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MADE IN THE USA

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**PREMIUM SOLID CARBIDE
HIGH SPEED STEEL
COBALT**

ENDMILLS \ MICRO ENDMILLS \ THREADMILLS \ DRILLS \ TAPS & DIES
CHAMFER MILLS \ DRILL MILLS \ BURS \ COUNTERSINKS \ REAMERS

Full offering of HIGH PERFORMANCE tools





MADE IN THE USA

Your #1 Source for American Made Cutting Tools

Our commitment to serving Industrial Distributors with premium quality, American-Made cutting tools endures as our number one priority. We strive to provide exceptional customer service and aggressive pricing, to ensure the profitability of our customers.

For over 42 years we've worked continuously to achieve these goals. We're proud to uphold this commitment to our valued distributors throughout North America. The "Titan Team" is rapidly growing; we invite you to join us today.

ALL TITAN USA TOOLS  *100% MADE IN THE USA*





CUTTING EDGE MANUFACTURING ■ STATE-OF-THE-ART COATING FACILITY ■ WORLD CLASS DISTRIBUTION CENTER

Our commitment to you

- 100% Made in the USA
- Premium Quality Products
- Over 13,000 Items in Stock
- Solid Carbide, HSS & Cobalt Tools
- On-site Platit PVD Coating Center
- Exceptional Customer Service
- All Orders Acknowledged Via Email Within 15 Minutes
- Online, Phone or Email Orders
- No Minimum Order
- 95% Same Day Shipping until 6pm EST
- UPS Blue @ Ground Rates
- UPS Red @ Blue Rates per Request
- Private Brand Program
- Custom Catalogs
- Blind Shipping
- Bar-Coding
- Live Stock Check & Net Pricing
- Online Cross Reference Feature
- Comprehensive Description Search
- Individual Account Log-in Feature
- Online Company Tour

Visit our website at titanman.com



TITAN USA utilizes the latest technology in high capacity cutting tool PVD coatings.

Partnering with PLATIT®, TITAN USA is able to control and maintain the consistent quality of all of our coatings and the ability to quickly replenish stock as needed. TITAN USA currently has 3 high production PLATIT PL1001 COMPACT coating machines that provide our customers & TITAN USA with uninterrupted tool coating production.



PLATIT PL1001 COMPACT

- High capacity hard coating machine
- Based on PLATIT's patented cathode ARC technology
- PVD Coating on HSS, Cobalt & Tungsten Carbide
- Produces the highest quality and consistent coating

PLATIT DEGASSER

- Vaporizes oils or any other fluids from blind or coolant fed holes after cleaning process
- Removes trapped gases from brazed cutting tools
- Helps ensure proper coating adhesion

TITAN's PVD Coatings

ALTIN

ALTIN is a high performance coating for milling, tapping and drilling in stainless steels, carbon steels, alloy steels, and cast iron. This coating is extremely heat resistant and can be used with or without coolant. It is exceptional in difficult to machine materials where adhesive wear is particularly high.

ALCRO-MAX

ALCRO-MAX is a Triple Platit Coating based on AlCrN with a titanium addition. Triple Coatings are deposited with 3 sections freely programmed in one batch. ALCRO-MAX has been engineered to give an optimum balance between the toughness of the core layer and the abrasion resistance of the top nano-layer. Titanium's addition reduces the adhesive wear compared to conventional AlCrN coatings, increases the micro-hardness up to 3500Hv and stops the crack propagation through the coating. ALCRO-MAX is mostly suitable when machining tool steel and shows excellent behavior for wet and MQL (minimum quantity lubrication) conditions.

TICN

TICN is a general purpose coating used for milling a wide variety of materials. This would be an option when ALTIN cannot be used, as in applications that can't generate the speeds and feeds required for higher cutting temperatures.

ZRN

ZRN is a high performance coating for milling non-ferrous materials such as aluminum. It prevents edge build up that is typical in soft and sticky materials.

SUPER TIN

SUPER TIN is a special multilayer coating for tapping and drilling in a wide variety of materials. It's generally used in applications with lower cutting speeds.



EUROCOLD Pluritank® is a state-of-the-art completely automated tool cleaning system that removes all oils and contaminants from tools prior to coating.



TITAN has a Platit quality control system that allows us to check coating thickness and adhesion. A test piece is inspected and documented after each load.

PVD Coatings increase cutting tool performance in terms of wear resistance, abrasion prevention, corrosion and oxidation at high temperatures.

With PLATIT's easy loading carousel tool holder, different tool types and sizes can be mixed and coated in one load maximizing cycle times.

After coating, to help maintain our clean-room environment, a cool-down box is used to contain and remove any excess coating dust particles.



Please visit us online at titanman.com for a tour and more information about our Coating Center.

All TITAN USA tools are 100% made in the USA



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USA****TITAN "Tuff Karb" PREMIUM SOLID CARBIDE**

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USA****TITAN TWIST DRILL** pages 133 – 155

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VI-PRO

TITAN's VI-PRO is a High Performance, solid carbide endmill, that incorporates the ultimate in variable index geometry. Our flute configuration produces a harmonics shift, resulting in minimal chatter and an exceptional finish.

- Used in all slotting, roughing, profiling and finishing applications
- High Performance, chatter free machining provides versatility in use for all ferrous materials
- Designed for use in Alloy Steels, Cast Iron, Titanium, Stainless Steel, High Temp and all other ferrous materials up to 50HRC
- Enables higher SFM and heavier chip loads
- Eccentric Relief on the cutting edge provides enhanced edge strength
- Available in 4 & 5 Flute - Stub, Regular, Long & Extra Long Lengths
- Available in Square End, Ball Nose and various  Corner Radius sizes
- Offered in ALTiN & ALCRO-MAX to cover a wide range of materials
- Made in the USA from premium solid micrograin carbide

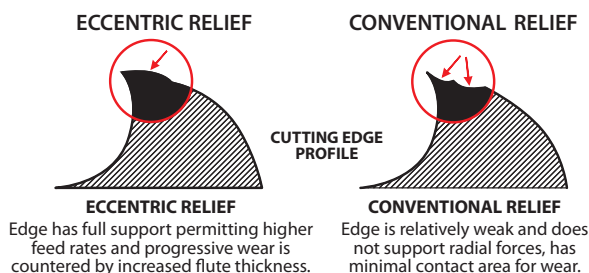
Why use TITAN's Corner Radius tools?

- The tools improve productivity and reduce costs.
- A sharp corner of an endmill is its weakest point. The corner radius design strengthens the endmill by reducing chipping and providing longer tool life.
- Extensive offering of Corner Radius tools: Stub, Regular, Long & Extra Long Lengths, with radius starting at 0.008 up to 0.120.



TITAN's High-Performance VI-PRO carbide endmill utilizes a Eccentric Relief on the cutting edge that provides enhanced edge strength and a smoother cutting action.

Advantages of Eccentric Relief vs Conventional Relief



Scan this QR code with your smartphone or mobile device to view a demonstration video of the VI-PRO.

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VI-PRO

**VARIABLE INDEX
STUB LENGTH - 4 FLUTE - SQUARE END**



SERIES V41S
ALTIN COATED

SERIES V42S
ALCRO-MAX COATED

VI-PRO					ALTIN COATED				ALCRO-MAX COATED			
SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLTS	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE
1/8	1/8	1/4	1-1/2	4	TC20901	25.24	-	-	TC21133	27.68	-	-
3/16	3/16	3/8	2	4	TC20904	32.47	-	-	TC21136	35.72	-	-
1/4	1/4	3/8	2	4	TC20907	36.74	-	-	TC21139	40.42	-	-
5/16	5/16	7/16	2	4	TC20910	53.45	-	-	TC21142	58.79	-	-
3/8	3/8	1/2	2	4	TC20913	59.25	-	-	TC21145	65.17	-	-
7/16	7/16	5/8	2-1/2	4	TC20915	77.18	-	-	TC21147	84.90	-	-
1/2	1/2	5/8	2-1/2	4	TC20916	88.60	TC20951	93.64	TC21148	97.45	TC21173	103.00
5/8	5/8	3/4	3	4	TC20919	174.42	TC20954	179.46	TC21151	183.14	TC21176	188.43
3/4	3/4	1	3	4	TC20922	230.04	TC20957	235.08	TC21154	241.54	TC21179	246.83

VARIABLE INDEX

REGULAR LENGTH - 4 FLUTE - SQUARE END



SERIES V41R
ALTIN COATED

SERIES V42R
ALCRO-MAX COATED

VI-PRO					ALTIN COATED				ALCRO-MAX COATED			
SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLTS	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE
1/8	1/8	1/2	2	4	TC21706	30.15	-	-	TC21821	33.17	-	-
3/16	3/16	9/16	2	4	TC21709	34.47	-	-	TC21824	37.91	-	-
1/4	1/4	3/4	2-1/2	4	TC21712	43.75	-	-	TC21827	48.12	-	-
5/16	5/16	13/16	2-1/2	4	TC21715	57.94	-	-	TC21830	63.73	-	-
3/8	3/8	1	2-1/2	4	TC21718	67.87	-	-	TC21833	74.66	-	-
7/16	7/16	1	2-3/4	4	TC21720	84.17	-	-	TC21835	92.58	-	-
1/2	1/2	1	3	4	TC21721	101.81	TC21755	106.85	TC21836	111.99	TC21863	117.53
1/2	1/2	1-1/4	3	4	TC21724	101.81	TC21758	106.85	TC21839	111.99	TC21866	117.53
5/8	5/8	1-5/8	3-1/2	4	TC21727	184.30	TC21761	189.34	TC21842	193.52	TC21869	198.81
3/4	3/4	1-5/8	4	4	TC21730	254.64	TC21764	259.68	TC21845	267.37	TC21872	272.67
1	1	2	4	4	TC21733	475.35	TC21767	480.39	TC21848	499.12	TC21875	504.41

The VI-PRO performs very well in a wide range of materials including:

HIGH TEMP ALLOYS ■ STAINLESS STEELS ■ ALLOY STEELS ■ CAST IRON ■ HIGH TEMP NICKEL BASE ALLOYS ■ TITANIUM ALLOYS ■ EXOTICS

FOR VI PRO TECHNICAL AND COATING INFORMATION, PLEASE SEE PAGES 177-179.

TOLERANCES	DIAMETER	SHANK
1/8" - 1/2"	+0.000, -0.002	-0.0001, -0.0004
5/8" - 1"	+0.000, -0.003	-0.0001, -0.0004

Solid Carbide Endmills

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VI-PRO**VARIABLE INDEX****LONG LENGTH - 4 FLUTE - SQUARE END****SERIES V41L**
ALTIN COATED**SERIES V42L**
ALCRO-MAX COATED

VI-PRO					ALTIN COATED				ALCRO-MAX COATED			
SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLTS	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE
1/4	1/4	1-1/8	3	4	TC23000	49.82	-	-	TC23201	54.81	-	-
5/16	5/16	1-1/8	3	4	TC23003	68.93	-	-	TC23204	75.82	-	-
3/8	3/8	1-1/4	3	4	TC23006	92.58	-	-	TC23207	101.84	-	-
7/16	7/16	2	4	4	TC23008	117.43	-	-	TC23209	129.17	-	-
1/2	1/2	1-1/2	4	4	TC23009	127.83	TC23134	132.87	TC23210	140.61	TC23331	146.15
1/2	1/2	2	4	4	TC23012	141.74	TC23137	146.78	TC23213	155.92	TC23334	161.46
5/8	5/8	2-1/4	5	4	TC23015	263.62	TC23140	268.66	TC23216	276.80	TC23337	282.09
3/4	3/4	2-1/4	5	4	TC23018	318.98	TC23143	324.03	TC23219	334.93	TC23340	340.23
1	1	2-1/4	5	4	TC23021	525.72	TC23146	530.77	TC23222	552.01	TC23343	557.30

VARIABLE INDEX**EXTRA LONG LENGTH - 4 FLUTE - SQUARE END****SERIES V41XL**
ALTIN COATED**SERIES V42XL**
ALCRO-MAX COATED

VI-PRO					ALTIN COATED				ALCRO-MAX COATED			
SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLTS	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE
1/4	1/4	1-1/2	4	4	TC24209	59.52	-	-	TC24408	65.47	-	-
3/8	3/8	2	4	4	TC24211	104.33	-	-	TC24411	114.76	-	-
7/16	7/16	3	6	4	TC24212	171.07	-	-	TC24413	188.17	-	-
1/2	1/2	3	6	4	TC24213	199.88	TC24348	204.92	TC24414	219.87	TC24543	225.42
5/8	5/8	3	6	4	TC24215	284.29	TC24351	289.33	TC24417	298.51	TC24546	303.80
3/4	3/4	3	6	4	TC24217	375.26	TC24354	380.30	TC24420	394.02	TC24549	399.31
3/4	3/4	4	7	4	TC24219	616.23	TC24357	621.28	TC24423	647.05	TC24552	652.34
1	1	3	6	4	TC24221	611.80	TC24360	616.84	TC24426	642.39	TC24555	647.68
1	1	4-1/4	7	4	TC24223	903.14	TC24363	908.54	TC24429	947.48	TC24558	952.89

The VI-PRO performs very well in a wide range of materials including:

HIGH TEMP ALLOYS ■ STAINLESS STEELS ■ ALLOY STEELS ■ CAST IRON ■ HIGH TEMP NICKEL BASE ALLOYS ■ TITANIUM ALLOYS ■ EXOTICS

FOR VI PRO TECHNICAL AND COATING INFORMATION, PLEASE SEE PAGES 177-179.

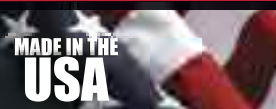
TOLERANCES	DIAMETER	SHANK
1/4" - 1/2"	+0.000, -0.002	-0.0001, -0.0004
5/8" - 1"	+0.000, -0.003	-0.0001, -0.0004



HIGH PERFORMANCE

YOUR #1 SOURCE FOR AMERICAN-MADE PREMIUM CUTTING TOOLS

Solid Carbide Endmills



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VI-PRO

VARIABLE INDEX

STUB LENGTH - 4 FLUTE - CORNER RADIUS



SERIES V41SR
ALTIM COATED

SERIES V42SR
ALCRO-MAX COATED

VI-PRO						ALTIM COATED				ALCRO-MAX COATED			
SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLTS	CORNER RADIUS	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE
1/8	1/8	1/4	1-1/2	4	0.008	TC21435	29.09	-	-	TC21503	32.00	-	-
3/16	3/16	3/8	2	4	0.008	TC21438	36.32	-	-	TC21506	39.96	-	-
1/4	1/4	3/8	2	4	0.015	TC21441	42.82	-	-	TC21509	47.10	-	-
5/16	5/16	7/16	2	4	0.015	TC21444	57.63	-	-	TC21512	63.40	-	-
3/8	3/8	1/2	2	4	0.015	TC21447	63.43	-	-	TC21515	69.78	-	-
7/16	7/16	5/8	2-1/2	4	0.030	TC21449	81.28	-	-	TC21517	89.41	-	-
1/2	1/2	5/8	2-1/2	4	0.030	TC21450	96.97	TC21468	102.01	TC21518	106.66	TC21541	112.21
5/8	5/8	3/4	3	4	0.030	TC21453	182.79	TC21471	187.83	TC21521	191.93	TC21544	197.22
3/4	3/4	1	3	4	0.030	TC21456	238.41	TC21474	243.45	TC21524	250.33	TC21547	255.62

The VI-PRO performs very well in a wide range of materials including:

HIGH TEMP ALLOYS ■ STAINLESS STEELS ■ ALLOY STEELS ■ CAST IRON ■ HIGH TEMP NICKEL BASE ALLOYS ■ TITANIUM ALLOYS ■ EXOTICS



ALL TITAN USA TOOLS ARE 100% MADE IN THE USA

FOR VI PRO TECHNICAL AND COATING INFORMATION, PLEASE SEE PAGES 177-179.

TOLERANCES	DIAMETER	SHANK	RADIUS
1/8" - 1/2"	+0.000, -.002	-.0001, -.0004	+0.001, -.001
5/8" - 3/4"	+0.000, -.003	-.0001, -.0004	+0.001, -.001

Solid Carbide Endmills

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VI-PRO**VARIABLE INDEX****REGULAR LENGTH - 4 FLUTE - CORNER RADIUS****SERIES V41RR**
ALTiN COATED**SERIES V42RR**
ALCRO-MAX COATED

VI-PRO						ALTiN COATED				ALCRO-MAX COATED			
SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLTS	CORNER RADIUS	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE
1/8	1/8	1/2	2	4	0.010	TC22211	34.00	-	-	TC22617	37.40	-	-
1/8	1/8	1/2	2	4	0.020	TC22214	34.00	-	-	TC22620	37.40	-	-
1/8	1/8	1/2	2	4	0.030	TC22217	34.00	-	-	TC22623	37.40	-	-
3/16	3/16	9/16	2	4	0.010	TC22220	38.32	-	-	TC22626	42.15	-	-
3/16	3/16	9/16	2	4	0.020	TC22223	38.32	-	-	TC22629	42.15	-	-
3/16	3/16	9/16	2	4	0.030	TC22226	38.32	-	-	TC22632	42.15	-	-
1/4	1/4	3/4	2-1/2	4	0.015	TC22229	47.60	-	-	TC22635	52.36	-	-
1/4	1/4	3/4	2-1/2	4	0.030	TC22232	47.60	-	-	TC22638	52.36	-	-
1/4	1/4	3/4	2-1/2	4	0.060	TC22235	47.60	-	-	TC22641	52.36	-	-
5/16	5/16	13/16	2-1/2	4	0.015	TC22238	61.32	-	-	TC22644	67.45	-	-
5/16	5/16	13/16	2-1/2	4	0.030	TC22241	61.32	-	-	TC22647	67.45	-	-
5/16	5/16	13/16	2-1/2	4	0.060	TC22244	61.32	-	-	TC22650	67.45	-	-
3/8	3/8	1	2-1/2	4	0.015	TC22247	71.60	-	-	TC22653	78.76	-	-
3/8	3/8	1	2-1/2	4	0.030	TC22250	71.60	-	-	TC22656	78.76	-	-
3/8	3/8	1	2-1/2	4	0.060	TC22253	71.60	-	-	TC22659	78.76	-	-
7/16	7/16	1	2-3/4	4	0.015	TC22254	93.45	-	-	TC22660	102.79	-	-
7/16	7/16	1	2-3/4	4	0.030	TC22255	93.45	-	-	TC22661	102.79	-	-
7/16	7/16	1	2-3/4	4	0.060	TC22257	93.45	-	-	TC22663	102.79	-	-
1/2	1/2	1	3	4	0.015	TC22256	114.39	TC22452	120.11	TC22662	125.83	TC22801	132.12
1/2	1/2	1	3	4	0.030	TC22259	114.39	TC22455	120.11	TC22665	125.83	TC22804	132.12
1/2	1/2	1	3	4	0.060	TC22262	114.39	TC22458	120.11	TC22668	125.83	TC22807	132.12
1/2	1/2	1	3	4	0.090	TC22265	114.39	TC22461	120.11	TC22671	125.83	TC22810	132.12
1/2	1/2	1	3	4	0.120	TC22268	114.39	TC22464	120.11	TC22674	125.83	TC22813	132.12
1/2	1/2	1-1/4	3	4	0.015	TC22271	114.39	TC22467	120.11	TC22677	125.83	TC22816	132.12
1/2	1/2	1-1/4	3	4	0.030	TC22274	114.39	TC22470	120.11	TC22680	125.83	TC22819	132.12
1/2	1/2	1-1/4	3	4	0.060	TC22277	114.39	TC22473	120.11	TC22683	125.83	TC22822	132.12
1/2	1/2	1-1/4	3	4	0.090	TC22280	114.39	TC22476	120.11	TC22686	125.83	TC22825	132.12
1/2	1/2	1-1/4	3	4	0.120	TC22283	114.39	TC22479	120.11	TC22689	125.83	TC22828	132.12
5/8	5/8	1-5/8	3-1/2	4	0.030	TC22286	192.72	TC22482	197.76	TC22692	202.36	TC22831	207.65
5/8	5/8	1-5/8	3-1/2	4	0.060	TC22289	192.72	TC22485	197.76	TC22695	202.36	TC22834	207.65
5/8	5/8	1-5/8	3-1/2	4	0.090	TC22292	192.72	TC22488	197.76	TC22698	202.36	TC22837	207.65
5/8	5/8	1-5/8	3-1/2	4	0.120	TC22295	192.72	TC22491	197.76	TC22701	202.36	TC22840	207.65
3/4	3/4	1-5/8	4	4	0.030	TC22298	267.25	TC22494	272.29	TC22704	280.61	TC22843	285.91
3/4	3/4	1-5/8	4	4	0.060	TC22301	267.25	TC22497	272.29	TC22707	280.61	TC22846	285.91
3/4	3/4	1-5/8	4	4	0.090	TC22304	267.25	TC22500	272.29	TC22710	280.61	TC22849	285.91
3/4	3/4	1-5/8	4	4	0.120	TC22307	267.25	TC22503	272.29	TC22713	280.61	TC22852	285.91
1	1	2	4	4	0.030	TC22310	487.96	TC22506	493.00	TC22716	512.35	TC22855	517.65
1	1	2	4	4	0.060	TC22313	487.96	TC22509	493.00	TC22719	512.35	TC22858	517.65
1	1	2	4	4	0.090	TC22316	487.96	TC22512	493.00	TC22722	512.35	TC22861	517.65
1	1	2	4	4	0.120	TC22319	487.96	TC22515	493.00	TC22725	512.35	TC22864	517.65

FOR VI PRO TECHNICAL AND COATING INFORMATION, PLEASE SEE PAGES 177-179.

TOLERANCES	DIAMETER	SHANK	RADIUS
1/8" - 1/2"	+0.00, -.002	-.0001, -.0004	+.001, -.001
5/8" - 1"	+0.00, -.003	-.0001, -.0004	+.001, -.001

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VARIABLE INDEX

LONG LENGTH - 4 FLUTE -  CORNER RADIUS



 CORNER RADIUS

SERIES V41LR
ALTIN COATED

SERIES V42LR
ALCRO-MAX COATED

VI-PRO							ALTIN COATED				ALCRO-MAX COATED			
SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLTS	CORNER RADIUS		ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE
1/4	1/4	1-1/8	3	4	0.015		TC23624	53.67	-	-	TC23820	59.04	-	-
1/4	1/4	1-1/8	3	4	0.030		TC23627	53.67	-	-	TC23823	59.04	-	-
5/16	5/16	1-1/8	3	4	0.015		TC23630	73.12	-	-	TC23826	80.43	-	-
5/16	5/16	1-1/8	3	4	0.030		TC23633	73.12	-	-	TC23829	80.43	-	-
3/8	3/8	1-1/4	3	4	0.030		TC23636	96.76	-	-	TC23832	106.44	-	-
3/8	3/8	1-1/4	3	4	0.060		TC23639	96.76	-	-	TC23835	106.44	-	-
7/16	7/16	2	4	4	0.030		TC23640	124.28	-	-	TC23836	136.71	-	-
7/16	7/16	2	4	4	0.060		TC23641	124.28	-	-	TC23837	136.71	-	-
1/2	1/2	1-1/2	4	4	0.030		TC23642	136.20	TC23780	141.24	TC23838	149.82	TC23905	155.36
1/2	1/2	1-1/2	4	4	0.060		TC23645	136.20	TC23783	141.24	TC23841	149.82	TC23908	155.36
1/2	1/2	2	4	4	0.030		TC23648	150.11	TC23786	155.16	TC23844	165.12	TC23911	170.67
1/2	1/2	2	4	4	0.060		TC23651	150.11	TC23789	155.16	TC23847	165.12	TC23914	170.67
5/8	5/8	2-1/4	5	4	0.030		TC23654	271.99	TC23792	277.03	TC23850	285.59	TC23917	290.88
5/8	5/8	2-1/4	5	4	0.060		TC23657	271.99	TC23795	277.03	TC23853	285.59	TC23920	290.88
3/4	3/4	2-1/4	5	4	0.030		TC23660	342.51	TC23798	349.06	TC23856	359.63	TC23923	366.51
3/4	3/4	2-1/4	5	4	0.060		TC23663	342.51	TC23801	349.06	TC23859	359.63	TC23926	366.51
1	1	2-1/4	5	4	0.030		TC23666	534.09	TC23804	539.14	TC23862	560.80	TC23929	566.09
1	1	2-1/4	5	4	0.060		TC23669	534.09	TC23807	539.14	TC23865	560.80	TC23932	566.09

The VI-PRO performs very well in a wide range of materials including:

HIGH TEMP ALLOYS ■ STAINLESS STEELS ■ ALLOY STEELS ■ CAST IRON ■ HIGH TEMP NICKEL BASE ALLOYS ■ TITANIUM ALLOYS ■ EXOTICS



PVD COATINGS INCREASE CUTTING TOOL PERFORMANCE

FOR VI PRO TECHNICAL AND COATING INFORMATION, PLEASE SEE PAGES 177-179.

TOLERANCES	DIAMETER	SHANK	RADIUS
1/4" - 1/2"	+0.000, -.002	-.0001, -.0004	+0.001, -.001
5/8" - 1"	+0.000, -.003	-.0001, -.0004	+0.001, -.001

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VI-PRO

VARIABLE INDEX

EXTRA LONG LENGTH - 4 FLUTE - CORNER RADIUS



SERIES V41XLR
ALTIM COATED

SERIES V42XLR
ALCRO-MAX COATED

VI-PRO						ALTIM COATED				ALCRO-MAX COATED			
SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLTS	CORNER RADIUS	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE
1/4	1/4	1-1/2	4	4	0.015	TC24913	65.32	-	-	TC25217	71.85	-	-
1/4	1/4	1-1/2	4	4	0.030	TC24916	65.32	-	-	TC25220	71.85	-	-
3/8	3/8	2	4	4	0.030	TC24919	110.63	-	-	TC25223	121.69	-	-
3/8	3/8	2	4	4	0.060	TC24922	110.63	-	-	TC25226	121.69	-	-
7/16	7/16	3	6	4	0.030	TC24923	175.22	-	-	TC25227	192.74	-	-
7/16	7/16	3	6	4	0.060	TC24924	175.22	-	-	TC25228	192.74	-	-
1/2	1/2	3	6	4	0.030	TC24925	206.18	TC25070	211.23	TC25229	226.80	TC25302	232.35
1/2	1/2	3	6	4	0.060	TC24928	206.18	TC25073	211.23	TC25232	226.80	TC25305	232.35
5/8	5/8	3	6	4	0.030	TC24931	290.54	TC25076	295.59	TC25235	305.07	TC25308	310.37
5/8	5/8	3	6	4	0.060	TC24934	290.54	TC25079	295.59	TC25238	305.07	TC25311	310.37
3/4	3/4	3	6	4	0.030	TC24937	383.63	TC25082	388.67	TC25241	402.81	TC25314	408.10
3/4	3/4	3	6	4	0.060	TC24940	383.63	TC25085	388.67	TC25244	402.81	TC25317	408.10
3/4	3/4	4	7	4	0.030	TC24943	624.61	TC25088	629.65	TC25247	655.84	TC25320	661.13
3/4	3/4	4	7	4	0.060	TC24946	624.61	TC25091	629.65	TC25250	655.84	TC25323	661.13
1	1	3	6	4	0.030	TC24949	627.93	TC25094	632.98	TC25253	659.33	TC25326	664.62
1	1	3	6	4	0.060	TC24952	627.93	TC25097	632.98	TC25256	659.33	TC25329	664.62
1	1	4-1/4	7	4	0.030	TC24955	911.79	TC25100	917.20	TC25259	956.13	TC25332	961.54
1	1	4-1/4	7	4	0.060	TC24958	911.79	TC25103	917.20	TC25262	956.13	TC25335	961.54

The VI-PRO performs very well in a wide range of materials including:

HIGH TEMP ALLOYS ■ STAINLESS STEELS ■ ALLOY STEELS ■ CAST IRON ■ HIGH TEMP NICKEL BASE ALLOYS ■ TITANIUM ALLOYS ■ EXOTICS



TITAN HAS OVER 13,000 ITEMS IN STOCK & READY TO SHIP

FOR VI PRO TECHNICAL AND COATING INFORMATION, PLEASE SEE PAGES 177-179.

TOLERANCES	DIAMETER	SHANK	RADIUS
1/4" - 1/2"	+0.00, -.002	-.0001, -.0004	+0.01, -.001
5/8" - 1"	+0.00, -.003	-.0001, -.0004	+0.01, -.001

Solid Carbide Endmills

VI-PRO

VARIABLE INDEX
STUB LENGTH - 4 FLUTE - BALL NOSE



SERIES V41SB
ALTIM COATED

SERIES V42SB
ALCRO-MAX COATED

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VI-PRO					ALTIM COATED				ALCRO-MAX COATED			
SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLTS	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE
1/8	1/8	1/4	1-1/2	4	TC25480	29.12	-	-	TC25499	32.03	-	-
3/16	3/16	3/8	2	4	TC25482	37.46	-	-	TC25501	41.21	-	-
1/4	1/4	3/8	2	4	TC25484	42.39	-	-	TC25502	46.64	-	-
5/16	5/16	7/16	2	4	TC25486	61.68	-	-	TC25504	67.84	-	-
3/8	3/8	1/2	2	4	TC25488	68.37	-	-	TC25506	75.20	-	-
7/16	7/16	5/8	2-1/2	4	TC25489	92.04	-	-	TC25507	101.24	-	-
1/2	1/2	5/8	2-1/2	4	TC25490	102.22	TC25496	108.04	TC25508	112.44	TC25514	118.85
5/8	5/8	3/4	3	4	TC25492	201.25	TC25498	207.07	TC25510	211.31	TC25516	217.43
3/4	3/4	1	3	4	TC25494	265.42	TC25500	271.24	TC25512	278.69	TC25518	284.81

VARIABLE INDEX
REGULAR LENGTH - 4 FLUTE - BALL NOSE



SERIES V41RB
ALTIM COATED

SERIES V42RB
ALCRO-MAX COATED

VI-PRO					ALTIM COATED				ALCRO-MAX COATED			
SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLTS	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE
1/8	1/8	1/2	2	4	TC25520	34.79	-	-	TC25547	38.27	-	-
3/16	3/16	9/16	2	4	TC25522	39.77	-	-	TC25549	43.75	-	-
1/4	1/4	3/4	2-1/2	4	TC25524	50.48	-	-	TC25550	55.52	-	-
5/16	5/16	13/16	2-1/2	4	TC25526	66.86	-	-	TC25552	73.53	-	-
3/8	3/8	1	2-1/2	4	TC25528	78.31	-	-	TC25554	86.15	-	-
7/16	7/16	1	2-3/4	4	TC25529	107.12	-	-	TC25555	117.83	-	-
1/2	1/2	1	3	4	TC25530	117.47	TC25540	123.29	TC25556	129.22	TC25566	135.62
1/2	1/2	1-1/4	3	4	TC25532	117.47	TC25542	123.29	TC25558	129.22	TC25568	135.62
5/8	5/8	1-5/8	3-1/2	4	TC25534	212.66	TC25544	218.47	TC25560	223.29	TC25570	229.39
3/4	3/4	1-5/8	4	4	TC25536	293.82	TC25546	299.63	TC25562	308.51	TC25572	314.62
1	1	2	4	4	TC25538	548.48	TC25548	554.30	TC25564	575.90	TC25574	582.02

The VI-PRO performs very well in a wide range of materials including:

HIGH TEMP ALLOYS • STAINLESS STEELS • ALLOY STEELS • CAST IRON • HIGH TEMP NICKEL BASE ALLOYS • TITANIUM ALLOYS • EXOTICS

FOR VI PRO TECHNICAL AND COATING INFORMATION, PLEASE SEE PAGES 177-179.

TOLERANCES	DIAMETER	SHANK
1/8" - 1/2"	+0.000, -.002	-.0001, -.0004
5/8" - 1"	+0.000, -.003	-.0001, -.0004

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VI-PRO

VARIABLE INDEX

LONG LENGTH - 4 FLUTE - BALL NOSE



SERIES V41LB
ALTiN COATED

SERIES V42LB
ALCRO-MAX COATED

VI-PRO					ALTiN COATED				ALCRO-MAX COATED			
SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLTS	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE
1/4	1/4	1-1/8	3	4	TC25576	57.48	-	-	TC25602	63.24	-	-
5/16	5/16	1-1/8	3	4	TC25578	79.54	-	-	TC25604	87.48	-	-
3/8	3/8	1-1/4	3	4	TC25580	106.82	-	-	TC25606	117.50	-	-
7/16	7/16	2	4	4	TC25581	133.12	-	-	TC25607	146.43	-	-
1/2	1/2	1-1/2	4	4	TC25582	147.49	TC25592	153.30	TC25608	162.24	TC25618	168.64
1/2	1/2	2	4	4	TC25584	163.55	TC25594	169.37	TC25610	179.90	TC25620	186.30
5/8	5/8	2-1/4	5	4	TC25586	304.18	TC25596	309.99	TC25612	319.39	TC25622	325.49
3/4	3/4	2-1/4	5	4	TC25588	368.06	TC25598	373.88	TC25614	386.46	TC25624	392.57
1	1	2-1/4	5	4	TC25590	606.60	TC25600	612.42	TC25616	636.93	TC25626	643.04

VARIABLE INDEX

EXTRA LONG LENGTH - 4 FLUTE - BALL NOSE



SERIES V41XLB
ALTiN COATED

SERIES V42XLB
ALCRO-MAX COATED

VI-PRO					ALTiN COATED				ALCRO-MAX COATED			
SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLTS	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE
1/4	1/4	1-1/2	4	4	TC25628	68.68	-	-	TC25656	75.54	-	-
3/8	3/8	2	4	4	TC25630	120.38	-	-	TC25658	132.41	-	-
7/16	7/16	3	6	4	TC25631	197.40	-	-	TC25659	217.14	-	-
1/2	1/2	3	6	4	TC25632	230.63	TC25644	236.45	TC25660	253.69	TC25672	260.10
5/8	5/8	3	6	4	TC25634	328.02	TC25646	333.85	TC25662	344.44	TC25674	350.54
3/4	3/4	3	6	4	TC25636	432.99	TC25648	438.81	TC25664	454.63	TC25676	460.75
3/4	3/4	4	7	4	TC25638	711.04	TC25650	716.86	TC25666	746.59	TC25678	752.71
1	1	3	6	4	TC25640	705.92	TC25652	711.73	TC25668	741.21	TC25680	747.33
1	1	4-1/4	7	4	TC25642	1,042.08	TC25654	1,048.32	TC25670	1,093.25	TC25682	1,099.49

The VI-PRO performs very well in a wide range of materials including:

HIGH TEMP ALLOYS ■ STAINLESS STEELS ■ ALLOY STEELS ■ CAST IRON ■ HIGH TEMP NICKEL BASE ALLOYS ■ TITANIUM ALLOYS ■ EXOTICS

FOR VI PRO TECHNICAL AND COATING INFORMATION, PLEASE SEE PAGES 177-179.

TOLERANCES	DIAMETER	SHANK
1/4" - 1/2"	+0.000, -0.002	-0.001, -0.004
5/8" - 1"	+0.000, -0.003	-0.001, -0.004

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VARIABLE INDEX

STUB LENGTH - 5 FLUTE - SQUARE END



SERIES V51S
ALTIN COATED

SERIES V52S
ALCRO-MAX COATED

VI-PRO					ALTIN COATED				ALCRO-MAX COATED			
SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLTS	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE
1/8	1/8	1/4	1-1/2	5	TC25785	27.76	-	-	TC25807	30.53	-	-
3/16	3/16	3/8	2	5	TC25786	35.72	-	-	TC25809	39.29	-	-
1/4	1/4	3/8	2	5	TC25787	40.42	-	-	TC25796	44.46	-	-
5/16	5/16	7/16	2	5	TC25788	58.80	-	-	TC25797	64.68	-	-
3/8	3/8	1/2	2	5	TC25789	65.18	-	-	TC25798	71.69	-	-
1/2	1/2	5/8	2-1/2	5	TC25790	97.45	TC25793	103.00	TC25799	107.20	TC25802	113.30
5/8	5/8	3/4	3	5	TC25791	191.86	TC25794	197.41	TC25800	201.45	TC25803	207.28
3/4	3/4	1	3	5	TC25792	253.04	TC25795	258.58	TC25801	265.69	TC25804	271.52

VARIABLE INDEX

REGULAR LENGTH - 5 FLUTE - SQUARE END



SERIES V51R
ALTIN COATED

SERIES V52R
ALCRO-MAX COATED

VI-PRO					ALTIN COATED				ALCRO-MAX COATED			
SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLTS	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE
1/8	1/8	1/2	2	5	TC25806	33.17	-	-	TC25829	36.49	-	-
3/16	3/16	9/16	2	5	TC25808	37.92	-	-	TC25835	41.71	-	-
1/4	1/4	3/4	2-1/2	5	TC25810	48.13	-	-	TC25836	52.93	-	-
5/16	5/16	13/16	2-1/2	5	TC25812	63.74	-	-	TC25838	70.10	-	-
3/8	3/8	1	2-1/2	5	TC25814	74.66	-	-	TC25840	82.13	-	-
1/2	1/2	1	3	5	TC25816	111.99	TC25826	117.54	TC25842	123.18	TC25852	129.29
1/2	1/2	1-1/4	3	5	TC25818	111.99	TC25828	117.54	TC25844	123.18	TC25854	129.29
5/8	5/8	1-5/8	3-1/2	5	TC25820	202.74	TC25830	208.28	TC25846	212.87	TC25856	218.69
3/4	3/4	1-5/8	4	5	TC25822	280.10	TC25832	285.65	TC25848	294.11	TC25858	299.94
1	1	2	4	5	TC25824	522.89	TC25834	528.44	TC25850	549.03	TC25860	554.86

The VI-PRO performs very well in a wide range of materials including:

HIGH TEMP ALLOYS ■ STAINLESS STEELS ■ ALLOY STEELS ■ CAST IRON ■ HIGH TEMP NICKEL BASE ALLOYS ■ TITANIUM ALLOYS ■ EXOTICS

FOR VI PRO TECHNICAL AND COATING INFORMATION, PLEASE SEE PAGES 177, 180-181.

TOLERANCES	DIAMETER	SHANK
1/8" - 1/2"	+0.000, -0.002	-0.0001, -0.0004
5/8" - 1"	+0.000, -0.003	-0.0001, -0.0004

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VI-PRO**VARIABLE INDEX****LONG LENGTH - 5 FLUTE - SQUARE END****SERIES V51L**
ALTIN COATED**SERIES V52L**
ALCRO-MAX COATED

VI-PRO					ALTIN COATED				ALCRO-MAX COATED			
SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLTS	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE
1/4	1/4	1-1/8	3	5	TC25862	54.80	-	-	TC25888	60.29	-	-
5/16	5/16	1-1/8	3	5	TC25864	75.82	-	-	TC25890	83.40	-	-
3/8	3/8	1-1/4	3	5	TC25866	101.83	-	-	TC25892	112.02	-	-
1/2	1/2	1-1/2	4	5	TC25868	140.61	TC25878	146.15	TC25894	154.67	TC25904	160.77
1/2	1/2	2	4	5	TC25870	155.92	TC25880	161.46	TC25896	171.51	TC25906	177.61
5/8	5/8	2-1/4	5	5	TC25872	289.98	TC25882	295.53	TC25898	304.48	TC25908	310.30
3/4	3/4	2-1/4	5	5	TC25874	350.88	TC25884	356.43	TC25900	368.43	TC25910	374.26
1	1	2-1/4	5	5	TC25876	578.30	TC25886	583.84	TC25902	607.21	TC25912	613.04

VARIABLE INDEX**EXTRA LONG LENGTH - 5 FLUTE - SQUARE END****SERIES V51XL**
ALTIN COATED**SERIES V52XL**
ALCRO-MAX COATED

VI-PRO					ALTIN COATED				ALCRO-MAX COATED			
SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLTS	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE
1/4	1/4	1-1/2	4	5	TC25914	65.47	-	-	TC25942	72.01	-	-
3/8	3/8	2	4	5	TC25916	114.77	-	-	TC25944	126.23	-	-
1/2	1/2	3	6	5	TC25918	219.87	TC25930	225.42	TC25946	241.86	TC25958	247.96
5/8	5/8	3	6	5	TC25920	312.71	TC25932	318.27	TC25948	328.36	TC25960	334.18
3/4	3/4	3	6	5	TC25922	412.79	TC25934	418.33	TC25950	433.42	TC25962	439.25
3/4	3/4	4	7	5	TC25924	677.85	TC25936	683.41	TC25952	711.75	TC25964	717.58
1	1	3	6	5	TC25926	672.97	TC25938	678.52	TC25954	706.62	TC25966	712.45
1	1	4-1/4	7	5	TC25928	993.45	TC25940	999.40	TC25956	1,042.23	TC25968	1,048.18

The VI-PRO performs very well in a wide range of materials including:

HIGH TEMP ALLOYS ■ STAINLESS STEELS ■ ALLOY STEELS ■ CAST IRON ■ HIGH TEMP NICKEL BASE ALLOYS ■ TITANIUM ALLOYS ■ EXOTICS

FOR VI PRO TECHNICAL AND COATING INFORMATION, PLEASE SEE PAGES 177, 180-181.

TOLERANCES	DIAMETER	SHANK
1/4" - 1/2"	+0.00, -0.02	-0.001, -0.004
5/8" - 1"	+0.00, -0.03	-0.001, -0.004



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VARIABLE INDEX

STUB LENGTH - 5 FLUTE - CORNER RADIUS



SERIES V51SR
ALTIM COATED

SERIES V52SR
ALCRO-MAX COATED

VI-PRO						ALTIM COATED				ALCRO-MAX COATED			
SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLTS	CORNER RADIUS	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE
1/8	1/8	1/4	1-1/2	5	0.008	TC25975	31.99	-	-	TC25995	35.19	-	-
3/16	3/16	3/8	2	5	0.008	TC25976	39.95	-	-	TC25996	43.95	-	-
1/4	1/4	3/8	2	5	0.015	TC25977	47.10	-	-	TC25986	51.81	-	-
5/16	5/16	7/16	2	5	0.015	TC25978	63.40	-	-	TC25987	69.74	-	-
3/8	3/8	1/2	2	5	0.015	TC25979	69.78	-	-	TC25988	76.75	-	-
1/2	1/2	5/8	2-1/2	5	0.030	TC25980	106.66	TC25983	112.21	TC25989	117.33	TC25992	123.43
5/8	5/8	3/4	3	5	0.030	TC25981	201.07	TC25984	206.61	TC25990	211.12	TC25993	216.94
3/4	3/4	1	3	5	0.030	TC25982	262.25	TC25985	267.79	TC25991	275.36	TC25994	281.19

The VI-PRO performs very well in a wide range of materials including:

HIGH TEMP ALLOYS • STAINLESS STEELS • ALLOY STEELS • CAST IRON • HIGH TEMP NICKEL BASE ALLOYS • TITANIUM ALLOYS • EXOTICS



3 HIGH CAPACITY PLATIT PL1001 COMPACT COATING MACHINES ENABLE TITAN USA TO PROVIDE UNINTERRUPTED TOOL COATING PRODUCTION.

FOR VI PRO TECHNICAL AND COATING INFORMATION, PLEASE SEE PAGES 177, 180-181.

TOLERANCES	DIAMETER	SHANK	RADIUS
1/8" - 1/2"	+0.00, -.002	-.0001, -.0004	+0.01, -.001
5/8" - 3/4"	+0.00, -.003	-.0001, -.0004	+0.01, -.001

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VI-PRO**VARIABLE INDEX****REGULAR LENGTH - 5 FLUTE - CORNER RADIUS****SERIES V51RR**
ALTIM COATED**SERIES V52RR**
ALCRO-MAX COATED

VI-PRO						ALTIM COATED				ALCRO-MAX COATED			
SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLTS	CORNER RADIUS	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE
1/4	1/4	3/4	2-1/2	5	0.015	TC26201	52.36	-	-	TC26416	57.59	-	-
1/4	1/4	3/4	2-1/2	5	0.030	TC26204	52.36	-	-	TC26419	57.59	-	-
1/4	1/4	3/4	2-1/2	5	0.060	TC26207	52.36	-	-	TC26422	57.59	-	-
5/16	5/16	13/16	2-1/2	5	0.015	TC26210	67.45	-	-	TC26425	74.19	-	-
5/16	5/16	13/16	2-1/2	5	0.030	TC26213	67.45	-	-	TC26428	74.19	-	-
5/16	5/16	13/16	2-1/2	5	0.060	TC26216	67.45	-	-	TC26431	74.19	-	-
3/8	3/8	1	2-1/2	5	0.015	TC26219	78.76	-	-	TC26434	86.64	-	-
3/8	3/8	1	2-1/2	5	0.030	TC26222	78.76	-	-	TC26437	86.64	-	-
3/8	3/8	1	2-1/2	5	0.060	TC26225	78.76	-	-	TC26440	86.64	-	-
1/2	1/2	1	3	5	0.015	TC26228	125.83	TC26321	132.12	TC26443	138.41	TC26625	145.34
1/2	1/2	1	3	5	0.030	TC26231	125.83	TC26324	132.12	TC26446	138.41	TC26628	145.34
1/2	1/2	1	3	5	0.060	TC26234	125.83	TC26327	132.12	TC26449	138.41	TC26631	145.34
1/2	1/2	1	3	5	0.090	TC26237	125.83	TC26330	132.12	TC26452	138.41	TC26634	145.34
1/2	1/2	1	3	5	0.120	TC26240	125.83	TC26333	132.12	TC26455	138.41	TC26637	145.34
1/2	1/2	1-1/4	3	5	0.015	TC26243	125.83	TC26336	132.12	TC26458	138.41	TC26640	145.34
1/2	1/2	1-1/4	3	5	0.030	TC26246	125.83	TC26339	132.12	TC26461	138.41	TC26643	145.34
1/2	1/2	1-1/4	3	5	0.060	TC26249	125.83	TC26342	132.12	TC26464	138.41	TC26646	145.34
1/2	1/2	1-1/4	3	5	0.090	TC26252	125.83	TC26345	132.12	TC26467	138.41	TC26649	145.34
1/2	1/2	1-1/4	3	5	0.120	TC26255	125.83	TC26348	132.12	TC26470	138.41	TC26652	145.34
5/8	5/8	1-5/8	3-1/2	5	0.030	TC26258	211.99	TC26351	217.54	TC26473	222.59	TC26655	228.42
5/8	5/8	1-5/8	3-1/2	5	0.060	TC26261	211.99	TC26354	217.54	TC26476	222.59	TC26658	228.42
5/8	5/8	1-5/8	3-1/2	5	0.090	TC26264	211.99	TC26357	217.54	TC26479	222.59	TC26661	228.42
5/8	5/8	1-5/8	3-1/2	5	0.120	TC26267	211.99	TC26360	217.54	TC26482	222.59	TC26664	228.42
3/4	3/4	1-5/8	4	5	0.030	TC26270	293.97	TC26363	299.52	TC26485	308.67	TC26667	314.50
3/4	3/4	1-5/8	4	5	0.060	TC26273	293.97	TC26366	299.52	TC26488	308.67	TC26670	314.50
3/4	3/4	1-5/8	4	5	0.090	TC26276	293.97	TC26369	299.52	TC26491	308.67	TC26673	314.50
3/4	3/4	1-5/8	4	5	0.120	TC26279	293.97	TC26372	299.52	TC26494	308.67	TC26676	314.50
1	1	2	4	5	0.030	TC26282	536.75	TC26375	542.30	TC26497	563.59	TC26679	569.41
1	1	2	4	5	0.060	TC26285	536.75	TC26378	542.30	TC26500	563.59	TC26682	569.41
1	1	2	4	5	0.090	TC26288	536.75	TC26381	542.30	TC26503	563.59	TC26685	569.41
1	1	2	4	5	0.120	TC26291	536.75	TC26384	542.30	TC26506	563.59	TC26688	569.41

The VI-PRO performs very well in a wide range of materials including:

HIGH TEMP ALLOYS ■ STAINLESS STEELS ■ ALLOY STEELS ■ CAST IRON ■ HIGH TEMP NICKEL BASE ALLOYS ■ TITANIUM ALLOYS ■ EXOTICS

FOR VI PRO TECHNICAL AND COATING INFORMATION, PLEASE SEE PAGES 177, 180-181.

TOLERANCES	DIAMETER	SHANK	RADIUS
1/4" - 1/2"	+0.00, -0.02	-0.001, -0.004	+0.01, -0.01
5/8" - 1"	+0.00, -0.03	-0.001, -0.004	+0.01, -0.01



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VARIABLE INDEX

LONG LENGTH - 5 FLUTE - CORNER RADIUS



**CORNER
RADIUS**

**SERIES V51LR
ALTiN COATED**

**SERIES V52LR
ALCRO-MAX COATED**

VI-PRO						ALTiN COATED				ALCRO-MAX COATED			
SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLTS	CORNER RADIUS	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE
1/4	1/4	1-1/8	3	5	0.015	TC26928	59.04	-	-	TC27109	64.94	-	-
1/4	1/4	1-1/8	3	5	0.030	TC26931	59.04	-	-	TC27112	64.94	-	-
5/16	5/16	1-1/8	3	5	0.015	TC26934	80.43	-	-	TC27115	88.47	-	-
5/16	5/16	1-1/8	3	5	0.030	TC26937	80.43	-	-	TC27118	88.47	-	-
3/8	3/8	1-1/4	3	5	0.030	TC26940	106.44	-	-	TC27121	117.08	-	-
3/8	3/8	1-1/4	3	5	0.060	TC26943	106.44	-	-	TC27124	117.08	-	-
1/2	1/2	2	4	5	0.030	TC26946	165.12	TC27000	170.67	TC27127	181.64	TC27262	187.74
1/2	1/2	2	4	5	0.060	TC26949	165.12	TC27003	170.67	TC27130	181.64	TC27265	187.74
5/8	5/8	2-1/4	5	5	0.030	TC26952	299.19	TC27006	304.73	TC27133	314.15	TC27268	319.97
5/8	5/8	2-1/4	5	5	0.060	TC26955	299.19	TC27009	304.73	TC27136	314.15	TC27271	319.97
3/4	3/4	2-1/4	5	5	0.030	TC26958	376.76	TC27012	383.97	TC27139	395.60	TC27274	403.17
3/4	3/4	2-1/4	5	5	0.060	TC26961	376.76	TC27015	383.97	TC27142	395.60	TC27277	403.17
1	1	2-1/4	5	5	0.030	TC26964	587.50	TC27018	593.05	TC27145	616.88	TC27280	622.70
1	1	2-1/4	5	5	0.060	TC26967	587.50	TC27021	593.05	TC27148	616.88	TC27283	622.70



"The achievements of an organization are the results of the combined effort of each individual"

~ TITAN USA ~

FOR VI PRO TECHNICAL AND COATING INFORMATION, PLEASE SEE PAGES 177, 180-181.

TOLERANCES	DIAMETER	SHANK	RADIUS
1/4" - 1/2"	+0.00, -.002	-.0001, -.0004	+0.01, -.001
5/8" - 1"	+0.00, -.003	-.0001, -.0004	+0.01, -.001

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VI-PRO

VARIABLE INDEX

EXTRA LONG LENGTH - 5 FLUTE -  CORNER RADIUS



SERIES V51XLR ALTIM COATED

SERIES V52XLR ALCRO-MAX COATED

VI-PRO						ALTIM COATED				ALCRO-MAX COATED			
SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLTS	CORNER RADIUS	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE
1/4	1/4	1-1/2	4	5	0.015	TC27604	71.85	-	-	TC27928	79.03	-	-
1/4	1/4	1-1/2	4	5	0.030	TC27607	71.85	-	-	TC27931	79.03	-	-
3/8	3/8	2	4	5	0.030	TC27610	121.69	-	-	TC27934	133.86	-	-
3/8	3/8	2	4	5	0.060	TC27613	121.69	-	-	TC27937	133.86	-	-
1/2	1/2	3	6	5	0.030	TC27616	226.80	TC27768	232.35	TC27940	249.48	TC28002	255.58
1/2	1/2	3	6	5	0.060	TC27619	226.80	TC27771	232.35	TC27943	249.48	TC28005	255.58
5/8	5/8	3	6	5	0.030	TC27622	319.60	TC27774	325.15	TC27946	335.58	TC28008	341.40
5/8	5/8	3	6	5	0.060	TC27625	319.60	TC27777	325.15	TC27949	335.58	TC28011	341.40
3/4	3/4	3	6	5	0.030	TC27628	421.99	TC27780	427.54	TC27952	443.09	TC28014	448.91
3/4	3/4	3	6	5	0.060	TC27631	421.99	TC27783	427.54	TC27955	443.09	TC28017	448.91
3/4	3/4	4	7	5	0.030	TC27634	687.07	TC27786	692.61	TC27958	721.42	TC28020	727.24
3/4	3/4	4	7	5	0.060	TC27637	687.07	TC27789	692.61	TC27961	721.42	TC28023	727.24
1	1	3	6	5	0.030	TC27640	690.73	TC27792	696.27	TC27964	725.26	TC28026	731.09
1	1	3	6	5	0.060	TC27643	690.73	TC27795	696.27	TC27967	725.26	TC28029	731.09
1	1	4-1/4	7	5	0.030	TC27646	1,002.97	TC27798	1,008.92	TC27970	1,051.32	TC28032	1,057.80
1	1	4-1/4	7	5	0.060	TC27649	1,002.97	TC27801	1,008.92	TC27973	1,051.32	TC28035	1,057.80



TITAN USA - AMERICA'S TOOLING PARTNER FOR OVER 40 YEARS

FOR VI PRO TECHNICAL AND COATING INFORMATION, PLEASE SEE PAGES 177, 180-181.

TOLERANCES	DIAMETER	SHANK	RADIUS
1/4" - 1/2"	+0.00, -.002	-.0001, -.0004	+0.01, -.001
5/8" - 1"	+0.00, -.003	-.0001, -.0004	+0.01, -.001

Terminator

REGULAR LENGTH - 6 FLUTE - SQUARE END - 40° HELIX



SERIES 605
ALTIN COATED

SERIES 645
ALCRO-MAX COATED

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LIST
PRICES!**

Terminator					ALTIN COATED				ALCRO-MAX COATED			
SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLTS	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE
1/4	1/4	3/4	2-1/2	6	TC60516	85.54	-	-	TC64516	94.08	-	-
5/16	5/16	13/16	2-1/2	6	TC60520	101.59	-	-	TC64520	111.75	-	-
3/8	3/8	1	2-1/2	6	TC60524	109.47	-	-	TC64524	120.43	-	-
1/2	1/2	1-1/4	3	6	TC60532	146.37	TC60569	153.68	TC64532	161.00	TC64579	169.05
5/8	5/8	1-5/8	3-1/2	6	TC60540	243.93	TC60571	251.23	TC64540	256.11	TC64581	263.79
3/4	3/4	1-5/8	4	6	TC60548	306.18	TC60573	315.35	TC64548	321.48	TC64583	331.12
1	1	2	4	6	TC60564	468.95	TC60575	478.32	TC64564	492.39	TC64585	502.24

REGULAR LENGTH - 6 FLUTE -  CORNER RADIUS - 40° HELIX



SERIES 606
ALTIN COATED

SERIES 607
ALCRO-MAX COATED

Terminator						ALTIN COATED				ALCRO-MAX COATED			
SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLTS	CORNER RADIUS	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE
1/4	1/4	3/4	2-1/2	6	.015	TC60616	95.47	-	-	TC67116	105.03	-	-
5/16	5/16	13/16	2-1/2	6	.015	TC60620	113.43	-	-	TC67120	124.77	-	-
3/8	3/8	1	2-1/2	6	.015	TC60624	122.26	-	-	TC67124	134.47	-	-
1/2	1/2	1-1/4	3	6	.030	TC60632	163.43	TC60682	171.59	TC67132	179.76	TC67184	188.75
5/8	5/8	1-5/8	3-1/2	6	.030	TC60640	260.50	TC60684	268.30	TC67140	273.51	TC67186	281.72
3/4	3/4	1-5/8	4	6	.060	TC60648	326.99	TC60686	336.80	TC67148	343.33	TC67188	353.63
1	1	2	4	6	.060	TC60664	500.81	TC60688	515.83	TC67164	525.85	TC67190	541.63

The Terminator features Eccentric Relief and stronger core diameter for added strength. Excellent for:

HIGH TEMP ALLOYS ■ STAINLESS STEELS ■ ALLOY STEELS ■ CAST IRON
HIGH TEMP NICKEL BASE ALLOYS ■ TITANIUM ALLOYS ■ EXOTICS

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION, PLEASE SEE PAGES 182-183.

TOLERANCES	DIAMETER	SHANK	RADIUS
ALL SIZES	+ .000, -.002	-.0001, -.0004	+ .001, -.001

Solid Carbide Endmills

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Terminator

LONG LENGTH - 6 FLUTE - SQUARE END - 40° HELIX


SERIES 610
ALTIM COATED

SERIES 613
ALCRO-MAX COATED

Terminator					ALTIM COATED				ALCRO-MAX COATED			
SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLTS	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE
1/4	1/4	1-1/8	3	6	TC61016	94.29	-	-	TC61316	103.73	-	-
5/16	5/16	1-1/8	3	6	TC61020	110.03	-	-	TC61320	121.02	-	-
3/8	3/8	1-1/4	3	6	TC61024	125.04	-	-	TC61324	137.55	-	-
1/2	1/2	2	4	6	TC61032	194.49	TC61067	204.20	TC61332	213.93	TC61384	224.62
5/8	5/8	2-1/4	5	6	TC61040	302.12	TC61069	311.19	TC61340	317.24	TC61386	326.75
3/4	3/4	2-1/4	5	6	TC61048	377.30	TC61071	388.62	TC61348	396.17	TC61388	408.05
1	1	3	6	6	TC61064	764.71	TC61073	780.00	TC61364	802.94	TC61390	819.00

LONG LENGTH - 6 FLUTE -  CORNER RADIUS - 40° HELIX
 CORNER RADIUS

SERIES 611
ALTIM COATED

SERIES 612
ALCRO-MAX COATED

Terminator						ALTIM COATED				ALCRO-MAX COATED			
SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLTS	CORNER RADIUS	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE	ROUND SHANK ITEM #	LIST PRICE	WELDON FLAT ITEM #	LIST PRICE
1/4	1/4	1-1/8	3	6	.015	TC61116	105.30	-	-	TC61216	115.82	-	-
5/16	5/16	1-1/8	3	6	.015	TC61120	122.85	-	-	TC61220	135.12	-	-
3/8	3/8	1-1/4	3	6	.015	TC61124	139.63	-	-	TC61224	153.58	-	-
1/2	1/2	2	4	6	.030	TC61132	217.14	TC61167	227.98	TC61232	238.83	TC61287	250.78
5/8	5/8	2-1/4	5	6	.030	TC61140	322.65	TC61169	332.35	TC61240	338.80	TC61289	348.96
3/4	3/4	2-1/4	5	6	.060	TC61148	402.94	TC61171	415.04	TC61248	423.10	TC61291	435.79
1	1	3	6	6	.060	TC61164	816.65	TC61173	833.00	TC61264	857.50	TC61293	874.65

The Terminator features Eccentric Relief and stronger core diameter for added strength. Excellent for:

HIGH TEMP ALLOYS ■ STAINLESS STEELS ■ ALLOY STEELS ■ CAST IRON
HIGH TEMP NICKEL BASE ALLOYS ■ TITANIUM ALLOYS ■ EXOTICS

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION, PLEASE SEE PAGES 182-183.

TOLERANCES	DIAMETER	SHANK	RADIUS
ALL SIZES	+.000, -.002	-.0001, -.0004	+.001, -.001

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FINE PITCH ROUGHER - STUB LENGTH - 4 FLUTE - 30° HELIX



SERIES 203
UNCOATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
1/4	1/4	3/8	2	4	TC20316	43.39
5/16	5/16	1/2	2	4	TC20320	59.76
3/8	3/8	9/16	2	4	TC20324	69.70
1/2	1/2	5/8	2-1/2	4	TC20332	88.81
5/8	5/8	3/4	3	4	TC20340	188.22
3/4	3/4	1	3	4	TC20348	230.21



SERIES 293
ALTIN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
1/4	1/4	3/8	2	4	TC29316	53.20
5/16	5/16	1/2	2	4	TC29320	74.70
3/8	3/8	9/16	2	4	TC29324	87.13
1/2	1/2	5/8	2-1/2	4	TC29332	108.90
5/8	5/8	3/4	3	4	TC29340	235.27
3/4	3/4	1	3	4	TC29348	282.36

FINE PITCH ROUGHER - REGULAR LENGTH - 4 FLUTE - 30° HELIX



SERIES 205
UNCOATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
1/4	1/4	3/4	2-1/2	4	TC20516	48.21
5/16	5/16	13/16	2-1/2	4	TC20520	66.39
3/8	3/8	7/8	2-1/2	4	TC20524	77.45
1/2	1/2	1-1/4	3	4	TC20532	98.68
5/8	5/8	1-5/8	3-1/2	4	TC20540	209.13
3/4	3/4	1-5/8	4	4	TC20548	255.79
1	1	2	4	4	TC20564	475.01



SERIES 295
ALTIN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
1/4	1/4	3/4	2-1/2	4	TC29516	59.67
5/16	5/16	13/16	2-1/2	4	TC29520	83.00
3/8	3/8	7/8	2-1/2	4	TC29524	96.81
1/2	1/2	1-1/4	3	4	TC29532	122.16
5/8	5/8	1-5/8	3-1/2	4	TC29540	261.40
3/4	3/4	1-5/8	4	4	TC29548	316.72
1	1	2	4	4	TC29564	582.54

Our fine pitch rougher is designed to remove maximum material with minimum vibration or chatter, while milling faster than conventional finishing endmills. Excellent for:

HARDENED STEELS ■ TITANIUM ■ INCONEL ■ SPACE AGE MATERIALS

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION, PLEASE SEE PAGE 184.

TOLERANCES	DIAMETER	SHANK
1/4" - 1/2"	+.000, -.002	-.0001, -.0004
5/8" - 1"	+.000, -.003	-.0001, -.0004

**TAKE 55%
OFF LIST PRICES!**

FINE PITCH ROUGHER - LONG LENGTH - 4 FLUTE - 30° HELIX



SERIES 206
UNCOATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
1/4	1/4	1-1/2	4	4	TC20616	68.34
5/16	5/16	1-1/2	4	4	TC20620	87.64
3/8	3/8	1-3/4	4	4	TC20624	109.56
1/2	1/2	2	4	4	TC20632	126.54
5/8	5/8	2-1/2	5	4	TC20640	296.53
3/4	3/4	2-1/2	5	4	TC20648	356.83
1	1	2-1/2	5	4	TC20664	609.58



SERIES 296
ALTIN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
1/4	1/4	1-1/2	4	4	TC29616	85.45
5/16	5/16	1-1/2	4	4	TC29620	109.56
3/8	3/8	1-3/4	4	4	TC29624	136.97
1/2	1/2	2	4	4	TC29632	158.30
5/8	5/8	2-1/2	5	4	TC29640	372.41
3/4	3/4	2-1/2	5	4	TC29648	447.30
1	1	2-1/2	5	4	TC29664	763.26

Our fine pitch rougher is designed to remove maximum material with minimum vibration or chatter, while milling faster than conventional finishing endmills. Excellent for:

HARDENED STEELS ■ TITANIUM ■ INCONEL ■ SPACE AGE MATERIALS

TOLERANCES	DIAMETER	SHANK
1/4" - 1/2"	+0.000, -0.002	-0.0001, -0.0004
5/8" - 1"	+0.000, -0.003	-0.0001, -0.0004

ROUGHER / FINISHER - REGULAR LENGTH - 4 FLUTE - CORNER RADIUS - 40° HELIX



CORNER RADIUS

SERIES 297
UNCOATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	CORNER RADIUS	ITEM#	LIST PRICE
1/4	1/4	3/4	2-1/2	4	0.020	TC29716	82.68
5/16	5/16	13/16	2-1/2	4	0.020	TC29720	89.55
3/8	3/8	7/8	2-1/2	4	0.020	TC29724	97.31
1/2	1/2	1-1/4	3	4	0.040	TC29732	112.46
5/8*	5/8	1-5/8	3-1/2	4	0.040	TC29740	223.97
3/4*	3/4	1-5/8	4	4	0.040	TC29748	299.22
1*	1	1-5/8	4	4	0.040	TC29764	488.31

* WITH WELDON FLATS



CORNER RADIUS

SERIES 298
ALTIN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	CORNER RADIUS	ITEM#	LIST PRICE
1/4	1/4	3/4	2-1/2	4	0.020	TC29816	103.36
5/16	5/16	13/16	2-1/2	4	0.020	TC29820	111.93
3/8	3/8	7/8	2-1/2	4	0.020	TC29824	121.63
1/2	1/2	1-1/4	3	4	0.040	TC29832	140.61
5/8*	5/8	1-5/8	3-1/2	4	0.040	TC29840	279.95
3/4*	3/4	1-5/8	4	4	0.040	TC29848	374.04
1*	1	1-5/8	4	4	0.040	TC29864	610.40

* WITH WELDON FLATS

The radius chipbreakers in this high performance tool allow for higher feed rates than a finishing endmill yet does not appreciably degrade the finish that the tool produces.

Works well in hard to machine materials such as stainless steel and titanium.

TOLERANCES	DIAMETER	SHANK	RADIUS
ALL SIZES	+0.000, -0.002	-0.0001, -0.0004	+0.002, -0.002

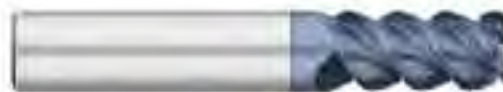
FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION, PLEASE SEE PAGE 184.

**TAKE 55% OFF LIST
PRICES!**

REGULAR LENGTH - 3 FLUTE - SQUARE END - 60° HELIX



**SERIES 305
UNCOATED**



**SERIES 395
ALTIN COATED**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
1/8	1/8	1/2	1-1/2	3	TC30508	22.20
3/16	3/16	5/8	2	3	TC30512	26.58
1/4	1/4	3/4	2-1/2	3	TC30516	28.49
5/16	5/16	13/16	2-1/2	3	TC30520	34.46
3/8	3/8	1	2-1/2	3	TC30524	46.14
1/2	1/2	1-1/4	3	3	TC30532	78.69
5/8	5/8	1-5/8	3-1/2	3	TC30540	156.65
3/4	3/4	1-5/8	4	3	TC30548	219.85

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
1/8	1/8	1/2	1-1/2	3	TC39508	27.72
3/16	3/16	5/8	2	3	TC39512	33.21
1/4	1/4	3/4	2-1/2	3	TC39516	35.61
5/16	5/16	13/16	2-1/2	3	TC39520	43.08
3/8	3/8	1	2-1/2	3	TC39524	57.67
1/2	1/2	1-1/4	3	3	TC39532	98.39
5/8	5/8	1-5/8	3-1/2	3	TC39540	195.81
3/4	3/4	1-5/8	4	3	TC39548	274.78

REGULAR LENGTH - 3 FLUTE - CORNER RADIUS - 60° HELIX



**SERIES 306
UNCOATED**



**SERIES 396
ALTIN COATED**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	CORNER RADIUS	ITEM#	LIST PRICE
1/8	1/8	1/2	1-1/2	3	0.010	TC30608	24.77
3/16	3/16	5/8	2	3	0.010	TC30612	29.67
1/4	1/4	3/4	2-1/2	3	0.020	TC30616	31.82
5/16	5/16	13/16	2-1/2	3	0.020	TC30620	38.46
3/8	3/8	1	2-1/2	3	0.020	TC30624	51.52
1/2	1/2	1-1/4	3	3	0.040	TC30632	87.86
5/8	5/8	1-5/8	3-1/2	3	0.040	TC30640	167.28
3/4	3/4	1-5/8	4	3	0.040	TC30648	234.75

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	CORNER RADIUS	ITEM#	LIST PRICE
1/8	1/8	1/2	1-1/2	3	0.010	TC39608	30.96
3/16	3/16	5/8	2	3	0.010	TC39612	37.07
1/4	1/4	3/4	2-1/2	3	0.020	TC39616	39.75
5/16	5/16	13/16	2-1/2	3	0.020	TC39620	48.08
3/8	3/8	1	2-1/2	3	0.020	TC39624	64.41
1/2	1/2	1-1/4	3	3	0.040	TC39632	109.82
5/8	5/8	1-5/8	3-1/2	3	0.040	TC39640	209.11
3/4	3/4	1-5/8	4	3	0.040	TC39648	293.47

These 60° tools are designed to machine all high temperature alloys. This 3 flute high shear design geometry will slot and profile while giving excellent surface finishes.

Works well in all high temperature alloys such as inconels, hastalloy, waspalloys and titanium.

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION, PLEASE SEE PAGES 182-183.

TOLERANCES	DIAMETER	SHANK	RADIUS
1/8" - 1/2"	+0.000, -0.002	-0.0001, -0.0004	+0.001, -0.001
5/8" - 3/4"	+0.000, -0.003	-0.0001, -0.0004	+0.001, -0.001

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PRICES!**

REGULAR LENGTH - 3 FLUTE - SQUARE END - 45° HELIX



**SERIES 405
UNCOATED**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
1/8	1/8	1/2	1-1/2	3	TC40508	22.20
3/16	3/16	5/8	2	3	TC40512	26.58
1/4	1/4	3/4	2-1/2	3	TC40516	28.49
5/16	5/16	13/16	2-1/2	3	TC40520	34.46
3/8	3/8	1	2-1/2	3	TC40524	46.14
1/2	1/2	1-1/4	3	3	TC40532	78.69
5/8	5/8	1-5/8	3-1/2	3	TC40540	156.65
3/4	3/4	1-5/8	4	3	TC40548	219.85



**SERIES 495
ALTIN COATED**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
1/8	1/8	1/2	1-1/2	3	TC49508	27.72
3/16	3/16	5/8	2	3	TC49512	33.21
1/4	1/4	3/4	2-1/2	3	TC49516	35.61
5/16	5/16	13/16	2-1/2	3	TC49520	43.08
3/8	3/8	1	2-1/2	3	TC49524	57.67
1/2	1/2	1-1/4	3	3	TC49532	98.39
5/8	5/8	1-5/8	3-1/2	3	TC49540	195.81
3/4	3/4	1-5/8	4	3	TC49548	274.78

REGULAR LENGTH - 3 FLUTE - CORNER RADIUS - 45° HELIX



**SERIES 407
UNCOATED**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	CORNER RADIUS	ITEM#	LIST PRICE
1/8	1/8	1/2	1-1/2	3	0.010	TC40708	24.77
3/16	3/16	5/8	2	3	0.010	TC40712	29.67
1/4	1/4	3/4	2-1/2	3	0.020	TC40716	31.82
5/16	5/16	13/16	2-1/2	3	0.020	TC40720	38.46
3/8	3/8	1	2-1/2	3	0.020	TC40724	51.52
1/2	1/2	1-1/4	3	3	0.040	TC40732	87.86
5/8	5/8	1-5/8	3-1/2	3	0.040	TC40740	167.28
3/4	3/4	1-5/8	4	3	0.040	TC40748	234.75



**SERIES 497
ALTIN COATED**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	CORNER RADIUS	ITEM#	LIST PRICE
1/8	1/8	1/2	1-1/2	3	0.010	TC49708	30.96
3/16	3/16	5/8	2	3	0.010	TC49712	37.07
1/4	1/4	3/4	2-1/2	3	0.020	TC49716	39.75
5/16	5/16	13/16	2-1/2	3	0.020	TC49720	48.08
3/8	3/8	1	2-1/2	3	0.020	TC49724	64.41
1/2	1/2	1-1/4	3	3	0.040	TC49732	109.82
5/8	5/8	1-5/8	3-1/2	3	0.040	TC49740	209.11
3/4	3/4	1-5/8	4	3	0.040	TC49748	293.47

These 3 flute 45° tools are designed to slot and profile at higher speeds and feeds while providing a shearing action that produces excellent finishes.

Works well in stainless steel and other similar alloys

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION, PLEASE SEE PAGES 182-183.

TOLERANCES	DIAMETER	SHANK	RADIUS
1/8" - 1/2"	+0.00, -0.002	-0.0001, -0.0004	+0.001, -0.001
5/8" - 3/4"	+0.00, -0.003	-0.0001, -0.0004	+0.001, -0.001

**HIGH PERFORMANCE**

YOUR #1 SOURCE FOR AMERICAN-MADE PREMIUM CUTTING TOOLS

Solid Carbide Endmills

**MADE IN THE
USA****TAKE
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LIST
PRICES!****STUB LENGTH - 5 FLUTE - SQUARE END - 45° HELIX****SERIES 614
UNCOATED**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
1/8	1/8	1/4	1-1/2	5	TC61408	10.87
3/16	3/16	3/8	2	5	TC61412	19.04
1/4	1/4	1/2	2	5	TC61416	22.96
5/16	5/16	1/2	2	5	TC61420	27.59
3/8	3/8	5/8	2	5	TC61424	45.37
7/16	7/16	5/8	2-1/2	5	TC61428	51.87
1/2	1/2	5/8	2-1/2	5	TC61432	59.90
5/8	5/8	3/4	3	5	TC61440	106.38
3/4	3/4	1	3	5	TC61448	143.35

**SERIES 615
ALTIN COATED**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
1/8	1/8	1/4	1-1/2	5	TC61508	13.72
3/16	3/16	3/8	2	5	TC61512	22.79
1/4	1/4	1/2	2	5	TC61516	27.27
5/16	5/16	1/2	2	5	TC61520	34.46
3/8	3/8	5/8	2	5	TC61524	53.99
7/16	7/16	5/8	2-1/2	5	TC61528	61.74
1/2	1/2	5/8	2-1/2	5	TC61532	71.36
5/8	5/8	3/4	3	5	TC61540	128.79
3/4	3/4	1	3	5	TC61548	176.94

STUB LENGTH - 5 FLUTE - CORNER RADIUS - 45° HELIX**SERIES 616
UNCOATED**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	CORNER RADIUS	ITEM#	LIST PRICE
1/8	1/8	1/4	1-1/2	5	0.010	TC61608	12.13
3/16	3/16	3/8	2	5	0.010	TC61612	21.26
1/4	1/4	1/2	2	5	0.020	TC61616	25.64
5/16	5/16	1/2	2	5	0.020	TC61620	30.78
3/8	3/8	5/8	2	5	0.020	TC61624	50.65
7/16	7/16	5/8	2-1/2	5	0.020	TC61628	57.92
1/2	1/2	5/8	2-1/2	5	0.040	TC61632	66.88
5/8	5/8	3/4	3	5	0.040	TC61640	113.61
3/4	3/4	1	3	5	0.040	TC61648	153.07

**SERIES 617
ALTIN COATED**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	CORNER RADIUS	ITEM#	LIST PRICE
1/8	1/8	1/4	1-1/2	5	0.010	TC61708	15.32
3/16	3/16	3/8	2	5	0.010	TC61712	25.47
1/4	1/4	1/2	2	5	0.020	TC61716	30.47
5/16	5/16	1/2	2	5	0.020	TC61720	38.46
3/8	3/8	5/8	2	5	0.020	TC61724	60.28
7/16	7/16	5/8	2-1/2	5	0.020	TC61728	68.96
1/2	1/2	5/8	2-1/2	5	0.040	TC61732	79.66
5/8	5/8	3/4	3	5	0.040	TC61740	137.51
3/4	3/4	1	3	5	0.040	TC61748	188.96

Designed for profiling and finishing, the 5 flute 45° geometry of this tool allows it to be run 20 - 40% faster than conventional endmills while providing an excellent finish.

Works well in all exotic materials, stainless steel, carbon steels and other similar materials.

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION, PLEASE SEE PAGES 182-183.

TOLERANCES	DIAMETER	SHANK	RADIUS
1/8" - 1/2"	+.000, -.002	-.0001, -.0004	+.001, -.001
5/8" - 3/4"	+.000, -.003	-.0001, -.0004	+.001, -.001

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REGULAR LENGTH - 5 FLUTE - SQUARE END - 45° HELIX



SERIES 618
UNCOATED



SERIES 619
ALTIN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
1/8	1/8	1/2	1-1/2	5	TC61808	23.14
3/16	3/16	3/4	2	5	TC61812	29.11
1/4	1/4	3/4	2-1/2	5	TC61816	31.34
5/16	5/16	7/8	2-1/2	5	TC61820	37.83
3/8	3/8	1	2-1/2	5	TC61824	50.62
1/2	1/2	1-1/4	3	5	TC61832	94.50
5/8	5/8	1-5/8	3-1/2	5	TC61840	179.17
3/4	3/4	1-5/8	4	5	TC61848	251.95

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
1/8	1/8	1/2	1-1/2	5	TC61908	28.94
3/16	3/16	3/4	2	5	TC61912	34.71
1/4	1/4	3/4	2-1/2	5	TC61916	37.35
5/16	5/16	7/8	2-1/2	5	TC61920	44.96
3/8	3/8	1	2-1/2	5	TC61924	60.31
1/2	1/2	1-1/4	3	5	TC61932	117.57
5/8	5/8	1-5/8	3-1/2	5	TC61940	227.32
3/4	3/4	1-5/8	4	5	TC61948	309.07

REGULAR LENGTH - 5 FLUTE - CORNER RADIUS - 45° HELIX



SERIES 638
UNCOATED



SERIES 639
ALTIN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	CORNER RADIUS	ITEM#	LIST PRICE
1/8	1/8	1/2	1-1/2	5	0.010	TC63808	25.85
3/16	3/16	3/4	2	5	0.010	TC63812	32.52
1/4	1/4	3/4	2-1/2	5	0.020	TC63816	35.02
5/16	5/16	7/8	2-1/2	5	0.020	TC63820	42.21
3/8	3/8	1	2-1/2	5	0.020	TC63824	56.53
1/2	1/2	1-1/4	3	5	0.040	TC63832	105.51
5/8	5/8	1-5/8	3-1/2	5	0.040	TC63840	191.36
3/4	3/4	1-5/8	4	5	0.040	TC63848	269.08

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	CORNER RADIUS	ITEM#	LIST PRICE
1/8	1/8	1/2	1-1/2	5	0.010	TC63908	32.31
3/16	3/16	3/4	2	5	0.010	TC63912	38.74
1/4	1/4	3/4	2-1/2	5	0.020	TC63916	41.66
5/16	5/16	7/8	2-1/2	5	0.020	TC63920	50.20
3/8	3/8	1	2-1/2	5	0.020	TC63924	67.33
1/2	1/2	1-1/4	3	5	0.040	TC63932	131.26
5/8	5/8	1-5/8	3-1/2	5	0.040	TC63940	242.78
3/4	3/4	1-5/8	4	5	0.040	TC63948	330.05

Designed for profiling and finishing, the 5 flute 45° geometry of this tool allows it to be run 20 - 40% faster than conventional endmills while providing an excellent finish.

Works well in all exotic materials, stainless steel, carbon steels and other similar materials.

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION, PLEASE SEE PAGES 182-183.

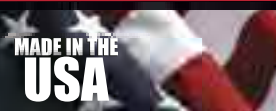
TOLERANCES	DIAMETER	SHANK	RADIUS
1/8" - 1/2"	+0.00, -.002	-.0001, -.0004	+0.01, -.001
5/8" - 3/4"	+0.00, -.003	-.0001, -.0004	+0.01, -.001



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FOR ALUMINUM

REGULAR LENGTH - 2 FLUTE - SQUARE END - 45° HELIX



SERIES 626
UNCOATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
1/8	1/8	1/2	1-1/2	2	TC62608	21.78
3/16	3/16	5/8	2	2	TC62612	30.36
1/4	1/4	3/4	2-1/2	2	TC62616	43.81
5/16	5/16	13/16	2-1/2	2	TC62620	51.73
3/8	3/8	1	2-1/2	2	TC62624	54.79
1/2	1/2	1-1/4	3	2	TC62632	90.68
5/8	5/8	1-5/8	3-1/2	2	TC62640	173.43
3/4	3/4	1-3/4	4	2	TC62648	248.58
1	1	1-3/4	4	2	TC62664	409.85



SERIES 627
ZRN (ZIRCONIUM NITRIDE) COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
1/8	1/8	1/2	1-1/2	2	TC62708	27.24
3/16	3/16	5/8	2	2	TC62712	37.97
1/4	1/4	3/4	2-1/2	2	TC62716	52.98
5/16	5/16	13/16	2-1/2	2	TC62720	62.57
3/8	3/8	1	2-1/2	2	TC62724	66.22
1/2	1/2	1-1/4	3	2	TC62732	105.16
5/8	5/8	1-5/8	3-1/2	2	TC62740	210.19
3/4	3/4	1-3/4	4	2	TC62748	301.88
1	1	1-3/4	4	2	TC62764	496.92

FOR ALUMINUM

REGULAR LENGTH - 2 FLUTE - CORNER RADIUS - 45° HELIX



SERIES 646
UNCOATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	CORNER RADIUS	ITEM#	LIST PRICE
1/8	1/8	1/2	1-1/2	2	0.020	TC64608	26.02
3/16	3/16	5/8	2	2	0.020	TC64612	35.72
1/4	1/4	3/4	2-1/2	2	0.020	TC64616	48.92
5/16	5/16	13/16	2-1/2	2	0.020	TC64620	57.78
3/8	3/8	1	2-1/2	2	0.020	TC64624	61.18
1/2	1/2	1-1/4	3	2	0.040	TC64632	101.24
5/8	5/8	1-5/8	3-1/2	2	0.040	TC64640	185.21
3/4	3/4	1-3/4	4	2	0.040	TC64648	265.50
1	1	1-3/4	4	2	0.040	TC64664	437.72



SERIES 647
ZRN (ZIRCONIUM NITRIDE) COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	CORNER RADIUS	ITEM#	LIST PRICE
1/8	1/8	1/2	1-1/2	2	0.020	TC64708	32.55
3/16	3/16	5/8	2	2	0.020	TC64712	44.64
1/4	1/4	3/4	2-1/2	2	0.020	TC64716	59.13
5/16	5/16	13/16	2-1/2	2	0.020	TC64720	69.87
3/8	3/8	1	2-1/2	2	0.020	TC64724	73.93
1/2	1/2	1-1/4	3	2	0.040	TC64732	117.39
5/8	5/8	1-5/8	3-1/2	2	0.040	TC64740	224.47
3/4	3/4	1-3/4	4	2	0.040	TC64748	322.41
1	1	1-3/4	4	2	0.040	TC64764	530.69

These 2 flute roughing tools are designed specifically for high speed machining in aluminum. This tool will plunge, slot and profile in all non-ferrous materials. Our ZRN coating allows for higher speed rates and prolonged tool life and does not have an affinity for aluminum.

Works well in all non-ferrous materials as well as brass and bronze applications

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION, PLEASE SEE PAGES 182-183.

TOLERANCES	DIAMETER	SHANK	RADIUS
1/8" - 1/2"	+0.000, -0.002	-0.0001, -0.0004	+0.001, -0.001
5/8" - 1"	+0.000, -0.003	-0.0001, -0.0004	+0.001, -0.001

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FOR ALUMINUM

LONG LENGTH - 2 FLUTE - SQUARE END - 45° HELIX


SERIES 632
UNCOATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
1/8	1/8	3/4	2-1/4	2	TC63208	37.00
3/16	3/16	3/4	2-1/2	2	TC63212	42.66
1/4	1/4	1-1/4	3	2	TC63216	60.14
5/16	5/16	1-3/8	3	2	TC63220	77.86
3/8	3/8	1-1/2	4	2	TC63224	97.52
1/2	1/2	2	4	2	TC63232	136.64
5/8	5/8	2-3/8	5	2	TC63240	283.32
3/4	3/4	2-1/2	5	2	TC63248	311.33
1	1	2-1/4	5	2	TC63264	511.75


SERIES 633
ZRN (ZIRCONIUM NITRIDE) COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
1/8	1/8	3/4	2-1/4	2	TC63308	46.24
3/16	3/16	3/4	2-1/2	2	TC63312	53.33
1/4	1/4	1-1/4	3	2	TC63316	72.68
5/16	5/16	1-3/8	3	2	TC63320	98.88
3/8	3/8	1-1/2	4	2	TC63324	117.95
1/2	1/2	2	4	2	TC63332	165.69
5/8	5/8	2-3/8	5	2	TC63340	360.59
3/4	3/4	2-1/2	5	2	TC63348	389.70
1	1	2-1/4	5	2	TC63364	613.65

FOR ALUMINUM

LONG LENGTH - 2 FLUTE - CORNER RADIUS - 45° HELIX


SERIES 652
UNCOATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	CORNER RADIUS	ITEM#	LIST PRICE
1/8	1/8	3/4	2-1/4	2	0.020	TC65208	44.37
3/16	3/16	3/4	2-1/2	2	0.020	TC65212	51.18
1/4	1/4	1-1/4	3	2	0.020	TC65216	67.16
5/16	5/16	1-3/8	3	2	0.020	TC65220	86.93
3/8	3/8	1-1/2	4	2	0.020	TC65224	108.88
1/2	1/2	2	4	2	0.040	TC65232	152.52
5/8	5/8	2-3/8	5	2	0.040	TC65240	302.57
3/4	3/4	2-1/2	5	2	0.040	TC65248	332.45
1	1	2-1/4	5	2	0.040	TC65264	546.57


SERIES 653
ZRN (ZIRCONIUM NITRIDE) COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	CORNER RADIUS	ITEM#	LIST PRICE
1/8	1/8	3/4	2-1/4	2	0.020	TC65308	55.48
3/16	3/16	3/4	2-1/2	2	0.020	TC65312	64.00
1/4	1/4	1-1/4	3	2	0.020	TC65316	81.16
5/16	5/16	1-3/8	3	2	0.020	TC65320	110.38
3/8	3/8	1-1/2	4	2	0.020	TC65324	131.71
1/2	1/2	2	4	2	0.040	TC65332	185.00
5/8	5/8	2-3/8	5	2	0.040	TC65340	385.08
3/4	3/4	2-1/2	5	2	0.040	TC65348	416.18
1	1	2-1/4	5	2	0.040	TC65364	655.38

These 2 flute roughing tools are designed specifically for high speed machining in aluminum. This tool will plunge, slot and profile in all non-ferrous materials. Our ZRN coating allows for higher speed rates and prolonged tool life and does not have an affinity for aluminum.

Works well in all non-ferrous materials as well as brass and bronze applications

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION, PLEASE SEE PAGES 182-183.

TOLERANCES	DIAMETER	SHANK	RADIUS
1/8" - 1/2"	+0.00, -.002	-.0001, -.0004	+.001, -.001
5/8" - 1"	+0.00, -.003	-.0001, -.0004	+.001, -.001

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PRICES!****FOR ALUMINUM****REGULAR LENGTH - 3 FLUTE - SQUARE END - 45° HELIX****SERIES 628
UNCOATED**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
1/8	1/8	1/2	1-1/2	3	TC62808	21.78
3/16	3/16	5/8	2	3	TC62812	30.36
1/4	1/4	3/4	2-1/2	3	TC62816	43.81
5/16	5/16	13/16	2-1/2	3	TC62820	51.73
3/8	3/8	1	2-1/2	3	TC62824	54.79
1/2	1/2	1-1/4	3	3	TC62832	90.68
5/8	5/8	1-5/8	3-1/2	3	TC62840	173.43
3/4	3/4	1-3/4	4	3	TC62848	248.58
1	1	1-3/4	4	3	TC62864	409.85

**SERIES 629
ZRN (ZIRCONIUM NITRIDE) COATED**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
1/8	1/8	1/2	1-1/2	3	TC62908	27.24
3/16	3/16	5/8	2	3	TC62912	37.97
1/4	1/4	3/4	2-1/2	3	TC62916	52.98
5/16	5/16	13/16	2-1/2	3	TC62920	62.57
3/8	3/8	1	2-1/2	3	TC62924	66.22
1/2	1/2	1-1/4	3	3	TC62932	105.16
5/8	5/8	1-5/8	3-1/2	3	TC62940	210.19
3/4	3/4	1-3/4	4	3	TC62948	301.88
1	1	1-3/4	4	3	TC62964	496.92

FOR ALUMINUM**REGULAR LENGTH - 3 FLUTE - CORNER RADIUS - 45° HELIX****SERIES 658
UNCOATED**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	CORNER RADIUS	ITEM#	LIST PRICE
1/8	1/8	1/2	1-1/2	3	0.020	TC65808	26.02
3/16	3/16	5/8	2	3	0.020	TC65812	35.72
1/4	1/4	3/4	2-1/2	3	0.020	TC65816	48.92
5/16	5/16	13/16	2-1/2	3	0.020	TC65820	57.78
3/8	3/8	1	2-1/2	3	0.020	TC65824	61.18
1/2	1/2	1-1/4	3	3	0.040	TC65832	101.24
5/8	5/8	1-5/8	3-1/2	3	0.040	TC65840	185.21
3/4	3/4	1-3/4	4	3	0.040	TC65848	265.50
1	1	1-3/4	4	3	0.040	TC65864	437.72

**SERIES 659
ZRN (ZIRCONIUM NITRIDE) COATED**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	CORNER RADIUS	ITEM#	LIST PRICE
1/8	1/8	1/2	1-1/2	3	0.020	TC65908	32.55
3/16	3/16	5/8	2	3	0.020	TC65912	44.64
1/4	1/4	3/4	2-1/2	3	0.020	TC65916	59.13
5/16	5/16	13/16	2-1/2	3	0.020	TC65920	69.87
3/8	3/8	1	2-1/2	3	0.020	TC65924	73.93
1/2	1/2	1-1/4	3	3	0.040	TC65932	117.39
5/8	5/8	1-5/8	3-1/2	3	0.040	TC65940	224.47
3/4	3/4	1-3/4	4	3	0.040	TC65948	322.41
1	1	1-3/4	4	3	0.040	TC65964	530.69

These 3 flute roughing tools are designed specifically for high speed machining in aluminum. This tool will plunge, slot and profile in all non-ferrous materials. Our ZRN coating allows for higher speed rates and prolonged tool life and does not have an affinity for aluminum.

Works well in all non-ferrous materials as well as brass and bronze applications

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION, PLEASE SEE PAGES 182-183.

TOLERANCES	DIAMETER	SHANK	RADIUS
1/8" - 1/2"	+.000, -.002	-.0001, -.0004	+.001, -.001
5/8" - 1"	+.000, -.003	-.0001, -.0004	+.001, -.001

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**FOR ALUMINUM
LONG LENGTH - 3 FLUTE - SQUARE END - 45° HELIX**



**SERIES 634
UNCOATED**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
1/8	1/8	3/4	2-1/4	3	TC63408	37.00
3/16	3/16	3/4	2-1/2	3	TC63412	42.66
1/4	1/4	1-1/4	3	3	TC63416	60.14
5/16	5/16	1-3/8	3	3	TC63420	77.86
3/8	3/8	1-1/2	4	3	TC63424	97.52
1/2	1/2	2	4	3	TC63432	136.64
5/8	5/8	2-3/8	5	3	TC63440	283.32
3/4	3/4	2-1/2	5	3	TC63448	311.33
1	1	2-1/4	5	3	TC63464	511.75



**SERIES 635
ZRN (ZIRCONIUM NITRIDE) COATED**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
1/8	1/8	3/4	2-1/4	3	TC63508	46.14
3/16	3/16	3/4	2-1/2	3	TC63512	53.33
1/4	1/4	1-1/4	3	3	TC63516	72.68
5/16	5/16	1-3/8	3	3	TC63520	98.88
3/8	3/8	1-1/2	4	3	TC63524	117.95
1/2	1/2	2	4	3	TC63532	165.69
5/8	5/8	2-3/8	5	3	TC63540	360.59
3/4	3/4	2-1/2	5	3	TC63548	389.70
1	1	2-1/4	5	3	TC63564	613.65

**FOR ALUMINUM
LONG LENGTH - 3 FLUTE - CORNER RADIUS - 45° HELIX**



**SERIES 664
UNCOATED**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	CORNER RADIUS	ITEM#	LIST PRICE
1/8	1/8	3/4	2-1/4	3	0.020	TC66408	44.37
3/16	3/16	3/4	2-1/2	3	0.020	TC66412	51.18
1/4	1/4	1-1/4	3	3	0.020	TC66416	67.16
5/16	5/16	1-3/8	3	3	0.020	TC66420	86.93
3/8	3/8	1-1/2	4	3	0.020	TC66424	108.88
1/2	1/2	2	4	3	0.040	TC66432	152.52
5/8	5/8	2-3/8	5	3	0.040	TC66440	302.57
3/4	3/4	2-1/2	5	3	0.040	TC66448	332.45
1	1	2-1/4	5	3	0.040	TC66464	546.57



**SERIES 665
ZRN (ZIRCONIUM NITRIDE) COATED**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	# OF FLUTES	CORNER RADIUS	ITEM#	LIST PRICE
1/8	1/8	3/4	2-1/4	3	0.020	TC66508	55.48
3/16	3/16	3/4	2-1/2	3	0.020	TC66512	64.00
1/4	1/4	1-1/4	3	3	0.020	TC66516	81.16
5/16	5/16	1-3/8	3	3	0.020	TC66520	110.38
3/8	3/8	1-1/2	4	3	0.020	TC66524	131.71
1/2	1/2	2	4	3	0.040	TC66532	185.00
5/8	5/8	2-3/8	5	3	0.040	TC66540	385.08
3/4	3/4	2-1/2	5	3	0.040	TC66548	416.18
1	1	2-1/4	5	3	0.040	TC66564	655.38

These 3 flute roughing tools are designed specifically for high speed machining in aluminum. This tool will plunge, slot and profile in all non-ferrous materials. Our ZRN coating allows for higher speed rates and prolonged tool life and does not have an affinity for aluminum.

Works well in all non-ferrous materials as well as brass and bronze applications

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION, PLEASE SEE PAGES 182-183.

TOLERANCES	DIAMETER	SHANK	RADIUS
1/8" - 1/2"	+0.000, -0.002	-0.0001, -0.0004	+0.001, -0.001
5/8" - 1"	+0.000, -0.003	-0.0001, -0.0004	+0.001, -0.001



Solid Carbide Endmills

MADE IN THE
USA

REGULAR LENGTH - 4 FLUTE - SQUARE END - 30° HELIX

SERIES 105
UNCOATED**SERIES 995**
ALTiN COATED**SERIES 905**
TiCN COATED**TAKE
55% OFF
LIST
PRICES!**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTiN	LIST PRICE	TiCN	LIST PRICE
1/64	1/8	1/32	1-1/2	TC10501	24.40	TC99501	32.69	TC90501	32.69
1/32	1/8	1/8	1-1/2	TC10502	16.34	TC99502	22.09	TC90502	22.09
3/64	1/8	1/8	1-1/2	TC10503	13.97	TC99503	18.82	TC90503	18.82
1/16	1/8	1/4	1-1/2	TC10504	13.94	TC99504	16.00	TC90504	16.00
5/64	1/8	1/4	1-1/2	TC10505	14.38	TC99505	19.41	TC90505	19.41
3/32	1/8	3/8	1-1/2	TC10506	12.66	TC99506	16.00	TC90506	16.00
7/64	1/8	3/8	1-1/2	TC10507	13.21	TC99507	17.82	TC90507	17.82
1/8	1/8	1/2	1-1/2	TC10508	12.15	TC99508	14.86	TC90508	14.86
9/64	3/16	9/16	2	TC10509	17.79	TC99509	24.02	TC90509	24.02
5/32	3/16	9/16	2	TC10510	17.89	TC99510	20.75	TC90510	20.75
11/64	3/16	5/8	2	TC10511	17.00	TC99511	22.98	TC90511	22.98
3/16	3/16	5/8	2	TC10512	16.55	TC99512	20.75	TC90512	20.75
13/64	1/4	5/8	2-1/2	TC10513	24.15	TC99513	31.66	TC90513	31.66
7/32	1/4	5/8	2-1/2	TC10514	24.67	TC99514	28.66	TC90514	28.66
15/64	1/4	3/4	2-1/2	TC10515	27.87	TC99515	35.92	TC90515	35.92
1/4	1/4	3/4	2-1/2	TC10516	20.44	TC99516	28.66	TC90516	28.66
17/64	5/16	3/4	2-1/2	TC10517	36.85	TC99517	47.35	TC90517	47.35
9/32	5/16	3/4	2-1/2	TC10518	36.85	TC99518	47.35	TC90518	47.35
19/64	5/16	13/16	2-1/2	TC10519	36.85	TC99519	47.35	TC90519	47.35
5/16	5/16	13/16	2-1/2	TC10520	26.60	TC99520	34.30	TC90520	34.30
21/64	3/8	1	2-1/2	TC10521	41.32	TC99521	53.13	TC90521	53.13
11/32	3/8	1	2-1/2	TC10522	41.32	TC99522	53.13	TC90522	53.13
23/64	3/8	1	2-1/2	TC10523	41.32	TC99523	53.13	TC90523	53.13
3/8	3/8	1	2-1/2	TC10524	31.72	TC99524	39.23	TC90524	39.23
25/64	7/16	1	2-3/4	TC10525	54.09	TC99525	69.81	TC90525	69.81
13/32	7/16	1	2-3/4	TC10526	54.09	TC99526	69.81	TC90526	69.81
27/64	7/16	1	2-3/4	TC10527	55.84	TC99527	72.12	TC90527	72.12
7/16	7/16	1	2-3/4	TC10528	48.69	TC99528	59.94	TC90528	59.94
29/64	1/2	1	3	TC10529	80.38	TC99529	102.88	TC90529	102.88
15/32	1/2	1	3	TC10530	80.38	TC99530	102.88	TC90530	102.88
31/64	1/2	1	3	TC10531	80.38	TC99531	102.88	TC90531	102.88
1/2	1/2	1	3	TC10532	58.46	TC99532	72.95	TC90532	72.95
1/2	1/2	1-1/4	3	TC10533	58.46	TC99533	72.95	TC90533	72.95
9/16	9/16	1-1/4	3-1/2	TC10536	110.48	TC99536	145.89	TC90536	145.89
5/8	5/8	1-1/4	3-1/2	TC10540	111.76	TC99540	142.48	TC90540	142.48
3/4	3/4	1-1/2	4	TC10548	156.97	TC99548	202.18	TC90548	202.18
7/8	7/8	1-1/2	4	TC10556	287.10	TC99556	363.39	TC90556	363.39
1	1	1-1/2	4	TC10564	264.27	TC99564	338.03	TC90564	338.03
1-1/4	1-1/4	2	4-1/2	TC10580	902.36	TC99580	1,025.40	TC90580	1,025.40

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

TOLERANCES	DIAMETER	SHANK
1/64" - 7/64"	+0.00, -0.01	-0.001, -0.004
1/8" - 1/2"	+0.00, -0.02	-0.001, -0.004
9/16" - 1-1/4"	+0.00, -0.03	-0.001, -0.004

MADE IN THE
USA

Solid Carbide Endmills

**TAKE
55% OFF
LIST
PRICES!**

LONG LENGTH - 4 FLUTE - SQUARE END - 30° HELIX



SERIES 155
UNCOATED



SERIES 156
ALTIN COATED



SERIES 955
TICN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIN	LIST PRICE	TICN	LIST PRICE
1/8	1/8	3/4	2-1/4	TC15508	19.61	TC15608	25.22	TC95508	25.22
3/16	3/16	3/4	2-1/2	TC15512	23.02	TC15612	29.59	TC95512	29.59
1/4	1/4	1-1/8	3	TC15516	32.96	TC15616	42.49	TC95516	42.49
1/4	1/4	1	4	TC15517	34.72	TC15617	44.77	TC95517	44.77
5/16	5/16	1-1/8	3	TC15520	37.20	TC15620	50.20	TC95520	50.20
3/8	3/8	1-1/8	3	TC15524	42.67	TC15624	57.60	TC95524	57.60
3/8	3/8	1	4	TC15525	49.82	TC15625	64.10	TC95525	64.10
7/16	7/16	2	4	TC15528	67.23	TC15628	87.43	TC95528	87.43
1/2	1/2	1	4	TC15532	74.93	TC15632	96.49	TC95532	96.49
1/2	1/2	2	4	TC15533	79.35	TC15633	101.84	TC95533	101.84
5/8	5/8	2-1/4	5	TC15540	172.35	TC15640	213.30	TC95540	213.30
3/4	3/4	2-1/4	5	TC15548	238.04	TC15648	288.15	TC95548	288.15
7/8	7/8	2-1/4	5	TC15556	451.16	TC15656	533.19	TC95556	533.19
1	1	2-1/4	5	TC15564	325.88	TC15664	420.61	TC95564	420.61

EXTRA LONG LENGTH - 4 FLUTE - SQUARE END - 30° HELIX



SERIES 175
UNCOATED



SERIES 176
ALTIN COATED



SERIES 975
TICN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIN	LIST PRICE	TICN	LIST PRICE
1/8	1/8	1	3	TC17508	21.92	TC17608	29.59	TC97508	29.59
3/16	3/16	1-1/8	3	TC17512	23.84	TC17612	30.62	TC97512	30.62
1/4	1/4	1-1/2	4	TC17516	33.69	TC17616	43.39	TC97516	43.39
1/4	1/4	1-1/2	6	TC17517	45.56	TC17617	58.60	TC97517	58.60
5/16	5/16	1-5/8	4	TC17520	45.97	TC17620	59.32	TC97520	59.32
3/8	3/8	1-3/4	4	TC17524	52.20	TC17624	66.86	TC97524	66.86
3/8	3/8	1-1/2	6	TC17525	79.04	TC17625	101.88	TC97525	101.88
7/16	7/16	3	6	TC17528	106.46	TC17628	136.50	TC97528	136.50
1/2	1/2	1-1/2	6	TC17532	120.29	TC17632	149.30	TC97532	149.30
1/2	1/2	3	6	TC17533	126.28	TC17633	155.28	TC97533	155.28
5/8	5/8	3	6	TC17540	185.98	TC17640	228.64	TC97540	228.64
3/4	3/4	3	6	TC17548	276.40	TC17648	324.57	TC97548	324.57
3/4	3/4	4	7	TC17549	474.35	TC17649	537.74	TC97549	537.74
7/8	7/8	3	6	TC17556	492.18	TC17656	615.25	TC97556	615.25
1	1	3	6	TC17564	469.23	TC17664	523.82	TC97564	523.82
1	1	4	7	TC17565	615.12	TC17665	755.02	TC97565	755.02

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

TOLERANCES	DIAMETER	SHANK
1/8" - 1/2"	+0.000, -.002	-.0001, -.0004
5/8" - 1"	+0.000, -.003	-.0001, -.0004



Solid Carbide Endmills

MADE IN THE
USA**REGULAR LENGTH - 4 FLUTE - BALL NOSE - 30° HELIX****SERIES 115**
UNCOATED**SERIES 116**
ALTiN COATED**SERIES 915**
TiCN COATED**TAKE
55% OFF
LIST
PRICES!**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTiN	LIST PRICE	TiCN	LIST PRICE
1/64	1/8	1/32	1-1/2	TC11501	27.32	TC11601	36.61	TC91501	36.61
1/32	1/8	1/8	1-1/2	TC11502	17.48	TC11602	22.71	TC91502	22.71
3/64	1/8	1/8	1-1/2	TC11503	17.48	TC11603	22.71	TC91503	22.71
1/16	1/8	1/4	1-1/2	TC11504	16.21	TC11604	21.88	TC91504	21.88
5/64	1/8	1/4	1-1/2	TC11505	16.21	TC11605	21.88	TC91505	21.88
3/32	1/8	3/8	1-1/2	TC11506	17.00	TC11606	22.98	TC91506	22.98
7/64	1/8	3/8	1-1/2	TC11507	17.00	TC11607	22.98	TC91507	22.98
1/8	1/8	1/2	1-1/2	TC11508	15.59	TC11608	21.06	TC91508	21.06
9/64	3/16	9/16	2	TC11509	22.85	TC11609	30.86	TC91509	30.86
5/32	3/16	9/16	2	TC11510	22.85	TC11610	30.86	TC91510	30.86
11/64	3/16	5/8	2	TC11511	22.85	TC11611	30.86	TC91511	30.86
3/16	3/16	5/8	2	TC11512	20.54	TC11612	27.73	TC91512	27.73
13/64	1/4	5/8	2-1/2	TC11513	26.63	TC11613	37.75	TC91513	37.75
7/32	1/4	5/8	2-1/2	TC11514	26.63	TC11614	37.75	TC91514	37.75
15/64	1/4	3/4	2-1/2	TC11515	26.63	TC11615	37.75	TC91515	37.75
1/4	1/4	3/4	2-1/2	TC11516	27.91	TC11616	35.96	TC91516	35.96
17/64	5/16	3/4	2-1/2	TC11517	37.75	TC11617	48.55	TC91517	48.55
9/32	5/16	3/4	2-1/2	TC11518	37.81	TC11618	48.62	TC91518	48.62
19/64	5/16	13/16	2-1/2	TC11519	41.08	TC11619	53.92	TC91519	53.92
5/16	5/16	13/16	2-1/2	TC11520	34.79	TC11620	44.73	TC91520	44.73
21/64	3/8	1	2-1/2	TC11521	47.79	TC11621	64.52	TC91521	64.52
11/32	3/8	1	2-1/2	TC11522	50.17	TC11622	64.52	TC91522	64.52
23/64	3/8	1	2-1/2	TC11523	47.79	TC11623	64.52	TC91523	64.52
3/8	3/8	1	2-1/2	TC11524	37.23	TC11624	52.61	TC91524	52.61
25/64	7/16	1	2-3/4	TC11525	64.72	TC11625	83.41	TC91525	83.41
13/32	7/16	1	2-3/4	TC11526	64.72	TC11626	83.41	TC91526	83.41
27/64	7/16	1	2-3/4	TC11527	64.72	TC11627	83.41	TC91527	83.41
7/16	7/16	1	2-3/4	TC11528	55.09	TC11628	71.02	TC91528	71.02
29/64	1/2	1	3	TC11529	85.33	TC11629	110.04	TC91529	110.04
15/32	1/2	1	3	TC11530	85.33	TC11630	110.04	TC91530	110.04
31/64	1/2	1	3	TC11531	85.33	TC11631	110.04	TC91531	110.04
1/2	1/2	1	3	TC11532	75.56	TC11632	97.38	TC91532	97.38
9/16	9/16	1-1/4	3-1/2	TC11536	115.16	TC11636	141.73	TC91536	141.73
5/8	5/8	1-1/4	3-1/2	TC11540	122.18	TC11640	157.49	TC91540	157.49
3/4	3/4	1-1/2	4	TC11548	180.02	TC11648	234.60	TC91548	234.60
7/8	7/8	1-1/2	4	TC11556	348.62	TC11656	442.97	TC91556	442.97
1	1	1-1/2	4	TC11564	321.54	TC11664	414.34	TC91564	414.34

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

TOLERANCES	DIAMETER	SHANK
1/64" - 7/64"	+0.00, -.001	-.0001, -.0004
1/8" - 1/2"	+0.00, -.002	-.0001, -.0004
9/16" - 1"	+0.00, -.003	-.0001, -.0004

MADE IN THE
USA

Solid Carbide Endmills

**TAKE
55% OFF
LIST
PRICES!**

LONG LENGTH - 4 FLUTE - BALL NOSE - 30° HELIX

**SERIES 165**
UNCOATED**SERIES 166**
ALTIN COATED**SERIES 965**
TICN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIN	LIST PRICE	TICN	LIST PRICE
1/8	1/8	3/4	2-1/4	TC16508	23.33	TC16608	30.00	TC96508	30.00
3/16	3/16	3/4	2-1/2	TC16512	26.84	TC16612	34.48	TC96512	34.48
1/4	1/4	1-1/8	3	TC16516	37.75	TC16616	48.58	TC96516	48.58
1/4	1/4	1	4	TC16517	41.67	TC16617	53.71	TC96517	53.71
5/16	5/16	1-1/8	3	TC16520	44.39	TC16620	59.90	TC96520	59.90
3/8	3/8	1-1/8	3	TC16524	51.23	TC16624	69.19	TC96524	69.19
3/8	3/8	1	4	TC16525	62.76	TC16625	81.55	TC96525	81.55
7/16	7/16	2	4	TC16528	85.81	TC16628	111.59	TC96528	111.59
1/2	1/2	1	4	TC16532	87.88	TC16632	111.76	TC96532	111.76
1/2	1/2	2	4	TC16533	88.74	TC16633	112.62	TC96533	112.62
5/8	5/8	2-1/4	5	TC16540	202.18	TC16640	256.79	TC96540	256.79
3/4	3/4	2-1/4	5	TC16548	281.53	TC16648	356.61	TC96548	356.61
7/8	7/8	2-1/4	5	TC16556	483.99	TC16656	594.75	TC96556	594.75
1	1	2-1/4	5	TC16564	557.07	TC16664	685.07	TC96564	685.07

EXTRA LONG LENGTH - 4 FLUTE - BALL NOSE - 30° HELIX

**SERIES 185**
UNCOATED**SERIES 186**
ALTIN COATED**SERIES 985**
TICN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIN	LIST PRICE	TICN	LIST PRICE
1/8	1/8	1	3	TC18508	26.12	TC18608	35.23	TC98508	35.23
3/16	3/16	1-1/8	3	TC18512	28.59	TC18612	36.78	TC98512	36.78
1/4	1/4	1-1/2	4	TC18516	39.70	TC18616	51.06	TC98516	51.06
1/4	1/4	1-1/2	6	TC18517	47.98	TC18617	61.72	TC98517	61.72
5/16	5/16	1-5/8	4	TC18520	55.47	TC18620	71.60	TC98520	71.60
3/8	3/8	1-3/4	4	TC18524	59.70	TC18624	76.32	TC98524	76.32
3/8	3/8	1-1/2	6	TC18525	84.13	TC18625	104.95	TC98525	104.95
7/16	7/16	3	6	TC18528	126.28	TC18628	162.10	TC98528	162.10
1/2	1/2	1-1/2	6	TC18532	133.95	TC18632	171.49	TC98532	171.49
1/2	1/2	3	6	TC18533	134.78	TC18633	174.04	TC98533	174.04
5/8	5/8	3	6	TC18540	212.44	TC18640	261.06	TC98540	261.06
3/4	3/4	3	6	TC18548	301.24	TC18648	406.67	TC98548	406.67
3/4	3/4	4	7	TC18549	496.03	TC18649	627.33	TC98549	627.33
7/8	7/8	3	6	TC18556	533.19	TC18656	664.46	TC98556	664.46
1	1	3	6	TC18564	537.46	TC18664	691.95	TC98564	691.95
1	1	4	7	TC18565	650.07	TC18665	774.22	TC98565	774.22

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

TOLERANCES	DIAMETER	SHANK
1/8" - 1/2"	+0.000, -0.002	-0.0001, -0.0004
5/8" - 1"	+0.000, -0.003	-0.0001, -0.0004



Solid Carbide Endmills

MADE IN THE
USA

REGULAR LENGTH - 2 FLUTE - SQUARE END - 30° HELIX

SERIES 100
UNCOATEDSERIES 101
ALTiN COATEDSERIES 900
TiCN COATED**TAKE
55% OFF
LIST
PRICES!**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTiN	LIST PRICE	TiCN	LIST PRICE
1/64	1/8	1/32	1-1/2	TC10001	24.40	TC10101	32.69	TC90001	32.69
1/32	1/8	1/8	1-1/2	TC10002	16.34	TC10102	22.09	TC90002	22.09
3/64	1/8	1/8	1-1/2	TC10003	13.97	TC10103	18.82	TC90003	18.82
1/16	1/8	1/4	1-1/2	TC10004	13.94	TC10104	16.00	TC90004	16.00
5/64	1/8	1/4	1-1/2	TC10005	14.38	TC10105	19.41	TC90005	19.41
3/32	1/8	3/8	1-1/2	TC10006	12.66	TC10106	16.00	TC90006	16.00
7/64	1/8	3/8	1-1/2	TC10007	13.21	TC10107	17.82	TC90007	17.82
1/8	1/8	1/2	1-1/2	TC10008	12.15	TC10108	14.86	TC90008	14.86
9/64	3/16	9/16	2	TC10009	17.79	TC10109	24.02	TC90009	24.02
5/32	3/16	9/16	2	TC10010	17.89	TC10110	20.75	TC90010	20.75
11/64	3/16	5/8	2	TC10011	17.00	TC10111	22.98	TC90011	22.98
3/16	3/16	5/8	2	TC10012	16.55	TC10112	20.75	TC90012	20.75
13/64	1/4	5/8	2-1/2	TC10013	24.15	TC10113	31.66	TC90013	31.66
7/32	1/4	5/8	2-1/2	TC10014	24.67	TC10114	28.66	TC90014	28.66
15/64	1/4	3/4	2-1/2	TC10015	27.87	TC10115	35.92	TC90015	35.92
1/4	1/4	3/4	2-1/2	TC10016	20.44	TC10116	28.66	TC90016	28.66
17/64	5/16	3/4	2-1/2	TC10017	36.85	TC10117	47.35	TC90017	47.35
9/32	5/16	3/4	2-1/2	TC10018	36.85	TC10118	47.35	TC90018	47.35
19/64	5/16	13/16	2-1/2	TC10019	36.85	TC10119	47.35	TC90019	47.35
5/16	5/16	13/16	2-1/2	TC10020	26.60	TC10120	34.30	TC90020	34.30
21/64	3/8	1	2-1/2	TC10021	41.32	TC10121	53.13	TC90021	53.13
11/32	3/8	1	2-1/2	TC10022	41.32	TC10122	53.13	TC90022	53.13
23/64	3/8	1	2-1/2	TC10023	41.32	TC10123	53.13	TC90023	53.13
3/8	3/8	1	2-1/2	TC10024	31.72	TC10124	39.23	TC90024	39.23
25/64	7/16	1	2-3/4	TC10025	54.09	TC10125	69.81	TC90025	69.81
13/32	7/16	1	2-3/4	TC10026	54.09	TC10126	69.81	TC90026	69.81
27/64	7/16	1	2-3/4	TC10027	55.84	TC10127	72.12	TC90027	72.12
7/16	7/16	1	2-3/4	TC10028	48.69	TC10128	59.94	TC90028	59.94
29/64	1/2	1	3	TC10029	80.38	TC10129	102.88	TC90029	102.88
15/32	1/2	1	3	TC10030	80.38	TC10130	102.88	TC90030	102.88
31/64	1/2	1	3	TC10031	80.38	TC10131	102.88	TC90031	102.88
1/2	1/2	1	3	TC10032	58.46	TC10132	72.95	TC90032	72.95
9/16	9/16	1-1/4	3-1/2	TC10036	110.48	TC10136	145.89	TC90036	145.89
5/8	5/8	1-1/4	3-1/2	TC10040	111.76	TC10140	142.48	TC90040	142.48
3/4	3/4	1-1/2	4	TC10048	156.97	TC10148	202.18	TC90048	202.18
7/8	7/8	1-1/2	4	TC10056	287.10	TC10156	363.39	TC90056	363.39
1	1	1-1/2	4	TC10064	256.79	TC10164	328.46	TC90064	328.46

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

TOLERANCES	DIAMETER	SHANK
1/64" - 7/64"	+0.00, -0.01	-0.0001, -0.0004
1/8" - 1/2"	+0.00, -0.002	-0.0001, -0.0004
9/16" - 1"	+0.00, -0.003	-0.0001, -0.0004

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LONG LENGTH - 2 FLUTE - SQUARE END - 30° HELIX



SERIES 150
UNCOATED



SERIES 151
ALTIN COATED



SERIES 950
TICN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIN	LIST PRICE	TICN	LIST PRICE
1/8	1/8	3/4	2-1/4	TC15008	19.61	TC15108	25.22	TC95008	25.22
3/16	3/16	3/4	2-1/2	TC15012	23.02	TC15112	29.59	TC95012	29.59
1/4	1/4	1-1/8	3	TC15016	32.96	TC15116	42.49	TC95016	42.49
1/4	1/4	1	4	TC15017	34.72	TC15117	44.77	TC95017	44.77
5/16	5/16	1-1/8	3	TC15020	37.20	TC15120	50.20	TC95020	50.20
3/8	3/8	1-1/8	3	TC15024	42.67	TC15124	57.60	TC95024	57.60
3/8	3/8	1	4	TC15025	49.82	TC15125	64.10	TC95025	64.10
7/16	7/16	2	4	TC15028	67.23	TC15128	87.43	TC95028	87.43
1/2	1/2	1	4	TC15032	72.81	TC15132	93.76	TC95032	93.76
1/2	1/2	2	4	TC15033	77.11	TC15133	98.96	TC95033	98.96
5/8	5/8	2-1/4	5	TC15040	172.35	TC15140	213.30	TC95040	213.30
3/4	3/4	2-1/4	5	TC15048	238.04	TC15148	307.13	TC95048	307.13
7/8	7/8	2-1/4	5	TC15056	451.16	TC15156	533.19	TC95056	533.19
1	1	2-1/4	5	TC15064	325.88	TC15164	420.61	TC95064	420.61

EXTRA LONG LENGTH - 2 FLUTE - SQUARE END - 30° HELIX



SERIES 170
UNCOATED



SERIES 171
ALTIN COATED



SERIES 970
TICN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIN	LIST PRICE	TICN	LIST PRICE
1/8	1/8	1	3	TC17008	21.92	TC17108	29.59	TC97008	29.59
3/16	3/16	1-1/8	3	TC17012	23.84	TC17112	30.62	TC97012	30.62
1/4	1/4	1-1/2	4	TC17016	33.69	TC17116	43.39	TC97016	43.39
1/4	1/4	1-1/2	6	TC17017	45.56	TC17117	58.60	TC97017	58.60
5/16	5/16	1-5/8	4	TC17020	45.97	TC17120	59.32	TC97020	59.32
3/8	3/8	1-3/4	4	TC17024	52.20	TC17124	66.86	TC97024	66.86
3/8	3/8	1-1/2	6	TC17025	79.04	TC17125	101.88	TC97025	101.88
7/16	7/16	3	6	TC17028	106.46	TC17128	136.50	TC97028	136.50
1/2	1/2	1-1/2	6	TC17032	120.29	TC17132	149.30	TC97032	149.30
1/2	1/2	3	6	TC17033	126.28	TC17133	155.28	TC97033	155.28
5/8	5/8	3	6	TC17040	185.98	TC17140	228.64	TC97040	228.64
3/4	3/4	3	6	TC17048	276.40	TC17148	339.54	TC97048	339.54
7/8	7/8	3	6	TC17056	492.18	TC17156	615.25	TC97056	615.25
1	1	3	6	TC17064	469.23	TC17164	576.61	TC97064	576.61

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

TOLERANCES	DIAMETER	SHANK
1/8" - 1/2"	+0.000, -.002	-.0001, -.0004
5/8" - 1"	+0.000, -.003	-.0001, -.0004



Solid Carbide Endmills

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REGULAR LENGTH - 2 FLUTE - BALL NOSE - 30° HELIX

SERIES 110
UNCOATED**SERIES 111**
ALTiN COATED**SERIES 910**
TiCN COATED**TAKE
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SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTiN	LIST PRICE	TiCN	LIST PRICE
1/64	1/8	1/32	1-1/2	TC11001	27.32	TC11101	36.61	TC91001	36.61
1/32	1/8	1/8	1-1/2	TC11002	17.48	TC11102	22.71	TC91002	22.71
3/64	1/8	1/8	1-1/2	TC11003	17.48	TC11103	22.71	TC91003	22.71
1/16	1/8	1/4	1-1/2	TC11004	16.21	TC11104	21.88	TC91004	21.88
5/64	1/8	1/4	1-1/2	TC11005	16.21	TC11105	21.88	TC91005	21.88
3/32	1/8	3/8	1-1/2	TC11006	17.00	TC11106	22.98	TC91006	22.98
7/64	1/8	3/8	1-1/2	TC11007	17.00	TC11107	22.98	TC91007	22.98
1/8	1/8	1/2	1-1/2	TC11008	15.59	TC11108	21.06	TC91008	21.06
9/64	3/16	9/16	2	TC11009	22.85	TC11109	30.86	TC91009	30.86
5/32	3/16	9/16	2	TC11010	22.85	TC11110	30.86	TC91010	30.86
11/64	3/16	5/8	2	TC11011	22.85	TC11111	30.86	TC91011	30.86
3/16	3/16	5/8	2	TC11012	20.54	TC11112	27.73	TC91012	27.73
13/64	1/4	5/8	2-1/2	TC11013	26.63	TC11113	37.75	TC91013	37.75
7/32	1/4	5/8	2-1/2	TC11014	26.63	TC11114	37.75	TC91014	37.75
15/64	1/4	3/4	2-1/2	TC11015	26.63	TC11115	37.75	TC91015	37.75
1/4	1/4	3/4	2-1/2	TC11016	27.91	TC11116	35.96	TC91016	35.96
17/64	5/16	3/4	2-1/2	TC11017	37.75	TC11117	48.55	TC91017	48.55
9/32	5/16	3/4	2-1/2	TC11018	37.81	TC11118	48.62	TC91018	48.62
19/64	5/16	13/16	2-1/2	TC11019	41.08	TC11119	53.92	TC91019	53.92
5/16	5/16	13/16	2-1/2	TC11020	34.79	TC11120	44.73	TC91020	44.73
21/64	3/8	1	2-1/2	TC11021	47.79	TC11121	64.52	TC91021	64.52
11/32	3/8	1	2-1/2	TC11022	50.17	TC11122	64.52	TC91022	64.52
23/64	3/8	1	2-1/2	TC11023	47.79	TC11123	64.52	TC91023	64.52
3/8	3/8	1	2-1/2	TC11024	37.23	TC11124	52.61	TC91024	52.61
25/64	7/16	1	2-3/4	TC11025	64.72	TC11125	83.41	TC91025	83.41
13/32	7/16	1	2-3/4	TC11026	64.72	TC11126	83.41	TC91026	83.41
27/64	7/16	1	2-3/4	TC11027	64.72	TC11127	83.41	TC91027	83.41
7/16	7/16	1	2-3/4	TC11028	55.09	TC11128	71.02	TC91028	71.02
29/64	1/2	1	3	TC11029	85.33	TC11129	110.04	TC91029	110.04
15/32	1/2	1	3	TC11030	85.33	TC11130	110.04	TC91030	110.04
31/64	1/2	1	3	TC11031	85.33	TC11131	110.04	TC91031	110.04
1/2	1/2	1	3	TC11032	75.56	TC11132	97.38	TC91032	97.38
9/16	9/16	1-1/4	3-1/2	TC11036	115.16	TC11136	141.73	TC91036	141.73
5/8	5/8	1-1/4	3-1/2	TC11040	122.18	TC11140	157.49	TC91040	157.49
3/4	3/4	1-1/2	4	TC11048	180.02	TC11148	234.60	TC91048	234.60
7/8	7/8	1-1/2	4	TC11056	348.62	TC11156	442.97	TC91056	442.97
1	1	1-1/2	4	TC11064	321.54	TC11164	414.34	TC91064	414.34

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

TOLERANCES	DIAMETER	SHANK
1/64" - 7/64"	+0.000, -0.001	-0.0001, -0.0004
1/8" - 1/2"	+0.000, -0.002	-0.0001, -0.0004
9/16" - 1"	+0.000, -0.003	-0.0001, -0.0004

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LONG LENGTH - 2 FLUTE - BALL NOSE - 30° HELIX



SERIES 160
UNCOATED



SERIES 161
ALTIN COATED



SERIES 960
TICN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIN	LIST PRICE	TICN	LIST PRICE
1/8	1/8	3/4	2-1/4	TC16008	23.33	TC16108	30.00	TC96008	30.00
3/16	3/16	3/4	2-1/2	TC16012	26.84	TC16112	34.48	TC96012	34.48
1/4	1/4	1-1/8	3	TC16016	37.75	TC16116	48.58	TC96016	48.58
1/4	1/4	1	4	TC16017	41.67	TC16117	53.71	TC96017	53.71
5/16	5/16	1-1/8	3	TC16020	44.39	TC16120	59.90	TC96020	59.90
3/8	3/8	1-1/8	3	TC16024	51.23	TC16124	69.19	TC96024	69.19
3/8	3/8	1	4	TC16025	62.76	TC16125	81.55	TC96025	81.55
7/16	7/16	2	4	TC16028	85.81	TC16128	111.59	TC96028	111.59
1/2	1/2	1	4	TC16032	87.88	TC16132	111.76	TC96032	111.76
1/2	1/2	2	4	TC16033	88.74	TC16133	112.62	TC96033	112.62
5/8	5/8	2-1/4	5	TC16040	202.18	TC16140	256.79	TC96040	256.79
3/4	3/4	2-1/4	5	TC16048	281.53	TC16148	356.61	TC96048	356.61
7/8	7/8	2-1/4	5	TC16056	483.99	TC16156	594.75	TC96056	594.75
1	1	2-1/4	5	TC16064	557.07	TC16164	685.07	TC96064	685.07

EXTRA LONG LENGTH - 2 FLUTE - BALL NOSE - 30° HELIX



SERIES 180
UNCOATED



SERIES 181
ALTIN COATED



SERIES 980
TICN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIN	LIST PRICE	TICN	LIST PRICE
1/8	1/8	1	3	TC18008	26.12	TC18108	35.23	TC98008	35.23
3/16	3/16	1-1/8	3	TC18012	28.59	TC18112	36.78	TC98012	36.78
1/4	1/4	1-1/2	4	TC18016	39.70	TC18116	51.06	TC98016	51.06
1/4	1/4	1-1/2	6	TC18017	46.62	TC18117	59.97	TC98017	59.97
5/16	5/16	1-5/8	4	TC18020	55.47	TC18120	71.60	TC98020	71.60
3/8	3/8	1-3/4	4	TC18024	59.70	TC18124	76.32	TC98024	76.32
3/8	3/8	1-1/2	6	TC18025	84.13	TC18125	103.26	TC98025	103.26
7/16	7/16	3	6	TC18028	126.28	TC18128	162.10	TC98028	162.10
1/2	1/2	1-1/2	6	TC18032	133.95	TC18132	171.49	TC98032	171.49
1/2	1/2	3	6	TC18033	134.78	TC18133	172.35	TC98033	172.35
5/8	5/8	3	6	TC18040	212.44	TC18140	261.06	TC98040	261.06
3/4	3/4	3	6	TC18048	301.24	TC18148	406.67	TC98048	406.67
7/8	7/8	3	6	TC18056	533.19	TC18156	664.46	TC98056	664.46
1	1	3	6	TC18064	537.46	TC18164	691.95	TC98064	691.95

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

TOLERANCES	DIAMETER	SHANK
1/8" - 1/2"	+0.000, -.002	-.0001, -.0004
5/8" - 1"	+0.000, -.003	-.0001, -.0004

Solid Carbide Endmills

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REGULAR LENGTH - 2 FLUTE -  CORNER RADIUS - 30° HELIX



SERIES 720
UNCOATED

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SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	CORNER RADIUS	ITEM#	LIST PRICE
1/8	1/8	1/2	1-1/2	0.015	TC72003	17.75
1/8	1/8	1/2	1-1/2	0.020	TC72005	17.75
1/8	1/8	1/2	1-1/2	0.030	TC72007	17.75
3/16	3/16	5/8	2	0.015	TC72009	17.75
3/16	3/16	5/8	2	0.020	TC72011	17.75
3/16	3/16	5/8	2	0.030	TC72013	17.75
1/4	1/4	3/4	2-1/2	0.015	TC72015	25.85
1/4	1/4	3/4	2-1/2	0.020	TC72017	25.85
1/4	1/4	3/4	2-1/2	0.030	TC72019	25.85
1/4	1/4	3/4	2-1/2	0.045	TC72021	25.85
1/4	1/4	3/4	2-1/2	0.060	TC72023	25.85
5/16	5/16	13/16	2-1/2	0.015	TC72025	39.64
5/16	5/16	13/16	2-1/2	0.020	TC72027	39.64
5/16	5/16	13/16	2-1/2	0.030	TC72029	39.64
5/16	5/16	13/16	2-1/2	0.045	TC72031	39.64
5/16	5/16	13/16	2-1/2	0.060	TC72033	39.64
3/8	3/8	1	2-1/2	0.015	TC72035	53.12
3/8	3/8	1	2-1/2	0.020	TC72037	53.12
3/8	3/8	1	2-1/2	0.030	TC72039	53.12
3/8	3/8	1	2-1/2	0.045	TC72041	53.12
3/8	3/8	1	2-1/2	0.060	TC72043	53.12
1/2	1/2	1	3	0.015	TC72045	91.37
1/2	1/2	1	3	0.020	TC72047	91.37
1/2	1/2	1	3	0.030	TC72049	91.37

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	CORNER RADIUS	ITEM#	LIST PRICE
1/2	1/2	1	3	0.045	TC72051	91.37
1/2	1/2	1	3	0.060	TC72053	91.37
1/2	1/2	1	3	0.090	TC72055	91.37
1/2	1/2	1	3	0.125	TC72057	91.37
5/8	5/8	1-1/4	3-1/2	0.015	TC72059	129.28
5/8	5/8	1-1/4	3-1/2	0.020	TC72061	129.28
5/8	5/8	1-1/4	3-1/2	0.030	TC72063	129.28
5/8	5/8	1-1/4	3-1/2	0.045	TC72065	129.28
5/8	5/8	1-1/4	3-1/2	0.060	TC72067	129.28
5/8	5/8	1-1/4	3-1/2	0.090	TC72069	129.28
3/4	3/4	1-1/2	4	0.015	TC72071	191.26
3/4	3/4	1-1/2	4	0.020	TC72073	191.26
3/4	3/4	1-1/2	4	0.030	TC72075	191.26
3/4	3/4	1-1/2	4	0.045	TC72077	191.26
3/4	3/4	1-1/2	4	0.060	TC72079	191.26
3/4	3/4	1-1/2	4	0.090	TC72081	191.26
3/4	3/4	1-1/2	4	0.125	TC72083	191.26
1	1	1-1/2	4	0.015	TC72085	361.88
1	1	1-1/2	4	0.020	TC72087	361.88
1	1	1-1/2	4	0.030	TC72089	361.88
1	1	1-1/2	4	0.045	TC72091	361.88
1	1	1-1/2	4	0.060	TC72093	361.88
1	1	1-1/2	4	0.090	TC72095	361.88
1	1	1-1/2	4	0.125	TC72097	361.88

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

TOLERANCES	DIAMETER	SHANK	RADIUS
1/8" - 1/2"	+0.00, -0.002	-0.0001, -0.0004	+0.002, -0.002
5/8" - 1"	+0.00, -0.003	-0.0001, -0.0004	+0.002, -0.002

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REGULAR LENGTH - 2 FLUTE -  CORNER RADIUS - 30° HELIX

SERIES 721
ALTIN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	CORNER RADIUS	ITEM#	LIST PRICE
1/8	1/8	1/2	1-1/2	0.015	TC72104	27.59
1/8	1/8	1/2	1-1/2	0.020	TC72106	27.59
1/8	1/8	1/2	1-1/2	0.030	TC72108	27.59
3/16	3/16	5/8	2	0.015	TC72110	27.59
3/16	3/16	5/8	2	0.020	TC72112	27.59
3/16	3/16	5/8	2	0.030	TC72114	27.59
1/4	1/4	3/4	2-1/2	0.015	TC72116	37.90
1/4	1/4	3/4	2-1/2	0.020	TC72118	37.90
1/4	1/4	3/4	2-1/2	0.030	TC72120	37.90
1/4	1/4	3/4	2-1/2	0.045	TC72122	37.90
1/4	1/4	3/4	2-1/2	0.060	TC72124	37.90
5/16	5/16	13/16	2-1/2	0.015	TC72126	54.51
5/16	5/16	13/16	2-1/2	0.020	TC72128	54.51
5/16	5/16	13/16	2-1/2	0.030	TC72130	54.51
5/16	5/16	13/16	2-1/2	0.045	TC72132	54.51
5/16	5/16	13/16	2-1/2	0.060	TC72134	54.51
3/8	3/8	1	2-1/2	0.015	TC72136	59.06
3/8	3/8	1	2-1/2	0.020	TC72138	59.06
3/8	3/8	1	2-1/2	0.030	TC72140	59.06
3/8	3/8	1	2-1/2	0.045	TC72142	59.06
3/8	3/8	1	2-1/2	0.060	TC72144	59.06
1/2	1/2	1	3	0.015	TC72146	98.91
1/2	1/2	1	3	0.020	TC72148	98.91
1/2	1/2	1	3	0.030	TC72150	98.91

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	CORNER RADIUS	ITEM#	LIST PRICE
1/2	1/2	1	3	0.045	TC72152	98.91
1/2	1/2	1	3	0.060	TC72154	98.91
1/2	1/2	1	3	0.090	TC72156	98.91
1/2	1/2	1	3	0.125	TC72158	98.91
5/8	5/8	1-1/4	3-1/2	0.015	TC72160	142.34
5/8	5/8	1-1/4	3-1/2	0.020	TC72162	142.34
5/8	5/8	1-1/4	3-1/2	0.030	TC72164	142.34
5/8	5/8	1-1/4	3-1/2	0.045	TC72166	142.34
5/8	5/8	1-1/4	3-1/2	0.060	TC72168	142.34
5/8	5/8	1-1/4	3-1/2	0.090	TC72170	142.34
3/4	3/4	1-1/2	4	0.015	TC72172	199.87
3/4	3/4	1-1/2	4	0.020	TC72174	199.87
3/4	3/4	1-1/2	4	0.030	TC72176	199.87
3/4	3/4	1-1/2	4	0.045	TC72178	199.87
3/4	3/4	1-1/2	4	0.060	TC72180	199.87
3/4	3/4	1-1/2	4	0.090	TC72182	199.87
3/4	3/4	1-1/2	4	0.125	TC72184	199.87
1	1	1-1/2	4	0.015	TC72186	417.15
1	1	1-1/2	4	0.020	TC72188	417.15
1	1	1-1/2	4	0.030	TC72190	417.15
1	1	1-1/2	4	0.045	TC72192	417.15
1	1	1-1/2	4	0.060	TC72194	417.15
1	1	1-1/2	4	0.090	TC72196	417.15
1	1	1-1/2	4	0.125	TC72198	417.15

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

TOLERANCES	DIAMETER	SHANK	RADIUS
1/8" - 1/2"	+0.000, -0.002	-0.0001, -0.0004	+0.002, -0.002
5/8" - 1"	+0.000, -0.003	-0.0001, -0.0004	+0.002, -0.002

Solid Carbide Endmills

MADE IN THE
USA

REGULAR LENGTH - 4 FLUTE -  CORNER RADIUS - 30° HELIX



SERIES 740
UNCOATED

**TAKE
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LIST
PRICES!**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	CORNER RADIUS	ITEM#	LIST PRICE
1/8	1/8	1/2	1-1/2	0.015	TC74003	17.75
1/8	1/8	1/2	1-1/2	0.020	TC74005	17.75
1/8	1/8	1/2	1-1/2	0.030	TC74007	17.75
3/16	3/16	5/8	2	0.015	TC74009	17.75
3/16	3/16	5/8	2	0.020	TC74011	17.75
3/16	3/16	5/8	2	0.030	TC74013	17.75
1/4	1/4	3/4	2-1/2	0.015	TC74015	25.85
1/4	1/4	3/4	2-1/2	0.020	TC74017	25.85
1/4	1/4	3/4	2-1/2	0.030	TC74019	25.85
1/4	1/4	3/4	2-1/2	0.045	TC74021	25.85
1/4	1/4	3/4	2-1/2	0.060	TC74023	25.85
5/16	5/16	13/16	2-1/2	0.015	TC74025	41.10
5/16	5/16	13/16	2-1/2	0.020	TC74027	41.10
5/16	5/16	13/16	2-1/2	0.030	TC74029	41.10
5/16	5/16	13/16	2-1/2	0.045	TC74031	41.10
5/16	5/16	13/16	2-1/2	0.060	TC74033	41.10
3/8	3/8	1	2-1/2	0.015	TC74035	48.67
3/8	3/8	1	2-1/2	0.020	TC74037	48.67
3/8	3/8	1	2-1/2	0.030	TC74039	48.67
3/8	3/8	1	2-1/2	0.045	TC74041	48.67
3/8	3/8	1	2-1/2	0.060	TC74043	48.67
1/2	1/2	1	3	0.015	TC74045	83.28
1/2	1/2	1	3	0.020	TC74047	83.28
1/2	1/2	1	3	0.030	TC74049	83.28

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	CORNER RADIUS	ITEM#	LIST PRICE
1/2	1/2	1	3	0.045	TC74051	83.28
1/2	1/2	1	3	0.060	TC74053	83.28
1/2	1/2	1	3	0.090	TC74055	83.28
1/2	1/2	1	3	0.125	TC74057	83.28
5/8	5/8	1-1/4	3-1/2	0.015	TC74059	129.28
5/8	5/8	1-1/4	3-1/2	0.020	TC74061	129.28
5/8	5/8	1-1/4	3-1/2	0.030	TC74063	129.28
5/8	5/8	1-1/4	3-1/2	0.045	TC74065	129.28
5/8	5/8	1-1/4	3-1/2	0.060	TC74067	129.28
5/8	5/8	1-1/4	3-1/2	0.090	TC74069	129.28
3/4	3/4	1-1/2	4	0.015	TC74071	191.26
3/4	3/4	1-1/2	4	0.020	TC74073	191.26
3/4	3/4	1-1/2	4	0.030	TC74075	191.26
3/4	3/4	1-1/2	4	0.045	TC74077	191.26
3/4	3/4	1-1/2	4	0.060	TC74079	191.26
3/4	3/4	1-1/2	4	0.090	TC74081	191.26
3/4	3/4	1-1/2	4	0.125	TC74083	191.26
1	1	1-1/2	4	0.015	TC74085	361.88
1	1	1-1/2	4	0.020	TC74087	361.88
1	1	1-1/2	4	0.030	TC74089	361.88
1	1	1-1/2	4	0.045	TC74091	361.88
1	1	1-1/2	4	0.060	TC74093	361.88
1	1	1-1/2	4	0.090	TC74095	361.88
1	1	1-1/2	4	0.125	TC74097	361.88

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

TOLERANCES	DIAMETER	SHANK	RADIUS
1/8" - 1/2"	+0.000, -0.002	-0.0001, -0.0004	+0.002, -0.002
5/8" - 1"	+0.000, -0.003	-0.0001, -0.0004	+0.002, -0.002

MADE IN THE
USA

Solid Carbide Endmills



**TAKE
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LIST
PRICES!**

REGULAR LENGTH - 4 FLUTE -  CORNER RADIUS - 30° HELIX

SERIES 741
ALTIN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	CORNER RADIUS	ITEM#	LIST PRICE
1/8	1/8	1/2	1-1/2	0.015	TC74104	27.59
1/8	1/8	1/2	1-1/2	0.020	TC74106	27.59
1/8	1/8	1/2	1-1/2	0.030	TC74108	27.59
3/16	3/16	5/8	2	0.015	TC74110	27.59
3/16	3/16	5/8	2	0.020	TC74112	27.59
3/16	3/16	5/8	2	0.030	TC74114	27.59
1/4	1/4	3/4	2-1/2	0.015	TC74116	37.90
1/4	1/4	3/4	2-1/2	0.020	TC74118	37.90
1/4	1/4	3/4	2-1/2	0.030	TC74120	37.90
1/4	1/4	3/4	2-1/2	0.045	TC74122	37.90
1/4	1/4	3/4	2-1/2	0.060	TC74124	37.90
5/16	5/16	13/16	2-1/2	0.015	TC74126	50.84
5/16	5/16	13/16	2-1/2	0.020	TC74128	50.84
5/16	5/16	13/16	2-1/2	0.030	TC74130	50.84
5/16	5/16	13/16	2-1/2	0.045	TC74132	50.84
5/16	5/16	13/16	2-1/2	0.060	TC74134	50.84
3/8	3/8	1	2-1/2	0.015	TC74136	63.81
3/8	3/8	1	2-1/2	0.020	TC74138	63.81
3/8	3/8	1	2-1/2	0.030	TC74140	63.81
3/8	3/8	1	2-1/2	0.045	TC74142	63.81
3/8	3/8	1	2-1/2	0.060	TC74144	63.81
1/2	1/2	1	3	0.015	TC74146	96.26
1/2	1/2	1	3	0.020	TC74148	96.26
1/2	1/2	1	3	0.030	TC74150	96.26

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	CORNER RADIUS	ITEM#	LIST PRICE
1/2	1/2	1	3	0.045	TC74152	96.26
1/2	1/2	1	3	0.060	TC74154	96.26
1/2	1/2	1	3	0.090	TC74156	96.26
1/2	1/2	1	3	0.125	TC74158	96.26
5/8	5/8	1-1/4	3-1/2	0.015	TC74160	156.83
5/8	5/8	1-1/4	3-1/2	0.020	TC74162	156.83
5/8	5/8	1-1/4	3-1/2	0.030	TC74164	156.83
5/8	5/8	1-1/4	3-1/2	0.045	TC74166	156.83
5/8	5/8	1-1/4	3-1/2	0.060	TC74168	156.83
5/8	5/8	1-1/4	3-1/2	0.090	TC74170	156.83
3/4	3/4	1-1/2	4	0.015	TC74172	215.24
3/4	3/4	1-1/2	4	0.020	TC74174	215.24
3/4	3/4	1-1/2	4	0.030	TC74176	215.24
3/4	3/4	1-1/2	4	0.045	TC74178	215.24
3/4	3/4	1-1/2	4	0.060	TC74180	215.24
3/4	3/4	1-1/2	4	0.090	TC74182	215.24
3/4	3/4	1-1/2	4	0.125	TC74184	215.24
1	1	1-1/2	4	0.015	TC74186	417.15
1	1	1-1/2	4	0.020	TC74188	417.15
1	1	1-1/2	4	0.030	TC74190	417.15
1	1	1-1/2	4	0.045	TC74192	417.15
1	1	1-1/2	4	0.060	TC74194	417.15
1	1	1-1/2	4	0.090	TC74196	417.15
1	1	1-1/2	4	0.125	TC74198	417.15

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

TOLERANCES	DIAMETER	SHANK	RADIUS
1/8" - 1/2"	+0.000, -0.002	-0.0001, -0.0004	+0.002, -0.002
5/8" - 1"	+0.000, -0.003	-0.0001, -0.0004	+0.002, -0.002



YOUR #1 SOURCE FOR AMERICAN-MADE PREMIUM CUTTING TOOLS

Solid Carbide Endmills

MADE IN THE
USALONG LENGTH - 4 FLUTE -  CORNER RADIUS - 30° HELIX CORNER RADIUS**TAKE
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LIST
PRICES!****SERIES 743
UNCOATED**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	CORNER RADIUS	ITEM#	LIST PRICE
1/8	1/8	3/4	2-1/4	0.015	TC74301	24.25
1/8	1/8	3/4	2-1/4	0.020	TC74302	24.25
1/8	1/8	3/4	2-1/4	0.030	TC74303	24.25
3/16	3/16	3/4	2-1/2	0.015	TC74304	28.19
3/16	3/16	3/4	2-1/2	0.020	TC74305	28.19
3/16	3/16	3/4	2-1/2	0.030	TC74306	28.19
1/4	1/4	1-1/8	3	0.015	TC74307	39.33
1/4	1/4	1-1/8	3	0.020	TC74308	39.33
1/4	1/4	1-1/8	3	0.030	TC74309	39.33
1/4	1/4	1-1/8	3	0.045	TC74310	39.33
1/4	1/4	1-1/8	3	0.060	TC74311	39.33
1/4	1/4	1	4	0.015	TC74312	41.30
1/4	1/4	1	4	0.020	TC74313	41.30
1/4	1/4	1	4	0.030	TC74314	41.30
1/4	1/4	1	4	0.045	TC74315	41.30
1/4	1/4	1	4	0.060	TC74316	41.30
5/16	5/16	1-1/8	3	0.015	TC74317	44.58
5/16	5/16	1-1/8	3	0.020	TC74318	44.58
5/16	5/16	1-1/8	3	0.030	TC74319	44.58
5/16	5/16	1-1/8	3	0.045	TC74320	44.58
5/16	5/16	1-1/8	3	0.060	TC74321	44.58
3/8	3/8	1-1/8	3	0.015	TC74322	57.32
3/8	3/8	1-1/8	3	0.020	TC74323	57.32
3/8	3/8	1-1/8	3	0.030	TC74324	57.32
3/8	3/8	1-1/8	3	0.045	TC74325	57.32
3/8	3/8	1-1/8	3	0.060	TC74326	57.32
3/8	3/8	1	4	0.015	TC74327	70.09
3/8	3/8	1	4	0.020	TC74328	70.09
3/8	3/8	1	4	0.030	TC74329	70.09
3/8	3/8	1	4	0.045	TC74330	70.09
3/8	3/8	1	4	0.060	TC74331	70.09
1/2	1/2	1	4	0.015	TC74332	98.43
1/2	1/2	1	4	0.020	TC74333	98.43

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	CORNER RADIUS	ITEM#	LIST PRICE
1/2	1/2	1	4	0.030	TC74334	98.43
1/2	1/2	1	4	0.045	TC74335	98.43
1/2	1/2	1	4	0.060	TC74336	98.43
1/2	1/2	1	4	0.090	TC74337	98.43
1/2	1/2	1	4	0.125	TC74338	98.43
1/2	1/2	2	4	0.015	TC74339	104.92
1/2	1/2	2	4	0.020	TC74340	104.92
1/2	1/2	2	4	0.030	TC74341	104.92
1/2	1/2	2	4	0.045	TC74342	104.92
1/2	1/2	2	4	0.060	TC74343	104.92
1/2	1/2	2	4	0.090	TC74344	104.92
1/2	1/2	2	4	0.125	TC74345	104.92
5/8	5/8	2-1/4	5	0.015	TC74346	186.17
5/8	5/8	2-1/4	5	0.020	TC74347	186.17
5/8	5/8	2-1/4	5	0.030	TC74348	186.17
5/8	5/8	2-1/4	5	0.045	TC74349	186.17
5/8	5/8	2-1/4	5	0.060	TC74350	186.17
5/8	5/8	2-1/4	5	0.090	TC74351	186.17
3/4	3/4	2-1/4	5	0.015	TC74352	259.58
3/4	3/4	2-1/4	5	0.020	TC74353	259.58
3/4	3/4	2-1/4	5	0.030	TC74354	259.58
3/4	3/4	2-1/4	5	0.045	TC74355	259.58
3/4	3/4	2-1/4	5	0.060	TC74356	259.58
3/4	3/4	2-1/4	5	0.090	TC74357	259.58
3/4	3/4	2-1/4	5	0.125	TC74358	259.58
1	1	2-1/4	5	0.015	TC74359	380.72
1	1	2-1/4	5	0.020	TC74360	380.72
1	1	2-1/4	5	0.030	TC74361	380.72
1	1	2-1/4	5	0.045	TC74362	380.72
1	1	2-1/4	5	0.060	TC74363	380.72
1	1	2-1/4	5	0.090	TC74364	380.72
1	1	2-1/4	5	0.125	TC74365	380.72
-	-	-	-	-	-	-

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

TOLERANCES	DIAMETER	SHANK	RADIUS
1/8" - 1/2"	+0.00, -0.002	-0.0001, -0.0004	+0.002, -0.002
5/8" - 1"	+0.00, -0.003	-0.0001, -0.0004	+0.002, -0.002

CARBIDE ENDMILLS - CORNER RADIUS

MADE IN THE
USA

Solid Carbide Endmills



**TAKE
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LIST
PRICES!**

LONG LENGTH - 4 FLUTE -  CORNER RADIUS - 30° HELIX
 CORNER RADIUS

SERIES 744
ALTIN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	CORNER RADIUS	ITEM#	LIST PRICE
1/8	1/8	3/4	2-1/4	0.015	TC74401	30.32
1/8	1/8	3/4	2-1/4	0.020	TC74402	30.32
1/8	1/8	3/4	2-1/4	0.030	TC74403	30.32
3/16	3/16	3/4	2-1/2	0.015	TC74404	35.23
3/16	3/16	3/4	2-1/2	0.020	TC74405	35.23
3/16	3/16	3/4	2-1/2	0.030	TC74406	35.23
1/4	1/4	1-1/8	3	0.015	TC74407	49.16
1/4	1/4	1-1/8	3	0.020	TC74408	49.16
1/4	1/4	1-1/8	3	0.030	TC74409	49.16
1/4	1/4	1-1/8	3	0.045	TC74410	49.16
1/4	1/4	1-1/8	3	0.060	TC74411	49.16
1/4	1/4	1	4	0.015	TC74412	51.62
1/4	1/4	1	4	0.020	TC74413	51.62
1/4	1/4	1	4	0.030	TC74414	51.62
1/4	1/4	1	4	0.045	TC74415	51.62
1/4	1/4	1	4	0.060	TC74416	51.62
5/16	5/16	1-1/8	3	0.015	TC74417	55.72
5/16	5/16	1-1/8	3	0.020	TC74418	55.72
5/16	5/16	1-1/8	3	0.030	TC74419	55.72
5/16	5/16	1-1/8	3	0.045	TC74420	55.72
5/16	5/16	1-1/8	3	0.060	TC74421	55.72
3/8	3/8	1-1/8	3	0.015	TC74422	70.30
3/8	3/8	1-1/8	3	0.020	TC74423	70.30
3/8	3/8	1-1/8	3	0.030	TC74424	70.30
3/8	3/8	1-1/8	3	0.045	TC74425	70.30
3/8	3/8	1-1/8	3	0.060	TC74426	70.30
3/8	3/8	1	4	0.015	TC74427	87.61
3/8	3/8	1	4	0.020	TC74428	87.61
3/8	3/8	1	4	0.030	TC74429	87.61
3/8	3/8	1	4	0.045	TC74430	87.61
3/8	3/8	1	4	0.060	TC74431	87.61
1/2	1/2	1	4	0.015	TC74432	121.14
1/2	1/2	1	4	0.020	TC74433	121.14

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	CORNER RADIUS	ITEM#	LIST PRICE
1/2	1/2	1	4	0.030	TC74434	121.14
1/2	1/2	1	4	0.045	TC74435	121.14
1/2	1/2	1	4	0.060	TC74436	121.14
1/2	1/2	1	4	0.090	TC74437	121.14
1/2	1/2	1	4	0.125	TC74438	121.14
1/2	1/2	2	4	0.015	TC74439	128.71
1/2	1/2	2	4	0.020	TC74440	128.71
1/2	1/2	2	4	0.030	TC74441	128.71
1/2	1/2	2	4	0.045	TC74442	128.71
1/2	1/2	2	4	0.060	TC74443	128.71
1/2	1/2	2	4	0.090	TC74444	128.71
1/2	1/2	2	4	0.125	TC74445	128.71
5/8	5/8	2-1/4	5	0.015	TC74446	232.71
5/8	5/8	2-1/4	5	0.020	TC74447	232.71
5/8	5/8	2-1/4	5	0.030	TC74448	232.71
5/8	5/8	2-1/4	5	0.045	TC74449	232.71
5/8	5/8	2-1/4	5	0.060	TC74450	232.71
5/8	5/8	2-1/4	5	0.090	TC74451	232.71
3/4	3/4	2-1/4	5	0.015	TC74452	302.85
3/4	3/4	2-1/4	5	0.020	TC74453	302.85
3/4	3/4	2-1/4	5	0.030	TC74454	302.85
3/4	3/4	2-1/4	5	0.045	TC74455	302.85
3/4	3/4	2-1/4	5	0.060	TC74456	302.85
3/4	3/4	2-1/4	5	0.090	TC74457	302.85
3/4	3/4	2-1/4	5	0.125	TC74458	302.85
1	1	2-1/4	5	0.015	TC74459	475.90
1	1	2-1/4	5	0.020	TC74460	475.90
1	1	2-1/4	5	0.030	TC74461	475.90
1	1	2-1/4	5	0.045	TC74462	475.90
1	1	2-1/4	5	0.060	TC74463	475.90
1	1	2-1/4	5	0.090	TC74464	475.90
1	1	2-1/4	5	0.125	TC74465	475.90
-	-	-	-	-	-	-

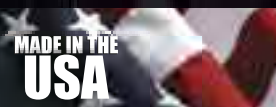
FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

TOLERANCES	DIAMETER	SHANK	RADIUS
1/8" - 1/2"	+0.00, -0.002	-0.0001, -0.0004	+0.002, -0.002
5/8" - 1"	+0.00, -0.003	-0.0001, -0.0004	+0.002, -0.002



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EXTRA LONG LENGTH - 4 FLUTE - CORNER RADIUS - 30° HELIX



**SERIES 745
UNCOATED**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	CORNER RADIUS	ITEM#	LIST PRICE
1/8	1/8	1	3	0.015	TC74501	27.53
1/8	1/8	1	3	0.020	TC74502	27.53
1/8	1/8	1	3	0.030	TC74503	27.53
3/16	3/16	1-1/8	3	0.015	TC74504	30.15
3/16	3/16	1-1/8	3	0.020	TC74505	30.15
3/16	3/16	1-1/8	3	0.030	TC74506	30.15
1/4	1/4	1-1/2	4	0.015	TC74507	41.95
1/4	1/4	1-1/2	4	0.020	TC74508	41.95
1/4	1/4	1-1/2	4	0.030	TC74509	41.95
1/4	1/4	1-1/2	4	0.045	TC74510	41.95
1/4	1/4	1-1/2	4	0.060	TC74511	41.95
1/4	1/4	1-1/2	6	0.015	TC74512	56.37
1/4	1/4	1-1/2	6	0.020	TC74513	56.37
1/4	1/4	1-1/2	6	0.030	TC74514	56.37
1/4	1/4	1-1/2	6	0.045	TC74515	56.37
1/4	1/4	1-1/2	6	0.060	TC74516	56.37
5/16	5/16	1-5/8	4	0.015	TC74517	57.69
5/16	5/16	1-5/8	4	0.020	TC74518	57.69
5/16	5/16	1-5/8	4	0.030	TC74519	57.69
5/16	5/16	1-5/8	4	0.045	TC74520	57.69
5/16	5/16	1-5/8	4	0.060	TC74521	57.69
3/8	3/8	1-3/4	4	0.015	TC74522	62.93
3/8	3/8	1-3/4	4	0.020	TC74523	62.93
3/8	3/8	1-3/4	4	0.030	TC74524	62.93
3/8	3/8	1-3/4	4	0.045	TC74525	62.93
3/8	3/8	1-3/4	4	0.060	TC74526	62.93
3/8	3/8	1-1/2	6	0.015	TC74527	89.15
3/8	3/8	1-1/2	6	0.020	TC74528	89.15
3/8	3/8	1-1/2	6	0.030	TC74529	89.15
3/8	3/8	1-1/2	6	0.045	TC74530	89.15
3/8	3/8	1-1/2	6	0.060	TC74531	89.15
1/2	1/2	1-1/2	6	0.015	TC74532	135.04
1/2	1/2	1-1/2	6	0.020	TC74533	135.04
1/2	1/2	1-1/2	6	0.030	TC74534	135.04
1/2	1/2	1-1/2	6	0.045	TC74535	135.04
1/2	1/2	1-1/2	6	0.060	TC74536	135.04
1/2	1/2	1-1/2	6	0.090	TC74537	135.04
1/2	1/2	1-1/2	6	0.125	TC74538	135.04
1/2	1/2	3	6	0.015	TC74539	141.59
1/2	1/2	3	6	0.020	TC74540	141.59

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	CORNER RADIUS	ITEM#	LIST PRICE
1/2	1/2	3	6	0.030	TC74541	141.59
1/2	1/2	3	6	0.045	TC74542	141.59
1/2	1/2	3	6	0.060	TC74543	141.59
1/2	1/2	3	6	0.090	TC74544	141.59
1/2	1/2	3	6	0.125	TC74545	141.59
5/8	5/8	3	6	0.015	TC74546	199.28
5/8	5/8	3	6	0.020	TC74547	199.28
5/8	5/8	3	6	0.030	TC74548	199.28
5/8	5/8	3	6	0.045	TC74549	199.28
5/8	5/8	3	6	0.060	TC74550	199.28
5/8	5/8	3	6	0.090	TC74551	199.28
3/4	3/4	3	6	0.015	TC74552	277.97
3/4	3/4	3	6	0.020	TC74553	277.97
3/4	3/4	3	6	0.030	TC74554	277.97
3/4	3/4	3	6	0.045	TC74555	277.97
3/4	3/4	3	6	0.060	TC74556	277.97
3/4	3/4	3	6	0.090	TC74557	277.97
3/4	3/4	3	6	0.125	TC74558	277.97
3/4	3/4	4	7	0.015	TC74559	449.08
3/4	3/4	4	7	0.020	TC74560	449.08
3/4	3/4	4	7	0.030	TC74561	449.08
3/4	3/4	4	7	0.045	TC74562	449.08
3/4	3/4	4	7	0.060	TC74563	449.08
3/4	3/4	4	7	0.090	TC74564	449.08
3/4	3/4	4	7	0.125	TC74565	449.08
1	1	3	6	0.015	TC74566	469.35
1	1	3	6	0.020	TC74567	469.35
1	1	3	6	0.030	TC74568	469.35
1	1	3	6	0.045	TC74569	469.35
1	1	3	6	0.060	TC74570	469.35
1	1	3	6	0.090	TC74571	469.35
1	1	3	6	0.125	TC74572	469.35
1	1	4	7	0.015	TC74573	642.40
1	1	4	7	0.020	TC74574	642.40
1	1	4	7	0.030	TC74575	642.40
1	1	4	7	0.045	TC74576	642.40
1	1	4	7	0.060	TC74577	642.40
1	1	4	7	0.090	TC74578	642.40
1	1	4	7	0.125	TC74579	642.40
-	-	-	-	-	-	-

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

TOLERANCES	DIAMETER	SHANK	RADIUS
1/8" - 1/2"	+0.00, -0.02	-0.001, -0.004	+0.02, -0.02
5/8" - 1"	+0.00, -0.03	-0.001, -0.004	+0.02, -0.02

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EXTRA LONG LENGTH - 4 FLUTE -  CORNER RADIUS - 30° HELIX
 CORNER RADIUS

SERIES 746
ALTiN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	CORNER RADIUS	ITEM#	LIST PRICE
1/8	1/8	1	3	0.015	TC74601	34.41
1/8	1/8	1	3	0.020	TC74602	34.41
1/8	1/8	1	3	0.030	TC74603	34.41
3/16	3/16	1-1/8	3	0.015	TC74604	37.69
3/16	3/16	1-1/8	3	0.020	TC74605	37.69
3/16	3/16	1-1/8	3	0.030	TC74606	37.69
1/4	1/4	1-1/2	4	0.015	TC74607	52.44
1/4	1/4	1-1/2	4	0.020	TC74608	52.44
1/4	1/4	1-1/2	4	0.030	TC74609	52.44
1/4	1/4	1-1/2	4	0.045	TC74610	52.44
1/4	1/4	1-1/2	4	0.060	TC74611	52.44
1/4	1/4	1-1/2	6	0.015	TC74612	70.47
1/4	1/4	1-1/2	6	0.020	TC74613	70.47
1/4	1/4	1-1/2	6	0.030	TC74614	70.47
1/4	1/4	1-1/2	6	0.045	TC74615	70.47
1/4	1/4	1-1/2	6	0.060	TC74616	70.47
5/16	5/16	1-5/8	4	0.015	TC74617	72.11
5/16	5/16	1-5/8	4	0.020	TC74618	72.11
5/16	5/16	1-5/8	4	0.030	TC74619	72.11
5/16	5/16	1-5/8	4	0.045	TC74620	72.11
5/16	5/16	1-5/8	4	0.060	TC74621	72.11
3/8	3/8	1-3/4	4	0.015	TC74622	78.66
3/8	3/8	1-3/4	4	0.020	TC74623	78.66
3/8	3/8	1-3/4	4	0.030	TC74624	78.66
3/8	3/8	1-3/4	4	0.045	TC74625	78.66
3/8	3/8	1-3/4	4	0.060	TC74626	78.66
3/8	3/8	1-1/2	6	0.015	TC74627	111.44
3/8	3/8	1-1/2	6	0.020	TC74628	111.44
3/8	3/8	1-1/2	6	0.030	TC74629	111.44
3/8	3/8	1-1/2	6	0.045	TC74630	111.44
3/8	3/8	1-1/2	6	0.060	TC74631	111.44
1/2	1/2	1-1/2	6	0.015	TC74632	168.80
1/2	1/2	1-1/2	6	0.020	TC74633	168.80
1/2	1/2	1-1/2	6	0.030	TC74634	168.80
1/2	1/2	1-1/2	6	0.045	TC74635	168.80
1/2	1/2	1-1/2	6	0.060	TC74636	168.80
1/2	1/2	1-1/2	6	0.090	TC74637	168.80
1/2	1/2	1-1/2	6	0.125	TC74638	168.80
1/2	1/2	3	6	0.015	TC74639	176.99
1/2	1/2	3	6	0.020	TC74640	176.99

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	CORNER RADIUS	ITEM#	LIST PRICE
1/2	1/2	3	6	0.030	TC74641	176.99
1/2	1/2	3	6	0.045	TC74642	176.99
1/2	1/2	3	6	0.060	TC74643	176.99
1/2	1/2	3	6	0.090	TC74644	176.99
1/2	1/2	3	6	0.125	TC74645	176.99
5/8	5/8	3	6	0.015	TC74646	249.10
5/8	5/8	3	6	0.020	TC74647	249.10
5/8	5/8	3	6	0.030	TC74648	249.10
5/8	5/8	3	6	0.045	TC74649	249.10
5/8	5/8	3	6	0.060	TC74650	249.10
5/8	5/8	3	6	0.090	TC74651	249.10
3/4	3/4	3	6	0.015	TC74652	341.79
3/4	3/4	3	6	0.020	TC74653	341.79
3/4	3/4	3	6	0.030	TC74654	341.79
3/4	3/4	3	6	0.045	TC74655	341.79
3/4	3/4	3	6	0.060	TC74656	341.79
3/4	3/4	3	6	0.090	TC74657	341.79
3/4	3/4	3	6	0.125	TC74658	341.79
3/4	3/4	4	7	0.015	TC74659	561.35
3/4	3/4	4	7	0.020	TC74660	561.35
3/4	3/4	4	7	0.030	TC74661	561.35
3/4	3/4	4	7	0.045	TC74662	561.35
3/4	3/4	4	7	0.060	TC74663	561.35
3/4	3/4	4	7	0.090	TC74664	561.35
3/4	3/4	4	7	0.125	TC74665	561.35
1	1	3	6	0.015	TC74666	557.02
1	1	3	6	0.020	TC74667	557.02
1	1	3	6	0.030	TC74668	557.02
1	1	3	6	0.045	TC74669	557.02
1	1	3	6	0.060	TC74670	557.02
1	1	3	6	0.090	TC74671	557.02
1	1	3	6	0.125	TC74672	557.02
1	1	4	7	0.015	TC74673	803.01
1	1	4	7	0.020	TC74674	803.01
1	1	4	7	0.030	TC74675	803.01
1	1	4	7	0.045	TC74676	803.01
1	1	4	7	0.060	TC74677	803.01
1	1	4	7	0.090	TC74678	803.01
1	1	4	7	0.125	TC74679	803.01
-	-	-	-	-	-	-

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

TOLERANCES	DIAMETER	SHANK	RADIUS
1/8" - 1/2"	+0.00, -0.02	-0.001, -0.004	+0.02, -0.02
5/8" - 1"	+0.00, -0.03	-0.001, -0.004	+0.02, -0.02

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REGULAR LENGTH - 4 FLUTE - SQUARE END - 30° HELIX



**SERIES 118
UNCOATED
METRIC**



**SERIES 119
ALTiN COATED
METRIC**

SIZE (mm)	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	ITEM#	LIST PRICE
1.0	3	3	38	TC11859	20.13
1.5	3	4.2	38	TC11860	20.13
2.0	3	6	38	TC11861	20.13
2.5	3	8	38	TC11862	20.13
3.0	3	12	38	TC11863	20.13
3.5	4	12	50	TC11864	24.81
4.0	4	14	50	TC11865	24.81
4.5	6	16	50	TC11866	30.33
5.0	6	16	50	TC11867	30.33
6.0	6	19	50	TC11868	31.70
7.0	8	19	63	TC11869	34.48
8.0	8	20	63	TC11870	35.86
9.0	10	22	75	TC11871	52.39
10.0	10	22	75	TC11872	66.19
11.0	12	25	75	TC11873	73.08
12.0	12	25	75	TC11874	75.83
14.0	14	32	89	TC11875	128.26
16.0	16	32	89	TC11876	146.17
18.0	18	38	100	TC11877	199.97
20.0	20	38	100	TC11878	317.18
25.0	25	38	100	TC11879	413.70

NOTE: ALL DIMENSIONS IN TABLE ARE METRIC (mm)

SIZE (mm)	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	ITEM#	LIST PRICE
1.0	3	3	38	TC11959	25.14
1.5	3	4.2	38	TC11960	25.14
2.0	3	6	38	TC11961	25.14
2.5	3	8	38	TC11962	25.14
3.0	3	12	38	TC11963	25.14
3.5	4	12	50	TC11964	31.04
4.0	4	14	50	TC11965	31.04
4.5	6	16	50	TC11966	37.93
5.0	6	16	50	TC11967	37.93
6.0	6	19	50	TC11968	39.64
7.0	8	19	63	TC11969	43.09
8.0	8	20	63	TC11970	44.83
9.0	10	22	75	TC11971	65.48
10.0	10	22	75	TC11972	82.73
11.0	12	25	75	TC11973	91.37
12.0	12	25	75	TC11974	94.81
14.0	14	32	89	TC11975	160.33
16.0	16	32	89	TC11976	182.73
18.0	18	38	100	TC11977	249.96
20.0	20	38	100	TC11978	396.46
25.0	25	38	100	TC11979	517.15

NOTE: ALL DIMENSIONS IN TABLE ARE METRIC (mm)

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

TOLERANCES	DIAMETER	SHANK
ALL SIZES	+0.00mm, -.05mm	-.0025, -.01mm

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STUB LENGTH - 2 FLUTE - 30° HELIX



SERIES 102
SQUARE END - UNCOATED



SERIES 103
BALL NOSE - UNCOATED



SERIES 112
SQUARE END - ALTIN COATED



SERIES 113
BALL NOSE - ALTIN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	SQUARE END UNCOATED	LIST PRICE	SQUARE END ALTIN	LIST PRICE	BALL NOSE UNCOATED	LIST PRICE	BALL NOSE ALTIN	LIST PRICE
1/64	1/8	0.023	1-1/2	TC10201	22.75	TC11201	28.42	TC10301	28.39	TC11301	35.48
1/32	1/8	1/16	1-1/2	TC10202	14.01	TC11202	18.16	TC10302	18.23	TC11302	23.33
3/64	1/8	3/32	1-1/2	TC10203	14.01	TC11203	18.16	TC10303	18.23	TC11303	23.33
1/16	1/8	1/8	1-1/2	TC10204	10.48	TC11204	13.68	TC10304	13.72	TC11304	17.54
5/64	1/8	1/8	1-1/2	TC10205	17.72	TC11205	22.16	TC10305	22.20	TC11305	27.73
3/32	1/8	3/16	1-1/2	TC10206	10.48	TC11206	13.68	TC10306	13.72	TC11306	17.54
1/8	1/8	1/4	1-1/2	TC10208	10.01	TC11208	13.07	TC10308	12.99	TC11308	16.67
5/32	3/16	5/16	2	TC10210	16.67	TC11210	20.60	TC10310	21.65	TC11310	27.73
3/16	3/16	3/8	2	TC10212	15.65	TC11212	19.40	TC10312	20.31	TC11312	25.98
7/32	1/4	7/16	2	TC10214	21.04	TC11214	26.09	TC10314	27.30	TC11314	34.94
1/4	1/4	1/2	2	TC10216	18.45	TC11216	22.93	TC10316	23.91	TC11316	30.61
5/16	5/16	1/2	2	TC10220	24.93	TC11220	32.43	TC10320	32.35	TC11320	41.42
3/8	3/8	5/8	2	TC10224	32.17	TC11224	39.85	TC10324	41.78	TC11324	50.95
7/16	7/16	5/8	2-1/2	TC10228	40.14	TC11228	49.82	TC10328	52.26	TC11328	63.72
1/2	1/2	5/8	2-1/2	TC10232	50.70	TC11232	62.96	TC10332	65.84	TC11332	84.25
5/8	5/8	3/4	3	TC10240	107.32	TC11240	126.79	TC10340	125.74	TC11340	153.94
3/4	3/4	1	3	TC10248	150.23	TC11248	185.90	TC10348	191.17	TC11348	244.71

STUB LENGTH - 4 FLUTE - 30° HELIX



SERIES 106
SQUARE END - UNCOATED



SERIES 107
BALL NOSE - UNCOATED



SERIES 109
SQUARE END - ALTIN COATED



SERIES 117
BALL NOSE - ALTIN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	SQUARE END UNCOATED	LIST PRICE	SQUARE END ALTIN	LIST PRICE	BALL NOSE UNCOATED	LIST PRICE	BALL NOSE ALTIN	LIST PRICE
1/64	1/8	0.023	1-1/2	TC10601	22.75	TC10901	28.42	TC10701	28.39	TC11701	35.48
1/32	1/8	1/16	1-1/2	TC10602	14.01	TC10902	18.16	TC10702	18.23	TC11702	23.33
3/64	1/8	3/32	1-1/2	TC10603	14.01	TC10903	18.16	TC10703	18.23	TC11703	23.33
1/16	1/8	1/8	1-1/2	TC10604	10.48	TC10904	13.68	TC10704	13.72	TC11704	17.54
5/64	1/8	1/8	1-1/2	TC10605	17.72	TC10905	22.16	TC10705	22.20	TC11705	27.73
3/32	1/8	3/16	1-1/2	TC10606	10.48	TC10906	13.68	TC10706	13.72	TC11706	17.54
1/8	1/8	1/4	1-1/2	TC10608	10.01	TC10908	13.07	TC10708	12.99	TC11708	16.67
5/32	3/16	5/16	2	TC10610	16.67	TC10910	20.60	TC10710	21.65	TC11710	27.73
3/16	3/16	3/8	2	TC10612	15.65	TC10912	19.40	TC10712	20.31	TC11712	25.98
7/32	1/4	7/16	2	TC10614	21.04	TC10914	26.09	TC10714	27.30	TC11714	34.94
1/4	1/4	1/2	2	TC10616	18.45	TC10916	22.93	TC10716	23.91	TC11716	30.61
5/16	5/16	1/2	2	TC10620	24.93	TC10920	32.43	TC10720	32.35	TC11720	41.42
3/8	3/8	5/8	2	TC10624	32.17	TC10924	39.85	TC10724	41.78	TC11724	50.95
7/16	7/16	5/8	2-1/2	TC10628	40.14	TC10928	49.82	TC10728	52.26	TC11728	63.72
1/2	1/2	5/8	2-1/2	TC10632	50.70	TC10932	63.14	TC10732	65.84	TC11732	84.25
5/8	5/8	3/4	3	TC10640	107.32	TC10940	126.83	TC10740	125.74	TC11740	153.94
3/4	3/4	1	3	TC10648	150.23	TC10948	185.90	TC10748	191.17	TC11748	244.71

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

TOLERANCES	DIAMETER	SHANK
1/64" - 1/2"	+0.00, -0.002	-0.0001, -0.0004
5/8" - 3/4"	+0.00, -0.003	-0.0001, -0.0004

Solid Carbide Endmills

MADE IN THE
USA

DOUBLE END - STUB LENGTH - 2 FLUTE - 30° HELIX



SERIES 140
SQUARE END - UNCOATED



SERIES 141
BALL NOSE - UNCOATED



SERIES 148
SQUARE END - ALTIN COATED



SERIES 142
BALL NOSE - ALTIN COATED

**TAKE
55% OFF
LIST
PRICES!**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	SQUARE END UNCOATED	LIST PRICE	SQUARE END ALTIN	LIST PRICE	BALL NOSE UNCOATED	LIST PRICE	BALL NOSE ALTIN	LIST PRICE
1/16	1/8	1/8	1-1/2	TC14004	20.38	TC14804	27.51	TC14104	25.49	TC14204	34.42
3/32	1/8	3/16	1-1/2	TC14006	20.99	TC14806	28.35	TC14106	26.22	TC14206	35.41
1/8	1/8	1/4	1-1/2	TC14008	16.94	TC14808	22.86	TC14108	21.18	TC14208	28.58
5/32	3/16	5/16	2	TC14010	23.82	TC14810	30.76	TC14110	29.76	TC14210	38.43
3/16	3/16	3/8	2	TC14012	23.82	TC14812	30.76	TC14112	29.76	TC14212	38.43
7/32	1/4	1/2	2-1/2	TC14014	32.67	TC14814	42.20	TC14114	39.08	TC14214	52.74
1/4	1/4	1/2	2-1/2	TC14016	32.67	TC14816	42.20	TC14116	39.08	TC14216	52.74
5/16	5/16	1/2	2-1/2	TC14020	42.24	TC14820	51.86	TC14120	52.81	TC14220	64.80
3/8	3/8	9/16	2-1/2	TC14024	46.63	TC14824	57.20	TC14124	58.27	TC14224	71.51
7/16	7/16	9/16	2-3/4	TC14028	65.86	TC14828	80.86	TC14128	82.35	TC14228	101.09
1/2	1/2	5/8	3	TC14032	80.63	TC14832	108.83	TC14132	100.78	TC14232	136.08

DOUBLE END - STUB LENGTH - 4 FLUTE - 30° HELIX



SERIES 145
SQUARE END - UNCOATED



SERIES 146
BALL NOSE - UNCOATED



SERIES 149
SQUARE END - ALTIN COATED



SERIES 147
BALL NOSE - ALTIN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	SQUARE END UNCOATED	LIST PRICE	SQUARE END ALTIN	LIST PRICE	BALL NOSE UNCOATED	LIST PRICE	BALL NOSE ALTIN	LIST PRICE
1/16	1/8	1/8	1-1/2	TC14504	20.38	TC14904	27.51	TC14604	25.49	TC14704	34.42
3/32	1/8	3/16	1-1/2	TC14506	20.99	TC14906	28.35	TC14606	26.22	TC14706	35.41
1/8	1/8	1/4	1-1/2	TC14508	16.94	TC14908	22.86	TC14608	21.18	TC14708	28.58
5/32	3/16	5/16	2	TC14510	23.82	TC14910	30.76	TC14610	29.76	TC14710	38.43
3/16	3/16	3/8	2	TC14512	23.82	TC14912	30.76	TC14612	29.76	TC14712	38.43
7/32	1/4	1/2	2-1/2	TC14514	32.67	TC14914	42.20	TC14614	39.08	TC14714	52.74
1/4	1/4	1/2	2-1/2	TC14516	32.67	TC14916	42.20	TC14616	39.08	TC14716	52.74
5/16	5/16	1/2	2-1/2	TC14520	42.24	TC14920	51.86	TC14620	52.81	TC14720	64.80
3/8	3/8	9/16	2-1/2	TC14524	46.63	TC14924	57.20	TC14624	58.27	TC14724	71.51
7/16	7/16	9/16	2-3/4	TC14528	65.86	TC14928	80.86	TC14628	82.35	TC14728	101.09
1/2	1/2	5/8	3	TC14532	80.63	TC14932	108.83	TC14632	100.78	TC14732	136.08

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

TOLERANCES	DIAMETER	SHANK
ALL SIZES	+ .000, -.002	-.0001, -.0004

MADE IN THE
USA

Solid Carbide Endmills



**TAKE
55% OFF
LIST
PRICES!**

DOUBLE END - REGULAR LENGTH - 2 FLUTE - 30° HELIX



SERIES 120
SQUARE END - UNCOATED



SERIES 130
BALL NOSE - UNCOATED



SERIES 121
SQUARE END - ALTIN COATED



SERIES 131
BALL NOSE - ALTIN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	SQUARE END UNCOATED	LIST PRICE	SQUARE END ALTIN	LIST PRICE	BALL NOSE UNCOATED	LIST PRICE	BALL NOSE ALTIN	LIST PRICE
1/8	3/8	3/8	3-1/8	TC12008	75.96	TC12108	100.27	TC13008	86.37	TC13108	112.77
5/32	3/8	7/16	3-1/4	TC12010	81.96	TC12110	97.08	TC13010	86.37	TC13110	112.77
3/16	3/8	1/2	3-1/4	TC12012	75.96	TC12112	97.08	TC13012	86.37	TC13112	112.77
7/32	3/8	9/16	3-1/2	TC12014	77.17	TC12114	102.61	TC13014	87.54	TC13114	112.77
1/4	3/8	5/8	3-1/2	TC12016	77.17	TC12116	99.87	TC13016	87.54	TC13116	112.77
9/32	3/8	11/16	3-1/2	TC12018	81.55	TC12118	110.11	TC13018	95.91	TC13118	129.51
5/16	3/8	3/4	3-1/2	TC12020	81.55	TC12120	110.11	TC13020	95.91	TC13120	129.51
11/32	3/8	3/4	3-1/2	TC12022	81.55	TC12122	110.11	TC13022	95.91	TC13122	129.51
3/8	3/8	3/4	3-1/2	TC12024	81.55	TC12124	110.11	TC13024	95.91	TC13124	129.51
7/16	1/2	7/8	4	TC12028	121.32	TC12128	163.83	TC13028	138.83	TC13128	176.26
1/2	1/2	1	4	TC12032	136.29	TC12132	184.00	TC13032	141.93	TC13132	191.58

NOTE: ALL TOOLS WITH WELDON FLATS

DOUBLE END - REGULAR LENGTH - 4 FLUTE - 30° HELIX



SERIES 125
SQUARE END - UNCOATED



SERIES 135
BALL NOSE - UNCOATED



SERIES 126
SQUARE END - ALTIN COATED



SERIES 136
BALL NOSE - ALTIN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	SQUARE END UNCOATED	LIST PRICE	SQUARE END ALTIN	LIST PRICE	BALL NOSE UNCOATED	LIST PRICE	BALL NOSE ALTIN	LIST PRICE
1/8	3/8	3/8	3-1/8	TC12508	75.96	TC12608	94.82	TC13508	86.37	TC13608	112.77
5/32	3/8	7/16	3-1/4	TC12510	75.96	TC12610	91.80	TC13510	86.37	TC13610	112.77
3/16	3/8	1/2	3-1/4	TC12512	75.96	TC12612	91.80	TC13512	86.37	TC13612	112.77
7/32	3/8	9/16	3-1/2	TC12514	77.17	TC12614	97.00	TC13514	87.54	TC13614	112.77
1/4	3/8	5/8	3-1/2	TC12516	77.17	TC12616	94.42	TC13516	87.54	TC13616	112.77
9/32	3/8	11/16	3-1/2	TC12518	77.12	TC12618	104.10	TC13518	95.91	TC13618	129.51
5/16	3/8	3/4	3-1/2	TC12520	77.12	TC12620	104.10	TC13520	95.91	TC13620	129.51
11/32	3/8	3/4	3-1/2	TC12522	77.12	TC12622	104.10	TC13522	95.91	TC13622	129.51
3/8	3/8	3/4	3-1/2	TC12524	77.12	TC12624	104.10	TC13524	95.91	TC13624	129.51
7/16	1/2	7/8	4	TC12528	114.71	TC12628	154.88	TC13528	138.83	TC13628	176.26
1/2	1/2	1	4	TC12532	128.87	TC12632	174.00	TC13532	141.93	TC13632	191.58

NOTE: ALL TOOLS WITH WELDON FLATS

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

TOLERANCES	DIAMETER	SHANK
ALL SIZES	+0.00, -0.02	-0.001, -0.004



YOUR #1 SOURCE FOR AMERICAN-MADE PREMIUM CUTTING TOOLS

Solid Carbide Endmills

MADE IN THE
USA

2 FLUTE - 30° HELIX



SERIES 560
SQUARE END - UNCOATED



SERIES 570
BALL NOSE - UNCOATED



SERIES 562
SQUARE END - ALTIN COATED



SERIES 572
BALL NOSE - ALTIN COATED

**TAKE
55% OFF
LIST
PRICES!**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	SQUARE END UNCOATED	LIST PRICE	SQUARE END ALTIN	LIST PRICE	BALL NOSE UNCOATED	LIST PRICE	BALL NOSE ALTIN	LIST PRICE
0.005	0.125	0.015	1-1/2	TC56005	48.72	TC56205	58.46	TC57005	60.90	TC57205	73.07
0.006	0.125	0.018	1-1/2	TC56006	48.72	TC56206	58.46	TC57006	60.90	TC57206	73.07
0.007	0.125	0.021	1-1/2	TC56007	48.72	TC56207	58.46	TC57007	60.90	TC57207	73.07
0.008	0.125	0.024	1-1/2	TC56008	48.72	TC56208	58.46	TC57008	60.90	TC57208	73.07
0.009	0.125	0.027	1-1/2	TC56009	43.66	TC56209	52.39	TC57009	54.60	TC57209	65.51
0.010	0.125	0.030	1-1/2	TC56010	43.66	TC56210	52.39	TC57010	54.60	TC57210	65.51
0.011	0.125	0.033	1-1/2	TC56011	39.08	TC56211	46.91	TC57011	48.85	TC57211	58.66
0.012	0.125	0.036	1-1/2	TC56012	39.08	TC56212	46.91	TC57012	48.85	TC57212	58.66
0.013	0.125	0.039	1-1/2	TC56013	32.33	TC56213	38.79	TC57013	40.48	TC57213	48.56
0.014	0.125	0.042	1-1/2	TC56014	32.33	TC56214	38.79	TC57014	40.48	TC57214	48.56
0.015	0.125	0.045	1-1/2	TC56015	27.33	TC56215	32.79	TC57015	34.15	TC57215	40.97
0.016	0.125	0.048	1-1/2	TC56016	27.33	TC56216	32.79	TC57016	34.15	TC57216	40.97
0.017	0.125	0.051	1-1/2	TC56017	27.33	TC56217	32.79	TC57017	34.15	TC57217	40.97
0.018	0.125	0.054	1-1/2	TC56018	27.33	TC56218	32.79	TC57018	34.15	TC57218	40.97
0.019	0.125	0.057	1-1/2	TC56019	27.33	TC56219	32.79	TC57019	34.15	TC57219	40.97
0.020	0.125	0.060	1-1/2	TC56020	24.83	TC56220	29.80	TC57020	31.06	TC57220	37.26
0.021	0.125	0.063	1-1/2	TC56021	24.83	TC56221	29.80	TC57021	31.06	TC57221	37.26
0.022	0.125	0.066	1-1/2	TC56022	24.83	TC56222	29.80	TC57022	31.06	TC57222	37.26
0.023	0.125	0.069	1-1/2	TC56023	24.83	TC56223	29.80	TC57023	31.06	TC57223	37.26
0.024	0.125	0.072	1-1/2	TC56024	24.83	TC56224	29.80	TC57024	31.06	TC57224	37.26
0.025	0.125	0.075	1-1/2	TC56025	24.83	TC56225	29.80	TC57025	31.06	TC57225	37.26
0.026	0.125	0.078	1-1/2	TC56026	23.31	TC56226	27.98	TC57026	29.15	TC57226	34.96
0.027	0.125	0.081	1-1/2	TC56027	23.31	TC56227	27.98	TC57027	29.15	TC57227	34.96
0.028	0.125	0.084	1-1/2	TC56028	23.31	TC56228	27.98	TC57028	29.15	TC57228	34.96
0.029	0.125	0.087	1-1/2	TC56029	23.31	TC56229	27.98	TC57029	29.15	TC57229	34.96
0.030	0.125	0.090	1-1/2	TC56030	23.31	TC56230	27.98	TC57030	29.15	TC57230	34.96
0.031	0.125	0.093	1-1/2	TC56031	21.85	TC56231	26.20	TC57031	27.33	TC57231	32.79
0.032	0.125	0.096	1-1/2	TC56032	21.85	TC56232	26.20	TC57032	27.33	TC57232	32.79
0.033	0.125	0.099	1-1/2	TC56033	21.85	TC56233	26.20	TC57033	27.33	TC57233	32.79
0.034	0.125	0.102	1-1/2	TC56034	21.85	TC56234	26.20	TC57034	27.33	TC57234	32.79
0.035	0.125	0.105	1-1/2	TC56035	21.85	TC56235	26.20	TC57035	27.33	TC57235	32.79
0.036	0.125	0.108	1-1/2	TC56036	21.85	TC56236	26.20	TC57036	27.33	TC57236	32.79
0.037	0.125	0.111	1-1/2	TC56037	21.85	TC56237	26.20	TC57037	27.33	TC57237	32.79
0.038	0.125	0.114	1-1/2	TC56038	21.85	TC56238	26.20	TC57038	27.33	TC57238	32.79
0.039	0.125	0.117	1-1/2	TC56039	21.85	TC56239	26.20	TC57039	27.33	TC57239	32.79
0.040	0.125	0.120	1-1/2	TC56040	21.85	TC56240	26.20	TC57040	27.33	TC57240	32.79
0.041	0.125	0.123	1-1/2	TC56041	21.85	TC56241	26.20	TC57041	27.33	TC57241	32.79
0.042	0.125	0.126	1-1/2	TC56042	21.85	TC56242	26.20	TC57042	27.33	TC57242	32.79
0.043	0.125	0.129	1-1/2	TC56043	21.85	TC56243	26.20	TC57043	27.33	TC57243	32.79
0.044	0.125	0.132	1-1/2	TC56044	21.29	TC56244	25.58	TC57044	26.65	TC57244	32.01
0.045	0.125	0.135	1-1/2	TC56045	21.29	TC56245	25.58	TC57045	26.65	TC57245	32.01
0.046	0.125	0.138	1-1/2	TC56046	21.29	TC56246	25.58	TC57046	26.65	TC57246	32.01
0.047	0.125	0.141	1-1/2	TC56047	21.29	TC56247	25.58	TC57047	26.65	TC57247	32.01
0.048	0.125	0.144	1-1/2	TC56048	21.29	TC56248	25.58	TC57048	26.65	TC57248	32.01
0.049	0.125	0.147	1-1/2	TC56049	21.29	TC56249	25.58	TC57049	26.65	TC57249	32.01
0.050	0.125	0.150	1-1/2	TC56050	21.29	TC56250	25.58	TC57050	26.65	TC57250	32.01
0.051	0.125	0.153	1-1/2	TC56051	21.29	TC56251	25.58	TC57051	26.65	TC57251	32.01
0.052	0.125	0.156	1-1/2	TC56052	21.29	TC56252	25.58	TC57052	26.65	TC57252	32.01
0.053	0.125	0.159	1-1/2	TC56053	21.29	TC56253	25.58	TC57053	26.65	TC57253	32.01
0.054	0.125	0.162	1-1/2	TC56054	21.29	TC56254	25.58	TC57054	26.65	TC57254	32.01
0.055	0.125	0.165	1-1/2	TC56055	21.29	TC56255	25.58	TC57055	26.65	TC57255	32.01
0.056	0.125	0.168	1-1/2	TC56056	21.29	TC56256	25.58	TC57056	26.65	TC57256	32.01
0.057	0.125	0.171	1-1/2	TC56057	21.29	TC56257	25.58	TC57057	26.65	TC57257	32.01
0.058	0.125	0.174	1-1/2	TC56058	21.29	TC56258	25.58	TC57058	26.65	TC57258	32.01

LENGTH OF CUT = 3 X DIAMETER. FOR COATING INFORMATION SEE PAGE 2. CONT'N ON NEXT PAGE

TOLERANCES	DIAMETER	SHANK
ALL SIZES	+.0005, -.0005	-.0001, -.0003

MADE IN THE
USA

Solid Carbide Endmills



**TAKE
55% OFF
LIST
PRICES!**

2 FLUTE - 30° HELIX



SERIES 560
SQUARE END - UNCOATED



SERIES 570
BALL NOSE - UNCOATED



SERIES 562
SQUARE END - ALTIN COATED



SERIES 572
BALL NOSE - ALTIN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	SQUARE END UNCOATED	LIST PRICE	SQUARE END ALTIN	LIST PRICE	BALL NOSE UNCOATED	LIST PRICE	BALL NOSE ALTIN	LIST PRICE
0.059	0.125	0.177	1-1/2	TC56059	21.29	TC56259	25.58	TC57059	26.65	TC57259	32.01
0.060	0.125	0.180	1-1/2	TC56060	21.29	TC56260	25.58	TC57060	26.65	TC57260	32.01
0.061	0.125	0.183	1-1/2	TC56061	21.29	TC56261	25.58	TC57061	26.65	TC57261	32.01
0.062	0.125	0.186	1-1/2	TC56062	21.29	TC56262	25.58	TC57062	26.65	TC57262	32.01
0.063	0.125	0.189	1-1/2	TC56063	21.29	TC56263	25.58	TC57063	26.65	TC57263	32.01
0.064	0.125	0.192	1-1/2	TC56064	21.29	TC56264	25.58	TC57064	26.65	TC57264	32.01
0.065	0.125	0.195	1-1/2	TC56065	21.29	TC56265	25.58	TC57065	26.65	TC57265	32.01
0.066	0.125	0.198	1-1/2	TC56066	21.29	TC56266	25.58	TC57066	26.65	TC57266	32.01
0.067	0.125	0.201	1-1/2	TC56067	21.29	TC56267	25.58	TC57067	26.65	TC57267	32.01
0.068	0.125	0.204	1-1/2	TC56068	21.29	TC56268	25.58	TC57068	26.65	TC57268	32.01
0.069	0.125	0.207	1-1/2	TC56069	21.29	TC56269	25.58	TC57069	26.65	TC57269	32.01
0.070	0.125	0.210	1-1/2	TC56070	21.29	TC56270	25.58	TC57070	26.65	TC57270	32.01
0.071	0.125	0.213	1-1/2	TC56071	21.29	TC56271	25.58	TC57071	26.65	TC57271	32.01
0.072	0.125	0.216	1-1/2	TC56072	21.29	TC56272	25.58	TC57072	26.65	TC57272	32.01
0.073	0.125	0.219	1-1/2	TC56073	21.29	TC56273	25.58	TC57073	26.65	TC57273	32.01
0.074	0.125	0.222	1-1/2	TC56074	21.29	TC56274	25.58	TC57074	26.65	TC57274	32.01
0.075	0.125	0.225	1-1/2	TC56075	21.29	TC56275	25.58	TC57075	26.65	TC57275	32.01
0.076	0.125	0.228	1-1/2	TC56076	21.29	TC56276	25.58	TC57076	26.65	TC57276	32.01
0.077	0.125	0.231	1-1/2	TC56077	21.29	TC56277	25.58	TC57077	26.65	TC57277	32.01
0.078	0.125	0.234	1-1/2	TC56078	21.29	TC56278	25.58	TC57078	26.65	TC57278	32.01
0.079	0.125	0.237	1-1/2	TC56079	21.29	TC56279	25.58	TC57079	26.65	TC57279	32.01
0.080	0.125	0.240	1-1/2	TC56080	21.29	TC56280	25.58	TC57080	26.65	TC57280	32.01
0.081	0.125	0.243	1-1/2	TC56081	21.29	TC56281	25.58	TC57081	26.65	TC57281	32.01
0.082	0.125	0.246	1-1/2	TC56082	21.29	TC56282	25.58	TC57082	26.65	TC57282	32.01
0.083	0.125	0.249	1-1/2	TC56083	21.29	TC56283	25.58	TC57083	26.65	TC57283	32.01
0.084	0.125	0.252	1-1/2	TC56084	21.29	TC56284	25.58	TC57084	26.65	TC57284	32.01
0.085	0.125	0.255	1-1/2	TC56085	21.29	TC56285	25.58	TC57085	26.65	TC57285	32.01
0.086	0.125	0.258	1-1/2	TC56086	21.29	TC56286	25.58	TC57086	26.65	TC57286	32.01
0.087	0.125	0.261	1-1/2	TC56087	21.29	TC56287	25.58	TC57087	26.65	TC57287	32.01
0.088	0.125	0.264	1-1/2	TC56088	21.29	TC56288	25.58	TC57088	26.65	TC57288	32.01
0.089	0.125	0.267	1-1/2	TC56089	21.29	TC56289	25.58	TC57089	26.65	TC57289	32.01
0.090	0.125	0.270	1-1/2	TC56090	21.29	TC56290	25.58	TC57090	26.65	TC57290	32.01
0.091	0.125	0.273	1-1/2	TC56091	21.29	TC56291	25.58	TC57091	26.65	TC57291	32.01
0.092	0.125	0.276	1-1/2	TC56092	21.29	TC56292	25.58	TC57092	26.65	TC57292	32.01
0.093	0.125	0.279	1-1/2	TC56093	21.29	TC56293	25.58	TC57093	26.65	TC57293	32.01
0.094	0.125	0.282	1-1/2	TC56094	21.29	TC56294	25.58	TC57094	26.65	TC57294	32.01
0.095	0.125	0.285	1-1/2	TC56095	21.29	TC56295	25.58	TC57095	26.65	TC57295	32.01
0.096	0.125	0.288	1-1/2	TC56096	21.29	TC56296	25.58	TC57096	26.65	TC57296	32.01
0.097	0.125	0.291	1-1/2	TC56097	21.29	TC56297	25.58	TC57097	26.65	TC57297	32.01
0.098	0.125	0.294	1-1/2	TC56098	21.29	TC56298	25.58	TC57098	26.65	TC57298	32.01
0.099	0.125	0.297	1-1/2	TC56099	21.29	TC56299	25.58	TC57099	26.65	TC57299	32.01
0.100	0.125	0.300	1-1/2	TC56100	21.29	TC56300	25.58	TC57100	26.65	TC57300	32.01
0.101	0.125	0.303	1-1/2	TC56101	21.29	TC56301	25.58	TC57101	26.65	TC57301	32.01
0.102	0.125	0.306	1-1/2	TC56102	21.29	TC56302	25.58	TC57102	26.65	TC57302	32.01
0.103	0.125	0.309	1-1/2	TC56103	21.29	TC56303	25.58	TC57103	26.65	TC57303	32.01
0.104	0.125	0.312	1-1/2	TC56104	21.29	TC56304	25.58	TC57104	26.65	TC57304	32.01
0.105	0.125	0.315	1-1/2	TC56105	21.29	TC56305	25.58	TC57105	26.65	TC57305	32.01
0.106	0.125	0.318	1-1/2	TC56106	21.29	TC56306	25.58	TC57106	26.65	TC57306	32.01
0.107	0.125	0.321	1-1/2	TC56107	21.29	TC56307	25.58	TC57107	26.65	TC57307	32.01
0.108	0.125	0.324	1-1/2	TC56108	21.29	TC56308	25.58	TC57108	26.65	TC57308	32.01
0.109	0.125	0.327	1-1/2	TC56109	21.29	TC56309	25.58	TC57109	26.65	TC57309	32.01
0.110	0.125	0.330	1-1/2	TC56110	21.29	TC56310	25.58	TC57110	26.65	TC57310	32.01
0.115	0.125	0.345	1-1/2	TC56115	21.29	TC56315	25.58	TC57115	26.65	TC57315	32.01
0.120	0.125	0.360	1-1/2	TC56120	21.29	TC56320	25.58	TC57120	26.65	TC57320	32.01

LENGTH OF CUT = 3 X DIAMETER. FOR COATING INFORMATION SEE PAGE 2.

TOLERANCES	DIAMETER	SHANK
ALL SIZES	+.0005, -.0005	-.0001, -.0003

Solid Carbide Endmills

MADE IN THE
USA

4 FLUTE - 30° HELIX



SERIES 580
SQUARE END - UNCOATED



SERIES 590
BALL NOSE - UNCOATED



SERIES 582
SQUARE END - ALTIN COATED



SERIES 592
BALL NOSE - ALTIN COATED

**TAKE
55% OFF
LIST
PRICES!**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	SQUARE END UNCOATED	LIST PRICE	SQUARE END ALTIN	LIST PRICE	BALL NOSE UNCOATED	LIST PRICE	BALL NOSE ALTIN	LIST PRICE
0.010	0.125	0.030	1-1/2	TC58010	43.66	TC58210	52.39	TC59010	54.60	TC59210	65.51
0.011	0.125	0.033	1-1/2	TC58011	39.08	TC58211	46.91	TC59011	48.85	TC59211	58.66
0.012	0.125	0.036	1-1/2	TC58012	39.08	TC58212	46.91	TC59012	48.85	TC59212	58.66
0.013	0.125	0.039	1-1/2	TC58013	32.33	TC58213	38.79	TC59013	40.48	TC59213	48.56
0.014	0.125	0.042	1-1/2	TC58014	32.33	TC58214	38.79	TC59014	40.48	TC59214	48.56
0.015	0.125	0.045	1-1/2	TC58015	27.33	TC58215	32.79	TC59015	34.15	TC59215	40.97
0.016	0.125	0.048	1-1/2	TC58016	27.33	TC58216	32.79	TC59016	34.15	TC59216	40.97
0.017	0.125	0.051	1-1/2	TC58017	27.33	TC58217	32.79	TC59017	34.15	TC59217	40.97
0.018	0.125	0.054	1-1/2	TC58018	27.33	TC58218	32.79	TC59018	34.15	TC59218	40.97
0.019	0.125	0.057	1-1/2	TC58019	27.33	TC58219	32.79	TC59019	34.15	TC59219	40.97
0.020	0.125	0.060	1-1/2	TC58020	24.83	TC58220	29.80	TC59020	31.06	TC59220	37.26
0.021	0.125	0.063	1-1/2	TC58021	24.83	TC58221	29.80	TC59021	31.06	TC59221	37.26
0.022	0.125	0.066	1-1/2	TC58022	24.83	TC58222	29.80	TC59022	31.06	TC59222	37.26
0.023	0.125	0.069	1-1/2	TC58023	24.83	TC58223	29.80	TC59023	31.06	TC59223	37.26
0.024	0.125	0.072	1-1/2	TC58024	24.83	TC58224	29.80	TC59024	31.06	TC59224	37.26
0.025	0.125	0.075	1-1/2	TC58025	24.83	TC58225	29.80	TC59025	31.06	TC59225	37.26
0.026	0.125	0.078	1-1/2	TC58026	23.31	TC58226	27.98	TC59026	29.15	TC59226	34.96
0.027	0.125	0.081	1-1/2	TC58027	23.31	TC58227	27.98	TC59027	29.15	TC59227	34.96
0.028	0.125	0.084	1-1/2	TC58028	23.31	TC58228	27.98	TC59028	29.15	TC59228	34.96
0.029	0.125	0.087	1-1/2	TC58029	23.31	TC58229	27.98	TC59029	29.15	TC59229	34.96
0.030	0.125	0.090	1-1/2	TC58030	23.31	TC58230	27.98	TC59030	29.15	TC59230	34.96
0.031	0.125	0.093	1-1/2	TC58031	21.85	TC58231	26.20	TC59031	27.33	TC59231	32.79
0.032	0.125	0.096	1-1/2	TC58032	21.85	TC58232	26.20	TC59032	27.33	TC59232	32.79
0.033	0.125	0.099	1-1/2	TC58033	21.85	TC58233	26.20	TC59033	27.33	TC59233	32.79
0.034	0.125	0.102	1-1/2	TC58034	21.85	TC58234	26.20	TC59034	27.33	TC59234	32.79
0.035	0.125	0.105	1-1/2	TC58035	21.85	TC58235	26.20	TC59035	27.33	TC59235	32.79
0.036	0.125	0.108	1-1/2	TC58036	21.85	TC58236	26.20	TC59036	27.33	TC59236	32.79
0.037	0.125	0.111	1-1/2	TC58037	21.85	TC58237	26.20	TC59037	27.33	TC59237	32.79
0.038	0.125	0.114	1-1/2	TC58038	21.85	TC58238	26.20	TC59038	27.33	TC59238	32.79
0.039	0.125	0.117	1-1/2	TC58039	21.85	TC58239	26.20	TC59039	27.33	TC59239	32.79
0.040	0.125	0.120	1-1/2	TC58040	21.85	TC58240	26.20	TC59040	27.33	TC59240	32.79
0.041	0.125	0.123	1-1/2	TC58041	21.85	TC58241	26.20	TC59041	27.33	TC59241	32.79
0.042	0.125	0.126	1-1/2	TC58042	21.85	TC58242	26.20	TC59042	27.33	TC59242	32.79
0.043	0.125	0.129	1-1/2	TC58043	21.85	TC58243	26.20	TC59043	27.33	TC59243	32.79
0.044	0.125	0.132	1-1/2	TC58044	21.29	TC58244	25.58	TC59044	26.65	TC59244	32.01
0.045	0.125	0.135	1-1/2	TC58045	21.29	TC58245	25.58	TC59045	26.65	TC59245	32.01
0.046	0.125	0.138	1-1/2	TC58046	21.29	TC58246	25.58	TC59046	26.65	TC59246	32.01
0.047	0.125	0.141	1-1/2	TC58047	21.29	TC58247	25.58	TC59047	26.65	TC59247	32.01
0.048	0.125	0.144	1-1/2	TC58048	21.29	TC58248	25.58	TC59048	26.65	TC59248	32.01
0.049	0.125	0.147	1-1/2	TC58049	21.29	TC58249	25.58	TC59049	26.65	TC59249	32.01
0.050	0.125	0.150	1-1/2	TC58050	21.29	TC58250	25.58	TC59050	26.65	TC59250	32.01
0.051	0.125	0.153	1-1/2	TC58051	21.29	TC58251	25.58	TC59051	26.65	TC59251	32.01
0.052	0.125	0.156	1-1/2	TC58052	21.29	TC58252	25.58	TC59052	26.65	TC59252	32.01
0.053	0.125	0.159	1-1/2	TC58053	21.29	TC58253	25.58	TC59053	26.65	TC59253	32.01
0.054	0.125	0.162	1-1/2	TC58054	21.29	TC58254	25.58	TC59054	26.65	TC59254	32.01
0.055	0.125	0.165	1-1/2	TC58055	21.29	TC58255	25.58	TC59055	26.65	TC59255	32.01
0.056	0.125	0.168	1-1/2	TC58056	21.29	TC58256	25.58	TC59056	26.65	TC59256	32.01
0.057	0.125	0.171	1-1/2	TC58057	21.29	TC58257	25.58	TC59057	26.65	TC59257	32.01
0.058	0.125	0.174	1-1/2	TC58058	21.29	TC58258	25.58	TC59058	26.65	TC59258	32.01

CONTINUED ON NEXT PAGE

LENGTH OF CUT = 3 X DIAMETER
FOR COATING INFORMATION SEE PAGE 2.

TOLERANCES	DIAMETER	SHANK
ALL SIZES	+0.0005, -0.0005	-0.0001, -0.0003

MADE IN THE
USA

Solid Carbide Endmills



4 FLUTE - 30° HELIX

SERIES 580

SQUARE END - UNCOATED

SERIES 590

BALL NOSE - UNCOATED

SERIES 582

SQUARE END - ALTiN COATED

SERIES 592

BALL NOSE - ALTiN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	SQUARE END UNCOATED	LIST PRICE	SQUARE END ALTiN	LIST PRICE	BALL NOSE UNCOATED	LIST PRICE	BALL NOSE ALTiN	LIST PRICE
0.059	0.125	0.177	1-1/2	TC58059	21.29	TC58259	25.58	TC59059	26.65	TC59259	32.01
0.060	0.125	0.180	1-1/2	TC58060	21.29	TC58260	25.58	TC59060	26.65	TC59260	32.01
0.061	0.125	0.183	1-1/2	TC58061	21.29	TC58261	25.58	TC59061	26.65	TC59261	32.01
0.062	0.125	0.186	1-1/2	TC58062	21.29	TC58262	25.58	TC59062	26.65	TC59262	32.01
0.063	0.125	0.189	1-1/2	TC58063	21.29	TC58263	25.58	TC59063	26.65	TC59263	32.01
0.064	0.125	0.192	1-1/2	TC58064	21.29	TC58264	25.58	TC59064	26.65	TC59264	32.01
0.065	0.125	0.195	1-1/2	TC58065	21.29	TC58265	25.58	TC59065	26.65	TC59265	32.01
0.066	0.125	0.198	1-1/2	TC58066	21.29	TC58266	25.58	TC59066	26.65	TC59266	32.01
0.067	0.125	0.201	1-1/2	TC58067	21.29	TC58267	25.58	TC59067	26.65	TC59267	32.01
0.068	0.125	0.204	1-1/2	TC58068	21.29	TC58268	25.58	TC59068	26.65	TC59268	32.01
0.069	0.125	0.207	1-1/2	TC58069	21.29	TC58269	25.58	TC59069	26.65	TC59269	32.01
0.070	0.125	0.210	1-1/2	TC58070	21.29	TC58270	25.58	TC59070	26.65	TC59270	32.01
0.071	0.125	0.213	1-1/2	TC58071	21.29	TC58271	25.58	TC59071	26.65	TC59271	32.01
0.072	0.125	0.216	1-1/2	TC58072	21.29	TC58272	25.58	TC59072	26.65	TC59272	32.01
0.073	0.125	0.219	1-1/2	TC58073	21.29	TC58273	25.58	TC59073	26.65	TC59273	32.01
0.074	0.125	0.222	1-1/2	TC58074	21.29	TC58274	25.58	TC59074	26.65	TC59274	32.01
0.075	0.125	0.225	1-1/2	TC58075	21.29	TC58275	25.58	TC59075	26.65	TC59275	32.01
0.076	0.125	0.228	1-1/2	TC58076	21.29	TC58276	25.58	TC59076	26.65	TC59276	32.01
0.077	0.125	0.231	1-1/2	TC58077	21.29	TC58277	25.58	TC59077	26.65	TC59277	32.01
0.078	0.125	0.234	1-1/2	TC58078	21.29	TC58278	25.58	TC59078	26.65	TC59278	32.01
0.079	0.125	0.237	1-1/2	TC58079	21.29	TC58279	25.58	TC59079	26.65	TC59279	32.01
0.080	0.125	0.240	1-1/2	TC58080	21.29	TC58280	25.58	TC59080	26.65	TC59280	32.01
0.081	0.125	0.243	1-1/2	TC58081	21.29	TC58281	25.58	TC59081	26.65	TC59281	32.01
0.082	0.125	0.246	1-1/2	TC58082	21.29	TC58282	25.58	TC59082	26.65	TC59282	32.01
0.083	0.125	0.249	1-1/2	TC58083	21.29	TC58283	25.58	TC59083	26.65	TC59283	32.01
0.084	0.125	0.252	1-1/2	TC58084	21.29	TC58284	25.58	TC59084	26.65	TC59284	32.01
0.085	0.125	0.255	1-1/2	TC58085	21.29	TC58285	25.58	TC59085	26.65	TC59285	32.01
0.086	0.125	0.258	1-1/2	TC58086	21.29	TC58286	25.58	TC59086	26.65	TC59286	32.01
0.087	0.125	0.261	1-1/2	TC58087	21.29	TC58287	25.58	TC59087	26.65	TC59287	32.01
0.088	0.125	0.264	1-1/2	TC58088	21.29	TC58288	25.58	TC59088	26.65	TC59288	32.01
0.089	0.125	0.267	1-1/2	TC58089	21.29	TC58289	25.58	TC59089	26.65	TC59289	32.01
0.090	0.125	0.270	1-1/2	TC58090	21.29	TC58290	25.58	TC59090	26.65	TC59290	32.01
0.091	0.125	0.273	1-1/2	TC58091	21.29	TC58291	25.58	TC59091	26.65	TC59291	32.01
0.092	0.125	0.276	1-1/2	TC58092	21.29	TC58292	25.58	TC59092	26.65	TC59292	32.01
0.093	0.125	0.279	1-1/2	TC58093	21.29	TC58293	25.58	TC59093	26.65	TC59293	32.01
0.094	0.125	0.282	1-1/2	TC58094	21.29	TC58294	25.58	TC59094	26.65	TC59294	32.01
0.095	0.125	0.285	1-1/2	TC58095	21.29	TC58295	25.58	TC59095	26.65	TC59295	32.01
0.096	0.125	0.288	1-1/2	TC58096	21.29	TC58296	25.58	TC59096	26.65	TC59296	32.01
0.097	0.125	0.291	1-1/2	TC58097	21.29	TC58297	25.58	TC59097	26.65	TC59297	32.01
0.098	0.125	0.294	1-1/2	TC58098	21.29	TC58298	25.58	TC59098	26.65	TC59298	32.01
0.099	0.125	0.297	1-1/2	TC58099	21.29	TC58299	25.58	TC59099	26.65	TC59299	32.01
0.100	0.125	0.300	1-1/2	TC58100	21.29	TC58300	25.58	TC59100	26.65	TC59300	32.01
0.101	0.125	0.303	1-1/2	TC58101	21.29	TC58301	25.58	TC59101	26.65	TC59301	32.01
0.102	0.125	0.306	1-1/2	TC58102	21.29	TC58302	25.58	TC59102	26.65	TC59302	32.01
0.103	0.125	0.309	1-1/2	TC58103	21.29	TC58303	25.58	TC59103	26.65	TC59303	32.01
0.104	0.125	0.312	1-1/2	TC58104	21.29	TC58304	25.58	TC59104	26.65	TC59304	32.01
0.105	0.125	0.315	1-1/2	TC58105	21.29	TC58305	25.58	TC59105	26.65	TC59305	32.01
0.106	0.125	0.318	1-1/2	TC58106	21.29	TC58306	25.58	TC59106	26.65	TC59306	32.01
0.107	0.125	0.321	1-1/2	TC58107	21.29	TC58307	25.58	TC59107	26.65	TC59307	32.01
0.108	0.125	0.324	1-1/2	TC58108	21.29	TC58308	25.58	TC59108	26.65	TC59308	32.01
0.109	0.125	0.327	1-1/2	TC58109	21.29	TC58309	25.58	TC59109	26.65	TC59309	32.01
0.110	0.125	0.330	1-1/2	TC58110	21.29	TC58310	25.58	TC59110	26.65	TC59310	32.01
0.115	0.125	0.345	1-1/2	TC58115	21.29	TC58315	25.58	TC59115	26.65	TC59315	32.01
0.120	0.125	0.360	1-1/2	TC58120	21.29	TC58320	25.58	TC59120	26.65	TC59320	32.01

LENGTH OF CUT = 3 X DIAMETER. FOR COATING INFORMATION SEE PAGE 2.

TOLERANCES	DIAMETER	SHANK
ALL SIZES	+.0005, -.0005	-.0001, -.0003

Solid Carbide Endmills

MADE IN THE
USA

2 FLUTE - STUB FLUTE - 30° HELIX



SERIES 520
SQUARE END - UNCOATED



SERIES 530
BALL NOSE - UNCOATED



SERIES 522
SQUARE END - ALTIN COATED



SERIES 532
BALL NOSE - ALTIN COATED

**TAKE
55% OFF
LIST
PRICES!**

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	SQUARE END UNCOATED	LIST PRICE	SQUARE END ALTIN	LIST PRICE	BALL NOSE UNCOATED	LIST PRICE	BALL NOSE ALTIN	LIST PRICE
0.005	0.125	0.008	1-1/2	TC52005	56.03	TC52205	67.23	TC53005	70.02	TC53205	84.04
0.010	0.125	0.015	1-1/2	TC52010	50.22	TC52210	60.25	TC53010	62.78	TC53210	75.31
0.015	0.125	0.023	1-1/2	TC52015	31.42	TC52215	37.72	TC53015	39.28	TC53215	47.13
0.020	0.125	0.030	1-1/2	TC52020	28.57	TC52220	34.28	TC53020	35.71	TC53220	42.85
0.025	0.125	0.038	1-1/2	TC52025	28.57	TC52225	34.28	TC53025	35.71	TC53225	42.85
0.030	0.125	0.045	1-1/2	TC52030	26.81	TC52230	32.17	TC53030	33.50	TC53230	40.19
0.031	0.125	0.047	1-1/2	TC52031	25.12	TC52231	30.12	TC53031	31.42	TC53231	37.72
0.035	0.125	0.053	1-1/2	TC52035	25.12	TC52235	30.12	TC53035	31.42	TC53235	37.72
0.040	0.125	0.060	1-1/2	TC52040	25.12	TC52240	30.12	TC53040	31.42	TC53240	37.72
0.045	0.125	0.068	1-1/2	TC52045	24.51	TC52245	29.41	TC53045	30.64	TC53245	36.81
0.047	0.125	0.071	1-1/2	TC52047	24.51	TC52247	29.41	TC53047	30.64	TC53247	36.81
0.050	0.125	0.075	1-1/2	TC52050	24.51	TC52250	29.41	TC53050	30.64	TC53250	36.81
0.055	0.125	0.083	1-1/2	TC52055	24.51	TC52255	29.41	TC53055	30.64	TC53255	36.81
0.060	0.125	0.090	1-1/2	TC52060	24.51	TC52260	29.41	TC53060	30.64	TC53260	36.81
0.062	0.125	0.093	1-1/2	TC52062	24.51	TC52262	29.41	TC53062	30.64	TC53262	36.81
0.065	0.125	0.098	1-1/2	TC52065	24.51	TC52265	29.41	TC53065	30.64	TC53265	36.81
0.070	0.125	0.105	1-1/2	TC52070	24.51	TC52270	29.41	TC53070	30.64	TC53270	36.81
0.075	0.125	0.113	1-1/2	TC52075	24.51	TC52275	29.41	TC53075	30.64	TC53275	36.81
0.078	0.125	0.117	1-1/2	TC52078	24.51	TC52278	29.41	TC53078	30.64	TC53278	36.81
0.080	0.125	0.120	1-1/2	TC52080	24.51	TC52280	29.41	TC53080	30.64	TC53280	36.81
0.085	0.125	0.128	1-1/2	TC52085	24.51	TC52285	29.41	TC53085	30.64	TC53285	36.81
0.090	0.125	0.135	1-1/2	TC52090	24.51	TC52290	29.41	TC53090	30.64	TC53290	36.81
0.093	0.125	0.140	1-1/2	TC52093	24.51	TC52293	29.41	TC53093	30.64	TC53293	36.81
0.095	0.125	0.143	1-1/2	TC52095	24.51	TC52295	29.41	TC53095	30.64	TC53295	36.81
0.100	0.125	0.150	1-1/2	TC52100	24.51	TC52300	29.41	TC53100	30.64	TC53300	36.81

LENGTH OF CUT = 1.5 X DIAMETER
FOR COATING INFORMATION SEE PAGE 2.

TOLERANCES	DIAMETER	SHANK
ALL SIZES	+0.005, -0.005	-0.001, -0.003

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4 FLUTE - STUB FLUTE - 30° HELIX



SERIES 540
SQUARE END - UNCOATED



SERIES 551
BALL NOSE - UNCOATED



SERIES 542
SQUARE END - ALTIN COATED



SERIES 552
BALL NOSE - ALTIN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	SQUARE END UNCOATED	LIST PRICE	SQUARE END ALTIN	LIST PRICE	BALL NOSE UNCOATED	LIST PRICE	BALL NOSE ALTIN	LIST PRICE
0.010	0.125	0.015	1-1/2	TC54010	50.22	TC54210	60.25	TC55010	54.60	TC55210	75.31
0.015	0.125	0.023	1-1/2	TC54015	31.42	TC54215	37.72	TC55015	34.15	TC55215	47.13
0.020	0.125	0.030	1-1/2	TC54020	28.57	TC54220	34.28	TC55020	31.06	TC55220	42.85
0.025	0.125	0.038	1-1/2	TC54025	28.57	TC54225	34.28	TC55025	31.06	TC55225	42.85
0.030	0.125	0.045	1-1/2	TC54030	26.81	TC54230	32.17	TC55030	29.15	TC55230	40.19
0.031	0.125	0.047	1-1/2	TC54031	25.12	TC54231	30.12	TC55031	27.33	TC55231	37.72
0.035	0.125	0.053	1-1/2	TC54035	25.12	TC54235	30.12	TC55035	27.33	TC55235	37.72
0.040	0.125	0.060	1-1/2	TC54040	25.12	TC54240	30.12	TC55040	27.33	TC55240	37.72
0.045	0.125	0.068	1-1/2	TC54045	24.51	TC54245	29.41	TC55045	26.65	TC55245	36.81
0.047	0.125	0.071	1-1/2	TC54047	24.51	TC54247	29.41	TC55047	26.65	TC55247	36.81
0.050	0.125	0.075	1-1/2	TC54050	24.51	TC54250	29.41	TC55050	26.65	TC55250	36.81
0.055	0.125	0.083	1-1/2	TC54055	24.51	TC54255	29.41	TC55055	26.65	TC55255	36.81
0.060	0.125	0.090	1-1/2	TC54060	24.51	TC54260	29.41	TC55060	26.65	TC55260	36.81
0.062	0.125	0.093	1-1/2	TC54062	24.51	TC54262	29.41	TC55062	26.65	TC55262	36.81
0.065	0.125	0.098	1-1/2	TC54065	24.51	TC54265	29.41	TC55065	26.65	TC55265	36.81
0.070	0.125	0.105	1-1/2	TC54070	24.51	TC54270	29.41	TC55070	26.65	TC55270	36.81
0.075	0.125	0.113	1-1/2	TC54075	24.51	TC54275	29.41	TC55075	26.65	TC55275	36.81
0.078	0.125	0.117	1-1/2	TC54078	24.51	TC54278	29.41	TC55078	26.65	TC55278	36.81
0.080	0.125	0.120	1-1/2	TC54080	24.51	TC54280	29.41	TC55080	26.65	TC55280	36.81
0.085	0.125	0.128	1-1/2	TC54085	24.51	TC54285	29.41	TC55085	26.65	TC55285	36.81
0.090	0.125	0.135	1-1/2	TC54090	24.51	TC54290	29.41	TC55090	26.65	TC55290	36.81
0.093	0.125	0.140	1-1/2	TC54093	24.51	TC54293	29.41	TC55093	26.65	TC55293	36.81
0.095	0.125	0.143	1-1/2	TC54095	24.51	TC54295	29.41	TC55095	26.65	TC55295	36.81
0.100	0.125	0.150	1-1/2	TC54100	24.51	TC54300	29.41	TC55100	26.65	TC55300	36.81

LENGTH OF CUT = 1.5 X DIAMETER
FOR COATING INFORMATION SEE PAGE 2.

TOLERANCES	DIAMETER	SHANK
ALL SIZES	+0.0005, -0.0005	-0.0001, -0.0003

Solid Carbide Endmills

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4 FLUTE - STUB FLUTE -  CORNER RADIUS - 30° HELIX



SERIES 502
UNCOATED



SERIES 504
ALTIN COATED

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SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	CORNER RADIUS	UNCOATED	LIST PRICE	ALTIN	LIST PRICE
0.015	0.125	0.023	1-1/2	0.003	TC50203	66.45	TC50404	82.39
0.020	0.125	0.030	1-1/2	0.005	TC50205	62.03	TC50406	76.90
0.025	0.125	0.038	1-1/2	0.005	TC50207	62.03	TC50408	76.90
0.030	0.125	0.045	1-1/2	0.005	TC50209	44.31	TC50410	54.92
0.030	0.125	0.045	1-1/2	0.010	TC50211	44.31	TC50412	54.92
0.031	0.125	0.047	1-1/2	0.005	TC50213	44.31	TC50414	54.92
0.031	0.125	0.047	1-1/2	0.010	TC50215	44.31	TC50416	54.92
0.035	0.125	0.053	1-1/2	0.005	TC50217	44.31	TC50418	54.92
0.035	0.125	0.053	1-1/2	0.010	TC50219	44.31	TC50420	54.92
0.040	0.125	0.060	1-1/2	0.005	TC50221	44.31	TC50422	54.92
0.040	0.125	0.060	1-1/2	0.010	TC50223	44.31	TC50424	54.92
0.045	0.125	0.068	1-1/2	0.005	TC50225	44.31	TC50426	54.92
0.045	0.125	0.068	1-1/2	0.010	TC50227	44.31	TC50428	54.92
0.045	0.125	0.068	1-1/2	0.015	TC50229	44.31	TC50430	54.92
0.047	0.125	0.071	1-1/2	0.005	TC50231	44.31	TC50432	54.92
0.047	0.125	0.071	1-1/2	0.010	TC50233	44.31	TC50434	54.92
0.047	0.125	0.071	1-1/2	0.015	TC50235	44.31	TC50436	54.92
0.050	0.125	0.075	1-1/2	0.005	TC50237	44.31	TC50438	54.92
0.050	0.125	0.075	1-1/2	0.010	TC50239	44.31	TC50440	54.92
0.050	0.125	0.075	1-1/2	0.015	TC50241	44.31	TC50442	54.92
0.060	0.125	0.090	1-1/2	0.005	TC50249	44.31	TC50450	54.92
0.060	0.125	0.090	1-1/2	0.010	TC50251	44.31	TC50452	54.92
0.060	0.125	0.090	1-1/2	0.015	TC50253	44.31	TC50454	54.92
0.062	0.125	0.093	1-1/2	0.005	TC50255	44.31	TC50456	54.92
0.062	0.125	0.093	1-1/2	0.010	TC50257	44.31	TC50458	54.92
0.062	0.125	0.093	1-1/2	0.015	TC50259	44.31	TC50460	54.92
0.075	0.125	0.113	1-1/2	0.005	TC50273	44.31	TC50474	54.92
0.075	0.125	0.113	1-1/2	0.010	TC50275	44.31	TC50476	54.92
0.075	0.125	0.113	1-1/2	0.015	TC50277	44.31	TC50478	54.92
0.078	0.125	0.117	1-1/2	0.005	TC50279	44.31	TC50480	54.92
0.078	0.125	0.117	1-1/2	0.010	TC50281	44.31	TC50482	54.92
0.078	0.125	0.117	1-1/2	0.015	TC50283	44.31	TC50484	54.92
0.090	0.125	0.135	1-1/2	0.005	TC50297	44.31	TC50498	54.92
0.090	0.125	0.135	1-1/2	0.010	TC50299	44.31	TC50500	54.92
0.090	0.125	0.135	1-1/2	0.015	TC50301	44.31	TC50502	54.92
0.093	0.125	0.140	1-1/2	0.005	TC50303	44.31	TC50504	54.92
0.093	0.125	0.140	1-1/2	0.010	TC50305	44.31	TC50506	54.92
0.093	0.125	0.140	1-1/2	0.015	TC50307	44.31	TC50508	54.92
0.100	0.125	0.150	1-1/2	0.005	TC50315	44.31	TC50516	54.92
0.100	0.125	0.150	1-1/2	0.010	TC50317	44.31	TC50518	54.92
0.100	0.125	0.150	1-1/2	0.015	TC50319	44.31	TC50520	54.92

LENGTH OF CUT = 1.5 X DIAMETER
FOR COATING INFORMATION SEE PAGE 2.

TOLERANCES	DIAMETER	SHANK	RADIUS
ALL SIZES	+0.0005, -0.0005	-0.0001, -0.0003	+0.0003, -0.0003

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4 FLUTE - CORNER RADIUS - 30° HELIX

SERIES 506
UNCOATED



SERIES 508
ALTIN COATED

SIZE	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	CORNER RADIUS	UNCOATED	LIST PRICE	ALTIN	LIST PRICE
0.015	0.125	0.045	1-1/2	0.003	TC50603	66.45	TC50804	82.39
0.020	0.125	0.060	1-1/2	0.005	TC50605	62.03	TC50806	76.90
0.025	0.125	0.075	1-1/2	0.005	TC50607	62.03	TC50808	76.90
0.030	0.125	0.090	1-1/2	0.005	TC50609	44.31	TC50810	54.92
0.030	0.125	0.090	1-1/2	0.010	TC50611	44.31	TC50812	54.92
0.031	0.125	0.093	1-1/2	0.005	TC50613	44.31	TC50814	54.92
0.031	0.125	0.093	1-1/2	0.010	TC50615	44.31	TC50816	54.92
0.035	0.125	0.105	1-1/2	0.005	TC50617	44.31	TC50818	54.92
0.035	0.125	0.105	1-1/2	0.010	TC50619	44.31	TC50820	54.92
0.040	0.125	0.120	1-1/2	0.005	TC50621	44.31	TC50822	54.92
0.040	0.125	0.120	1-1/2	0.010	TC50623	44.31	TC50824	54.92
0.045	0.125	0.135	1-1/2	0.005	TC50625	44.31	TC50826	54.92
0.045	0.125	0.135	1-1/2	0.010	TC50627	44.31	TC50828	54.92
0.045	0.125	0.135	1-1/2	0.015	TC50629	44.31	TC50830	54.92
0.047	0.125	0.141	1-1/2	0.005	TC50631	44.31	TC50832	54.92
0.047	0.125	0.141	1-1/2	0.010	TC50633	44.31	TC50834	54.92
0.047	0.125	0.141	1-1/2	0.015	TC50635	44.31	TC50836	54.92
0.050	0.125	0.150	1-1/2	0.005	TC50637	44.31	TC50838	54.92
0.050	0.125	0.150	1-1/2	0.010	TC50639	44.31	TC50840	54.92
0.050	0.125	0.150	1-1/2	0.015	TC50641	44.31	TC50842	54.92
0.060	0.125	0.180	1-1/2	0.005	TC50649	44.31	TC50850	54.92
0.060	0.125	0.180	1-1/2	0.010	TC50651	44.31	TC50852	54.92
0.060	0.125	0.180	1-1/2	0.015	TC50653	44.31	TC50854	54.92
0.062	0.125	0.186	1-1/2	0.005	TC50655	44.31	TC50856	54.92
0.062	0.125	0.186	1-1/2	0.010	TC50657	44.31	TC50858	54.92
0.062	0.125	0.186	1-1/2	0.015	TC50659	44.31	TC50860	54.92
0.075	0.125	0.225	1-1/2	0.005	TC50673	44.31	TC50874	54.92
0.075	0.125	0.225	1-1/2	0.010	TC50675	44.31	TC50876	54.92
0.075	0.125	0.225	1-1/2	0.015	TC50677	44.31	TC50878	54.92
0.078	0.125	0.234	1-1/2	0.005	TC50679	44.31	TC50880	54.92
0.078	0.125	0.234	1-1/2	0.010	TC50681	44.31	TC50882	54.92
0.078	0.125	0.234	1-1/2	0.015	TC50683	44.31	TC50884	54.92
0.090	0.125	0.270	1-1/2	0.005	TC50697	44.31	TC50898	54.92
0.090	0.125	0.270	1-1/2	0.010	TC50699	44.31	TC50900	54.92
0.090	0.125	0.270	1-1/2	0.015	TC50701	44.31	TC50902	54.92
0.093	0.125	0.279	1-1/2	0.005	TC50703	44.31	TC50904	54.92
0.093	0.125	0.279	1-1/2	0.010	TC50705	44.31	TC50906	54.92
0.093	0.125	0.279	1-1/2	0.015	TC50707	44.31	TC50908	54.92
0.100	0.125	0.300	1-1/2	0.005	TC50715	44.31	TC50916	54.92
0.100	0.125	0.300	1-1/2	0.010	TC50717	44.31	TC50918	54.92
0.100	0.125	0.300	1-1/2	0.015	TC50719	44.31	TC50920	54.92

LENGTH OF CUT = 3.0 X DIAMETER
FOR COATING INFORMATION SEE PAGE 2.

TOLERANCES	DIAMETER	SHANK	RADIUS
ALL SIZES	+0.0005, -0.0005	-0.0001, -0.0003	+0.0003, -0.0003

Solid Carbide Threadmills

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INTERNAL / EXTERNAL - UN THREADS



SERIES 840
ALTIN COATED

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SIZE	SHANK DIAMETER	CUTTING DIAMETER	THREAD LENGTH	OVERALL LENGTH	NUMBER OF FLUTES	ITEM#	LIST PRICE
6 - 32	1/8	0.100	0.218	2	3	TC84001	166.47
8 - 32	1/8	0.115	0.250	2	3	TC84003	166.47
8 - 36	1/8	0.115	0.250	2	3	TC84005	166.47
10 - 24	3/16	0.120	0.312	2	3	TC84007	166.47
10 - 32	3/16	0.120	0.312	2	3	TC84009	166.47
1/4 - 20	3/16	0.180	0.500	2-1/2	3	TC84011	188.29
1/4 - 28	3/16	0.180	0.500	2-1/2	3	TC84013	188.29
5/16 - 18	1/4	0.240	0.625	2-1/2	3	TC84015	221.58
5/16 - 24	1/4	0.240	0.625	2-1/2	3	TC84017	221.58
3/8 - 16	5/16	0.290	0.750	3	4	TC84019	264.02
3/8 - 24	5/16	0.290	0.750	3	4	TC84021	264.02
7/16 - 14	3/8	0.340	0.875	3	4	TC84023	284.71
7/16 - 20	3/8	0.340	0.875	3	4	TC84025	284.71
1/2 - 13	3/8	0.350	0.875	3-1/2	4	TC84027	284.71
1/2 - 20	3/8	0.350	0.875	3-1/2	4	TC84029	284.71
9/16 - 12	1/2	0.370	0.875	3-1/2	4	TC84031	284.71
9/16 - 18	1/2	0.370	0.875	3-1/2	4	TC84033	284.71
5/8 - 11	1/2	0.470	1.250	3-1/2	5	TC84035	355.88
5/8 - 18	1/2	0.470	1.250	3-1/2	5	TC84037	355.88
3/4 - 10	1/2	0.495	1.250	3-1/2	5	TC84039	355.88
3/4 - 16	1/2	0.495	1.250	3-1/2	5	TC84041	355.88
7/8 - 9	5/8	0.620	1.250	3-1/2	5	TC84043	445.43
7/8 - 14	5/8	0.620	1.250	3-1/2	5	TC84045	445.43
1 - 8	3/4	0.620	1.375	4	5	TC84047	445.43
1 - 12	3/4	0.620	1.375	4	5	TC84049	445.43

INTERNAL / EXTERNAL - NPT PIPE THREADS



SERIES 842
ALTIN COATED

SIZE	SHANK DIAMETER	CUTTING DIAMETER	THREAD LENGTH	OVERALL LENGTH	NUMBER OF FLUTES	ITEM#	LIST PRICE
1/16 - 27	1/4	0.245	0.437	2-1/2	3	TC84200	221.58
1/8 - 27	5/16	0.310	0.437	2-1/2	4	TC84202	221.58
1/4 - 18	3/8	0.370	0.625	3	4	TC84204	252.55
3/8 - 18	3/8	0.370	0.625	3	4	TC84206	252.55
1/2 - 14	1/2	0.495	0.875	3-1/2	4	TC84208	355.88
3/4 - 14	1/2	0.495	0.875	3-1/2	4	TC84210	355.88
1 - 11-1/2	3/4	0.620	1.125	4	5	TC84212	445.43

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION PLEASE SEE PAGE 185.

THREADMILL CUTTING DIAMETER TOLERANCE

+ .000, - .002

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INTERNAL / EXTERNAL - NPTF PIPE THREADS



SERIES 844
ALTIN COATED

SIZE	SHANK DIAMETER	CUTTING DIAMETER	THREAD LENGTH	OVERALL LENGTH	NUMBER OF FLUTES	ITEM#	LIST PRICE
1/16 - 27	1/4	0.245	0.437	2-1/2	3	TC84401	221.58
1/8 - 27	5/16	0.310	0.437	2-1/2	4	TC84403	221.58
1/4 - 18	3/8	0.370	0.625	3	4	TC84405	252.55
3/8 - 18	3/8	0.370	0.625	3	4	TC84407	252.55
1/2 - 14	1/2	0.495	0.875	3-1/2	4	TC84409	355.88
3/4 - 14	1/2	0.495	0.875	3-1/2	4	TC84411	355.88
1 - 11-1/2	3/4	0.620	1.125	4	5	TC84413	445.43

INTERNAL / EXTERNAL - METRIC THREADS



SERIES 846
ALTIN COATED

SIZE	SHANK DIAMETER	CUTTING DIAMETER	THREAD LENGTH	OVERALL LENGTH	NUMBER OF FLUTES	ITEM#	LIST PRICE
M4 x 0.70	1/8	0.115	0.250	2	3	TC84620	169.91
M4.5 x 0.75	1/8	0.120	0.250	2	3	TC84622	169.91
M5 x 0.80	3/16	0.120	0.312	2	3	TC84624	169.91
M6 x 1.00	3/16	0.170	0.500	2-1/2	3	TC84626	187.13
M8 x 0.75	1/4	0.235	0.625	2-1/2	3	TC84628	221.58
M8 x 1.00	1/4	0.235	0.625	2-1/2	3	TC84630	221.58
M8 x 1.25	1/4	0.235	0.625	2-1/2	3	TC84632	221.58
M10 x 1.25	5/16	0.300	0.750	3	4	TC84634	264.02
M10 x 1.50	5/16	0.300	0.750	3	4	TC84636	264.02
M12 x 1.00	3/8	0.360	0.875	3-1/2	4	TC84638	285.84
M12 x 1.25	3/8	0.360	0.875	3-1/2	4	TC84640	285.84
M12 x 1.75	3/8	0.360	0.875	3-1/2	4	TC84642	285.84
M14 x 1.50	3/8	0.360	0.875	3-1/2	4	TC84644	285.84
M16 x 2.00	1/2	0.470	1.250	3-1/2	5	TC84646	355.88
M18 x 2.50	1/2	0.470	1.250	3-1/2	5	TC84648	355.88
M20 x 3.00	5/8	0.470	1.250	3-1/2	5	TC84650	355.88

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION PLEASE SEE PAGE 185.

THREADMILL CUTTING DIAMETER TOLERANCE

+.000, -.002

Solid Carbide Drill Mills

2 FLUTE - 60° POINT - 30° HELIX



SERIES 316
UNCOATED

SIZE	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	NUMBER OF FLUTES	ITEM#	LIST PRICE
1/32	1/8	1/8	1-1/2	2	TC31602	22.63
1/16	1/8	3/16	1-1/2	2	TC31604	22.63
3/32	1/8	3/8	1-1/2	2	TC31606	22.63
1/8	1/8	1/2	1-1/2	2	TC31608	21.71
3/16	3/16	5/8	2	2	TC31612	30.56
1/4	1/4	3/4	2-1/2	2	TC31616	38.24
5/16	5/16	13/16	2-1/2	2	TC31620	47.49
3/8	3/8	1	2-1/2	2	TC31624	59.67
7/16	7/16	1	2-3/4	2	TC31628	80.66
1/2	1/2	1	3	2	TC31632	98.90
5/8	5/8	1-1/4	3-1/2	2	TC31640	188.84
3/4	3/4	1-1/2	4	2	TC31648	278.15

**TAKE
55% OFF
LIST
PRICES!**



SERIES 318
ALTIN COATED

SIZE	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	NUMBER OF FLUTES	ITEM#	LIST PRICE
1/32	1/8	1/8	1-1/2	2	TC31802	28.29
1/16	1/8	3/16	1-1/2	2	TC31804	28.29
3/32	1/8	3/8	1-1/2	2	TC31806	28.29
1/8	1/8	1/2	1-1/2	2	TC31808	27.16
3/16	3/16	5/8	2	2	TC31812	38.21
1/4	1/4	3/4	2-1/2	2	TC31816	47.80
5/16	5/16	13/16	2-1/2	2	TC31820	59.35
3/8	3/8	1	2-1/2	2	TC31824	74.61
7/16	7/16	1	2-3/4	2	TC31828	100.85
1/2	1/2	1	3	2	TC31832	123.65
5/8	5/8	1-1/4	3-1/2	2	TC31840	236.08
3/4	3/4	1-1/2	4	2	TC31848	347.69

Drill mills enjoy great popularity in job shop environments because of their versatility in performing a wide range of applications:

The following applications can be performed with drill mills:
Drilling ▪ Chamfering ▪ Countersinking ▪ Spotting ▪ Profile Milling

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

TOLERANCES	DIAMETER	SHANK
1/32" - 3/32"	+0.000, -0.001	-0.0001, -0.0004
1/8" - 1/2"	+0.000, -0.002	-0.0001, -0.0004
5/8" - 3/4"	+0.000, -0.003	-0.0001, -0.0004

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Solid Carbide Drill Mills



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PRICES!**

4 FLUTE - 60° POINT - 30° HELIX



SERIES 347
UNCOATED

SIZE	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	NUMBER OF FLUTES	ITEM#	LIST PRICE
1/32	1/8	1/8	1-1/2	4	TC34702	22.63
1/16	1/8	3/16	1-1/2	4	TC34704	22.63
3/32	1/8	3/8	1-1/2	4	TC34706	22.63
1/8	1/8	1/2	1-1/2	4	TC34708	21.71
3/16	3/16	5/8	2	4	TC34712	30.56
1/4	1/4	3/4	2-1/2	4	TC34716	38.24
5/16	5/16	13/16	2-1/2	4	TC34720	47.49
3/8	3/8	1	2-1/2	4	TC34724	59.67
7/16	7/16	1	2-3/4	4	TC34728	80.66
1/2	1/2	1	3	4	TC34732	98.90
5/8	5/8	1-1/4	3-1/2	4	TC34740	188.84
3/4	3/4	1-1/2	4	4	TC34748	278.15



SERIES 349
ALTIN COATED

SIZE	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	NUMBER OF FLUTES	ITEM#	LIST PRICE
1/32	1/8	1/8	1-1/2	4	TC34902	28.29
1/16	1/8	3/16	1-1/2	4	TC34904	28.29
3/32	1/8	3/8	1-1/2	4	TC34906	28.29
1/8	1/8	1/2	1-1/2	4	TC34908	27.16
3/16	3/16	5/8	2	4	TC34912	38.21
1/4	1/4	3/4	2-1/2	4	TC34916	47.80
5/16	5/16	13/16	2-1/2	4	TC34920	59.35
3/8	3/8	1	2-1/2	4	TC34924	74.61
7/16	7/16	1	2-3/4	4	TC34928	100.85
1/2	1/2	1	3	4	TC34932	123.65
5/8	5/8	1-1/4	3-1/2	4	TC34940	236.08
3/4	3/4	1-1/2	4	4	TC34948	347.69

Drill mills enjoy great popularity in job shop environments because of their versatility in performing a wide range of applications:

The following applications can be performed with drill mills:
Drilling ▫ Chamfering ▫ Countersinking ▫ Spotting ▫ Profile Milling

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

TOLERANCES	DIAMETER	SHANK
1/32" - 3/32"	+0.000, -0.001	-0.0001, -0.0004
1/8" - 1/2"	+0.000, -0.002	-0.0001, -0.0004
5/8" - 3/4"	+0.000, -0.003	-0.0001, -0.0004

Solid Carbide Drill Mills

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2 FLUTE - 90° POINT - 30° HELIX



SERIES 320
UNCOATED

SIZE	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	NUMBER OF FLUTES	ITEM#	LIST PRICE
1/32	1/8	1/8	1-1/2	2	TC32002	22.63
1/16	1/8	3/16	1-1/2	2	TC32004	22.63
3/32	1/8	3/8	1-1/2	2	TC32006	22.63
1/8	1/8	1/2	1-1/2	2	TC32008	21.71
3/16	3/16	5/8	2	2	TC32012	30.56
1/4	1/4	3/4	2-1/2	2	TC32016	38.24
5/16	5/16	13/16	2-1/2	2	TC32020	47.49
3/8	3/8	1	2-1/2	2	TC32024	59.67
7/16	7/16	1	2-3/4	2	TC32028	80.66
1/2	1/2	1	3	2	TC32032	98.90
5/8	5/8	1-1/4	3-1/2	2	TC32040	188.84
3/4	3/4	1-1/2	4	2	TC32048	278.15

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LIST
PRICES!**



SERIES 322
ALTIN COATED

SIZE	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	NUMBER OF FLUTES	ITEM#	LIST PRICE
1/32	1/8	1/8	1-1/2	2	TC32202	28.29
1/16	1/8	3/16	1-1/2	2	TC32204	28.29
3/32	1/8	3/8	1-1/2	2	TC32206	28.29
1/8	1/8	1/2	1-1/2	2	TC32208	27.16
3/16	3/16	5/8	2	2	TC32212	38.21
1/4	1/4	3/4	2-1/2	2	TC32216	47.80
5/16	5/16	13/16	2-1/2	2	TC32220	59.35
3/8	3/8	1	2-1/2	2	TC32224	74.61
7/16	7/16	1	2-3/4	2	TC32228	100.85
1/2	1/2	1	3	2	TC32232	123.65
5/8	5/8	1-1/4	3-1/2	2	TC32240	236.08
3/4	3/4	1-1/2	4	2	TC32248	347.69

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Drilling ▪ Chamfering ▪ Countersinking ▪ Spotting ▪ Profile Milling

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

TOLERANCES	DIAMETER	SHANK
1/32" - 3/32"	+ .000, -.001	-.0001, -.0004
1/8" - 1/2"	+ .000, -.002	-.0001, -.0004
5/8" - 3/4"	+ .000, -.003	-.0001, -.0004

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Solid Carbide Drill Mills



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PRICES!**

4 FLUTE - 90° POINT - 30° HELIX



SERIES 341
UNCOATED

SIZE	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	NUMBER OF FLUTES	ITEM#	LIST PRICE
1/32	1/8	1/8	1-1/2	4	TC34102	22.63
1/16	1/8	3/16	1-1/2	4	TC34104	22.63
3/32	1/8	3/8	1-1/2	4	TC34106	22.63
1/8	1/8	1/2	1-1/2	4	TC34108	21.71
3/16	3/16	5/8	2	4	TC34112	30.56
1/4	1/4	3/4	2-1/2	4	TC34116	38.24
5/16	5/16	13/16	2-1/2	4	TC34120	47.49
3/8	3/8	1	2-1/2	4	TC34124	59.67
7/16	7/16	1	2-3/4	4	TC34128	80.66
1/2	1/2	1	3	4	TC34132	98.90
5/8	5/8	1-1/4	3-1/2	4	TC34140	188.84
3/4	3/4	1-1/2	4	4	TC34148	278.15



SERIES 343
ALTIN COATED

SIZE	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	NUMBER OF FLUTES	ITEM#	LIST PRICE
1/32	1/8	1/8	1-1/2	4	TC34302	28.29
1/16	1/8	3/16	1-1/2	4	TC34304	28.29
3/32	1/8	3/8	1-1/2	4	TC34306	28.29
1/8	1/8	1/2	1-1/2	4	TC34308	27.16
3/16	3/16	5/8	2	4	TC34312	38.21
1/4	1/4	3/4	2-1/2	4	TC34316	47.80
5/16	5/16	13/16	2-1/2	4	TC34320	59.35
3/8	3/8	1	2-1/2	4	TC34324	74.61
7/16	7/16	1	2-3/4	4	TC34328	100.85
1/2	1/2	1	3	4	TC34332	123.65
5/8	5/8	1-1/4	3-1/2	4	TC34340	236.08
3/4	3/4	1-1/2	4	4	TC34348	347.69

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TOLERANCES	DIAMETER	SHANK
1/32" - 3/32"	+ .000, - .001	- .0001, - .0004
1/8" - 1/2"	+ .000, - .002	- .0001, - .0004
5/8" - 3/4"	+ .000, - .003	- .0001, - .0004

Solid Carbide Chamfer Mills

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2 FLUTE - SINGLE END
60° • 82° • 90° • 100° • 120°

SERIES 850
UNCOATED

SIZE	SHANK DIA.	OVERALL LENGTH	PKG. QTY.	60° - ITEM#	82° - ITEM#	90° - ITEM#	100° - ITEM#	120° - ITEM#	LIST PRICE
1/8	1/8	1-1/2	1	TC87600	TC87612	TC87624	TC87636	TC87648	19.38
1/4	1/4	2-1/2	1	TC87603	TC87615	TC87627	TC87639	TC87651	34.12
3/8	3/8	2-1/2	1	TC87606	TC87618	TC87630	TC87642	TC87654	53.23
1/2	1/2	3	1	TC87609	TC87621	TC87633	TC87645	TC87657	88.11



2 FLUTE - SINGLE END
60° • 82° • 90° • 100° • 120°

SERIES 852
ALTIN COATED

SIZE	SHANK DIA.	OVERALL LENGTH	PKG. QTY.	60° - ITEM#	82° - ITEM#	90° - ITEM#	100° - ITEM#	120° - ITEM#	LIST PRICE
1/8	1/8	1-1/2	1	TC87660	TC87672	TC87684	TC87696	TC87708	24.24
1/4	1/4	2-1/2	1	TC87663	TC87675	TC87687	TC87699	TC87711	42.58
3/8	3/8	2-1/2	1	TC87666	TC87678	TC87690	TC87702	TC87714	66.55
1/2	1/2	3	1	TC87669	TC87681	TC87693	TC87705	TC87717	110.22



4 FLUTE - SINGLE END
60° • 82° • 90° • 100° • 120°

SERIES 854
UNCOATED

SIZE	SHANK DIA.	OVERALL LENGTH	PKG. QTY.	60° - ITEM#	82° - ITEM#	90° - ITEM#	100° - ITEM#	120° - ITEM#	LIST PRICE
1/8	1/8	1-1/2	1	TC87720	TC87732	TC87744	TC87756	TC87768	19.38
1/4	1/4	2-1/2	1	TC87723	TC87735	TC87747	TC87759	TC87771	34.12
3/8	3/8	2-1/2	1	TC87726	TC87738	TC87750	TC87762	TC87774	53.23
1/2	1/2	3	1	TC87729	TC87741	TC87753	TC87765	TC87777	88.11



4 FLUTE - SINGLE END
60° • 82° • 90° • 100° • 120°

SERIES 856
ALTIN COATED

SIZE	SHANK DIA.	OVERALL LENGTH	PKG. QTY.	60° - ITEM#	82° - ITEM#	90° - ITEM#	100° - ITEM#	120° - ITEM#	LIST PRICE
1/8	1/8	1-1/2	1	TC87780	TC87792	TC87804	TC87816	TC87828	24.24
1/4	1/4	2-1/2	1	TC87783	TC87795	TC87807	TC87819	TC87831	42.58
3/8	3/8	2-1/2	1	TC87786	TC87798	TC87810	TC87822	TC87834	66.55
1/2	1/2	3	1	TC87789	TC87801	TC87813	TC87825	TC87837	110.22

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

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Solid Carbide Chamfer Mills

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2 FLUTE - DOUBLE END
60° • 82° • 90° • 100° • 120°

SERIES 858**UNCOATED**

SIZE	SHANK DIA.	OVERALL LENGTH	PKG. QTY.	60° - ITEM#	82° - ITEM#	90° - ITEM#	100° - ITEM#	120° - ITEM#	LIST PRICE
1/8	1/8	2	1	TC87840	TC87858	TC87876	TC87894	TC87912	34.88
3/16	3/16	2-1/2	1	TC87843	TC87861	TC87879	TC87897	TC87915	48.04
1/4	1/4	2-1/2	1	TC87846	TC87864	TC87882	TC87900	TC87918	61.41
5/16	5/16	2-1/2	1	TC87849	TC87867	TC87885	TC87903	TC87921	78.61
3/8	3/8	2-1/2	1	TC87852	TC87870	TC87888	TC87906	TC87924	95.81
1/2	1/2	3	1	TC87855	TC87873	TC87891	TC87909	TC87927	158.59



2 FLUTE - DOUBLE END
60° • 82° • 90° • 100° • 120°

SERIES 860**ALTiN COATED**

SIZE	SHANK DIA.	OVERALL LENGTH	PKG. QTY.	60° - ITEM#	82° - ITEM#	90° - ITEM#	100° - ITEM#	120° - ITEM#	LIST PRICE
1/8	1/8	2	1	TC87930	TC87948	TC87966	TC87984	TC88002	43.63
3/16	3/16	2-1/2	1	TC87933	TC87951	TC87969	TC87987	TC88005	60.05
1/4	1/4	2-1/2	1	TC87936	TC87954	TC87972	TC87990	TC88008	76.64
5/16	5/16	2-1/2	1	TC87939	TC87957	TC87975	TC87993	TC88011	98.21
3/8	3/8	2-1/2	1	TC87942	TC87960	TC87978	TC87996	TC88014	119.88
1/2	1/2	3	1	TC87945	TC87963	TC87981	TC87999	TC88017	198.43



4 FLUTE - DOUBLE END
60° • 82° • 90° • 100° • 120°

SERIES 862**UNCOATED**

SIZE	SHANK DIA.	OVERALL LENGTH	PKG. QTY.	60° - ITEM#	82° - ITEM#	90° - ITEM#	100° - ITEM#	120° - ITEM#	LIST PRICE
1/8	1/8	2	1	TC88020	TC88038	TC88056	TC88074	TC88092	34.88
3/16	3/16	2-1/2	1	TC88023	TC88041	TC88059	TC88077	TC88095	48.04
1/4	1/4	2-1/2	1	TC88026	TC88044	TC88062	TC88080	TC88098	61.41
5/16	5/16	2-1/2	1	TC88029	TC88047	TC88065	TC88083	TC88101	78.61
3/8	3/8	2-1/2	1	TC88032	TC88050	TC88068	TC88086	TC88104	95.81
1/2	1/2	3	1	TC88035	TC88053	TC88071	TC88089	TC88107	158.59



4 FLUTE - DOUBLE END
60° • 82° • 90° • 100° • 120°

SERIES 864**ALTiN COATED**

SIZE	SHANK DIA.	OVERALL LENGTH	PKG. QTY.	60° - ITEM#	82° - ITEM#	90° - ITEM#	100° - ITEM#	120° - ITEM#	LIST PRICE
1/8	1/8	2	1	TC88110	TC88128	TC88146	TC88164	TC88182	43.63
3/16	3/16	2-1/2	1	TC88113	TC88131	TC88149	TC88167	TC88185	60.05
1/4	1/4	2-1/2	1	TC88116	TC88134	TC88152	TC88170	TC88188	76.64
5/16	5/16	2-1/2	1	TC88119	TC88137	TC88155	TC88173	TC88191	98.21
3/8	3/8	2-1/2	1	TC88122	TC88140	TC88158	TC88176	TC88194	119.88
1/2	1/2	3	1	TC88125	TC88143	TC88161	TC88179	TC88197	198.43

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION SEE PAGES 184, 186-187.

Solid Carbide Drills

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N/C SPOTTING DRILLS



**SERIES 187 - 90° POINT
UNCOATED**

SIZE	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH	ITEM #	LIST PRICE
1/8	1/8	1/4	2	TC18708	27.14
3/16	3/16	3/8	2	TC18712	32.30
1/4	1/4	3/8	3	TC18716	39.23
3/8	3/8	1/2	4	TC18724	62.37
1/2	1/2	3/4	4	TC18732	104.23
5/8	5/8	1	4	TC18740	185.55
3/4	3/4	1	4	TC18748	249.14



**SERIES 188 - 120° POINT
UNCOATED**

SIZE	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH	ITEM #	LIST PRICE
1/8	1/8	1/4	2	TC18808	27.14
3/16	3/16	3/8	2	TC18812	32.30
1/4	1/4	3/8	3	TC18816	39.23
3/8	3/8	1/2	4	TC18824	62.37
1/2	1/2	3/4	4	TC18832	104.23
5/8	5/8	1	4	TC18840	185.55
3/4	3/4	1	4	TC18848	249.14



**SERIES 189 - 140° POINT
UNCOATED**

N/C SPOTTING FOR HIGH PERFORMANCE DRILLING					
SIZE	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH	ITEM #	LIST PRICE
1/8	1/8	1/4	2	TC18908	27.14
3/16	3/16	3/8	2	TC18912	32.30
1/4	1/4	3/8	3	TC18916	39.23
3/8	3/8	1/2	4	TC18924	62.37
1/2	1/2	3/4	4	TC18932	104.23
5/8	5/8	1	4	TC18940	185.55
3/4	3/4	1	4	TC18948	249.14

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FOR TECHNICAL INFORMATION PLEASE SEE PAGE 188.

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Solid Carbide Drills



N/C SPOTTING DRILLS


SERIES 287 - 90° POINT
 ALTiN COATED

SIZE	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH	ITEM #	LIST PRICE
1/8	1/8	1/4	2	TC28708	33.93
3/16	3/16	3/8	2	TC28712	40.39
1/4	1/4	3/8	3	TC28716	49.26
3/8	3/8	1/2	4	TC28724	77.96
1/2	1/2	3/4	4	TC28732	135.70
5/8	5/8	1	4	TC28740	237.23
3/4	3/4	1	4	TC28748	311.43


SERIES 288 - 120° POINT
 ALTiN COATED

SIZE	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH	ITEM #	LIST PRICE
1/8	1/8	1/4	2	TC28808	33.93
3/16	3/16	3/8	2	TC28812	40.39
1/4	1/4	3/8	3	TC28816	49.26
3/8	3/8	1/2	4	TC28824	77.96
1/2	1/2	3/4	4	TC28832	135.70
5/8	5/8	1	4	TC28840	237.23
3/4	3/4	1	4	TC28848	311.43


SERIES 289 - 140° POINT
 ALTiN COATED

N/C SPOTTING FOR HIGH PERFORMANCE DRILLING					
SIZE	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH	ITEM #	LIST PRICE
1/8	1/8	1/4	2	TC28908	33.93
3/16	3/16	3/8	2	TC28912	40.39
1/4	1/4	3/8	3	TC28916	49.26
3/8	3/8	1/2	4	TC28924	77.96
1/2	1/2	3/4	4	TC28932	135.70
5/8	5/8	1	4	TC28940	237.23
3/4	3/4	1	4	TC28948	311.43

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION PLEASE SEE PAGE 188.

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Solid Carbide Drills

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JOBBER LENGTH - 118° SPLIT POINT - 25° HELIX

SERIES 190
UNCOATED



SERIES 191
ALTIM COATED



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FRACTIONAL SIZES

SIZE	FLUTE LENGTH	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIM	LIST PRICE
1/32	5/16	1-1/4	TC19002	15.29	TC79002	19.11
3/64	3/4	1-1/2	TC19003	15.29	TC79003	19.11
1/16	3/4	1-1/2	TC19004	14.46	TC79004	18.06
5/64	7/8	1-3/4	TC19005	15.29	TC79005	19.11
3/32	1	2	TC19006	16.84	TC79006	21.06
7/64	1-1/4	2-1/4	TC19007	19.14	TC79007	23.94
1/8	1-1/4	2-1/4	TC19008	20.41	TC79008	25.53
9/64	1-3/8	2-1/2	TC19009	22.61	TC79009	28.27
5/32	1-3/8	2-1/2	TC19010	25.35	TC79010	31.69
11/64	1-5/8	2-3/4	TC19011	29.92	TC79011	37.42
3/16	1-5/8	2-3/4	TC19012	30.79	TC79012	38.47
13/64	1-3/4	3	TC19013	35.55	TC79013	44.45
7/32	1-3/4	3	TC19014	39.44	TC79014	49.32
15/64	2	3-1/4	TC19015	44.67	TC79015	55.81
1/4	2	3-1/4	TC19016	46.94	TC79016	58.66
17/64	2-1/8	3-1/2	TC19017	52.85	TC79017	66.09

FRACTIONAL SIZES

SIZE	FLUTE LENGTH	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIM	LIST PRICE
9/32	2-1/8	3-1/2	TC19018	55.13	TC79018	68.93
19/64	2-3/8	3-3/4	TC19019	61.94	TC79019	77.41
5/16	2-3/8	3-3/4	TC19020	65.15	TC79020	81.41
21/64	2-1/2	4	TC19021	71.10	TC79021	88.87
11/32	2-1/2	4	TC19022	77.73	TC79022	97.16
23/64	2-3/4	4-1/4	TC19023	86.92	TC79023	108.66
3/8	2-3/4	4-1/4	TC19024	92.19	TC79024	115.23
25/64	2-7/8	4-1/2	TC19025	107.94	TC79025	134.91
13/32	2-7/8	4-1/2	TC19026	118.22	TC79026	147.78
27/64	2-7/8	4-1/2	TC19027	128.57	TC79027	160.69
7/16	2-7/8	4-1/2	TC19028	134.51	TC79028	168.19
29/64	3	4-3/4	TC19029	156.07	TC79029	195.08
15/32	3	4-3/4	TC19030	162.60	TC79030	203.23
31/64	3	4-3/4	TC19031	167.18	TC79031	209.00
1/2	3	4-3/4	TC19032	167.54	TC79032	209.43
-	-	-	-	-	-	-

NOTE: SIZES 7/64" AND UNDER ARE NOT SPLIT.

METRIC SIZES

SIZE (mm)	FLUTE LENGTH	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIM	LIST PRICE
0.7	12	31	TC19307	19.00	TC79307	23.76
0.8	12	31	TC19308	19.00	TC79308	23.76
0.9	16	38	TC19309	19.00	TC79309	23.76
1.0	16	38	TC19310	19.00	TC79310	23.76
1.1	19	38	TC19311	19.00	TC79311	23.76
1.2	19	38	TC19312	19.00	TC79312	23.76
1.3	19	38	TC19313	19.00	TC79313	23.76
1.4	19	38	TC19314	19.00	TC79314	23.76
1.5	19	38	TC19315	19.14	TC79315	23.94
1.6	19	38	TC19316	19.14	TC79316	23.94
1.7	19	38	TC19317	19.14	TC79317	23.94
1.8	22	38	TC19318	19.14	TC79318	23.94
1.9	22	38	TC19319	19.14	TC79319	23.94
2.0	22	44	TC19320	20.33	TC79320	25.42
2.1	22	44	TC19321	20.33	TC79321	25.42
2.2	25	50	TC19322	20.33	TC79322	25.42
2.3	25	50	TC19323	20.33	TC79323	25.42
2.4	25	50	TC19324	20.33	TC79324	25.42
2.5	25	50	TC19325	23.36	TC79325	29.20
2.6	32	57	TC19326	23.36	TC79326	29.20
2.7	32	57	TC19327	23.36	TC79327	29.20
2.8	32	57	TC19328	23.36	TC79328	29.20
2.9	32	57	TC19329	23.36	TC79329	29.20

NOTE: ALL DIMENSIONS IN TABLE ARE METRIC (mm)

METRIC SIZES

SIZE (mm)	FLUTE LENGTH	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIM	LIST PRICE
3.0	32	57	TC19330	26.17	TC79330	32.70
3.1	32	57	TC19331	26.17	TC79331	32.70
3.2	32	57	TC19332	26.17	TC79332	32.70
3.3	32	57	TC19333	26.17	TC79333	32.70
3.4	35	63	TC19334	28.41	TC79334	35.55
3.5	35	63	TC19335	28.41	TC79335	35.55
4.0	35	63	TC19340	34.97	TC79340	43.70
4.5	41	70	TC19345	37.46	TC79345	46.83
5.0	44	75	TC19350	41.43	TC79350	51.81
5.5	44	75	TC19355	49.07	TC79355	61.33
6.0	50	82	TC19360	51.88	TC79360	64.82
6.5	50	82	TC19365	82.63	TC79365	103.29
7.0	54	89	TC19370	90.49	TC79370	113.14
7.5	60	95	TC19375	93.45	TC79375	116.81
8.0	60	95	TC19380	98.86	TC79380	123.55
8.5	63	100	TC19385	122.04	TC79385	152.54
9.0	70	100	TC19390	138.55	TC79390	173.20
9.5	70	108	TC19395	158.09	TC79395	197.64
10.0	73	114	TC19400	181.56	TC79400	226.96
10.5	73	114	TC19405	203.05	TC79405	253.82
11.0	73	114	TC19410	241.59	TC79410	302.02
11.5	76	120	TC19415	248.84	TC79415	311.07
12.0	76	120	TC19420	276.17	TC79420	345.25

NOTE: SIZES 3.1mm AND UNDER ARE NOT SPLIT.

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION PLEASE SEE PAGE 188.

DIAMETER TOLERANCE +.0000, -.0005

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USA

Solid Carbide Drills



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55% OFF
LIST
PRICES!**

JOBBER LENGTH - 118° SPLIT POINT - 25° HELIX


SERIES 190
UNCOATED

SERIES 191
ALTIN COATED

LETTER SIZES

SIZE	FLUTE LENGTH	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIN	LIST PRICE
A	2	3-1/4	TC19101	45.07	TC79101	56.32
B	2	3-1/4	TC19102	46.94	TC79102	58.66
C	2	3-1/4	TC19103	47.30	TC79103	59.13
D	2	3-1/4	TC19104	47.88	TC79104	59.85
E	2	3-1/4	TC19105	46.94	TC79105	58.66
F	2	3-1/4	TC19106	52.21	TC79106	65.26
G	2-1/8	3-1/2	TC19107	55.38	TC79107	69.19
H	2-1/8	3-1/2	TC19108	56.57	TC79108	70.70
I	2-1/8	3-1/2	TC19109	57.47	TC79109	71.85
J	2-1/8	3-1/2	TC19110	59.02	TC79110	73.80
K	2-1/8	3-1/2	TC19111	59.52	TC79111	74.41
L	2-1/8	3-1/2	TC19112	62.91	TC79112	78.67
M	2-3/8	3-3/4	TC19113	64.21	TC79113	80.25

LETTER SIZES

SIZE	FLUTE LENGTH	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIN	LIST PRICE
N	2-3/8	3-3/4	TC19114	68.25	TC79114	85.30
O	2-3/8	3-3/4	TC19115	71.93	TC79115	89.92
P	2-3/8	3-3/4	TC19116	74.67	TC79116	93.34
Q	2-1/2	4	TC19117	77.41	TC79117	96.73
R	2-1/2	4	TC19118	80.80	TC79118	100.99
S	2-1/2	4	TC19119	86.06	TC79119	107.58
T	2-3/4	4-1/4	TC19120	89.16	TC79120	111.40
U	2-3/4	4-1/4	TC19121	93.56	TC79121	116.92
V	2-3/4	4-1/4	TC19122	103.62	TC79122	129.50
W	2-7/8	4-1/2	TC19123	111.59	TC79123	139.49
X	2-7/8	4-1/2	TC19124	121.79	TC79124	152.22
Y	2-7/8	4-1/2	TC19125	125.86	TC79125	157.34
Z	2-7/8	4-1/2	TC19126	136.39	TC79126	170.50

WIRE SIZES

SIZE	FLUTE LENGTH	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIN	LIST PRICE
1	1-3/4	3	TC19201	40.85	TC79201	51.05
2	1-3/4	3	TC19202	40.85	TC79202	51.05
3	1-3/4	3	TC19203	40.85	TC79203	51.05
4	1-3/4	3	TC19204	40.42	TC79204	50.51
5	1-3/4	3	TC19205	36.05	TC79205	45.10
6	1-3/4	3	TC19206	36.05	TC79206	45.10
7	1-3/4	3	TC19207	35.04	TC79207	43.80
8	1-3/4	3	TC19208	34.86	TC79208	43.59
9	1-3/4	3	TC19209	34.86	TC79209	43.59
10	1-5/8	2-3/4	TC19210	34.86	TC79210	43.59
11	1-5/8	2-3/4	TC19211	34.03	TC79211	42.51
12	1-5/8	2-3/4	TC19212	34.03	TC79212	42.51
13	1-5/8	2-3/4	TC19213	32.81	TC79213	41.03
14	1-5/8	2-3/4	TC19214	31.98	TC79214	39.98
15	1-5/8	2-3/4	TC19215	31.47	TC79215	39.33
16	1-5/8	2-3/4	TC19216	31.47	TC79216	39.33
17	1-5/8	2-3/4	TC19217	29.92	TC79217	37.42
18	1-5/8	2-3/4	TC19218	28.16	TC79218	35.19
19	1-5/8	2-3/4	TC19219	27.54	TC79219	34.43
20	1-3/8	2-1/2	TC19220	26.35	TC79220	32.95
21	1-3/8	2-1/2	TC19221	26.35	TC79221	32.95
22	1-3/8	2-1/2	TC19222	25.35	TC79222	31.69
23	1-3/8	2-1/2	TC19223	25.35	TC79223	31.69
24	1-3/8	2-1/2	TC19224	25.17	TC79224	31.47
25	1-3/8	2-1/2	TC19225	23.80	TC79225	29.78
26	1-3/8	2-1/2	TC19226	23.80	TC79226	29.78
27	1-3/8	2-1/2	TC19227	23.80	TC79227	29.78
28	1-3/8	2-1/2	TC19228	22.61	TC79228	28.27
29	1-3/8	2-1/2	TC19229	22.61	TC79229	28.27
30	1-1/4	2-1/4	TC19230	21.42	TC79230	26.79

WIRE SIZES

SIZE	FLUTE LENGTH	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIN	LIST PRICE
31	1-1/4	2-1/4	TC19231	19.90	TC79231	24.88
32	1-1/4	2-1/4	TC19232	19.90	TC79232	24.88
33	1-1/4	2-1/4	TC19233	19.72	TC79233	24.66
34	1-1/4	2-1/4	TC19234	19.58	TC79234	24.44
35	1-1/4	2-1/4	TC19235	19.58	TC79235	24.44
36	1-1/4	2-1/4	TC19236	19.58	TC79236	24.44
37	1-1/4	2-1/4	TC19237	18.53	TC79237	23.18
38	1-1/4	2-1/4	TC19238	18.21	TC79238	22.75
39	1-1/4	2-1/4	TC19239	18.21	TC79239	22.75
40	1	2	TC19240	17.52	TC79240	21.88
41	1	2	TC19241	17.52	TC79241	21.88
42	1	2	TC19242	17.02	TC79242	21.27
43	1	2	TC19243	17.02	TC79243	21.27
44	1	2	TC19244	16.15	TC79244	20.19
45	7/8	1-3/4	TC19245	15.68	TC79245	19.58
46	7/8	1-3/4	TC19246	15.68	TC79246	19.58
47	7/8	1-3/4	TC19247	15.68	TC79247	19.58
48	7/8	1-3/4	TC19248	15.68	TC79248	19.58
49	7/8	1-3/4	TC19249	14.96	TC79249	18.71
50	7/8	1-3/4	TC19250	14.96	TC79250	18.71
51	3/4	1-1/2	TC19251	14.46	TC79251	18.06
52	3/4	1-1/2	TC19252	14.46	TC79252	18.06
53	3/4	1-1/2	TC19253	15.29	TC79253	19.11
54	3/4	1-1/2	TC19254	15.29	TC79254	19.11
55	3/4	1-1/2	TC19255	15.29	TC79255	19.11
56	3/4	1-1/2	TC19256	15.29	TC79256	19.11
57	3/4	1-1/2	TC19257	15.29	TC79257	19.11
58	3/4	1-1/2	TC19258	15.29	TC79258	19.11
59	3/4	1-1/2	TC19259	15.29	TC79259	19.11
60	3/4	1-1/2	TC19260	15.29	TC79260	19.11

NOTE: SIZES 31 AND UNDER ARE NOT SPLIT.

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION PLEASE SEE PAGE 188.

DIAMETER TOLERANCE

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YOUR #1 SOURCE FOR AMERICAN-MADE PREMIUM CUTTING TOOLS

Solid Carbide Drills

MADE IN THE
USA

STUB LENGTH - 135° SPLIT POINT - 15° HELIX

SERIES 200
UNCOATEDSERIES 201
ALTIN COATED**TAKE
55% OFF
LIST
PRICES!****FRACTIONAL SIZES**

SIZE	FLUTE LENGTH	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIN	LIST PRICE
1/32	3/8	1-1/2	TC20002	16.26	TC29002	20.33
3/64	3/8	1-1/2	TC20003	16.26	TC29003	20.33
1/16	13/32	1-1/2	TC20004	15.36	TC29004	19.18
5/64	7/16	1-1/2	TC20005	16.26	TC29005	20.33
3/32	1/2	1-1/2	TC20006	17.92	TC29006	22.39
7/64	5/8	2	TC20007	20.33	TC29007	25.42
1/8	3/4	2	TC20008	21.70	TC29008	27.11
9/64	3/4	2	TC20009	24.05	TC29009	30.03
5/32	7/8	2	TC20010	26.93	TC29010	33.64
11/64	7/8	2	TC20011	31.80	TC29011	39.77
3/16	7/8	2	TC20012	32.70	TC29012	40.88
13/64	1-1/8	2-1/2	TC20013	37.78	TC29013	47.23
7/32	1-1/8	2-1/2	TC20014	41.93	TC29014	52.42
15/64	1-1/4	2-1/2	TC20015	47.45	TC29015	59.31
1/4	1-1/4	2-1/2	TC20016	49.86	TC29016	62.34
17/64	1-1/4	2-1/2	TC20017	56.21	TC29017	70.23

FRACTIONAL SIZES

SIZE	FLUTE LENGTH	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIN	LIST PRICE
9/32	1-1/4	2-1/2	TC20018	58.55	TC29018	73.19
19/64	1-1/4	2-1/2	TC20019	65.76	TC29019	82.24
5/16	1-1/4	2-1/2	TC20020	69.26	TC29020	86.53
21/64	1-3/8	3	TC20021	75.53	TC29021	94.42
11/32	1-3/8	3	TC20022	82.60	TC29022	103.22
23/64	1-3/8	3	TC20023	92.33	TC29023	115.41
3/8	1-3/8	3	TC20024	97.92	TC29024	122.40
25/64	1-3/8	3	TC20025	114.69	TC29025	143.35
13/32	1-3/8	3	TC20026	125.61	TC29026	157.01
27/64	1-3/8	3	TC20027	136.64	TC29027	170.78
7/16	1-3/8	3	TC20028	142.92	TC29028	178.64
29/64	1-3/8	3	TC20029	165.81	TC29029	207.27
15/32	1-3/8	3	TC20030	172.77	TC29030	215.96
31/64	1-3/8	3	TC20031	177.63	TC29031	222.05
1/2	1-3/8	3	TC20032	178.03	TC29032	222.52
-	-	-	-	-	-	-

NOTE: SIZES 7/64" AND UNDER ARE NOT SPLIT.

LETTER SIZES

SIZE	FLUTE LENGTH	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIN	LIST PRICE
A	1-1/4	2-1/2	TC20101	47.88	TC29101	59.85
B	1-1/4	2-1/2	TC20102	49.86	TC29102	62.34
C	1-1/4	2-1/2	TC20103	50.22	TC29103	62.80
D	1-1/4	2-1/2	TC20104	50.87	TC29104	63.56
E	1-1/4	2-1/2	TC20105	49.86	TC29105	62.34
F	1-1/4	2-1/2	TC20106	55.49	TC29106	69.33
G	1-1/4	2-1/2	TC20107	58.80	TC29107	73.51
H	1-1/4	2-1/2	TC20108	60.06	TC29108	75.10
I	1-1/4	2-1/2	TC20109	61.07	TC29109	76.36
J	1-1/4	2-1/2	TC20110	62.70	TC29110	78.38
K	1-1/4	2-1/2	TC20111	63.27	TC29111	79.06
L	1-1/4	2-1/2	TC20112	66.88	TC29112	83.57
M	1-1/4	2-1/2	TC20113	68.21	TC29113	85.30

LETTER SIZES

SIZE	FLUTE LENGTH	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIN	LIST PRICE
N	1-1/4	2-1/2	TC20114	72.50	TC29114	90.60
O	1-3/8	3	TC20115	76.43	TC29115	95.54
P	1-3/8	3	TC20116	79.35	TC29116	99.18
Q	1-3/8	3	TC20117	82.24	TC29117	102.79
R	1-3/8	3	TC20118	85.84	TC29118	107.29
S	1-3/8	3	TC20119	91.43	TC29119	114.33
T	1-3/8	3	TC20120	94.71	TC29120	118.40
U	1-3/8	3	TC20121	99.40	TC29121	124.24
V	1-3/8	3	TC20122	110.07	TC29122	137.58
W	1-3/8	3	TC20123	118.54	TC29123	148.18
X	1-3/8	3	TC20124	129.40	TC29124	161.74
Y	1-3/8	3	TC20125	133.72	TC29125	167.14
Z	1-3/8	3	TC20126	144.93	TC29126	181.13

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION PLEASE SEE PAGE 188.

DIAMETER TOLERANCE +.0000, -.0005

CARBIDE STUB DRILLS

MADE IN THE
USA

Solid Carbide Drills



**TAKE
55% OFF
LIST
PRICES!**

STUB LENGTH - 135° SPLIT POINT - 15° HELIX



SERIES 200
UNCOATED



SERIES 201
ALTiN COATED

WIRE SIZES						WIRE SIZES							
SIZE	FLUTE LENGTH	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIN	LIST PRICE	SIZE	FLUTE LENGTH	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIN	LIST PRICE
1	1-1/4	2-1/2	TC20201	43.37	TC29201	54.22	31	3/4	2	TC20231	21.16	TC29231	26.43
2	1-1/4	2-1/2	TC20202	43.37	TC29202	54.22	32	3/4	2	TC20232	21.16	TC29232	26.43
3	1-1/8	2-1/2	TC20203	43.37	TC29203	54.22	33	3/4	2	TC20233	20.95	TC29233	26.21
4	1-1/8	2-1/2	TC20204	42.90	TC29204	53.65	34	3/4	2	TC20234	20.77	TC29234	25.96
5	1-1/8	2-1/2	TC20205	38.32	TC29205	47.88	35	3/4	2	TC20235	20.77	TC29235	25.96
6	1-1/8	2-1/2	TC20206	38.32	TC29206	47.88	36	5/8	2	TC20236	20.77	TC29236	25.96
7	1-1/8	2-1/2	TC20207	37.21	TC29207	46.51	37	5/8	2	TC20237	19.69	TC29237	24.62
8	1-1/8	2-1/2	TC20208	37.06	TC29208	46.33	38	5/8	2	TC20238	19.32	TC29238	24.16
9	1-1/8	2-1/2	TC20209	37.06	TC29209	46.33	39	5/8	2	TC20239	19.32	TC29239	24.16
10	1-1/8	2-1/2	TC20210	37.06	TC29210	46.33	40	5/8	2	TC20240	18.60	TC29240	23.29
11	1-1/8	2-1/2	TC20211	36.13	TC29211	45.17	41	5/8	2	TC20241	18.60	TC29241	23.29
12	1-1/8	2-1/2	TC20212	36.13	TC29212	45.17	42	1/2	1-1/2	TC20242	18.10	TC29242	22.61
13	7/8	2	TC20213	34.86	TC29213	43.59	43	1/2	1-1/2	TC20243	18.10	TC29243	22.61
14	7/8	2	TC20214	34.00	TC29214	42.51	44	1/2	1-1/2	TC20244	17.16	TC29244	21.45
15	7/8	2	TC20215	33.46	TC29215	41.79	45	1/2	1-1/2	TC20245	16.62	TC29245	20.77
16	7/8	2	TC20216	33.46	TC29216	41.79	46	1/2	1-1/2	TC20246	16.62	TC29246	20.77
17	7/8	2	TC20217	31.80	TC29217	39.77	47	1/2	1-1/2	TC20247	16.62	TC29247	20.77
18	7/8	2	TC20218	29.89	TC29218	37.39	48	7/16	1-1/2	TC20248	16.62	TC29248	20.77
19	7/8	2	TC20219	29.28	TC29219	36.59	49	7/16	1-1/2	TC20249	15.90	TC29249	19.87
20	7/8	2	TC20220	28.01	TC29220	35.04	50	7/16	1-1/2	TC20250	15.90	TC29250	19.87
21	7/8	2	TC20221	28.01	TC29221	35.04	51	7/16	1-1/2	TC20251	15.36	TC29251	19.18
22	7/8	2	TC20222	26.93	TC29222	33.64	52	7/16	1-1/2	TC20252	15.36	TC29252	19.18
23	7/8	2	TC20223	26.93	TC29223	33.64	53	13/32	1-1/2	TC20253	16.26	TC29253	20.33
24	7/8	2	TC20224	26.75	TC29224	33.46	54	13/32	1-1/2	TC20254	16.26	TC29254	20.33
25	7/8	2	TC20225	25.31	TC29225	31.62	55	13/32	1-1/2	TC20255	16.26	TC29255	20.33
26	7/8	2	TC20226	25.31	TC29226	31.62	56	3/8	1-1/2	TC20256	16.26	TC29256	20.33
27	7/8	2	TC20227	25.31	TC29227	31.62	57	3/8	1-1/2	TC20257	16.26	TC29257	20.33
28	3/4	2	TC20228	24.05	TC29228	30.03	58	3/8	1-1/2	TC20258	16.26	TC29258	20.33
29	3/4	2	TC20229	24.05	TC29229	30.03	59	3/8	1-1/2	TC20259	16.26	TC29259	20.33
30	3/4	2	TC20230	22.75	TC29230	28.45	60	3/8	1-1/2	TC20260	16.26	TC29260	20.33

NOTE: SIZES 31 AND UNDER ARE NOT SPLIT.

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION PLEASE SEE PAGE 188.

DIAMETER TOLERANCE +.0000, -.0005

Solid Carbide Drills

MADE IN THE
USA

STRAIGHT FLUTE - 140° SPLIT POINT

SERIES 195
UNCOATED



SERIES 196
ALTIM COATED



**TAKE
55% OFF
LIST
PRICES!**

FRACTIONAL SIZES

SIZE	FLUTE LENGTH	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIM	LIST PRICE
1/32	3/8	1-1/2	TC19502	19.43	TC79502	24.30
3/64	3/8	1-1/2	TC19503	19.43	TC79503	24.30
1/16	13/32	1-1/2	TC19504	20.01	TC79504	24.98
5/64	7/16	1-1/2	TC19505	20.87	TC79505	26.10
3/32	1/2	1-1/2	TC19506	23.00	TC79506	28.77
7/64	5/8	2	TC19507	25.09	TC79507	31.37
1/8	3/4	2	TC19508	23.80	TC79508	29.74
9/64	3/4	2	TC19509	27.22	TC79509	34.00
5/32	7/8	2	TC19510	30.47	TC79510	38.11
11/64	7/8	2	TC19511	33.82	TC79511	42.25
3/16	7/8	2	TC19512	31.22	TC79512	39.01
13/64	1-1/8	2-1/2	TC19513	40.60	TC79513	50.80
7/32	1-1/8	2-1/2	TC19514	45.61	TC79514	57.04
15/64	1-1/4	2-1/2	TC19515	48.13	TC79515	60.17
1/4	1-1/4	2-1/2	TC19516	45.54	TC79516	56.93

FRACTIONAL SIZES

SIZE	FLUTE LENGTH	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIM	LIST PRICE
17/64	1-1/4	2-1/2	TC19517	63.31	TC79517	79.10
9/32	1-1/4	2-1/2	TC19518	65.80	TC79518	82.27
19/64	1-1/4	2-1/2	TC19519	69.66	TC79519	87.07
5/16	1-1/4	2-1/2	TC19520	72.14	TC79520	90.17
21/64	1-3/8	3	TC19521	77.55	TC79521	96.91
11/32	1-3/8	3	TC19522	86.02	TC79522	107.51
23/64	1-3/8	3	TC19523	94.10	TC79523	117.64
3/8	1-3/8	3	TC19524	93.31	TC79524	116.63
25/64	1-3/8	3	TC19525	115.41	TC79525	144.25
13/32	1-3/8	3	TC19526	110.43	TC79526	138.05
27/64	1-3/8	3	TC19527	140.03	TC79527	175.00
7/16	1-3/8	3	TC19528	136.57	TC79528	170.71
15/32	1-3/8	3	TC19530	151.96	TC79530	189.97
1/2	1-3/8	3	TC19532	164.66	TC79532	205.83
-	-	-	-	-	-	-

NOTE: SIZES 7/64" AND UNDER ARE NOT SPLIT.

LETTER SIZES

SIZE	FLUTE LENGTH	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIM	LIST PRICE
A	1-1/4	2-1/2	TC19601	48.13	TC79601	60.17
B	1-1/4	2-1/2	TC19602	48.13	TC79602	60.17
C	1-1/4	2-1/2	TC19603	48.13	TC79603	60.17
D	1-1/4	2-1/2	TC19604	48.13	TC79604	60.17
E	1-1/4	2-1/2	TC19605	45.54	TC79605	56.93
F	1-1/4	2-1/2	TC19606	63.31	TC79606	79.10
G	1-1/4	2-1/2	TC19607	63.31	TC79607	79.10
H	1-1/4	2-1/2	TC19608	63.31	TC79608	79.10
I	1-1/4	2-1/2	TC19609	65.80	TC79609	82.27
J	1-1/4	2-1/2	TC19610	65.80	TC79610	82.27
K	1-1/4	2-1/2	TC19611	65.80	TC79611	82.27
L	1-1/4	2-1/2	TC19612	69.66	TC79612	87.07
M	1-1/4	2-1/2	TC19613	69.66	TC79613	87.07

LETTER SIZES

SIZE	FLUTE LENGTH	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIM	LIST PRICE
N	1-1/4	2-1/2	TC19614	72.14	TC79614	90.17
O	1-3/8	3	TC19615	72.14	TC79615	90.17
P	1-3/8	3	TC19616	77.55	TC79616	96.95
Q	1-3/8	3	TC19617	86.02	TC79617	107.51
R	1-3/8	3	TC19618	86.02	TC79618	107.51
S	1-3/8	3	TC19619	94.10	TC79619	117.64
T	1-3/8	3	TC19620	94.10	TC79620	117.64
U	1-3/8	3	TC19621	104.37	TC79621	130.44
V	1-3/8	3	TC19622	104.37	TC79622	130.44
W	1-3/8	3	TC19623	115.41	TC79623	144.25
X	1-3/8	3	TC19624	127.70	TC79624	159.64
Y	1-3/8	3	TC19625	133.87	TC79625	167.32
Z	1-3/8	3	TC19626	140.03	TC79626	175.00

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION PLEASE SEE PAGE 188.

DIAMETER TOLERANCE +.0000, -.0005

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Solid Carbide Drills



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STRAIGHT FLUTE - 140° SPLIT POINT



SERIES 195
UNCOATED



SERIES 196
ALTiN COATED

WIRE SIZES						WIRE SIZES							
SIZE	FLUTE LENGTH	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIN	LIST PRICE	SIZE	FLUTE LENGTH	OVERALL LENGTH	UNCOATED	LIST PRICE	ALTIN	LIST PRICE
1	1-1/4	2-1/2	TC19701	46.83	TC79701	58.55	31	3/4	2	TC19731	26.75	TC79731	33.49
2	1-1/4	2-1/2	TC19702	46.00	TC79702	57.51	32	3/4	2	TC19732	26.54	TC79732	33.17
3	1-1/8	2-1/2	TC19703	44.17	TC79703	55.20	33	3/4	2	TC19733	25.85	TC79733	32.34
4	1-1/8	2-1/2	TC19704	41.71	TC79704	52.13	34	3/4	2	TC19734	25.74	TC79734	32.20
5	1-1/8	2-1/2	TC19705	42.18	TC79705	52.71	35	3/4	2	TC19735	25.09	TC79735	31.37
6	1-1/8	2-1/2	TC19706	41.57	TC79706	51.95	36	5/8	2	TC19736	24.84	TC79736	31.04
7	1-1/8	2-1/2	TC19707	40.02	TC79707	50.04	37	5/8	2	TC19737	24.84	TC79737	31.04
8	1-1/8	2-1/2	TC19708	39.44	TC79708	49.28	38	5/8	2	TC19738	24.59	TC79738	30.72
9	1-1/8	2-1/2	TC19709	38.25	TC79709	47.81	39	5/8	2	TC19739	23.61	TC79739	29.53
10	1-1/8	2-1/2	TC19710	37.68	TC79710	47.12	40	5/8	2	TC19740	23.61	TC79740	29.53
11	1-1/8	2-1/2	TC19711	37.03	TC79711	46.26	41	5/8	2	TC19741	23.61	TC79741	29.53
12	1-1/8	2-1/2	TC19712	36.34	TC79712	45.43	42	1/2	1-1/2	TC19742	22.75	TC79742	28.41
13	7/8	2	TC19713	35.73	TC79713	44.63	43	1/2	1-1/2	TC19743	22.35	TC79743	27.94
14	7/8	2	TC19714	35.48	TC79714	44.38	44	1/2	1-1/2	TC19744	22.06	TC79744	27.58
15	7/8	2	TC19715	35.15	TC79715	43.91	45	1/2	1-1/2	TC19745	21.56	TC79745	26.97
16	7/8	2	TC19716	35.01	TC79716	43.77	46	1/2	1-1/2	TC19746	20.87	TC79746	26.10
17	7/8	2	TC19717	34.18	TC79717	42.72	47	1/2	1-1/2	TC19747	20.87	TC79747	26.10
18	7/8	2	TC19718	33.21	TC79718	41.50	48	7/16	1-1/2	TC19748	20.87	TC79748	26.10
19	7/8	2	TC19719	32.99	TC79719	41.25	49	7/16	1-1/2	TC19749	20.37	TC79749	25.45
20	7/8	2	TC19720	31.87	TC79720	39.84	50	7/16	1-1/2	TC19750	20.12	TC79750	25.13
21	7/8	2	TC19721	31.65	TC79721	39.59	51	7/16	1-1/2	TC19751	20.01	TC79751	24.98
22	7/8	2	TC19722	31.04	TC79722	38.83	52	7/16	1-1/2	TC19752	20.01	TC79752	24.98
23	7/8	2	TC19723	29.74	TC79723	37.17	53	13/32	1-1/2	TC19753	19.72	TC79753	24.66
24	7/8	2	TC19724	28.91	TC79724	36.16	54	13/32	1-1/2	TC19754	19.72	TC79754	24.66
25	7/8	2	TC19725	28.05	TC79725	35.08	55	13/32	1-1/2	TC19755	19.43	TC79755	24.30
26	7/8	2	TC19726	27.73	TC79726	34.65	56	3/8	1-1/2	TC19756	19.43	TC79756	24.30
27	7/8	2	TC19727	27.18	TC79727	34.00	57	3/8	1-1/2	TC19757	19.43	TC79757	24.30
28	3/4	2	TC19728	26.28	TC79728	32.81	58	3/8	1-1/2	TC19758	19.43	TC79758	24.30
29	3/4	2	TC19729	25.71	TC79729	32.12	59	3/8	1-1/2	TC19759	19.43	TC79759	24.30
30	3/4	2	TC19730	25.31	TC79730	31.65	60	3/8	1-1/2	TC19760	19.43	TC79760	24.30

NOTE: SIZES 31 AND UNDER ARE NOT SPLIT.

FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION PLEASE SEE PAGE 188.

DIAMETER TOLERANCE

+.0000, -.0005



YOUR #1 SOURCE FOR AMERICAN-MADE PREMIUM CUTTING TOOLS

Solid Carbide Reamers

MADE IN THE
USA**TAKE 55% OFF LIST PRICES!**

SERIES 870

DEC. EQUIV.	SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
.0400	N60	.0400	1/4	1-1/2	4	TC87046	39.05
.0410	N59	.0410	3/8	1-1/2	4	TC87047	39.05
.0420	N58	.0420	3/8	1-1/2	4	TC87048	39.05
.0430	N57	.0430	3/8	1-1/2	4	TC87049	39.05
.0440		.0440	3/8	1-1/2	4	TC87050	41.26
.0450		.0450	3/8	1-1/2	4	TC87051	41.26
.0460		.0460	3/8	1-1/2	4	TC87052	41.26
.0465	N56	.0465	3/8	1-1/2	4	TC87053	39.05
.0469	3/64	.0469	3/8	1-1/2	4	TC87054	37.10
.0470		.0470	3/8	1-1/2	4	TC87055	41.26
.0480		.0480	3/8	1-1/2	4	TC87056	41.26
.0490		.0490	3/8	1-1/2	4	TC87057	41.26
.0500		.0500	3/8	1-1/2	4	TC87058	41.26
.0510		.0510	3/8	1-1/2	4	TC87059	41.26
.0520	N55	.0520	3/8	1-1/2	4	TC87060	39.05
.0530		.0530	3/8	1-1/2	4	TC87061	41.26
.0540		.0540	3/8	1-1/2	4	TC87062	41.26
.0550	N54	.0550	3/8	1-1/2	4	TC87063	39.05
.0560		.0560	3/8	1-1/2	4	TC87064	41.26
.0570		.0570	3/8	1-1/2	4	TC87065	41.26
.0580		.0580	3/8	1-1/2	4	TC87066	41.26
.0590		.0590	3/8	1-1/2	4	TC87067	41.26
.0591	1.5mm	.0591	3/8	1-1/2	4	TC87068	41.26
.0595	N53	.0595	3/8	1-1/2	4	TC87069	39.05
.0600		.0600	3/8	1-1/2	4	TC87070	41.26
.0605		.0605	3/8	1-1/2	4	TC87071	54.86
.0610		.0610	3/8	1-1/2	4	TC87072	41.26
.0615		.0615	3/8	1-1/2	4	TC87073	45.63
.0620		.0620	3/8	1-1/2	4	TC87074	41.26
.0625	1/16	.0625	3/8	1-1/2	4	TC87075	37.10
.0630		.0630	3/8	1-1/2	4	TC87076	41.26
.0635	N52	.0635	3/8	1-1/2	4	TC87077	39.05
.0640		.0640	3/8	1-1/2	4	TC87078	41.26
.0645		.0645	3/8	1-1/2	4	TC87079	54.86
.0650		.0650	3/8	1-1/2	4	TC87080	41.26
.0660		.0660	1/2	1-3/4	4	TC87081	41.26
.0670	N51	.0670	1/2	1-3/4	4	TC87082	39.05
.0680		.0680	1/2	1-3/4	4	TC87083	41.26
.0690		.0690	1/2	1-3/4	4	TC87084	41.26
.0700	N50	.0700	1/2	1-3/4	4	TC87085	39.05
.0710		.0710	1/2	1-3/4	4	TC87086	41.26
.0720		.0720	1/2	1-3/4	4	TC87087	41.26
.0730	N49	.0730	1/2	1-3/4	4	TC87088	39.05
.0740		.0740	1/2	1-3/4	4	TC87089	41.26
.0750		.0750	1/2	1-3/4	4	TC87090	41.26
.0760	N48	.0760	1/2	1-3/4	4	TC87091	39.05
.0770		.0770	1/2	1-3/4	4	TC87092	41.26
.0780		.0780	1/2	1-3/4	4	TC87093	41.26
.0781	5/64	.0781	1/2	1-3/4	4	TC87094	37.10
.0785	N47	.0785	1/2	1-3/4	4	TC87095	39.05
.0787	2mm	.0787	1/2	1-3/4	4	TC87096	41.26
.0790		.0790	1/2	1-3/4	4	TC87097	41.26
.0800		.0800	1/2	1-3/4	4	TC87098	41.26
.0810	N46	.0810	1/2	2	4	TC87099	39.05
.0820	N45	.0820	1/2	2	4	TC87100	39.05
.0830		.0830	1/2	2	4	TC87101	41.26

DEC. EQUIV.	SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
.0840		.0840	1/2	2	4	TC87102	41.26
.0850		.0850	1/2	2	4	TC87103	41.26
.0860	N44	.0860	1/2	2	4	TC87104	39.05
.0870		.0870	1/2	2	4	TC87105	41.26
.0880		.0880	1/2	2	4	TC87106	41.26
.0890	N43	.0890	1/2	2	4	TC87107	39.05
.0900		.0900	1/2	2	4	TC87108	41.26
.0910		.0910	1/2	2	4	TC87109	41.26
.0915		.0915	1/2	2	4	TC87110	54.42
.0920		.0920	1/2	2	4	TC87111	41.26
.0925		.0925	1/2	2	4	TC87112	45.63
.0930		.0930	1/2	2	4	TC87113	41.26
.0935	N42	.0935	1/2	2	4	TC87114	39.05
.0938	3/32	.0938	1/2	2	4	TC87115	37.10
.0940		.0940	1/2	2	4	TC87116	41.26
.0945		.0945	1/2	2	4	TC87117	45.63
.0950		.0950	1/2	2	4	TC87118	41.26
.0960	N41	.0960	5/8	2	4	TC87119	39.05
.0970		.0970	5/8	2	4	TC87120	41.26
.0980	N40	.0980	5/8	2	4	TC87121	39.05
.0984	2.5mm	.0984	5/8	2	4	TC87122	41.26
.0990		.0990	5/8	2-1/4	4	TC87123	41.26
.0995	N39	.0995	5/8	2-1/4	4	TC87124	39.05
.1000		.1000	5/8	2-1/4	4	TC87125	41.26
.1010		.1010	5/8	2-1/4	4	TC87126	41.26
.1015	N38	.1015	5/8	2-1/4	4	TC87127	39.05
.1020		.1020	5/8	2-1/4	4	TC87128	41.26
.1030		.1030	5/8	2-1/4	4	TC87129	41.26
.1040	N37	.1040	5/8	2-1/4	4	TC87130	39.05
.1050		.1050	5/8	2-1/4	4	TC87131	41.26
.1060		.1060	5/8	2-1/4	4	TC87132	41.26
.1065	N36	.1065	5/8	2-1/4	4	TC87133	39.05
.1070		.1070	5/8	2-1/4	4	TC87134	41.26
.1080		.1080	5/8	2-1/4	4	TC87135	41.26
.1090		.1090	5/8	2-1/4	4	TC87136	42.99
.1094	7/64	.1094	5/8	2-1/4	4	TC87137	37.10
.1100	N35	.1100	5/8	2-1/4	4	TC87138	39.05
.1110	N34	.1110	5/8	2-1/4	4	TC87139	39.05
.1120		.1120	5/8	2-1/4	4	TC87140	41.26
.1130	N33	.1130	5/8	2-1/4	4	TC87141	39.05
.1140		.1140	5/8	2-1/4	4	TC87142	41.26
.1150		.1150	5/8	2-1/4	4	TC87143	41.26
.1160	N32	.1160	5/8	2-1/4	4	TC87144	41.07
.1170		.1170	5/8	2-1/4	4	TC87145	43.69
.1180		.1180	5/8	2-1/4	4	TC87146	43.69
.1181	3mm	.1181	5/8	2-1/4	4	TC87147	40.16
.1190		.1190	5/8	2-1/4	4	TC87148	43.69
.1200	N31	.1200	5/8	2-1/4	4	TC87149	41.07
.1210		.1210	5/8	2-1/4	4	TC87150	43.69
.1220		.1220	5/8	2-1/4	4	TC87151	43.69
.1230		.1230	5/8	2-1/4	4	TC87152	43.69
.1235		.1235	5/8	2-1/4	4	TC87153	58.17
.1240		.1240	5/8	2-1/4	4	TC87154	43.69
.1245		.1245	5/8	2-1/4	4	TC87155	48.28
.1250	1/8	.1250	5/8	2-1/4	4	TC87156	39.49
.1255		.1255	5/8	2-1/4	4	TC87157	48.28

CONTINUED ON NEXT PAGE

TOLERANCES	DIAMETER	SHANK
ALL SIZES	+.0003, -.0000	+.0003, -.0002

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Solid Carbide Reamers

**TAKE 55% OFF LIST PRICES!**

SERIES 870

DEC. EQUIV.	SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
.1260		.1260	5/8	2-1/4	4	TC87158	43.69
.1265		.1265	5/8	2-1/4	4	TC87159	58.17
.1270		.1270	5/8	2-1/4	4	TC87160	43.69
.1275		.1275	5/8	2-1/4	4	TC87161	58.17
.1280		.1280	5/8	2-1/4	4	TC87162	43.69
.1285	N30	.1285	5/8	2-1/4	4	TC87163	43.69
.1290		.1290	5/8	2-1/4	4	TC87164	43.69
.1300		.1300	5/8	2-1/2	4	TC87165	43.69
.1310		.1310	3/4	2-1/2	4	TC87166	50.01
.1320		.1320	3/4	2-1/2	4	TC87167	50.01
.1330		.1330	3/4	2-1/2	4	TC87168	50.01
.1340		.1340	3/4	2-1/2	4	TC87169	50.01
.1350		.1350	3/4	2-1/2	4	TC87170	50.01
.1360	N29	.1360	3/4	2-1/2	4	TC87171	46.77
.1370		.1370	3/4	2-1/2	4	TC87172	50.01
.1378	3.5mm	.1378	3/4	2-1/2	4	TC87173	50.01
.1380		.1380	3/4	2-1/2	4	TC87174	50.01
.1390		.1390	3/4	2-1/2	4	TC87175	50.01
.1400		.1400	3/4	2-1/2	4	TC87176	50.01
.1405	N28	.1405	3/4	2-1/2	4	TC87177	46.77
.1406	9/64	.1406	3/4	2-1/2	4	TC87178	45.01
.1410		.1410	3/4	2-1/2	4	TC87179	50.01
.1420		.1420	3/4	2-1/2	4	TC87180	50.01
.1430		.1430	3/4	2-1/2	4	TC87181	50.01
.1440	N27	.1440	3/4	2-1/2	4	TC87182	46.77
.1450		.1450	3/4	2-1/2	4	TC87183	50.01
.1460		.1460	3/4	2-1/2	4	TC87184	52.22
.1470	N26	.1470	3/4	2-1/2	4	TC87185	48.72
.1480		.1480	3/4	2-1/2	4	TC87186	52.22
.1490		.1490	3/4	2-1/2	4	TC87187	52.22
.1495	N25	.1495	3/4	2-1/2	4	TC87188	48.72
.1500		.1500	3/4	2-1/2	4	TC87189	52.22
.1510		.1510	3/4	2-1/2	4	TC87190	52.22
.1520	N24	.1520	3/4	2-1/2	4	TC87191	48.72
.1530		.1530	3/4	2-1/2	4	TC87192	52.22
.1540	N23	.1540	3/4	2-1/2	4	TC87193	48.72
.1545		.1545	3/4	2-1/2	4	TC87194	60.38
.1550		.1550	3/4	2-1/2	4	TC87195	52.22
.1555		.1555	3/4	2-1/2	4	TC87196	60.38
.1560		.1560	3/4	2-1/2	4	TC87197	52.22
.1562	5/32	.1562	3/4	2-1/2	4	TC87198	47.22
.1565		.1565	3/4	2-1/2	4	TC87199	60.38
.1570	N22	.1570	3/4	2-1/2	4	TC87200	48.72
.1575	4mm	.1575	3/4	2-1/2	4	TC87201	52.22
.1580		.1580	3/4	2-1/2	4	TC87202	52.22
.1590	N21	.1590	3/4	2-1/2	4	TC87203	48.72
.1600		.1600	3/4	2-1/2	4	TC87204	52.22
.1610	N20	.1610	7/8	2-1/2	4	TC87205	54.86
.1620		.1620	7/8	2-3/4	4	TC87206	58.80
.1630		.1630	7/8	2-3/4	4	TC87207	58.80
.1640		.1640	7/8	2-3/4	4	TC87208	58.80
.1650		.1650	7/8	2-3/4	4	TC87209	54.86
.1660	N19	.1660	7/8	2-3/4	4	TC87210	54.86
.1670		.1670	7/8	2-3/4	4	TC87211	58.80
.1680		.1680	7/8	2-3/4	4	TC87212	58.80
.1690		.1690	7/8	2-3/4	4	TC87213	58.80

DEC. EQUIV.	SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
.1695	N18	.1695	7/8	2-3/4	4	TC87214	54.86
.1700		.1700	7/8	2-3/4	4	TC87215	58.80
.1710		.1710	7/8	2-3/4	4	TC87216	58.80
.1719	11/64	.1719	7/8	2-3/4	4	TC87217	52.88
.1720		.1720	7/8	2-3/4	4	TC87218	58.80
.1730	N17	.1730	7/8	2-3/4	4	TC87219	54.86
.1740		.1740	7/8	2-3/4	4	TC87220	58.80
.1750		.1750	7/8	2-3/4	4	TC87221	58.80
.1760		.1760	7/8	2-3/4	4	TC87222	58.80
.1770	N16	.1770	7/8	2-3/4	4	TC87223	54.86
.1772	4.5mm	.1772	7/8	2-3/4	4	TC87224	61.23
.1780		.1780	7/8	2-3/4	4	TC87225	58.80
.1790		.1790	7/8	2-3/4	4	TC87226	58.80
.1800	N15	.1800	7/8	2-3/4	4	TC87227	54.86
.1810		.1810	7/8	2-3/4	4	TC87228	58.80
.1820	N14	.1820	7/8	2-3/4	4	TC87229	54.86
.1830		.1830	7/8	2-3/4	4	TC87230	58.80
.1840		.1840	7/8	2-3/4	4	TC87231	58.80
.1850	N13	.1850	7/8	2-3/4	4	TC87232	54.86
.1855		.1855	7/8	2-3/4	4	TC87233	70.68
.1860		.1860	7/8	2-3/4	4	TC87234	58.80
.1865		.1865	7/8	2-3/4	4	TC87235	63.21
.1870		.1870	7/8	2-3/4	4	TC87236	58.80
.1875	3/16	.1875	7/8	2-3/4	4	TC87237	52.88
.1880		.1880	7/8	2-3/4	4	TC87238	58.80
.1885		.1885	7/8	2-3/4	4	TC87239	63.21
.1890	N12	.1890	7/8	2-3/4	4	TC87240	54.86
.1900		.1900	7/8	2-3/4	4	TC87241	58.80
.1910	N11	.1910	7/8	2-3/4	4	TC87242	66.71
.1920		.1920	7/8	2-3/4	4	TC87243	71.34
.1930		.1930	7/8	2-3/4	4	TC87244	71.34
.1935	N10	.1935	7/8	2-3/4	4	TC87245	66.71
.1940		.1940	7/8	2-3/4	4	TC87246	71.34
.1950		.1950	7/8	2-3/4	4	TC87247	71.34
.1960	N9	.1960	1	3	4	TC87248	66.71
.1969	5mm	.1969	1	3	4	TC87249	71.34
.1970		.1970	1	3	4	TC87250	71.34
.1980		.1980	1	3	4	TC87251	71.34
.1990	N8	.1990	1	3	4	TC87252	66.71
.2000		.2000	1	3	4	TC87253	71.34
.2010	N7	.2010	1	3	4	TC87254	66.71
.2020		.2020	1	3	4	TC87255	71.34
.2030		.2030	1	3	4	TC87256	71.34
.2031	13/64	.2031	1	3	4	TC87257	64.06
.2040	N6	.2040	1	3	4	TC87258	66.71
.2050		.2050	1	3	4	TC87259	71.34
.2055	N5	.2055	1	3	4	TC87260	66.71
.2060		.2060	1	3	4	TC87261	71.34
.2070		.2070	1	3	4	TC87262	71.34
.2080		.2080	1	3	4	TC87263	71.34
.2090	N4	.2090	1	3	4	TC87264	66.71
.2100		.2100	1	3	4	TC87265	71.34
.2110		.2110	1	3	4	TC87266	71.34
.2120		.2120	1	3	4	TC87267	71.34
.2130	N3	.2130	1	3	4	TC87268	66.71
.2140		.2140	1	3	4	TC87269	71.34

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TOLERANCES	DIAMETER	SHANK
ALL SIZES	+ .0003, -.0000	+ .0003, -.0002



YOUR #1 SOURCE FOR AMERICAN-MADE PREMIUM CUTTING TOOLS

Solid Carbide Reamers

MADE IN THE
USA

TAKE 55% OFF LIST PRICES!



SERIES 870

DEC. EQUIV.	SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
.2150		.2150	1	3	4	TC87270	71.34
.2160		.2160	1	3	4	TC87271	71.34
.2165	5.5mm	.2165	1	3	4	TC87272	75.27
.2170		.2170	1	3	4	TC87273	71.34
.2180		.2180	1	3	4	TC87274	71.34
.2188	7/32	.2188	1	3	4	TC87275	64.06
.2190		.2190	1	3	4	TC87276	71.34
.2200		.2200	1	3	4	TC87277	71.34
.2210	N2	.2210	1	3	4	TC87278	66.71
.2220		.2220	1	3	4	TC87279	71.34
.2230		.2230	1	3	4	TC87280	71.34
.2240		.2240	1	3	4	TC87281	71.34
.2250		.2250	1	3	4	TC87282	71.34
.2260		.2260	1	3	4	TC87283	78.36
.2270		.2270	1	3	4	TC87284	78.36
.2280	N1	.2280	1	3	4	TC87285	73.10
.2290		.2290	1	3	4	TC87286	73.10
.2300		.2300	1	3	4	TC87287	78.36
.2310		.2310	1	3	4	TC87288	78.36
.2320		.2320	1	3	4	TC87289	78.36
.2330		.2330	1	3	4	TC87290	78.36
.2340	A	.2340	1	3	4	TC87291	78.36
.2344	15/64	.2344	1	3	4	TC87292	70.46
.2350		.2350	1	3	4	TC87293	78.36
.2360		.2360	1	3	4	TC87294	78.36
.2362	6mm	.2362	1	3	4	TC87295	74.61
.2370		.2370	1	3	4	TC87296	78.36
.2380	B	.2380	1	3	4	TC87297	78.36
.2390		.2390	1	3	4	TC87298	78.36
.2400		.2400	1	3	4	TC87299	78.36
.2410		.2410	1	3	4	TC87300	78.36
.2420	C	.2420	1	3	4	TC87301	78.36
.2430		.2430	1	3	4	TC87302	78.36
.2440		.2440	1	3	4	TC87303	78.36
.2450		.2450	1	3	4	TC87304	78.36
.2460	D	.2460	1	3	4	TC87305	78.36
.2470		.2470	1	3	4	TC87306	78.36
.2480		.2480	1	3	4	TC87307	78.36
.2485		.2485	1	3	4	TC87308	87.56
.2490		.2490	1	3	4	TC87309	78.36
.2495		.2495	1	3	4	TC87310	83.18
.2500	1/4	.2500	1	3	4	TC87311	70.46
.2505		.2505	1	3	4	TC87312	83.18
.2510		.2510	1	3	4	TC87313	78.36
.2515		.2515	1	3	4	TC87314	97.45
.2520		.2520	1	3	4	TC87315	78.36
.2530		.2530	1	3	4	TC87316	78.36
.2540		.2540	1	3	4	TC87317	78.36
.2550		.2550	1	3	6	TC87318	78.36
.2559	6.5mm	.2559	1-1/8	3-1/4	6	TC87319	82.96
.2560		.2560	1-1/8	3-1/4	6	TC87320	94.80
.2570	F	.2570	1-1/8	3-1/4	6	TC87321	94.80
.2580		.2580	1-1/8	3-1/4	6	TC87322	94.80
.2590		.2590	1-1/8	3-1/4	6	TC87323	94.80
.2600		.2600	1-1/8	3-1/4	6	TC87324	94.80
.2610	G	.2610	1-1/8	3-1/4	6	TC87325	94.80

DEC. EQUIV.	SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
.2620		.2620	1-1/8	3-1/4	6	TC87326	94.80
.2630		.2630	1-1/8	3-1/4	6	TC87327	94.80
.2640		.2640	1-1/8	3-1/4	6	TC87328	94.80
.2650		.2650	1-1/8	3-1/4	6	TC87329	94.80
.2656	17/64	.2656	1-1/8	3-1/4	6	TC87330	85.39
.2660	H	.2660	1-1/8	3-1/4	6	TC87331	94.80
.2670		.2670	1-1/8	3-1/4	6	TC87332	94.80
.2680		.2680	1-1/8	3-1/4	6	TC87333	94.80
.2690		.2690	1-1/8	3-1/4	6	TC87334	94.80
.2700		.2700	1-1/8	3-1/4	6	TC87335	94.80
.2710		.2710	1-1/8	3-1/4	6	TC87336	94.80
.2720	I	.2720	1-1/8	3-1/4	6	TC87337	94.80
.2730		.2730	1-1/8	3-1/4	6	TC87338	94.80
.2740		.2740	1-1/8	3-1/4	6	TC87339	94.80
.2750		.2750	1-1/8	3-1/4	6	TC87340	94.80
.2756	7mm	.2756	1-1/8	3-1/4	6	TC87341	103.55
.2760		.2760	1-1/8	3-1/4	6	TC87342	94.80
.2770	J	.2770	1-1/8	3-1/4	6	TC87343	94.80
.2780		.2780	1-1/8	3-1/4	6	TC87344	94.80
.2790		.2790	1-1/8	3-1/4	6	TC87345	94.80
.2800		.2800	1-1/8	3-1/4	6	TC87346	94.80
.2810	K	.2810	1-1/8	3-1/4	6	TC87347	94.80
.2812	9/32	.2812	1-1/8	3-1/4	6	TC87348	85.39
.2820		.2820	1-1/8	3-1/4	6	TC87349	94.80
.2830		.2830	1-1/8	3-1/4	6	TC87350	94.80
.2840		.2840	1-1/8	3-1/4	6	TC87351	94.80
.2850		.2850	1-1/8	3-1/4	6	TC87352	94.80
.2860		.2860	1-1/8	3-1/4	6	TC87353	94.80
.2870		.2870	1-1/8	3-1/4	6	TC87354	94.80
.2880		.2880	1-1/8	3-1/4	6	TC87355	94.80
.2890		.2890	1-1/8	3-1/4	6	TC87356	94.80
.2900	L	.2900	1-1/8	3-1/4	6	TC87357	94.80
.2910		.2910	1-1/8	3-1/4	6	TC87358	94.80
.2920		.2920	1-1/8	3-1/4	6	TC87359	94.80
.2930		.2930	1-1/8	3-1/4	6	TC87360	94.80
.2940		.2940	1-1/8	3-1/4	6	TC87361	94.80
.2950	M	.2950	1-1/8	3-1/4	6	TC87362	94.80
.2953	7.5mm	.2953	1-1/8	3-1/4	6	TC87363	103.55
.2960		.2960	1-1/8	3-1/4	6	TC87364	94.80
.2969	19/64	.2969	1-1/8	3-1/4	6	TC87365	94.80
.2970		.2970	1-1/8	3-1/4	6	TC87366	94.80
.2980		.2980	1-1/8	3-1/4	6	TC87367	94.80
.2990		.2990	1-1/8	3-1/4	6	TC87368	94.80
.3000		.3000	1-1/8	3-1/4	6	TC87369	94.80
.3010		.3010	1-1/8	3-1/4	6	TC87370	94.80
.3020	N	.3020	1-1/8	3-1/4	6	TC87371	94.80
.3030		.3030	1-1/8	3-1/4	6	TC87372	94.80
.3040		.3040	1-1/8	3-1/4	6	TC87373	94.80
.3050		.3050	1-1/8	3-1/4	6	TC87374	94.80
.3060		.3060	1-1/8	3-1/4	6	TC87375	94.80
.3070		.3070	1-1/8	3-1/4	6	TC87376	94.80
.3080		.3080	1-1/8	3-1/4	6	TC87377	94.80
.3090		.3090	1-1/8	3-1/4	6	TC87378	94.80
.3100		.3100	1-1/8	3-1/4	6	TC87379	94.80
.3110		.3110	1-1/8	3-1/4	6	TC87380	94.80
.3115		.3115	1-1/8	3-1/4	6	TC87381	108.85

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TOLERANCES	DIAMETER	SHANK
ALL SIZES	+ .0003, - .0000	+ .0003, - .0002

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SERIES 870

DEC. EQUIV.	SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
.3120		.3120	1-1/8	3-1/4	6	TC87382	94.80
.3125	5/16	.3125	1-1/8	3-1/4	6	TC87383	94.80
.3130		.3130	1-1/8	3-1/4	6	TC87384	94.80
.3135		.3135	1-1/8	3-1/4	6	TC87385	108.85
.3140		.3140	1-1/8	3-1/4	6	TC87386	94.80
.3150	8mm	.3150	1-1/8	3-1/4	6	TC87387	94.80
.3160	O	.3160	1-1/8	3-1/4	6	TC87388	106.01
.3170		.3170	1-1/8	3-1/4	6	TC87389	106.01
.3180		.3180	1-1/8	3-1/4	6	TC87390	106.01
.3190		.3190	1-1/8	3-1/4	6	TC87391	106.01
.3200		.3200	1-1/8	3-1/4	6	TC87392	106.01
.3210		.3210	1-1/4	3-1/2	6	TC87393	106.01
.3220		.3220	1-1/4	3-1/2	6	TC87394	106.01
.3230	P	.3230	1-1/4	3-1/2	6	TC87395	106.01
.3240		.3240	1-1/4	3-1/2	6	TC87396	106.01
.3250		.3250	1-1/4	3-1/2	6	TC87397	106.01
.3260		.3260	1-1/4	3-1/2	6	TC87398	106.01
.3270		.3270	1-1/4	3-1/2	6	TC87399	106.01
.3280		.3280	1-1/4	3-1/2	6	TC87400	106.01
.3281	21/64	.3281	1-1/4	3-1/2	6	TC87401	107.08
.3290		.3290	1-1/4	3-1/2	6	TC87402	106.01
.3300		.3300	1-1/4	3-1/2	6	TC87403	106.01
.3310		.3310	1-1/4	3-1/2	6	TC87404	106.01
.3320	Q	.3320	1-1/4	3-1/2	6	TC87405	106.01
.3330		.3330	1-1/4	3-1/2	6	TC87406	106.01
.3340		.3340	1-1/4	3-1/2	6	TC87407	106.01
.3346	8.5mm	.3346	1-1/4	3-1/2	6	TC87408	106.01
.3350		.3350	1-1/4	3-1/2	6	TC87409	106.01
.3360		.3360	1-1/4	3-1/2	6	TC87410	106.01
.3370		.3370	1-1/4	3-1/2	6	TC87411	106.01
.3380		.3380	1-1/4	3-1/2	6	TC87412	106.01
.3390	R	.3390	1-1/4	3-1/2	6	TC87413	106.71
.3400		.3400	1-1/4	3-1/2	6	TC87414	106.01
.3410		.3410	1-1/4	3-1/2	6	TC87415	106.01
.3420		.3420	1-1/4	3-1/2	6	TC87416	106.01
.3430		.3430	1-1/4	3-1/2	6	TC87417	106.01
.3438	11/32	.3438	1-1/4	3-1/2	6	TC87418	107.08
.3440		.3440	1-1/4	3-1/2	6	TC87419	106.01
.3450		.3450	1-1/4	3-1/2	6	TC87420	106.01
.3460		.3460	1-1/4	3-1/2	6	TC87421	106.01
.3470		.3470	1-1/4	3-1/2	6	TC87422	106.01
.3480	S	.3480	1-1/4	3-1/2	6	TC87423	106.01
.3490		.3490	1-1/4	3-1/2	6	TC87424	106.01
.3500		.3500	1-1/4	3-1/2	6	TC87425	106.01
.3510		.3510	1-1/4	3-1/2	6	TC87426	115.65
.3520		.3520	1-1/4	3-1/2	6	TC87427	115.65
.3530		.3530	1-1/4	3-1/2	6	TC87428	115.65
.3540		.3540	1-1/4	3-1/2	6	TC87429	115.65
.3543	9mm	.3543	1-1/4	3-1/2	6	TC87430	120.69
.3550		.3550	1-1/4	3-1/2	6	TC87431	115.65
.3560		.3560	1-1/4	3-1/2	6	TC87432	115.65
.3570		.3570	1-1/4	3-1/2	6	TC87433	115.65
.3580	T	.3580	1-1/4	3-1/2	6	TC87434	115.65
.3590		.3590	1-1/4	3-1/2	6	TC87435	117.63
.3594	23/64	.3594	1-1/4	3-1/2	6	TC87436	114.10
.3600		.3600	1-1/4	3-1/2	6	TC87437	115.65

DEC. EQUIV.	SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
.3610		.3610	1-1/4	3-1/2	6	TC87438	115.65
.3620		.3620	1-1/4	3-1/2	6	TC87439	115.65
.3630		.3630	1-1/4	3-1/2	6	TC87440	115.65
.3640		.3640	1-1/4	3-1/2	6	TC87441	115.65
.3650		.3650	1-1/4	3-1/2	6	TC87442	115.65
.3660		.3660	1-1/4	3-1/2	6	TC87443	115.65
.3670		.3670	1-1/4	3-1/2	6	TC87444	115.65
.3680	U	.3680	1-1/4	3-1/2	6	TC87445	115.65
.3690		.3690	1-1/4	3-1/2	6	TC87446	115.65
.3700		.3700	1-1/4	3-1/2	6	TC87447	115.65
.3710		.3710	1-1/4	3-1/2	6	TC87448	115.65
.3720		.3720	1-1/4	3-1/2	6	TC87449	115.65
.3730		.3730	1-1/4	3-1/2	6	TC87450	115.65
.3740	9.5mm	.3740	1-1/4	3-1/2	6	TC87451	96.56
.3745		.3745	1-1/4	3-1/2	6	TC87452	140.43
.3750	3/8	.3750	1-1/4	3-1/2	6	TC87453	114.10
.3755		.3755	1-1/4	3-1/2	6	TC87454	140.43
.3760		.3760	1-1/4	3-1/2	6	TC87455	145.25
.3765		.3765	1-1/4	3-1/2	6	TC87456	152.38
.3770	V	.3770	1-1/4	3-1/2	6	TC87457	145.25
.3780		.3780	1-1/4	3-1/2	6	TC87458	145.25
.3790		.3790	1-1/4	3-1/2	6	TC87459	145.25
.3800		.3800	1-1/4	3-1/2	6	TC87460	145.25
.3810		.3810	1-1/4	3-1/2	6	TC87461	145.25
.3820		.3820	1-1/4	3-1/2	6	TC87462	145.25
.3830		.3830	1-1/4	3-1/2	6	TC87463	145.25
.3840		.3840	1-1/4	3-1/2	6	TC87464	145.25
.3850		.3850	1-1/4	3-1/2	6	TC87465	145.25
.3860	W	.3860	1-1/4	3-1/2	6	TC87466	145.25
.3870		.3870	1-1/4	3-1/2	6	TC87467	180.18
.3880		.3880	1-1/4	3-1/2	6	TC87468	180.18
.3890		.3890	1-1/4	3-1/2	6	TC87469	180.18
.3900		.3900	1-1/4	3-1/2	6	TC87470	180.18
.3906	25/64	.3906	1-1/4	3-1/2	6	TC87471	130.80
.3910		.3910	1-1/4	3-1/2	6	TC87472	180.18
.3920		.3920	1-1/4	3-1/2	6	TC87473	180.18
.3930		.3930	1-1/4	3-1/2	6	TC87474	180.18
.3937	10mm	.3937	1-1/4	3-1/2	6	TC87475	136.50
.3940		.3940	1-1/4	3-1/2	6	TC87476	180.18
.3950		.3950	1-1/4	3-1/2	6	TC87477	180.18
.3960		.3960	1-1/4	3-1/2	6	TC87478	180.18
.3970	X	.3970	1-1/4	3-1/2	6	TC87479	180.18
.3980		.3980	1-1/4	3-1/2	6	TC87480	180.18
.3990		.3990	1-1/4	3-1/2	6	TC87481	180.18
.4000		.4000	1-1/4	3-1/2	6	TC87482	180.18
.4010		.4010	1-1/4	3-1/2	6	TC87483	180.18
.4020		.4020	1-1/4	3-1/2	6	TC87484	180.18
.4030		.4030	1-1/4	3-1/2	6	TC87485	180.18
.4040	Y	.4040	1-1/4	3-1/2	6	TC87486	180.18
.4050		.4050	1-1/4	3-1/2	6	TC87487	180.18
.4060		.4060	1-1/4	3-1/2	6	TC87488	180.18
.4062	13/32	.4062	1-1/4	3-1/2	6	TC87489	130.80
.4070		.4070	1-1/4	3-1/2	6	TC87490	180.18
.4080		.4080	1-1/4	3-1/2	6	TC87491	180.18
.4090		.4090	1-1/4	3-1/2	6	TC87492	180.18
.4100		.4100	1-1/4	3-1/2	6	TC87493	180.18

CONTINUED ON NEXT PAGE

TOLERANCES	DIAMETER	SHANK
ALL SIZES	+ .0003, -.0000	+ .0003, -.0002



YOUR #1 SOURCE FOR AMERICAN-MADE PREMIUM CUTTING TOOLS

Solid Carbide Reamers

MADE IN THE
USA**TAKE 55% OFF LIST PRICES!**

SERIES 870

DEC. EQUIV.	SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
.4110		.4110	1-1/4	3-1/2	6	TC87494	180.18
.4120		.4120	1-1/4	3-1/2	6	TC87495	180.18
.4130	Z	.4130	1-1/4	3-1/2	6	TC87496	180.18
.4134	10.5mm	.4134	1-1/4	3-1/2	6	TC87497	164.12
.4140		.4140	1-1/4	3-1/2	6	TC87498	180.18
.4150		.4150	1-1/4	3-1/2	6	TC87499	180.18
.4160		.4160	1-3/8	4	6	TC87500	180.18
.4170		.4170	1-3/8	4	6	TC87501	180.18
.4180		.4180	1-3/8	4	6	TC87502	180.18
.4190		.4190	1-3/8	4	6	TC87503	180.18
.4200		.4200	1-3/8	4	6	TC87504	180.18
.4210		.4210	1-3/8	4	6	TC87505	180.18
.4219	27/64	.4219	1-3/8	4	6	TC87506	148.30
.4220		.4220	1-3/8	4	6	TC87507	180.18
.4230		.4230	1-3/8	4	6	TC87508	180.18
.4240		.4240	1-3/8	4	6	TC87509	180.18
.4250		.4250	1-3/8	4	6	TC87510	180.18
.4260		.4260	1-3/8	4	6	TC87511	180.18
.4270		.4270	1-3/8	4	6	TC87512	180.18
.4280		.4280	1-3/8	4	6	TC87513	180.18
.4290		.4290	1-3/8	4	6	TC87514	180.18
.4300		.4300	1-3/8	4	6	TC87515	180.18
.4310		.4310	1-3/8	4	6	TC87516	180.18
.4320		.4320	1-3/8	4	6	TC87517	180.18
.4330		.4330	1-3/8	4	6	TC87518	180.18
.4331	11mm	.4331	1-3/8	4	6	TC87519	164.12
.4340		.4340	1-3/8	4	6	TC87520	180.18
.4350		.4350	1-3/8	4	6	TC87521	180.18
.4360		.4360	1-3/8	4	6	TC87522	180.18
.4365		.4365	1-3/8	4	6	TC87523	180.18
.4370		.4370	1-3/8	4	6	TC87524	180.18
.4375	7/16	.4375	1-3/8	4	6	TC87525	148.30
.4380		.4380	1-3/8	4	6	TC87526	180.18
.4385		.4385	1-3/8	4	6	TC87527	215.30
.4390		.4390	1-3/8	4	6	TC87528	180.18
.4400		.4400	1-3/8	4	6	TC87529	180.18
.4410		.4410	1-3/8	4	6	TC87530	204.45
.4420		.4420	1-3/8	4	6	TC87531	204.45
.4430		.4430	1-3/8	4	6	TC87532	204.45
.4440		.4440	1-3/8	4	6	TC87533	204.45
.4450		.4450	1-3/8	4	6	TC87534	204.45
.4460		.4460	1-3/8	4	6	TC87535	204.45
.4470		.4470	1-3/8	4	6	TC87536	204.45
.4480		.4480	1-3/8	4	6	TC87537	204.45
.4490		.4490	1-3/8	4	6	TC87538	204.45
.4500		.4500	1-3/8	4	6	TC87539	204.45
.4510		.4510	1-3/8	4	6	TC87540	204.45
.4520		.4520	1-3/8	4	6	TC87541	204.45
.4528	11.5mm	.4528	1-3/8	4	6	TC87542	204.45
.4530		.4530	1-3/8	4	6	TC87543	187.39
.4531	29/64	.4531	1-3/8	4	6	TC87544	163.49
.4540		.4540	1-3/8	4	6	TC87545	204.45
.4550		.4550	1-3/8	4	6	TC87546	204.45

DEC. EQUIV.	SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	# OF FLUTES	ITEM#	LIST PRICE
.4560		.4560	1-3/8	4	6	TC87547	204.45
.4570		.4570	1-3/8	4	6	TC87548	204.45
.4580		.4580	1-3/8	4	6	TC87549	204.45
.4590		.4590	1-3/8	4	6	TC87550	204.45
.4600		.4600	1-3/8	4	6	TC87551	204.45
.4610		.4610	1-3/8	4	6	TC87552	204.45
.4620		.4620	1-3/8	4	6	TC87553	204.45
.4630		.4630	1-3/8	4	6	TC87554	204.45
.4640		.4640	1-3/8	4	6	TC87555	204.45
.4650		.4650	1-3/8	4	6	TC87556	204.45
.4660		.4660	1-3/8	4	6	TC87557	204.45
.4670		.4670	1-3/8	4	6	TC87558	204.45
.4680		.4680	1-3/8	4	6	TC87559	204.45
.4688	15/32	.4688	1-3/8	4	6	TC87560	163.49
.4690		.4690	1-3/8	4	6	TC87561	215.45
.4700		.4700	1-3/8	4	6	TC87562	215.45
.4710		.4710	1-3/8	4	6	TC87563	215.45
.4720		.4720	1-3/8	4	6	TC87564	215.45
.4724	12mm	.4724	1-3/8	4	6	TC87565	207.58
.4730		.4730	1-3/8	4	6	TC87566	215.45
.4740		.4740	1-3/8	4	6	TC87567	215.45
.4750		.4750	1-3/8	4	6	TC87568	215.45
.4760		.4760	1-1/2	4	6	TC87569	215.45
.4770		.4770	1-1/2	4	6	TC87570	215.45
.4780		.4780	1-1/2	4	6	TC87571	215.45
.4790		.4790	1-1/2	4	6	TC87572	215.45
.4800		.4800	1-1/2	4	6	TC87573	215.45
.4810		.4810	1-1/2	4	6	TC87574	215.45
.4820		.4820	1-1/2	4	6	TC87575	215.45
.4830		.4830	1-1/2	4	6	TC87576	215.45
.4840		.4840	1-1/2	4	6	TC87577	215.45
.4844	31/64	.4844	1-1/2	4	6	TC87578	185.22
.4850		.4850	1-1/2	4	6	TC87579	215.45
.4860		.4860	1-1/2	4	6	TC87580	215.45
.4870		.4870	1-1/2	4	6	TC87581	259.80
.4880		.4880	1-1/2	4	6	TC87582	259.80
.4890		.4890	1-1/2	4	6	TC87583	259.80
.4900		.4900	1-1/2	4	6	TC87584	259.80
.4910		.4910	1-1/2	4	6	TC87585	259.80
.4920		.4920	1-1/2	4	6	TC87586	259.80
.4921	12.5mm	.4921	1-1/2	4	6	TC87587	259.80
.4930		.4930	1-1/2	4	6	TC87588	259.80
.4940		.4940	1-1/2	4	6	TC87589	259.80
.4950		.4950	1-1/2	4	6	TC87590	259.80
.4960		.4960	1-1/2	4	6	TC87591	259.80
.4970		.4970	1-1/2	4	6	TC87592	259.80
.4980		.4980	1-1/2	4	6	TC87593	259.80
.4990		.4990	1-1/2	4	6	TC87594	259.80
.4995		.4995	1-1/2	4	6	TC87595	259.80
.5000	1/2	.5000	1-1/2	4	6	TC87596	185.22
.5005		.5005	1-1/2	4	6	TC87597	259.80
.5010		.5010	1-1/2	4	6	TC87598	259.80
.5020		.5020	1-1/2	4	6	TC87599	259.80

TOLERANCES	DIAMETER	SHANK
ALL SIZES	+.0003, -.0000	+.0003, -.0002

MADE IN THE
USA

Solid Carbide Reamers

**TAKE 55% OFF LIST PRICES!****SPECIAL SIZES****PRICES INCLUDE THE FOLLOWING STYLES:****STRAIGHT FLUTE - RIGHT HAND CUT ■ RIGHT HAND SPIRAL - RIGHT HAND CUT ■ LEFT HAND SPIRAL - RIGHT HAND CUT**

SIZE RANGE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	1 PIECE	2 PIECES	3-5 PIECES	6-11 PIECES	12-17 PIECES	18-23 PIECES	24-35 PIECES	36-49 PIECES	50-74 PIECES
.0401 - .0450	0.037	3/8	1-1/2	249.86	165.30	144.15	92.26	73.04	65.35	61.50	57.65	53.82
.0451 - .0500	0.042	3/8	1-1/2	249.86	165.30	144.15	92.26	73.04	65.35	61.50	57.65	53.82
.0501 - .0570	0.046	3/8	1-1/2	251.77	167.20	146.07	94.17	74.96	67.27	63.42	59.58	55.75
.0571 - .0650	0.053	3/8	1-1/2	249.86	165.30	144.15	92.26	73.04	65.35	61.50	57.65	53.82
.0651 - .0800	0.060	1/2	1-3/4	251.77	167.20	146.07	94.17	74.96	67.27	63.42	59.58	55.75
.0801 - .0950	0.075	1/2	2	253.71	169.13	147.99	96.10	76.88	69.20	65.35	61.50	57.65
.0951 - .1150	0.090	5/8	2-1/4	257.54	172.97	151.83	99.94	80.71	73.04	69.20	65.35	61.50
.1151 - .1300	0.110	5/8	2-1/4	259.47	174.89	153.75	101.87	82.65	74.96	71.10	67.27	63.42
.1301 - .1450	0.125	3/4	2-1/2	265.22	180.66	159.53	107.63	88.43	80.71	76.88	73.04	69.20
.1451 - .1600	0.140	3/4	2-1/2	271.01	186.43	165.30	113.40	94.17	86.49	82.65	78.80	74.96
.1601 - .1750	0.155	7/8	2-3/4	276.76	192.20	171.04	119.15	99.94	92.26	88.43	84.57	80.71
.1751 - .1950	0.170	7/8	2-3/4	284.46	199.88	178.75	126.85	107.63	99.94	96.10	92.26	88.43
.1951 - .2100	0.188	1	3	299.82	215.26	194.13	142.23	123.01	115.32	111.48	107.63	103.78
.2101 - .2250	0.205	1	3	305.60	221.03	199.88	147.99	128.78	121.08	117.25	113.40	109.53
.2251 - .2400	0.220	1	3	315.20	230.65	209.50	157.60	138.39	130.69	126.85	123.01	119.15
.2401 - .2550	0.235	1	3	322.89	238.31	217.18	165.30	146.07	138.39	134.52	130.69	126.85
.2551 - .2750	0.250	1	3-1/4	342.12	257.54	236.39	184.51	165.30	157.60	153.75	149.92	146.07
.2751 - .2950	0.270	1-1/8	3-1/4	344.02	259.47	238.31	186.43	167.20	159.53	155.68	151.83	147.99
.2951 - .3150	0.290	1-1/8	3-1/4	363.24	278.67	257.54	205.65	186.43	178.75	174.89	171.04	167.20
.3151 - .3350	0.313	1-1/4	3-1/2	390.15	305.60	284.46	232.56	213.34	205.65	201.81	197.96	194.13
.3351 - .3550	0.330	1-1/4	3-1/2	393.99	313.28	288.30	236.39	217.18	209.50	205.65	201.81	197.96
.3551 - .3800	0.350	1-1/4	3-1/2	401.69	320.97	295.98	244.10	224.87	217.18	213.34	209.50	205.65
.3801 - .4100	0.375	1-1/4	4	430.51	345.96	324.81	272.92	253.71	246.00	242.17	238.31	234.48
.4101 - .4400	0.405	1-3/8	4	445.89	361.34	340.19	288.30	269.08	261.39	257.54	253.71	249.86
.4401 - .4700	0.438	1-3/8	4	468.95	384.40	363.24	311.36	292.13	284.46	280.61	276.76	272.92
.4701 - .5050	0.465	1-1/2	4	507.40	422.84	401.69	349.79	330.57	322.89	319.06	315.20	311.36
.5051 - .5400	0.500	1-1/2	4-1/2	557.37	472.81	451.67	399.78	380.55	372.86	369.02	365.18	361.34
.5401 - .5800	0.535	1-1/2	4-1/2	634.25	549.67	528.55	476.65	457.43	449.75	445.89	442.05	438.21
.5801 - .6260	0.575	1-3/4	4-1/2	695.76	611.19	590.04	538.15	518.93	511.25	507.40	503.55	499.71
.6261 - .6600	0.615	1-3/4	4-1/2	788.01	703.44	682.30	630.41	611.19	603.49	599.65	595.82	591.97
.6601 - .7050	0.655	2	5	903.33	818.77	797.62	745.72	726.51	718.81	714.97	711.14	707.29
.7051 - .7550	0.700	2	5	980.19	895.65	874.49	822.60	803.38	795.68	791.85	788.01	784.17
.7551 - .7950	0.750	2	5	1,057.07	972.52	951.36	899.48	880.26	872.58	868.72	864.89	861.04
.7951 - .8450	0.750	2-1/4	5	1,133.96	1,049.40	1,028.26	976.36	957.15	949.45	945.60	941.77	937.92
.8451 - .9000	0.750	2-1/4	5	1,287.72	1,203.17	1,182.02	1,130.12	1,110.91	1,103.20	1,099.36	1,095.53	1,091.69
.9001 - .9600	0.875	2-1/4	5	1,479.92	1,395.35	1,374.22	1,322.31	1,303.09	1,295.40	1,291.56	1,287.72	1,283.88
.9601 - 1.025	0.875	2-1/4	5	1,633.67	1,549.11	1,527.97	1,476.08	1,456.85	1,449.17	1,445.32	1,441.47	1,437.63

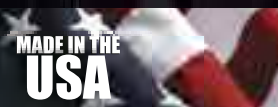
FOR .0001" TOLERANCE, ALL SIZES ADD 20% TO ABOVE PRICING
 FOR .0002" TOLERANCE FROM .5001" - 1.025", ADD 10% TO ABOVE PRICING

DIAMETER TOLERANCE

+.0003, -.0000

CARBIDE REAMERS ■ DECIMAL

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LIST
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SA - CYLINDRICAL



SA - CYLINDRICAL								
SIZE	DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	DOUBLE CUT ITEM #	LIST PRICE	STANDARD CUT ITEM #	LIST PRICE
SA-41	1/16	1/8	3/16	1-1/2	TB19316	9.32	TB19301	9.32
SA-42	3/32	1/8	7/16	1-1/2	TB19317	9.32	TB19302	9.32
SA-43	1/8	1/8	9/16	1-1/2	TB19318	9.32	TB19303	9.32
SA-52	5/32	1/8	1/2	1-1/2	TB19319	31.13	TB19304	31.13
SA-53	3/16	1/8	1/2	1-1/2	TB19320	31.13	TB19305	31.13
SA-51	1/4	1/8	1/2	1-3/4	TB19321	13.83	TB19306	13.83
SA-11	1/8	1/4	1/2	2	TB19322	22.14	TB19307	22.14
SA-13	5/32	1/4	5/8	2	TB19652	25.64	TB19630	25.64
SA-14	3/16	1/4	5/8	2	TB19323	22.14	TB19308	22.14
SA-1	1/4	1/4	5/8	2	TB19324	15.68	TB19309	15.68
SA-2	5/16	1/4	3/4	2-1/2	TB19325	28.95	TB19310	28.95
SA-3	3/8	1/4	3/4	2-1/2	TB19326	19.41	TB19311	19.41
SA-4	7/16	1/4	1	2-3/4	TB19327	44.99	TB19312	44.99
SA-5	1/2	1/4	1	2-3/4	TB19328	30.97	TB19313	30.97
SA-6	5/8	1/4	1	2-3/4	TB19329	44.65	TB19314	44.65
SA-7	3/4	1/4	1	2-3/4	TB19330	69.62	TB19315	69.62
SA-9	1	1/4	1	2-3/4	TB19654	109.94	TB19632	109.94

SA - CYLINDRICAL - EXTENDED SHANK LENGTHS

SIZE	DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	DOUBLE CUT ITEM #	LIST PRICE	STANDARD CUT ITEM #	LIST PRICE
SA-1L6	1/4	1/4	1/2	6-3/4	TB19565	31.78	TB19562	31.78
SA-3L6	3/8	1/4	3/4	6-3/4	TB19566	44.76	TB19563	44.76
SA-5L6	1/2	1/4	1	7	TB19567	69.95	TB19564	69.95

SA - CYLINDRICAL - FOR ALUMINUM

SIZE	DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	—	—	ALUMA CUT ITEM #	LIST PRICE
SA-1NF	1/4	1/4	3/4	2	—	—	TB19592	22.69
SA-3NF	3/8	1/4	3/4	2-1/2	—	—	TB19593	31.71
SA-5NF	1/2	1/4	1	2-3/4	—	—	TB19594	52.98
SA-6NF	5/8	1/4	1	2-3/4	—	—	TB19595	78.73
SA-7NF	3/4	1/4	1	2-3/4	—	—	TB19596	103.44

SB - CYLINDRICAL END CUT



SB - CYLINDRICAL END CUT								
SIZE	DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	DOUBLE CUT ITEM #	LIST PRICE	STANDARD CUT ITEM #	LIST PRICE
SB-41	1/16	1/8	1/4	1-1/2	TB19660	12.56	TB19331	12.56
SB-42	3/32	1/8	7/16	1-1/2	TB19658	9.93	TB19332	9.93
SB-43	1/8	1/8	9/16	1-1/2	TB19656	9.09	TB19333	9.09
SB-51	1/4	1/8	3/16	1-7/16	TB19342	13.86	TB19334	13.86
SB-51	1/4	1/8	1/2	1-3/4	TB19343	15.09	TB19335	15.09
SB-11	1/8	1/4	1/2	2	TB19344	23.96	TB19336	23.96
SB-13	5/32	1/4	5/8	2	TB19662	28.92	TB19634	28.92
SB-14	3/16	1/4	5/8	2	TB19345	23.96	TB19337	23.96
SB-1	1/4	1/4	5/8	2	TB19346	18.60	TB19338	18.60
SB-2	5/16	1/4	3/4	2-1/2	TB19347	31.84	TB19339	31.84
SB-3	3/8	1/4	3/4	2-1/2	TB19348	22.20	TB19340	22.20
SB-4	7/16	1/4	1	2-3/4	TB19349	51.13	TB19636	51.13
SB-5	1/2	1/4	1	2-3/4	TB19350	34.08	TB19341	34.08
SB-6	5/8	1/4	1	2-3/4	TB19351	49.95	TB19692	49.95
SB-7	3/4	1/4	1	2-3/4	TB19352	76.71	TB19638	76.71
SB-9	1	1/4	1	2-3/4	TB19664	119.98	TB19640	119.98

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SC - CYLINDRICAL BALL NOSE



SC - CYLINDRICAL BALL NOSE

SIZE	DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	DOUBLE CUT ITEM #	LIST PRICE	STANDARD CUT ITEM #	LIST PRICE
SC-41	3/32	1/8	7/16	1-1/2	TB19367	9.32	TB19353	9.32
SC-42	1/8	1/8	9/16	1-1/2	TB19368	9.32	TB19354	9.32
SC-52	5/32	1/8	1/2	1-1/2	TB19369	31.13	TB19355	31.13
SC-53	3/16	1/8	1/2	1-1/2	TB19370	31.13	TB19356	31.13
SC-51	1/4	1/8	1/2	1-3/4	TB19371	13.86	TB19357	13.86
SC-11	1/8	1/4	1/2	2	TB19372	25.74	TB19358	25.74
SC-13	5/32	1/4	5/8	2	TB19666	29.44	TB19642	29.44
SC-14	3/16	1/4	5/8	2	TB19373	25.74	TB19359	25.74
SC-1	1/4	1/4	5/8	1-3/4	TB19374	18.63	TB19360	18.63
SC-2	5/16	1/4	3/4	2-1/2	TB19375	31.29	TB19361	31.29
SC-3	3/8	1/4	3/4	2-1/2	TB19376	22.53	TB19362	22.53
SC-4	7/16	1/4	1	2-3/4	TB19377	49.44	TB19363	49.44
SC-5	1/2	1/4	1	2-3/4	TB19378	34.93	TB19364	34.93
SC-6	5/8	1/4	1	2-3/4	TB19379	52.04	TB19365	52.04
SC-7	3/4	1/4	1	2-3/4	TB19380	75.00	TB19366	75.00
SC-9	1	1/4	1	2-3/4	TB19782	113.41	TB19780	113.41

SC - CYLINDRICAL BALL NOSE - EXTENDED SHANK LENGTHS

SIZE	DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	DOUBLE CUT ITEM #	LIST PRICE	STANDARD CUT ITEM #	LIST PRICE
SC-1L6	1/4	1/4	1/2	6-3/4	TB19571	37.01	TB19568	37.01
SC-3L6	3/8	1/4	3/4	6-3/4	TB19572	49.86	TB19569	49.86
SC-5L6	1/2	1/4	1	7	TB19573	78.46	TB19570	78.46

SC - CYLINDRICAL BALL NOSE - FOR ALUMINUM

SIZE	DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	—	—	ALUMA CUT ITEM #	LIST PRICE
SC-1NF	1/4	1/4	3/4	2	—	—	TB19597	22.33
SC-3NF	3/8	1/4	3/4	2-1/2	—	—	TB19598	29.77
SC-5NF	1/2	1/4	1	2-3/4	—	—	TB19599	42.20
SC-7NF	3/4	1/4	1	2-3/4	—	—	TB19600	102.28

SE - EGG SHAPE



SE - EGG SHAPE

SIZE	DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	DOUBLE CUT ITEM #	LIST PRICE	STANDARD CUT ITEM #	LIST PRICE
SE-41	1/8	1/8	7/32	1-1/2	TB19464	9.32	TB19456	9.32
SE-53	3/16	1/8	9/32	1-1/2	TB19465	31.13	TB19457	31.13
SE-51	1/4	1/8	3/8	1-5/8	TB19466	13.83	TB19458	13.83
SE-1	1/4	1/4	3/8	2	TB19467	22.14	TB19459	22.14
SE-3	3/8	1/4	5/8	2-3/8	TB19468	23.31	TB19460	23.31
SE-5	1/2	1/4	7/8	2-5/8	TB19469	32.59	TB19461	32.59
SE-6	5/8	1/4	1	2-3/4	TB19470	51.48	TB19462	51.48
SE-7	3/4	1/4	1	2-3/4	TB19471	72.01	TB19463	72.01

SE - EGG SHAPE - FOR ALUMINUM

SIZE	DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	—	—	ALUMA CUT ITEM #	LIST PRICE
SE-3NF	3/8	1/4	5/8	2-3/8	—	—	TB19606	30.90
SE-5NF	1/2	1/4	7/8	2-5/8	—	—	TB19607	53.79
SE-6NF	5/8	1/4	1	2-3/4	—	—	TB19608	76.19
SE-7NF	3/4	1/4	1	2-3/4	—	—	TB19609	109.04

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SD - BALL SHAPE



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SD - BALL SHAPE								
SIZE	DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	DOUBLE CUT ITEM #	LIST PRICE	STANDARD CUT ITEM #	LIST PRICE
SD-40	1/16	1/8	1/16	1-1/2	—	—	TB19492	12.56
SD-41	3/32	1/8	3/32	1-1/2	TB19506	9.32	TB19493	9.32
SD-42	1/8	1/8	1/8	1-1/2	TB19507	9.32	TB19644	9.32
SD-53	3/16	1/8	3/16	1-1/2	TB19508	31.13	—	—
SD-51	1/4	1/8	1/4	1-3/4	TB19509	13.83	TB19496	13.83
SD-11	1/8	1/4	1/8	2	TB19510	23.63	TB19497	23.63
SD-14	3/16	1/4	3/16	2	TB19511	23.63	TB19498	23.63
SD-1	1/4	1/4	1/4	2	TB19512	18.11	TB19499	18.11
SD-2	5/16	1/4	5/16	2-1/32	TB19513	25.45	TB19500	25.45
SD-3	3/8	1/4	3/8	2-5/64	TB19514	19.41	TB19501	19.41
SD-4	7/16	1/4	7/16	2-9/64	TB19515	32.85	TB19502	32.85
SD-5	1/2	1/4	1/2	2-13/64	TB19516	26.33	TB19503	26.33
SD-6	5/8	1/4	5/8	2-5/16	TB19517	40.99	TB19504	40.99
SD-7	3/4	1/4	3/4	2-7/16	TB19518	56.55	TB19505	56.55
SD-9	1	1/4	1	2-11/16	TB19668	119.98	TB19646	119.98

SD - BALL SHAPE - EXTENDED SHANK LENGTHS								
SIZE	DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	DOUBLE CUT ITEM #	LIST PRICE	STANDARD CUT ITEM #	LIST PRICE
SD-1L6	1/4	1/4	1/4	6-1/4	TB19577	34.12	TB19574	34.12
SD-3L6	3/8	1/4	3/8	6-3/8	TB19578	41.03	TB19575	41.03
SD-5L6	1/2	1/4	1/2	6-1/2	TB19579	55.28	TB19576	55.28

SD - BALL SHAPE - FOR ALUMINUM								
SIZE	DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	—	—	ALUMA CUT ITEM #	LIST PRICE
SD-1NF	1/4	1/4	1/4	2	—	—	TB19613	22.01
SD-3NF	3/8	1/4	3/8	2-1/2	—	—	TB19614	27.82
SD-5NF	1/2	1/4	1/2	2-13/64	—	—	TB19615	45.64
SD-6NF	5/8	1/4	5/8	2-5/16	—	—	TB19616	68.72

SG - POINTED TREE



SG - POINTED TREE								
SIZE	DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	DOUBLE CUT ITEM #	LIST PRICE	STANDARD CUT ITEM #	LIST PRICE
SG-41	1/8	1/8	1/4	1-1/2	TB19421	9.28	TB19408	9.28
SG-42	1/8	1/8	5/16	1-1/2	TB19422	9.28	TB19409	9.28
SG-43	1/8	1/8	3/8	1-1/2	TB19423	9.28	TB19410	9.28
SG-44	1/8	1/8	1/2	1-1/2	TB19424	12.92	TB19411	12.92
SG-53	3/16	1/8	1/2	1-1/2	TB19425	31.13	TB19412	31.13
SG-51	1/4	1/8	1/2	1-3/4	TB19426	13.83	TB19413	13.83
SG-1	1/4	1/4	5/8	2	TB19427	20.58	TB19414	20.58
SG-2	5/16	1/4	3/4	2-1/2	TB19428	32.62	TB19415	32.62
SG-3	3/8	1/4	3/4	2-1/2	TB19429	23.21	TB19416	23.21
SG-13	1/2	1/4	3/4	2-1/2	TB19430	49.21	TB19417	49.21
SG-5	1/2	1/4	1	2-3/4	TB19431	34.08	TB19418	34.08
SG-6	5/8	1/4	1	2-3/4	TB19432	52.86	TB19419	52.86
SG-7	3/4	1/4	1	2-3/4	TB19433	70.74	TB19420	70.74

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SF - ROUND NOSE TREE



SF - ROUND NOSE TREE

SIZE	DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	DOUBLE CUT ITEM #	LIST PRICE	STANDARD CUT ITEM #	LIST PRICE
SF-41	1/8	1/8	1/4	1-1/2	TB19395	9.32	TB19381	9.32
SF-42	1/8	1/8	1/2	1-1/2	TB19396	9.32	TB19382	9.32
SF-53	3/16	1/8	1/2	1-1/2	TB19397	31.13	TB19383	31.13
SF-51	1/4	1/8	1/2	1-3/4	TB19398	13.83	TB19384	13.83
SF-1	1/4	1/4	3/4	2	TB19399	20.19	TB19385	20.19
SF-3	3/8	1/4	3/4	2-1/2	TB19400	22.53	TB19386	22.53
SF-4	7/16	1/4	1	2-3/4	TB19401	47.10	TB19387	47.10
SF-13	1/2	1/4	3/4	2-1/2	TB19402	50.15	TB19389	50.15
SF-5	1/2	1/4	1	2-3/4	TB19403	33.82	TB19390	33.82
SF-6	5/8	1/4	1	2-3/4	TB19404	51.78	TB19391	51.78
SF-7	3/4	1/4	1	2-3/4	TB19405	72.35	TB19392	72.35
SF-14	3/4	1/4	1-1/4	3	TB19406	131.74	TB19393	131.74
SF-15	3/4	1/4	1-1/2	3	TB19407	154.69	TB19394	154.69

SF - ROUND NOSE TREE - EXTENDED SHANK LENGTHS

SIZE	DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	DOUBLE CUT ITEM #	LIST PRICE	STANDARD CUT ITEM #	LIST PRICE
SF-1L6	1/4	1/4	5/8	6-3/4	TB19583	38.60	TB19580	38.60
SF-3L6	3/8	1/4	3/4	6-3/4	TB19584	48.89	TB19581	48.89
SF-5L6	1/2	1/4	1	7	TB19585	72.09	TB19582	72.09

SF - ROUND NOSE TREE - FOR ALUMINUM

SIZE	DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	—	—	ALUMA CUT ITEM #	LIST PRICE
SF-1NF	1/4	1/4	3/4	2	—	—	TB19601	22.75
SF-3NF	3/8	1/4	3/4	2-1/2	—	—	TB19602	30.09
SF-5NF	1/2	1/4	1	2-3/4	—	—	TB19603	53.24
SF-6NF	5/8	1/4	1	2-3/4	—	—	TB19604	81.23
SF-14NF	3/4	1/4	1-1/4	3	—	—	TB19605	98.81

SH - FLAME SHAPE



SH - FLAME SHAPE

SIZE	DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	DOUBLE CUT ITEM #	LIST PRICE	STANDARD CUT ITEM #	LIST PRICE
SH-41	1/8	1/8	1/4	1-1/2	TB19525	9.32	TB19519	9.32
SH-53	3/16	1/8	3/8	1-1/2	TB19526	31.13	TB19520	31.13
SH-1	1/4	1/4	5/8	2	TB19812	21.88	TB19810	21.88
SH-2	5/16	1/4	3/4	2-1/2	TB19527	25.22	TB19521	25.22
SH-5	1/2	1/4	1-1/4	3	TB19528	48.89	TB19522	48.89
SH-6	5/8	1/4	1-7/16	3-3/16	TB19529	115.24	TB19523	115.24
SH-7	3/4	1/4	1-5/8	3-3/8	TB19530	146.41	TB19524	146.41

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SJ - 60° INCLUDED ANGLE



SJ - 60° INCLUDED ANGLE								
SIZE	DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	DOUBLE CUT ITEM #	LIST PRICE	STANDARD CUT ITEM #	LIST PRICE
SJ-42	1/8	1/8	3/32	1-1/2	TB19558	9.32	TB19554	9.32
SJ-1	1/4	1/4	3/16	2	TB19559	18.11	TB19555	18.11
SJ-3	3/8	1/4	5/16	2-3/16	TB19560	22.20	TB19556	22.20
SJ-5	1/2	1/4	7/16	2-19/64	TB19561	30.45	TB19557	30.45

SK - 90° INCLUDED ANGLE



SK - 90° INCLUDED ANGLE								
SIZE	DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	DOUBLE CUT ITEM #	LIST PRICE	STANDARD CUT ITEM #	LIST PRICE
SK-42	1/8	1/8	1/16	1-1/2	TB19550	9.32	TB19546	9.32
SK-1	1/4	1/4	1/8	2	TB19551	18.11	TB19547	18.11
SK-3	3/8	1/4	3/16	2-1/16	TB19552	18.73	TB19548	18.73
SK-5	1/2	1/4	1/4	2-1/8	TB19553	29.34	TB19549	29.34
SK-7	3/4	1/4	3/8	2-1/4	TB19695	59.76	TB19694	59.76

SL - INCLUDED ANGLE WITH RADIUS END



SL - INCLUDED ANGLE WITH RADIUS END									
SIZE	DIA.	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	INCL. ANGLE	DOUBLE CUT ITEM #	LIST PRICE	STANDARD CUT ITEM #	LIST PRICE
SL-41	1/8	1/8	3/8	1-1/2	8°	TB19482	9.28	TB19472	9.28
SL-42	1/8	1/8	1/2	1-1/2	8°	TB19483	9.28	TB19473	9.28
SL-53	3/16	1/8	1/2	1-1/2	14°	TB19484	31.13	TB19474	31.13
SL-1	1/4	1/4	5/8	2	14°	TB19485	18.86	TB19475	18.86
SL-2	5/16	1/4	7/8	2-3/4	14°	TB19486	36.06	TB19476	36.06
SL-3	3/8	1/4	1-1/16	2-15/16	14°	TB19487	26.10	TB19477	26.10
SL-4	1/2	1/4	1-1/4	3	14°	TB19488	52.88	TB19478	52.88
SL-6	5/8	1/4	1-5/16	3-3/16	14°	TB19490	84.81	TB19480	84.81
SL-7	3/4	1/4	1-1/2	3-3/8	14°	TB19491	116.06	TB19481	116.06

SL - INCL. ANGLE WITH RAD. END - EXTENDED SHANK LENGTHS

SIZE	DIA.	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	INCL. ANGLE	DOUBLE CUT ITEM #	LIST PRICE	STANDARD CUT ITEM #	LIST PRICE
SL-1L6	1/4	1/4	5/8	6-5/8	14°	TB19589	39.54	TB19586	39.54
SL-3L6	3/8	1/4	1-1/16	7-1/16	14°	TB19590	62.29	TB19587	62.29
SL-4L6	1/2	1/4	1-1/4	7-1/4	14°	TB19591	76.31	TB19588	76.31

SL - INCL. ANGLE WITH RADIUS END - FOR ALUMINUM

SIZE	DIA.	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	INCL. ANGLE	—	—	ALUMA CUT ITEM #	LIST PRICE
SL-4NF	1/2	1/4	1-1/4	3	14°	—	—	TB19610	53.37
SL-6NF	5/8	1/4	1-5/16	3-3/16	14°	—	—	TB19611	107.47
SL-7NF	3/4	1/4	1-1/2	3-3/8	14°	—	—	TB19612	133.49

FOR TECHNICAL INFORMATION PLEASE SEE PAGE 185.

MADE IN THE
USA

Solid Carbide Burs



SM - POINTED CONE



**TAKE
55% OFF
LIST
PRICES!**

SM - POINTED CONE

SIZE	DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	DOUBLE CUT ITEM #	LIST PRICE	STANDARD CUT ITEM #	LIST PRICE
SM-41	1/8	1/8	11/32	1-1/2	TB19445	9.32	TB19434	9.32
SM-42	1/8	1/8	7/16	1-1/2	TB19446	9.32	TB19435	9.32
SM-43	1/8	1/8	5/8	1-1/2	TB19447	9.32	TB19436	9.32
SM-53	3/16	1/8	1/2	1-1/2	TB19448	31.13	TB19437	31.13
SM-51	1/4	1/8	1/2	1-7/8	TB19449	13.83	TB19438	13.83
SM-1	1/4	1/4	1/2	2	TB19450	17.72	TB19439	17.72
SM-2	1/4	1/4	3/4	2	TB19451	27.46	TB19440	27.46
SM-3	1/4	1/4	1	2	TB19452	19.80	TB19441	19.80
SM-4	3/8	1/4	5/8	2-1/2	TB19453	26.39	TB19442	26.39
SM-5	1/2	1/4	7/8	2-3/4	TB19454	36.94	TB19443	36.94
SM-6	5/8	1/4	1	2-7/8	TB19455	83.43	TB19444	83.43

SN - INVERTED TAPER



SN - INVERTED TAPER

SIZE	DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	DOUBLE CUT ITEM #	LIST PRICE	STANDARD CUT ITEM #	LIST PRICE
SN-41	3/32	1/8	3/16	1-1/2	—	—	TB19531	9.09
SN-42	1/8	1/8	3/16	1-1/2	TB19537	9.32	TB19532	9.32
SN-53	3/16	1/8	1/4	1-1/2	TB19538	31.13	TB19533	31.13
SN-51	1/4	1/8	1/4	1-1/2	TB19539	13.83	TB19534	13.83
SN-1	1/4	1/4	5/16	2	TB19540	18.02	TB19535	18.02
SN-4	1/2	1/4	1/2	2-1/4	TB19541	52.59	TB19536	52.59

CARBIDE BUR SETS

SET SIZES	# OF PCS. IN SET	DIA.	SHANK DIAMETER	CASE TYPE	TYPE	ITEM#	LIST PRICE
SA-42, SA-43, SC-41, SC-42, SD-42, SE-41, SF-42, SG-42, SM-43	9 PCS.	1/8	1/8	WOOD	DOUBLE CUT	TB19542	137.24
SA-51, SB-51, SC-51, SD-51, SE-51, SF-51, SG-51, SM-51, SN-51	9 PCS.	1/4	1/8	WOOD	DOUBLE CUT	TB19543	147.57
SA-1, SC-1, SD-1, SE-1, SF-1, SG-1, SL-1, SM-2	8 PCS.	1/4	1/4	WOOD	DOUBLE CUT	TB19544	224.82
SA-5, SC-5, SD-5, SE-5, SF-5, SG-5, SL-4, SM-5	8 PCS.	1/2	1/4	WOOD	DOUBLE CUT	TB19545	403.42
SC-3, SD-3, SF-3, SG-3, SA-5, SC-5, SF-5, SL-4	8 PCS.	—	1/4	WOOD	DOUBLE CUT	TB19800	259.78
SA-1, SC-1, SD-3, SH-1, SF-3, SA-3, SC-3, SC-5, SF-5, SA-5	10 PCS.	—	1/4	METAL	DOUBLE CUT	TB19850	258.42

FOR TECHNICAL INFORMATION PLEASE SEE PAGE 185.

Carbide Machine Countersinks

MADE IN THE
USA

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PRICES!**



SINGLE FLUTE

SERIES 310 - 60°

SERIES 311 - 82°

SERIES 312 - 90°

SERIES 313 - 100°

SIZE	SHANK DIA.	OVERALL LENGTH	PKG. QTY.	60° - ITEM#	82° - ITEM#	90° - ITEM#	100° - ITEM#	LIST PRICE
1/8	1/8	1-1/2	1	CS31008	CS31108	CS31208	CS31308	21.26
3/16	3/16	2	1	CS31012	CS31112	CS31212	CS31312	22.71
1/4	1/4	2	1	CS31016	CS31116	CS31216	CS31316	25.80
3/8	1/4	2-5/8	1	CS31024	CS31124	CS31224	CS31324	46.71
1/2	1/4	2-5/8	1	CS31032	CS31132	CS31232	CS31332	57.85
5/8	3/8	2-3/4	1	CS31040	CS31140	CS31240	CS31340	84.52
3/4	3/8	2-3/4	1	CS31048	CS31148	CS31248	CS31348	115.70
1	1/2	3	1	CS31064	CS31164	CS31264	CS31364	177.10



THREE FLUTE

SERIES 331 - 60°

SERIES 332 - 82°

SERIES 333 - 90°

SERIES 334 - 100°

SIZE	SHANK DIA.	OVERALL LENGTH	PKG. QTY.	60° - ITEM#	82° - ITEM#	90° - ITEM#	100° - ITEM#	LIST PRICE
1/8	1/8	1-1/2	1	CS33108	CS33208	CS33308	CS33408	21.26
3/16	3/16	2	1	CS33112	CS33212	CS33312	CS33412	22.71
1/4	1/4	2	1	CS33116	CS33216	CS33316	CS33416	25.80
3/8	1/4	2-5/8	1	CS33124	CS33224	CS33324	CS33424	46.71
1/2	1/4	2-5/8	1	CS33132	CS33232	CS33332	CS33432	57.85
5/8	3/8	2-3/4	1	CS33140	CS33240	CS33340	CS33440	84.52
3/4	3/8	2-3/4	1	CS33148	CS33248	CS33348	CS33448	115.70
1	1/2	3	1	CS33164	CS33264	CS33364	CS33464	177.10



SIX FLUTE - CHATTERLESS

SERIES 366 - 60°

SERIES 367 - 82°

SERIES 368 - 90°

SERIES 369 - 100°

SIZE	SHANK DIA.	OVERALL LENGTH	PKG. QTY.	60° - ITEM#	82° - ITEM#	90° - ITEM#	100° - ITEM#	LIST PRICE
1/8	1/8	1-1/2	1	CS36608	CS36708	CS36808	CS36908	21.26
3/16	3/16	2	1	CS36612	CS36712	CS36812	CS36912	22.71
1/4	1/4	2	1	CS36616	CS36716	CS36816	CS36916	25.80
3/8	1/4	2-5/8	1	CS36624	CS36724	CS36824	CS36924	46.71
1/2	1/4	2-5/8	1	CS36632	CS36732	CS36832	CS36932	57.85
5/8	3/8	2-3/4	1	CS36640	CS36740	CS36840	CS36940	84.52
3/4	3/8	2-3/4	1	CS36648	CS36748	CS36848	CS36948	115.70
1	1/2	3	1	CS36664	CS36764	CS36864	CS36964	177.10

MADE IN THE
USA

Combined Drill & Countersinks



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LIST
PRICES!**

SOLID CARBIDE



SERIES 3000
REGULAR - 60°
UNCOATED

SIZE	DRILL DIA.	BODY DIA.	OVERALL LENGTH	PKG. QTY.	ITEM#	LIST PRICE
00	.025	1/8	1-1/2	1	CS30020	28.86
0	1/32	1/8	1-1/2	1	CS30010	27.58
1	3/64	1/8	1-1/2	1	CS30001	25.11
2	5/64	3/16	2	1	CS30002	37.36
3	7/64	1/4	2	1	CS30003	42.14
4	1/8	5/16	2-1/8	1	CS30004	54.39
5	3/16	7/16	2-3/4	1	CS30005	86.22
6	7/32	1/2	3	1	CS30006	107.33



SERIES 3600
REGULAR - 60°
ALTIN COATED

SIZE	DRILL DIA.	BODY DIA.	OVERALL LENGTH	PKG. QTY.	ITEM#	LIST PRICE
00	.025	1/8	1-1/2	1	CS36020	36.05
0	1/32	1/8	1-1/2	1	CS36010	34.49
1	3/64	1/8	1-1/2	1	CS36001	31.37
2	5/64	3/16	2	1	CS36002	46.71
3	7/64	1/4	2	1	CS36003	52.66
4	1/8	5/16	2-1/8	1	CS36004	67.99
5	3/16	7/16	2-3/4	1	CS36005	107.79
6	7/32	1/2	3	1	CS36006	134.17

HIGH SPEED STEEL & COBALT



SERIES 1000
HIGH SPEED STEEL - REGULAR - 60°
UNCOATED

SIZE	DRILL DIA.	BODY DIA.	OVERALL LENGTH	PKG. QTY.	ITEM#	LIST PRICE
0	1/32	1/8	1-1/4	12	CS10010	12.53
1	3/64	1/8	1-1/4	12	CS10001	8.75
2	5/64	3/16	1-7/8	12	CS10002	9.15
3	7/64	1/4	2	12	CS10003	9.56
4	1/8	5/16	2-1/8	12	CS10004	9.84
5	3/16	7/16	2-3/4	12	CS10005	15.58
6	7/32	1/2	3	1	CS10006	23.41
7	1/4	5/8	3-1/4	1	CS10007	35.57
8	5/16	3/4	3-1/2	1	CS10008	48.82



SERIES 350
HIGH SPEED STEEL - REGULAR - 60°
TIN COATED

SIZE	DRILL DIA.	BODY DIA.	OVERALL LENGTH	PKG. QTY.	ITEM#	LIST PRICE
00	.025	1/8	1-1/4	12	CS35020	17.42
0	1/32	1/8	1-1/4	12	CS35010	17.42
1	3/64	1/8	1-1/4	12	CS35001	13.90
2	5/64	3/16	1-7/8	12	CS35002	14.27
3	7/64	1/4	2	12	CS35003	19.44
4	1/8	5/16	2-1/8	12	CS35004	20.04
5	3/16	7/16	2-3/4	12	CS35005	27.90
6	7/32	1/2	3	1	CS35006	44.53
7	1/4	5/8	3-1/4	1	CS35007	64.01
8	5/16	3/4	3-1/2	1	CS35008	103.00

SERIES 50
HIGH SPEED STEEL - MINIATURE - 60°

SIZE	DRILL DIA.	BODY DIA.	OVERALL LENGTH	PKG. QTY.	ITEM#	LIST PRICE
00000	.010	1/8	1-1/4	12	CS00050	14.41
0000	.015	1/8	1-1/4	12	CS00040	13.25
000	.020	1/8	1-1/4	12	CS00030	12.53
00	.025	1/8	1-1/4	12	CS00020	12.53

SERIES 2000
M42 COBALT - 60°

SIZE	DRILL DIA.	BODY DIA.	OVERALL LENGTH	PKG. QTY.	ITEM#	LIST PRICE
1	3/64	1/8	1-1/4	12	CS20001	24.81
2	5/64	3/16	1-7/8	12	CS20002	25.62
3	7/64	1/4	2	12	CS20003	26.46
4	1/8	5/16	2-1/8	12	CS20004	27.54

FOR COATING INFORMATION SEE PAGE 2.

Combined Drill & Countersinks

MADE IN THE
USA

COMBINED DRILL & COUNTERSINKS



SERIES 5000

HIGH SPEED STEEL - LONG LENGTH - 60°

**TAKE
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LIST
PRICES!**

SIZE	DRILL DIA.	BODY DIA.	PKG. QTY.	ITEM#	LIST PRICE
1x3	3/64	1/8	1	CS50013	21.96
1x4	3/64	1/8	1	CS50014	22.92
1x5	3/64	1/8	1	CS50015	31.83
1x6	3/64	1/8	1	CS50016	41.71
2x3	5/64	3/16	1	CS50023	22.21
2x4	5/64	3/16	1	CS50024	25.12
2x5	5/64	3/16	1	CS50025	32.17
2x6	5/64	3/16	1	CS50026	41.83
3x3	7/64	1/4	1	CS50033	23.21
3x4	7/64	1/4	1	CS50034	26.46
3x5	7/64	1/4	1	CS50035	34.79
3x6	7/64	1/4	1	CS50036	42.21
4x4	1/8	5/16	1	CS50044	29.33

SIZE	DRILL DIA.	BODY DIA.	PKG. QTY.	ITEM#	LIST PRICE
4x5	1/8	5/16	1	CS50045	37.46
4x6	1/8	5/16	1	CS50046	43.29
4-1/2x4	9/64	3/8	1	CS50040	32.96
4-1/2x5	9/64	3/8	1	CS50050	47.96
4-1/2x6	9/64	3/8	1	CS50060	53.60
5x4	3/16	7/16	1	CS50054	38.50
5x5	3/16	7/16	1	CS50055	44.58
5x6	3/16	7/16	1	CS50056	50.04
6x5	7/32	1/2	1	CS50065	47.92
6x6	7/32	1/2	1	CS50066	57.92
7x6	1/4	5/8	1	CS50076	107.88
8x6	5/16	3/4	1	CS50086	130.44
-	-	-	-	-	-

COMBINED DRILL & COUNTERSINKS



SERIES 4000

HIGH SPEED STEEL - BELL TYPE - 60°

SIZE	DRILL DIAMETER	BODY DIAMETER	OVERALL LENGTH	PACKAGE QUANTITY	ITEM#	LIST PRICE
11	3/64	1/8	1-1/4	12	CS40011	10.83
12	1/16	3/16	1-7/8	12	CS40012	11.37
13	3/32	1/4	2	12	CS40013	11.50
14	7/64	5/16	2-1/8	12	CS40014	11.88
15	5/32	7/16	2-3/4	12	CS40015	18.08
16	3/16	1/2	3	1	CS40016	27.92
17	7/32	5/8	3-1/4	1	CS40017	52.86
18	1/4	3/4	3-1/2	1	CS40018	70.08

MADE IN THE
USA

HSS Machine Countersinks

**TAKE
55% OFF
LIST
PRICES!**

FOUR-FLUTE MACHINE COUNTERSINKS



HIGH SPEED STEEL

SERIES 521 - 60°

SIZE	SHANK DIA.	OVERALL LENGTH	PKG. QTY.	60° - ITEM#	LIST PRICE
1/2	1/2	3-7/8	1	CD52032	74.47
5/8	1/2	4	1	CD52040	83.83
3/4	1/2	4-1/8	1	CD52048	106.98
7/8	1/2	4-1/4	1	CD52056	125.75
1	1/2	4-3/8	1	CD52064	129.96

SERIES 523 - 82°

SIZE	SHANK DIA.	OVERALL LENGTH	PKG. QTY.	82° - ITEM#	LIST PRICE
1/2	1/2	3-7/8	1	CD52232	74.47
5/8	1/2	4	1	CD52240	83.83
3/4	1/2	4-1/8	1	CD52248	106.98
7/8	1/2	4-1/4	1	CD52256	125.75
1	1/2	4-3/8	1	CD52264	129.96

SINGLE-FLUTE COUNTERSINKS



HIGH SPEED STEEL

SERIES 505 - 60°

SIZE	SHANK DIA.	OVERALL LENGTH	PKG. QTY.	60° - ITEM#	LIST PRICE
1/4 - 60	3/16	1-7/16	1	CD50501	23.33
3/8 - 60	1/4	1-21/32	1	CD50502	26.55
1/2 - 60	1/4	1-13/32	1	CD50503	33.96
3/4 - 60	1/2	1-27/32	1	CD50504	46.89
1 - 60	1/2	2-13/16	1	CD50505	72.85

SERIES 510 - 82°

SIZE	SHANK DIA.	OVERALL LENGTH	PKG. QTY.	82° - ITEM#	LIST PRICE
1/4 - 82	3/16	1-7/16	1	CD51014	23.33
3/8 - 82	1/4	1-21/32	1	CD51015	26.55
1/2 - 82	1/4	1-13/32	1	CD51016	33.96
3/4 - 82	1/2	1-27/32	1	CD51017	46.89
1 - 82	1/2	2-13/16	1	CD51018	72.85

SERIES 515 - 90°

SIZE	SHANK DIA.	OVERALL LENGTH	PKG. QTY.	90° - ITEM#	LIST PRICE
1/4 - 90	3/16	1-7/16	1	CD51523	23.33
3/8 - 90	1/4	1-21/32	1	CD51524	26.55
1/2 - 90	1/4	1-13/32	1	CD51525	33.96
3/4 - 90	1/2	1-27/32	1	CD51526	46.89
1 - 90	1/2	2-13/16	1	CD51527	72.85

High Speed Steel Endmills

MADE IN THE
USA

SQUARE END - 30° HELIX - HSS



SERIES 805
2 FLUTE - UNCOATED



SERIES 806
2 FLUTE - ALTIN COATED

**TAKE
55% OFF
LIST
PRICES!**

SIZE	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	#OF FLTS	UNCOATED	LIST PRICE
1/8	3/8	3/8	2-5/16	2	TE64001	30.76
5/32	3/8	3/8	2-5/16	2	TE64002	40.09
3/16	3/8	9/32	2-5/16	2	TE64004	30.76
7/32	3/8	7/16	2-5/16	2	TE64005	40.09
1/4	3/8	1/2	2-5/16	2	TE64007	30.76
9/32	3/8	1/2	2-5/16	2	TE64008	40.09
5/16	3/8	9/16	2-5/16	2	TE64009	30.76
3/8	3/8	9/16	2-5/16	2	TE64014	30.76
7/16	3/8	13/16	2-1/2	2	TE64020	42.52
1/2	3/8	13/16	2-1/2	2	TE64027	42.52
1/2	1/2	1	3	2	TE64028	44.94
9/16	1/2	1-1/8	3-1/8	2	TE64033	54.86
5/8	1/2	1-1/8	3-1/8	2	TE64035	61.44
5/8	5/8	1-5/16	3-7/16	2	TE64036	62.40
3/4	1/2	1-5/16	3-5/16	2	TE64043	71.33
3/4	5/8	1-5/16	3-7/16	2	TE64044	71.33
3/4	3/4	1-5/16	3-9/16	2	TE64045	71.33
13/16	5/8	1-1/2	3-5/8	2	TE64049	87.71
13/16	3/4	1-1/2	3-3/4	2	TE64050	88.23
7/8	5/8	1-1/2	3-5/8	2	TE64052	87.71
7/8	3/4	1-1/2	3-3/4	2	TE64053	97.75
7/8	7/8	1-1/2	3-3/4	2	TE64054	97.75
15/16	3/4	1-1/2	3-3/4	2	TE64059	112.52
15/16	7/8	1-1/2	3-3/4	2	TE64060	106.23
1	5/8	1-1/2	3-5/8	2	TE64062	99.47
1	3/4	1-1/2	3-3/4	2	TE64063	99.47
1	1	1-5/8	4-1/8	2	TE64066	113.25
1-1/8	7/8	1-5/8	3-7/8	2	TE64070	174.29
1-1/8	1	1-5/8	4-1/8	2	TE64071	165.62
1-1/4	7/8	1-5/8	3-7/8	2	TE64073	174.29
1-1/4	1	1-5/8	4-1/8	2	TE64074	184.65
1-1/4	1-1/4	1-5/8	4-1/8	2	TE64075	197.15
1-3/8	1	1-5/8	4-1/8	2	TE64079	205.49
1-1/2	1	1-5/8	4-1/8	2	TE64082	220.81
1-1/2	1-1/4	1-5/8	4-1/8	2	TE64083	220.81

SIZE	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	#OF FLTS	ALTIN	LIST PRICE
1/8	3/8	3/8	2-5/16	2	TE64101	38.44
5/32	3/8	3/8	2-5/16	2	TE64102	50.09
3/16	3/8	9/32	2-5/16	2	TE64104	38.44
7/32	3/8	7/16	2-5/16	2	TE64105	50.09
1/4	3/8	1/2	2-5/16	2	TE64107	38.44
9/32	3/8	1/2	2-5/16	2	TE64108	50.09
5/16	3/8	9/16	2-5/16	2	TE64109	38.44
3/8	3/8	9/16	2-5/16	2	TE64114	38.44
7/16	3/8	13/16	2-1/2	2	TE64120	53.14
1/2	3/8	13/16	2-1/2	2	TE64127	53.14
1/2	1/2	1	3	2	TE64128	56.22
9/16	1/2	1-1/8	3-1/8	2	TE64133	68.57
5/8	1/2	1-1/8	3-1/8	2	TE64135	76.80
5/8	5/8	1-5/16	3-7/16	2	TE64136	78.01
3/4	1/2	1-5/16	3-5/16	2	TE64143	89.26
3/4	5/8	1-5/16	3-7/16	2	TE64144	89.26
3/4	3/4	1-5/16	3-9/16	2	TE64145	89.26
13/16	5/8	1-1/2	3-5/8	2	TE64149	109.62
13/16	3/4	1-1/2	3-3/4	2	TE64150	109.98
7/8	5/8	1-1/2	3-5/8	2	TE64152	109.62
7/8	3/4	1-1/2	3-3/4	2	TE64153	122.18
7/8	7/8	1-1/2	3-3/4	2	TE64154	122.18
15/16	3/4	1-1/2	3-3/4	2	TE64159	140.67
15/16	7/8	1-1/2	3-3/4	2	TE64160	132.80
1	5/8	1-1/2	3-5/8	2	TE64162	124.31
1	3/4	1-1/2	3-3/4	2	TE64163	124.31
1	1	1-5/8	4-1/8	2	TE64166	141.55
1-1/8	7/8	1-5/8	3-7/8	2	TE64170	217.87
1-1/8	1	1-5/8	4-1/8	2	TE64171	207.03
1-1/4	7/8	1-5/8	3-7/8	2	TE64173	217.80
1-1/4	1	1-5/8	4-1/8	2	TE64174	230.81
1-1/4	1-1/4	1-5/8	4-1/8	2	TE64175	246.46
1-3/8	1	1-5/8	4-1/8	2	TE64179	256.86
1-1/2	1	1-5/8	4-1/8	2	TE64182	276.04
1-1/2	1-1/4	1-5/8	4-1/8	2	TE64183	276.04

FOR COATING INFORMATION SEE PAGE 2.

TOLERANCES	DIAMETER	SHANK
ALL SIZES	+.0015, -.0000	+.0000, -.0005

MADE IN THE
USA

High Speed Steel Endmills



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SQUARE END - 30° HELIX - HSS



SERIES 810

4 & 6 FLUTE - NON CENTER CUTTING - UNCOATED



SERIES 811

4 & 6 FLUTE - NON CENTER CUTTING - ALTIN COATED

SIZE	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	#OF FLTS	UNCOATED	LIST PRICE
1/8	3/8	3/8	2-5/16	4	TE69400	31.42
5/32	3/8	3/8	2-5/16	4	TE69401	42.99
3/16	3/8	1/2	2-3/8	4	TE69403	31.42
7/32	3/8	1/2	2-3/8	4	TE69404	42.99
1/4	3/8	5/8	2-7/16	4	TE69406	31.42
9/32	3/8	11/16	2-1/2	4	TE69408	42.99
5/16	3/8	3/4	2-1/2	4	TE69409	31.42
11/32	3/8	3/4	2-1/2	4	TE69413	43.91
3/8	3/8	3/4	2-1/2	4	TE69414	31.42
13/32	3/8	3/4	2-1/2	4	TE69419	64.20
7/16	3/8	1	2-11/16	4	TE69420	42.41
15/32	3/8	1	2-11/16	4	TE69425	75.26
1/2	3/8	1	2-11/16	4	TE69427	42.41
1/2	1/2	1-1/4	3-1/4	4	TE69428	42.41
17/32	1/2	1-1/4	3-1/4	4	TE69432	86.21
9/16	1/2	1-3/8	3-3/8	4	TE69433	55.19
5/8	1/2	1-3/8	3-3/8	4	TE69435	60.08
5/8	5/8	1-5/8	3-3/4	4	TE69436	66.77
11/16	1/2	1-5/8	3-5/8	4	TE69440	69.63
11/16	5/8	1-5/8	3-3/4	4	TE69441	70.96
3/4	1/2	1-5/8	3-5/8	4	TE69443	72.10
3/4	5/8	1-5/8	3-3/4	4	TE69444	72.10
3/4	3/4	1-5/8	3-7/8	4	TE69445	74.78
13/16	3/4	1-7/8	4-1/8	4	TE69450	95.36
7/8	3/4	1-7/8	4-1/8	4	TE69453	95.03
7/8	7/8	1-7/8	4-1/8	4	TE69454	95.03
15/16	3/4	1-7/8	4-1/8	4	TE69459	122.04
15/16	7/8	1-7/8	4-1/8	4	TE69460	115.49
1	3/4	1-7/8	4-1/8	4	TE69463	108.18
1	7/8	1-7/8	4-1/8	4	TE69465	115.49
1	1	2	4-1/2	4	TE69466	114.54
1-1/8	1	2	4-1/2	6	TE69471	163.45
1-1/4	1	2	4-1/2	6	TE69474	175.17
1-1/4	1-1/4	2	4-1/2	6	TE69476	178.59
1-3/8	1	2	4-1/2	6	TE69479	202.77
1-1/2	1	2	4-1/2	6	TE69482	218.83
1-1/2	1-1/4	2	4-1/2	4	TE69483	229.96
1-5/8	1-1/4	2	4-1/2	6	TE69487	250.47
1-3/4	1-1/4	2	4-1/2	4	TE69488	303.60
1-3/4	1-1/4	2	4-1/2	6	TE69489	278.80
2	1-1/4	2	4-1/2	6	TE69493	406.82

SIZE	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	#OF FLTS	ALTIN	LIST PRICE
1/8	3/8	3/8	2-5/16	4	TE69500	39.25
5/32	3/8	3/8	2-5/16	4	TE69501	53.76
3/16	3/8	1/2	2-3/8	4	TE69503	39.25
7/32	3/8	1/2	2-3/8	4	TE69504	53.76
1/4	3/8	5/8	2-7/16	4	TE69506	39.25
9/32	3/8	11/16	2-1/2	4	TE69508	53.76
5/16	3/8	3/4	2-1/2	4	TE69509	39.25
11/32	3/8	3/4	2-1/2	4	TE69513	54.90
3/8	3/8	3/4	2-1/2	4	TE69514	39.25
13/32	3/8	3/4	2-1/2	4	TE69519	80.25
7/16	3/8	1	2-11/16	4	TE69520	53.03
15/32	3/8	1	2-11/16	4	TE69525	84.66
1/2	3/8	1	2-11/16	4	TE69527	53.03
1/2	1/2	1-1/4	3-1/4	4	TE69528	53.03
17/32	1/2	1-1/4	3-1/4	4	TE69532	107.78
9/16	1/2	1-3/8	3-3/8	4	TE69533	68.97
5/8	1/2	1-3/8	3-3/8	4	TE69535	75.11
5/8	5/8	1-5/8	3-3/4	4	TE69536	83.45
11/16	1/2	1-5/8	3-5/8	4	TE69540	87.05
11/16	5/8	1-5/8	3-3/4	4	TE69541	88.71
3/4	1/2	1-5/8	3-5/8	4	TE69543	90.10
3/4	5/8	1-5/8	3-3/4	4	TE69544	90.10
3/4	3/4	1-5/8	3-7/8	4	TE69545	90.10
13/16	3/4	1-7/8	4-1/8	4	TE69550	119.24
7/8	3/4	1-7/8	4-1/8	4	TE69553	118.84
7/8	7/8	1-7/8	4-1/8	4	TE69554	118.84
15/16	3/4	1-7/8	4-1/8	4	TE69559	152.57
15/16	7/8	1-7/8	4-1/8	4	TE69560	139.01
1	3/4	1-7/8	4-1/8	4	TE69563	135.23
1	7/8	1-7/8	4-1/8	4	TE69565	144.38
1	1	2	4-1/2	4	TE69566	143.20
1-1/8	1	2	4-1/2	6	TE69571	203.72
1-1/4	1	2	4-1/2	6	TE69574	218.97
1-1/4	1-1/4	2	4-1/2	6	TE69576	223.20
1-3/8	1	2	4-1/2	6	TE69579	246.72
1-1/2	1	2	4-1/2	6	TE69582	274.35
1-1/2	1-1/4	2	4-1/2	4	TE69583	287.54
1-5/8	1-1/4	2	4-1/2	6	TE69587	314.44
1-3/4	1-1/4	2	4-1/2	4	TE69588	379.52
1-3/4	1-1/4	2	4-1/2	6	TE69589	347.18
2	1-1/4	2	4-1/2	6	TE69593	504.53

FOR COATING INFORMATION SEE PAGE 2.

TOLERANCES	DIAMETER	SHANK
ALL SIZES	+0.015, -0.000	+0.000, -0.005

High Speed Steel Endmills

MADE IN THE
USA

DOUBLE END - 2 FLUTE - SQUARE END - 30° HELIX



SERIES 815
UNCOATED

SIZE	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	NUMBER OF FLUTES	UNCOATED	LIST PRICE
1/8	3/8	3/8	3-1/16	2	TE62206	47.07
5/32	3/8	7/16	3-1/8	2	TE62208	49.98
3/16	3/8	7/16	3-1/8	2	TE62210	47.11
7/32	3/8	1/2	3-1/8	2	TE62212	50.01
1/4	3/8	1/2	3-1/8	2	TE62214	47.11
9/32	3/8	9/16	3-1/8	2	TE62216	50.01
5/16	3/8	9/16	3-1/8	2	TE62218	47.11
11/32	3/8	9/16	3-1/8	2	TE62220	50.01
3/8	3/8	9/16	3-1/2	2	TE62222	47.11
13/32	1/2	13/16	3-3/4	2	TE62224	76.18
7/16	1/2	13/16	3-3/4	2	TE62226	71.66
1/2	1/2	13/16	3-3/4	2	TE62230	71.66
9/16	5/8	1-1/8	4-1/2	2	TE62234	97.49
5/8	5/8	1-1/8	4-1/2	2	TE62238	97.49
11/16	3/4	1-5/16	5	2	TE62242	122.77
3/4	3/4	1-5/16	5	2	TE62246	122.77
13/16	7/8	1-9/16	5-1/2	2	TE62250	154.45
7/8	7/8	1-9/16	5-1/2	2	TE62254	154.45
15/16	1	1-5/8	5-7/8	2	TE62258	198.98
1	1	1-5/8	5-7/8	2	TE62262	189.98

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SERIES 816
ALTIN COATED

SIZE	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	NUMBER OF FLUTES	ALTIN	LIST PRICE
1/8	3/8	3/8	3-1/16	2	TE62306	58.83
5/32	3/8	7/16	3-1/8	2	TE62308	62.47
3/16	3/8	7/16	3-1/8	2	TE62310	58.87
7/32	3/8	1/2	3-1/8	2	TE62312	62.47
1/4	3/8	1/2	3-1/8	2	TE62314	58.87
9/32	3/8	9/16	3-1/8	2	TE62316	62.47
5/16	3/8	9/16	3-1/8	2	TE62318	58.87
11/32	3/8	9/16	3-1/8	2	TE62320	62.47
3/8	3/8	9/16	3-1/2	2	TE62322	58.87
13/32	1/2	13/16	3-3/4	2	TE62324	95.21
7/16	1/2	13/16	3-3/4	2	TE62326	89.55
1/2	1/2	13/16	3-3/4	2	TE62330	89.55
9/16	5/8	1-1/8	4-1/2	2	TE62334	121.85
5/8	5/8	1-1/8	4-1/2	2	TE62338	121.85
11/16	3/4	1-5/16	5	2	TE62342	153.45
3/4	3/4	1-5/16	5	2	TE62346	153.45
13/16	7/8	1-9/16	5-1/2	2	TE62350	193.03
7/8	7/8	1-9/16	5-1/2	2	TE62354	193.03
15/16	1	1-5/8	5-7/8	2	TE62358	248.74
1	1	1-5/8	5-7/8	2	TE62362	237.46

FOR COATING INFORMATION SEE PAGE 2.

TOLERANCES	DIAMETER IF SIZE & SHANK DIA. ARE NOT THE SAME	DIAMETER IF SIZE & SHANK DIA. ARE THE SAME	SHANK
ALL SIZES	+.0000, -.0015	+.0000, -.0025	+.0001, -.0005

MADE IN THE
USA

High Speed Steel Endmills



DOUBLE END - 4 FLUTE - SQUARE END - 30° HELIX - NON CENTER CUTTING


SERIES 820
UNCOATED

SIZE	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	NUMBER OF FLUTES	UNCOATED	LIST PRICE
1/8	3/8	3/8	3-1/16	4	TE68006	47.55
5/32	3/8	7/16	3-1/8	4	TE68008	50.23
3/16	3/8	1/2	3-1/8	4	TE68010	47.55
7/32	3/8	9/16	3-1/4	4	TE68012	50.23
1/4	3/8	5/8	3-3/8	4	TE68014	47.55
9/32	3/8	11/16	3-3/8	4	TE68016	50.23
5/16	3/8	3/4	3-1/2	4	TE68018	47.55
11/32	3/8	3/4	3-1/2	4	TE68020	50.23
3/8	3/8	3/4	3-1/2	4	TE68022	47.55
13/32	1/2	1	4-1/8	4	TE68024	73.82
7/16	1/2	1	4-1/8	4	TE68026	71.80
15/32	1/2	1	4-1/8	4	TE68028	73.82
1/2	1/2	1	4-1/8	4	TE68030	71.80
9/16	5/8	1-3/8	5	4	TE68034	95.84
5/8	5/8	1-3/8	5	4	TE68038	95.84
11/16	3/4	1-5/8	5-5/8	4	TE68042	120.68
3/4	3/4	1-5/8	5-5/8	4	TE68046	120.68
13/16	7/8	1-7/8	6-1/8	4	TE68050	161.13
7/8	7/8	1-7/8	6-1/8	4	TE68054	161.13
15/16	1	1-7/8	6-3/8	4	TE68058	195.12
1	1	1-7/8	6-3/8	4	TE68062	187.11


SERIES 821
ALUMINIZED COATED

SIZE	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	NUMBER OF FLUTES	ALUMINIZED	LIST PRICE
1/8	3/8	3/8	3-1/16	4	TE68106	59.46
5/32	3/8	7/16	3-1/8	4	TE68108	62.76
3/16	3/8	1/2	3-1/8	4	TE68110	59.46
7/32	3/8	9/16	3-1/4	4	TE68112	62.76
1/4	3/8	5/8	3-3/8	4	TE68114	59.46
9/32	3/8	11/16	3-3/8	4	TE68116	62.76
5/16	3/8	3/4	3-1/2	4	TE68118	59.46
11/32	3/8	3/4	3-1/2	4	TE68120	62.76
3/8	3/8	3/4	3-1/2	4	TE68122	59.46
13/32	1/2	1	4-1/8	4	TE68124	92.27
7/16	1/2	1	4-1/8	4	TE68126	89.74
15/32	1/2	1	4-1/8	4	TE68128	92.27
1/2	1/2	1	4-1/8	4	TE68130	89.74
9/16	5/8	1-3/8	5	4	TE68134	119.79
5/8	5/8	1-3/8	5	4	TE68138	119.79
11/16	3/4	1-5/8	5-5/8	4	TE68142	150.88
3/4	3/4	1-5/8	5-5/8	4	TE68146	150.88
13/16	7/8	1-7/8	6-1/8	4	TE68150	201.45
7/8	7/8	1-7/8	6-1/8	4	TE68154	201.45
15/16	1	1-7/8	6-3/8	4	TE68158	243.92
1	1	1-7/8	6-3/8	4	TE68162	233.75

FOR COATING INFORMATION SEE PAGE 2.

TOLERANCES	DIAMETER IF SIZE & SHANK DIA. ARE NOT THE SAME	DIAMETER IF SIZE & SHANK DIA. ARE THE SAME	SHANK
ALL SIZES	+.0000, -.0015	+.0000, -.0025	+.0001, -.0005

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SQUARE END - 30° HELIX - M42 COBALT



SERIES 807
2 FLUTE - UNCOATED



SERIES 808
2 FLUTE - ALTiN COATED

SIZE	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	#OF FLTS	UNCOATED	LIST PRICE
1/8	3/8	3/8	2-5/16	2	TE82701	37.44
3/16	3/8	9/32	2-5/16	2	TE82705	37.44
1/4	3/8	1/2	2-5/16	2	TE82709	37.44
5/16	3/8	9/16	2-5/16	2	TE82713	37.44
3/8	3/8	9/16	2-5/16	2	TE82715	37.44
7/16	3/8	13/16	2-1/2	2	TE82717	51.74
1/2	3/8	13/16	2-1/2	2	TE82719	51.74
1/2	1/2	1	3	2	TE82721	54.72
9/16	1/2	1-1/8	3-1/8	2	TE82723	66.77
5/8	1/2	1-1/8	3-1/8	2	TE82725	74.78
5/8	5/8	1-5/16	3-7/16	2	TE82727	75.96
3/4	1/2	1-5/16	3-5/16	2	TE82729	86.83
3/4	5/8	1-5/16	3-7/16	2	TE82731	86.83
3/4	3/4	1-5/16	3-9/16	2	TE82733	86.83
13/16	5/8	1-1/2	3-5/8	2	TE82735	106.75
13/16	3/4	1-1/2	3-3/4	2	TE82737	107.37
7/8	3/4	1-1/2	3-3/4	2	TE82741	118.99
7/8	7/8	1-1/2	3-3/4	2	TE82743	118.99
15/16	5/8	1-1/2	3-5/8	2	TE82745	129.31
15/16	3/4	1-1/2	3-3/4	2	TE82747	136.95
1	3/4	1-1/2	3-3/4	2	TE82753	121.04
1	1	1-5/8	4-1/8	2	TE82757	137.84
1-1/8	1	1-5/8	4-1/8	2	TE82761	201.59
1-1/4	1	1-5/8	4-1/8	2	TE82765	224.74
1-1/2	1-1/4	1-5/8	4-1/8	2	TE82773	268.80

SIZE	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	#OF FLTS	ALTiN	LIST PRICE
1/8	3/8	3/8	2-5/16	2	TE82802	46.82
3/16	3/8	9/32	2-5/16	2	TE82806	46.82
1/4	3/8	1/2	2-5/16	2	TE82810	46.82
5/16	3/8	9/16	2-5/16	2	TE82814	46.82
3/8	3/8	9/16	2-5/16	2	TE82816	46.82
7/16	3/8	13/16	2-1/2	2	TE82818	64.67
1/2	3/8	13/16	2-1/2	2	TE82820	64.67
1/2	1/2	1	3	2	TE82822	68.42
9/16	1/2	1-1/8	3-1/8	2	TE82824	83.49
5/8	1/2	1-1/8	3-1/8	2	TE82826	93.48
5/8	5/8	1-5/16	3-7/16	2	TE82828	94.95
3/4	1/2	1-5/16	3-5/16	2	TE82830	108.66
3/4	5/8	1-5/16	3-7/16	2	TE82832	108.66
3/4	3/4	1-5/16	3-9/16	2	TE82834	108.66
13/16	5/8	1-1/2	3-5/8	2	TE82836	133.43
13/16	3/4	1-1/2	3-3/4	2	TE82838	133.90
7/8	3/4	1-1/2	3-3/4	2	TE82842	148.71
7/8	7/8	1-1/2	3-3/4	2	TE82844	148.71
15/16	5/8	1-1/2	3-5/8	2	TE82846	161.61
15/16	3/4	1-1/2	3-3/4	2	TE82848	171.24
1	3/4	1-1/2	3-3/4	2	TE82854	151.32
1	1	1-5/8	4-1/8	2	TE82858	172.31
1-1/8	1	1-5/8	4-1/8	2	TE82862	252.01
1-1/4	1	1-5/8	4-1/8	2	TE82866	280.93
1-1/2	1-1/4	1-5/8	4-1/8	2	TE82874	336.01



ALL TITAN USA TOOLS ARE 100% MADE IN THE USA

FOR COATING INFORMATION SEE PAGE 2.

TOLERANCES	DIAMETER	SHANK
ALL SIZES	+.003, -.0000	+.0000, -.0004

MADE IN THE
USA

M42 Cobalt Endmills



**TAKE
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PRICES!**

SQUARE END - 30° HELIX - M42 COBALT



SERIES 812

4 & 6 FLUTE - CENTER CUTTING - UNCOATED

SIZE	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	#OF FLTS	UNCOATED	LIST PRICE
1/8	3/8	3/8	2-5/16	4	TE81201	38.22
5/32	3/8	3/8	2-5/16	4	TE81203	52.36
3/16	3/8	1/2	2-3/8	4	TE81205	38.22
7/32	3/8	1/2	2-3/8	4	TE81207	52.36
1/4	3/8	5/8	2-7/16	4	TE81209	38.22
9/32	3/8	11/16	2-1/2	4	TE81211	52.36
5/16	3/8	3/4	2-1/2	4	TE81213	38.22
11/32	3/8	3/4	2-1/2	4	TE81215	53.47
3/8	3/8	3/4	2-1/2	4	TE81217	38.22
13/32	3/8	3/4	2-1/2	4	TE81219	78.12
7/16	3/8	1	2-11/16	4	TE81221	51.63
15/32	3/8	1	2-11/16	4	TE81223	91.61
1/2	3/8	1	2-11/16	4	TE81225	51.63
1/2	1/2	1-1/4	3-1/4	4	TE81227	51.63
17/32	1/2	1-1/4	3-1/4	4	TE81229	104.95
9/16	1/2	1-3/8	3-3/8	4	TE81231	67.17
5/8	1/2	1-3/8	3-3/8	4	TE81233	73.16
5/8	5/8	1-5/8	3-3/4	4	TE81235	81.25
11/16	1/2	1-5/8	3-5/8	4	TE81237	84.77
11/16	5/8	1-5/8	3-3/4	4	TE81239	86.39
3/4	1/2	1-5/8	3-5/8	4	TE81241	87.71
3/4	5/8	1-5/8	3-3/4	4	TE81243	87.71
3/4	3/4	1-5/8	3-7/8	4	TE81245	91.02
13/16	3/4	1-7/8	4-1/8	4	TE81247	116.08
7/8	3/4	1-7/8	4-1/8	4	TE81249	115.68
7/8	7/8	1-7/8	4-1/8	4	TE81251	115.68
15/16	3/4	1-7/8	4-1/8	4	TE81253	148.57
1	3/4	1-7/8	4-1/8	4	TE81257	131.66
1	1	2	4-1/2	4	TE81261	139.45
1-1/8	1	2	4-1/2	6	TE81265	198.95
1-1/4	1	2	4-1/2	6	TE81269	213.24
1-1/4	1-1/4	2	4-1/2	6	TE81273	217.36
1-3/8	1	2	4-1/2	6	TE81275	246.79
1-1/2	1	2	4-1/2	6	TE81277	266.38
1-1/2	1-1/4	2	4-1/2	4	TE81279	279.90
1-5/8	1-1/4	2	4-1/2	6	TE81283	304.89
2	1-1/4	2	4-1/2	6	TE81291	495.23



SERIES 813

4 & 6 FLUTE - CENTER CUTTING - ALTIN COATED

SIZE	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	#OF FLTS	ALTIN	LIST PRICE
1/8	3/8	3/8	2-5/16	4	TE81302	47.77
5/32	3/8	3/8	2-5/16	4	TE81304	65.45
3/16	3/8	1/2	2-3/8	4	TE81306	47.77
7/32	3/8	1/2	2-3/8	4	TE81308	65.45
1/4	3/8	5/8	2-7/16	4	TE81310	47.77
9/32	3/8	11/16	2-1/2	4	TE81312	65.45
5/16	3/8	3/4	2-1/2	4	TE81314	47.77
11/32	3/8	3/4	2-1/2	4	TE81316	66.84
3/8	3/8	3/4	2-1/2	4	TE81318	47.77
13/32	3/8	3/4	2-1/2	4	TE81320	97.67
7/16	3/8	1	2-11/16	4	TE81322	64.56
15/32	3/8	1	2-11/16	4	TE81324	103.07
1/2	3/8	1	2-11/16	4	TE81326	64.56
1/2	1/2	1-1/4	3-1/4	4	TE81328	64.56
17/32	1/2	1-1/4	3-1/4	4	TE81330	131.19
9/16	1/2	1-3/8	3-3/8	4	TE81332	83.97
5/8	1/2	1-3/8	3-3/8	4	TE81334	91.43
5/8	5/8	1-5/8	3-3/4	4	TE81336	101.57
11/16	1/2	1-5/8	3-5/8	4	TE81338	105.98
11/16	5/8	1-5/8	3-3/4	4	TE81340	108.00
3/4	1/2	1-5/8	3-5/8	4	TE81342	109.65
3/4	5/8	1-5/8	3-3/4	4	TE81344	109.65
3/4	3/4	1-5/8	3-7/8	4	TE81346	109.65
13/16	3/4	1-7/8	4-1/8	4	TE81348	145.15
7/8	3/4	1-7/8	4-1/8	4	TE81350	144.63
7/8	7/8	1-7/8	4-1/8	4	TE81352	144.63
15/16	3/4	1-7/8	4-1/8	4	TE81354	185.72
1	3/4	1-7/8	4-1/8	4	TE81358	164.59
1	1	2	4-1/2	4	TE81362	174.29
1-1/8	1	2	4-1/2	6	TE81366	247.97
1-1/4	1	2	4-1/2	6	TE81370	266.56
1-1/4	1-1/4	2	4-1/2	6	TE81374	271.70
1-3/8	1	2	4-1/2	6	TE81376	300.33
1-1/2	1	2	4-1/2	6	TE81378	333.95
1-1/2	1-1/4	2	4-1/2	4	TE81380	350.01
1-5/8	1-1/4	2	4-1/2	6	TE81384	382.75
2	1-1/4	2	4-1/2	6	TE81392	614.15

FOR COATING INFORMATION SEE PAGE 2.

TOLERANCES	DIAMETER	SHANK
ALL SIZES	+0.003, -.0000	+0.0000, -.0004

COBALT ENDMILLS ■ SINGLE END

M42 Cobalt Endmills

MADE IN THE
USA

DOUBLE END - 2 FLUTE - SQUARE END - 30° HELIX



SERIES 817
UNCOATED



SERIES 818
ALTIN COATED

**TAKE
55% OFF
LIST
PRICES!**

SIZE	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	NUMBER OF FLUTES	UNCOATED	LIST PRICE	ALTIN	LIST PRICE
1/8	3/8	3/8	3-1/16	2	TE81701	57.29	TE81802	71.62
5/32	3/8	7/16	3-1/8	2	TE81703	60.82	TE81804	76.03
3/16	3/8	7/16	3-1/8	2	TE81705	57.36	TE81806	71.66
7/32	3/8	1/2	3-1/8	2	TE81707	60.85	TE81808	76.07
1/4	3/8	1/2	3-1/8	2	TE81709	57.36	TE81810	71.66
9/32	3/8	9/16	3-1/8	2	TE81711	60.85	TE81812	76.07
5/16	3/8	9/16	3-1/8	2	TE81713	57.36	TE81814	71.66
11/32	3/8	9/16	3-1/8	2	TE81715	60.85	TE81816	76.07
3/8	3/8	9/16	3-1/8	2	TE81717	57.36	TE81818	71.66
13/32	1/2	13/16	3-3/4	2	TE81719	92.71	TE81820	49.75
7/16	1/2	13/16	3-3/4	2	TE81721	87.20	TE81822	108.99
1/2	1/2	13/16	3-3/4	2	TE81725	87.20	TE81826	108.99
9/16	5/8	1-1/8	4-1/2	2	TE81727	118.65	TE81828	148.31
5/8	5/8	1-1/8	4-1/2	2	TE81729	118.65	TE81830	148.31
3/4	3/4	1-5/16	5	2	TE81733	149.41	TE81834	186.82
7/8	7/8	1-9/16	5-1/2	2	TE81737	188.00	TE81838	234.99
1	1	1-5/8	5-7/8	2	TE81741	231.25	TE81842	289.05

DOUBLE END - 4 FLUTE - SQUARE END - 30° HELIX - CENTER CUTTING



SERIES 823
UNCOATED



SERIES 824
ALTIN COATED

SIZE	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	NUMBER OF FLUTES	UNCOATED	LIST PRICE	ALTIN	LIST PRICE
1/8	3/8	3/8	3-1/16	4	TE82301	57.88	TE82402	72.35
5/32	3/8	7/16	3-1/8	4	TE82303	61.11	TE82404	76.40
3/16	3/8	1/2	3-1/8	4	TE82305	57.88	TE82406	72.35
7/32	3/8	9/16	3-1/4	4	TE82307	61.11	TE82408	76.40
1/4	3/8	5/8	3-3/8	4	TE82309	57.88	TE82410	72.35
9/32	3/8	11/16	3-3/8	4	TE82311	61.11	TE82412	76.40
5/16	3/8	3/4	3-1/2	4	TE82313	57.88	TE82414	72.35
11/32	3/8	3/4	3-1/2	4	TE82315	61.11	TE82416	76.40
3/8	3/8	3/4	3-1/2	4	TE82317	57.88	TE82418	72.35
13/32	1/2	1	4-1/8	4	TE82319	89.85	TE82420	112.30
7/16	1/2	1	4-1/8	4	TE82321	87.38	TE82422	109.25
1/2	1/2	1	4-1/8	4	TE82325	87.38	TE82426	109.25
9/16	5/8	1-3/8	5	4	TE82327	116.63	TE82428	145.81
5/8	5/8	1-3/8	5	4	TE82329	116.63	TE82430	145.81
3/4	3/4	1-5/8	5-5/8	4	TE82333	146.91	TE82434	183.66
7/8	7/8	1-7/8	6-1/8	4	TE82337	196.15	TE82438	245.21
1	1	1-7/8	6-3/8	4	TE82341	227.76	TE82442	284.53

FOR COATING INFORMATION SEE PAGE 2.

TOLERANCES	DIAMETER IF SIZE & SHANK DIA. ARE NOT THE SAME	DIAMETER IF SIZE & SHANK DIA. ARE THE SAME	SHANK
ALL SIZES	+.0000, -.0015	+.0000, -.0025	+.0001, -.0005

MADE IN THE
USA

M42 Cobalt Roughing Endmills



COARSE PITCH - 30° HELIX - NON CENTER CUTTING - M42 COBALT

**SERIES 825**
UNCOATED**SERIES 826**
ALTIN COATED

SIZE	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	NUMBER OF FLUTES	UNCOATED	LIST PRICE	ALTIN	LIST PRICE
1/4	3/8	5/8	2-7/16	3	TE63404	70.55	TE63504	88.16
5/16	3/8	3/4	2-1/2	3	TE63409	76.98	TE63509	96.28
3/8	3/8	3/4	2-1/2	4	TE63414	80.44	TE63514	100.58
7/16	3/8	1	2-11/16	4	TE63419	81.36	TE63519	101.16
1/2	1/2	1	3	4	TE63428	82.39	TE63528	103.00
1/2	1/2	1-1/4	3-1/4	4	TE63429	85.22	TE63529	106.53
5/8	5/8	1-5/8	3-3/4	4	TE63436	108.44	TE63536	135.56
3/4	3/4	1-5/8	3-7/8	4	TE63445	119.35	TE63545	149.19
7/8	3/4	1-7/8	4-1/8	5	TE63454	152.79	TE63554	206.74
1	1	2	4-1/2	5	TE63466	159.88	TE63566	199.83
1-1/8	1	2	4-1/2	6	TE63471	248.37	TE63571	310.33
1-1/4	1-1/4	2	4-1/2	6	TE63475	269.50	TE63575	336.78
1-1/2	1-1/4	2	4-1/2	6	TE63483	315.98	TE63583	394.99
2	1-1/4	2	4-1/2	8	TE63492	439.09	TE63592	548.85

FINE PITCH - 30° HELIX - NON CENTER CUTTING - M42 COBALT

**SERIES 830**
UNCOATED**SERIES 831**
ALTIN COATED

SIZE	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	NUMBER OF FLUTES	UNCOATED	LIST PRICE	ALTIN	LIST PRICE
1/4	3/8	5/8	2-7/16	3	TE66104	70.55	TE66204	88.16
5/16	3/8	3/4	2-1/2	3	TE66109	77.02	TE66209	96.28
3/8	3/8	3/4	2-1/2	4	TE66114	80.95	TE66214	101.16
7/16	3/8	1	2-11/16	4	TE66119	81.36	TE66219	101.68
1/2	1/2	1-1/4	3-1/4	4	TE66129	85.22	TE66229	103.00
5/8	5/8	1-5/8	3-3/4	4	TE66136	108.44	TE66236	135.56
3/4	3/4	1-5/8	3-7/8	4	TE66145	119.35	TE66245	149.19
7/8	3/4	1-7/8	4-1/8	5	TE66154	156.14	TE66254	195.16
1	1	2	4-1/2	5	TE66166	159.96	TE66266	199.98
1-1/8	1	2	4-1/2	6	TE66171	265.24	TE66271	331.53
1-1/4	1-1/4	2	4-1/2	6	TE66175	269.50	TE66275	336.78
1-1/2	1-1/4	2	4-1/2	6	TE66183	332.92	TE66283	416.16
2	1-1/4	2	4-1/2	8	TE66192	468.85	TE66292	586.62

FOR COATING INFORMATION SEE PAGE 2.

TOLERANCES	DIAMETER	SHANK
ALL SIZES	+.005, -.005	+.0000, -.0005

**TAKE
55% OFF
LIST
PRICES!**

Predator

HIGH VANADIUM POWDERED METAL



SERIES 772
UNCOATED

SERIES 771
STEAM OXIDE

SERIES 773
ALTIN COATED

**TAKE
55% OFF
LIST
PRICES!**

SIZE	H LIMIT	# OF FLUTES	PKG. QTY.	UNCOATED	LIST PRICE	STEAM OXIDE	LIST PRICE	ALTIN	LIST PRICE
4 - 40	H2	2	1	TT97015	25.34	TT96915	29.16	TT97115	38.99
6 - 32	H3	2	1	TT97024	25.34	TT96924	29.16	TT97124	38.99
8 - 32	H3	3	1	TT97030	25.34	TT96930	29.16	TT97130	38.99
10 - 24	H3	3	1	TT97036	25.34	TT96936	29.16	TT97136	38.99
10 - 32	H3	3	1	TT97040	25.34	TT96940	29.16	TT97140	38.99
1/4 - 20	H3	3	1	TT97048	27.69	TT96948	31.85	TT97148	42.60
1/4 - 28	H3	3	1	TT97054	27.69	TT96954	31.85	TT97154	42.60
5/16 - 18	H3	3	1	TT97060	30.27	TT96960	34.83	TT97160	46.59
5/16 - 24	H3	3	1	TT97066	30.27	TT96966	34.83	TT97166	46.59
3/8 - 16	H3	3	1	TT97071	36.02	TT96971	41.40	TT97171	55.41
3/8 - 24	H3	3	1	TT97075	36.02	TT96975	41.40	TT97175	55.41
7/16 - 14	H3	3	1	TT97078	46.13	TT96978	53.03	TT97178	70.95
7/16 - 20	H3	3	1	TT97081	46.13	TT96981	53.03	TT97181	70.95
1/2 - 13	H3	3	1	TT97085	55.05	TT96985	63.32	TT97185	84.70
1/2 - 20	H3	3	1	TT97089	55.05	TT96989	63.32	TT97189	84.70
5/8 - 11	H3	4	1	TT97093	104.90	TT96993	120.65	TT97193	161.39
5/8 - 18	H3	4	1	TT97095	104.90	TT96995	120.65	TT97195	161.39
3/4 - 10	H3	4	1	TT97096	135.63	TT96996	155.96	TT97196	208.64
3/4 - 16	H3	4	1	TT97098	135.63	TT96998	155.96	TT97198	208.64

- **CNC STYLE**
- **FOR THROUGH HOLE TAPPING**
- **MATERIALS: STEEL, STEEL ALLOYS, STAINLESS STEELS, TITANIUM ALLOYS, AND A VARIETY OF OTHER STEELS WITH A MAXIMUM OF RC 32**

FOR COATING INFORMATION SEE PAGE 2.

FOR TECHNICAL INFORMATION PLEASE SEE PAGES 189-190, OR GO TO: TITANMAN.COM

**TAKE
55% OFF
LIST
PRICES!**

Predator

**HIGH VANADIUM POWDERED METAL
METRIC**



SERIES 711
UNCOATED



SERIES 712
STEAM OXIDE



SERIES 713
ALTIN COATED

SIZE	D LIMIT	# OF FLUTES	PKG. QTY.	UNCOATED	LIST PRICE	STEAM OXIDE	LIST PRICE	ALTIN	LIST PRICE
M3×0.5	D3	2	1	TT98210	28.76	TT98303	33.09	TT98420	43.12
M4×0.7	D4	3	1	TT98211	28.76	TT98304	33.09	TT98421	43.12
M5×0.8	D4	3	1	TT98212	28.76	TT98305	33.09	TT98422	43.12
M6×1.0	D5	3	1	TT98213	31.60	TT98306	36.33	TT98423	47.39
M8×1.25	D5	3	1	TT98214	34.38	TT98308	39.54	TT98424	51.62
M10×1.5	D6	3	1	TT98215	40.83	TT98310	46.92	TT98425	60.75
M12×1.75	D6	3	1	TT98216	62.57	TT98312	71.94	TT98426	93.55
M14×2.0	D7	3	1	TT98218	95.40	TT98314	109.70	TT98428	128.69
M16×2.0	D7	3	1	TT98220	112.05	TT98316	128.86	TT98430	151.19

- **CNC STYLE**
- **FOR THROUGH HOLE TAPPING**
- **MATERIALS: STEEL, STEEL ALLOYS, STAINLESS STEELS, TITANIUM ALLOYS, AND A VARIETY OF OTHER STEELS WITH A MAXIMUM OF RC 32**



ALL TITAN USA TOOLS ARE 100% MADE IN THE USA

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FOR TECHNICAL INFORMATION PLEASE SEE PAGES 189-190, OR GO TO: TITANMAN.COM

Predator

HIGH VANADIUM POWDERED METAL

37° HELIX - SEMI BOTTOMING
2 - 2-1/2 THREAD CHAMFER

**TAKE
55% OFF
LIST
PRICES!**



SERIES 774
UNCOATED



SERIES 799
STEAM OXIDE



SERIES 779
ALTIN COATED

SIZE	H LIMIT	# OF FLUTES	PKG. QTY.	UNCOATED	LIST PRICE	STEAM OXIDE	LIST PRICE	ALTIN	LIST PRICE
4 - 40	H2	3	1	TT97207	39.20	TT97507	45.08	TT97307	60.27
6 - 32	H3	3	1	TT97215	39.20	TT97515	45.08	TT97315	60.27
8 - 32	H3	3	1	TT97223	39.20	TT97523	45.08	TT97323	60.27
10 - 24	H3	3	1	TT97227	39.20	TT97527	45.08	TT97327	60.27
10 - 32	H3	3	1	TT97231	39.20	TT97531	45.08	TT97331	60.27
1/4 - 20	H3	3	1	TT97239	40.39	TT97539	46.44	TT97339	62.13
1/4 - 28	H3	3	1	TT97243	40.39	TT97543	46.44	TT97343	62.13
5/16 - 18	H3	3	1	TT97247	44.24	TT97547	50.85	TT97347	68.04
5/16 - 24	H3	3	1	TT97251	44.24	TT97551	50.85	TT97351	68.04
3/8 - 16	H3	3	1	TT97255	52.40	TT97555	60.27	TT97355	80.64
3/8 - 24	H3	3	1	TT97259	52.40	TT97559	60.27	TT97359	80.64
7/16 - 14	H3	3	1	TT97263	66.29	TT97563	76.26	TT97363	101.99
7/16 - 20	H3	3	1	TT97267	66.29	TT97567	76.26	TT97367	101.99
1/2 - 13	H3	3	1	TT97271	78.61	TT97571	90.44	TT97371	120.96
1/2 - 20	H3	3	1	TT97275	78.61	TT97575	90.44	TT97375	120.96
5/8 - 11	H3	3	1	TT97279	150.18	TT97579	172.73	TT97379	231.07
5/8 - 18	H3	3	1	TT97283	150.18	TT97583	172.73	TT97383	231.07
3/4 - 10	H3	4	1	TT97287	175.53	TT97587	201.88	TT97387	270.09
3/4 - 16	H3	4	1	TT97291	175.53	TT97591	201.88	TT97391	270.09

- **CNC STYLE**
- **SUITED FOR BLIND HOLE TAPPING**
- **MATERIALS: STEEL, STEEL ALLOYS, STAINLESS STEELS, TITANIUM ALLOYS, AND A VARIETY OF OTHER STEELS WITH A MAXIMUM OF RC 32**

FOR COATING INFORMATION SEE PAGE 2.

FOR TECHNICAL INFORMATION PLEASE SEE PAGES 189-190, OR GO TO: TITANMAN.COM

Spiral Flute Taps

**TAKE
55% OFF
LIST
PRICES!**

Predator

HIGH VANADIUM POWDERED METAL METRIC

37° HELIX - SEMI BOTTOMING
2 - 2-1/2 THREAD CHAMFER



SERIES 716
UNCOATED



SERIES 717
STEAM OXIDE



SERIES 718
ALTIN COATED

SIZE	D LIMIT	# OF FLUTES	PKG. QTY.	UNCOATED	LIST PRICE	STEAM OXIDE	LIST PRICE	ALTIN	LIST PRICE
M3×0.5	D3	2	1	TT98510	44.47	TT98603	51.13	TT98720	65.62
M4×0.7	D4	3	1	TT98511	44.47	TT98604	51.13	TT98721	65.62
M5×0.8	D4	3	1	TT98512	44.47	TT98605	51.13	TT98722	65.62
M6×1.0	D5	3	1	TT98513	45.80	TT98606	52.68	TT98723	68.03
M8×1.25	D5	3	1	TT98514	50.30	TT98608	57.84	TT98724	75.31
M10×1.5	D6	3	1	TT98515	59.46	TT98610	68.40	TT98725	88.68
M12×1.75	D6	3	1	TT98516	89.25	TT98612	102.61	TT98726	133.65
M14×2.0	D7	3	1	TT98518	126.47	TT98614	145.47	TT98728	170.75
M16×2.0	D7	3	1	TT98520	147.98	TT98616	170.19	TT98730	199.77

- **CNC STYLE**
- **SUITED FOR BLIND HOLE TAPPING**
- **MATERIALS: STEEL, STEEL ALLOYS, STAINLESS STEELS, TITANIUM ALLOYS, AND A VARIETY OF OTHER STEELS WITH A MAXIMUM OF RC 32**



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Hand Taps

MADE IN THE
USA



SERIES 725
HIGH SPEED STEEL

**TAKE
55% OFF
LIST
PRICES!**

SIZE	H LIMIT	# OF FLUTES	PKG. QTY.	TAPER ITEM#	PLUG ITEM#	BOTTOM ITEM#	LIST PRICE	SET-ITEM#	LIST PRICE
0 - 80	H1	2	1	TT90000	TT90001	TT90002	16.55	TT90003	49.60
0 - 80	H2	2	1	-	TT90005	TT90006	16.55	-	-
1 - 64	H1	2	1	-	TT90009	TT90010	15.39	TT90011	46.13
1 - 72	H1	2	1	TT90016	TT90017	TT90018	15.39	TT90019	46.13
1 - 72	H2	2	1	-	TT90021	TT90022	15.39	-	-
2 - 56	H1	3	1	TT90028	TT90029	TT90030	14.23	TT90031	42.65
2 - 56	H2	2	1	-	TT90033	TT90034	14.23	-	-
2 - 56	H2	3	1	TT90036	TT90037	TT90038	13.24	TT90039	39.71
2 - 64	H2	3	1	TT90044	TT90045	TT90046	14.23	TT90047	42.65
3 - 48	H2	2	1	-	TT90053	-	11.58	-	-
3 - 48	H2	3	1	TT90056	TT90057	TT90058	10.19	TT90059	30.54
3 - 56	H2	3	1	TT90060	TT90061	TT90062	11.45	TT90063	34.32
4 - 40	H1	2	1	-	TT90065	-	9.36	-	-
4 - 40	H1	3	1	TT90068	TT90069	TT90070	9.00	TT90071	26.94
4 - 40	H2	2	1	-	TT90073	TT90074	9.00	-	-
4 - 40	H2	3	1	TT90076	TT90077	TT90078	8.37	TT90079	25.08
4 - 48	H2	3	1	TT90084	TT90085	TT90086	9.00	TT90087	26.94
4 - 36	H2	3	1	-	TT90089	-	9.00	-	-
5 - 40	H1	3	1	-	TT90093	TT90094	9.00	-	-
5 - 40	H2	2	1	-	TT90097	TT90098	9.00	-	-
5 - 40	H2	3	1	TT90100	TT90101	TT90102	8.37	TT90103	25.08
5 - 44	H2	3	1	TT90108	TT90109	TT90110	9.00	TT90111	27.04
6 - 32	H1	3	1	TT90116	TT90117	TT90118	7.91	TT90119	23.69
6 - 32	H2	2	1	-	TT90121	TT90122	7.91	-	-
6 - 32	H2	3	1	TT90124	TT90125	TT90126	6.78	TT90127	20.42
6 - 32	H3	2	1	-	TT90129	TT90130	6.78	-	-
6 - 32	H3	3	1	TT90132	TT90133	TT90134	6.42	TT90135	19.23
6 - 32	H7	3	1	-	TT90137	TT90138	7.91	-	-
6 - 40	H2	2	1	-	TT90145	-	7.91	-	-
6 - 40	H2	3	1	TT90148	TT90149	TT90150	6.78	TT90151	20.42
8 - 32	H1	3	1	-	TT90157	TT90158	7.91	-	-
8 - 32	H1	4	1	TT90160	TT90161	TT90162	7.91	TT90163	23.69
8 - 32	H2	2	1	-	TT90165	TT90166	7.91	-	-
8 - 32	H2	3	1	-	TT90169	TT90170	7.91	-	-
8 - 32	H2	4	1	TT90172	TT90173	TT90174	6.78	TT90175	20.42
8 - 32	H3	2	1	-	TT90177	TT90178	6.78	-	-
8 - 32	H3	3	1	-	TT90181	TT90182	6.78	-	-
8 - 32	H3	4	1	TT90184	TT90185	TT90186	6.55	TT90187	19.69

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Hand Taps



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SERIES 725
HIGH SPEED STEEL

SIZE	H LIMIT	# OF FLUTES	PKG. QTY.	TAPER ITEM#	PLUG ITEM#	BOTTOM ITEM#	LIST PRICE	SET-ITEM#	LIST PRICE
8 - 32	H7	3	1	-	TT90189	TT90190	7.91	-	-
8 - 36	H1	4	1	-	TT90197	-	7.91	-	-
8 - 36	H2	4	1	TT90200	TT90201	TT90202	6.78	TT90203	20.42
10 - 24	H1	3	1	-	TT90205	-	7.91	-	-
10 - 24	H1	4	1	TT90208	TT90209	TT90210	7.02	TT90211	21.01
10 - 24	H2	2	1	-	TT90213	TT90214	7.91	-	-
10 - 24	H2	3	1	-	TT90217	-	7.91	-	-
10 - 24	H2	4	1	TT90220	TT90221	TT90222	7.02	TT90223	21.01
10 - 24	H3	2	1	-	TT90225	TT90226	7.02	-	-
10 - 24	H3	3	1	-	TT90229	TT90230	7.02	-	-
10 - 24	H3	4	1	TT90232	TT90233	TT90234	6.78	TT90235	20.42
10 - 24	H7	3	1	-	TT90237	TT90238	7.91	-	-
10 - 24	H7	4	1	-	TT90241	TT90242	7.91	-	-
10 - 32	H1	2	1	-	TT90245	TT90246	7.91	-	-
10 - 32	H1	3	1	-	TT90249	-	7.91	-	-
10 - 32	H1	4	1	TT90252	TT90253	TT90254	7.02	TT90255	21.01
10 - 32	H2	2	1	-	TT90257	TT90258	7.91	-	-
10 - 32	H2	3	1	-	TT90261	TT90262	7.91	-	-
10 - 32	H2	4	1	TT90264	TT90265	TT90266	7.02	TT90267	21.01
10 - 32	H3	2	1	-	TT90269	TT90270	7.02	-	-
10 - 32	H3	3	1	-	TT90273	TT90274	7.02	-	-
10 - 32	H3	4	1	TT90276	TT90277	TT90278	6.78	TT90279	20.42
12 - 24	H3	4	1	TT90288	TT90289	TT90290	7.18	TT90291	21.54
12 - 28	H3	4	1	TT90296	TT90297	TT90298	7.91	TT90299	23.69
1/4 - 20	H1	3	1	-	TT90301	-	9.13	-	-
1/4 - 20	H1	4	1	TT90304	TT90305	TT90306	9.13	TT90307	27.40
1/4 - 20	H2	3	1	-	TT90309	-	9.13	-	-
1/4 - 20	H2	4	1	TT90311	TT90312	TT90313	8.70	TT90314	26.11
1/4 - 20	H3	2	1	-	TT90316	TT90317	9.13	-	-
1/4 - 20	H3	3	1	-	TT90320	TT90321	8.70	-	-
1/4 - 20	H3	4	1	TT90323	TT90324	TT90325	7.31	TT90326	21.94
1/4 - 20	H5	3	1	-	TT90328	TT90329	9.13	-	-
1/4 - 20	H5	4	1	-	TT90332	TT90333	8.70	-	-
1/4 - 28	H1	4	1	-	TT90336	TT90337	8.70	-	-
1/4 - 28	H2	4	1	-	TT90340	TT90341	9.13	-	-
1/4 - 28	H3	2	1	-	TT90344	TT90345	9.13	-	-
1/4 - 28	H3	3	1	-	TT90348	TT90349	9.13	-	-
1/4 - 28	H3	4	1	TT90351	TT90352	TT90353	7.31	TT90354	21.94
1/4 - 28	H4	4	1	-	TT90356	TT90357	9.13	-	-
5/16 - 18	H1	4	1	TT90359	TT90360	TT90361	10.13	-	-
5/16 - 18	H2	4	1	TT90363	TT90364	TT90365	10.13	TT90366	30.38

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Hand Taps

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SERIES 725
HIGH SPEED STEEL

**TAKE
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LIST
PRICES!**

SIZE	H LIMIT	# OF FLUTES	PKG. QTY.	TAPER ITEM#	PLUG ITEM#	BOTTOM ITEM#	LIST PRICE	SET-ITEM#	LIST PRICE
5/16 - 18	H3	2	1	-	TT90368	TT90369	11.38	-	-
5/16 - 18	H3	3	1	-	TT90372	TT90373	10.13	-	-
5/16 - 18	H3	4	1	TT90375	TT90376	TT90377	9.00	TT90378	27.00
5/16 - 18	H5	3	1	-	TT90380	TT90381	11.38	-	-
5/16 - 18	H5	4	1	-	TT90384	TT90385	10.13	-	-
5/16 - 24	H1	4	1	-	TT90388	TT90389	10.13	-	-
5/16 - 24	H2	4	1	-	TT90392	-	10.13	-	-
5/16 - 24	H3	3	1	-	TT90396	TT90397	10.13	-	-
5/16 - 24	H3	4	1	TT90399	TT90400	TT90401	9.00	TT90402	27.00
5/16 - 24	H4	4	1	-	TT90404	TT90405	10.13	-	-
3/8 - 16	H1	3	1	-	TT90408	-	12.97	-	-
3/8 - 16	H2	4	1	TT90414	TT90415	TT90416	11.38	TT90417	34.18
3/8 - 16	H3	3	1	-	TT90419	TT90420	11.38	-	-
3/8 - 16	H3	4	1	TT90422	TT90423	TT90424	10.16	TT90425	30.48
3/8 - 16	H5	3	1	-	TT90427	TT90428	12.97	-	-
3/8 - 16	H5	4	1	-	TT90431	TT90432	11.38	-	-
3/8 - 24	H3	3	1	-	TT90443	TT90444	12.97	-	-
3/8 - 24	H3	4	1	TT90446	TT90447	TT90448	10.16	TT90449	30.48
3/8 - 24	H4	4	1	-	TT90451	TT90452	11.38	-	-
7/16 - 14	H2	4	1	-	TT90459	TT90460	19.19	-	-
7/16 - 14	H3	3	1	-	TT90463	-	19.19	-	-
7/16 - 14	H3	4	1	TT90465	TT90466	TT90467	17.47	TT90468	52.38
7/16 - 14	H5	4	1	-	TT90470	TT90471	19.19	-	-
7/16 - 20	H2	4	1	-	TT90478	TT90479	19.19	-	-
7/16 - 20	H3	3	1	-	TT90482	-	19.19	-	-
7/16 - 20	H3	4	1	TT90484	TT90485	TT90486	17.47	TT90487	52.38
7/16 - 20	H5	4	1	-	TT90489	TT90490	19.19	-	-
1/2 - 13	H1	4	1	-	TT90493	TT90494	22.40	-	-
1/2 - 13	H2	4	1	-	TT90497	TT90498	22.40	-	-
1/2 - 13	H3	3	1	-	TT90501	TT90502	22.40	-	-
1/2 - 13	H3	4	1	TT90504	TT90505	TT90506	18.20	TT90507	54.63
1/2 - 13	H5	4	1	-	TT90509	TT90510	22.73	-	-
1/2 - 20	H1	4	1	TT90512	TT90513	TT90514	22.40	-	-
1/2 - 20	H3	3	1	-	TT90521	-	22.40	-	-
1/2 - 20	H3	4	1	TT90523	TT90524	TT90525	20.58	TT90526	61.75
1/2 - 20	H5	4	1	-	TT90528	TT90529	22.40	-	-
9/16 - 12	H2	4	1	-	TT90532	-	33.29	-	-
9/16 - 12	H3	4	1	TT90535	TT90536	TT90537	30.54	TT90538	91.66
9/16 - 12	H5	4	1	-	TT90540	TT90541	33.29	-	-

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Hand Taps



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LIST
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SERIES 725
HIGH SPEED STEEL

SIZE	H LIMIT	# OF FLUTES	PKG. QTY.	TAPER ITEM#	PLUG ITEM#	BOTTOM ITEM#	LIST PRICE	SET - ITEM#	LIST PRICE
9/16 - 18	H2	4	1	-	TT90544	-	33.29	-	-
9/16 - 18	H3	4	1	TT90546	TT90547	TT90548	30.54	TT90549	91.66
9/16 - 18	H5	4	1	-	TT90551	TT90552	33.29	-	-
5/8 - 11	H3	4	1	TT90561	TT90562	TT90563	36.66	TT90564	109.96
5/8 - 11	H5	4	1	-	TT90566	TT90567	42.16	-	-
5/8 - 18	H2	4	1	-	TT90574	TT90575	42.16	-	-
5/8 - 18	H3	4	1	TT90577	TT90578	TT90579	36.66	TT90580	109.96
11/16 - 11	H3	4	1	TT90585	TT90586	TT90587	45.53	TT90588	136.60
11/16 - 16	H3	4	1	TT90589	TT90590	TT90591	45.53	TT90592	136.60
3/4 - 10	H2	4	1	-	TT90597	-	55.43	-	-
3/4 - 10	H3	4	1	TT90600	TT90601	TT90602	51.32	TT90603	153.87
3/4 - 10	H5	4	1	-	TT90605	TT90606	55.43	-	-
3/4 - 16	H2	4	1	-	TT90612	-	55.43	-	-
3/4 - 16	H3	4	1	TT90615	TT90616	TT90617	51.32	TT90618	153.87
3/4 - 16	H5	4	1	-	TT90620	TT90621	55.43	-	-
7/8 - 9	H4	4	1	TT90626	TT90627	TT90628	71.51	TT90629	214.53
7/8 - 9	H6	4	1	-	TT90631	-	75.08	-	-
7/8 - 14	H2	4	1	-	TT90634	-	75.08	-	-
7/8 - 14	H4	4	1	TT90636	TT90637	TT90638	71.51	TT90639	214.53
7/8 - 14	H6	4	1	-	TT90641	-	75.08	-	-
1 - 8	H2	4	1	-	TT90644	-	97.92	-	-
1 - 8	H4	4	1	TT90646	TT90647	TT90648	95.07	TT90649	285.24
1 - 8	H6	4	1	-	TT90651	-	97.92	-	-
1 - 12	H4	4	1	TT90653	TT90654	TT90655	95.07	TT90656	285.24
1 - 14	H2	4	1	-	TT90658	-	97.92	-	-
1 - 14	H4	4	1	TT90660	TT90661	TT90662	95.07	TT90663	285.24
1 - 14	H6	4	1	TT90664	TT90665	TT90666	97.92	-	-
1-1/8 - 7	H4	4	1	TT90668	TT90669	TT90670	153.87	TT90671	461.62
1-1/8 - 12	H4	4	1	TT90672	TT90673	TT90674	162.97	TT90675	488.92
1-1/4 - 7	H4	4	1	TT90676	TT90677	TT90678	201.99	TT90679	605.89
1-1/4 - 12	H4	6	1	TT90680	TT90681	TT90682	205.49	TT90683	616.48
1-3/8 - 6	H4	4	1	TT90684	TT90685	TT90686	253.77	TT90687	761.29
1-3/8 - 12	H4	6	1	TT90688	TT90689	TT90690	255.56	TT90691	766.65
1-1/2 - 6	H4	4	1	TT90692	TT90693	TT90694	293.05	TT90695	879.16
1-1/2 - 12	H4	6	1	TT90696	TT90697	TT90698	298.45	TT90699	895.31

HSS HAND TAPS

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Hand Taps

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STEAM OXIDE



SERIES 726 HIGH SPEED STEEL

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LIST
PRICES!**

SIZE	H LIMIT	# OF FLUTES	PKG. QTY.	TAPER ITEM#	PLUG ITEM#	BOTTOM ITEM#	LIST PRICE
0 - 80	H1	2	1	TT90000S	TT90001S	TT90002S	19.03
2 - 56	H2	3	1	TT90036S	TT90037S	TT90038S	15.25
3 - 48	H2	3	1	TT90056S	TT90057S	TT90058S	11.75
4 - 40	H2	3	1	TT90076S	TT90077S	TT90078S	9.63
4 - 48	H2	3	1	TT90084S	TT90085S	TT90086S	10.36
5 - 40	H2	3	1	TT90100S	TT90101S	TT90102S	9.63
6 - 32	H2	3	1	TT90124S	TT90125S	TT90126S	7.84
6 - 40	H2	3	1	TT90148S	TT90149S	TT90150S	7.84
8 - 32	H3	4	1	TT90184S	TT90185S	TT90186S	7.58
8 - 36	H2	4	1	TT90200S	TT90201S	TT90202S	7.84
10 - 24	H3	4	1	TT90232S	TT90233S	TT90234S	7.84
10 - 32	H3	4	1	TT90276S	TT90277S	TT90278S	7.84
12 - 24	H3	4	1	TT90288S	TT90289S	TT90290S	8.27
12 - 28	H3	4	1	TT90296S	TT90297S	TT90298S	9.10
1/4 - 20	H3	4	1	TT90323S	TT90324S	TT90325S	8.41
1/4 - 28	H3	4	1	TT90351S	TT90352S	TT90353S	8.41
5/16 - 18	H3	4	1	TT90375S	TT90376S	TT90377S	10.36
5/16 - 24	H3	4	1	TT90399S	TT90400S	TT90401S	10.36
3/8 - 16	H3	4	1	TT90422S	TT90423S	TT90424S	11.68
3/8 - 24	H3	4	1	TT90446S	TT90447S	TT90448S	11.68
7/16 - 14	H3	4	1	TT90465S	TT90466S	TT90467S	20.12
7/16 - 20	H3	4	1	TT90484S	TT90485S	TT90486S	20.12
1/2 - 13	H3	4	1	TT90504S	TT90505S	TT90506S	20.95
1/2 - 20	H3	4	1	TT90523S	TT90524S	TT90525S	23.69
9/16 - 12	H3	4	1	TT90535S	TT90536S	TT90537S	35.11
9/16 - 18	H3	4	1	TT90546S	TT90547S	TT90548S	35.11
5/8 - 11	H3	4	1	TT90561S	TT90562S	TT90563S	42.16
5/8 - 18	H3	4	1	TT90577S	TT90578S	TT90579S	42.16
3/4 - 10	H3	4	1	TT90600S	TT90601S	TT90602S	59.00
3/4 - 16	H3	4	1	TT90615S	TT90616S	TT90617S	59.00
7/8 - 9	H4	4	1	TT90626S	TT90627S	TT90628S	82.26
7/8 - 14	H4	4	1	TT90636S	TT90637S	TT90638S	82.26
1 - 8	H4	4	1	TT90646S	TT90647S	TT90648S	109.27
1 - 12	H4	4	1	TT90653S	TT90654S	TT90655S	109.27
1 - 14	H4	4	1	TT90660S	TT90661S	TT90662S	109.27
1-1/8 - 7	H4	4	1	TT90668S	TT90669S	TT90670S	176.94
1-1/8 - 12	H4	4	1	TT90672S	TT90673S	TT90674S	187.43
1-1/4 - 7	H4	4	1	TT90676S	TT90677S	TT90678S	232.27
1-1/4 - 12	H4	6	1	TT90680S	TT90681S	TT90682S	236.30
1-3/8 - 6	H4	4	1	TT90684S	TT90685S	TT90686S	291.83
1-3/8 - 12	H4	6	1	TT90688S	TT90689S	TT90690S	293.88
1-1/2 - 6	H4	4	1	TT90692S	TT90693S	TT90694S	337.00
1-1/2 - 12	H4	6	1	TT90696S	TT90697S	TT90698S	343.22

STEAM OXIDE: A BLACK OXIDE COATING OF NON-MEASURABLE THICKNESS IS USED TO INCREASE TAP SURFACE CAPILLARY WHERE LUBRICANT PROPERTIES ARE REQUIRED.

MATERIALS: STEEL, STEEL ALLOYS, STAINLESS STEELS, TITANIUM ALLOYS AND A WIDE RANGE OF FERROUS MATERIALS (IRON BASED).

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Hand Taps

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NITRIDE & STEAM OXIDE



SERIES 727 HIGH SPEED STEEL

SIZE	H LIMIT	# OF FLUTES	PKG. QTY.	PLUG ITEM#	BOTTOM ITEM#	LIST PRICE
4 – 40	H2	3	1	TT90077NS	TT90078NS	9.63
6 – 32	H2	3	1	TT90125NS	TT90126NS	7.84
6 – 40	H2	3	1	TT90149NS	TT90150NS	7.84
8 – 32	H3	4	1	TT90185NS	TT90186NS	7.58
10 – 24	H3	4	1	TT90233NS	TT90234NS	7.84
10 – 32	H3	4	1	TT90277NS	TT90278NS	7.84
1/4 – 20	H3	4	1	TT90324NS	TT90325NS	8.41
1/4 – 28	H3	4	1	TT90352NS	TT90353NS	8.41
5/16 – 18	H3	4	1	TT90376NS	TT90377NS	10.36
3/8 – 16	H3	4	1	TT90423NS	TT90424NS	11.68
3/8 – 24	H3	4	1	TT90447NS	TT90448NS	11.68
7/16 – 14	H3	4	1	TT90466NS	TT90467NS	20.12
7/16 – 20	H3	4	1	TT90485NS	TT90486NS	20.12
1/2 – 13	H3	4	1	TT90505NS	TT90506NS	20.95
1/2 – 20	H3	4	1	TT90524NS	TT90525NS	23.69
9/16 – 12	H3	4	1	TT90536NS	TT90537NS	35.11
9/16 – 18	H3	4	1	TT90547NS	TT90548NS	35.11
5/8 – 11	H3	4	1	TT90562NS	TT90563NS	42.16
5/8 – 18	H3	4	1	TT90578NS	TT90579NS	42.16
3/4 – 10	H3	4	1	TT90601NS	TT90602NS	59.00
3/4 – 16	H3	4	1	TT90616NS	TT90617NS	59.00
7/8 – 9	H3	4	1	TT90627NS	TT90628NS	82.26
7/8 – 14	H4	4	1	TT90637NS	TT90638NS	82.26
1 – 8	H4	4	1	TT90647NS	TT90648NS	109.27
1-1/8 – 7	H4	4	1	TT90669NS	TT90670NS	176.94
1-1/4 – 7	H4	4	1	TT90677NS	TT90678NS	232.27
1-1/4 – 12	H4	6	1	TT90681NS	TT90682NS	236.30
1-1/2 – 6	H4	4	1	TT90693NS	TT90694NS	337.00
1-1/2 – 12	H4	6	1	TT90697NS	TT90698NS	343.22

NITRIDE & STEAM OXIDE: A NITRIDED SURFACE FOLLOWED BY A STEAM OXIDE TREATMENT PROVIDES THE BENEFITS OF WEAR AND DUCTILITY.

MATERIALS: ALL TYPES OF GRAY, DUCTILE AND MALLEABLE CAST IRON FERROUS MATERIALS (IRON BASED).

HSS HAND TAPS

Hand Taps

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USA



SERIES 729
HIGH SPEED STEEL
TIN COATED

**TAKE
55% OFF
LIST
PRICES!**

SIZE	H-LIMIT	# OF FLUTES	PKG. QTY.	TAPER ITEM#	PLUG ITEM#	BOTTOM ITEM#	LIST PRICE	SET-ITEM#	LIST PRICE
0 - 80	H1	2	1	TT75200	TT75201	TT75202	29.78	TT75203	89.37
2 - 56	H2	3	1	TT75223	TT75224	TT75225	23.85	TT75226	71.52
4 - 40	H2	3	1	TT75249	TT75250	TT75251	15.05	TT75252	45.18
5 - 40	H2	3	1	TT75266	TT75267	TT75268	15.05	TT75269	45.18
6 - 32	H3	3	1	TT75288	TT75289	TT75290	11.54	TT75291	34.62
8 - 32	H3	4	1	TT75319	TT75320	TT75321	11.82	TT75322	35.50
10 - 24	H3	4	1	TT75348	TT75349	TT75350	12.24	TT75351	36.80
10 - 32	H3	4	1	TT75375	TT75376	TT75377	12.24	TT75378	36.80
12 - 24	H3	4	1	TT75383	TT75384	TT75385	12.94	TT75386	38.79
12 - 28	H3	4	1	TT75388	TT75389	TT75390	14.24	TT75391	42.72
1/4 - 20	H3	4	1	TT75406	TT75407	TT75408	13.15	TT75409	39.53
1/4 - 28	H3	4	1	TT75422	TT75423	TT75424	13.15	TT75425	39.53
5/16 - 18	H3	4	1	TT75439	TT75440	TT75441	16.24	TT75442	48.69
5/16 - 24	H3	4	1	TT75454	TT75455	TT75456	16.24	TT75457	48.69
3/8 - 16	H3	4	1	TT75469	TT75470	TT75471	18.31	TT75472	54.89
3/8 - 24	H3	4	1	TT75484	TT75485	TT75486	18.31	TT75487	54.89
7/16 - 14	H3	4	1	TT75495	TT75496	TT75497	31.46	TT75498	94.43
7/16 - 20	H3	4	1	TT75506	TT75507	TT75508	31.46	TT75509	94.43
1/2 - 13	H3	4	1	TT75518	TT75519	TT75520	32.80	TT75521	98.42
1/2 - 20	H3	4	1	TT75530	TT75531	TT75532	37.08	TT75533	111.26
9/16 - 18	H3	4	1	TT75544	TT75545	TT75546	50.37	TT75547	151.28
5/8 - 11	H3	4	1	TT75552	TT75553	TT75554	66.08	TT75555	198.11
5/8 - 18	H3	4	1	TT75561	TT75562	TT75563	66.08	TT75564	198.11
3/4 - 10	H3	4	1	TT75577	TT75578	TT75579	92.46	TT75580	277.28
3/4 - 16	H3	4	1	TT75585	TT75586	TT75587	92.46	TT75588	277.28
1 - 8	H4	4	1	TT75604	TT75605	TT75606	156.90	TT75607	470.79

FOR COATING INFORMATION SEE PAGE 2.
FOR TECHNICAL INFORMATION PLEASE SEE PAGE 189, OR GO TO: TITANMAN.COM

MADE IN THE
USA

Hand Taps



SERIES 755
HIGH SPEED STEEL
METRIC
UNCOATED

**TAKE
55% OFF
LIST
PRICES!**

SIZE	D-LIMIT	# OF FLUTES	PKG. QTY.	TAPER ITEM#	PLUG ITEM#	BOTTOM ITEM#	LIST PRICE	SET-ITEM#	LIST PRICE
M1.6 x 0.35	D3	2	1	—	TT93002	—	22.10	—	—
M2 x 0.4	D3	3	1	TT93007	TT93008	TT93009	22.10	TT93100	66.28
M2.5 x 0.45	D3	3	1	—	TT93014	—	13.60	—	—
M3 x 0.5	D3	3	1	TT93016	TT93017	TT93018	11.32	TT93102	33.98
M3.5 x 0.6	D4	3	1	—	TT93020	—	9.36	—	—
M4 x 0.7	D4	4	1	TT93022	TT93023	TT93024	9.36	TT93104	28.09
M4.5 x 0.75	D4	4	1	—	TT93026	—	9.36	—	—
M5 x 0.8	D4	4	1	TT93028	TT93029	TT93030	9.36	TT93106	28.09
M6 x 1.0	D5	4	1	TT93031	TT93032	TT93033	9.89	TT93108	29.65
M7 x 1.0	D5	4	1	TT93037	TT93038	TT93039	9.89	TT93110	29.68
M8 x 1.25	D5	4	1	TT93043	TT93044	TT93045	9.89	TT93112	29.68
M10 x 1.25	D5	4	1	TT93046	TT93047	TT93048	20.32	TT93114	60.92
M10 x 1.50	D6	4	1	TT93049	TT93050	TT93051	20.32	TT93116	60.92
M12 x 1.25	D5	4	1	TT93052	TT93053	TT93054	23.83	TT93118	71.44
M12 x 1.75	D6	4	1	TT93055	TT93056	TT93057	23.83	TT93120	71.44
M14 x 1.5	D6	4	1	TT93058	TT93059	TT93060	35.61	TT93122	106.82
M14 x 2.0	D7	4	1	TT93061	TT93062	TT93063	35.61	TT93124	106.82
M16 x 1.5	D6	4	1	TT93064	TT93065	TT93066	43.38	TT93126	130.15
M16 x 2.0	D7	4	1	TT93067	TT93068	TT93069	43.38	TT93128	130.15
M18 x 1.5	D6	4	1	TT93070	TT93071	TT93072	58.44	TT93130	175.28
M18 x 2.5	D7	4	1	TT93073	TT93074	TT93075	58.44	TT93132	175.28
M20 x 2.5	D7	4	1	TT93076	TT93077	TT93078	75.58	TT93134	226.71
M24 x 3.0	D8	4	1	TT93082	TT93083	TT93084	110.59	TT93136	331.74
M27 x 3.0	D8	4	1	TT93085	TT93086	TT93087	191.13	TT93138	573.40
M30 x 3.5	D9	4	1	TT93088	TT93089	TT93090	244.11	TT93140	732.27
M33 x 3.5	D9	4	1	TT93091	TT93092	TT93093	243.45	TT93142	730.35
M36 x 4.0	D9	4	1	TT93094	TT93095	TT93096	308.74	TT93144	926.25

HSS HAND TAPS

FOR TECHNICAL INFORMATION PLEASE SEE PAGE 189, OR GO TO: TITANMAN.COM

Hand Taps

MADE IN THE
USA



SERIES 757
HIGH SPEED STEEL
METRIC
TIN COATED

**TAKE
55% OFF
LIST
PRICES!**

SIZE	D-LIMIT	# OF FLUTES	PKG. QTY.	TAPER ITEM#	PLUG ITEM#	BOTTOM ITEM#	LIST PRICE	SET-ITEM#	LIST PRICE
M1.6 x 0.35	D3	2	1	—	TT75700	—	39.81	—	—
M2 x 0.4	D3	3	1	TT75702	TT75704	TT75706	39.81	TT75846	119.43
M2.5 x 0.45	D3	3	1	—	TT75708	—	24.48	—	—
M3 x 0.5	D3	3	1	TT75710	TT75712	TT75714	20.41	TT75848	61.28
M3.5 x 0.6	D4	3	1	—	TT75716	—	16.87	—	—
M4 x 0.7	D4	4	1	TT75718	TT75720	TT75722	16.87	TT75850	50.62
M4.5 x 0.75	D4	4	1	—	TT75724	—	16.87	—	—
M5 x 0.8	D4	4	1	TT75726	TT75728	TT75730	16.87	TT75852	50.62
M6 x 1.0	D5	4	1	TT75732	TT75734	TT75736	17.82	TT75854	53.42
M7 x 1.0	D5	4	1	TT75738	TT75740	TT75742	17.85	TT75856	53.46
M8 x 1.25	D5	4	1	TT75744	TT75746	TT75748	17.85	TT75858	53.46
M10 x 1.25	D5	4	1	TT75750	TT75752	TT75754	36.58	TT75860	109.79
M10 x 1.50	D6	4	1	TT75756	TT75758	TT75760	36.58	TT75862	109.79
M12 x 1.25	D5	4	1	TT75762	TT75764	TT75766	42.90	TT75864	128.73
M12 x 1.75	D6	4	1	TT75768	TT75770	TT75772	42.90	TT75866	128.73
M14 x 1.5	D6	4	1	TT75774	TT75776	TT75778	64.15	TT75868	192.46
M14 x 2.0	D7	4	1	TT75780	TT75782	TT75784	64.15	TT75870	192.46
M16 x 1.5	D6	4	1	TT75786	TT75788	TT75790	78.19	TT75872	234.56
M16 x 2.0	D7	4	1	TT75792	TT75794	TT75796	78.19	TT75874	234.56
M18 x 1.5	D6	4	1	TT75798	TT75800	TT75802	105.26	TT75876	315.83
M18 x 2.5	D7	4	1	TT75804	TT75806	TT75808	105.26	TT75878	315.83
M20 x 2.5	D7	4	1	TT75810	TT75812	TT75814	136.17	TT75880	408.53
M24 x 3.0	D8	4	1	TT75816	TT75818	TT75820	199.27	TT75882	597.81
M27 x 3.0	D8	4	1	TT75822	TT75824	TT75826	344.41	TT75884	1,033.28
M30 x 3.5	D9	4	1	TT75828	TT75830	TT75832	439.86	TT75886	1,319.57
M33 x 3.5	D9	4	1	TT75834	TT75836	TT75838	438.70	TT75888	1,316.10
M36 x 4.0	D9	4	1	TT75840	TT75842	TT75844	556.38	TT75890	1,669.11

FOR COATING INFORMATION SEE PAGE 2.
FOR TECHNICAL INFORMATION PLEASE SEE PAGE 189, OR GO TO: TITANMAN.COM

MADE IN THE
USA

Spiral Point Plug Taps



**TAKE
55% OFF
LIST
PRICES!**



SERIES 750
HIGH SPEED STEEL

SIZE	H LIMIT	# OF FLUTES	PKG. QTY.	ITEM#	LIST PRICE
0 - 80	H1	2	1	TT91000	20.38
0 - 80	H2	2	1	TT91001	20.38
1 - 64	H1	2	1	TT91002	18.40
1 - 64	H2	2	1	TT91003	18.40
1 - 72	H1	2	1	TT91004	18.40
1 - 72	H2	2	1	TT91005	18.40
2 - 56	H1	2	1	TT91006	17.51
2 - 56	H2	2	1	TT91007	15.62
2 - 64	H1	2	1	TT91008	17.51
2 - 64	H2	2	1	TT91009	17.51
3 - 48	H1	2	1	TT91010	12.54
3 - 48	H2	2	1	TT91011	12.54
3 - 56	H1	2	1	TT91012	15.35
3 - 56	H2	2	1	TT91013	13.96
4 - 40	H1	2	1	TT91014	11.45
4 - 40	H2	2	1	TT91015	10.06
4 - 48	H1	2	1	TT91016	11.65
4 - 48	H2	2	1	TT91017	11.45
4 - 36	H2	2	1	TT91018	11.45
5 - 40	H1	2	1	TT91019	11.45
5 - 40	H2	2	1	TT91020	10.06
5 - 44	H2	2	1	TT91021	11.45
6 - 32	H1	2	1	TT91022	10.06
6 - 32	H2	2	1	TT91023	8.47
6 - 32	H3	2	1	TT91024	8.47
6 - 32	H7	2	1	TT91025	9.60
6 - 40	H1	2	1	TT91026	9.60
6 - 40	H2	2	1	TT91027	9.60
8 - 32	H1	2	1	TT91028	9.60
8 - 32	H2	2	1	TT91029	8.47
8 - 32	H3	2	1	TT91030	8.47
8 - 32	H7	2	1	TT91031	9.60
8 - 36	H1	2	1	TT91032	9.60
8 - 36	H2	2	1	TT91033	9.60
10 - 24	H1	2	1	TT91034	10.49
10 - 24	H2	2	1	TT91035	9.60
10 - 24	H3	2	1	TT91036	8.47
10 - 24	H7	2	1	TT91037	10.49
10 - 32	H1	2	1	TT91038	9.60
10 - 32	H2	2	1	TT91039	8.47
10 - 32	H3	2	1	TT91040	8.47
10 - 32	H7	2	1	TT91041	10.49
12 - 24	H1	2	1	TT91042	9.60
12 - 24	H3	2	1	TT91043	9.60
12 - 28	H3	2	1	TT91044	9.60
1/4 - 20	H1	2	1	TT91045	9.60
1/4 - 20	H2	2	1	TT91046	9.60
1/4 - 20	H3	2	1	TT91047	8.47
1/4 - 20	H3	3	1	TT91048	10.49
1/4 - 20	H5	2	1	TT91049	9.56

SIZE	H LIMIT	# OF FLUTES	PKG. QTY.	ITEM#	LIST PRICE
1/4 - 20	H5	3	1	TT91050	10.49
1/4 - 28	H1	2	1	TT91051	10.49
1/4 - 28	H2	2	1	TT91052	9.56
1/4 - 28	H2	3	1	TT91053	10.49
1/4 - 28	H3	2	1	TT91054	8.47
1/4 - 28	H4	2	1	TT91055	10.49
1/4 - 28	H4	3	1	TT91056	10.49
5/16 - 18	H1	2	1	TT91057	12.08
5/16 - 18	H2	2	1	TT91058	10.49
5/16 - 18	H3	2	1	TT91059	9.13
5/16 - 18	H3	3	1	TT91060	12.08
5/16 - 18	H5	2	1	TT91061	10.49
5/16 - 18	H5	3	1	TT91062	12.08
5/16 - 24	H1	2	1	TT91063	12.08
5/16 - 24	H2	2	1	TT91064	12.08
5/16 - 24	H2	3	1	TT91065	12.08
5/16 - 24	H3	2	1	TT91066	9.13
5/16 - 24	H4	2	1	TT91067	12.08
5/16 - 24	H4	3	1	TT91068	12.08
3/8 - 16	H1	3	1	TT91069	13.53
3/8 - 16	H2	3	1	TT91070	12.57
3/8 - 16	H3	3	1	TT91071	10.82
3/8 - 16	H5	3	1	TT91072	13.63
3/8 - 24	H1	3	1	TT91073	13.73
3/8 - 24	H2	3	1	TT91074	13.73
3/8 - 24	H3	3	1	TT91075	11.65
3/8 - 24	H4	3	1	TT91076	13.73
7/16 - 14	H2	3	1	TT91077	20.09
7/16 - 14	H3	3	1	TT91078	18.40
7/16 - 14	H5	3	1	TT91079	20.09
7/16 - 20	H2	3	1	TT91080	20.09
7/16 - 20	H3	3	1	TT91081	18.40
7/16 - 20	H5	3	1	TT91082	20.09
1/2 - 13	H1	3	1	TT91083	24.59
1/2 - 13	H2	3	1	TT91084	24.59
1/2 - 13	H3	3	1	TT91085	18.76
1/2 - 13	H5	3	1	TT91086	22.14
1/2 - 20	H1	3	1	TT91087	24.59
1/2 - 20	H2	3	1	TT91088	24.59
1/2 - 20	H3	3	1	TT91089	22.04
1/2 - 20	H5	3	1	TT91090	24.59
9/16 - 12	H3	3	1	TT91091	30.64
9/16 - 18	H3	3	1	TT91092	30.64
5/8 - 11	H3	3	1	TT91093	41.83
5/8 - 11	H5	3	1	TT91094	41.83
5/8 - 18	H3	3	1	TT91095	41.83
3/4 - 10	H3	3	1	TT91096	59.00
3/4 - 10	H5	3	1	TT91097	59.00
3/4 - 16	H3	3	1	TT91098	59.00
-	-	-	-	-	-

FOR TECHNICAL INFORMATION PLEASE SEE PAGE 189, OR GO TO: TITANMAN.COM

Spiral Point Plug Taps

MADE IN THE
USA

STEAM OXIDE



SERIES 751
HIGH SPEED STEEL

SIZE	H LIMIT	# OF FLUTES	PKG. QTY.	ITEM#	LIST PRICE
0 - 80	H2	2	1	TT91001S	23.46
1 - 64	H2	2	1	TT91003S	21.21
1 - 72	H2	2	1	TT91005S	21.21
2 - 56	H2	2	1	TT91007S	18.00
2 - 64	H2	2	1	TT91009S	20.15
3 - 48	H2	2	1	TT91011S	14.43
3 - 56	H2	2	1	TT91013S	16.08
4 - 40	H2	2	1	TT91015S	11.58
4 - 48	H2	2	1	TT91017S	13.20
4 - 36	H2	2	1	TT91018S	13.20
5 - 40	H2	2	1	TT91020S	11.58
5 - 44	H2	2	1	TT91021S	13.20
6 - 32	H3	2	1	TT91024S	9.73
6 - 40	H2	2	1	TT91027S	11.05
8 - 32	H3	2	1	TT91030S	9.73
8 - 36	H2	2	1	TT91033S	11.05
10 - 24	H3	2	1	TT91036S	9.73
10 - 32	H3	2	1	TT91040S	9.73
12 - 24	H3	2	1	TT91043S	11.05
1/4 - 20	H3	2	1	TT91047S	9.73
1/4 - 28	H3	2	1	TT91054S	9.73
5/16 - 18	H3	2	1	TT91059S	10.52
5/16 - 24	H3	2	1	TT91066S	10.52
3/8 - 16	H3	3	1	TT91071S	12.48
3/8 - 24	H3	3	1	TT91075S	13.40
7/16 - 14	H3	3	1	TT91078S	21.21
7/16 - 20	H3	3	1	TT91081S	21.21
1/2 - 13	H3	3	1	TT91085S	21.61
1/2 - 20	H3	3	1	TT91089S	25.35
9/16 - 12	H3	3	1	TT91091S	35.24
9/16 - 18	H3	3	1	TT91092S	35.24
5/8 - 11	H3	3	1	TT91093S	48.11
5/8 - 18	H3	3	1	TT91095S	48.11
3/4 - 10	H3	3	1	TT91096S	67.87
3/4 - 16	H3	3	1	TT91098S	67.87

STEAM OXIDE: A BLACK OXIDE COATING OF NON-MEASURABLE THICKNESS IS USED TO INCREASE TAP SURFACE CAPILLARY WHERE LUBRICANT PROPERTIES ARE REQUIRED.

MATERIALS: STEEL, STEEL ALLOYS, STAINLESS STEELS, TITANIUM ALLOYS AND A WIDE RANGE OF FERROUS MATERIALS (IRON BASED).

NITRIDE & STEAM OXIDE



SERIES 752
HIGH SPEED STEEL

SIZE	H LIMIT	# OF FLUTES	PKG. QTY.	ITEM#	LIST PRICE
4 - 40	H2	2	1	TT91015NS	11.58
4 - 48	H2	2	1	TT91017NS	13.20
4 - 36	H2	2	1	TT91018NS	13.20
5 - 40	H2	2	1	TT91020NS	11.58
5 - 44	H2	2	1	TT91021NS	13.20
6 - 32	H3	2	1	TT91024NS	9.73
6 - 40	H2	2	1	TT91027NS	11.05
8 - 32	H3	2	1	TT91030NS	9.73
8 - 36	H2	2	1	TT91033NS	11.05
10 - 24	H3	2	1	TT91036NS	9.73
10 - 32	H3	2	1	TT91040NS	9.73
12 - 24	H3	2	1	TT91043NS	11.05
1/4 - 20	H3	2	1	TT91047NS	9.73
1/4 - 28	H3	2	1	TT91054NS	9.73
5/16 - 18	H3	2	1	TT91059NS	10.52
5/16 - 24	H3	2	1	TT91066NS	10.52
3/8 - 16	H3	3	1	TT91071NS	12.48
3/8 - 24	H3	3	1	TT91075NS	13.40
7/16 - 14	H3	3	1	TT91078NS	21.21
7/16 - 20	H3	3	1	TT91081NS	21.21
1/2 - 13	H3	3	1	TT91085NS	21.61
1/2 - 20	H3	3	1	TT91089NS	25.35
9/16 - 12	H3	3	1	TT91091NS	35.24
9/16 - 18	H3	3	1	TT91092NS	35.24
5/8 - 11	H3	3	1	TT91093NS	48.11
5/8 - 18	H3	3	1	TT91095NS	48.11
3/4 - 10	H3	3	1	TT91096NS	67.87
3/4 - 16	H3	3	1	TT91098NS	67.87

NITRIDE & STEAM OXIDE: A NITRIDED SURFACE FOLLOWED BY A STEAM OXIDE TREATMENT PROVIDES THE BENEFITS OF WEAR AND DUCTILITY.

MATERIALS: ALL TYPES OF GRAY, DUCTILE AND MALLEABLE CAST IRON FERROUS MATERIALS (IRON BASED).

**TAKE
55% OFF
LIST
PRICES!**

MADE IN THE
USA

Spiral Point Plug Taps

**TAKE
55% OFF
LIST
PRICES!**



SERIES 760
HIGH SPEED STEEL
TIN COATED



SERIES 762
HIGH SPEED STEEL
ALTIN COATED

SIZE	H LIMIT	# OF FLUTES	PKG. QTY.	ITEM#	LIST PRICE
0-80	H2	2	1	TT99401	30.17
2-56	H2	2	1	TT99407	24.20
4-40	H2	2	1	TT99415	17.12
5-40	H2	2	1	TT99420	17.12
6-32	H3	2	1	TT99424	15.99
8-32	H3	2	1	TT99430	15.99
10-24	H3	2	1	TT99436	15.99
10-32	H3	2	1	TT99440	15.99
12-24	H3	2	1	TT99443	17.47
12-28	H3	2	1	TT99444	17.47
1/4-20	H3	2	1	TT99447	15.99
1/4-28	H3	2	1	TT99454	15.99
5/16-18	H3	2	1	TT99459	17.50
5/16-24	H3	2	1	TT99466	17.50
3/8-16	H3	3	1	TT99471	20.55
3/8-24	H3	3	1	TT99475	21.61
7/16-14	H3	3	1	TT99478	33.99
7/16-20	H3	3	1	TT99481	33.99
1/2-13	H3	3	1	TT99485	34.45
1/2-20	H3	3	1	TT99489	38.48
5/8-11	H3	3	1	TT99493	79.62
5/8-18	H3	3	1	TT99495	79.62
3/4-10	H3	3	1	TT99496	103.97
3/4-16	H3	3	1	TT99498	103.97

TIN COATED: IT IS AN EXCELLENT MULTI-PURPOSE WEAR COATING WITH GOOD LUBRICITY.

SIZE	H LIMIT	# OF FLUTES	PKG. QTY.	ITEM#	LIST PRICE
0-80	H2	2	1	TT98001	30.17
2-56	H2	2	1	TT98002	24.20
4-40	H2	2	1	TT98003	17.12
5-40	H2	2	1	TT98004	17.12
6-32	H3	2	1	TT98005	15.99
8-32	H3	2	1	TT98006	15.99
10-24	H3	2	1	TT98007	15.99
10-32	H3	2	1	TT98008	15.99
12-24	H3	2	1	TT98009	17.47
12-28	H3	2	1	TT98010	17.47
1/4-20	H3	2	1	TT98011	15.99
1/4-28	H3	2	1	TT98012	15.99
5/16-18	H3	2	1	TT98013	17.50
5/16-24	H3	2	1	TT98014	17.50
3/8-16	H3	3	1	TT98015	20.55
3/8-24	H3	3	1	TT98016	21.61
7/16-14	H3	3	1	TT98017	33.99
7/16-20	H3	3	1	TT98018	33.99
1/2-13	H3	3	1	TT98019	34.45
1/2-20	H3	3	1	TT98020	38.48
5/8-11	H3	3	1	TT98021	79.62
5/8-18	H3	3	1	TT98022	79.62
3/4-10	H3	3	1	TT98023	103.97
3/4-16	H3	3	1	TT98024	103.97

ALTIN COATED: A MULTI-LAYERED COATING FOR A WIDE RANGE OF HIGH SPEED STEEL APPLICATIONS FOR CAST IRON, STAINLESS STEEL, NICKEL BASED HIGH TEMPERATURE ALLOYS AND TITANIUM ALLOYS.

FOR COATING INFORMATION SEE PAGE 2.
FOR TECHNICAL INFORMATION PLEASE SEE PAGE 189, OR GO TO: TITANMAN.COM

Spiral Point Plug • Spiral Point Bottoming

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SPIRAL POINT PLUG TAPS

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SERIES 780
HIGH SPEED STEEL
METRIC
UNCOATED

SIZE	D-LIMIT	# OF FLUTES	PKG. QTY.	ITEM#	LIST PRICE
M2 x 0.4	D3	2	1	TT93208	22.57
M2.5 x 0.45	D3	2	1	TT93214	16.18
M3 x 0.5	D3	2	1	TT93217	13.00
M3.5 x 0.6	D4	2	1	TT93220	11.22
M4 x 0.7	D4	2	1	TT93223	11.22
M4.5 x 0.75	D4	2	1	TT93226	11.22
M5 x 0.8	D4	2	1	TT93229	11.22
M6 x 1.0	D5	2	1	TT93232	11.22
M7 x 1.0	D5	2	1	TT93238	12.97
M8 x 1.25	D5	2	1	TT93244	12.97
M10 x 1.50	D6	3	1	TT93250	21.54
M12 x 1.75	D6	3	1	TT93256	26.97
M14 x 2.0	D7	3	1	TT93262	41.86
M16 x 2.0	D7	3	1	TT93268	47.42
M18 x 2.5	D7	3	1	TT93274	69.76
M20 x 2.5	D7	3	1	TT93277	92.06



SERIES 882
HIGH SPEED STEEL
METRIC
TIN COATED

SIZE	D-LIMIT	# OF FLUTES	PKG. QTY.	ITEM#	LIST PRICE
M2 x 0.4	D3	2	1	TT93208TIN	31.11
M2.5 x 0.45	D3	2	1	TT93214TIN	22.31
M3 x 0.5	D3	2	1	TT93217TIN	17.96
M3.5 x 0.6	D4	2	1	TT93220TIN	15.47
M4 x 0.7	D4	2	1	TT93223TIN	15.47
M4.5 x 0.75	D4	2	1	TT93226TIN	15.47
M5 x 0.8	D4	2	1	TT93229TIN	15.47
M6 x 1.0	D5	2	1	TT93232TIN	15.47
M7 x 1.0	D5	2	1	TT93238TIN	17.85
M8 x 1.25	D5	2	1	TT93244TIN	17.85
M10 x 1.50	D6	3	1	TT93250TIN	29.67
M12 x 1.75	D6	3	1	TT93256TIN	37.18
M14 x 2.0	D7	3	1	TT93262TIN	57.67
M16 x 2.0	D7	3	1	TT93268TIN	65.35
M18 x 2.5	D7	3	1	TT93274TIN	96.11
M20 x 2.5	D7	3	1	TT93277TIN	126.87

SPIRAL POINT BOTTOMING TAPS



SERIES 754
HIGH SPEED STEEL
UNCOATED

SIZE	H-LIMIT	# OF FLUTES	PKG. QTY.	ITEM#	LIST PRICE
0 - 80	H2	2	1	TT91201	37.53
2 - 56	H2	2	1	TT91207	28.76
3 - 48	H2	2	1	TT91211	23.08
4 - 40	H2	2	1	TT91215	18.52
5 - 40	H2	2	1	TT91220	18.52
6 - 32	H2	2	1	TT91223	15.57
6 - 32	H3	2	1	TT91224	15.57
6 - 40	H2	2	1	TT91227	17.71
8 - 32	H2	2	1	TT91229	15.57
8 - 32	H3	2	1	TT91230	15.57
10 - 24	H2	2	1	TT91235	17.71
10 - 24	H3	2	1	TT91236	15.57
10 - 32	H2	2	1	TT91239	15.57
10 - 32	H3	2	1	TT91240	15.57
12 - 24	H3	2	1	TT91243	17.71
1/4 - 20	H3	2	1	TT91247	15.57
1/4 - 28	H3	2	1	TT91254	15.57
5/16 - 18	H3	2	1	TT91259	16.80
5/16 - 24	H3	2	1	TT91266	16.80



SERIES 756
HIGH SPEED STEEL
TIN COATED

SIZE	H-LIMIT	# OF FLUTES	PKG. QTY.	ITEM#	LIST PRICE
0 - 80	H2	2	1	TT92202	50.67
2 - 56	H2	2	1	TT92209	38.83
3 - 48	H2	2	1	TT92212	31.16
4 - 40	H2	2	1	TT92216	25.00
5 - 40	H2	2	1	TT92221	25.00
6 - 32	H2	2	1	TT92224	21.02
6 - 32	H3	2	1	TT92225	21.02
6 - 40	H2	2	1	TT92228	23.91
8 - 32	H2	2	1	TT92230	21.02
8 - 32	H3	2	1	TT92231	21.02
10 - 24	H2	2	1	TT92236	23.91
10 - 24	H3	2	1	TT92237	21.02
10 - 32	H2	2	1	TT92240	21.02
10 - 32	H3	2	1	TT92241	21.02
12 - 24	H3	2	1	TT92244	23.91
1/4 - 20	H3	2	1	TT92248	21.02
1/4 - 28	H3	2	1	TT92255	21.02
5/16 - 18	H3	2	1	TT92260	22.68
5/16 - 24	H3	2	1	TT92267	22.68

SPIRAL POINT BOTTOMING TAPS ARE RECOMMENDED FOR USE WHERE CLOSE GAGING IS REQUIRED.

FOR COATING INFORMATION SEE PAGE 2.

FOR TECHNICAL INFORMATION PLEASE SEE PAGE 189, OR GO TO: TITANMAN.COM

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Spiral Flute Taps



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**52° HELIX - SEMI BOTTOMING - 2 TO 2-1/2 THREAD CHAMFER
HIGH SPEED STEEL**

**SERIES 761****SERIES 763
METRIC**

SIZE	H LIMIT	# OF FLUTES	PKG. QTY.	ITEM#	LIST PRICE
3 - 48	H2	2	1	TT76101	34.45
3 - 56	H2	2	1	TT76103	34.45
4 - 40	H2	2	1	TT76105	28.34
4 - 48	H2	2	1	TT76107	28.34
5 - 40	H3	2	1	TT76109	28.34
5 - 44	H3	2	1	TT76111	28.34
6 - 32	H3	2	1	TT76113	23.01
6 - 40	H3	2	1	TT76115	23.01
8 - 32	H3	3	1	TT76117	23.01
8 - 36	H3	3	1	TT76119	23.01
10 - 24	H3	3	1	TT76121	23.01
10 - 32	H3	3	1	TT76123	23.01
12 - 24	H3	3	1	TT76125	24.97
12 - 28	H3	3	1	TT76127	24.97
1/4 - 20	H3	3	1	TT76129	24.97
1/4 - 28	H3	3	1	TT76131	24.97
5/16 - 18	H3	3	1	TT76133	30.76
5/16 - 24	H3	3	1	TT76135	30.76
3/8 - 16	H3	3	1	TT76137	35.50
3/8 - 24	H3	3	1	TT76139	35.50
7/16 - 14	H3	3	1	TT76141	53.21
7/16 - 20	H3	3	1	TT76143	53.21
1/2 - 13	H3	3	1	TT76145	64.05
1/2 - 20	H3	3	1	TT76147	64.05
9/16 - 12	H3	4	1	TT76149	106.84
9/16 - 18	H3	4	1	TT76151	106.84
5/8 - 11	H3	4	1	TT76153	139.43
5/8 - 18	H3	4	1	TT76155	139.43
3/4 - 10	H3	4	1	TT76157	178.47
3/4 - 16	H3	4	1	TT76159	178.47

SIZE	D-LIMIT	# OF FLUTES	PKG. QTY.	ITEM#	LIST PRICE
M3 x 0.5	D3	2	1	TT76349	29.15
M3.5 x 0.6	D4	3	1	TT76351	23.61
M4 x 0.7	D4	3	1	TT76353	23.61
M4.5 x 0.75	D4	3	1	TT76355	23.61
M5 x 0.8	D4	3	1	TT76357	23.61
M6 x 1.0	D5	3	1	TT76359	25.78
M8 x 1.25	D5	3	1	TT76361	31.78
M10 x 1.5	D6	3	1	TT76363	54.93
M12 x 1.75	D6	3	1	TT76365	66.12

- CAN BE USED FOR PLUG OR BOTTOMING APPLICATIONS
- ALLOWS FOR THREADING CLOSE TO BOTTOM IN BLIND HOLES
- CAN BE USED FOR THROUGH OR BLIND HOLES
- CUTS MORE EFFICIENTLY THAN BOTTOMING TAPS
- SLIGHTLY LONGER CHAMFER DISTRIBUTES CUTTING OVER GREATER NUMBER OF TEETH FOR INCREASED PRODUCTION
- MATERIALS: FOR TAPPING IN RELATIVELY DEEP HOLES IN COPPER, BRASS, ALUMINUM AND OTHER SOFT DUCTILE MATERIALS

HSS SPIRAL FLUTE TAPS

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Thread Forming Taps

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PLUG & BOTTOMING HIGH SPEED STEEL



**SERIES 876
UNCOATED**



**SERIES 898
METRIC
UNCOATED**

SIZE	H LIMIT	# OF LUBE GROOVES	PKG. QTY.	PLUG ITEM#	BOTTOM ITEM#	LIST PRICE
0 - 80	H2	1	1	-	TT82800	27.14
0 - 80	H3	1	1	-	TT82802	27.14
1 - 64	H2	1	1	-	TT82804	27.14
1 - 72	H2	1	1	-	TT82806	27.14
2 - 56	H2	1	1	-	TT82808	26.96
2 - 56	H3	1	1	-	TT82810	26.96
2 - 64	H2	1	1	-	TT82812	26.96
2 - 64	H3	1	1	-	TT82814	26.96
3 - 48	H2	1	1	-	TT82816	26.96
3 - 48	H3	1	1	-	TT82818	26.96
3 - 56	H2	1	1	-	TT82820	26.96
3 - 56	H3	1	1	-	TT82822	26.96
4 - 40	H3	1	1	TT82823	TT82824	24.30
4 - 40	H5	1	1	TT82825	TT82826	24.30
4 - 48	H3	1	1	TT82827	TT82828	24.30
4 - 48	H5	1	1	TT82829	TT82830	24.30
5 - 40	H3	1	1	TT82831	TT82832	24.30
5 - 40	H5	1	1	TT82833	TT82834	24.30
5 - 44	H3	1	1	TT82835	TT82836	24.30
5 - 44	H5	1	1	TT82837	TT82838	24.30
6 - 32	H3	1	1	TT82839	TT82840	20.03
6 - 32	H5	1	1	TT82841	TT82842	20.03
6 - 32	H7	1	1	TT82843	TT82844	20.03
6 - 40	H3	1	1	TT82845	TT82846	20.03
6 - 40	H5	1	1	TT82847	TT82848	20.03
8 - 32	H3	1	1	TT82849	TT82850	20.03
8 - 32	H5	1	1	TT82851	TT82852	20.03
8 - 32	H7	1	1	TT82853	TT82854	20.03
8 - 36	H3	1	1	TT82855	TT82856	20.03
10 - 24	H4	1	1	TT82857	TT82858	19.26
10 - 24	H6	1	1	TT82859	TT82860	19.26
10 - 32	H4	1	1	TT82861	TT82862	19.26
10 - 32	H6	1	1	TT82863	TT82864	19.26
12 - 24	H4	2	1	TT82865	TT82866	19.26
12 - 24	H6	2	1	TT82867	TT82868	19.26
12 - 28	H4	2	1	TT82869	TT82870	19.26
1/4 - 20	H3	2	1	TT82871	TT82872	20.45
1/4 - 20	H4	2	1	TT82873	TT82874	20.45
1/4 - 20	H6	2	1	TT82875	TT82876	20.45
1/4 - 28	H4	2	1	TT82877	TT82878	20.45
1/4 - 28	H6	2	1	TT82879	TT82880	20.45
5/16 - 18	H5	2	1	TT82881	TT82882	22.71
5/16 - 18	H7	2	1	TT82883	TT82884	22.71
5/16 - 24	H5	2	1	TT82885	TT82886	22.71
5/16 - 24	H7	2	1	TT82887	TT82888	22.71
3/8 - 16	H5	2	1	TT82889	TT82890	22.71
3/8 - 16	H7	2	1	TT82891	TT82892	25.92
3/8 - 24	H5	2	1	TT82893	TT82894	25.92
3/8 - 24	H7	2	1	TT82895	TT82896	25.92
7/16 - 14	H5	2	1	TT82897	TT82898	39.44
7/16 - 14	H8	2	1	TT82901	TT82902	39.44
7/16 - 20	H5	2	1	TT82903	TT82904	39.44
7/16 - 20	H8	2	1	TT82905	TT82906	39.44
1/2 - 13	H5	2	1	TT82907	TT82908	44.11
1/2 - 13	H8	2	1	TT82909	TT82910	44.11
1/2 - 20	H5	2	1	TT82911	TT82912	44.11
1/2 - 20	H8	2	1	TT82913	TT82914	44.11

SIZE	D LIMIT	# OF LUBE GROOVES	PKG. QTY.	PLUG ITEM#	BOTTOM ITEM#	LIST PRICE
M3 x 0.5	D5	1	1	TT89801	TT89802	20.15
M4 x 0.7	D6	1	1	TT89803	TT89804	20.15
M5 x 0.8	D7	1	1	TT89805	TT89806	20.15
M6 x 1.0	D8	2	1	TT89807	TT89808	21.37
M8 x 1.25	D9	2	1	TT89809	TT89810	24.45
M10 x 1.5	D10	2	1	TT89811	TT89812	27.51
M12 x 1.75	D11	2	1	TT89813	TT89814	47.47

- **THREAD FORMING TAPS HAVE NO FLUTES OR CUTTING EDGES AND PROVIDE CHIP-LESS TAPPING**
- **"LUBE GROOVES" FOR LUBRICATION AND VENTING IN BLIND HOLES**
- **PLUG STYLE - 4 THREADS TAPERED, REQUIRES LESS TORQUE INCREASING TOOL LIFE IN THROUGH HOLES**
- **BOTTOMING STYLE - 2 THREADS TAPERED FOR BLIND HOLES**
- **TOOL LIFE 3-4 TIMES OR MORE THAN CUTTING TAPS**
- **MATERIALS: BRASS, COPPER, LEAD, STAINLESS STEELS, CARBON STEEL, LEADED STEEL AND ZINC. DUCTILE MATERIALS PRODUCING STRINGY CHIPS ARE A GOOD CANDIDATE FOR FORMING.**

FOR TECHNICAL INFORMATION PLEASE SEE PAGE 189, OR GO TO: TITANMAN.COM

FOR COATING OPTIONS AVAILABLE ON OUR THREAD FORMING TOOLS, PLEASE SEE PAGE 2

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Thread Forming Taps

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PLUG & BOTTOMING HIGH SPEED STEEL



SERIES 776
TIN COATED



SERIES 798
METRIC
TIN COATED

SIZE	H LIMIT	# OF LUBE GROOVES	PKG. QTY.	PLUG ITEM#	BOTTOM ITEM#	LIST PRICE
0 - 80	H2	1	1	-	TT92800	33.92
0 - 80	H3	1	1	-	TT92802	33.92
1 - 64	H2	1	1	-	TT92804	33.92
1 - 72	H2	1	1	-	TT92806	33.92
2 - 56	H2	1	1	-	TT92808	33.70
2 - 56	H3	1	1	-	TT92810	33.70
2 - 64	H2	1	1	-	TT92812	33.70
2 - 64	H3	1	1	-	TT92814	33.70
3 - 48	H2	1	1	-	TT92816	33.70
3 - 48	H3	1	1	-	TT92818	33.70
3 - 56	H2	1	1	-	TT92820	33.70
3 - 56	H3	1	1	-	TT92822	33.70
4 - 40	H3	1	1	TT92823	TT92824	30.38
4 - 40	H5	1	1	TT92825	TT92826	30.38
4 - 48	H3	1	1	TT92827	TT92828	30.38
4 - 48	H5	1	1	TT92829	TT92830	30.38
5 - 40	H3	1	1	TT92831	TT92832	30.38
5 - 40	H5	1	1	TT92833	TT92834	30.38
5 - 44	H3	1	1	TT92835	TT92836	30.38
5 - 44	H5	1	1	TT92837	TT92838	30.38
6 - 32	H3	1	1	TT92839	TT92840	25.03
6 - 32	H5	1	1	TT92841	TT92842	25.03
6 - 32	H7	1	1	TT92843	TT92844	25.03
6 - 40	H3	1	1	TT92845	TT92846	25.03
6 - 40	H5	1	1	TT92847	TT92848	25.03
8 - 32	H3	1	1	TT92849	TT92850	25.03
8 - 32	H5	1	1	TT92851	TT92852	25.03
8 - 32	H7	1	1	TT92853	TT92854	25.03
8 - 36	H3	1	1	TT92855	TT92856	25.03
10 - 24	H4	1	1	TT92857	TT92858	24.08
10 - 24	H6	1	1	TT92859	TT92860	24.08
10 - 32	H4	1	1	TT92861	TT92862	24.08
10 - 32	H6	1	1	TT92863	TT92864	24.08
12 - 24	H4	2	1	TT92865	TT92866	24.08
12 - 24	H6	2	1	TT92867	TT92868	24.08
12 - 28	H4	2	1	TT92869	TT92870	24.08
1/4 - 20	H3	2	1	TT92871	TT92872	25.57
1/4 - 20	H4	2	1	TT92873	TT92874	25.57
1/4 - 20	H6	2	1	TT92875	TT92876	25.57
1/4 - 28	H4	2	1	TT92877	TT92878	25.57
1/4 - 28	H6	2	1	TT92879	TT92880	25.57
5/16 - 18	H5	2	1	TT92881	TT92882	28.39
5/16 - 18	H7	2	1	TT92883	TT92884	28.39
5/16 - 24	H5	2	1	TT92885	TT92886	28.39
5/16 - 24	H7	2	1	TT92887	TT92888	28.39
3/8 - 16	H5	2	1	TT92889	TT92890	28.39
3/8 - 16	H7	2	1	TT92891	TT92892	32.40
3/8 - 24	H5	2	1	TT92893	TT92894	32.40
3/8 - 24	H7	2	1	TT92895	TT92896	32.40
7/16 - 14	H5	2	1	TT92897	TT92898	49.30
7/16 - 14	H8	2	1	TT92901	TT92902	49.30
7/16 - 20	H5	2	1	TT92903	TT92904	49.30
7/16 - 20	H8	2	1	TT92905	TT92906	49.30
1/2 - 13	H5	2	1	TT92907	TT92908	55.14
1/2 - 13	H8	2	1	TT92909	TT92910	55.14
1/2 - 20	H5	2	1	TT92911	TT92912	55.14
1/2 - 20	H8	2	1	TT92913	TT92914	55.14

SIZE	D LIMIT	# OF LUBE GROOVES	PKG. QTY.	PLUG ITEM#	BOTTOM ITEM#	LIST PRICE
M3 x 0.5	D5	1	1	TT79801	TT79802	25.19
M4 x 0.7	D6	1	1	TT79803	TT79804	25.19
M5 x 0.8	D7	1	1	TT79805	TT79806	25.19
M6 x 1.0	D8	2	1	TT79807	TT79808	26.71
M8 x 1.25	D9	2	1	TT79809	TT79810	30.57
M10 x 1.5	D10	2	1	TT79811	TT79812	34.38
M12 x 1.75	D11	2	1	TT79813	TT79814	59.34

- **THREAD FORMING TAPS HAVE NO FLUTES OR CUTTING EDGES AND PROVIDE CHIP-LESS TAPPING**
- **"LUBE GROOVES" FOR LUBRICATION AND VENTING IN BLIND HOLES**
- **PLUG STYLE - 4 THREADS TAPERED, REQUIRES LESS TORQUE INCREASING TOOL LIFE IN THROUGH HOLES**
- **BOTTOMING STYLE - 2 THREADS TAPERED FOR BLIND HOLES**
- **TOOL LIFE 3-4 TIMES OR MORE THAN CUTTING TAPS**
- **TIN COATED FOR INCREASED TOOL LIFE**
- **MATERIALS: BRASS, COPPER, LEAD, STAINLESS STEELS, CARBON STEEL, LEADED STEEL AND ZINC. DUCTILE MATERIALS PRODUCING STRINGY CHIPS ARE A GOOD CANDIDATE FOR FORMING.**

FOR TECHNICAL INFORMATION PLEASE SEE
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FOR COATING INFORMATION SEE PAGE 2.

HSS THREAD FORMING TAPS

Combination Drill & Tap

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SERIES 707
HIGH SPEED STEEL

SIZE	SHANK DIA.	OVERALL LENGTH	DRILL LENGTH	DRILL SIZE	THREAD LENGTH	# OF FLUTES	PACKAGE QUANTITY	ITEM#	LIST PRICE
4-40	0.141	1-7/8	1/4	0.0910	3/8	2	1	TT70701	37.74
5-40	0.141	1-15/16	9/32	0.1040	13/32	2	1	TT70703	37.74
6-32	0.141	2	5/16	0.1115	7/16	2	1	TT70705	37.74
8-32	0.168	2-1/8	3/8	0.1375	1/2	2	1	TT70707	37.74
10-24	0.194	2-3/8	13/32	0.1545	5/8	2	1	TT70709	37.74
10-32	0.194	2-3/8	13/32	0.1635	5/8	2	1	TT70711	37.74
12-24	0.220	2-3/8	15/32	0.1805	21/32	2	1	TT70713	40.79
1/4-20	0.255	2-1/2	17/32	0.2080	25/32	2	1	TT70715	37.74
1/4-28	0.255	2-1/2	17/32	0.2200	25/32	2	1	TT70717	37.74
5/16-18	0.318	2-27/32	11/16	0.2660	15/16	2	1	TT70719	55.74
5/16-24	0.318	2-27/32	11/16	0.2770	15/16	2	1	TT70721	55.74
3/8-16	0.381	3-3/8	13/16	0.3225	1-1/16	2	1	TT70723	67.73
3/8-24	0.381	3-3/8	13/16	0.3395	1-1/16	2	1	TT70725	67.73
7/16-14	0.323	3-3/4	1	0.3770	1-1/4	2	1	TT70727	81.06
7/16-20	0.323	3-3/4	1	0.3955	1-1/4	2	1	TT70729	81.06
1/2-13	0.367	4-1/16	1-1/8	0.4350	1-3/8	2	1	TT70731	91.48
1/2-20	0.367	4-1/16	1-1/8	0.4580	1-3/8	2	1	TT70733	91.48

PITCH DIAMETER AND THREAD TOLERANCES ARE DESIGNED TO PRODUCE A CLASS 2B FIT.



SERIES 708
HIGH SPEED STEEL
METRIC

SIZE	SHANK DIA.	OVERALL LENGTH	DRILL LENGTH	DRILL SIZE	THREAD LENGTH	# OF FLUTES	PACKAGE QUANTITY	ITEM#	LIST PRICE
M4 x 0.7	0.168	2-1/8	3/8	0.1340	1/2	2	1	TT70830	41.53
M5 x 0.8	0.194	2-3/8	13/32	0.1700	5/8	2	1	TT70832	41.53
M6 x 1.0	0.255	2-1/2	17/32	0.2030	25/32	2	1	TT70834	41.53
M8 x 1.25	0.318	2-27/32	11/16	0.2730	15/16	2	1	TT70836	75.24
M10 x 1.50	0.381	3.38	13/16	0.3440	0.69	2	1	TT70838	85.97
M12 x 1.75	0.367	4-1/16	1-1/8	0.4140	1-3/8	2	1	TT70840	85.97

PITCH DIAMETER AND THREAD TOLERANCES ARE DESIGNED TO PRODUCE A CLASS 6H FIT.

FOR TECHNICAL INFORMATION PLEASE SEE PAGE 189, OR GO TO: TITANMAN.COM

MADE IN THE
USA

Taper Pipe Taps



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PRICES!**

NPT
HIGH SPEED STEEL



SERIES 775
UNCOATED



SERIES 777
STEAM OXIDE



SERIES 878
TIN COATED

SIZE	# OF FLUTES	PKG. QTY.	UNCOATED	LIST PRICE	STEAM OXIDE	LIST PRICE	TIN	LIST PRICE
1/16 - 27	4	1	TT93400	32.38	TT93400S	37.25	TT93400TIN	42.13
1/8 - 27*	4	1	TT93401	32.38	TT93401S	37.25	TT93401TIN	42.13
1/8 - 27	4	1	TT93402	32.38	TT93402S	37.25	TT93402TIN	42.13
1/4 - 18	4	1	TT93406	35.85	TT93406S	41.21	TT93406TIN	46.62
3/8 - 18	4	1	TT93408	47.18	TT93408S	54.26	TT93408TIN	61.31
1/2 - 14	4	1	TT93410	75.03	TT93410S	86.29	TT93410TIN	97.51
3/4 - 14	5	1	TT93412	104.95	TT93412S	120.70	TT93412TIN	136.45
1 - 11-1/2	5	1	TT93414	159.49	TT93414S	183.38	TT93414TIN	191.20
1-1/4 - 11-1/2	5	1	TT93416	227.33	TT93416S	261.42	TT93416TIN	295.52
1-1/2 - 11-1/2	7	1	TT93418	304.92	TT93418S	350.69	TT93418TIN	396.40
2 - 11-1/2	7	1	TT93420	414.78	TT93420S	477.00	TT93420TIN	539.23

* SMALL SHANK

NPT - INTERRUPTED
HIGH SPEED STEEL



SERIES 785
UNCOATED



SERIES 786
STEAM OXIDE



SERIES 880
TIN COATED

SIZE	# OF FLUTES	PKG. QTY.	UNCOATED	LIST PRICE	STEAM OXIDE	LIST PRICE	TIN	LIST PRICE
1/8 - 27*	5	1	TT93601	50.23	TT93601S	57.77	TT93601TIN	65.31
1/8 - 27	5	1	TT93602	50.23	TT93602S	57.77	TT93602TIN	65.31
1/4 - 18	5	1	TT93606	55.56	TT93606S	63.87	TT93606TIN	72.22
3/8 - 18	5	1	TT93608	70.29	TT93608S	80.82	TT93608TIN	91.37
1/2 - 14	5	1	TT93610	111.79	TT93610S	128.55	TT93610TIN	145.32
3/4 - 14	5	1	TT93612	162.68	TT93612S	187.06	TT93612TIN	211.48
1 - 11-1/2	5	1	TT93614	247.22	TT93614S	284.29	TT93614TIN	321.37
1-1/4 - 11-1/2	5	1	TT93616	350.10	TT93616S	402.61	TT93616TIN	455.12
1-1/2 - 11-1/2	7	1	TT93618	469.60	TT93618S	540.04	TT93618TIN	610.47
2 - 11-1/2	7	1	TT93620	634.64	TT93620S	729.83	TT93620TIN	825.00

* SMALL SHANK

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Taper Pipe Taps

MADE IN THE
USA

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NPTF DRYSEAL HIGH SPEED STEEL



**SERIES 787
UNCOATED**



**SERIES 883
TIN COATED**

SIZE	# OF FLUTES	PKG. QTY.	ITEM#	LIST PRICE
1/16 - 27	4	1	TT93800	35.64
1/8 - 27*	4	1	TT93801	35.64
1/8 - 27	4	1	TT93802	35.64
1/4 - 18	4	1	TT93806	39.43
3/8 - 18	4	1	TT93808	51.88
1/2 - 14	4	1	TT93810	82.53
3/4 - 14	5	1	TT93812	115.44
1 - 11-1/2	5	1	TT93814	175.42
1-1/4 - 11-1/2	5	1	TT93816	250.06
1-1/2 - 11-1/2	7	1	TT93818	335.40
2 - 11-1/2	7	1	TT93820	456.27

* SMALL SHANK

SIZE	# OF FLUTES	PKG. QTY.	ITEM#	LIST PRICE
1/16 - 27	4	1	TT93800TIN	53.39
1/8 - 27*	4	1	TT93801TIN	53.39
1/8 - 27	4	1	TT93802TIN	53.39
1/4 - 18	4	1	TT93806TIN	59.07
3/8 - 18	4	1	TT93808TIN	77.73
1/2 - 14	4	1	TT93810TIN	123.61
3/4 - 14	5	1	TT93812TIN	172.93
1 - 11-1/2	5	1	TT93814TIN	262.79
1-1/4 - 11-1/2	5	1	TT93816TIN	374.58
1-1/2 - 11-1/2	7	1	TT93818TIN	502.47
2 - 11-1/2	7	1	TT93820TIN	683.50

* SMALL SHANK

NPTF DRYSEAL - INTERRUPTED HIGH SPEED STEEL



**SERIES 788
UNCOATED**



**SERIES 884
TIN COATED**

SIZE	# OF FLUTES	PKG. QTY.	ITEM#	LIST PRICE
1/8 - 27*	5	1	TT94001	55.25
1/8 - 27	5	1	TT94002	55.25
1/4 - 18	5	1	TT94006	61.10
3/8 - 18	5	1	TT94008	77.31
1/2 - 14	5	1	TT94010	122.98
3/4 - 14	5	1	TT94012	178.92
1 - 11-1/2	5	1	TT94014	271.91
1-1/4 - 11-1/2	5	1	TT94016	385.07
1-1/2 - 11-1/2	7	1	TT94018	516.57
2 - 11-1/2	7	1	TT94020	698.09

* SMALL SHANK

SIZE	# OF FLUTES	PKG. QTY.	ITEM#	LIST PRICE
1/8 - 27*	5	1	TT94001TIN	82.78
1/8 - 27	5	1	TT94002TIN	82.78
1/4 - 18	5	1	TT94006TIN	91.55
3/8 - 18	5	1	TT94008TIN	115.82
1/2 - 14	5	1	TT94010TIN	184.19
3/4 - 14	5	1	TT94012TIN	268.05
1 - 11-1/2	5	1	TT94014TIN	407.34
1-1/4 - 11-1/2	5	1	TT94016TIN	576.87
1-1/2 - 11-1/2	7	1	TT94018TIN	773.78
2 - 11-1/2	7	1	TT94020TIN	1,045.73

* SMALL SHANK

FOR COATING INFORMATION SEE PAGE 2.
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MADE IN THE
USA

Pipe Taps

STRAIGHT PIPE - NPS
HIGH SPEED STEELSERIES 792
UNCOATED

SIZE	# OF FLUTES	PKG. QTY.	ITEM#	LIST PRICE
1/8 - 27	4	1	TT94201	51.74
1/4 - 18	4	1	TT94202	57.24
3/8 - 18	4	1	TT94203	75.34
1/2 - 14	4	1	TT94204	119.86
3/4 - 14	5	1	TT94205	167.63
1 - 11-1/2	5	1	TT94206	254.72

SERIES 888
TIN COATED

SIZE	# OF FLUTES	PKG. QTY.	ITEM#	LIST PRICE
1/8 - 27	4	1	TT94201TIN	77.52
1/4 - 18	4	1	TT94202TIN	85.76
3/8 - 18	4	1	TT94203TIN	112.88
1/2 - 14	4	1	TT94204TIN	179.52
3/4 - 14	5	1	TT94205TIN	251.11
1 - 11-1/2	5	1	TT94206TIN	381.60

EXTENSION TAPER PIPE - NPT
HIGH SPEED STEELSERIES 793
UNCOATED

SIZE	# OF FLUTES	OVERALL LENGTH	PKG. QTY.	ITEM#	LIST PRICE
1/8 - 27	4	6	1	TT94221	96.99
1/4 - 18	4	6	1	TT94223	111.79
3/8 - 18	4	6	1	TT94225	151.25
1/2 - 14	4	6	1	TT94227	242.73

SERIES 890
TIN COATED

SIZE	# OF FLUTES	OVERALL LENGTH	PKG. QTY.	ITEM#	LIST PRICE
1/8 - 27	4	6	1	TT94221TIN	145.29
1/4 - 18	4	6	1	TT94223TIN	167.49
3/8 - 18	4	6	1	TT94225TIN	226.59
1/2 - 14	4	6	1	TT94227TIN	363.60

FOR COATING INFORMATION SEE PAGE 2.
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PRICES!

STI Taps • Oversize Taps

MADE IN THE
USA

STI - SPIRAL POINT PLUG



SERIES 770
HIGH SPEED STEEL

SIZE	H LIMIT	# OF FLUTES	PKG. QTY.	ITEM#	LIST PRICE
4 - 40	H1	2	1	TT92315	24.55
5 - 40	H1	2	1	TT92320	24.55
6 - 32	H2	2	1	TT92324	24.73
6 - 40	H2	2	1	TT92327	24.73
8 - 32	H2	2	1	TT92330	24.97
10 - 24	H2	2	1	TT92336	25.43
10 - 32	H2	2	1	TT92340	25.89
12 - 24	H2	2	1	TT92343	25.89
1/4 - 20	H2	2	1	TT92347	25.89
1/4 - 28	H2	2	1	TT92354	26.31
5/16 - 18	H3	3	1	TT92360	33.25
5/16 - 24	H2	3	1	TT92368	33.67
3/8 - 16	H3	3	1	TT92371	40.93
3/8 - 24	H2	3	1	TT92375	41.43
7/16 - 14	H3	3	1	TT92378	44.90
7/16 - 20	H3	3	1	TT92381	44.90
1/2 - 13	H3	3	1	TT92385	49.98
1/2 - 20	H3	3	1	TT92389	49.98

STI - HAND PLUG & BOTTOMING



SERIES 783
HIGH SPEED STEEL

SIZE	H LIMIT	# OF FLUTES	PKG. QTY.	PLUG ITEM#	BOTTOM ITEM#	LIST PRICE
4 - 40	H1	3	1	TT78302	TT78303	21.89
5 - 40	H1	3	1	TT78304	TT78305	21.89
6 - 32	H2	3	1	TT78306	TT78307	22.27
6 - 40	H1	3	1	TT78308	TT78309	22.27
8 - 32	H2	3	1	TT78310	TT78311	22.80
10 - 24	H2	3	1	TT78312	TT78313	22.80
10 - 32	H2	3	1	TT78314	TT78315	23.71
12 - 24	H2	3	1	TT78316	TT78317	23.71
1/4 - 20	H2	3	1	TT78318	TT78319	23.82
1/4 - 28	H2	3	1	TT78320	TT78321	23.82
5/16 - 18	H3	4	1	TT78322	TT78323	25.71
5/16 - 24	H2	4	1	TT78324	TT78325	25.71
3/8 - 16	H3	4	1	TT78326	TT78327	27.92
3/8 - 24	H2	4	1	TT78328	TT78329	27.92
7/16 - 14	H3	4	1	TT78330	TT78331	38.41
7/16 - 20	H3	4	1	TT78332	TT78333	38.41
1/2 - 13	H3	4	1	TT78334	TT78335	43.11
1/2 - 20	H3	4	1	TT78336	TT78337	43.11

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PRICES!**

STI TAPS ARE OVERSIZE SO THAT THEY WILL PRODUCE THREADS THAT WILL ACCEPT HELICAL COIL WIRE SCREW THREAD INSERTS THAT HAVE THE SAME SIZE AND PITCH. MATERIALS: ALUMINUM AND NON-FERROUS MATERIALS

+ .005 OVERSIZE SPIRAL POINT PLUG



SERIES 764
HIGH SPEED STEEL

SIZE	H LIMIT	# OF FLUTES	PKG. QTY.	ITEM#	LIST PRICE
6 - 32	H11	2	1	TT91732	12.70
8 - 32	H11	2	1	TT91734	12.70
10 - 24	H11	2	1	TT91736	13.82
10 - 32	H11	2	1	TT91738	13.82
1/4 - 20	H11	2	1	TT91749	15.75
5/16 - 18	H11	2	1	TT91761	18.10
3/8 - 16	H11	3	1	TT91772	20.55
7/16 - 14	H11	3	1	TT91779	30.87
1/2 - 13	H11	3	1	TT91786	37.57
5/8 - 11	H11	3	1	TT91794	64.01

+ .005 OVERSIZE HAND PLUG



SERIES 766
HIGH SPEED STEEL

SIZE	H LIMIT	# OF FLUTES	PKG. QTY.	ITEM#	LIST PRICE
6 - 32	H11	3	1	TT90931	10.56
8 - 32	H11	4	1	TT90933	10.56
10 - 24	H11	4	1	TT90935	11.68
10 - 32	H11	4	1	TT90937	11.68
1/4 - 20	H11	4	1	TT90940	13.93
5/16 - 18	H11	4	1	TT90946	17.54
3/8 - 16	H11	4	1	TT90950	20.13
7/16 - 14	H11	4	1	TT90954	29.15
1/2 - 13	H11	4	1	TT90958	34.20
5/8 - 11	H11	4	1	TT90966	64.40

THESE OVERSIZE TAPS CAN BE USED ON A WIDE RANGE OF MATERIALS. PRIMARILY USED WHERE PARTS ARE GOING TO BE PLATED AFTER TAPPING.

FOR TECHNICAL INFORMATION PLEASE SEE PAGE 189, OR GO TO: TITANMAN.COM

HSS TAPS • STI • OVERSIZE

MADE IN THE
USA

Pulley Taps • Extension Taps



**TAKE
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LIST
PRICES!**

PULLEY - PLUG


SERIES 747
 HIGH SPEED STEEL

SIZE	H LIMIT	# OF FLUTES	OVERALL LENGTH	PKG. QTY.	ITEM#	LIST PRICE
1/4 - 20	H3	4	6	1	TT92722	74.50
1/4 - 20	H3	4	8	1	TT92723	92.11
5/16 - 18	H3	4	6	1	TT92730	78.57
5/16 - 18	H3	4	8	1	TT92731	94.85
3/8 - 16	H3	4	6	1	TT92738	88.04
3/8 - 16	H3	4	8	1	TT92739	105.65
3/8 - 16	H3	4	10	1	TT92740	132.76
7/16 - 14	H3	4	6	1	TT92746	93.48
7/16 - 14	H3	4	8	1	TT92747	121.93
1/2 - 13	H3	4	6	1	TT92754	94.85

SIZE	H LIMIT	# OF FLUTES	OVERALL LENGTH	PKG. QTY.	ITEM#	LIST PRICE
1/2 - 13	H3	4	8	1	TT92755	124.63
1/2 - 13	H3	4	10	1	TT92756	153.07
1/2 - 13	H3	4	12	1	TT92757	188.29
5/8 - 11	H3	4	6	1	TT92762	125.99
5/8 - 11	H3	4	8	1	TT92763	163.91
5/8 - 11	H3	4	10	1	TT92764	205.93
5/8 - 11	H3	4	12	1	TT92765	241.15
3/4 - 10	H3	4	10	1	TT92772	241.15
3/4 - 10	H3	4	12	1	TT92773	287.21
-	-	-	-	-	-	-

SMALL SHANK EXTENSION - SPIRAL POINT PLUG


SERIES 749
 HIGH SPEED STEEL

SIZE	H LIMIT	OVERALL LENGTH	NC/NF	THREAD LENGTH	SQUARE LENGTH	SHANK DIAMETER	SQUARE	# OF FLUTES	PKG. QTY.	ITEM#	LIST PRICE
6 - 32	H3	6	NC	11/16	3/16	0.097	0.073	2	1	TT94101	75.59
8 - 32	H3	6	NC	3/4	1/4	0.123	0.092	2	1	TT94102	74.05
10 - 24	H3	6	NC	7/8	1/4	0.136	0.102	2	1	TT94103	69.42
10 - 32	H3	6	NF	7/8	1/4	0.136	0.102	2	1	TT94104	69.42
1/4 - 20	H3	6	NC	1	5/16	0.185	0.139	2	1	TT94105	94.71
1/4 - 28	H3	6	NF	1	5/16	0.185	0.139	2	1	TT94106	94.71
5/16 - 18	H3	6	NC	1-1/8	3/8	0.240	0.180	2	1	TT94107	99.41
5/16 - 24	H3	6	NF	1-1/8	3/8	0.240	0.180	2	1	TT94108	99.41
3/8 - 16	H3	6	NC	1-1/4	7/16	0.275	0.206	3	1	TT94109	107.09
3/8 - 24	H3	6	NF	1-1/4	7/16	0.275	0.206	3	1	TT94110	107.09
7/16 - 14	H3	6	NC	1-7/16	13/32	0.323	0.242	3	1	TT94111	122.77
7/16 - 20	H3	6	NF	1-7/16	13/32	0.323	0.242	3	1	TT94112	122.77
1/2 - 13	H3	6	NC	1-21/32	7/16	0.367	0.275	3	1	TT94113	128.87
1/2 - 20	H3	6	NF	1-21/32	7/16	0.367	0.275	3	1	TT94114	128.87
5/8 - 11	H3	6	NC	1-13/16	9/16	0.480	0.360	3	1	TT94115	166.51
5/8 - 18	H3	6	NF	1-13/16	9/16	0.480	0.360	3	1	TT94116	166.51
3/4 - 10	H3	6	NC	2	11/16	0.590	0.442	3	1	TT94117	216.25
3/4 - 16	H3	6	NF	2	11/16	0.590	0.442	3	1	TT94118	216.25

SMALL SHANK EXTENSIONS: LONG REACH SMALL SHANKS ALLOW FOR DEEPER TAPPING

FOR TECHNICAL INFORMATION PLEASE SEE PAGE 189, OR GO TO: TITANMAN.COM

HSS Dies & Die Stocks

ADJUSTABLE ROUND SPLIT



SERIES 794
HIGH SPEED STEEL

**TAKE
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LIST
PRICES!**

SIZE	OUTSIDE DIA.	ITEM#	LIST PRICE
4-40	1	TE80810	60.16
5-40	13/16	TE80811	49.67
5-44	13/16	TE80812	49.67
6-32	13/16	TE80813	49.67
6-32	1	TE80814	60.16
6-40	13/16	TE80815	49.67
8-32	13/16	TE80816	49.67
8-32	1	TE80817	60.16
10-24	13/16	TE80818	49.67
10-24	1	TE80819	60.16
10-32	13/16	TE80820	49.67
10-32	1	TE80821	60.16
12-24	13/16	TE80822	49.67
12-24	1	TE80823	60.16
12-28	13/16	TE80824	49.67
1/4-20	13/16	TE80825	49.67
1/4-20	1	TE80826	60.16

SIZE	OUTSIDE DIA.	ITEM#	LIST PRICE
1/4-20	1-1/2	TE80827	98.36
1/4-28	13/16	TE80828	49.67
1/4-28	1	TE80829	60.16
1/4-28	1-1/2	TE80830	98.36
5/16-18	13/16	TE80831	49.67
5/16-18	1	TE80832	60.16
5/16-18	1-1/2	TE80833	98.36
5/16-24	13/16	TE80834	49.67
5/16-24	1	TE80835	60.16
5/16-24	1-1/2	TE80836	98.36
3/8-16	1	TE80837	60.16
3/8-16	1-1/2	TE80838	98.36
3/8-24	1	TE80839	60.16
3/8-24	1-1/2	TE80840	98.36
7/16-14	1	TE80841	60.16
7/16-14	1-1/2	TE80842	98.36
7/16-20	1	TE80843	60.16

SIZE	OUTSIDE DIA.	ITEM#	LIST PRICE
7/16-20	1-1/2	TE80844	98.36
1/2-13	1	TE80845	60.16
1/2-13	1-1/2	TE80846	98.36
1/2-20	1	TE80847	60.16
1/2-20	1-1/2	TE80848	98.36
9/16-12	1-1/2	TE80849	98.36
9/16-18	1-1/2	TE80850	98.36
5/8-11	1-1/2	TE80851	98.36
5/8-11	2	TE80852	133.70
5/8-18	1-1/2	TE80853	98.36
5/8-18	2	TE80854	133.70
3/4-10	1-1/2	TE80855	98.36
3/4-10	2	TE80856	133.70
3/4-16	1-1/2	TE80857	98.36
3/4-16	2	TE80858	133.70
7/8-9	2	TE80859	133.70
7/8-14	2	TE80860	133.70

DIE STOCKS



SERIES 789

SIZE	ITEM#	LIST PRICE
1 OD	TE78909	44.78
1-1/2 OD	TE78910	73.34
2 OD	TE78911	129.12

MADE IN THE
USA

Carbon Steel Dies



**TAKE
55% OFF
LIST
PRICES!**

ADJUSTABLE ROUND SPLIT



SERIES 790
CARBON STEEL

SIZE	OUTSIDE DIA.	ITEM#	LIST PRICE
6-32	1	TE80113	39.12
8-32	1	TE80116	39.12
10-24	1	TE80119	39.12
10-32	1	TE80121	39.12
1/4-20	1	TE80127	39.12
1/4-20	1-1/2	TE80128	64.00
1/4-28	1	TE80130	39.12
1/4-32	1	TE80134	39.11
5/16-18	1	TE80135	39.12
5/16-18	1-1/2	TE80136	64.00
5/16-24	1	TE80138	39.12
5/16-24	1-1/2	TE80139	64.00
5/16-32	1	TE80141	39.12

SIZE	OUTSIDE DIA.	ITEM#	LIST PRICE
3/8-16	1	TE80142	39.12
3/8-16	1-1/2	TE80143	64.00
3/8-24	1	TE80145	39.12
3/8-24	1-1/2	TE80146	64.00
7/16-14	1	TE80148	39.12
7/16-14	1-1/2	TE80149	64.00
7/16-20	1	TE80151	39.12
1/2-13	1-1/2	TE80154	64.00
1/2-20	1-1/2	TE80156	64.00
9/16-12	1-1/2	TE80158	64.00
9/16-18	1-1/2	TE80160	64.00
5/8-11	1-1/2	TE80162	64.00
5/8-18	1-1/2	TE80165	64.00

HEXAGON RETHREADING



SERIES 795
CARBON STEEL

SIZE	ACROSS FLATS	THICKNESS	ITEM#	LIST PRICE
1/4-20	19/32	1/4	TE80529	22.93
1/4-28	19/32	1/4	TE80532	22.93
5/16-18	11/16	5/16	TE80537	26.74
5/16-24	11/16	5/16	TE80540	26.74
3/8-16	25/32	3/8	TE80544	29.61
3/8-24	25/32	3/8	TE80547	29.61
7/16-14	7/8	7/16	TE80550	36.28
7/16-20	7/8	7/16	TE80553	36.28
1/2-13	1-1/16	1/2	TE80555	40.13
1/2-20	1-1/16	1/2	TE80557	40.13
9/16-12	1-1/16	1/2	TE80559	42.96
9/16-18	1-1/16	1/2	TE80561	42.96
5/8-11	1-1/4	5/8	TE80563	44.88
5/8-18	1-1/4	5/8	TE80566	44.88
11/16-11	1-7/16	3/4	TE80568	49.67
11/16-16	1-7/16	3/4	TE80569	49.67

SIZE	ACROSS FLATS	THICKNESS	ITEM#	LIST PRICE
3/4-10	1-7/16	3/4	TE80571	55.40
3/4-16	1-7/16	3/4	TE80573	55.40
7/8-9	1-5/8	7/8	TE80575	60.16
7/8-14	1-5/8	7/8	TE80577	60.16
1-8	1-13/16	1	TE80579	67.81
1-12	1-13/16	1	TE80581	67.81
1-14	1-13/16	1	TE80583	67.81
1-1/8-7	2	1	TE80584	78.30
1-1/8-12	2	1	TE80585	78.30
1-1/4-7	2-3/16	1	TE80586	85.96
1-1/4-12	2-3/16	1	TE80587	85.96
1-3/8-6	2-3/8	1	TE80588	162.37
1-3/8-12	2-3/8	1	TE80589	162.37
1-1/2-6	2-9/16	1	TE80590	181.45
1-1/2-12	2-9/16	1	TE80591	181.45
-	-	-	-	-

CARBON STEEL DIES

Carbon Steel Dies • Tap Wrenches

MADE IN THE
USA



NPT HEXAGON RETHREADING

SERIES 797
CARBON STEEL

**TAKE
55% OFF
LIST
PRICES!**

SIZE	ACROSS THE FLATS	THICKNESS	ITEM#	LIST PRICE
1/8 – 27 NPT	1-1/16	3/8	TE80701	31.70
1/4 – 18 NPT	1-1/4	5/8	TE80702	35.14
3/8 – 18 NPT	1-7/16	5/8	TE80703	48.59
1/2 – 14 NPT	1-5/8	3/4	TE80704	70.21
3/4 – 14 NPT	2	13/16	TE80705	86.80
1 – 11-1/2 NPT	2-3/8	1	TE80706	168.03



METRIC HEXAGON RETHREADING

SERIES 796
CARBON STEEL

SIZE	ACROSS THE FLATS	ITEM#	LIST PRICE
M3 x 0.5	1	TE80601	17.47
M4 x 0.7	1	TE80602	17.00
M5 x 0.8	1	TE80603	17.00
M6 x 1.0	1	TE80604	17.00
M7 x 1.0	1	TE80605	17.47
M8 x 1.25	1	TE80606	17.00
M10 x 1.25	1	TE80607	17.00
M10 x 1.50	1	TE80608	17.00
M12 x 1.25	1	TE80609	17.00

SIZE	ACROSS THE FLATS	ITEM#	LIST PRICE
M12 x 1.75	1	TE80610	17.00
M14 x 1.50	1-7/16	TE80611	26.37
M14 x 2.0	1-7/16	TE80612	26.37
M16 x 1.50	1-7/16	TE80613	26.37
M16 x 2.0	1-7/16	TE80614	26.37
M18 x 1.50	1-7/16	TE80615	26.37
M18 x 2.50	1-7/16	TE80616	26.37
M20 x 2.5	1-13/16	TE80617	55.07
M24 x 3.0	1-13/16	TE80618	55.07

T - HANDLE TAP WRENCHES



SERIES 801

SIZE	ITEM#	LIST PRICE
0 – 1/4	TE78701	14.50
1/4 – 1/2	TE78702	21.72

MADE IN THE
USA

Drill Sets



**TAKE
55% OFF
LIST
PRICES!**

**ITEM# MS99028****29 PC. JOBBER DRILL SET - BRIGHT FINISH
HIGH SPEED STEEL****ITEM# MS99030****29 PC. HEAVY DUTY DRILL SET - BLACK/GOLD
HIGH SPEED STEEL****HIGH SPEED STEEL - JOBBER DRILL SETS**

DESCRIPTION	ITEM#	LIST PRICE
13Pc. • 1/16" - 1/4" by 64ths • 118° Point • Oxidized	MS99010	38.30
13Pc. • 1/16" - 1/4" by 64ths • 118° Point • Bright	MS99011	38.30
15Pc. • 1/16" - 1/2" by 32nds • 118° Point • Oxidized	MS99014	106.95
15Pc. • 1/16" - 1/2" by 32nds • 118° Point • Bright	MS99016	106.95
15Pc. • 1/16" - 1/2" by 32nds • Heavy Duty • 135° SP/PT • Oxidized	MS99017	117.96
21Pc. • 1/16" - 3/8" by 64ths • 118° Point • Oxidized	MS99018	90.39
21Pc. • 1/16" - 3/8" by 64ths • 118° Point • Bright	MS99020	90.39
25Pc. • 1.0mm - 13.0mm by 0.5mm • 118° Point • Oxidized	MS99050	206.42
26Pc. • A-Z • 118° Point • Oxidized	MS99022	151.28
26Pc. • A-Z • 118° Point • Bright	MS99024	151.28
29Pc. • 1/16" - 1/2" by 64ths • 118° Point • Oxidized	MS99026	146.97
29Pc. • 1/16" - 1/2" by 64ths • 118° Point • Bright	MS99028	146.97
29Pc. • 1/16" - 1/2" by 64ths • Heavy Duty • 135° SP/PT • Oxidized	MS99032	182.92
29Pc. • 1/16" - 1/2" by 64ths • 3/8" Reduced Shank • 118° Point • Oxidized	MS99034	156.62
29Pc. • 1/16" - 1/2" by 64ths • 118° Point • TIN Coated	MS99036	363.46
60Pc. • #1 - #60 • 118° Point • Oxidized	MS99038	132.94
60Pc. • #1 - #60 • 118° Point • Bright	MS99040	132.94
115Pc. • 1/16" - 1/2" by 64ths • #1 - #60 • A - Z • 118° Point • Oxidized	MS99042	422.42
115Pc. • 1/16" - 1/2" by 64ths • #1 - #60 • A - Z • 118° Point • Bright	MS99044	422.42

HIGH SPEED STEEL - BLACK & GOLD SETS

DESCRIPTION	ITEM#	LIST PRICE
13Pc. • 1/16" - 1/4" by 64ths • Heavy Duty • 135° SP/PT • Black/Gold	MS99012	47.77
15Pc. • 1/16" - 1/2" by 32nds • Heavy Duty • 135° SP/PT • Black/Gold	MS99015	138.38
21Pc. • 1/16" - 3/8" by 64ths • Heavy Duty • 135° SP/PT • Black/Gold	MS99021	135.54
29Pc. • 1/16" - 1/2" by 64ths • Heavy Duty • 135° SP/PT • Black/Gold	MS99030	221.40
29Pc. • 1/16" - 1/2" by 64ths • H.D. • 135° SP/PT • Black/Gold • Plastic Case	MS99431	221.40
115Pc. • 1/16" - 1/2" by 64ths • Heavy Duty • 135° SP/PT • Black/Gold	MS99046	528.74

NOTE: SIZES BELOW 1/16" ARE NOT SPLIT POINT.**FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION PLEASE SEE PAGES 191-192.**

Drill Sets



**TAKE
55% OFF
LIST
PRICES!**

ITEM# MS99163

115 PC. JOBBER DRILL SET - M42 COBALT - STRAW FINISH

M42 COBALT - JOBBER DRILL SETS

DESCRIPTION	ITEM#	LIST PRICE
13Pc. • 1/16" - 1/4" by 64ths • Heavy Duty • 135° SP/PT • Straw Finish	MS99151	51.63
15Pc. • 1/16" - 1/2" by 32nds • Heavy Duty • 135° SP/PT • Straw Finish	MS99153	174.22
21Pc. • 1/16" - 3/8" by 64ths • Heavy Duty • 135° SP/PT • Straw Finish	MS99155	189.76
26Pc. • A - Z • Heavy Duty • 135° SP/PT • Straw Finish	MS99157	288.96
29Pc. • 1/16" - 1/2" by 64ths • Heavy Duty • 135° SP/PT • Straw Finish	MS99159	282.82
60Pc. • #1 - #60 • Heavy Duty • 135° SP/PT • Straw Finish	MS99161	246.87
115Pc. • 1/16" - 1/2" by 64ths • #1 - #60 • A - Z • H.D. • 135° SP/PT • Straw Finish	MS99163	1,041.14

DRILL INDEXES ONLY

DESCRIPTION	ITEM#	LIST PRICE
21Pc. • 1/16" - 3/8" by 64ths • Metal Case	MS99320	14.03
26Pc. • A - Z • Metal Case	MS99323	15.12
29Pc. • 1/16" - 1/2" by 64ths • Metal Case	MS99326	15.12
60Pc. • #1 - #60 • Metal Case	MS99329	15.01
115Pc. • 1/16" - 1/2" by 64ths, A - Z, #1 - #60 • Metal Case	MS99332	92.74

HIGH SPEED STEEL - TAP & DRILL SETS

DESCRIPTION	ITEM#	LIST PRICE
18Pc. • (6-32, #36), (8-32, #29), (10-24, #25), (10-32, #21), (1/4-20, #7) (5/16-18,"F"), (3/8-16, 5/16"), (7/16-14,"U"), (1/2-13, 27/64)	MS99201	197.06

NOTE: SIZES BELOW 1/16" ARE NOT SPLIT POINT.
FOR TECHNICAL INFORMATION PLEASE SEE PAGES 191-192.

Drill Sets

**TAKE
55% OFF
LIST
PRICES!**



ITEM# MS99302

**8 PC. SILVER & DEMING DRILL SET
HIGH SPEED STEEL**

SILVER & DEMING SETS - 1/2" SHANK

DESCRIPTION	ITEM#	LIST PRICE
8Pc. • HSS • 9/16", 5/8", 11/16", 3/4", 13/16", 7/8", 15/16", 1" • 118° Point • In Plastic Case	MS99302	357.18
8Pc. • HSS • Black & Gold • 118° Split Point • In Plastic Case	MS99313	453.61
8Pc. • M42 Cobalt • 118° Split Point • In Plastic Case	MS99310	521.83
33Pc. • HSS • 1/2" - 1" by 64ths • 118° Point • Metal Stand	MS99304	1,606.92



ITEM# MS99442

**29 PC. MECHANICS LENGTH DRILL SET
HIGH SPEED STEEL - BLACK/GOLD**

HIGH SPEED STEEL - MECHANICS LENGTH SETS

DESCRIPTION	ITEM#	LIST PRICE
15Pc. • 1/16" - 1/2" by 32ths • Black/Gold • Heavy Duty • 135° SP/PT • Metal Case	MS99425	130.24
29Pc. • 1/16" - 1/2" by 64ths • Black/Gold • Heavy Duty • 135° SP/PT • Metal Case	MS99405	240.34
29Pc. • 1/16" - 1/2" by 64ths • Black/Gold • Heavy Duty • 135° SP/PT • Plastic Case	MS99442	240.34

**MECHANICS LENGTH: SIZES 3/16" TO 1/2" - HAVE 3 FLATS;
SIZES 27/64" AND HIGHER - HAVE 3/8" REDUCED FLATTED SHANKS**

FOR TECHNICAL INFORMATION PLEASE SEE PAGES 191-192.

High Speed Steel Drills

MADE IN THE
USA

JOBBER LENGTH - 118° POINT



SERIES 406
BRIGHT FINISH

**TAKE
55% OFF
LIST
PRICES!**

FRACTIONAL SIZES						FRACTIONAL SIZES						FRACTIONAL SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
1/16	7/8	1-7/8	12	CD40604	1.56	7/32	2-1/2	3-3/4	12	CD40614	2.51	3/8	3-5/8	5	6	CD40624	6.95
5/64	1	2	12	CD40605	1.56	15/64	2-5/8	3-7/8	12	CD40615	2.81	25/64	3-3/4	5-1/8	6	CD40625	7.51
3/32	1-1/4	2-1/4	12	CD40606	1.56	1/4	2-3/4	4	12	CD40616	2.88	13/32	3-7/8	5-1/4	6	CD40626	8.21
7/64	1-1/2	2-5/8	12	CD40607	1.56	17/64	2-7/8	4-1/8	6	CD40617	4.14	27/64	3-15/16	5-3/8	6	CD40627	8.74
1/8	1-5/8	2-3/4	12	CD40608	1.56	9/32	2-15/16	4-1/4	6	CD40618	4.40	7/16	4-1/16	5-1/2	6	CD40628	9.53
9/64	1-3/4	2-7/8	12	CD40609	1.65	19/64	3-1/16	4-3/8	6	CD40619	4.83	29/64	4-3/16	5-5/8	6	CD40629	10.16
5/32	2	3-1/8	12	CD40610	1.72	5/16	3-3/16	4-1/2	6	CD40620	5.03	15/32	4-5/16	5-3/4	6	CD40630	11.05
11/64	2-1/8	3-1/4	12	CD40611	1.85	21/64	3-5/16	4-5/8	6	CD40621	5.63	31/64	4-3/8	5-7/8	6	CD40631	11.68
3/16	2-5/16	3-1/2	12	CD40612	2.02	11/32	3-7/16	4-3/4	6	CD40622	6.02	1/2	4-1/2	6	6	CD40632	12.18
13/64	2-7/16	3-5/8	12	CD40613	2.28	23/64	3-1/2	4-7/8	6	CD40623	6.62	-	-	-	-	-	-

LETTER SIZES						LETTER SIZES						LETTER SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
A	2-5/8	3-7/8	12	CD40901	2.81	J	2-7/8	4-1/8	6	CD40910	4.30	S	3-1/2	4-7/8	6	CD40919	6.62
B	2-3/4	4	12	CD40902	2.88	K	2-15/16	4-1/4	6	CD40911	4.40	T	3-1/2	4-7/8	6	CD40920	6.95
C	2-3/4	4	12	CD40903	2.88	L	2-15/16	4-1/4	6	CD40912	4.60	U	3-5/8	5	6	CD40921	7.51
D	2-3/4	4	12	CD40904	2.98	M	3-1/16	4-3/8	6	CD40913	4.86	V	3-5/8	5	6	CD40922	7.78
E	2-3/4	4	12	CD40905	3.01	N	3-1/16	4-3/8	6	CD40914	5.03	W	3-3/4	5-1/8	6	CD40923	8.27
F	2-7/8	4-1/8	6	CD40906	4.17	O	3-3/16	4-1/2	6	CD40915	5.46	X	3-3/4	5-1/8	6	CD40924	8.77
G	2-7/8	4-1/8	6	CD40907	4.00	P	3-5/16	4-5/8	6	CD40916	5.86	Y	3-7/8	5-1/4	6	CD40925	9.20
H	2-7/8	4-1/8	6	CD40908	4.07	Q	3-7/16	4-3/4	6	CD40917	6.09	Z	3-7/8	5-1/4	6	CD40926	9.40
I	2-7/8	4-1/8	6	CD40909	4.17	R	3-7/16	4-3/4	6	CD40918	6.32	-	-	-	-	-	-

WIRE SIZES						WIRE SIZES						WIRE SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
1	2-5/8	3-7/8	12	CD40801	3.08	21	2-1/8	3-1/4	12	CD40821	1.95	41	1-3/8	2-3/8	12	CD40841	1.42
2	2-5/8	3-7/8	12	CD40802	3.08	22	2	3-1/8	12	CD40822	1.85	42	1-1/4	2-1/4	12	CD40842	1.42
3	2-1/2	3-3/4	12	CD40803	2.81	23	2	3-1/8	12	CD40823	1.85	43	1-1/4	2-1/4	12	CD40843	1.42
4	2-1/2	3-3/4	12	CD40804	2.81	24	2	3-1/8	12	CD40824	1.85	44	1-1/8	2-1/8	12	CD40844	1.42
5	2-1/2	3-3/4	12	CD40805	2.78	25	1-7/8	3	12	CD40825	1.62	45	1-1/8	2-1/8	12	CD40845	1.49
6	2-1/2	3-3/4	12	CD40806	2.78	26	1-7/8	3	12	CD40826	1.62	46	1-1/8	2-1/8	12	CD40846	1.49
7	2-7/16	3-5/8	12	CD40807	2.68	27	1-7/8	3	12	CD40827	1.62	47	1	2	12	CD40847	1.49
8	2-7/16	3-5/8	12	CD40808	2.68	28	1-3/4	2-7/8	12	CD40828	1.49	48	1	2	12	CD40848	1.49
9	2-7/16	3-5/8	12	CD40809	2.65	29	1-3/4	2-7/8	12	CD40829	1.49	49	1	2	12	CD40849	1.49
10	2-7/16	3-5/8	12	CD40810	2.42	30	1-5/8	2-3/4	12	CD40830	1.46	50	1	2	12	CD40850	1.49
11	2-5/16	3-1/2	12	CD40811	2.42	31	1-5/8	2-3/4	12	CD40831	1.42	51	1	2	12	CD40851	1.49
12	2-5/16	3-1/2	12	CD40812	2.42	32	1-5/8	2-3/4	12	CD40832	1.42	52	7/8	1-7/8	12	CD40852	1.49
13	2-5/16	3-1/2	12	CD40813	2.42	33	1-1/2	2-5/8	12	CD40833	1.42	53	7/8	1-7/8	12	CD40853	1.49
14	2-3/16	3-3/8	12	CD40814	2.28	34	1-1/2	2-5/8	12	CD40834	1.42	54	7/8	1-7/8	12	CD40854	1.59
15	2-3/16	3-3/8	12	CD40815	2.28	35	1-1/2	2-5/8	12	CD40835	1.42	55	7/8	1-7/8	12	CD40855	1.59
16	2-3/16	3-3/8	12	CD40816	2.28	36	1-7/16	2-1/2	12	CD40836	1.42	56	3/4	1-3/4	12	CD40856	1.59
17	2-3/16	3-3/8	12	CD40817	2.18	37	1-7/16	2-1/2	12	CD40837	1.42	57	3/4	1-3/4	12	CD40857	1.75
18	2-1/8	3-1/4	12	CD40818	2.18	38	1-7/16	2-1/2	12	CD40838	1.42	58	11/16	1-5/8	12	CD40858	1.75
19	2-1/8	3-1/4	12	CD40819	2.18	39	1-3/8	2-3/8	12	CD40839	1.42	59	11/16	1-5/8	12	CD40859	1.75
20	2-1/8	3-1/4	12	CD40820	1.95	40	1-3/8	2-3/8	12	CD40840	1.42	60	11/16	1-5/8	12	CD40860	1.75

FOR TECHNICAL INFORMATION PLEASE SEE PAGES 191-192.

MADE IN THE
USA

High Speed Steel Drills

**TAKE
55% OFF
LIST
PRICES!**

JOBBER LENGTH - 118° POINT



SERIES 475 TIN COATED

FRACTIONAL SIZES						FRACTIONAL SIZES						FRACTIONAL SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
1/16	7/8	1-7/8	12	CD47504	4.40	7/32	2-1/2	3-3/4	12	CD47514	8.15	3/8	3-5/8	5	6	CD47524	20.31
5/64	1	2	12	CD47505	4.40	15/64	2-5/8	3-7/8	12	CD47515	8.51	25/64	3-3/4	5-1/8	6	CD47525	25.13
3/32	1-1/4	2-1/4	12	CD47506	4.40	1/4	2-3/4	4	12	CD47516	8.72	13/32	3-7/8	5-1/4	6	CD47526	25.70
7/64	1-1/2	2-5/8	12	CD47507	4.47	17/64	2-7/8	4-1/8	6	CD47517	12.41	27/64	3-15/16	5-3/8	6	CD47527	26.60
1/8	1-5/8	2-3/4	12	CD47508	4.47	9/32	2-15/16	4-1/4	6	CD47518	13.76	7/16	4-1/16	5-1/2	6	CD47528	27.17
9/64	1-3/4	2-7/8	12	CD47509	4.68	19/64	3-1/16	4-3/8	6	CD47519	14.05	29/64	4-3/16	5-5/8	6	CD47529	29.85
5/32	2	3-1/8	12	CD47510	5.22	5/16	3-3/16	4-1/2	6	CD47520	14.84	15/32	4-5/16	5-3/4	6	CD47530	30.71
11/64	2-1/8	3-1/4	12	CD47511	5.29	21/64	3-5/16	4-5/8	6	CD47521	16.91	31/64	4-3/8	5-7/8	6	CD47531	30.96
3/16	2-5/16	3-1/2	12	CD47512	5.58	11/32	3-7/16	4-3/4	6	CD47522	17.80	1/2	4-1/2	6	6	CD47532	31.60
13/64	2-7/16	3-5/8	12	CD47513	7.94	23/64	3-1/2	4-7/8	6	CD47523	20.09	-	-	-	-	-	-

LETTER SIZES						LETTER SIZES						LETTER SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
A	2-5/8	3-7/8	12	CD47601	8.87	J	2-7/8	4-1/8	6	CD47610	15.09	S	3-1/2	4-7/8	6	CD47619	22.67
B	2-3/4	4	12	CD47602	9.08	K	2-15/16	4-1/4	6	CD47611	16.23	T	3-1/2	4-7/8	6	CD47620	23.74
C	2-3/4	4	12	CD47603	9.08	L	2-15/16	4-1/4	6	CD47612	16.23	U	3-5/8	5	6	CD47621	23.74
D	2-3/4	4	12	CD47604	9.08	M	3-1/16	4-3/8	6	CD47613	16.52	V	3-5/8	5	6	CD47622	24.06
E	2-3/4	4	12	CD47605	8.72	N	3-1/16	4-3/8	6	CD47614	16.80	W	3-3/4	5-1/8	6	CD47623	27.85
F	2-7/8	4-1/8	6	CD47606	14.98	O	3-3/16	4-1/2	6	CD47615	16.80	X	3-3/4	5-1/8	6	CD47624	30.00
G	2-7/8	4-1/8	6	CD47607	14.98	P	3-5/16	4-5/8	6	CD47616	17.52	Y	3-7/8	5-1/4	6	CD47625	31.96
H	2-7/8	4-1/8	6	CD47608	14.98	Q	3-7/16	4-3/4	6	CD47617	17.52	Z	3-7/8	5-1/4	6	CD47626	32.32
I	2-7/8	4-1/8	6	CD47609	14.98	R	3-7/16	4-3/4	6	CD47618	17.98	-	-	-	-	-	-

WIRE SIZES						WIRE SIZES						WIRE SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
1	2-5/8	3-7/8	12	CD47701	8.87	21	2-1/8	3-1/4	12	CD47721	5.72	41	1-3/8	2-3/8	12	CD47741	4.40
2	2-5/8	3-7/8	12	CD47702	8.87	22	2	3-1/8	12	CD47722	5.72	42	1-1/4	2-1/4	12	CD47742	4.40
3	2-1/2	3-3/4	12	CD47703	8.51	23	2	3-1/8	12	CD47723	5.65	43	1-1/4	2-1/4	12	CD47743	4.40
4	2-1/2	3-3/4	12	CD47704	8.51	24	2	3-1/8	12	CD47724	5.65	44	1-1/8	2-1/8	12	CD47744	4.40
5	2-1/2	3-3/4	12	CD47705	8.51	25	1-7/8	3	12	CD47725	5.54	45	1-1/8	2-1/8	12	CD47745	4.40
6	2-1/2	3-3/4	12	CD47706	8.51	26	1-7/8	3	12	CD47726	5.54	46	1-1/8	2-1/8	12	CD47746	4.40
7	2-7/16	3-5/8	12	CD47707	8.08	27	1-7/8	3	12	CD47727	5.54	47	1	2	12	CD47747	4.40
8	2-7/16	3-5/8	12	CD47708	8.08	28	1-3/4	2-7/8	12	CD47728	5.36	48	1	2	12	CD47748	4.40
9	2-7/16	3-5/8	12	CD47709	8.08	29	1-3/4	2-7/8	12	CD47729	5.36	49	1	2	12	CD47749	4.40
10	2-7/16	3-5/8	12	CD47710	8.08	30	1-5/8	2-3/4	12	CD47730	4.47	50	1	2	12	CD47750	4.40
11	2-5/16	3-1/2	12	CD47711	8.08	31	1-5/8	2-3/4	12	CD47731	4.47	51	1	2	12	CD47751	4.40
12	2-5/16	3-1/2	12	CD47712	6.61	32	1-5/8	2-3/4	12	CD47732	4.47	52	7/8	1-7/8	12	CD47752	4.40
13	2-5/16	3-1/2	12	CD47713	6.51	33	1-1/2	2-5/8	12	CD47733	4.47	53	7/8	1-7/8	12	CD47753	4.40
14	2-3/16	3-3/8	12	CD47714	6.51	34	1-1/2	2-5/8	12	CD47734	4.47	54	7/8	1-7/8	12	CD47754	4.40
15	2-3/16	3-3/8	12	CD47715	6.51	35	1-1/2	2-5/8	12	CD47735	4.47	55	7/8	1-7/8	12	CD47755	4.40
16	2-3/16	3-3/8	12	CD47716	6.51	36	1-7/16	2-1/2	12	CD47736	4.40	56	3/4	1-3/4	12	CD47756	4.40
17	2-3/16	3-3/8	12	CD47717	6.51	37	1-7/16	2-1/2	12	CD47737	4.40	57	3/4	1-3/4	12	CD47757	4.40
18	2-1/8	3-1/4	12	CD47718	5.79	38	1-7/16	2-1/2	12	CD47738	4.40	58	11/16	1-5/8	12	CD47758	4.40
19	2-1/8	3-1/4	12	CD47719	5.79	39	1-3/8	2-3/8	12	CD47739	4.40	59	11/16	1-5/8	12	CD47759	4.40
20	2-1/8	3-1/4	12	CD47720	5.79	40	1-3/8	2-3/8	12	CD47740	4.40	60	11/16	1-5/8	12	CD47760	4.40

FOR COATING INFORMATION SEE PAGE 2.
FOR TECHNICAL INFORMATION PLEASE SEE PAGES 191-192.

High Speed Steel Drills

MADE IN THE
USA

JOBBER LENGTH - 118° POINT



SERIES 400
OXIDE FINISH

**TAKE
55% OFF
LIST
PRICES!**

FRACTIONAL SIZES						FRACTIONAL SIZES						FRACTIONAL SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
1/16	7/8	1-7/8	12	CD40004	1.56	9/32	2-15/16	4-1/4	6	CD40018	4.40	1/2	4-1/2	6	6	CD40032	12.18
5/64	1	2	12	CD40005	1.56	19/64	3-1/16	4-3/8	6	CD40019	4.83	33/64	4-13/16	6-5/8	1	CD40033	29.09
3/32	1-1/4	2-1/4	12	CD40006	1.56	5/16	3-3/16	4-1/2	6	CD40020	5.03	17/32	4-13/16	6-5/8	1	CD40034	30.48
7/64	1-1/2	2-5/8	12	CD40007	1.56	21/64	3-5/16	4-5/8	6	CD40021	5.63	35/64	4-13/16	6-5/8	1	CD40035	32.99
1/8	1-5/8	2-3/4	12	CD40008	1.56	11/32	3-7/16	4-3/4	6	CD40022	6.02	9/16	4-13/16	6-5/8	1	CD40036	34.55
9/64	1-3/4	2-7/8	12	CD40009	1.65	23/64	3-1/2	4-7/8	6	CD40023	6.62	37/64	4-13/16	6-5/8	1	CD40037	34.65
5/32	2	3-1/8	12	CD40010	1.72	3/8	3-5/8	5	6	CD40024	6.95	19/32	5-3/16	7-1/8	1	CD40038	35.61
11/64	2-1/8	3-1/4	12	CD40011	1.85	25/64	3-3/4	5-1/8	6	CD40025	7.51	39/64	5-3/16	7-1/8	1	CD40039	39.11
3/16	2-5/16	3-1/2	12	CD40012	2.02	13/32	3-7/8	5-1/4	6	CD40026	8.21	5/8	5-3/16	7-1/8	1	CD40040	38.19
13/64	2-7/16	3-5/8	12	CD40013	2.28	27/64	3-15/16	5-3/8	6	CD40027	8.74	41/64	5-3/16	7-1/8	1	CD40041	41.76
7/32	2-1/2	3-3/4	12	CD40014	2.51	7/16	4-1/16	5-1/2	6	CD40028	9.53	21/32	5-3/16	7-1/8	1	CD40042	40.34
15/64	2-5/8	3-7/8	12	CD40015	2.81	29/64	4-3/16	5-5/8	6	CD40029	10.16	43/64	5-5/8	7-5/8	1	CD40043	47.42
1/4	2-3/4	4	12	CD40016	2.88	15/32	4-5/16	5-3/4	6	CD40030	11.05	11/16	5-5/8	7-5/8	1	CD40044	46.39
17/64	2-7/8	4-1/8	6	CD40017	4.14	31/64	4-3/8	5-7/8	6	CD40031	11.68	-	-	-	-	-	-

LETTER SIZES						LETTER SIZES						LETTER SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
A	2-5/8	3-7/8	12	CD40301	2.81	J	2-7/8	4-1/8	6	CD40310	4.30	S	3-1/2	4-7/8	6	CD40319	6.62
B	2-3/4	4	12	CD40302	2.88	K	2-15/16	4-1/4	6	CD40311	4.40	T	3-1/2	4-7/8	6	CD40320	6.95
C	2-3/4	4	12	CD40303	2.88	L	2-15/16	4-1/4	6	CD40312	4.60	U	3-5/8	5	6	CD40321	7.51
D	2-3/4	4	12	CD40304	2.98	M	3-1/16	4-3/8	6	CD40313	4.86	V	3-5/8	5	6	CD40322	7.78
E	2-3/4	4	12	CD40305	3.01	N	3-1/16	4-3/8	6	CD40314	5.03	W	3-3/4	5-1/8	6	CD40323	8.27
F	2-7/8	4-1/8	6	CD40306	4.17	O	3-3/16	4-1/2	6	CD40315	5.46	X	3-3/4	5-1/8	6	CD40324	8.77
G	2-7/8	4-1/8	6	CD40307	4.00	P	3-5/16	4-5/8	6	CD40316	5.86	Y	3-7/8	5-1/4	6	CD40325	9.20
H	2-7/8	4-1/8	6	CD40308	4.07	Q	3-7/16	4-3/4	6	CD40317	6.09	Z	3-7/8	5-1/4	6	CD40326	9.40
I	2-7/8	4-1/8	6	CD40309	4.17	R	3-7/16	4-3/4	6	CD40318	6.32	-	-	-	-	-	-

WIRE SIZES						WIRE SIZES						WIRE SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
1	2-5/8	3-7/8	12	CD40201	3.08	21	2-1/8	3-1/4	12	CD40221	1.95	41	1-3/8	2-3/8	12	CD40241	1.42
2	2-5/8	3-7/8	12	CD40202	3.08	22	2	3-1/8	12	CD40222	1.89	42	1-1/4	2-1/4	12	CD40242	1.42
3	2-1/2	3-3/4	12	CD40203	2.81	23	2	3-1/8	12	CD40223	1.89	43	1-1/4	2-1/4	12	CD40243	1.42
4	2-1/2	3-3/4	12	CD40204	2.81	24	2	3-1/8	12	CD40224	1.89	44	1-1/8	2-1/8	12	CD40244	1.42
5	2-1/2	3-3/4	12	CD40205	2.78	25	1-7/8	3	12	CD40225	1.62	45	1-1/8	2-1/8	12	CD40245	1.49
6	2-1/2	3-3/4	12	CD40206	2.78	26	1-7/8	3	12	CD40226	1.62	46	1-1/8	2-1/8	12	CD40246	1.49
7	2-7/16	3-5/8	12	CD40207	2.68	27	1-7/8	3	12	CD40227	1.62	47	1	2	12	CD40247	1.49
8	2-7/16	3-5/8	12	CD40208	2.68	28	1-3/4	2-7/8	12	CD40228	1.49	48	1	2	12	CD40248	1.49
9	2-7/16	3-5/8	12	CD40209	2.65	29	1-3/4	2-7/8	12	CD40229	1.49	49	1	2	12	CD40249	1.49
10	2-7/16	3-5/8	12	CD40210	2.42	30	1-5/8	2-3/4	12	CD40230	1.46	50	1	2	12	CD40250	1.49
11	2-5/16	3-1/2	12	CD40211	2.42	31	1-5/8	2-3/4	12	CD40231	1.42	51	1	2	12	CD40251	1.49
12	2-5/16	3-1/2	12	CD40212	2.42	32	1-5/8	2-3/4	12	CD40232	1.42	52	7/8	1-7/8	12	CD40252	1.49
13	2-5/16	3-1/2	12	CD40213	2.42	33	1-1/2	2-5/8	12	CD40233	1.42	53	7/8	1-7/8	12	CD40253	1.49
14	2-3/16	3-3/8	12	CD40214	2.28	34	1-1/2	2-5/8	12	CD40234	1.42	54	7/8	1-7/8	12	CD40254	1.59
15	2-3/16	3-3/8	12	CD40215	2.28	35	1-1/2	2-5/8	12	CD40235	1.42	55	7/8	1-7/8	12	CD40255	1.59
16	2-3/16	3-3/8	12	CD40216	2.28	36	1-7/16	2-1/2	12	CD40236	1.42	56	3/4	1-3/4	12	CD40256	1.59
17	2-3/16	3-3/8	12	CD40217	2.18	37	1-7/16	2-1/2	12	CD40237	1.42	57	3/4	1-3/4	12	CD40257	1.75
18	2-1/8	3-1/4	12	CD40218	2.18	38	1-7/16	2-1/2	12	CD40238	1.42	58	11/16	1-5/8	12	CD40258	1.75
19	2-1/8	3-1/4	12	CD40219	2.18	39	1-3/8	2-3/8	12	CD40239	1.42	59	11/16	1-5/8	12	CD40259	1.75
20	2-1/8	3-1/4	12	CD40220	1.95	40	1-3/8	2-3/8	12	CD40240	1.42	60	11/16	1-5/8	12	CD40260	1.75

FOR TECHNICAL INFORMATION PLEASE SEE PAGES 191-192.

MADE IN THE
USA

High Speed Steel Drills



**TAKE
55% OFF
LIST
PRICES!**

JOBBER LENGTH - 118° POINT



SERIES 420
OXIDE FINISH

METRIC SIZES

SIZE (mm)	FLUTE LENGTH	OVERALL LENGTH	PKG. QTY.	ITEM#	LIST PRICE
1.00	17	41	12	CD42100	2.03
1.05	17	41	12	CD42105	2.24
1.10	19	44	12	CD42110	2.14
1.15	19	44	12	CD42115	2.17
1.20	22	48	12	CD42120	2.14
1.25	22	48	12	CD42125	2.17
1.30	22	48	12	CD42130	2.14
1.35	22	48	12	CD42135	2.24
1.40	22	48	12	CD42140	2.14
1.50	22	48	12	CD42150	2.14
1.60	22	48	12	CD42160	2.14
1.70	25	51	12	CD42170	2.17
1.80	25	51	12	CD42180	2.17
1.90	25	51	12	CD42190	2.17
2.00	25	51	12	CD42200	2.17
2.50	35	60	12	CD42250	2.28
3.00	41	70	12	CD42300	2.39
3.50	45	73	12	CD42350	2.49
4.00	54	83	12	CD42400	2.60
4.50	56	86	12	CD42450	2.91
5.00	62	92	12	CD42500	3.30
5.50	64	95	12	CD42550	3.72
6.00	70	102	12	CD42600	4.03
6.50	73	105	6	CD42650	5.16
7.00	73	105	6	CD42700	5.37
7.50	78	111	6	CD42750	6.38
8.00	81	114	6	CD42800	7.02
8.50	87	121	6	CD42850	8.03
9.00	89	124	6	CD42900	9.05
9.50	92	127	6	CD42950	9.47
10.00	95	130	6	CD43100	10.17
10.50	98	133	6	CD43105	11.58
11.00	103	140	6	CD43110	11.89
11.50	106	143	6	CD43115	13.36
12.00	111	149	6	CD43120	14.73
12.50	114	152	6	CD43125	15.05
13.00	114	152	6	CD43130	24.94

NOTE: ALL DIMENSIONS IN TABLE ARE METRIC (mm)

FOR TECHNICAL INFORMATION PLEASE SEE PAGES 191-192.

High Speed Steel Drills

MADE IN THE
USA

JOBBER LENGTH - HEAVY DUTY - 135° SPLIT POINT - TYPE "B"



SERIES 440
OXIDE FINISH

**TAKE
55% OFF
LIST
PRICES!**

FRACTIONAL SIZES						FRACTIONAL SIZES						FRACTIONAL SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
1/16	7/8	1-7/8	12	CD44004	1.56	7/32	2-1/2	3-3/4	12	CD44014	2.95	3/8	3-5/8	5	6	CD44024	7.97
5/64	1	2	12	CD44005	1.56	15/64	2-5/8	3-7/8	12	CD44015	3.21	25/64	3-3/4	5-1/8	6	CD44025	8.67
3/32	1-1/4	2-1/4	12	CD44006	1.56	1/4	2-3/4	4	12	CD44016	3.41	13/32	3-7/8	5-1/4	6	CD44026	9.40
7/64	1-1/2	2-5/8	12	CD44007	1.56	17/64	2-7/8	4-1/8	6	CD44017	4.70	27/64	3-15/16	5-3/8	6	CD44027	10.13
1/8	1-5/8	2-3/4	12	CD44008	1.56	9/32	2-15/16	4-1/4	6	CD44018	5.10	7/16	4-1/16	5-1/2	6	CD44028	10.99
9/64	1-3/4	2-7/8	12	CD44009	1.69	19/64	3-1/16	4-3/8	6	CD44019	5.63	29/64	4-3/16	5-5/8	6	CD44029	11.71
5/32	2	3-1/8	12	CD44010	2.05	5/16	3-3/16	4-1/2	6	CD44020	5.79	15/32	4-5/16	5-3/4	6	CD44030	12.74
11/64	2-1/8	3-1/4	12	CD44011	2.18	21/64	3-5/16	4-5/8	6	CD44021	6.55	31/64	4-3/8	5-7/8	6	CD44031	13.47
3/16	2-5/16	3-1/2	12	CD44012	2.48	11/32	3-7/16	4-3/4	6	CD44022	6.95	1/2	4-1/2	6	6	CD44032	14.16
13/64	2-7/16	3-5/8	12	CD44013	2.68	23/64	3-1/2	4-7/8	6	CD44023	7.31	-	-	-	-	-	-

LETTER SIZES						LETTER SIZES						LETTER SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
A	2-5/8	3-7/8	12	CD44301	3.67	J	2-7/8	4-1/8	6	CD44310	5.66	S	3-1/2	4-7/8	6	CD44319	8.93
B	2-3/4	4	12	CD44302	3.67	K	2-15/16	4-1/4	6	CD44311	5.66	T	3-1/2	4-7/8	6	CD44320	8.93
C	2-3/4	4	12	CD44303	3.67	L	2-15/16	4-1/4	6	CD44312	5.66	U	3-5/8	5	6	CD44321	9.50
D	2-3/4	4	12	CD44304	3.67	M	3-1/16	4-3/8	6	CD44313	6.95	V	3-5/8	5	6	CD44322	9.50
E	2-3/4	4	12	CD44305	3.67	N	3-1/16	4-3/8	6	CD44314	6.95	W	3-3/4	5-1/8	6	CD44323	10.79
F	2-7/8	4-1/8	6	CD44306	4.67	O	3-3/16	4-1/2	6	CD44315	6.95	X	3-3/4	5-1/8	6	CD44324	10.79
G	2-7/8	4-1/8	6	CD44307	4.67	P	3-5/16	4-5/8	6	CD44316	7.84	Y	3-7/8	5-1/4	6	CD44325	11.75
H	2-7/8	4-1/8	6	CD44308	4.67	Q	3-7/16	4-3/4	6	CD44317	7.84	Z	3-7/8	5-1/4	6	CD44326	11.75
I	2-7/8	4-1/8	6	CD44309	4.67	R	3-7/16	4-3/4	6	CD44318	7.84	-	-	-	-	-	-

WIRE SIZES						WIRE SIZES						WIRE SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
1	2-5/8	3-7/8	12	CD44201	3.18	21	2-1/8	3-1/4	12	CD44221	2.51	41	1-3/8	2-3/8	12	CD44241	2.12
2	2-5/8	3-7/8	12	CD44202	3.18	22	2	3-1/8	12	CD44222	2.51	42	1-1/4	2-1/4	12	CD44242	2.12
3	2-1/2	3-3/4	12	CD44203	2.95	23	2	3-1/8	12	CD44223	2.51	43	1-1/4	2-1/4	12	CD44243	2.12
4	2-1/2	3-3/4	12	CD44204	2.95	24	2	3-1/8	12	CD44224	2.51	44	1-1/8	2-1/8	12	CD44244	2.12
5	2-1/2	3-3/4	12	CD44205	2.95	25	1-7/8	3	12	CD44225	2.51	45	1-1/8	2-1/8	12	CD44245	2.12
6	2-1/2	3-3/4	12	CD44206	2.95	26	1-7/8	3	12	CD44226	2.51	46	1-1/8	2-1/8	12	CD44246	2.12
7	2-7/16	3-5/8	12	CD44207	2.78	27	1-7/8	3	12	CD44227	2.51	47	1	2	12	CD44247	2.12
8	2-7/16	3-5/8	12	CD44208	2.81	28	1-3/4	2-7/8	12	CD44228	2.51	48	1	2	12	CD44248	2.12
9	2-7/16	3-5/8	12	CD44209	2.81	29	1-3/4	2-7/8	12	CD44229	2.02	49	1	2	12	CD44249	2.12
10	2-7/16	3-5/8	12	CD44210	2.55	30	1-5/8	2-3/4	12	CD44230	2.02	50	1	2	12	CD44250	2.12
11	2-5/16	3-1/2	12	CD44211	2.55	31	1-5/8	2-3/4	12	CD44231	2.22	51	1	2	12	CD44251	2.12
12	2-5/16	3-1/2	12	CD44212	2.55	32	1-5/8	2-3/4	12	CD44232	2.22	52	7/8	1-7/8	12	CD44252	2.12
13	2-5/16	3-1/2	12	CD44213	2.81	33	1-1/2	2-5/8	12	CD44233	2.22	53	7/8	1-7/8	12	CD44253	2.12
14	2-3/16	3-3/8	12	CD44214	2.81	34	1-1/2	2-5/8	12	CD44234	2.22	54	7/8	1-7/8	12	CD44254	2.12
15	2-3/16	3-3/8	12	CD44215	2.81	35	1-1/2	2-5/8	12	CD44235	2.22	55	7/8	1-7/8	12	CD44255	2.12
16	2-3/16	3-3/8	12	CD44216	2.81	36	1-7/16	2-1/2	12	CD44236	2.22	56	3/4	1-3/4	12	CD44256	2.12
17	2-3/16	3-3/8	12	CD44217	2.81	37	1-7/16	2-1/2	12	CD44237	2.22	57	3/4	1-3/4	12	CD44257	2.12
18	2-1/8	3-1/4	12	CD44218	2.81	38	1-7/16	2-1/2	12	CD44238	2.22	58	11/16	1-5/8	12	CD44258	2.12
19	2-1/8	3-1/4	12	CD44219	2.68	39	1-3/8	2-3/8	12	CD44239	2.22	59	11/16	1-5/8	12	CD44259	2.12
20	2-1/8	3-1/4	12	CD44220	2.68	40	1-3/8	2-3/8	12	CD44240	2.22	60	11/16	1-5/8	12	CD44260	2.12

NOTE: SIZES BELOW 1/16" ARE NOT SPLIT POINT.
FOR TECHNICAL INFORMATION PLEASE SEE PAGES 191-192.

MADE IN THE
USA

High Speed Steel Drills



JOBBER LENGTH - HEAVY DUTY - 135° SPLIT POINT - TYPE "B"


SERIES 445
BLACK & GOLD

**TAKE
55% OFF
LIST
PRICES!**

FRACTIONAL SIZES						FRACTIONAL SIZES						FRACTIONAL SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
1/16	7/8	1-7/8	12	CD44504	1.79	7/32	2-1/2	3-3/4	12	CD44514	3.57	3/8	3-5/8	5	6	CD44524	9.10
5/64	1	2	12	CD44505	1.95	15/64	2-5/8	3-7/8	12	CD44515	3.94	25/64	3-3/4	5-1/8	6	CD44525	9.89
3/32	1-1/4	2-1/4	12	CD44506	1.79	1/4	2-3/4	4	12	CD44516	4.14	13/32	3-7/8	5-1/4	6	CD44526	10.89
7/64	1-1/2	2-5/8	12	CD44507	1.85	17/64	2-7/8	4-1/8	6	CD44517	5.56	27/64	3-15/16	5-3/8	6	CD44527	11.61
1/8	1-5/8	2-3/4	12	CD44508	2.05	9/32	2-15/16	4-1/4	6	CD44518	5.99	7/16	4-1/16	5-1/2	6	CD44528	12.51
9/64	1-3/4	2-7/8	12	CD44509	2.15	19/64	3-1/16	4-3/8	6	CD44519	6.59	29/64	4-3/16	5-5/8	6	CD44529	13.30
5/32	2	3-1/8	12	CD44510	2.58	5/16	3-3/16	4-1/2	6	CD44520	6.82	15/32	4-5/16	5-3/4	6	CD44530	14.46
11/64	2-1/8	3-1/4	12	CD44511	2.71	21/64	3-5/16	4-5/8	6	CD44521	7.51	31/64	4-3/8	5-7/8	6	CD44531	15.25
3/16	2-5/16	3-1/2	12	CD44512	3.01	11/32	3-7/16	4-3/4	6	CD44522	8.04	1/2	4-1/2	6	6	CD44532	15.95
13/64	2-7/16	3-5/8	12	CD44513	3.28	23/64	3-1/2	4-7/8	6	CD44523	8.70	-	-	-	-	-	-

LETTER SIZES						LETTER SIZES						LETTER SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
A	2-5/8	3-7/8	12	CD44801	5.80	J	2-7/8	4-1/8	6	CD44810	7.34	S	3-1/2	4-7/8	6	CD44819	11.27
B	2-3/4	4	12	CD44802	5.80	K	2-15/16	4-1/4	6	CD44811	8.19	T	3-1/2	4-7/8	6	CD44820	12.68
C	2-3/4	4	12	CD44803	5.80	L	2-15/16	4-1/4	6	CD44812	7.90	U	3-5/8	5	6	CD44821	12.68
D	2-3/4	4	12	CD44804	5.61	M	3-1/16	4-3/8	6	CD44813	8.70	V	3-5/8	5	6	CD44822	12.91
E	2-3/4	4	12	CD44805	4.68	N	3-1/16	4-3/8	6	CD44814	8.70	W	3-3/4	5-1/8	6	CD44823	15.81
F	2-7/8	4-1/8	6	CD44806	6.27	O	3-3/16	4-1/2	6	CD44815	8.70	X	3-3/4	5-1/8	6	CD44824	18.66
G	2-7/8	4-1/8	6	CD44807	6.78	P	3-5/16	4-5/8	6	CD44816	9.73	Y	3-7/8	5-1/4	6	CD44825	18.90
H	2-7/8	4-1/8	6	CD44808	6.92	Q	3-7/16	4-3/4	6	CD44817	10.01	Z	3-7/8	5-1/4	6	CD44826	19.32
I	2-7/8	4-1/8	6	CD44809	6.92	R	3-7/16	4-3/4	6	CD44818	10.43	-	-	-	-	-	-

WIRE SIZES						WIRE SIZES						WIRE SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
1	2-5/8	3-7/8	12	CD44701	5.38	21	2-1/8	3-1/4	12	CD44721	3.34	41	1-3/8	2-3/8	12	CD44741	2.58
2	2-5/8	3-7/8	12	CD44702	5.38	22	2	3-1/8	12	CD44722	3.34	42	1-1/4	2-1/4	12	CD44742	2.58
3	2-1/2	3-3/4	12	CD44703	5.00	23	2	3-1/8	12	CD44723	3.24	43	1-1/4	2-1/4	12	CD44743	2.58
4	2-1/2	3-3/4	12	CD44704	5.00	24	2	3-1/8	12	CD44724	3.24	44	1-1/8	2-1/8	12	CD44744	2.58
5	2-1/2	3-3/4	12	CD44705	5.00	25	1-7/8	3	12	CD44725	3.24	45	1-1/8	2-1/8	12	CD44745	2.58
6	2-1/2	3-3/4	12	CD44706	5.00	26	1-7/8	3	12	CD44726	3.24	46	1-1/8	2-1/8	12	CD44746	2.58
7	2-7/16	3-5/8	12	CD44707	4.40	27	1-7/8	3	12	CD44727	3.14	47	1	2	12	CD44747	2.58
8	2-7/16	3-5/8	12	CD44708	4.40	28	1-3/4	2-7/8	12	CD44728	3.14	48	1	2	12	CD44748	2.58
9	2-7/16	3-5/8	12	CD44709	4.40	29	1-3/4	2-7/8	12	CD44729	3.08	49	1	2	12	CD44749	2.58
10	2-7/16	3-5/8	12	CD44710	4.30	30	1-5/8	2-3/4	12	CD44730	2.68	50	1	2	12	CD44750	2.58
11	2-5/16	3-1/2	12	CD44711	3.98	31	1-5/8	2-3/4	12	CD44731	2.68	51	1	2	12	CD44751	2.58
12	2-5/16	3-1/2	12	CD44712	3.98	32	1-5/8	2-3/4	12	CD44732	2.68	52	7/8	1-7/8	12	CD44752	2.42
13	2-5/16	3-1/2	12	CD44713	3.84	33	1-1/2	2-5/8	12	CD44733	2.68	53	7/8	1-7/8	12	CD44753	2.42
14	2-3/16	3-3/8	12	CD44714	3.84	34	1-1/2	2-5/8	12	CD44734	2.68	54	7/8	1-7/8	12	CD44754	2.42
15	2-3/16	3-3/8	12	CD44715	3.84	35	1-1/2	2-5/8	12	CD44735	2.68	55	7/8	1-7/8	12	CD44755	2.42
16	2-3/16	3-3/8	12	CD44716	3.84	36	1-7/16	2-1/2	12	CD44736	2.58	56	3/4	1-3/4	12	CD44756	2.42
17	2-3/16	3-3/8	12	CD44717	3.84	37	1-7/16	2-1/2	12	CD44737	2.58	57	3/4	1-3/4	12	CD44757	2.42
18	2-1/8	3-1/4	12	CD44718	3.37	38	1-7/16	2-1/2	12	CD44738	2.58	58	11/16	1-5/8	12	CD44758	2.42
19	2-1/8	3-1/4	12	CD44719	3.37	39	1-3/8	2-3/8	12	CD44739	2.58	59	11/16	1-5/8	12	CD44759	2.42
20	2-1/8	3-1/4	12	CD44720	3.37	40	1-3/8	2-3/8	12	CD44740	2.58	60	11/16	1-5/8	12	CD44760	2.42

NOTE: SIZES BELOW 1/16" ARE NOT SPLIT POINT.
 FOR TECHNICAL INFORMATION PLEASE SEE PAGES 191-192.

High Speed Steel Drills

MADE IN THE
USA

MECHANICS LENGTH - HEAVY DUTY - 135° SPLIT POINT - TYPE "B"



SERIES 455
BLACK & GOLD

**TAKE
55% OFF
LIST
PRICES!**

FRACTIONAL SIZES					
SIZE	FLUTE LENGTH	OVERALL LENGTH	PACKAGE QUANTITY	ITEM#	LIST PRICE
1/16	7/8	1-7/8	12	CD45504	2.12
5/64	1	2	12	CD45505	2.28
3/32	1-1/4	2-1/4	12	CD45506	2.28
7/64	1-5/16	2-3/8	12	CD45507	2.35
1/8	1-7/16	2-1/2	12	CD45508	2.45
9/64	1-9/16	2-5/8	12	CD45509	2.51
5/32	1-11/16	2-3/4	12	CD45510	3.01
11/64	1-13/16	2-7/8	12	CD45511	3.08
3/16	1-7/8	3	12	CD45512	3.51
13/64	1-15/16	3-1/8	12	CD45513	3.81
7/32	2	3-1/4	12	CD45514	4.24
15/64	2-1/16	3-3/8	12	CD45515	4.53
1/4	2	3-1/2	12	CD45516	4.80
17/64	2-1/8	3-5/8	6	CD45517	6.02
9/32	2-1/4	3-3/4	6	CD45518	6.02
19/64	2-3/8	3-7/8	6	CD45519	7.15
5/16	2-1/2	4	6	CD45520	7.64
21/64	2-9/16	4-1/16	6	CD45521	8.14
11/32	2-5/8	4-1/8	6	CD45522	8.87
23/64	2-11/16	4-3/16	6	CD45523	9.43
3/8	2-11/16	4-1/4	6	CD45524	9.99
25/64	2-3/4	4-5/16	6	CD45525	10.62
13/32	2-13/16	4-3/8	6	CD45526	11.45
27/64	2-7/8	4-7/16	6	CD45527	12.91
7/16	2-15/16	4-1/2	6	CD45528	13.63
29/64	3	4-5/8	6	CD45529	14.86
15/32	3-1/8	4-3/4	6	CD45530	15.92
31/64	3-1/4	4-7/8	6	CD45531	16.25
1/2	3-3/8	5	6	CD45532	16.68

**SIZES 3/16" TO 1/2" - HAVE 3 FLATS;
SIZES 27/64" AND HIGHER - HAVE 3/8" REDUCED FLATTED SHANKS**

FOR TECHNICAL INFORMATION PLEASE SEE PAGES 191-192.

MADE IN THE
USA

High Speed Steel Drills



SCREW MACHINE LENGTH - HEAVY DUTY - 135° SPLIT POINT - TYPE "C"


SERIES 300
 OXIDE FINISH

FRACTIONAL SIZES

SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
1/16	5/8	1-5/8	12	CD30004	1.82
5/64	11/16	1-11/16	12	CD30005	1.85
3/32	3/4	1-3/4	12	CD30006	1.85
7/64	13/16	1-13/16	12	CD30007	1.85
1/8	7/8	1-7/8	12	CD30008	1.85
9/64	15/16	1-15/16	12	CD30009	1.85
5/32	1	2-1/16	12	CD30010	2.02
11/64	1-1/16	2-1/8	12	CD30011	2.02
3/16	1-1/8	2-3/16	12	CD30012	2.35
13/64	1-3/16	2-1/4	12	CD30013	2.42

FRACTIONAL SIZES

SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
7/32	1-1/4	2-3/8	12	CD30014	2.75
15/64	1-5/16	2-7/16	12	CD30015	3.18
1/4	1-3/8	2-1/2	12	CD30016	3.51
17/64	1-7/16	2-5/8	6	CD30017	3.61
9/32	1-1/2	2-11/16	6	CD30018	3.81
19/64	1-9/16	2-3/4	6	CD30019	4.14
5/16	1-5/8	2-13/16	6	CD30020	4.40
21/64	1-11/16	2-15/16	6	CD30021	4.93
11/32	1-11/16	3	6	CD30022	5.26
23/64	1-3/4	3-1/16	6	CD30023	5.59

FRACTIONAL SIZES

SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
3/8	1-13/16	3-1/8	6	CD30024	6.09
25/64	1-7/8	3-1/4	6	CD30025	6.45
13/32	1-15/16	3-5/16	6	CD30026	7.08
27/64	2	3-3/8	6	CD30027	7.48
7/16	1-1/16	3-7/16	6	CD30028	8.17
29/64	2-1/8	3-9/16	6	CD30029	8.67
15/32	2-1/8	3-5/8	6	CD30030	9.53
31/64	2-3/16	3-11/16	6	CD30031	9.89
1/2	2-1/4	3-3/4	6	CD30032	10.42
-	-	-	-	-	-

LETTER SIZES

SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
A	1-5/16	2-7/16	12	CD30301	3.81
B	1-3/8	2-1/2	12	CD30302	4.00
C	1-3/8	2-1/2	12	CD30303	4.00
D	1-3/8	2-1/2	12	CD30304	4.04
E	1-3/8	2-1/2	12	CD30305	4.04
F	1-7/16	2-5/8	6	CD30306	5.20
G	1-7/16	2-5/8	6	CD30307	5.56
H	1-1/2	2-11/16	6	CD30308	5.72
I	1-1/2	2-11/16	6	CD30309	5.76

LETTER SIZES

SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
J	1-1/2	2-11/16	6	CD30310	5.89
K	1-1/2	2-11/16	6	CD30311	5.99
L	1-9/16	2-3/4	6	CD30312	6.12
M	1-9/16	2-3/4	6	CD30313	6.42
N	1-5/8	2-13/16	6	CD30314	6.68
O	1-11/16	2-15/16	6	CD30315	7.51
P	1-11/16	2-15/16	6	CD30316	7.71
Q	1-11/16	3	6	CD30317	8.04
R	1-11/16	3	6	CD30318	8.27

LETTER SIZES

SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
S	1-3/4	3-1/16	6	CD30319	8.60
T	1-3/4	3-1/16	6	CD30320	8.80
U	1-13/16	3-1/8	6	CD30321	9.50
V	1-7/8	3-1/4	6	CD30322	10.09
W	1-7/8	3-1/4	6	CD30323	10.46
X	1-15/16	3-5/16	6	CD30324	11.09
Y	1-15/16	3-5/16	6	CD30325	11.32
Z	2	3-3/8	6	CD30326	11.71
-	-	-	-	-	-

WIRE SIZES

SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
1	1-5/16	2-7/16	12	CD30201	3.18
2	1-5/16	2-7/16	12	CD30202	3.18
3	1-1/4	2-3/8	12	CD30203	3.28
4	1-1/4	2-3/8	12	CD30204	3.28
5	1-1/4	2-3/8	12	CD30205	3.28
6	1-1/4	2-3/8	12	CD30206	3.28
7	1-3/16	2-1/4	12	CD30207	2.81
8	1-3/16	2-1/4	12	CD30208	2.81
9	1-3/16	2-1/4	12	CD30209	2.81
10	1-3/16	2-1/4	12	CD30210	2.81
11	1-3/16	2-1/4	12	CD30211	2.81
12	1-3/16	2-1/4	12	CD30212	2.81
13	1-1/8	2-3/16	12	CD30213	2.81
14	1-1/8	2-3/16	12	CD30214	2.81
15	1-1/8	2-3/16	12	CD30215	2.81
16	1-1/8	2-3/16	12	CD30216	2.81
17	1-1/8	2-3/16	12	CD30217	2.81
18	1-1/16	2-1/8	12	CD30218	2.68
19	1-1/16	2-1/8	12	CD30219	2.68
20	1-1/16	2-1/8	12	CD30220	2.68

WIRE SIZES

SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
21	1-1/16	2-1/8	12	CD30221	2.68
22	1-1/16	2-1/8	12	CD30222	2.61
23	1	2-1/16	12	CD30223	2.61
24	1	2-1/16	12	CD30224	2.61
25	1	2-1/16	12	CD30225	2.61
26	1	2-1/16	12	CD30226	2.61
27	1	2-1/16	12	CD30227	2.61
28	15/16	1-15/16	12	CD30228	2.61
29	15/16	1-15/16	12	CD30229	2.61
30	15/16	1-15/16	12	CD30230	2.05
31	7/8	1-7/8	12	CD30231	2.05
32	7/8	1-7/8	12	CD30232	2.05
33	7/8	1-7/8	12	CD30233	2.05
34	7/8	1-7/8	12	CD30234	2.05
35	7/8	1-7/8	12	CD30235	2.05
36	13/16	1-13/16	12	CD30236	2.05
37	13/16	1-13/16	12	CD30237	2.05
38	13/16	1-13/16	12	CD30238	2.05
39	13/16	1-13/16	12	CD30239	2.05
40	13/16	1-13/16	12	CD30240	2.05

WIRE SIZES

SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
41	13/16	1-13/16	12	CD30241	2.05
42	3/4	1-3/4	12	CD30242	2.05
43	3/4	1-3/4	12	CD30243	2.05
44	3/4	1-3/4	12	CD30244	2.05
45	3/4	1-3/4	12	CD30245	2.05
46	3/4	1-3/4	12	CD30246	2.05
47	11/16	1-11/16	12	CD30247	2.05
48	11/16	1-11/16	12	CD30248	2.05
49	11/16	1-11/16	12	CD30249	2.05
50	11/16	1-11/16	12	CD30250	2.05
51	11/16	1-11/16	12	CD30251	2.05
52	11/16	1-11/16	12	CD30252	2.05
53	5/8	1-5/8	12	CD30253	2.05
54	5/8	1-5/8	12	CD30254	2.05
55	5/8	1-5/8	12	CD30255	2.05
56	1/2	1-3/8	12	CD30256	2.05
57	1/2	1-3/8	12	CD30257	2.05
58	1/2	1-3/8	12	CD30258	2.05
59	1/2	1-3/8	12	CD30259	2.05
60	1/2	1-3/8	12	CD30260	2.05

NOTE: SIZES BELOW 1/16" ARE NOT SPLIT POINT.
 FOR TECHNICAL INFORMATION PLEASE SEE PAGES 191-192.

High Speed Steel Drills

MADE IN THE
USA

TAPER LENGTH - 118° POINT



SERIES 525
OXIDE FINISH

**TAKE
55% OFF
LIST
PRICES!**

FRACTIONAL SIZES						FRACTIONAL SIZES						FRACTIONAL SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
3/64	1-1/8	2-1/4	12	CD52503	7.46	13/32	4-3/8	7	6	CD52526	27.10	49/64	6	9-7/8	1	CD52549	96.10
1/16	1-3/4	3	12	CD52504	7.77	27/64	4-5/8	7-1/4	6	CD52527	28.74	25/32	6	9-7/8	1	CD52550	96.10
5/64	2	3-3/4	12	CD52505	8.03	7/16	4-5/8	7-1/4	6	CD52528	28.74	51/64	6-1/8	10	1	CD52551	103.75
3/32	2-1/4	4-1/4	12	CD52506	8.51	29/64	4-3/4	7-1/2	6	CD52529	32.71	13/16	6-1/8	10	1	CD52552	103.75
7/64	2-1/2	4-5/8	12	CD52507	9.94	15/32	4-3/4	7-1/2	6	CD52530	32.71	53/64	6-1/8	10	1	CD52553	109.25
1/8	2-3/4	5-1/8	12	CD52508	10.22	31/64	4-3/4	7-3/4	6	CD52531	34.61	27/32	6-1/8	10	1	CD52554	109.25
9/64	3	5-3/8	12	CD52509	13.66	1/2	4-3/4	7-3/4	6	CD52532	34.61	55/64	6-1/8	10	1	CD52555	114.65
5/32	3	5-3/8	12	CD52510	13.80	33/64	4-3/4	8	1	CD52533	45.98	7/8	6-1/8	10	1	CD52556	114.65
11/64	3-3/8	5-3/4	12	CD52511	14.48	17/32	4-3/4	8	1	CD52534	45.98	57/64	6-1/8	10	1	CD52557	119.52
3/16	3-3/8	5-3/4	12	CD52512	13.48	35/64	4-7/8	8-1/4	1	CD52535	48.30	29/32	6-1/8	10	1	CD52558	119.52
13/64	3-5/8	6	12	CD52513	16.45	9/16	4-7/8	8-1/4	1	CD52536	48.30	59/64	6-1/8	10-3/4	1	CD52559	129.92
7/32	3-5/8	6	12	CD52514	17.73	37/64	4-7/8	8-3/4	1	CD52537	56.52	15/16	6-1/8	10-3/4	1	CD52560	129.92
15/64	3-3/4	6-1/8	12	CD52515	17.73	19/32	4-7/8	8-3/4	1	CD52538	56.52	61/64	6-3/8	11	1	CD52561	143.40
1/4	3-3/4	6-1/8	12	CD52516	15.30	39/64	4-7/8	8-3/4	1	CD52539	58.56	31/32	6-3/8	11	1	CD52562	143.40
17/64	3-7/8	6-1/4	6	CD52517	18.55	5/8	4-7/8	8-3/4	1	CD52540	58.56	63/64	6-3/8	11	1	CD52563	149.47
9/32	3-7/8	6-1/4	6	CD52518	18.55	41/64	5-1/8	9	1	CD52541	66.68	1	6-3/8	11	1	CD52564	149.47
19/64	4	6-3/8	6	CD52519	20.20	21/32	5-1/8	9	1	CD52542	66.68	1-1/16	6-5/8	11-1/4	1	CD52568	185.23
5/16	4	6-3/8	6	CD52520	20.20	43/64	5-3/8	9-1/4	1	CD52543	78.87	1-1/8	7-1/8	11-3/4	1	CD52572	206.18
21/64	4-1/8	6-1/2	6	CD52521	20.20	11/16	5-3/8	9-1/4	1	CD52544	78.87	1-3/16	7-3/8	12	1	CD52576	241.64
11/32	4-1/8	6-1/2	6	CD52522	20.20	45/64	5-5/8	9-1/2	1	CD52545	82.48	1-1/4	7-7/8	12-1/2	1	CD52580	258.80
23/64	4-1/4	6-3/4	6	CD52523	23.81	23/32	5-5/8	9-1/2	1	CD52546	82.48	1-5/16	8-5/8	14-1/4	1	CD52584	308.82
3/8	4-1/4	6-3/4	6	CD52524	23.81	47/64	5-7/8	9-3/4	1	CD52547	88.70	1-3/8	8-7/8	14-1/2	1	CD52588	331.20
25/64	4-3/8	6-3/4	6	CD52525	27.10	3/4	5-7/8	9-3/4	1	CD52548	88.70	-	-	-	-	-	-

WIRE SIZES						WIRE SIZES						WIRE SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
1	3-3/4	6-1/8	12	CD52701	18.59	15	3-3/8	5-3/4	12	CD52715	16.34	29	3	5-3/8	12	CD52729	16.34
2	3-3/4	6-1/8	12	CD52702	18.59	16	3-3/8	5-3/4	12	CD52716	16.34	30	3	5-3/8	12	CD52730	16.34
3	3-5/8	6	12	CD52703	17.98	17	3-3/8	5-3/4	12	CD52717	16.34	31	2-3/4	5-1/8	12	CD52731	16.02
4	3-5/8	6	12	CD52704	17.98	18	3-3/8	5-3/4	12	CD52718	16.34	32	2-3/4	5-1/8	12	CD52732	16.02
5	3-5/8	6	12	CD52705	17.98	19	3-3/8	5-3/4	12	CD52719	16.34	33	2-3/4	5-1/8	12	CD52733	16.02
6	3-5/8	6	12	CD52706	17.98	20	3-3/8	5-3/4	12	CD52720	16.34	34	2-3/4	5-1/8	12	CD52734	16.02
7	3-5/8	6	12	CD52707	17.98	21	3-3/8	5-3/4	12	CD52721	16.34	35	2-3/4	5-1/8	12	CD52735	16.02
8	3-5/8	6	12	CD52708	17.98	22	3-3/8	5-3/4	12	CD52722	16.34	36	2-1/2	4-5/8	12	CD52736	11.98
9	3-5/8	6	12	CD52709	17.98	23	3	5-3/8	12	CD52723	16.34	37	2-1/2	4-5/8	12	CD52737	11.98
10	3-5/8	6	12	CD52710	17.98	24	3	5-3/8	12	CD52724	16.34	38	2-1/2	4-5/8	12	CD52738	11.98
11	3-5/8	6	12	CD52711	17.98	25	3	5-3/8	12	CD52725	16.34	39	2-1/2	4-5/8	12	CD52739	10.51
12	3-5/8	6	12	CD52712	17.98	26	3	5-3/8	12	CD52726	16.34	40	2-1/2	4-5/8	12	CD52740	10.51
13	3-3/8	5-3/4	12	CD52713	16.34	27	3	5-3/8	12	CD52727	16.34	-	-	-	-	-	-
14	3-3/8	5-3/4	12	CD52714	16.34	28	3	5-3/8	12	CD52728	16.34	-	-	-	-	-	-

FOR TECHNICAL INFORMATION PLEASE SEE PAGES 191-192.

MADE IN THE
USA

High Speed Steel Drills



TAPER SHANK - 118° POINT


SERIES 550
 OXIDE FINISH

FRACTIONAL SIZES						FRACTIONAL SIZES					
SIZE	MORSE TAPER #	FLUTE LENGTH	OVERALL LENGTH	ITEM#	LIST PRICE	SIZE	MORSE TAPER #	FLUTE LENGTH	OVERALL LENGTH	ITEM#	LIST PRICE
3/16	#1	2-1/2	5-3/4	CD55012	36.14	13/16	#3	6-1/8	10-3/4	CD55052	121.16
13/64	#1	2-3/4	6	CD55013	36.14	53/64	#3	6-1/8	10-3/4	CD55053	134.21
7/32	#1	2-3/4	6	CD55014	36.14	27/32	#3	6-1/8	10-3/4	CD55054	130.60
15/64	#1	2-7/8	6-1/8	CD55015	36.14	55/64	#3	6-1/8	10-3/4	CD55055	147.37
1/4	#1	2-7/8	6-1/8	CD55016	36.14	7/8	#3	6-1/8	10-3/4	CD55056	134.57
17/64	#1	3	6-1/4	CD55017	36.14	57/64	#3	6-1/8	10-3/4	CD55057	142.11
9/32	#1	3	6-1/4	CD55018	36.14	29/32	#3	6-1/8	10-3/4	CD55058	142.11
19/64	#1	3-1/8	6-3/8	CD55019	38.29	59/64	#3	6-1/8	10-3/4	CD55059	144.08
5/16	#1	3-1/8	6-3/8	CD55020	40.26	15/16	#3	6-1/8	10-3/4	CD55060	135.03
21/64	#1	3-1/4	6-1/2	CD55021	40.26	61/64	#3	6-3/8	11	CD55061	148.01
11/32	#1	3-1/4	6-1/2	CD55022	40.26	31/32	#3	6-3/8	11	CD55062	147.01
23/64	#1	3-1/2	6-3/4	CD55023	41.08	63/64	#3	6-3/8	11	CD55063	157.05
3/8	#1	3-1/2	6-3/4	CD55024	41.08	1	#3	6-3/8	11	CD55064	149.47
25/64	#1	3-5/8	7	CD55025	48.80	1-1/64	#3	6-1/2	11-1/8	CD55065	173.79
13/32	#1	3-5/8	7	CD55026	48.80	1-1/32	#3	6-1/2	11-1/8	CD55066	172.50
27/64	#1	3-7/8	7-1/4	CD55027	52.55	1-3/64	#3	6-5/8	11-1/4	CD55067	180.72
7/16	#1	3-7/8	7-1/4	CD55028	52.55	1-1/16	#3	6-5/8	11-1/4	CD55068	172.50
29/64	#1	4-1/8	7-1/2	CD55029	52.55	1-5/64	#4	6-7/8	12-1/2	CD55069	205.32
15/32	#1	4-1/8	7-1/2	CD55030	52.55	1-3/32	#4	6-7/8	12-1/2	CD55070	205.32
31/64	#2	4-3/8	8-1/4	CD55031	57.49	1-7/64	#4	7-1/8	12-3/4	CD55071	213.54
1/2	#2	4-3/8	8-1/4	CD55032	53.81	1-1/8	#4	7-1/8	12-3/4	CD55072	213.54
33/64	#2	4-5/8	8-1/2	CD55033	62.03	1-9/64	#4	7-1/4	12-7/8	CD55073	229.99
17/32	#2	4-5/8	8-1/2	CD55034	64.07	1-5/32	#4	7-1/4	12-7/8	CD55074	221.76
35/64	#2	4-7/8	8-3/4	CD55035	67.50	1-11/64	#4	7-3/8	13	CD55075	229.99
9/16	#2	4-7/8	8-3/4	CD55036	65.71	1-3/16	#4	7-3/8	13	CD55076	229.99
37/64	#2	4-7/8	8-3/4	CD55037	71.86	1-13/64	#4	7-1/2	13-1/8	CD55077	246.40
19/32	#2	4-7/8	8-3/4	CD55038	70.64	1-7/32	#4	7-1/2	13-1/8	CD55078	246.40
39/64	#2	4-7/8	8-3/4	CD55039	74.76	1-1/4	#4	7-7/8	13-1/2	CD55080	257.91
5/8	#2	4-7/8	8-3/4	CD55040	71.47	1-5/16	#4	8-5/8	14-1/4	CD55084	317.04
41/64	#2	5-1/8	9	CD55041	82.16	1-3/8	#4	8-7/8	14-1/2	CD55088	338.38
21/32	#2	5-1/8	9	CD55042	80.51	1-7/16	#4	9-1/8	14-3/4	CD55092	371.24
43/64	#2	5-3/8	9-1/4	CD55043	88.70	1-1/2	#4	9-3/8	15	CD55096	389.33
11/16	#2	5-3/8	9-1/4	CD55044	83.76	1-9/16	#5	9-5/8	16-5/8	CD55102	474.74
45/64	#2	5-5/8	9-1/2	CD55045	91.99	1-5/8	#5	10	17	CD55106	512.53
23/32	#2	5-5/8	9-1/2	CD55046	88.88	1-11/16	#5	10-1/8	17-1/8	CD55110	565.11
47/64	#2	5-7/8	9-3/4	CD55047	98.57	1-3/4	#5	10-1/8	17-1/8	CD55114	601.26
3/4	#2	5-7/8	9-3/4	CD55048	97.74	1-13/16	#5	10-1/8	17-1/8	CD55118	645.59
49/64	#2	6	9-7/8	CD55049	117.80	1-7/8	#5	10-3/8	17-3/8	CD55122	673.51
25/32	#2	6	9-7/8	CD55050	117.12	1-15/16	#5	10-3/8	17-3/8	CD55126	726.10
51/64	#3	6-1/8	10-3/4	CD55051	128.95	2	#5	10-3/8	17-3/8	CD55130	752.38

FOR TECHNICAL INFORMATION PLEASE SEE PAGES 191-192.

TAKE
55% OFF
LIST
PRICES!

M42 Cobalt Drills

MADE IN THE
USA

SCREW MACHINE LENGTH - HEAVY DUTY - 135° SPLIT POINT - TYPE "J"



SERIES 325
NAS 907 - M42 COBALT
STRAW FINISH

**TAKE
55% OFF
LIST
PRICES!**

FRACTIONAL SIZES						FRACTIONAL SIZES						FRACTIONAL SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
1/16	5/8	1-5/8	12	CD32504	2.25	7/32	1-1/4	2-3/8	12	CD32514	5.43	3/8	1-13/16	3-1/8	6	CD32524	12.87
5/64	11/16	1-11/16	12	CD32505	2.25	15/64	1-5/16	2-7/16	12	CD32515	5.82	25/64	1-7/8	3-1/4	6	CD32525	14.73
3/32	3/4	1-3/4	12	CD32506	2.25	1/4	1-3/8	2-1/2	12	CD32516	6.06	13/32	1-15/16	3-5/16	6	CD32526	15.22
7/64	13/16	1-13/16	12	CD32507	2.55	17/64	1-7/16	2-5/8	6	CD32517	6.92	27/64	2	3-3/8	6	CD32527	16.88
1/8	7/8	1-7/8	12	CD32508	2.95	9/32	1-1/2	2-11/16	6	CD32518	7.51	7/16	1-1/16	3-7/16	6	CD32528	17.34
9/64	15/16	1-15/16	12	CD32509	2.95	19/64	1-9/16	2-3/4	6	CD32519	8.70	29/64	2-1/8	3-9/16	6	CD32529	20.81
5/32	1	2-1/16	12	CD32510	3.24	5/16	1-5/8	2-13/16	6	CD32520	9.33	15/32	2-1/8	3-5/8	6	CD32530	20.81
11/64	1-1/16	2-1/8	12	CD32511	3.67	21/64	1-11/16	2-15/16	6	CD32521	10.36	31/64	2-3/16	3-11/16	6	CD32531	20.81
3/16	1-1/8	2-3/16	12	CD32512	4.30	11/32	1-11/16	3	6	CD32522	11.18	1/2	2-1/4	3-3/4	6	CD32532	20.81
13/64	1-3/16	2-1/4	12	CD32513	4.93	23/64	1-3/4	3-1/16	6	CD32523	12.87	-	-	-	-	-	-

LETTER SIZES						LETTER SIZES						LETTER SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
A	1-5/16	2-7/16	12	CD32701	6.95	J	1-1/2	2-11/16	6	CD32710	8.27	S	1-3/4	3-1/16	6	CD32719	15.72
B	1-3/8	2-1/2	12	CD32702	7.38	K	1-1/2	2-11/16	6	CD32711	8.27	T	1-3/4	3-1/16	6	CD32720	15.72
C	1-3/8	2-1/2	12	CD32703	7.38	L	1-9/16	2-3/4	6	CD32712	9.83	U	1-13/16	3-1/8	6	CD32721	15.72
D	1-3/8	2-1/2	12	CD32704	7.38	M	1-9/16	2-3/4	6	CD32713	9.83	V	1-7/8	3-1/4	6	CD32722	17.47
E	1-3/8	2-1/2	12	CD32705	6.72	N	1-5/8	2-13/16	6	CD32714	10.56	W	1-7/8	3-1/4	6	CD32723	17.47
F	1-7/16	2-5/8	6	CD32706	7.81	O	1-11/16	2-15/16	6	CD32715	11.68	X	1-15/16	3-5/16	6	CD32724	17.47
G	1-7/16	2-5/8	6	CD32707	7.81	P	1-11/16	2-15/16	6	CD32716	11.68	Y	1-15/16	3-5/16	6	CD32725	17.47
H	1-1/2	2-11/16	6	CD32708	8.27	Q	1-11/16	3	6	CD32717	12.64	Z	2	3-3/8	6	CD32726	20.02
I	1-1/2	2-11/16	6	CD32709	8.27	R	1-11/16	3	6	CD32718	12.64	-	-	-	-	-	-

WIRE SIZES						WIRE SIZES						WIRE SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
1	1-5/16	2-7/16	12	CD32601	6.68	21	1-1/16	2-1/8	12	CD32621	3.47	41	13/16	1-13/16	12	CD32641	2.35
2	1-5/16	2-7/16	12	CD32602	6.68	22	1-1/16	2-1/8	12	CD32622	3.47	42	3/4	1-3/4	12	CD32642	2.32
3	1-1/4	2-3/8	12	CD32603	6.68	23	1	2-1/16	12	CD32623	3.47	43	3/4	1-3/4	12	CD32643	2.32
4	1-1/4	2-3/8	12	CD32604	5.96	24	1	2-1/16	12	CD32624	3.47	44	3/4	1-3/4	12	CD32644	2.32
5	1-1/4	2-3/8	12	CD32605	5.96	25	1	2-1/16	12	CD32625	3.24	45	3/4	1-3/4	12	CD32645	2.32
6	1-1/4	2-3/8	12	CD32606	5.96	26	1	2-1/16	12	CD32626	3.24	46	3/4	1-3/4	12	CD32646	2.32
7	1-3/16	2-1/4	12	CD32607	4.70	27	1	2-1/16	12	CD32627	3.24	47	11/16	1-11/16	12	CD32647	2.32
8	1-3/16	2-1/4	12	CD32608	4.70	28	15/16	1-15/16	12	CD32628	2.95	48	11/16	1-11/16	12	CD32648	2.32
9	1-3/16	2-1/4	12	CD32609	4.70	29	15/16	1-15/16	12	CD32629	2.95	49	11/16	1-11/16	12	CD32649	2.32
10	1-3/16	2-1/4	12	CD32610	4.70	30	15/16	1-15/16	12	CD32630	2.78	50	11/16	1-11/16	12	CD32650	2.32
11	1-3/16	2-1/4	12	CD32611	4.57	31	7/8	1-7/8	12	CD32631	2.78	51	11/16	1-11/16	12	CD32651	2.32
12	1-3/16	2-1/4	12	CD32612	4.57	32	7/8	1-7/8	12	CD32632	2.78	52	11/16	1-11/16	12	CD32652	2.32
13	1-1/8	2-3/16	12	CD32613	4.47	33	7/8	1-7/8	12	CD32633	2.68	53	5/8	1-5/8	12	CD32653	2.61
14	1-1/8	2-3/16	12	CD32614	4.47	34	7/8	1-7/8	12	CD32634	2.68	54	5/8	1-5/8	12	CD32654	2.61
15	1-1/8	2-3/16	12	CD32615	4.47	35	7/8	1-7/8	12	CD32635	2.68	55	5/8	1-5/8	12	CD32655	2.61
16	1-1/8	2-3/16	12	CD32616	4.47	36	13/16	1-13/16	12	CD32636	2.68	56	1/2	1-3/8	12	CD32656	2.61
17	1-1/8	2-3/16	12	CD32617	4.30	37	13/16	1-13/16	12	CD32637	2.68	57	1/2	1-3/8	12	CD32657	2.61
18	1-1/16	2-1/8	12	CD32618	3.67	38	13/16	1-13/16	12	CD32638	2.45	58	1/2	1-3/8	12	CD32658	2.78
19	1-1/16	2-1/8	12	CD32619	3.47	39	13/16	1-13/16	12	CD32639	2.45	59	1/2	1-3/8	12	CD32659	2.78
20	1-1/16	2-1/8	12	CD32620	3.47	40	13/16	1-13/16	12	CD32640	2.45	60	1/2	1-3/8	12	CD32660	2.78

NOTE: ALL COBALT DRILLS HAVE IDENTIFICATION RING ON SHANK

NOTE: SIZES BELOW 1/16" ARE NOT SPLIT POINT.
FOR TECHNICAL INFORMATION PLEASE SEE PAGES 191-192.

MADE IN THE
USA

M42 Cobalt Drills



**TAKE
55% OFF
LIST
PRICES!**

SCREW MACHINE LENGTH - HEAVY DUTY - 135° SPLIT POINT - TYPE "J"



SERIES 602
NAS 907 - M42 COBALT
ALTIN COATED

FRACTIONAL SIZES						FRACTIONAL SIZES						FRACTIONAL SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
1/16	5/8	1-5/8	12	CD60204	4.08	7/32	1-1/4	2-3/8	12	CD60214	9.81	3/8	1-13/16	3-1/8	6	CD60224	23.27
5/64	11/16	1-11/16	12	CD60205	4.08	15/64	1-5/16	2-7/16	12	CD60215	10.56	25/64	1-7/8	3-1/4	6	CD60225	26.64
3/32	3/4	1-3/4	12	CD60206	4.08	1/4	1-3/8	2-1/2	12	CD60216	10.96	13/32	1-15/16	3-5/16	6	CD60226	27.49
7/64	13/16	1-13/16	12	CD60207	4.62	17/64	1-7/16	2-5/8	6	CD60217	12.48	27/64	2	3-3/8	6	CD60227	30.46
1/8	7/8	1-7/8	12	CD60208	5.36	9/32	1-1/2	2-11/16	6	CD60218	13.59	7/16	1-1/16	3-7/16	6	CD60228	31.33
9/64	15/16	1-15/16	12	CD60209	5.36	19/64	1-9/16	2-3/4	6	CD60219	15.72	29/64	2-1/8	3-9/16	6	CD60229	37.57
5/32	1	2-1/16	12	CD60210	5.87	5/16	1-5/8	2-13/16	6	CD60220	16.86	15/32	2-1/8	3-5/8	6	CD60230	37.57
11/64	1-1/16	2-1/8	12	CD60211	6.61	21/64	1-11/16	2-15/16	6	CD60221	18.72	31/64	2-3/16	3-11/16	6	CD60231	37.57
3/16	1-1/8	2-3/16	12	CD60212	7.79	11/32	1-11/16	3	6	CD60222	20.24	1/2	2-1/4	3-3/4	6	CD60232	37.57
13/64	1-3/16	2-1/4	12	CD60213	8.87	23/64	1-3/4	3-1/16	6	CD60223	23.27	-	-	-	-	-	-

LETTER SIZES						LETTER SIZES						LETTER SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
A	1-5/16	2-7/16	12	CD60401	12.55	J	1-1/2	2-11/16	6	CD60410	14.97	S	1-3/4	3-1/16	6	CD60419	28.43
B	1-3/8	2-1/2	12	CD60402	13.32	K	1-1/2	2-11/16	6	CD60411	14.97	T	1-3/4	3-1/16	6	CD60420	28.43
C	1-3/8	2-1/2	12	CD60403	13.32	L	1-9/16	2-3/4	6	CD60412	17.74	U	1-13/16	3-1/8	6	CD60421	28.43
D	1-3/8	2-1/2	12	CD60404	13.32	M	1-9/16	2-3/4	6	CD60413	17.74	V	1-7/8	3-1/4	6	CD60422	31.53
E	1-3/8	2-1/2	12	CD60405	12.18	N	1-5/8	2-13/16	6	CD60414	19.06	W	1-7/8	3-1/4	6	CD60423	31.53
F	1-7/16	2-5/8	6	CD60406	14.10	O	1-11/16	2-15/16	6	CD60415	21.11	X	1-15/16	3-5/16	6	CD60424	31.53
G	1-7/16	2-5/8	6	CD60407	14.10	P	1-11/16	2-15/16	6	CD60416	21.11	Y	1-15/16	3-5/16	6	CD60425	31.53
H	1-1/2	2-11/16	6	CD60408	14.97	Q	1-11/16	3	6	CD60417	22.83	Z	2	3-3/8	6	CD60426	36.19
I	1-1/2	2-11/16	6	CD60409	14.97	R	1-11/16	3	6	CD60418	22.83	-	-	-	-	-	-

WIRE SIZES						WIRE SIZES						WIRE SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
1	1-5/16	2-7/16	12	CD60301	12.07	21	1-1/16	2-1/8	12	CD60321	6.27	41	13/16	1-13/16	12	CD60341	4.28
2	1-5/16	2-7/16	12	CD60302	12.07	22	1-1/16	2-1/8	12	CD60322	6.27	42	3/4	1-3/4	12	CD60342	4.22
3	1-1/4	2-3/8	12	CD60303	12.07	23	1	2-1/16	12	CD60323	6.27	43	3/4	1-3/4	12	CD60343	4.22
4	1-1/4	2-3/8	12	CD60304	10.79	24	1	2-1/16	12	CD60324	6.27	44	3/4	1-3/4	12	CD60344	4.22
5	1-1/4	2-3/8	12	CD60305	10.79	25	1	2-1/16	12	CD60325	5.87	45	3/4	1-3/4	12	CD60345	4.22
6	1-1/4	2-3/8	12	CD60306	10.79	26	1	2-1/16	12	CD60326	5.87	46	3/4	1-3/4	12	CD60346	4.22
7	1-3/16	2-1/4	12	CD60307	8.47	27	1	2-1/16	12	CD60327	5.87	47	11/16	1-11/16	12	CD60347	4.22
8	1-3/16	2-1/4	12	CD60308	8.47	28	15/16	1-15/16	12	CD60328	5.36	48	11/16	1-11/16	12	CD60348	4.22
9	1-3/16	2-1/4	12	CD60309	8.47	29	15/16	1-15/16	12	CD60329	5.36	49	11/16	1-11/16	12	CD60349	4.22
10	1-3/16	2-1/4	12	CD60310	8.47	30	15/16	1-15/16	12	CD60330	5.03	50	11/16	1-11/16	12	CD60350	4.22
11	1-3/16	2-1/4	12	CD60311	8.23	31	7/8	1-7/8	12	CD60331	5.03	51	11/16	1-11/16	12	CD60351	4.22
12	1-3/16	2-1/4	12	CD60312	8.23	32	7/8	1-7/8	12	CD60332	5.03	52	11/16	1-11/16	12	CD60352	4.22
13	1-1/8	2-3/16	12	CD60313	8.09	33	7/8	1-7/8	12	CD60333	4.86	53	5/8	1-5/8	12	CD60353	4.72
14	1-1/8	2-3/16	12	CD60314	8.09	34	7/8	1-7/8	12	CD60334	4.86	54	5/8	1-5/8	12	CD60354	4.72
15	1-1/8	2-3/16	12	CD60315	8.09	35	7/8	1-7/8	12	CD60335	4.86	55	5/8	1-5/8	12	CD60355	4.72
16	1-1/8	2-3/16	12	CD60316	8.06	36	13/16	1-13/16	12	CD60336	4.86	56	1/2	1-3/8	12	CD60356	4.72
17	1-1/8	2-3/16	12	CD60317	7.79	37	13/16	1-13/16	12	CD60337	4.86	57	1/2	1-3/8	12	CD60357	4.72
18	1-1/16	2-1/8	12	CD60318	6.61	38	13/16	1-13/16	12	CD60338	4.42	58	1/2	1-3/8	12	CD60358	5.03
19	1-1/16	2-1/8	12	CD60319	6.27	39	13/16	1-13/16	12	CD60339	4.42	59	1/2	1-3/8	12	CD60359	5.03
20	1-1/16	2-1/8	12	CD60320	6.27	40	13/16	1-13/16	12	CD60340	4.42	60	1/2	1-3/8	12	CD60360	5.03

- For use where extreme temperatures are found
- Coating allows for increased machining speeds from 50% up to 200%
- Used in machining Stainless Steels, Nickel-based and Titanium alloys
- Not recommended for aluminum

NOTE: SIZES BELOW 1/16" ARE NOT SPLIT POINT. ALL COBALT DRILLS HAVE IDENTIFICATION RING ON SHANK.
FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION PLEASE SEE PAGES 191-192.

M42 Cobalt Drills

MADE IN THE
USA

JOBBER LENGTH - HEAVY DUTY - 135° SPLIT POINT - TYPE "J"



SERIES 500
NAS 907 - M42 COBALT
STRAW FINISH

**TAKE
55% OFF
LIST
PRICES!**

FRACTIONAL SIZES						FRACTIONAL SIZES						FRACTIONAL SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
3/64	3/4	1-3/4	12	CD50003	3.79	13/64	2-7/16	3-5/8	12	CD50013	5.36	23/64	3-1/2	4-7/8	6	CD50023	14.30
1/16	7/8	1-7/8	12	CD50004	2.61	7/32	2-1/2	3-3/4	12	CD50014	5.86	3/8	3-5/8	5	6	CD50024	14.30
5/64	1	2	12	CD50005	2.61	15/64	2-5/8	3-7/8	12	CD50015	6.22	25/64	3-3/4	5-1/8	6	CD50025	16.25
3/32	1-1/4	2-1/4	12	CD50006	2.61	1/4	2-3/4	4	12	CD50016	6.65	13/32	3-7/8	5-1/4	6	CD50026	16.94
7/64	1-1/2	2-5/8	12	CD50007	2.75	17/64	2-7/8	4-1/8	6	CD50017	7.54	27/64	3-15/16	5-3/8	6	CD50027	18.73
1/8	1-5/8	2-3/4	12	CD50008	3.38	9/32	2-15/16	4-1/4	6	CD50018	7.91	7/16	4-1/16	5-1/2	6	CD50028	19.16
9/64	1-3/4	2-7/8	12	CD50009	3.38	19/64	3-1/16	4-3/8	6	CD50019	9.63	29/64	4-3/16	5-5/8	6	CD50029	23.00
5/32	2	3-1/8	12	CD50010	3.77	5/16	3-3/16	4-1/2	6	CD50020	10.26	15/32	4-5/16	5-3/4	6	CD50030	23.43
11/64	2-1/8	3-1/4	12	CD50011	3.97	21/64	3-5/16	4-5/8	6	CD50021	11.35	31/64	4-3/8	5-7/8	6	CD50031	23.56
3/16	2-5/16	3-1/2	12	CD50012	4.47	11/32	3-7/16	4-3/4	6	CD50022	12.48	1/2	4-1/2	6	6	CD50032	23.56

LETTER SIZES						LETTER SIZES						LETTER SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
A	2-5/8	3-7/8	12	CD50301	7.05	J	2-7/8	4-1/8	6	CD50310	9.17	S	3-1/2	4-7/8	6	CD50319	16.45
B	2-3/4	4	12	CD50302	8.14	K	2-15/16	4-1/4	6	CD50311	9.17	T	3-1/2	4-7/8	6	CD50320	16.45
C	2-3/4	4	12	CD50303	8.14	L	2-15/16	4-1/4	6	CD50312	10.39	U	3-5/8	5	6	CD50321	16.45
D	2-3/4	4	12	CD50304	9.17	M	3-1/16	4-3/8	6	CD50313	11.02	V	3-5/8	5	6	CD50322	18.13
E	2-3/4	4	12	CD50305	6.65	N	3-1/16	4-3/8	6	CD50314	11.02	W	3-3/4	5-1/8	6	CD50323	18.13
F	2-7/8	4-1/8	6	CD50306	8.14	O	3-3/16	4-1/2	6	CD50315	12.18	X	3-3/4	5-1/8	6	CD50324	18.13
G	2-7/8	4-1/8	6	CD50307	8.14	P	3-5/16	4-5/8	6	CD50316	12.94	Y	3-7/8	5-1/4	6	CD50325	19.23
H	2-7/8	4-1/8	6	CD50308	9.17	Q	3-7/16	4-3/4	6	CD50317	13.43	Z	3-7/8	5-1/4	6	CD50326	20.91
I	2-7/8	4-1/8	6	CD50309	9.17	R	3-7/16	4-3/4	6	CD50318	13.43	-	-	-	-	-	-

WIRE SIZES						WIRE SIZES						WIRE SIZES					
SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE	SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
1	2-5/8	3-7/8	12	CD50201	7.11	21	2-1/8	3-1/4	12	CD50221	4.00	41	1-3/8	2-3/8	12	CD50241	2.61
2	2-5/8	3-7/8	12	CD50202	7.11	22	2	3-1/8	12	CD50222	4.00	42	1-1/4	2-1/4	12	CD50242	2.58
3	2-1/2	3-3/4	12	CD50203	6.65	23	2	3-1/8	12	CD50223	4.00	43	1-1/4	2-1/4	12	CD50243	2.58
4	2-1/2	3-3/4	12	CD50204	6.65	24	2	3-1/8	12	CD50224	4.00	44	1-1/8	2-1/8	12	CD50244	2.58
5	2-1/2	3-3/4	12	CD50205	6.65	25	1-7/8	3	12	CD50225	3.67	45	1-1/8	2-1/8	12	CD50245	2.58
6	2-1/2	3-3/4	12	CD50206	6.65	26	1-7/8	3	12	CD50226	3.61	46	1-1/8	2-1/8	12	CD50246	2.58
7	2-7/16	3-5/8	12	CD50207	5.20	27	1-7/8	3	12	CD50227	3.61	47	1	2	12	CD50247	2.58
8	2-7/16	3-5/8	12	CD50208	5.20	28	1-3/4	2-7/8	12	CD50228	3.38	48	1	2	12	CD50248	2.58
9	2-7/16	3-5/8	12	CD50209	5.20	29	1-3/4	2-7/8	12	CD50229	3.28	49	1	2	12	CD50249	2.58
10	2-7/16	3-5/8	12	CD50210	5.20	30	1-5/8	2-3/4	12	CD50230	3.11	50	1	2	12	CD50250	2.58
11	2-5/16	3-1/2	12	CD50211	5.20	31	1-5/8	2-3/4	12	CD50231	3.01	51	1	2	12	CD50251	2.58
12	2-5/16	3-1/2	12	CD50212	5.20	32	1-5/8	2-3/4	12	CD50232	2.98	52	7/8	1-7/8	12	CD50252	2.58
13	2-5/16	3-1/2	12	CD50213	5.10	33	1-1/2	2-5/8	12	CD50233	2.88	53	7/8	1-7/8	12	CD50253	2.88
14	2-3/16	3-3/8	12	CD50214	5.10	34	1-1/2	2-5/8	12	CD50234	2.88	54	7/8	1-7/8	12	CD50254	2.88
15	2-3/16	3-3/8	12	CD50215	5.10	35	1-1/2	2-5/8	12	CD50235	2.88	55	7/8	1-7/8	12	CD50255	2.88
16	2-3/16	3-3/8	12	CD50216	4.63	36	1-7/16	2-1/2	12	CD50236	2.85	56	3/4	1-3/4	12	CD50256	3.24
17	2-3/16	3-3/8	12	CD50217	4.53	37	1-7/16	2-1/2	12	CD50237	2.85	57	3/4	1-3/4	12	CD50257	3.24
18	2-1/8	3-1/4	12	CD50218	4.14	38	1-7/16	2-1/2	12	CD50238	2.65	58	11/16	1-5/8	12	CD50258	3.24
19	2-1/8	3-1/4	12	CD50219	4.04	39	1-3/8	2-3/8	12	CD50239	2.65	59	11/16	1-5/8	12	CD50259	3.24
20	2-1/8	3-1/4	12	CD50220	4.04	40	1-3/8	2-3/8	12	CD50240	2.65	60	11/16	1-5/8	12	CD50260	3.24

NOTE: SIZES BELOW 1/16" ARE NOT SPLIT POINT. ALL COBALT DRILLS HAVE IDENTIFICATION RING ON SHANK.
FOR TECHNICAL INFORMATION PLEASE SEE PAGES 191-192.

MADE IN THE
USA

M42 Cobalt Drills



JOBBER LENGTH - HEAVY DUTY - 135° SPLIT POINT - TYPE "J"



SERIES 608
NAS 907 - M42 COBALT
ALTiN COATED

FRACTIONAL SIZES

SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
1/16	7/8	1-7/8	12	CD60704	4.69
5/64	1	2	12	CD60705	4.69
3/32	1-1/4	2-1/4	12	CD60706	4.69
7/64	1-1/2	2-5/8	12	CD60707	4.96
1/8	1-5/8	2-3/4	12	CD60708	6.07
9/64	1-3/4	2-7/8	12	CD60709	6.07
5/32	2	3-1/8	12	CD60710	6.81
11/64	2-1/8	3-1/4	12	CD60711	7.18
3/16	2-5/16	3-1/2	12	CD60712	8.06
13/64	2-7/16	3-5/8	12	CD60713	9.68

FRACTIONAL SIZES

SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
7/32	2-1/2	3-3/4	12	CD60714	10.59
15/64	2-5/8	3-7/8	12	CD60715	11.23
1/4	2-3/4	4	12	CD60716	12.04
17/64	2-7/8	4-1/8	6	CD60717	13.63
9/32	2-15/16	4-1/4	6	CD60718	14.30
19/64	3-1/16	4-3/8	6	CD60719	17.40
5/16	3-3/16	4-1/2	6	CD60720	18.52
21/64	3-5/16	4-5/8	6	CD60721	20.51
11/32	3-7/16	4-3/4	6	CD60722	22.53
23/64	3-1/2	4-7/8	6	CD60723	25.80

FRACTIONAL SIZES

SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
3/8	3-5/8	5	6	CD60724	25.80
25/64	3-3/4	5-1/8	6	CD60725	29.34
13/32	3-7/8	5-1/4	6	CD60726	30.62
27/64	3-15/16	5-3/8	6	CD60727	33.86
7/16	4-1/16	5-1/2	6	CD60728	34.64
29/64	4-3/16	5-5/8	6	CD60729	41.55
15/32	4-5/16	5-3/4	6	CD60730	42.33
31/64	4-3/8	5-7/8	6	CD60731	42.56
1/2	4-1/2	6	6	CD60732	42.56
-	-	-	-	-	-

LETTER SIZES

SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
A	2-5/8	3-7/8	12	CD60901	12.72
B	2-3/4	4	12	CD60902	14.67
C	2-3/4	4	12	CD60903	14.67
D	2-3/4	4	12	CD60904	16.53
E	2-3/4	4	12	CD60905	12.04
F	2-7/8	4-1/8	6	CD60906	14.67
G	2-7/8	4-1/8	6	CD60907	14.67
H	2-7/8	4-1/8	6	CD60908	16.53
I	2-7/8	4-1/8	6	CD60909	16.53

LETTER SIZES

SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
J	2-7/8	4-1/8	6	CD60910	16.53
K	2-15/16	4-1/4	6	CD60911	16.53
L	2-15/16	4-1/4	6	CD60912	18.79
M	3-1/16	4-3/8	6	CD60913	19.93
N	3-1/16	4-3/8	6	CD60914	19.93
O	3-3/16	4-1/2	6	CD60915	22.02
P	3-5/16	4-5/8	6	CD60916	23.41
Q	3-7/16	4-3/4	6	CD60917	24.25
R	3-7/16	4-3/4	6	CD60918	24.25

LETTER SIZES

SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
S	3-1/2	4-7/8	6	CD60919	29.75
T	3-1/2	4-7/8	6	CD60920	29.75
U	3-5/8	5	6	CD60921	29.75
V	3-5/8	5	6	CD60922	32.78
W	3-3/4	5-1/8	6	CD60923	32.78
X	3-3/4	5-1/8	6	CD60924	32.78
Y	3-7/8	5-1/4	6	CD60925	34.74
Z	3-7/8	5-1/4	6	CD60926	37.77
-	-	-	-	-	-

WIRE SIZES

SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
1	2-5/8	3-7/8	12	CD60801	12.88
2	2-5/8	3-7/8	12	CD60802	12.88
3	2-1/2	3-3/4	12	CD60803	12.04
4	2-1/2	3-3/4	12	CD60804	12.04
5	2-1/2	3-3/4	12	CD60805	12.04
6	2-1/2	3-3/4	12	CD60806	12.04
7	2-7/16	3-5/8	12	CD60807	9.38
8	2-7/16	3-5/8	12	CD60808	9.38
9	2-7/16	3-5/8	12	CD60809	9.38
10	2-7/16	3-5/8	12	CD60810	9.38
11	2-5/16	3-1/2	12	CD60811	9.38
12	2-5/16	3-1/2	12	CD60812	9.38
13	2-5/16	3-1/2	12	CD60813	9.21
14	2-3/16	3-3/8	12	CD60814	9.21
15	2-3/16	3-3/8	12	CD60815	9.21
16	2-3/16	3-3/8	12	CD60816	8.40
17	2-3/16	3-3/8	12	CD60817	8.20
18	2-1/8	3-1/4	12	CD60818	7.49
19	2-1/8	3-1/4	12	CD60819	7.29
20	2-1/8	3-1/4	12	CD60820	7.29

WIRE SIZES

SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
21	2-1/8	3-1/4	12	CD60821	7.22
22	2	3-1/8	12	CD60822	7.22
23	2	3-1/8	12	CD60823	7.22
24	2	3-1/8	12	CD60824	7.22
25	1-7/8	3	12	CD60825	6.61
26	1-7/8	3	12	CD60826	6.54
27	1-7/8	3	12	CD60827	6.54
28	1-3/4	2-7/8	12	CD60828	6.14
29	1-3/4	2-7/8	12	CD60829	5.94
30	1-5/8	2-3/4	12	CD60830	5.57
31	1-5/8	2-3/4	12	CD60831	5.46
32	1-5/8	2-3/4	12	CD60832	5.40
33	1-1/2	2-5/8	12	CD60833	5.19
34	1-1/2	2-5/8	12	CD60834	5.19
35	1-1/2	2-5/8	12	CD60835	5.19
36	1-7/16	2-1/2	12	CD60836	5.13
37	1-7/16	2-1/2	12	CD60837	5.13
38	1-7/16	2-1/2	12	CD60838	4.76
39	1-3/8	2-3/8	12	CD60839	4.76
40	1-3/8	2-3/8	12	CD60840	4.76

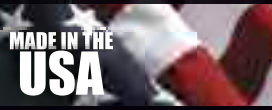
WIRE SIZES

SIZE	FLUTE LENGTH	O.A.L.	PKG. QTY.	ITEM#	LIST PRICE
41	1-3/8	2-3/8	12	CD60841	4.69
42	1-1/4	2-1/4	12	CD60842	4.65
43	1-1/4	2-1/4	12	CD60843	4.65
44	1-1/8	2-1/8	12	CD60844	4.65
45	1-1/8	2-1/8	12	CD60845	4.65
46	1-1/8	2-1/8	12	CD60846	4.65
47	1	2	12	CD60847	4.65
48	1	2	12	CD60848	4.65
49	1	2	12	CD60849	4.65
50	1	2	12	CD60850	4.65
51	1	2	12	CD60851	4.65
52	7/8	1-7/8	12	CD60852	4.65
53	7/8	1-7/8	12	CD60853	5.23
54	7/8	1-7/8	12	CD60854	5.23
55	7/8	1-7/8	12	CD60855	5.23
56	3/4	1-3/4	12	CD60856	5.90
57	3/4	1-3/4	12	CD60857	5.90
58	11/16	1-5/8	12	CD60858	5.90
59	11/16	1-5/8	12	CD60859	5.90
60	11/16	1-5/8	12	CD60860	5.90

- For use where extreme temperatures are found
- Coating allows for increased machining speeds from 50% up to 200%
- Used in machining Stainless Steels, Nickel-based and Titanium alloys
- Not recommended for aluminum

NOTE: SIZES BELOW 1/16" ARE NOT SPLIT POINT. ALL COBALT DRILLS HAVE IDENTIFICATION RING ON SHANK.
FOR COATING INFORMATION SEE PAGE 2. FOR TECHNICAL INFORMATION PLEASE SEE PAGES 191-192.

Silver & Deming Drills



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SILVER & DEMING DRILLS



SERIES 625

HIGH SPEED STEEL

1/2" ROUND SHANK - 118° POINT

SIZE	OVERALL LENGTH	ITEM#	LIST PRICE
33/64	6	SD91433	29.78
17/32	6	SD91434	29.78
35/64	6	SD91435	31.44
9/16	6	SD91436	31.44
37/64	6	SD91437	33.75
19/32	6	SD91438	33.75
39/64	6	SD91439	35.47
5/8	6	SD91440	35.47
41/64	6	SD91441	37.16
21/32	6	SD91442	37.16
43/64	6	SD91443	39.51
11/16	6	SD91444	39.51
45/64	6	SD91445	39.68
23/32	6	SD91446	39.68
47/64	6	SD91447	43.28
3/4	6	SD91448	43.42
49/64	6	SD91449	46.03
25/32	6	SD91450	46.03
51/64	6	SD91451	48.38
13/16	6	SD91452	48.38
53/64	6	SD91453	50.27
27/32	6	SD91454	50.27
55/64	6	SD91455	51.92
7/8	6	SD91456	51.92
57/64	6	SD91457	54.04
29/32	6	SD91458	54.04
59/64	6	SD91459	58.84
15/16	6	SD91460	58.84
61/64	6	SD91461	61.68
31/32	6	SD91462	61.68
63/64	6	SD91463	68.76
1	6	SD91464	68.76
1-1/32	6	SD91466	92.26
1-1/16	6	SD91468	92.26
1-3/32	6	SD91470	98.38
1-1/8	6	SD91472	105.10
1-5/32	6	SD91474	105.10
1-3/16	6	SD91476	116.35
1-7/32	6	SD91478	128.76
1-1/4	6	SD91480	128.76
1-5/16	6	SD91484	136.20
1-3/8	6	SD91488	156.88
1-7/16	6	SD91492	172.50
1-1/2	6	SD91496	189.54



SERIES 620

HIGH SPEED STEEL

1/2" SHANK - 3 FLATS - 118° POINT

SIZE	OVERALL LENGTH	ITEM#	LIST PRICE
33/64	6	SD92533	32.46
17/32	6	SD92534	32.46
35/64	6	SD92535	34.51
9/16	6	SD92536	34.51
37/64	6	SD92537	37.09
19/32	6	SD92538	37.09
39/64	6	SD92539	38.82
5/8	6	SD92540	38.82
41/64	6	SD92541	41.40
21/32	6	SD92542	41.40
43/64	6	SD92543	43.05
11/16	6	SD92544	43.05
45/64	6	SD92545	43.61
23/32	6	SD92546	43.61
47/64	6	SD92547	47.52
3/4	6	SD92548	47.52
49/64	6	SD92549	50.70
25/32	6	SD92550	50.70
51/64	6	SD92551	55.56
13/16	6	SD92552	55.56
53/64	6	SD92553	57.88
27/32	6	SD92554	57.88
55/64	6	SD92555	61.75
7/8	6	SD92556	61.75
57/64	6	SD92557	64.06
29/32	6	SD92558	64.06
59/64	6	SD92559	65.59
15/16	6	SD92560	65.59
61/64	6	SD92561	68.66
31/32	6	SD92562	68.66
63/64	6	SD92563	75.25
1	6	SD92564	75.25

FOR TECHNICAL INFORMATION PLEASE SEE PAGES 191-192

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**SERIES 623**

HIGH SPEED STEEL - BLACK & GOLD
1/2" SHANK - 3 FLATS - 118° SPLIT POINT

SIZE	OVERALL LENGTH	ITEM#	LIST PRICE
33/64	6	SD94733	38.02
17/32	6	SD94734	38.02
35/64	6	SD94735	40.27
9/16	6	SD94736	40.27
37/64	6	SD94737	42.75
19/32	6	SD94738	42.75
39/64	6	SD94739	44.44
5/8	6	SD94740	44.44
41/64	6	SD94741	47.15
21/32	6	SD94742	47.15
43/64	6	SD94743	49.17
11/16	6	SD94744	49.17
45/64	6	SD94745	51.22
23/32	6	SD94746	51.22
47/64	6	SD94747	53.44
3/4	6	SD94748	53.44
49/64	6	SD94749	56.42
25/32	6	SD94750	56.42
51/64	6	SD94751	60.03
13/16	6	SD94752	60.03
53/64	6	SD94753	62.64
27/32	6	SD94754	62.64
55/64	6	SD94755	64.33
7/8	6	SD94756	64.33
57/64	6	SD94757	67.14
29/32	6	SD94758	67.14
59/64	6	SD94759	72.17
15/16	6	SD94760	72.17
61/64	6	SD94761	77.73
31/32	6	SD94762	77.73
63/64	6	SD94763	81.64
1	6	SD94764	81.64

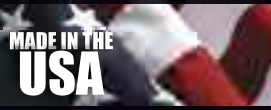
**SERIES 622**

COBALT - STRAW FINISH
1/2" ROUND SHANK - 118° SPLIT POINT

SIZE	OVERALL LENGTH	ITEM#	LIST PRICE
33/64	6	SD93633	59.23
17/32	6	SD93634	59.23
35/64	6	SD93635	71.28
9/16	6	SD93636	71.28
37/64	6	SD93637	73.69
19/32	6	SD93638	73.69
39/64	6	SD93639	75.58
5/8	6	SD93640	75.58
41/64	6	SD93641	79.29
21/32	6	SD93642	79.29
43/64	6	SD93643	80.91
11/16	6	SD93644	80.91
45/64	6	SD93645	85.34
23/32	6	SD93646	85.34
47/64	6	SD93647	89.05
3/4	6	SD93648	89.05
49/64	6	SD93649	93.12
25/32	6	SD93650	93.12
51/64	6	SD93651	95.60
13/16	6	SD93652	95.60
53/64	6	SD93653	103.31
27/32	6	SD93654	103.31
55/64	6	SD93655	103.31
7/8	6	SD93656	103.31
57/64	6	SD93657	107.25
29/32	6	SD93658	107.25
59/64	6	SD93659	111.88
15/16	6	SD93660	111.88
61/64	6	SD93661	118.07
31/32	6	SD93662	118.07
63/64	6	SD93663	122.70
1	6	SD93664	122.70

FOR TECHNICAL INFORMATION PLEASE SEE PAGES 191-192.

Aircraft Extension Drills



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6" OVERALL LENGTH - 135° SPLIT POINT



SERIES 675

HIGH SPEED STEEL - NAS 907 - TYPE "B"
OXIDE FINISH



SERIES 677

M42 COBALT - NAS 907 - TYPE "J"
STRAW FINISH

FRACTIONAL SIZES

SIZE	OVERALL LENGTH	FLUTE LENGTH	PACKAGE QUANTITY	HSS	LIST PRICE	COBALT	LIST PRICE
3/32	6	1-1/4	12	CD67506	6.08	CD67706	9.44
7/64	6	1-1/2	12	CD67507	6.58	CD67707	10.62
1/8	6	1-5/8	12	CD67508	6.47	CD67708	10.15
9/64	6	1-3/4	12	CD67509	7.72	CD67709	12.05
5/32	6	2	12	CD67510	7.72	CD67710	11.94
11/64	6	2-1/8	12	CD67511	8.44	CD67711	13.23
3/16	6	2-5/16	12	CD67512	8.44	CD67712	12.94
13/64	6	2-7/16	12	CD67513	10.26	CD67713	16.37
7/32	6	2-1/2	12	CD67514	10.26	CD67714	16.23
15/64	6	2-5/8	12	CD67515	11.44	CD67715	17.80
1/4	6	2-3/4	12	CD67516	11.23	CD67716	17.48
17/64	6	2-7/8	6	CD67517	25.67	-	-
9/32	6	2-15/16	6	CD67518	26.67	-	-
19/64	6	3-1/16	6	CD67519	31.32	-	-
5/16	6	3-3/16	6	CD67520	34.00	-	-
21/64	6	3-5/16	6	CD67521	36.93	-	-
11/32	6	3-7/16	6	CD67522	36.54	-	-
23/64	6	3-1/2	6	CD67523	41.01	-	-
3/8	6	3-5/8	6	CD67524	41.79	-	-

WIRE SIZES

SIZE	OVERALL LENGTH	FLUTE LENGTH	PACKAGE QUANTITY	HSS	LIST PRICE	COBALT	LIST PRICE
1	6	2-5/8	12	CD67601	12.08	CD67801	18.70
2	6	2-5/8	12	CD67602	12.08	CD67802	18.70
10	6	2-7/16	12	CD67610	9.80	CD67810	14.73
11	6	2-5/16	12	CD67611	9.01	CD67811	14.16
20	6	2-1/8	12	CD67620	8.12	CD67820	12.33
21	6	2-1/8	12	CD67621	8.12	CD67821	12.33
29	6	1-3/4	12	CD67629	8.22	CD67829	12.69
30	6	1-5/8	12	CD67630	6.58	CD67830	10.01
40	6	1-5/8	12	CD67640	5.97	CD67840	9.26

FOR TECHNICAL INFORMATION PLEASE SEE PAGES 191-192.

MADE IN THE
USA

Aircraft Extension Drills

12" OVERALL LENGTH - 135° SPLIT POINT

SERIES 680

HIGH SPEED STEEL - NAS 907 - TYPE "B"
OXIDE FINISH

SERIES 688

M42 COBALT - NAS 907 - TYPE "J"
STRAW FINISH

**TAKE
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FRACTIONAL SIZES

SIZE	OVERALL LENGTH	FLUTE LENGTH	PACKAGE QUANTITY	HSS	LIST PRICE	COBALT	LIST PRICE
1/8	12	1-5/8	12	CD68008	18.73	CD68808	29.24
9/64	12	1-3/4	12	CD68009	18.91	CD68809	32.82
5/32	12	2	12	CD68010	18.91	CD68810	29.92
11/64	12	2-1/8	12	CD68011	21.31	CD68811	32.53
3/16	12	2-5/16	12	CD68012	21.09	CD68812	31.64
13/64	12	2-7/16	12	CD68013	24.20	CD68813	41.40
7/32	12	2-1/2	12	CD68014	23.95	CD68814	37.32
15/64	12	2-5/8	12	CD68015	26.99	CD68815	39.97
1/4	12	2-3/4	12	CD68016	25.74	CD68816	38.18
17/64	12	2-7/8	6	CD68017	32.07	-	-
9/32	12	2-15/16	6	CD68018	32.75	-	-
19/64	12	3-1/16	6	CD68019	37.75	-	-
5/16	12	3-3/16	6	CD68020	41.33	-	-
21/64	12	3-5/16	6	CD68021	44.90	-	-
11/32	12	3-7/16	6	CD68022	44.40	-	-
23/64	12	3-1/2	6	CD68023	50.30	-	-
3/8	12	3-5/8	6	CD68024	50.77	-	-
25/64	12	3-3/4	6	CD68025	56.63	-	-
13/32	12	3-7/8	6	CD68026	54.59	-	-
27/64	12	3-15/16	6	CD68027	60.20	-	-
7/16	12	4-1/16	6	CD68028	60.31	-	-
29/64	12	4-3/16	6	CD68029	68.03	-	-
15/32	12	4-5/16	6	CD68030	70.50	-	-
31/64	12	4-3/8	6	CD68031	73.11	-	-
1/2	12	4-1/2	6	CD68032	72.32	-	-

WIRE SIZES

SIZE	OVERALL LENGTH	FLUTE LENGTH	PACKAGE QUANTITY	HSS	LIST PRICE	COBALT	LIST PRICE
1	12	2-5/8	12	CD68101	29.39	CD68901	41.40
10	12	2-7/16	12	CD68110	23.63	CD68910	33.11
11	12	2-5/16	12	CD68111	23.85	CD68911	33.11
20	12	2-1/8	12	CD68120	21.45	CD68920	30.35
21	12	2-1/8	12	CD68121	21.06	CD68921	30.35
29	12	1-3/4	12	CD68129	22.31	CD68929	31.85
30	12	1-5/8	12	CD68130	21.06	CD68930	30.35
40	12	1-3/8	12	CD68140	21.06	CD68940	30.35

FOR TECHNICAL INFORMATION PLEASE SEE PAGES 191-192.

EXTRA LENGTH DRILL - STRAIGHT SHANK - 118° POINT - 12" O.A.L. HIGH SPEED STEEL



SERIES 686 - BRIGHT FINISH

FRACTIONAL SIZES				
SIZE	FLUTE LENGTH	O.A.L.	ITEM#	LIST PRICE
1/8	9	12	CD68608	40.36
9/64	9	12	CD68609	58.51
5/32	9	12	CD68610	53.20
11/64	9	12	CD68611	45.37
3/16	9	12	CD68612	45.37
13/64	9	12	CD68613	54.98
7/32	9	12	CD68614	49.23
15/64	9	12	CD68615	49.23
1/4	9	12	CD68616	50.90
17/64	9	12	CD68617	52.68
9/32	9	12	CD68618	52.68
19/64	9	12	CD68619	54.61
5/16	9	12	CD68620	54.61
21/64	9	12	CD68621	58.51
11/32	9	12	CD68622	58.51
23/64	9	12	CD68623	58.51

FRACTIONAL SIZES				
SIZE	FLUTE LENGTH	O.A.L.	ITEM#	LIST PRICE
3/8	9	12	CD68624	53.91
25/64	9	12	CD68625	81.58
13/32	9	12	CD68626	81.58
27/64	9	12	CD68627	81.58
7/16	9	12	CD68628	69.67
29/64	9	12	CD68629	85.14
15/32	9	12	CD68630	76.61
31/64	9	12	CD68631	78.39
1/2	9	12	CD68632	78.39
17/32	9	12	CD68634	99.32
9/16	9	12	CD68636	99.32
19/32	9	12	CD68638	124.14
5/8	9	12	CD68640	120.61
11/16	9	12	CD68644	127.70
3/4	9	12	CD68648	143.84
-	-	-	-	-

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PRICES!**

3/8" REDUCED SHANK - 118° POINT HIGH SPEED STEEL



SERIES 650 - OXIDE FINISH

SIZE	SHANK DIAMETER	PKG. QTY.	ITEM#	LIST PRICE
25/64	3/8	6	CD65025	11.72
13/32	3/8	6	CD65026	13.24
27/64	3/8	6	CD65027	13.73
7/16	3/8	6	CD65028	14.65
29/64	3/8	6	CD65029	15.77
15/32	3/8	6	CD65030	16.88
31/64	3/8	6	CD65031	17.59
1/2	3/8	6	CD65032	18.14

FOR TECHNICAL INFORMATION PLEASE SEE PAGES 191-192.

MADE IN THE
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Screw Extractors • Drill Drifts



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PRICES!**

SCREW EXTRACTORS HIGH SPEED STEEL



SERIES 531

SIZE	FOR SCREW & BOLT SIZES	PIPE SIZE	PKG. QTY.	ITEM#	LIST PRICE
1	3/16 - 1/4	-	1	CD53101	6.72
2	1/4 - 5/16	-	1	CD53102	7.16
3	5/16 - 7/16	-	1	CD53103	8.68
4	7/16 - 9/16	1/8	1	CD53104	9.20
5	9/16 - 3/4	1/4	1	CD53105	11.50
6	3/4 - 1	3/8	1	CD53106	25.27
7	1 - 1-3/8	1/2	1	CD53107	40.66
8	1-3/8 - 1-3/4	3/4	1	CD53108	55.32
9	1-3/4 - 2-1/8	1	1	CD53109	96.20
10	2-1/8 - 2-1/2	1-1/4	1	CD53110	249.65
11	2-1/2 - 3	1-1/2	1	CD53111	265.75
12	3 - 3-1/2	2	1	CD53112	352.52
SET	SIZES 1-5	-	1	CD53113	43.22

DRILL DRIFTS



SERIES 534 - OXIDE FINISH

SIZE	FOR USE WITH TAPER#	ITEM#	LIST PRICE
1	1	CD53401	23.93
2	2	CD53402	28.38
3	3	CD53403	32.50
4	4,5,6	CD53404	35.84



OVER 13,000 "AMERICAN-MADE" PRODUCTS IN STOCK AND READY TO SHIP

Chucking Reamers

MADE IN THE
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STRAIGHT SHANK - STRAIGHT FLUTE



**TAKE
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LIST
PRICES!**

SIZE	DEC. EQUIV.	FLUTE LENGTH	# OF FLUTES	OVERALL LENGTH	SHANK DIA.	SERIES 933		SERIES 1933	
						HSS	LIST PRICE	M42 COBALT	LIST PRICE
#80	.0135	3/8	2	3/4	.0135	TR96001	33.33	TR96310	36.90
#79	.0145	3/8	2	3/4	.0145	TR96002	33.33	TR96311	36.90
1/64	.0156	3/8	2	3/4	.0156	TR96003	33.33	TR96312	36.90
#78	.0160	3/8	2	7/8	.0160	TR96004	33.33	TR96313	36.90
#77	.0180	3/8	2	7/8	.0180	TR96005	33.33	TR96314	36.90
#76	.0200	3/8	2	7/8	.0200	TR96006	33.33	TR96315	36.90
#75	.0210	1/2	3	1	.0210	TR96007	33.33	TR96316	36.90
#74	.0225	1/2	3	1	.0225	TR96008	33.33	TR96317	36.90
#73	.0240	1/2	3	1-1/8	.0240	TR96009	33.33	TR96318	36.90
#72	.0250	1/2	3	1-1/8	.0250	TR96010	33.33	TR96319	36.90
#71	.0260	1/2	3	1-1/4	.0260	TR96011	33.33	TR96320	36.90
#70	.0280	1/2	3	1-1/4	.0280	TR96012	33.33	TR96321	36.90
#69	.0292	1/2	3	1-3/8	.0292	TR96013	33.33	TR96322	36.90
#68	.0310	1/2	3	1-3/8	.0310	TR96014	33.33	TR96323	36.90
1/32	.0312	1/2	3	1-3/8	.0312	TR96015	26.28	TR96324	30.36
#67	.0320	1/2	3	1-3/8	.0320	TR96016	27.91	TR96325	30.36
#66	.0330	1/2	3	1-3/8	.0330	TR96017	27.91	TR96326	30.36
#65	.0350	1/2	3	1-1/2	.0350	TR96018	27.91	TR96327	30.36
#64	.0360	1/2	3	1-1/2	.0360	TR96019	27.91	TR96328	30.36
#63	.0370	1/2	3	1-1/2	.0370	TR96020	27.91	TR96329	30.36
#62	.0380	1/2	3	1-1/2	.0380	TR96021	27.91	TR96330	30.36
#61	.0390	1/2	3	1-1/2	.0390	TR96022	27.91	TR96331	30.36
1.0mm	.0394	1/2	4	2-1/2	.0394	TR96023	27.91	TR96332	29.88
#60	.0400	1/2	4	2-1/2	.0390	TR96024	27.91	TR96333	29.88
#59	.0410	1/2	4	2-1/2	.0390	TR96025	27.91	TR96334	29.88
#58	.0420	1/2	4	2-1/2	.0390	TR96026	27.91	TR96335	29.88
#57	.0430	1/2	4	2-1/2	.0390	TR96027	27.91	TR96336	29.88
#56	.0465	1/2	4	2-1/2	.0455	TR96028	27.91	TR96337	29.88
3/64	.0469	1/2	4	2-1/2	.0455	TR96029	27.91	TR96338	29.88
#55	.0520	1/2	4	2-1/2	.0510	TR96030	27.91	TR96339	29.88
#54	.0550	1/2	4	2-1/2	.0510	TR96031	27.91	TR96340	29.88
1.5mm	.0591	1/2	4	2-1/2	.0510	TR96032	27.91	TR96341	29.88
#53	.0595	1/2	4	2-1/2	.0585	TR96033	27.91	TR96342	29.88
1/16	.0625	1/2	4	2-1/2	.0585	TR96034	25.09	TR96343	29.88
#52	.0635	1/2	4	2-1/2	.0585	TR96035	25.09	TR96344	29.88
#51	.0670	3/4	4	3	.0660	TR96036	22.46	TR96345	24.05
#50	.0700	3/4	4	3	.0660	TR96037	22.46	TR96346	24.05
#49	.0730	3/4	4	3	.0660	TR96038	22.46	TR96347	24.05
#48	.0760	3/4	4	3	.0720	TR96039	22.46	TR96348	24.05
5/64	.0781	3/4	4	3	.0720	TR96040	22.46	TR96349	24.05
#47	.0785	3/4	4	3	.0720	TR96041	22.46	TR96350	24.05
2.0mm	.0787	3/4	4	3	.0720	TR96042	22.46	TR96351	24.05
#46	.0810	3/4	4	3	.0771	TR96043	22.46	TR96352	24.05
#45	.0820	3/4	4	3	.0771	TR96044	22.46	TR96353	24.05
#44	.0860	3/4	4	3	.0810	TR96045	22.46	TR96354	24.05
#43	.0890	3/4	4	3	.0810	TR96046	22.46	TR96355	24.05

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THRU 1/2" DIAMETER	1/2" TO 5/8"	5/8" TO 1-1/2"	1-1/2" TO 2"
+ .0002, -.0000	+ .0003, -.0000	+ .0001, +.0004	+ .0002, +.0006

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Chucking Reamers



STRAIGHT SHANK - STRAIGHT FLUTE



**TAKE
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LIST
PRICES!**

SIZE	DEC. EQUIV.	FLUTE LENGTH	# OF FLUTES	OVERALL LENGTH	SHANK DIA.	SERIES 933		SERIES 1933	
						HSS	LIST PRICE	M42 COBALT	LIST PRICE
#42	.0935	3/4	4	3	.0880	TR96047	22.46	TR96356	24.05
3/32	.0938	3/4	4	3	.0880	TR96048	20.19	TR96357	24.05
#41	.0960	7/8	4	3-1/2	.0928	TR96049	22.68	TR96358	24.24
#40	.0980	7/8	4	3-1/2	.0928	TR96050	22.68	TR96359	24.24
2.5mm	.0984	7/8	4	3-1/2	.0928	TR96051	22.68	TR96360	24.24
#39	.0995	7/8	4	3-1/2	.0928	TR96052	22.68	TR96361	24.24
#38	.1015	7/8	4	3-1/2	.0950	TR96053	22.68	TR96362	24.24
#37	.1040	7/8	4	3-1/2	.0950	TR96054	22.68	TR96363	24.24
#36	.1065	7/8	4	3-1/2	.1030	TR96055	22.68	TR96364	24.24
7/64	.1094	7/8	4	3-1/2	.1030	TR96056	23.39	TR96365	24.98
#35	.1100	7/8	4	3-1/2	.1030	TR96057	23.39	TR96366	24.98
#34	.1110	7/8	4	3-1/2	.1055	TR96058	23.39	TR96367	24.98
#33	.1130	7/8	4	3-1/2	.1055	TR96059	23.39	TR96368	24.98
#32	.1160	7/8	4	3-1/2	.1120	TR96060	23.39	TR96369	24.98
3.0mm	.1181	7/8	4	3-1/2	.1120	TR96061	23.39	TR96370	24.98
#31	.1200	7/8	4	3-1/2	.1120	TR96062	23.39	TR96371	24.98
o/u	.1240	7/8	4	3-1/2	.1190	TR96063	23.39	TR96372	24.98
1/8	.1250	7/8	4	3-1/2	.1190	TR96064	18.63	TR96373	19.97
o/u	.1260	7/8	4	3-1/2	.1190	TR96065	23.39	TR96374	24.98
#30	.1285	7/8	4	3-1/2	.1190	TR96066	23.39	TR96375	24.98
#29	.1360	1	4	4	.1275	TR96067	27.91	TR96376	29.88
3.5mm	.1378	1	4	4	.1350	TR96068	27.91	TR96377	29.88
#28	.1405	1	4	4	.1350	TR96069	27.91	TR96378	29.88
9/64	.1406	1	4	4	.1350	TR96070	27.91	TR96379	29.88
#27	.1440	1	4	4	.1350	TR96071	27.91	TR96380	29.88
#26	.1470	1	4	4	.1430	TR96072	27.91	TR96381	29.88
#25	.1495	1	4	4	.1430	TR96073	27.91	TR96382	29.88
#24	.1520	1	4	4	.1460	TR96074	27.91	TR96383	29.88
#23	.1540	1	4	4	.1460	TR96075	27.91	TR96384	29.88
5/32	.1562	1	4	4	.1510	TR96076	27.91	TR96385	29.88
#22	.1570	1	6	4	.1510	TR96077	27.91	TR96386	29.88
4.0mm	.1575	1	6	4	.1510	TR96078	27.91	TR96387	29.88
#21	.1590	1-1/8	6	4-1/2	.1530	TR96079	29.81	TR96388	31.89
#20	.1610	1-1/8	6	4-1/2	.1530	TR96080	29.81	TR96389	31.89
#19	.1660	1-1/8	6	4-1/2	.1595	TR96081	29.81	TR96390	31.89
#18	.1695	1-1/8	6	4-1/2	.1595	TR96082	29.81	TR96391	31.89
11/64	.1719	1-1/8	6	4-1/2	.1645	TR96083	29.81	TR96392	31.89
#17	.1730	1-1/8	6	4-1/2	.1645	TR96084	29.81	TR96393	31.89
#16	.1770	1-1/8	6	4-1/2	.1704	TR96085	29.81	TR96394	31.89
4.5mm	.1772	1-1/8	6	4-1/2	.1704	TR96086	29.81	TR96395	31.89
#15	.1800	1-1/8	6	4-1/2	.1755	TR96087	29.81	TR96396	31.89
#14	.1820	1-1/8	6	4-1/2	.1755	TR96088	29.81	TR96397	31.89
#13	.1850	1-1/8	6	4-1/2	.1805	TR96089	29.81	TR96398	31.89
o/u	.1865	1-1/8	6	4-1/2	.1805	TR96090	29.81	TR96399	31.89
3/16	.1875	1-1/8	6	4-1/2	.1805	TR96091	26.80	TR96400	30.81
o/u	.1885	1-1/8	6	4-1/2	.1805	TR96092	29.81	TR96401	31.89

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THRU 1/2" DIAMETER	1/2" TO 5/8"	5/8" TO 1-1/2"	1-1/2" TO 2"
+ .0002, -.0000	+ .0003, -.0000	+ .0001, +.0004	+ .0002, +.0006

Chucking Reamers

STRAIGHT SHANK - STRAIGHT FLUTE



**TAKE
55% OFF
LIST
PRICES!**

SIZE	DEC. EQUIV.	FLUTE LENGTH	# OF FLUTES	OVERALL LENGTH	SHANK DIA.	SERIES 933		SERIES 1933	
						HSS	LIST PRICE	M42 COBALT	LIST PRICE
#12	.1890	1-1/8	6	4-1/2	.1805	TR96093	29.81	TR96402	31.89
#11	.1910	1-1/4	6	5	.1860	TR96094	33.37	TR96403	38.53
#10	.1935	1-1/4	6	5	.1860	TR96095	33.37	TR96404	38.53
#9	.1960	1-1/4	6	5	.1895	TR96096	33.37	TR96405	38.53
5.0mm	.1969	1-1/4	6	5	.1895	TR96097	33.37	TR96406	38.53
#8	.1990	1-1/4	6	5	.1895	TR96098	33.37	TR96407	38.53
#7	.2010	1-1/4	6	5	.1895	TR96099	33.37	TR96408	38.53
13/64	.2031	1-1/4	6	5	.1945	TR96100	33.37	TR96409	38.53
#6	.2040	1-1/4	6	5	.1945	TR96101	33.37	TR96410	38.53
#5	.2055	1-1/4	6	5	.2016	TR96102	33.37	TR96411	38.53
#4	.2090	1-1/4	6	5	.2016	TR96103	33.37	TR96412	38.53
#3	.2130	1-1/4	6	5	.2075	TR96104	33.37	TR96413	38.53
5.5mm	.2165	1-1/4	6	5	.2075	TR96105	33.37	TR96414	38.53
7/32	.2188	1-1/4	6	5	.2075	TR96106	33.37	TR96415	38.53
#2	.2210	1-1/2	6	6	.2173	TR96107	34.30	TR96416	39.64
#1	.2280	1-1/2	6	6	.2173	TR96108	34.30	TR96417	39.64
A	.2340	1-1/2	6	6	.2265	TR96109	34.30	TR96418	39.64
15/64	.2344	1-1/2	6	6	.2265	TR96110	34.30	TR96419	39.64
6.0mm	.2362	1-1/2	6	6	.2265	TR96111	36.15	TR96420	39.83
B	.2380	1-1/2	6	6	.2329	TR96112	36.15	TR96421	39.83
C	.2420	1-1/2	6	6	.2329	TR96113	36.15	TR96422	39.83
D	.2460	1-1/2	6	6	.2329	TR96114	36.15	TR96423	36.19
o/u	.2490	1-1/2	6	6	.2405	TR96115	32.55	TR96424	35.82
1/4	.2500	1-1/2	6	6	.2405	TR96116	30.70	TR96425	33.85
o/u	.2510	1-1/2	6	6	.2405	TR96117	32.55	TR96426	35.86
6.5mm	.2559	1-1/2	6	6	.2405	TR96118	36.15	TR96427	39.83
F	.2570	1-1/2	6	6	.2485	TR96119	36.15	TR96428	39.83
G	.2610	1-1/2	6	6	.2485	TR96120	36.15	TR96429	39.83
17/64	.2656	1-1/2	6	6	.2485	TR96121	40.27	TR96430	54.01
H	.2660	1-1/2	6	6	.2485	TR96122	40.27	TR96431	54.01
I	.2720	1-1/2	6	6	.2485	TR96123	40.27	TR96432	54.01
7.0mm	.2756	1-1/2	6	6	.2485	TR96124	40.27	TR96433	54.01
J	.2770	1-1/2	6	6	.2485	TR96125	40.27	TR96434	54.01
K	.2810	1-1/2	6	6	.2485	TR96126	40.27	TR96435	54.01
9/32	.2812	1-1/2	6	6	.2485	TR96127	38.23	TR96436	51.30
L	.2900	1-1/2	6	6	.2792	TR96128	40.27	TR96437	54.01
M	.2950	1-1/2	6	6	.2792	TR96129	40.27	TR96438	54.01
7.5mm	.2953	1-1/2	6	6	.2792	TR96130	40.27	TR96439	54.01
19/64	.2969	1-1/2	6	6	.2792	TR96131	40.27	TR96440	54.01
N	.3020	1-1/2	6	6	.2792	TR96132	40.27	TR96441	54.01
o/u	.3115	1-1/2	6	6	.2792	TR96133	38.23	TR96442	51.30
5/16	.3125	1-1/2	6	6	.2792	TR96134	36.30	TR96443	48.59
o/u	.3135	1-1/2	6	6	.2792	TR96135	38.23	TR96444	51.30
8.0mm	.3150	1-1/2	6	6	.2792	TR96136	40.27	TR96445	54.01
O	.3160	1-1/2	6	6	.2792	TR96137	40.27	TR96446	54.01
P	.3230	1-1/2	6	6	.2792	TR96138	43.06	TR96447	58.20

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THRU 1/2" DIAMETER	1/2" TO 5/8"	5/8" TO 1-1/2"	1-1/2" TO 2"
+ .0002, -.0000	+ .0003, -.0000	+ .0001, +.0004	+ .0002, +.0006

MADE IN THE
USA

Chucking Reamers



STRAIGHT SHANK - STRAIGHT FLUTE



**TAKE
55% OFF
LIST
PRICES!**

SIZE	DEC. EQUIV.	FLUTE LENGTH	# OF FLUTES	OVERALL LENGTH	SHANK DIA.	SERIES 933		SERIES 1933	
						HSS	LIST PRICE	M42 COBALT	LIST PRICE
21/64	.3281	1-1/2	6	6	.2792	TR96139	43.06	TR96448	58.20
Q	.3320	1-1/2	6	6	.2792	TR96140	43.06	TR96449	58.20
8.5mm	.3346	1-1/2	6	6	.2792	TR96141	43.06	TR96450	58.20
R	.3390	1-1/2	6	6	.2792	TR96142	43.06	TR96451	58.20
11/32	.3438	1-1/2	6	6	.2792	TR96143	43.06	TR96452	58.20
S	.3480	1-3/4	6	6	.3105	TR96144	43.50	TR96453	59.17
9.0mm	.3543	1-3/4	6	7	.3105	TR96145	43.50	TR96454	59.17
T	.3580	1-3/4	6	7	.3105	TR96146	43.50	TR96455	59.17
23/64	.3594	1-3/4	6	7	.3105	TR96147	43.50	TR96456	59.17
U	.3680	1-3/4	6	7	.3105	TR96148	43.50	TR96457	59.17
9.5mm-o/u	.3740	1-3/4	6	7	.3105	TR96149	41.31	TR96458	56.16
3/8	.3750	1-3/4	6	7	.3105	TR96150	39.09	TR96459	53.23
o/u	.3760	1-3/4	6	7	.3105	TR96151	41.31	TR96460	56.16
V	.3770	1-3/4	6	7	.3105	TR96152	47.29	TR96461	72.12
W	.3860	1-3/4	6	7	.3105	TR96153	47.29	TR96462	72.12
25/64	.3906	1-3/4	6	7	.3105	TR96154	47.29	TR96463	72.12
10.0mm	.3937	1-3/4	6	7	.3105	TR96155	47.29	TR96464	72.12
X	.3970	1-3/4	6	7	.3105	TR96156	47.29	TR96465	72.12
Y	.4040	1-3/4	6	7	.3105	TR96157	49.07	TR96466	72.12
13/32	.4062	1-3/4	6	7	.3105	TR96158	49.07	TR96467	72.12
Z	.4130	1-3/4	6	7	.3730	TR96159	49.07	TR96468	72.12
10.5mm	.4134	1-3/4	6	7	.3730	TR96160	49.55	TR96469	72.12
27/64	.4219	1-3/4	6	7	.3730	TR96161	49.07	TR96470	72.12
11.0mm	.4331	1-3/4	6	7	.3730	TR96162	49.07	TR96471	72.12
o/u	.4365	1-3/4	6	7	.3730	TR96163	46.62	TR96472	72.12
7/16	.4375	1-3/4	6	7	.3730	TR96164	46.62	TR96473	72.12
o/u	.4385	1-3/4	6	7	.3730	TR96165	46.62	TR96474	72.12
11.5mm	.4528	1-3/4	6	7	.3730	TR96166	53.45	TR96475	82.66
29/64	.4531	1-3/4	6	7	.3730	TR96167	53.45	TR96476	82.66
15/32	.4688	1-3/4	6	7	.3730	TR96168	53.45	TR96477	82.66
12.0mm	.4724	2	6	8	.4355	TR96169	53.45	TR96478	82.66
31/64	.4844	2	6	8	.4355	TR96170	53.45	TR96479	82.66
12.5mm	.4921	2	6	8	.4355	TR96171	53.45	TR96480	82.66
o/u	.4990	2	6	8	.4355	TR96172	50.74	TR96481	82.66
1/2	.5000	2	6	8	.4355	TR96173	50.74	TR96482	82.66
o/u	.5010	2	6	8	.4355	TR96174	50.74	TR96483	82.66
13.0mm	.5118	2	6	8	.4355	TR96175	66.22	-	-
33/64	.5156	2	6	8	.4355	TR96176	66.22	-	-
17/32	.5312	2	6	8	.4355	TR96177	63.07	TR96484	92.72
13.5mm	.5315	2	6	8	.4355	TR96178	66.22	-	-
35/64	.5469	2	8	8	.4355	TR96179	66.22	-	-
14.0mm	.5512	2	8	8	.4355	TR96180	66.22	-	-
o/u	.5615	2	8	8	.4355	TR96181	66.22	-	-
9/16	.5625	2	8	8	.4355	TR96182	63.07	TR96485	92.72
o/u	.5635	2	8	8	.4355	TR96183	66.22	-	-
14.5mm	.5709	2	8	8	.4355	TR96184	66.22	-	-

CONTINUED ON NEXT PAGE

THRU 1/2" DIAMETER	1/2" TO 5/8"	5/8" TO 1-1/2"	1-1/2" TO 2"
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Chucking Reamers

STRAIGHT SHANK - STRAIGHT FLUTE



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SIZE	DEC. EQUIV.	FLUTE LENGTH	# OF FLUTES	OVERALL LENGTH	SHANK DIA.	SERIES 933		SERIES 1933	
						HSS	LIST PRICE	M42 COBALT	LIST PRICE
37/64	.5781	2	8	8	.4355	TR96185	66.22	-	-
15.0mm	.5906	2	8	8	.4355	TR96186	66.22	-	-
19/32	.5938	2	8	8	.4355	TR96187	63.07	TR96486	92.72
39/64	.6094	2-1/4	8	9	.5615	TR96188	77.28	-	-
15.5mm	.6102	2-1/4	8	9	.5615	TR96189	77.28	-	-
o/u	.6240	2-1/4	8	9	.5615	TR96190	77.28	-	-
5/8	.6250	2-1/4	8	9	.5615	TR96191	73.87	TR96487	108.20
o/u	.6260	2-1/4	8	9	.5615	TR96192	77.28	-	-
16.0mm	.6299	2-1/4	8	9	.5615	TR96193	77.28	-	-
41/64	.6406	2-1/4	8	9	.5615	TR96194	77.28	-	-
16.5mm	.6496	2-1/4	8	9	.5615	TR96195	77.28	-	-
21/32	.6562	2-1/4	8	9	.5615	TR96196	83.22	TR96488	122.31
17.0mm	.6693	2-1/4	8	9	.5615	TR96197	87.34	-	-
43/64	.6719	2-1/4	8	9	.5615	TR96198	87.34	-	-
o/u	.6865	2-1/4	8	9	.5615	TR96199	87.34	-	-
11/16	.6875	2-1/4	8	9	.5615	TR96200	83.22	TR96489	122.31
o/u	.6885	2-1/4	8	9	.5615	TR96201	93.76	-	-
17.5mm	.6890	2-1/4	8	9	.5615	TR96202	93.76	-	-
45/64	.7031	2-1/4	8	9	.5615	TR96203	93.76	-	-
18.0mm	.7087	2-1/4	8	9	.5615	TR96204	93.76	-	-
23/32	.7188	2-1/4	8	9	.5615	TR96205	92.87	TR96490	136.52
18.5mm	.7283	2-1/2	8	9	.6240	TR96206	97.48	-	-
47/64	.7344	2-1/2	8	9	.6240	TR96207	107.98	-	-
19.0mm	.7480	2-1/2	8	9	.6240	TR96208	107.98	-	-
o/u	.7490	2-1/2	8	9	.6240	TR96209	107.98	-	-
3/4	.7500	2-1/2	8	9	.6240	TR96210	93.43	TR96491	137.30
o/u	.7510	2-1/2	8	9	.6240	TR96211	103.93	-	-
49/64	.7656	2-1/2	8	9	.6240	TR96212	103.93	-	-
19.5mm	.7677	2-1/2	8	9	.6240	TR96213	103.93	-	-
25/32	.7812	2-1/2	8	9	.6240	TR96214	100.74	TR96492	148.07
20.0mm	.7874	2-1/2	8	9	.6240	TR96215	111.28	-	-
51/64	.7969	2-1/2	8	9	.6240	TR96216	111.28	-	-
20.5mm	.8071	2-1/2	8	9	.6240	TR96217	111.28	-	-
o/u	.8115	2-1/2	8	9	.6240	TR96218	111.28	-	-
13/16	.8125	2-1/2	8	9	.6240	TR96219	100.74	TR96493	148.07
o/u	.8135	2-1/2			.6240	TR96220	111.28	-	-
21.0mm	.8268	2-1/2	8	9-1/2	.6240	TR96221	111.28	-	-
53/64	.8281	2-1/2	8	9-1/2	.6240	TR96222	111.28	-	-
27/32	.8438	2-1/2	8	9-1/2	.6240	TR96223	119.19	TR96494	175.20
21.5mm	.8465	2-5/8	8	10	.7490	TR96224	129.73	-	-
55/64	.8594	2-5/8	8	10	.7490	TR96225	129.73	-	-
22.0mm	.8661	2-5/8	8	10	.7490	TR96226	129.73	-	-
o/u	.8740	2-5/8	8	10	.7490	TR96227	129.73	-	-
7/8	.8750	2-5/8	8	10	.7490	TR96228	121.94	TR96495	179.29
o/u	.8760	2-5/8	8	10	.7490	TR96229	132.52	-	-
22.5mm	.8858	2-5/8	8	10	.7490	TR96230	132.52	-	-

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THRU 1/2" DIAMETER	1/2" TO 5/8"	5/8" TO 1-1/2"	1-1/2" TO 2"
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Chucking Reamers

STRAIGHT SHANK - STRAIGHT FLUTE



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SIZE	DEC. EQUIV.	FLUTE LENGTH	# OF FLUTES	OVERALL LENGTH	SHANK DIA.	SERIES 933		SERIES 1933	
						HSS	LIST PRICE	M42 COBALT	LIST PRICE
57/64	.8906	2-5/8	8	10	.7490	TR96231	132.52	-	-
23.0mm	.9055	2-5/8	8	10	.7490	TR96232	132.52	-	-
29/32	.9062	2-5/8	8	10	.7490	TR96233	131.44	TR96496	193.17
59/64	.9219	2-5/8	8	10	.7490	TR96234	141.91	-	-
23.5mm	.9252	2-5/8	8	10	.7490	TR96235	141.91	-	-
o/u	.9365	2-5/8	8	10	.7490	TR96236	141.91	-	-
15/16	.9375	2-5/8	8	10	.7490	TR96237	131.44	TR96497	193.17
o/u	.9385	2-5/8	8	10	.7490	TR96238	141.91	-	-
24.0mm	.9449	2-5/8	8	10	.7490	TR96239	141.91	-	-
61/64	.9531	2-5/8	8	10	.7490	TR96240	141.91	-	-
24.5mm	.9646	2-5/8	8	10	.7490	TR96241	141.91	-	-
31/32	.9688	2-5/8	8	10	.7490	TR96242	147.22	TR96498	216.33
25.0mm	.9843	2-3/4	8	10-1/2	.8740	TR96243	150.67	-	-
63/64	.9844	2-3/4	8	10-1/2	.8740	TR96244	150.67	-	-
o/u	.9990	2-3/4	8	10-1/2	.8740	TR96245	150.67	-	-
1	1.0000	2-3/4	8	10-1/2	.8740	TR96246	148.59	TR96499	218.37
o/u	1.0010	2-3/4	8	10-1/2	.8740	TR96247	159.09	-	-
1-1/32	1.0312	2-3/4	8	10-1/2	.8740	TR96248	206.72	-	-
1-1/16	1.0625	2-3/4	8	10-1/2	.8740	TR96249	164.70	TR96500	242.09
1-3/32	1.0938	2-7/8	8	11	.8740	TR96250	217.11	-	-
1-1/8	1.1250	2-7/8	8	11	.8740	TR96251	175.05	TR96501	257.27
1-5/32	1.1562	2-7/8	10	11	.9990	TR96252	247.03	-	-
1-3/16	1.1875	2-7/8	10	11	.9990	TR96253	205.01	TR96502	301.37
1-7/32	1.2188	3	10	11-1/2	.9990	TR96254	259.32	-	-
1-1/4	1.2500	3	10	11-1/2	.9990	TR96255	217.26	TR96503	319.34
1-9/32	1.2812	3	10	11-1/2	.9990	TR96256	295.51	-	-
1-5/16	1.3125	3	10	11-1/2	.9990	TR96257	253.41	TR96504	372.45
1-11/32	1.3438	3-1/4	10	12	.9990	TR96258	308.35	-	-
1-3/8	1.3750	3-1/4	10	12	.9990	TR96259	266.29	TR96505	391.46
1-13/32	1.4062	3-1/4	10	12	1.2490	TR96260	327.61	-	-
1-7/16	1.4375	3-1/4	10	12	1.2490	TR96261	285.56	TR96506	419.86
1-15/32	1.4688	3-1/2	10	12-1/2	1.2490	TR96262	349.59	-	-
1-1/2	1.5000	3-1/2	10	12-1/2	1.2490	TR96263	307.50	TR96507	452.04
1-9/16	1.5625	3-1/2	12	13	1.2490	TR96910	435.33	-	-
1-5/8	1.6250	3-1/2	12	13	1.2490	TR96911	435.33	-	-
1-11/16	1.6875	4	12	13-1/2	1.2490	TR96912	499.96	-	-
1-3/4	1.7500	4	12	13-1/2	1.2490	TR96913	499.96	-	-
1-13/16	1.8125	4	12	14	1.4990	TR96914	575.83	-	-
1-7/8	1.8750	4	12	14	1.4990	TR96915	575.83	-	-
1-15/16	1.9375	4	12	14	1.4990	TR96916	675.27	-	-
2	2.0000	4	12	14	1.4990	TR96917	675.27	-	-

THRU 1/2" DIAMETER	1/2" TO 5/8"	5/8" TO 1-1/2"	1-1/2" TO 2"
+ .0002, -.0000	+ .0003, -.0000	+ .0001, +.0004	+ .0002, +.0006



YOUR #1 SOURCE FOR AMERICAN-MADE PREMIUM CUTTING TOOLS

Chucking Reamers

MADE IN THE
USA

STOCKED INTERMEDIATE SIZES - HIGH SPEED STEEL

DEC SIZE	ITEM#	LIST PRICE	DEC SIZE	ITEM#	LIST PRICE	DEC SIZE	ITEM#	LIST PRICE	DEC SIZE	ITEM#	LIST PRICE	DEC SIZE	ITEM#	LIST PRICE	DEC SIZE	ITEM#	LIST PRICE
0.0140	TR94007	41.50	0.0610	TR94075	32.66	0.1030	TR94143	29.29	0.1430	TR94211	32.66	0.1845	TR94279	32.26	0.2265	TR94347	40.35
0.0150	TR94008	41.50	0.0615	TR94076	32.66	0.1035	TR94144	29.29	0.1435	TR94212	32.66	0.1855	TR94280	32.26	0.2270	TR94348	40.35
0.0155	TR94009	41.50	0.0620	TR94077	32.66	0.1045	TR94145	29.29	0.1445	TR94213	32.66	0.1860	TR94281	32.26	0.2275	TR94349	40.35
0.0165	TR94010	41.50	0.0630	TR94078	29.29	0.1050	TR94146	29.29	0.1450	TR94214	32.66	0.1870	TR94282	32.26	0.2285	TR94350	40.35
0.0170	TR94011	41.50	0.0640	TR94079	29.29	0.1055	TR94147	29.29	0.1455	TR94215	32.66	0.1880	TR94283	40.72	0.2290	TR94351	40.35
0.0175	TR94012	41.50	0.0645	TR94080	29.29	0.1060	TR94148	29.29	0.1460	TR94216	32.66	0.1895	TR94284	40.72	0.2295	TR94352	40.35
0.0185	TR94013	41.50	0.0650	TR94081	29.29	0.1070	TR94149	29.29	0.1465	TR94217	32.66	0.1900	TR94285	40.72	0.2300	TR94353	40.35
0.0190	TR94014	41.50	0.0655	TR94082	29.29	0.1075	TR94150	29.29	0.1475	TR94218	32.66	0.1905	TR94286	40.72	0.2305	TR94354	40.35
0.0195	TR94015	41.50	0.0660	TR94083	29.29	0.1080	TR94151	29.29	0.1480	TR94219	32.66	0.1915	TR94287	40.72	0.2310	TR94355	40.35
0.0205	TR94016	37.79	0.0665	TR94084	29.29	0.1085	TR94152	29.29	0.1485	TR94220	32.66	0.1920	TR94288	40.72	0.2315	TR94356	40.35
0.0215	TR94017	37.79	0.0675	TR94085	29.29	0.1090	TR94153	29.29	0.1490	TR94221	32.66	0.1925	TR94289	40.72	0.2320	TR94357	40.35
0.0220	TR94018	37.79	0.0680	TR94086	29.29	0.1095	TR94154	25.32	0.1500	TR94222	32.66	0.1930	TR94290	40.72	0.2325	TR94358	40.35
0.0230	TR94019	37.79	0.0685	TR94087	29.29	0.1105	TR94155	25.32	0.1505	TR94223	32.66	0.1940	TR94291	40.72	0.2330	TR94359	40.35
0.0235	TR94020	37.79	0.0690	TR94088	29.29	0.1115	TR94156	25.32	0.1510	TR94224	32.66	0.1945	TR94292	40.72	0.2335	TR94360	40.35
0.0245	TR94021	37.79	0.0695	TR94089	29.29	0.1120	TR94157	25.32	0.1515	TR94225	32.66	0.1950	TR94293	40.72	0.2345	TR94361	36.38
0.0255	TR94022	37.79	0.0705	TR94090	29.29	0.1125	TR94158	25.32	0.1525	TR94226	32.66	0.1955	TR94294	40.72	0.2350	TR94362	36.38
0.0265	TR94023	37.79	0.0710	TR94091	29.29	0.1135	TR94159	25.32	0.1530	TR94227	32.66	0.1965	TR94295	40.72	0.2355	TR94363	36.38
0.0270	TR94024	37.79	0.0715	TR94092	29.29	0.1140	TR94160	25.32	0.1535	TR94228	32.66	0.1970	TR94296	40.72	0.2360	TR94364	36.38
0.0275	TR94025	37.79	0.0720	TR94093	29.29	0.1145	TR94161	25.32	0.1545	TR94229	32.66	0.1975	TR94297	40.72	0.2365	TR94365	36.38
0.0285	TR94026	37.79	0.0725	TR94094	29.29	0.1150	TR94162	25.32	0.1550	TR94230	32.66	0.1980	TR94298	40.72	0.2370	TR94366	36.38
0.0290	TR94027	37.79	0.0735	TR94095	29.29	0.1155	TR94163	25.32	0.1555	TR94231	32.66	0.1985	TR94299	40.72	0.2375	TR94367	36.38
0.0295	TR94028	34.34	0.0740	TR94096	29.29	0.1165	TR94164	25.32	0.1560	TR94232	32.66	0.1995	TR94300	40.72	0.2385	TR94368	36.38
0.0300	TR94029	34.34	0.0745	TR94097	29.29	0.1170	TR94165	25.32	0.1565	TR94233	34.34	0.2000	TR94301	40.72	0.2390	TR94369	36.38
0.0305	TR94030	34.34	0.0750	TR94098	29.29	0.1175	TR94166	25.32	0.1580	TR94234	34.34	0.2005	TR94302	40.72	0.2395	TR94370	36.38
0.0315	TR94031	34.34	0.0755	TR94099	29.29	0.1180	TR94167	25.32	0.1585	TR94235	34.34	0.2015	TR94303	40.72	0.2400	TR94371	36.38
0.0325	TR94032	34.34	0.0765	TR94100	29.29	0.1185	TR94168	25.32	0.1595	TR94236	34.34	0.2020	TR94304	40.72	0.2405	TR94372	36.38
0.0335	TR94033	34.34	0.0770	TR94101	29.29	0.1190	TR94169	25.32	0.1600	TR94237	34.34	0.2025	TR94305	40.72	0.2410	TR94373	36.38
0.0340	TR94034	34.34	0.0775	TR94102	29.29	0.1195	TR94170	25.32	0.1605	TR94238	34.34	0.2030	TR94306	40.72	0.2415	TR94374	36.38
0.0345	TR94035	34.34	0.0780	TR94103	29.29	0.1205	TR94171	25.32	0.1615	TR94239	34.34	0.2035	TR94307	39.68	0.2425	TR94375	36.38
0.0355	TR94036	34.34	0.0790	TR94104	29.29	0.1210	TR94172	25.32	0.1620	TR94240	34.34	0.2045	TR94308	39.68	0.2430	TR94376	36.38
0.0365	TR94037	34.34	0.0795	TR94105	29.29	0.1215	TR94173	25.32	0.1625	TR94241	34.34	0.2050	TR94309	39.68	0.2435	TR94377	36.38
0.0375	TR94038	34.34	0.0800	TR94106	29.29	0.1220	TR94174	25.32	0.1630	TR94242	34.34	0.2060	TR94310	39.68	0.2440	TR94378	36.38
0.0385	TR94039	34.34	0.0805	TR94107	29.29	0.1225	TR94175	25.32	0.1635	TR94243	34.34	0.2065	TR94311	39.68	0.2445	TR94379	36.38
0.0395	TR94040	32.66	0.0815	TR94108	29.29	0.1230	TR94176	25.32	0.1640	TR94244	34.34	0.2070	TR94312	39.68	0.2450	TR94380	36.38
0.0405	TR94041	32.66	0.0825	TR94109	29.29	0.1235	TR94177	25.32	0.1645	TR94245	34.34	0.2075	TR94313	39.68	0.2455	TR94381	36.38
0.0415	TR94042	32.66	0.0830	TR94110	29.29	0.1245	TR94178	25.32	0.1650	TR94246	34.34	0.2080	TR94314	39.68	0.2465	TR94382	36.38
0.0425	TR94043	32.66	0.0835	TR94111	29.29	0.1247	TR94179	25.32	0.1655	TR94247	34.34	0.2085	TR94315	39.68	0.2470	TR94383	36.38
0.0435	TR94044	32.66	0.0840	TR94112	29.29	0.1255	TR94180	34.34	0.1665	TR94248	34.34	0.2095	TR94316	39.68	0.2475	TR94384	36.38
0.0440	TR94045	32.66	0.0845	TR94113	29.29	0.1265	TR94181	34.34	0.1670	TR94249	34.34	0.2100	TR94317	39.68	0.2480	TR94385	36.38
0.0445	TR94046	32.66	0.0850	TR94114	29.29	0.1270	TR94182	34.34	0.1675	TR94250	34.34	0.2105	TR94318	39.68	0.2485	TR94386	36.38
0.0450	TR94047	32.66	0.0855	TR94115	29.29	0.1275	TR94183	34.34	0.1680	TR94251	34.34	0.2110	TR94319	39.68	0.2495	TR94387	36.38
0.0455	TR94048	32.66	0.0865	TR94116	29.29	0.1280	TR94184	34.34	0.1685	TR94252	34.34	0.2115	TR94320	39.68	0.2505	TR94388	46.40
0.0460	TR94049	32.66	0.0870	TR94117	29.29	0.1290	TR94185	34.34	0.1690	TR94253	34.34	0.2120	TR94321	39.68	0.2515	TR94389	46.40
0.0470	TR94050	32.66	0.0875	TR94118	29.29	0.1295	TR94186	34.34	0.1700	TR94254	34.34	0.2125	TR94322	39.68	0.2520	TR94390	46.40
0.0475	TR94051	32.66	0.0880	TR94119	29.29	0.1300	TR94187	34.34	0.1705	TR94255	34.34	0.2135	TR94323	39.68	0.2525	TR94391	46.40
0.0480	TR94052	32.66	0.0885	TR94120	29.29	0.1305	TR94188	34.34	0.1710	TR94256	34.34	0.2140	TR94324	39.68	0.2530	TR94392	46.40
0.0485	TR94053	32.66	0.0895	TR94121	29.29	0.1310	TR94189	34.34	0.1715	TR94257	34.34	0.2145	TR94325	39.68	0.2535	TR94393	46.40
0.0490	TR94054	32.66	0.0900	TR94122	29.29	0.1315	TR94190	34.34	0.1720	TR94258	32.26	0.2150	TR94326	39.68	0.2540	TR94394	46.40
0.0495	TR94055	32.66	0.0905	TR94123	29.29	0.1320	TR94191	34.34	0.1725	TR94259	32.26	0.2155	TR94327	39.68	0.2545	TR94395	46.40
0.0500	TR94056	32.66	0.0910	TR94124	29.29	0.1325	TR94192	34.34	0.1735	TR94260	32.26	0.2160	TR94328	39.68	0.2550	TR94396	46.40
0.0505	TR94057	32.66	0.0915	TR94125	29.29	0.1330	TR94193	34.34	0.1740	TR94261	32.26	0.2170	TR94329	39.68	0.2555	TR94397	46.40
0.0510	TR94058	32.66	0.0920	TR94126	29.29	0.1335	TR94194	34.34	0.1745	TR94262	32.26	0.2175	TR94330	39.68	0.2560	TR94398	46.40
0.0515	TR94059	32.66	0.0925	TR94127	29.29	0.1340	TR94195	34.34	0.1750	TR94263	32.26	0.2180	TR94331	39.68	0.2565	TR94399	46.40
0.0525	TR94060	32.66	0.0930	TR94128	29.29	0.1345	TR94196	34.34	0.1755	TR94264	32.26	0.2185	TR94332	39.68	0.2575	TR94400	46.40
0.0530	TR94061	32.66	0.0940	TR94129	29.29	0.1350	TR94197	34.34	0.1760	TR94265	32.26	0.2190	TR94333	40.35	0.2580	TR94401	46.40
0.0535	TR94062	32.66	0.0945	TR94130	29.29	0.1355	TR94198	34.34	0.1765	TR94266	32.26	0.2195	TR94334	40.35	0.2585	TR94402	46.40
0.0540	TR94063	32.66	0.0950	TR94131	29.29	0.1365	TR94199	34.34	0.1775	TR94267	32.26	0.2200	TR94335	40.35	0.2590	TR94403	46.40
0.0545	TR94064	32.66	0.0955	TR94132	29.29	0.1370	TR94200	34.34	0.1780	TR94268	32.26	0.2205	TR94336	40.35	0.2595	TR94404	46.40
0.0555	TR94065	32.66	0.0965	TR94133	29.29	0.1375	TR94201	34.34	0.1785	TR94269	32.26	0.2215	TR94337	40.35	0.2600	TR94405	46.40
0.0560	TR94066	32.66	0.0970	TR94134	29.29	0.1380	TR94202	34.34	0.1790	TR94270	32.26	0.2220	TR94338	40.35	0.2605	TR94406	46.40
0.0565	TR94067	32.66	0.0975	TR94135	29.29	0.1385	TR94203	34.34	0.1795	TR94271	32.26	0.2225	TR94339	40.35	0.2615	TR94407	46.40
0.0570	TR94068	32.66	0.0985	TR94136	29.29	0.1390	TR										

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STOCKED INTERMEDIATE SIZES - HIGH SPEED STEEL

DEC SIZE	ITEM#	LIST PRICE	DEC SIZE	ITEM#	LIST PRICE	DEC SIZE	ITEM#	LIST PRICE	DEC SIZE	ITEM#	LIST PRICE	DEC SIZE	ITEM#	LIST PRICE	DEC SIZE	ITEM#	LIST PRICE
0.3030	TR94483	41.54	0.3410	TR94551	48.92	0.3785	TR94619	53.53	0.4145	TR94687	54.90	0.4500	TR94755	58.39	0.4840	TR94823	58.39
0.3035	TR94484	41.54	0.3415	TR94552	48.92	0.3790	TR94620	53.53	0.4150	TR94688	54.90	0.4505	TR94756	58.39	0.4845	TR94824	54.90
0.3040	TR94485	41.54	0.3420	TR94553	48.92	0.3795	TR94621	53.53	0.4155	TR94689	54.90	0.4510	TR94757	58.39	0.4850	TR94825	54.90
0.3045	TR94486	41.54	0.3425	TR94554	48.92	0.3800	TR94622	53.53	0.4160	TR94690	54.90	0.4515	TR94758	58.39	0.4855	TR94826	54.90
0.3050	TR94487	41.54	0.3430	TR94555	48.92	0.3805	TR94623	53.53	0.4165	TR94691	54.90	0.4520	TR94759	58.39	0.4860	TR94827	54.90
0.3055	TR94488	41.54	0.3435	TR94556	48.92	0.3810	TR94624	53.53	0.4170	TR94692	54.90	0.4525	TR94760	58.39	0.4865	TR94828	54.90
0.3060	TR94489	41.54	0.3440	TR94557	49.63	0.3815	TR94625	53.53	0.4175	TR94693	54.90	0.4530	TR94761	58.39	0.4870	TR94829	54.90
0.3065	TR94490	41.54	0.3445	TR94558	49.63	0.3820	TR94626	53.53	0.4180	TR94694	54.90	0.4535	TR94762	58.39	0.4875	TR94830	54.90
0.3070	TR94491	41.54	0.3450	TR94559	49.63	0.3825	TR94627	53.53	0.4185	TR94695	54.90	0.4540	TR94763	58.39	0.4880	TR94831	54.90
0.3075	TR94492	41.54	0.3455	TR94560	49.63	0.3830	TR94628	53.53	0.4190	TR94696	54.90	0.4545	TR94764	58.39	0.4885	TR94832	54.90
0.3080	TR94493	41.54	0.3460	TR94561	49.63	0.3835	TR94629	53.53	0.4195	TR94697	54.90	0.4550	TR94765	58.39	0.4890	TR94833	54.90
0.3085	TR94494	41.54	0.3465	TR94562	49.63	0.3840	TR94630	53.53	0.4200	TR94698	54.90	0.4555	TR94766	58.39	0.4895	TR94834	54.90
0.3090	TR94495	41.54	0.3470	TR94563	49.63	0.3845	TR94631	53.53	0.4205	TR94699	54.90	0.4560	TR94767	58.39	0.4900	TR94835	54.90
0.3095	TR94496	41.54	0.3475	TR94564	49.63	0.3850	TR94632	53.53	0.4210	TR94700	54.90	0.4565	TR94768	58.39	0.4905	TR94836	54.90
0.3100	TR94497	41.54	0.3485	TR94565	49.63	0.3855	TR94633	53.53	0.4215	TR94701	54.90	0.4570	TR94769	58.39	0.4910	TR94837	54.90
0.3105	TR94498	41.54	0.3490	TR94566	49.63	0.3865	TR94634	53.53	0.4220	TR94702	51.48	0.4575	TR94770	58.39	0.4915	TR94838	54.90
0.3110	TR94499	41.54	0.3495	TR94567	49.63	0.3870	TR94635	53.53	0.4225	TR94703	51.48	0.4580	TR94771	58.39	0.4920	TR94839	54.90
0.3120	TR94500	41.54	0.3500	TR94568	49.63	0.3875	TR94636	53.53	0.4230	TR94704	51.48	0.4585	TR94772	58.39	0.4925	TR94840	54.90
0.3130	TR94501	48.92	0.3505	TR94569	49.63	0.3880	TR94637	53.53	0.4235	TR94705	51.48	0.4590	TR94773	58.39	0.4930	TR94841	54.90
0.3140	TR94502	48.92	0.3510	TR94570	49.63	0.3885	TR94638	53.53	0.4240	TR94706	51.48	0.4595	TR94774	58.39	0.4935	TR94842	54.90
0.3145	TR94503	48.92	0.3515	TR94571	49.63	0.3890	TR94639	53.53	0.4245	TR94707	51.48	0.4600	TR94775	58.39	0.4940	TR94843	54.90
0.3155	TR94504	48.92	0.3520	TR94572	49.63	0.3895	TR94640	53.53	0.4250	TR94708	51.48	0.4605	TR94776	58.39	0.4945	TR94844	54.90
0.3165	TR94505	48.92	0.3525	TR94573	49.63	0.3900	TR94641	53.53	0.4255	TR94709	51.48	0.4610	TR94777	58.39	0.4950	TR94845	54.90
0.3170	TR94506	48.92	0.3530	TR94574	49.63	0.3905	TR94642	53.53	0.4260	TR94710	51.48	0.4615	TR94778	58.39	0.4955	TR94846	54.90
0.3175	TR94507	48.92	0.3535	TR94575	49.63	0.3910	TR94643	54.90	0.4265	TR94711	51.48	0.4620	TR94779	58.39	0.4960	TR94847	54.90
0.3180	TR94508	48.92	0.3540	TR94576	49.63	0.3915	TR94644	54.90	0.4270	TR94712	51.48	0.4625	TR94780	58.39	0.4965	TR94848	54.90
0.3185	TR94509	48.92	0.3545	TR94577	49.63	0.3920	TR94645	54.90	0.4275	TR94713	51.48	0.4630	TR94781	58.39	0.4970	TR94849	54.90
0.3190	TR94510	48.92	0.3550	TR94578	49.63	0.3925	TR94646	54.90	0.4280	TR94714	51.48	0.4635	TR94782	58.39	0.4975	TR94850	54.90
0.3195	TR94511	48.92	0.3555	TR94579	49.63	0.3930	TR94647	54.90	0.4285	TR94715	51.48	0.4640	TR94783	58.39	0.4980	TR94851	54.90
0.3200	TR94512	48.92	0.3560	TR94580	49.63	0.3935	TR94648	54.90	0.4290	TR94716	51.48	0.4645	TR94784	58.39	0.4985	TR94852	54.90
0.3205	TR94513	48.92	0.3565	TR94581	49.63	0.3940	TR94649	54.90	0.4295	TR94717	51.48	0.4650	TR94785	58.39	0.4995	TR94853	54.90
0.3210	TR94514	48.92	0.3570	TR94582	49.63	0.3945	TR94650	54.90	0.4300	TR94718	51.48	0.4655	TR94786	58.39	0.5005	TR94854	73.87
0.3215	TR94515	48.92	0.3575	TR94583	49.63	0.3950	TR94651	54.90	0.4305	TR94719	51.48	0.4660	TR94787	58.39	0.5015	TR94855	73.87
0.3220	TR94516	48.92	0.3585	TR94584	49.63	0.3955	TR94652	54.90	0.4310	TR94720	51.48	0.4665	TR94788	58.39	0.5020	TR94856	73.87
0.3225	TR94517	48.92	0.3590	TR94585	49.63	0.3960	TR94653	54.90	0.4315	TR94721	51.48	0.4670	TR94789	58.39	0.5025	TR94857	73.87
0.3235	TR94518	48.92	0.3595	TR94586	44.47	0.3965	TR94654	54.90	0.4320	TR94722	51.48	0.4675	TR94790	58.39	0.5030	TR94858	73.87
0.3240	TR94519	48.92	0.3600	TR94587	44.47	0.3975	TR94655	54.90	0.4325	TR94723	51.48	0.4680	TR94791	58.39	0.5035	TR94859	73.87
0.3245	TR94520	48.92	0.3605	TR94588	44.47	0.3980	TR94656	54.90	0.4330	TR94724	51.48	0.4685	TR94792	58.39	0.5040	TR94860	73.87
0.3250	TR94521	48.92	0.3610	TR94589	44.47	0.3985	TR94657	54.90	0.4335	TR94725	51.48	0.4690	TR94793	58.39	0.5045	TR94861	73.87
0.3255	TR94522	48.92	0.3615	TR94590	44.47	0.3990	TR94658	54.90	0.4340	TR94726	51.48	0.4695	TR94794	58.39	0.5050	TR94862	73.87
0.3260	TR94523	48.92	0.3620	TR94591	44.47	0.3995	TR94659	54.90	0.4345	TR94727	51.48	0.4700	TR94795	58.39	0.5060	TR94863	73.87
0.3265	TR94524	48.92	0.3625	TR94592	44.47	0.4000	TR94660	54.90	0.4350	TR94728	51.48	0.4705	TR94796	58.39	0.5070	TR94864	73.87
0.3270	TR94525	48.92	0.3630	TR94593	44.47	0.4005	TR94661	54.90	0.4355	TR94729	51.48	0.4710	TR94797	58.39	0.5080	TR94865	73.87
0.3275	TR94526	48.92	0.3635	TR94594	44.47	0.4010	TR94662	54.90	0.4360	TR94730	51.48	0.4715	TR94798	58.39	0.5090	TR94866	73.87
0.3280	TR94527	48.92	0.3640	TR94595	44.47	0.4015	TR94663	54.90	0.4370	TR94731	51.48	0.4720	TR94799	58.39	0.5100	TR94867	73.87
0.3285	TR94528	48.92	0.3645	TR94596	44.47	0.4020	TR94664	54.90	0.4380	TR94732	58.39	0.4725	TR94800	58.39	0.5600	TR94868	72.35
0.3290	TR94529	48.92	0.3650	TR94597	44.47	0.4025	TR94665	54.90	0.4390	TR94733	58.39	0.4730	TR94801	58.39	0.5605	TR94869	72.35
0.3295	TR94530	48.92	0.3655	TR94598	44.47	0.4030	TR94666	54.90	0.4395	TR94734	58.39	0.4735	TR94802	58.39	0.5610	TR94870	72.35
0.3300	TR94531	48.92	0.3660	TR94599	44.47	0.4035	TR94667	54.90	0.4400	TR94735	58.39	0.4740	TR94803	58.39	0.5620	TR94871	72.35
0.3305	TR94532	48.92	0.3665	TR94600	44.47	0.4045	TR94668	54.90	0.4405	TR94736	58.39	0.4745	TR94804	58.39	0.5630	TR94872	83.07
0.3310	TR94533	48.92	0.3670	TR94601	44.47	0.4050	TR94669	54.90	0.4410	TR94737	58.39	0.4750	TR94805	58.39	0.5640	TR94873	83.07
0.3315	TR94534	48.92	0.3675	TR94602	44.47	0.4055	TR94670	54.90	0.4415	TR94738	58.39	0.4755	TR94806	58.39	0.5645	TR94874	83.07
0.3325	TR94535	48.92	0.3685	TR94603	44.47	0.4060	TR94671	54.90	0.4420	TR94739	58.39	0.4760	TR94807	58.39	0.5650	TR94875	83.07
0.3330	TR94536	48.92	0.3690	TR94604	44.47	0.4065	TR94672	54.90	0.4425	TR94740	58.39	0.4765	TR94808	58.39	0.5655	TR94876	83.07
0.3335	TR94537	48.92	0.3695	TR94605	44.47	0.4070	TR94673	54.90	0.4430	TR94741	58.39	0.4770	TR94809	58.39	0.6220	TR94877	83.44
0.3340	TR94538	48.92	0.3700	TR94606	44.47	0.4075	TR94674	54.90	0.4435	TR94742	58.39	0.4775	TR94810	58.39	0.6225	TR94878	83.44
0.3345	TR94539	48.92	0.3705	TR94607	44.47	0.4080	TR94675	54.90	0.4440	TR94743	58.39	0.4780	TR94811	58.39	0.6230	TR94879	83.44
0.3350	TR94540	48.92	0.3710	TR94608	44.47	0.4085	TR94676	54.90	0.4445	TR94744	58.39	0.4785	TR94812	58.39	0.6235	TR94880	83.44
0.3355	TR94541	48.92	0.3715	TR94609	44.47	0.4090	TR94677	54.90	0.4450	TR94745	58.39	0.4790	TR94813	58.39	0.6245	TR94881	83.44
0.3360	TR94542	48.92	0.3720	TR94610	44.47	0.4095	TR94678	54.90	0.4455	TR94746	58.39	0.4795	TR94814	58.39	0.6255	TR94882	93.21
0.3365	TR94543	48.92	0.3725	TR94611	44.47	0.4100	TR94679	54.90	0.4460	TR94747	58.39	0.4800	TR94815	58.39	0.6265	TR94883	93.21



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PRICES!****STRAIGHT SHANK - STRAIGHT FLUTE****SERIES 933**
HIGH SPEED STEEL**SPECIAL SIZES - QUANTITY PRICING**

SIZE RANGE	1	2	3-5	6-7	8-11	12-17	18-23	24-35	36-47	48-59	60-71	72-95	96+
.0135 - .0195	199.87	130.61	97.32	64.23	58.02	49.31	44.62	41.50	40.42	37.04	35.91	35.45	34.61
.0196 - .0290	181.71	118.74	88.54	58.38	52.72	46.22	40.55	37.79	35.04	33.63	33.49	33.43	33.31
.0291 - .0390	165.18	107.76	80.46	53.03	47.91	42.06	36.90	34.33	31.82	30.59	29.72	29.30	28.61
.0391 - .0624	149.30	99.40	80.46	51.15	46.11	39.96	35.16	32.67	30.13	28.28	27.84	27.73	27.55
.0626 - .1093	157.20	100.63	77.60	48.35	42.38	35.14	31.82	29.29	26.83	25.31	24.70	24.26	23.43
.1095 - .1249	155.12	98.46	72.94	42.26	37.10	33.95	27.84	25.31	24.95	24.54	24.13	23.69	23.50
.1251 - .1405	165.18	107.76	72.75	53.03	49.94	42.06	36.90	34.33	31.82	30.59	29.81	29.30	28.32
.1407 - .1561	162.68	106.06	80.54	51.42	46.11	40.28	35.16	32.67	30.84	30.13	29.45	28.75	28.03
.1563 - .1718	165.18	103.09	80.08	53.03	48.03	42.06	36.90	34.33	31.82	31.32	30.84	30.59	29.99
.1720 - .1874	158.42	98.89	80.03	49.40	44.39	39.68	34.90	32.26	31.91	31.43	30.98	30.19	29.81
.1876 - .2030	169.63	113.01	88.69	59.36	54.30	48.27	43.17	40.71	37.94	35.91	35.14	34.90	34.62
.2032 - .2187	169.63	113.01	87.73	58.45	53.41	47.28	42.12	39.69	37.10	34.90	34.47	34.06	33.89
.2189 - .2343	170.31	113.90	88.45	59.19	54.10	48.03	42.89	40.34	37.85	36.32	35.78	35.45	35.16
.2345 - .2499	170.31	113.90	84.19	54.92	49.80	43.93	38.91	36.37	33.68	33.49	33.04	32.69	32.55
.2501 - .2968	176.89	120.26	94.73	65.48	60.45	54.00	48.92	46.40	43.71	41.44	41.04	40.68	40.28
.2970 - .3124	171.97	115.39	89.86	60.49	55.41	49.31	44.12	41.53	41.36	41.00	40.80	40.52	40.28
.3126 - .3437	180.66	123.15	97.49	63.14	61.22	56.49	51.56	48.92	46.17	44.16	43.71	43.42	43.07
.3439 - .3593	180.40	123.82	98.22	68.91	63.80	59.89	51.56	49.63	47.10	44.85	44.39	44.04	43.71
.3595 - .3749	175.22	118.47	92.94	63.47	58.45	52.27	47.22	44.47	44.23	44.16	43.86	43.64	43.49
.3751 - .3905	183.41	126.88	101.50	71.92	66.86	61.29	56.07	53.52	51.05	48.35	48.09	47.69	47.28
.3907 - .4218	185.71	129.07	103.47	74.18	69.11	62.44	57.39	54.90	52.30	50.02	49.54	49.31	49.18
.4220 - .4374	182.21	125.69	99.96	70.78	65.74	59.19	54.00	51.48	51.05	50.88	50.66	49.61	49.07
.4376 - .4843	190.65	133.97	108.44	79.16	74.09	67.14	59.59	58.38	57.10	55.32	54.92	54.30	53.82
.4845 - .4999	186.16	129.53	103.95	74.55	69.61	62.71	55.07	54.90	54.46	54.25	53.82	53.63	53.46
.5001 - .5311	270.14	167.79	133.76	99.50	91.09	82.46	76.84	73.87	71.02	69.71	68.82	68.26	67.59
.5313 - .5624	268.63	166.22	132.12	97.92	89.50	80.86	75.31	72.36	69.44	68.03	67.18	66.55	66.25
.5626 - .5937	279.20	176.78	142.62	108.44	101.94	91.46	88.48	83.07	80.03	78.73	77.81	77.24	76.45
.5939 - .6249	279.59	177.07	142.94	108.77	100.35	91.82	86.14	83.44	80.36	79.08	78.11	77.60	77.27
.6251 - .6874	289.56	187.15	153.00	118.83	110.30	105.87	96.05	93.21	90.41	88.94	88.09	87.61	87.33
.6876 - .7187	298.93	196.61	162.42	127.84	119.50	111.15	105.52	102.75	99.93	98.46	97.52	96.84	96.29
.7189 - .7499	302.70	200.30	166.34	132.05	123.69	115.09	109.31	109.17	109.05	108.95	108.55	108.33	107.97
.7501 - .8124	314.64	212.30	178.30	144.05	135.56	127.06	121.35	118.49	115.65	114.24	113.41	112.75	111.99
.8126 - .8437	326.70	224.24	190.28	156.06	147.52	139.11	133.32	130.48	127.69	126.20	125.28	124.78	124.07
.8439 - .8749	329.73	227.34	193.14	158.96	150.48	141.99	136.21	133.85	132.60	129.07	128.15	127.61	125.19
.8751 - .9374	342.12	239.70	205.58	171.40	162.94	154.52	148.69	145.85	143.09	142.65	142.40	142.19	141.92
.9376 - .9687	356.33	252.41	219.82	185.71	177.20	168.69	162.94	160.09	157.29	155.97	154.91	154.58	153.72
.9689 - .9999	359.29	256.91	222.81	188.57	180.16	171.61	165.97	163.18	160.19	158.85	157.92	157.29	156.65
1.0001 - 1.0624	385.58	288.02	277.82	267.63	257.32	247.12	236.89	226.65	216.48	215.13	210.21	208.49	206.72
1.0626 - 1.1249	407.18	310.13	298.93	287.69	276.45	265.23	254.06	242.85	231.64	220.45	219.41	218.31	217.08
1.1251 - 1.1874	434.83	339.19	327.55	316.43	305.27	294.13	283.32	271.88	262.77	249.55	238.40	227.30	216.13
1.1876 - 1.2499	459.01	362.00	349.84	337.80	325.74	313.70	301.62	289.56	277.51	265.48	253.41	241.33	229.30
1.2501 - 1.3749	522.11	420.51	407.39	394.55	381.74	366.98	356.09	343.33	330.43	317.60	314.30	311.03	308.34
1.3751 - 1.4999	577.56	479.24	464.91	450.66	436.32	422.00	407.78	393.42	379.17	364.82	360.93	355.64	349.57

THRU 1/2" DIAMETER	ABOVE 1/2" TO 5/8"	ABOVE 5/8" TO 1-1/2"
+.0002, -.0000	+.0003, -.0000	+.0001, +.0004

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STRAIGHT SHANK - STRAIGHT FLUTE



SERIES 1933

M42 COBALT

SPECIAL SIZES - QUANTITY PRICING

SIZE RANGE	1	2	3-5	6-7	8-11	12-17	18-23	24-35	36-47	48-59	60-71	72-95	96+
.0135 - .0195	288.71	152.63	113.13	73.84	63.99	54.09	47.56	44.26	40.97	39.35	38.39	37.04	36.90
.0196 - .0290	262.50	138.68	102.85	67.12	58.17	49.18	43.17	40.22	37.28	37.10	37.06	37.04	36.90
.0291 - .0390	238.66	126.16	93.53	60.96	52.84	47.27	39.27	36.60	33.89	32.55	31.75	31.16	30.44
.0391 - .0624	217.28	124.25	91.67	59.05	50.90	42.77	37.39	34.67	31.94	30.60	30.42	30.17	29.90
.0626 - .1093	218.77	121.47	88.89	56.29	48.21	39.97	34.61	31.88	29.15	27.84	27.68	27.55	27.32
.1095 - .1249	213.77	116.40	83.90	51.30	43.16	35.06	29.63	28.02	26.43	25.97	25.60	25.27	24.97
.1251 - .1405	223.44	126.10	93.15	60.96	52.84	44.72	39.27	36.60	33.89	32.55	31.75	31.16	30.44
.1407 - .1561	221.59	124.25	91.67	59.05	50.90	42.77	37.39	34.67	31.94	30.60	30.19	30.09	29.87
.1563 - .1718	223.64	126.20	93.63	61.12	53.00	44.85	39.46	36.72	33.98	32.61	32.37	32.14	31.88
.1720 - .1874	222.00	124.72	92.09	59.59	52.83	43.31	37.86	35.16	32.44	32.37	32.18	31.94	31.93
.1876 - .2030	231.10	133.76	101.10	68.59	60.48	52.27	46.92	44.18	41.45	40.09	39.27	38.76	38.55
.2032 - .2343	230.12	132.83	100.27	67.67	59.59	51.48	45.99	44.57	43.13	42.68	42.41	42.06	41.40
.2345 - .2499	226.17	129.07	96.51	63.99	55.80	47.67	42.26	42.01	41.73	41.40	41.01	40.28	39.76
.2501 - .2968	246.33	149.03	116.34	83.90	75.71	67.61	62.05	59.41	56.73	55.37	54.96	54.16	54.00
.2970 - .3124	240.13	142.72	110.16	77.60	69.40	61.30	55.94	55.59	55.25	54.99	54.52	54.45	54.07
.3126 - .3437	249.39	151.97	119.38	86.86	78.73	70.54	65.16	62.43	59.67	59.44	59.10	58.54	58.23
.3439 - .3593	249.83	152.51	119.92	87.37	79.26	71.16	65.66	63.02	60.35	59.92	59.57	59.44	59.05
.3595 - .3749	244.12	146.75	114.19	81.57	73.45	65.30	59.89	59.73	59.57	59.36	29.81	59.23	58.99
.3751 - .3905	266.65	169.34	136.79	104.22	96.05	87.94	82.28	79.69	77.09	75.71	74.88	74.38	73.69
.3907 - .4218	270.06	172.81	140.16	107.61	99.51	91.34	85.91	83.22	80.52	79.26	78.26	77.77	77.09
.4220 - .4374	264.76	167.42	134.87	102.29	94.20	86.03	80.56	77.89	75.15	73.87	73.01	72.49	71.82
.4376 - .4843	277.62	180.33	147.74	115.20	107.08	98.90	93.59	90.87	88.13	86.74	85.91	85.40	84.69
.4845 - .4999	270.62	173.24	140.70	108.12	99.93	91.85	86.46	84.99	83.50	83.28	82.98	82.81	82.67
.5001 - .5311	285.55	186.81	154.58	119.37	116.06	112.95	109.89	106.81	103.71	100.64	97.52	94.45	91.41
.5313 - .5624	287.69	189.95	158.84	123.19	119.56	116.06	112.59	109.12	105.65	102.19	98.71	95.25	91.76
.5626 - .5937	293.14	194.85	162.81	126.97	123.01	119.13	115.28	121.21	107.58	103.71	99.86	95.99	92.10
.5939 - .6249	302.41	204.62	173.52	137.58	133.89	130.48	127.06	123.64	120.23	116.72	113.32	109.89	106.47
.6251 - .6874	312.03	213.86	184.36	148.23	144.89	141.74	138.60	135.45	132.28	129.17	127.24	122.80	119.72
.6876 - .7187	321.50	223.21	191.75	155.44	152.74	150.21	147.52	145.07	142.62	140.12	137.58	136.79	136.54
.7189 - .7499	332.86	235.63	206.32	169.71	165.75	161.83	157.96	154.10	150.21	146.31	142.40	138.53	134.60
.7501 - .8124	350.43	252.40	221.81	186.44	174.77	171.04	167.27	163.53	159.82	156.06	152.28	148.55	144.82
.8126 - .8437	368.07	271.10	239.01	206.01	196.24	192.88	189.67	186.44	183.16	179.87	176.61	173.39	170.14
.8439 - .8749	387.20	289.09	257.58	222.85	209.87	205.44	201.11	196.79	192.44	188.11	183.73	179.46	175.10
.8751 - .9374	402.65	304.15	273.00	236.63	223.44	219.00	214.65	210.25	205.87	201.50	197.08	195.16	193.13
.9376 - .9687	423.29	322.73	291.96	256.52	251.17	246.41	241.33	236.35	231.28	226.21	221.20	218.68	216.31
.9689 - .9999	438.01	340.01	309.85	275.19	268.31	261.54	254.82	248.14	241.47	234.81	228.11	221.38	214.69
1.0001 - 1.0624	471.31	373.18	341.33	305.91	298.40	285.77	283.29	275.79	268.28	260.72	253.19	245.60	238.15
1.0626 - 1.1249	504.91	407.17	375.95	341.35	331.44	321.88	312.24	302.66	293.01	283.48	273.87	264.27	254.69
1.1251 - 1.1874	537.48	438.01	409.62	371.60	362.98	354.52	346.13	337.67	329.25	320.76	312.29	303.90	295.40
1.1876 - 1.2499	571.54	475.28	444.59	407.53	396.58	386.30	375.96	365.73	355.50	345.22	334.96	324.66	314.46
1.2501 - 1.3749	605.87	506.03	473.06	439.44	432.77	423.39	419.43	412.79	406.12	399.46	392.80	392.37	391.47
1.3751 - 1.4999	639.49	541.15	510.49	474.90	470.21	465.82	461.39	458.58	455.77	454.81	454.02	452.92	452.02

THRU 1/2" DIAMETER	ABOVE 1/2" TO 5/8"	ABOVE 5/8" TO 1-1/2"
+0.002, -0.000	+0.003, -0.000	+0.001, +0.004

COBALT CHUCKING REAMERS ■ DECIMAL

Chucking Reamers

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STRAIGHT SHANK - RIGHT HAND SPIRAL - RIGHT HAND CUT



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SIZE	DEC. EQUIV.	FLUTE LENGTH	# OF FLUTES	OVERALL LENGTH	SHANK DIA.	SERIES 935R		SERIES 1935R	
						HSS	LIST PRICE	M42 COBALT	LIST PRICE
1.0mm	.0394	1/2	4	2-1/2	.0394	TR96550	32.11	TR96726	35.11
#60	.0400	1/2	4	2-1/2	.0390	TR96551	32.11	TR96727	35.11
#59	.0410	1/2	4	2-1/2	.0390	TR96552	32.11	TR96728	35.11
#58	.0420	1/2	4	2-1/2	.0390	TR96553	32.11	TR96729	35.11
#57	.0430	1/2	4	2-1/2	.0390	TR96554	32.11	TR96730	35.11
#56	.0465	1/2	4	2-1/2	.0455	TR96555	32.11	TR96731	35.11
3/64	.0469	1/2	4	2-1/2	.0455	TR96556	32.11	TR96732	35.11
#55	.0520	1/2	4	2-1/2	.0510	TR96557	32.11	TR96733	35.11
#54	.0550	1/2	4	2-1/2	.0510	TR96558	32.11	TR96734	35.11
1.5mm	.0591	1/2	4	2-1/2	.0510	TR96559	32.11	TR96735	35.11
#53	.0595	1/2	4	2-1/2	.0585	TR96560	32.11	TR96736	35.11
1/16	.0625	1/2	4	2-1/2	.0585	TR96561	32.11	TR96737	35.11
#52	.0635	1/2	4	2-1/2	.0585	TR96562	32.11	TR96738	35.11
#51	.0670	3/4	4	3	.0660	TR96563	25.84	TR96739	28.28
#50	.0700	3/4	4	3	.0660	TR96564	25.84	TR96740	28.28
#49	.0730	3/4	4	3	.0660	TR96565	25.84	TR96741	28.28
#48	.0760	3/4	4	3	.0720	TR96566	25.84	TR96742	28.28
5/64	.0781	3/4	4	3	.0720	TR96567	25.84	TR96743	28.28
#47	.0785	3/4	4	3	.0720	TR96568	25.84	TR96744	28.28
2.0mm	.0787	3/4	4	3	.0720	TR96569	25.84	TR96745	28.28
#46	.0810	3/4	4	3	.0771	TR96570	25.84	TR96746	28.28
#45	.0820	3/4	4	3	.0771	TR96571	25.84	TR96747	28.28
#44	.0860	3/4	4	3	.0810	TR96572	25.84	TR96748	28.28
#43	.0890	3/4	4	3	.0810	TR96573	25.84	TR96749	28.28
#42	.0935	3/4	4	3	.0880	TR96574	25.84	TR96750	28.28
3/32	.0938	3/4	4	3	.0880	TR96575	25.61	TR96751	28.28
#41	.0960	7/8	4	3-1/2	.0928	TR96576	26.02	TR96752	28.54
#40	.0980	7/8	4	3-1/2	.0928	TR96577	26.02	TR96753	28.54
2.5mm	.0984	7/8	4	3-1/2	.0928	TR96578	26.02	TR96754	28.54
#39	.0995	7/8	4	3-1/2	.0928	TR96579	26.02	TR96755	28.54
#38	.1015	7/8	4	3-1/2	.0950	TR96580	26.02	TR96756	28.54
#37	.1040	7/8	4	3-1/2	.0950	TR96581	26.02	TR96757	28.54
#36	.1065	7/8	4	3-1/2	.1030	TR96582	26.02	TR96758	28.54
7/64	.1094	7/8	4	3-1/2	.1030	TR96583	26.80	TR96759	29.44
#35	.1100	7/8	4	3-1/2	.1030	TR96584	26.80	TR96760	29.44
#34	.1110	7/8	4	3-1/2	.1055	TR96585	26.80	TR96761	29.44
#33	.1130	7/8	4	3-1/2	.1055	TR96586	26.80	TR96762	29.44
#32	.1160	7/8	4	3-1/2	.1120	TR96587	26.80	TR96763	29.44
3.0mm	.1181	7/8	4	3-1/2	.1120	TR96588	26.80	TR96764	29.44
#31	.1200	7/8	4	3-1/2	.1120	TR96589	26.80	TR96765	29.44
o/u	.1240	7/8	4	3-1/2	.1190	TR96590	26.80	TR96766	29.44
1/8	.1250	7/8	4	3-1/2	.1190	TR96591	24.16	TR96767	26.47
o/u	.1260	7/8	4	3-1/2	.1190	TR96592	26.80	TR96768	29.44
#30	.1285	7/8	4	3-1/2	.1190	TR96593	26.80	TR96769	29.44
#29	.1360	1	4	4	.1275	TR96594	32.11	TR96770	35.15
3.5mm	.1378	1	4	4	.1350	TR96595	32.11	TR96771	35.15

CONTINUED ON NEXT PAGE

THRU 1/2" DIAMETER	1/2" TO 5/8"	5/8" TO 1-1/2"	1-1/2" TO 2"
+ .0002, -.0000	+ .0003, -.0000	+ .0001, +.0004	+ .0002, +.0006

MADE IN THE
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Chucking Reamers



**TAKE
55% OFF
LIST
PRICES!**

STRAIGHT SHANK - RIGHT HAND SPIRAL - RIGHT HAND CUT



SIZE	DEC. EQUIV.	FLUTE LENGTH	# OF FLUTES	OVERALL LENGTH	SHANK DIA.	SERIES 935R		SERIES 1935R	
						HSS	LIST PRICE	M42 COBALT	LIST PRICE
#28	.1405	1	4	4	.1350	TR96596	32.11	TR96772	35.15
9/64	.1406	1	4	4	.1350	TR96597	32.11	TR96773	35.15
#27	.1440	1	4	4	.1350	TR96598	32.11	TR96774	35.15
#26	.1470	1	4	4	.1430	TR96599	32.11	TR96775	35.15
#25	.1495	1	4	4	.1430	TR96600	32.11	TR96776	35.15
#24	.1520	1	4	4	.1460	TR96601	33.41	TR96777	35.15
#23	.1540	1	4	4	.1460	TR96602	33.41	TR96778	35.15
5/32	.1562	1	4	4	.1510	TR96603	33.41	TR96779	35.15
#22	.1570	1	6	4	.1510	TR96604	33.41	TR96780	35.15
4.0mm	.1575	1	6	4	.1510	TR96605	33.41	TR96781	35.15
#21	.1590	1-1/8	6	4-1/2	.1530	TR96606	34.26	TR96782	37.53
#20	.1610	1-1/8	6	4-1/2	.1530	TR96607	34.26	TR96783	37.53
#19	.1660	1-1/8	6	4-1/2	.1595	TR96608	34.26	TR96784	37.53
#18	.1695	1-1/8	6	4-1/2	.1595	TR96609	34.26	TR96785	37.53
11/64	.1719	1-1/8	6	4-1/2	.1645	TR96610	34.26	TR96786	37.53
#17	.1730	1-1/8	6	4-1/2	.1645	TR96611	34.26	TR96787	37.53
#16	.1770	1-1/8	6	4-1/2	.1704	TR96612	34.26	TR96788	37.53
4.5mm	.1772	1-1/8	6	4-1/2	.1704	TR96613	34.26	TR96789	37.53
#15	.1800	1-1/8	6	4-1/2	.1755	TR96614	34.26	TR96790	37.53
#14	.1820	1-1/8	6	4-1/2	.1755	TR96615	34.26	TR96791	37.53
#13	.1850	1-1/8	6	4-1/2	.1805	TR96616	34.26	TR96792	37.53
o/u	.1865	1-1/8	6	4-1/2	.1805	TR96617	34.26	TR96793	37.53
3/16	.1875	1-1/8	6	4-1/2	.1805	TR96618	32.55	TR96794	35.63
o/u	.1885	1-1/8	6	4-1/2	.1805	TR96619	34.26	TR96795	37.53
#12	.1890	1-1/8	6	4-1/2	.1805	TR96620	34.26	TR96796	37.53
#11	.1910	1-1/4	6	5	.1860	TR96621	38.38	TR96797	42.06
#10	.1935	1-1/4	6	5	.1860	TR96622	38.38	TR96798	42.06
#9	.1960	1-1/4	6	5	.1895	TR96623	38.38	TR96799	42.06
5.0mm	.1969	1-1/4	6	5	.1895	TR96624	38.38	TR96800	42.06
#8	.1990	1-1/4	6	5	.1895	TR96625	38.38	TR96801	42.06
#7	.2010	1-1/4	6	5	.1895	TR96626	38.38	TR96802	42.06
13/64	.2031	1-1/4	6	5	.1945	TR96627	38.38	TR96803	42.06
#6	.2040	1-1/4	6	5	.1945	TR96628	38.38	TR96804	42.06
#5	.2055	1-1/4	6	5	.2016	TR96629	38.38	TR96805	42.06
#4	.2090	1-1/4	6	5	.2016	TR96630	38.38	TR96806	42.06
#3	.2130	1-1/4	6	5	.2075	TR96631	38.38	TR96807	42.06
5.5mm	.2165	1-1/4	6	5	.2075	TR96632	38.38	TR96808	42.06
7/32	.2188	1-1/4	6	5	.2075	TR96633	38.38	TR96809	42.06
#2	.2210	1-1/2	6	6	.2173	TR96634	39.46	TR96810	43.24
#1	.2280	1-1/2	6	6	.2173	TR96635	39.46	TR96811	43.24
A	.2340	1-1/2	6	6	.2265	TR96636	39.46	TR96812	43.24
15/64	.2344	1-1/2	6	6	.2265	TR96637	39.46	TR96813	43.24
6.0mm	.2362	1-1/2	6	6	.2265	TR96638	39.72	TR96814	45.51
B	.2380	1-1/2	6	6	.2329	TR96639	39.72	TR96815	45.51
C	.2420	1-1/2	6	6	.2329	TR96640	39.72	TR96816	45.51
D	.2460	1-1/2	6	6	.2329	TR96641	39.72	TR96817	41.39

CONTINUED ON NEXT PAGE

THRU 1/2" DIAMETER	1/2" TO 5/8"	5/8" TO 1-1/2"	1-1/2" TO 2"
+0.0002, -.0000	+0.0003, -.0000	+0.0001, +.0004	+0.0002, +.0006

Chucking Reamers

MADE IN THE
USA

STRAIGHT SHANK - RIGHT HAND SPIRAL - RIGHT HAND CUT



**TAKE
55% OFF
LIST
PRICES!**

SIZE	DEC. EQUIV.	FLUTE LENGTH	# OF FLUTES	OVERALL LENGTH	SHANK DIA.	SERIES 935R		SERIES 1935R	
						HSS	LIST PRICE	M42 COBALT	LIST PRICE
o/u	.2490	1-1/2	6	6	.2405	TR96642	42.39	TR96818	48.74
1/4	.2500	1-1/2	6	6	.2405	TR96643	33.82	TR96819	38.68
o/u	.2510	1-1/2	6	6	.2405	TR96644	42.39	TR96820	48.74
6.5mm	.2559	1-1/2	6	6	.2405	TR96645	39.72	TR96821	45.51
F	.2570	1-1/2	6	6	.2485	TR96646	39.72	TR96822	45.51
G	.2610	1-1/2	6	6	.2485	TR96647	39.72	TR96823	45.51
17/64	.2656	1-1/2	6	6	.2485	TR96648	44.32	TR96824	56.20
H	.2660	1-1/2	6	6	.2485	TR96649	44.32	TR96825	56.20
I	.2720	1-1/2	6	6	.2485	TR96650	44.32	TR96826	56.20
7.0mm	.2756	1-1/2	6	6	.2485	TR96651	44.32	TR96827	56.20
J	.2770	1-1/2	6	6	.2485	TR96652	44.32	TR96828	56.20
K	.2810	1-1/2	6	6	.2485	TR96653	44.32	TR96829	56.20
9/32	.2812	1-1/2	6	6	.2485	TR96654	42.06	TR96830	53.41
L	.2900	1-1/2	6	6	.2792	TR96655	44.32	TR96831	56.20
M	.2950	1-1/2	6	6	.2792	TR96656	44.32	TR96832	56.20
7.5mm	.2953	1-1/2	6	6	.2792	TR96657	44.32	TR96833	56.20
19/64	.2969	1-1/2	6	6	.2792	TR96658	44.32	TR96834	56.20
N	.3020	1-1/2	6	6	.2792	TR96659	44.32	TR96835	56.20
o/u	.3115	1-1/2	6	6	.2792	TR96660	42.06	TR96836	53.41
5/16	.3125	1-1/2	6	6	.2792	TR96661	39.87	TR96837	50.59
o/u	.3135	1-1/2	6	6	.2792	TR96662	42.06	TR96838	53.41
8.0mm	.3150	1-1/2	6	6	.2792	TR96663	44.32	TR96839	56.20
O	.3160	1-1/2	6	6	.2792	TR96664	44.32	TR96840	56.20
P	.3230	1-1/2	6	6	.2792	TR96665	47.40	TR96841	60.54
21/64	.3281	1-1/2	6	6	.2792	TR96666	47.40	TR96842	60.54
Q	.3320	1-1/2	6	6	.2792	TR96667	47.40	TR96843	60.54
8.5mm	.3346	1-1/2	6	6	.2792	TR96668	47.40	TR96844	60.54
R	.3390	1-1/2	6	6	.2792	TR96669	47.40	TR96845	60.54
11/32	.3438	1-1/2	6	6	.2792	TR96670	47.40	TR96846	60.54
S	.3480	1-3/4	6	6	.3105	TR96671	47.81	TR96847	61.36
9.0mm	.3543	1-3/4	6	7	.3105	TR96672	47.81	TR96848	61.36
T	.3580	1-3/4	6	7	.3105	TR96673	47.81	TR96849	61.36
23/64	.3594	1-3/4	6	7	.3105	TR96674	47.81	TR96850	61.36
U	.3680	1-3/4	6	7	.3105	TR96675	47.81	TR96851	61.36
9.5mm-o/u	.3740	1-3/4	6	7	.3105	TR96676	45.43	TR96852	58.24
3/8	.3750	1-3/4	6	7	.3105	TR96677	43.06	TR96853	55.23
o/u	.3760	1-3/4	6	7	.3105	TR96678	45.43	TR96854	58.24
V	.3770	1-3/4	6	7	.3105	TR96679	52.04	TR96855	77.28
W	.3860	1-3/4	6	7	.3105	TR96680	52.04	TR96856	77.28
25/64	.3906	1-3/4	6	7	.3105	TR96681	52.04	TR96857	77.28
10.0mm	.3937	1-3/4	6	7	.3105	TR96682	52.04	TR96858	77.28
X	.3970	1-3/4	6	7	.3105	TR96683	52.04	TR96859	77.28
Y	.4040	1-3/4	6	7	.3105	TR96684	53.97	TR96860	77.28
13/32	.4062	1-3/4	6	7	.3105	TR96685	53.97	TR96861	77.28
Z	.4130	1-3/4	6	7	.3730	TR96686	53.97	TR96862	77.28
10.5mm	.4134	1-3/4	6	7	.3730	TR96687	53.97	TR96863	77.28

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THRU 1/2" DIAMETER	1/2" TO 5/8"	5/8" TO 1-1/2"	1-1/2" TO 2"
+ .0002, -.0000	+ .0003, -.0000	+ .0001, +.0004	+ .0002, +.0006

MADE IN THE
USA

Chucking Reamers



**TAKE
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LIST
PRICES!**

STRAIGHT SHANK - RIGHT HAND SPIRAL - RIGHT HAND CUT



SIZE	DEC. EQUIV.	FLUTE LENGTH	# OF FLUTES	OVERALL LENGTH	SHANK DIA.	SERIES 935R		SERIES 1935R	
						HSS	LIST PRICE	M42 COBALT	LIST PRICE
27/64	.4219	1-3/4	6	7	.3730	TR96688	53.97	TR96864	77.28
11.0mm	.4331	1-3/4	6	7	.3730	TR96689	53.97	TR96865	77.28
o/u	.4365	1-3/4	6	7	.3730	TR96690	53.97	TR96866	77.28
7/16	.4375	1-3/4	6	7	.3730	TR96691	51.26	TR96867	73.38
o/u	.4385	1-3/4	6	7	.3730	TR96692	53.97	TR96868	77.28
11.5mm	.4528	1-3/4	6	7	.3730	TR96693	58.83	TR96869	88.57
29/64	.4531	1-3/4	6	7	.3730	TR96694	58.83	TR96870	88.57
15/32	.4688	1-3/4	6	7	.3730	TR96695	58.83	TR96871	88.57
12.0mm	.4724	2	6	8	.4355	TR96696	58.83	TR96872	88.57
31/64	.4844	2	6	8	.4355	TR96697	58.83	TR96873	88.57
12.5mm	.4921	2	6	8	.4355	TR96698	58.83	TR96874	88.57
o/u	.4990	2	6	8	.4355	TR96699	58.83	TR96875	88.57
1/2	.5000	2	6	8	.4355	TR96700	55.79	TR96876	84.11
o/u	.5010	2	6	8	.4355	TR96701	58.83	TR96877	88.57
17/32	.5312	2	6	8	.4355	TR96702	69.38	TR96878	99.37
9/16	.5625	2	8	8	.4355	TR96703	69.38	TR96880	99.37
19/32	.5938	2	8	8	.4355	TR96704	69.38	TR96881	99.37
5/8	.6250	2-1/4	8	9	.5615	TR96705	80.96	TR96882	115.92
21/32	.6562	2-1/4	8	9	.5615	TR96706	85.15	TR96883	131.07
11/16	.6875	2-1/4	8	9	.5615	TR96707	91.54	TR96884	131.07
23/32	.7188	2-1/4	8	9	.5615	TR96708	102.19	TR96885	146.25
3/4	.7500	2-1/2	8	9-1/2	.6240	TR96709	102.19	TR96886	147.07
25/32	.7812	2-1/2	8	9-1/2	.6240	TR96710	110.76	TR96887	158.68
13/16	.8125	2-1/2	8	9-1/2	.6240	TR96711	110.76	TR96888	158.68
27/32	.8438	2-1/2	8	9-1/2	.6240	TR96712	131.11	TR96889	187.75
7/8	.8750	2-5/8	8	10	.7490	TR96713	134.11	TR96890	192.09
29/32	.9062	2-5/8	8	10	.7490	TR96714	144.58	TR96891	206.98
15/16	.9375	2-5/8	8	10	.7490	TR96715	144.58	TR96892	206.98
31/32	.9688	2-5/8	8	10	.7490	TR96716	161.88	TR96893	231.81
1	1.0000	2-3/4	8	10-1/2	.8740	TR96717	163.44	TR96894	233.67
1-1/16	1.0625	2-3/4	8	10-1/2	.8740	TR96718	181.18	-	-
1-1/8	1.1250	2-7/8	8	11	.8740	TR96719	192.54	-	-
1-3/16	1.1875	2-7/8	8	11	.9990	TR96720	225.46	-	-
1-1/4	1.2500	3	8	11-1/2	.9990	TR96721	238.97	-	-
1-5/16	1.3125	3	10	11-1/2	.9990	TR96722	278.77	-	-
1-3/8	1.3750	3-1/4	10	12	.9990	TR96723	292.98	-	-
1-7/16	1.4375	3-1/4	10	12	1.2490	TR96724	314.14	-	-
1-1/2	1.5000	3-1/2	10	12-1/2	1.2490	TR96725	338.19	-	-
1-9/16	1.5625	3-1/2	12	13	1.2490	TR96900	478.99	-	-
1-5/8	1.6250	3-1/2	12	13	1.2490	TR96901	478.99	-	-
1-11/16	1.6875	4	12	13-1/2	1.2490	TR96902	550.00	-	-
1-3/4	1.7500	4	12	13-1/2	1.2490	TR96903	550.00	-	-
1-13/16	1.8125	4	12	14	1.4990	TR96904	633.44	-	-
1-7/8	1.8750	4	12	14	1.4990	TR96905	633.44	-	-
1-15/16	1.9375	4	12	14	1.4990	TR96906	741.57	-	-
2	2.0000	4	12	14	1.4990	TR96907	741.57	-	-

THRU 1/2" DIAMETER	1/2" TO 5/8"	5/8" TO 1-1/2"	1-1/2" TO 2"
+0.0002, -.0000	+0.0003, -.0000	+0.0001, +.0004	+0.0002, +.0006

Dowel Pin • Taper Shank

MADE IN THE
USA

DOWEL PIN SIZES

STRAIGHT SHANK - STRAIGHT FLUTE



SERIES 9700
HIGH SPEED STEEL

SERIES 1970
M42 COBALT

STRAIGHT SHANK - RIGHT HAND SPIRAL - RIGHT HAND CUT



SERIES 9750
HIGH SPEED STEEL

SERIES 1975
M42 COBALT

**TAKE
55% OFF
LIST
PRICES!**

SIZE	FLUTE LENGTH	# OF FLUTES	OVERALL LENGTH	SHANK DIA.	9700-ITEM#	LIST PRICE	1970-ITEM#	LIST PRICE	9750-ITEM#	LIST PRICE	1975-ITEM#	LIST PRICE
.1230	7/8	4	3-1/2	.1190	TR96264	23.39	TR96508	24.20	TR96950	26.80	TR96970	27.95
.1247	7/8	4	3-1/2	.1190	TR96265	23.39	TR96509	24.20	TR96951	26.80	TR96971	27.95
.1855	1-1/8	6	4-1/2	.1805	TR96266	29.84	TR96510	30.40	TR96952	34.26	TR96972	35.93
.1870	1-1/8	6	4-1/2	.1805	TR96267	29.84	TR96511	30.40	TR96953	34.26	TR96973	35.93
.2480	1-1/2	6	6	.2405	TR96268	32.55	TR96512	34.11	TR96954	35.78	TR96974	39.01
.2495	1-1/2	6	6	.2405	TR96269	32.55	TR96513	34.11	TR96955	35.78	TR96975	39.01
.3105	1-1/2	6	6	.2792	TR96270	38.23	TR96514	48.85	TR96956	42.09	TR96976	50.67
.3120	1-1/2	6	6	.2792	TR96271	38.23	TR96515	48.85	TR96957	42.09	TR96977	50.67
.3730	1-3/4	6	7	.3105	TR96272	41.28	TR96516	53.53	TR96958	45.43	TR96978	55.49
.3745	1-3/4	6	7	.3105	TR96273	41.28	TR96517	53.53	TR96959	45.43	TR96979	55.49
.4355	1-3/4	6	7	.3730	TR96274	46.58	TR96518	68.67	TR96960	53.97	TR96980	73.61
.4370	1-3/4	6	7	.3730	TR96275	46.58	TR96519	68.67	TR96961	53.97	TR96981	73.61
.4980	2	6	8	.4355	TR96276	50.74	TR96520	78.77	TR96962	58.80	TR96982	84.37
.4995	2	6	8	.4355	TR96277	50.74	TR96521	78.77	TR96963	58.80	TR96983	84.37

DIAMETER TOLERANCES FOR DOWEL PIN SIZES

+0.0000, -0.0002

TAPER SHANK - STRAIGHT FLUTE



SERIES 936
HIGH SPEED STEEL

SIZE	DEC. EQUIV.	FLUTE LENGTH	# OF FLUTES	OVERALL LENGTH	MORSE TAPER #	ITEM#	LIST PRICE
1/4	.2500	1-1/2	6	6	1	TR97801	54.79
9/32	.2812	1-1/2	6	6	1	TR97802	57.35
5/16	.3125	1-1/2	6	6	1	TR97803	56.38
11/32	.3438	1-1/2	6	6	1	TR97804	61.10
3/8	.3750	1-3/4	6	7	1	TR97805	63.03
13/32	.4062	1-3/4	6	7	1	TR97806	64.14
7/16	.4375	1-3/4	6	7	1	TR97807	64.44
15/32	.4688	1-3/4	6	7	1	TR97808	69.60
1/2	.5000	2	6	8	1	TR97809	70.56
17/32	.5312	2	6	8	1	TR97810	78.54
9/16	.5625	2	8	8	1	TR97811	83.78
19/32	.5938	2	8	8	1	TR97812	85.26
5/8	.6250	2-1/4	8	9	2	TR97813	90.83
21/32	.6562	2-1/4	8	9	2	TR97814	91.68
11/16	.6875	2-1/4	8	9	2	TR97815	91.68
23/32	.7188	2-1/4	8	9	2	TR97816	103.38
3/4	.7500	2-1/2	8	9-1/2	2	TR97817	103.38
25/32	.7182	2-1/2	8	9-1/2	2	TR97818	118.15
13/16	.8125	2-1/2	8	9-1/2	2	TR97819	118.15
27/32	.8438	2-1/2	8	9-1/2	2	TR97820	131.92
7/8	.8750	2-5/8	8	10	2	TR97821	133.33

SIZE	DEC. EQUIV.	FLUTE LENGTH	# OF FLUTES	OVERALL LENGTH	MORSE TAPER #	ITEM#	LIST PRICE
29/32	.9062	2-5/8	8	10	2	TR97822	146.77
15/16	.9375	2-5/8	8	10	3	TR97823	146.77
31/32	.9688	2-5/8	8	10	3	TR97824	161.06
1	1.0000	2-3/4	8	10-1/2	3	TR97825	162.47
1-1/16	1.0625	2-3/4	8	10-1/2	3	TR97826	177.62
1-1/8	1.1250	2-7/8	8	11	3	TR97827	197.10
1-3/16	1.1875	2-7/8	10	11	3	TR97828	220.90
1-1/4	1.2500	3	10	11-1/2	4	TR97829	239.16
1-5/16	1.3125	3	10	11-1/2	4	TR97830	261.54
1-3/8	1.3750	3-1/4	10	12	4	TR97831	282.66
1-7/16	1.4375	3-1/4	10	12	4	TR97832	306.38
1-1/2	1.5000	3-1/2	10	12-1/2	4	TR97833	325.65
1-9/16	1.5625	3-1/2	12	13	4	TR97834	457.24
1-5/8	1.6250	3-1/2	12	13	4	TR97835	457.24
1-11/16	1.6875	4	12	13-1/2	5	TR97836	525.02
1-3/4	1.7500	4	12	13-1/2	5	TR97837	525.02
1-13/16	1.8125	4	12	14	5	TR97838	604.67
1-7/8	1.8750	4	12	14	5	TR97839	604.67
1-15/16	1.9375	4	12	14	5	TR97840	707.90
2	2.0000	4	12	14	5	TR97841	707.90
-	-	-	-	-	-	-	-

THRU 1/2" DIAMETER

+0.0002, -0.0000

1/2" TO 5/8"

+0.0003, -0.0000

5/8" TO 1-1/2"

+0.0001, +0.0004

1-1/2" TO 2"

+0.0002, +0.0006

MADE IN THE
USA

Expansion Reamers



**TAKE
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PRICES!**

STRAIGHT SHANK


SERIES 931
HIGH SPEED STEEL

SIZE	FLUTE LENGTH	# OF FLUTES	OVERALL LENGTH	SHANK DIA.	ITEM#	LIST PRICE
3/8	3/4	6	7	5/16	TR97201	141.83
13/32	3/4	6	7	5/16	TR97202	151.08
7/16	7/8	6	7	3/8	TR97203	151.08
15/32	7/8	6	8	27/64	TR97204	156.90
1/2	1	6	8	7/16	TR97205	159.69
17/32	1	6	8	7/16	TR97206	166.44
9/16	1-1/8	6	8	7/16	TR97207	170.67
19/32	1-1/8	6	8	7/16	TR97208	173.27
5/8	1-1/4	6	9	9/16	TR97209	178.54
21/32	1-1/4	6	9	9/16	TR97210	185.67
11/16	1-1/4	6	9	9/16	TR97211	186.97
23/32	1-1/4	6	9	9/16	TR97212	199.11
3/4	1-3/8	6	9-1/2	5/8	TR97213	205.97
25/32	1-3/8	8	9-1/2	5/8	TR97214	218.08
13/16	1-3/8	8	9-1/2	5/8	TR97215	226.43
27/32	1-3/8	8	9-1/2	5/8	TR97216	238.57
7/8	1-1/2	8	10	3/4	TR97217	242.91

SIZE	FLUTE LENGTH	# OF FLUTES	OVERALL LENGTH	SHANK DIA.	ITEM#	LIST PRICE
29/32	1-1/2	8	10	3/4	TR97218	255.79
15/16	1-1/2	8	10	3/4	TR97219	267.78
31/32	1-1/2	8	10	3/4	TR97220	279.88
1	1-5/8	8	10-1/2	7/8	TR97221	295.21
1-1/32	1-5/8	8	10-1/2	7/8	TR97222	410.72
1-1/16	1-5/8	8	10-1/2	7/8	TR97223	326.28
1-3/32	1-5/8	8	10-1/2	7/8	TR97224	341.79
1-1/8	1-3/4	8	11	7/8	TR97225	357.05
1-5/32	1-3/4	8	11	7/8	TR97226	361.91
1-3/16	1-3/4	8	11	1	TR97227	376.06
1-7/32	1-3/4	8	11	1	TR97228	389.75
1-1/4	1-7/8	8	11-1/2	1	TR97229	405.31
1-5/16	1-7/8	8	11-1/2	1	TR97230	418.85
1-3/8	2	8	12	1	TR97231	434.26
1-7/16	2	8	12	1-1/4	TR97232	451.44
1-1/2	2-1/8	8	12-1/2	1-1/4	TR97233	470.49
-	-	-	-	-	-	-

TAPER SHANK


SERIES 932
HIGH SPEED STEEL

SIZE	FLUTE LENGTH	# OF FLUTES	OVERALL LENGTH	SHANK DIA.	MORSE TAPER#	ITEM#	LIST PRICE
3/8	3/4	6	7	5/16	1	TR97250	160.91
13/32	3/4	6	7	5/16	1	TR97251	186.60
7/16	7/8	6	7	3/8	1	TR97252	170.38
15/32	7/8	6	8	27/64	1	TR97253	174.42
1/2	1	6	8	7/16	1	TR97254	177.91
17/32	1	6	8	7/16	1	TR97255	184.97
9/16	1-1/8	6	8	7/16	1	TR97256	184.97
19/32	1-1/8	6	8	7/16	1	TR97257	191.72
5/8	1-1/4	6	9	9/16	2	TR97258	198.59
21/32	1-1/4	6	9	9/16	2	TR97259	204.04
11/16	1-1/4	6	9	9/16	2	TR97260	205.27
23/32	1-1/4	6	9	9/16	2	TR97261	218.97
3/4	1-3/8	6	9-1/2	5/8	2	TR97262	225.72
25/32	1-3/8	8	9-1/2	5/8	2	TR97263	236.12
13/16	1-3/8	8	9-1/2	5/8	2	TR97264	239.64
27/32	1-3/8	8	9-1/2	5/8	2	TR97265	253.60
7/8	1-1/2	8	10	3/4	2	TR97266	263.58

SIZE	FLUTE LENGTH	# OF FLUTES	OVERALL LENGTH	SHANK DIA.	MORSE TAPER#	ITEM#	LIST PRICE
29/32	1-1/2	8	10	3/4	2	TR97267	277.28
15/16	1-1/2	8	10	3/4	3	TR97268	284.19
31/32	1-1/2	8	10	3/4	3	TR97269	296.17
1	1-5/8	8	10-1/2	7/8	3	TR97270	313.25
1-1/32	1-5/8	8	10-1/2	7/8	3	TR97271	325.24
1-1/16	1-5/8	8	10-1/2	7/8	3	TR97272	340.79
1-3/32	1-5/8	8	10-1/2	7/8	3	TR97273	356.01
1-1/8	1-3/4	8	11	7/8	3	TR97274	368.30
1-5/32	1-3/4	8	11	7/8	3	TR97275	383.48
1-3/16	1-3/4	8	11	1	3	TR97276	398.81
1-7/32	1-3/4	8	11	1	3	TR97277	414.18
1-1/4	1-7/8	8	11-1/2	1	4	TR97278	433.33
1-5/16	1-7/8	8	11-1/2	1	4	TR97279	450.29
1-3/8	2	8	12	1	4	TR97280	468.96
1-7/16	2	8	12	1-1/4	4	TR97281	496.47
1-1/2	2-1/8	8	12-1/2	1-1/4	4	TR97282	513.43
-	-	-	-	-	-	-	-

THRU 1/2" DIAMETER	ABOVE 1/2" TO 5/8"	ABOVE 5/8" TO 1-1/2"
+0.002, -.0000	+0.003, -.0000	+0.001, +0.004

Hand Reamers

MADE IN THE
USA

STRAIGHT SHANK - STRAIGHT FLUTE



SERIES 9000
HIGH SPEED STEEL

**TAKE
55% OFF
LIST
PRICES!**

SIZE	DECIMAL EQUIV.	FLUTE LENGTH	# OF FLUTES	OVERALL LENGTH	SHANK DIA.	ITEM#	LIST PRICE
1/16	.0625	1	4	2	.0625	TR97606	66.18
5/64	.0781	1	4	2	.0781	TR97607	66.18
3/32	.0938	1-1/4	4	2-1/2	.0938	TR97608	66.18
7/64	.1094	1-1/4	4	2-1/2	.1094	TR97609	66.18
1/8	.1250	1-1/2	4	3	.1250	TR97610	62.40
9/64	.1406	1-5/8	4	3-1/4	.1406	TR97611	62.40
5/32	.1562	1-5/8	4	3-1/4	.1562	TR97612	67.45
11/64	.1719	1-3/4	6	3-1/2	.1719	TR97613	67.45
3/16	.1875	1-3/4	6	3-1/2	.1875	TR97614	66.18
13/64	.2031	1-7/8	6	3-3/4	.2031	TR97615	66.18
7/32	.2188	1-7/8	6	3-3/4	.2188	TR97616	72.94
15/64	.2344	2	6	4	.2344	TR97617	72.94
1/4	.2500	2	6	4	.2500	TR97618	72.49
17/64	.2656	2-1/8	6	4-1/4	.2656	TR97619	72.94
9/32	.2812	2-1/8	6	4-1/4	.2812	TR97620	78.47
19/64	.2969	2-1/4	6	4-1/2	.2969	TR97621	78.47
5/16	.3125	2-1/4	6	4-1/2	.3125	TR97622	76.73
11/32	.3438	2-3/8	6	4-3/4	.3438	TR97623	89.05
3/8	.3750	2-1/2	6	5	.3750	TR97624	86.93
13/32	.4062	2-5/8	6	5-1/4	.4062	TR97625	100.89
7/16	.4375	2-3/4	6	5-1/2	.4375	TR97626	98.85
15/32	.4688	2-7/8	6	5-3/4	.4688	TR97627	109.35

SIZE	DECIMAL EQUIV.	FLUTE LENGTH	# OF FLUTES	OVERALL LENGTH	SHANK DIA.	ITEM#	LIST PRICE
1/2	.5000	3	6	6	.5000	TR97628	105.12
17/32	.5312	3-1/8	8	6-1/4	.5312	TR97629	113.58
9/16	.5625	3-1/4	8	6-1/2	.5625	TR97630	121.49
19/32	.5938	3-3/8	8	6-3/4	.5938	TR97631	135.04
5/8	.6250	3-1/2	8	7	.6250	TR97632	130.92
21/32	.6562	3-11/16	8	7-3/8	.6562	TR97633	146.73
11/16	.6875	3-7/8	8	7-3/4	.6875	TR97634	143.84
23/32	.7188	4-1/16	8	8-1/8	.7188	TR97635	157.57
3/4	.7500	4-3/16	8	8-3/8	.7500	TR97636	153.38
25/32	.7812	4-3/8	8	8-3/4	.7812	TR97637	168.30
13/16	.8125	4-9/16	8	9-1/8	.8125	TR97638	153.38
27/32	.8438	4-11/16	8	9-3/8	.8438	TR97639	184.26
7/8	.8750	4-7/8	8	9-3/4	.8750	TR97640	185.86
29/32	.9062	5	8	10	.9062	TR97641	205.38
15/16	.9375	5-1/8	8	10-1/4	.9375	TR97642	186.00
31/32	.9688	5-5/16	8	10-5/8	.9688	TR97643	226.13
1	1.0000	5-7/16	8	10-7/8	1.0000	TR97644	225.13
1-1/8	1.1250	5-13/16	8	11-5/8	1.1250	TR97645	294.21
1-1/4	1.2500	6-1/8	8	12-1/4	1.2500	TR97646	361.28
1-3/8	1.3750	6-5/16	10	12-5/8	1.3750	TR97647	427.02
1-1/2	1.5000	6-1/2	10	13	1.5000	TR97648	504.01
-	-	-	-	-	-	-	-

STRAIGHT SHANK - LEFT HAND SPIRAL - RIGHT HAND CUT



SERIES 9050
HIGH SPEED STEEL

SIZE	DECIMAL EQUIV.	FLUTE LENGTH	# OF FLUTES	OVERALL LENGTH	SHANK DIA.	ITEM#	LIST PRICE
1/16	.0625	1	4	2	.0625	TR97350	77.65
5/64	.0781	1	4	2	.0781	TR97351	77.65
3/32	.0938	1-1/4	4	2-1/2	.0938	TR97352	77.65
7/64	.1094	1-1/4	4	2-1/2	.1094	TR97353	77.65
1/8	.1250	1-1/2	4	3	.1250	TR97354	76.73
9/64	.1406	1-5/8	4	3-1/4	.1406	TR97355	76.73
5/32	.1562	1-5/8	4	3-1/4	.1562	TR97356	82.74
11/64	.1719	1-3/4	6	3-1/2	.1719	TR97357	82.74
3/16	.1875	1-3/4	6	3-1/2	.1875	TR97358	82.74
13/64	.2031	1-7/8	6	3-3/4	.2031	TR97359	82.74
7/32	.2188	1-7/8	6	3-3/4	.2188	TR97360	80.55
15/64	.2344	2	6	4	.2344	TR97361	80.55
1/4	.2500	2	6	4	.2500	TR97362	80.18
17/64	.2656	2-1/8	6	4-1/4	.2656	TR97363	80.55
9/32	.2812	2-1/8	6	4-1/4	.2812	TR97364	89.05
19/64	.2969	2-1/4	6	4-1/2	.2969	TR97365	89.05
5/16	.3125	2-1/4	6	4-1/2	.3125	TR97366	88.20
11/32	.3438	2-3/8	6	4-3/4	.3438	TR97367	99.18
3/8	.3750	2-1/2	6	5	.3750	TR97368	98.89
13/32	.4062	2-5/8	6	5-1/4	.4062	TR97369	109.87
7/16	.4375	2-3/4	6	5-1/2	.4375	TR97370	110.24
15/32	.4688	2-7/8	6	5-3/4	.4688	TR97371	121.71

SIZE	DECIMAL EQUIV.	FLUTE LENGTH	# OF FLUTES	OVERALL LENGTH	SHANK DIA.	ITEM#	LIST PRICE
1/2	.5000	3	6	6	.5000	TR97372	118.74
17/32	.5312	3-1/8	8	6-1/4	.5312	TR97373	138.64
9/16	.5625	3-1/4	8	6-1/2	.5625	TR97374	139.42
19/32	.5938	3-3/8	8	6-3/4	.5938	TR97375	151.63
5/8	.6250	3-1/2	8	7	.6250	TR97376	148.85
21/32	.6562	3-11/16	8	7-3/8	.6562	TR97377	163.21
11/16	.6875	3-7/8	8	7-3/4	.6875	TR97378	162.73
23/32	.7188	4-1/16	8	8-1/8	.7188	TR97379	175.46
3/4	.7500	4-3/16	8	8-3/8	.7500	TR97380	172.08
25/32	.7812	4-3/8	8	8-3/4	.7812	TR97381	187.01
13/16	.8125	4-9/16	8	9-1/8	.8125	TR97382	187.01
27/32	.8438	4-11/16	8	9-3/8	.8438	TR97383	204.68
7/8	.8750	4-7/8	8	9-3/4	.8750	TR97384	204.68
29/32	.9062	5	8	10	.9062	TR97385	228.17
15/16	.9375	5-1/8	8-10	10-1/4	.9375	TR97386	228.17
31/32	.9688	5-5/16	8-10	10-5/8	.9688	TR97387	251.26
1	1.0000	5-7/16	8-10	10-7/8	1.0000	TR97388	251.26
1-1/8	1.1250	5-13/16	8-10	11-5/8	1.1250	TR97389	323.42
1-1/4	1.2500	6-1/8	8-10	12-1/4	1.2500	TR97390	397.96
1-3/8	1.3750	6-5/16	8-10	12-5/8	1.3750	TR97391	469.52
1-1/2	1.5000	6-1/2	8-10	13	1.5000	TR97392	556.12
-	-	-	-	-	-	-	-

THRU 1/2" DIAMETER	ABOVE 1/2" TO 5/8"	ABOVE 5/8" TO 1-1/2"
+0.002, -.0000	+0.003, -.0000	+0.001, +0.004

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Reamers



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TAPER PIPE REAMERS - LEFT HAND SPIRAL - RIGHT HAND CUT



SERIES 906
HIGH SPEED STEEL

SIZE	DIAMETER SMALL END	DIAMETER LARGE END	#OF FLUTES	THREAD OR FLUTE LENGTH	OVERALL LENGTH	SHANK DIA.	SIZE OF SQUARE	ITEM#	LIST PRICE
1/16	.2320	.2750	6	3/4	2-1/8	.3125	.235	TR97649	86.56
1/8	.3160	.3620	6	3/4	2-1/8	.4375	.328	TR97650	80.70
1/4	.4060	.4720	6	1-1/16	2-7/16	.5625	.421	TR97651	92.39
3/8	.5400	.6060	6	1-1/16	2-9/16	.7000	.531	TR97652	104.60
1/2	.6650	.7510	6	1-3/8	3-1/8	.6875	.515	TR97653	132.14
3/4	.8760	.9620	8	1-3/8	3-1/4	.9063	.679	TR97654	183.22
1	1.1030	1.2120	8	1-3/4	3-3/4	1.1250	.843	TR97655	269.60
1-1/4	1.4440	1.5530	10	1-3/4	4	1.3125	.984	TR97656	454.08
1-1/2	1.6840	1.7930	12	1-3/4	4-1/4	1.5000	1.125	TR97657	574.16
2	2.1590	2.2680	12	1-3/4	4-1/2	1.8750	1.406	TR97658	766.92

TAPER PIN REAMERS
HIGH SPEED STEEL

SERIES 987
STRAIGHT FLUTE



SERIES 991
LEFT HAND SPIRAL
RIGHT HAND CUT



SERIES 988
LEFT HAND HELICAL
RIGHT HAND CUT

SIZE	DIAMETER SMALL END	DIAMETER LARGE END	#OF FLUTES	STRAIGHT	LIST PRICE	LH-SPIRAL	LIST PRICE	LH-HELICAL	LIST PRICE
7/0	.0497	.0666	4	TR97525	69.23	TR97567	71.83	TR97546	64.22
6/0	.0611	.0806	4	TR97526	69.23	TR97568	71.83	TR97547	60.47
5/0	.0719	.0966	4	TR97527	63.10	TR97569	69.23	TR97548	62.73
4/0	.0869	.1142	4	TR97528	63.10	TR97570	69.23	TR97549	62.73
3/0	.1029	.1302	4	TR97529	63.10	TR97571	69.23	TR97550	56.64
2/0	.1137	.1462	4	TR97530	56.42	TR97572	60.47	TR97551	57.31
0	.1287	.1638	4	TR97531	54.27	TR97573	57.79	TR97552	58.69
1	.1447	.1798	6	TR97532	52.56	TR97574	58.69	TR97553	59.58
2	.1605	.2008	6	TR97533	52.56	TR97575	58.69	TR97554	67.45
3	.1813	.2294	6	TR97534	52.56	TR97576	58.69	TR97555	69.71
4	.2071	.2604	6	TR97535	58.69	TR97577	63.99	TR97556	78.47
5	.2409	.2994	6	TR97536	63.10	TR97578	68.26	TR97557	85.86
6	.2773	.3540	6	TR97537	76.17	TR97579	84.11	TR97558	100.78
7	.3297	.4220	6	TR97538	98.11	TR97580	106.35	TR97559	124.39
8	.3971	.5050	6	TR97539	102.63	TR97581	137.53	TR97560	145.95
9	.4805	.6066	6	TR97540	152.45	TR97582	165.96	TR97561	160.36
10	.5799	.7216	6	TR97541	167.37	TR97583	183.96	TR97562	203.60
11	.7060	.8780	8	TR97542	178.36	TR97584	196.25	TR97563	215.81
12	.8420	1.0500	8	TR97543	275.98	TR97585	303.56	TR97564	334.07
13	1.0090	1.2590	10	TR97544	535.30	TR97586	588.82	TR97565	647.14
14	1.2500	1.5420	10	TR97545	857.72	TR97587	951.89	TR97566	1,045.20

Reamers

MADE IN THE
USA

CAPSCREW COUNTERBORES HIGH SPEED STEEL



**TAKE
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PRICES!**

SERIES 901 - STANDARD • SERIES 902 - 1/64 o/s • SERIES 903 - 1/32 o/s

SIZE	TOLERANCE	SERIES NUMBER	PILOT SIZE	PILOT LENGTH	FLUTE SIZE	BODY LENGTH	OVERALL LENGTH	ITEM#	LIST PRICE
4	std.	901	.1120	1/8	.1830	9/16	3-7/8	TR97470	39.72
4	1/64 o/s	902	.1270	1/8	.1990	9/16	3-7/8	TR97484	39.72
4	1/32 o/s	903	.1430	1/8	.2150	9/16	3-7/8	TR97501	39.72
5	std.	901	.1250	5/32	.2050	5/8	4-1/8	TR97471	39.72
5	1/64 o/s	902	.1400	5/32	.2210	5/8	4-1/8	TR97485	39.72
5	1/32 o/s	903	.1560	5/32	.2370	5/8	4-1/8	TR97502	39.72
6	std.	901	.1380	3/16	.2270	3/4	4-5/8	TR97472	42.06
6	1/64 o/s	902	.1530	3/16	.2430	3/4	4-5/8	TR97486	42.06
6	1/32 o/s	903	.1690	3/16	.2590	3/4	4-5/8	TR97503	42.06
8	std.	901	.1640	7/32	.2700	3/4	5	TR97473	45.06
8	1/64 o/s	902	.1790	7/32	.2860	3/4	5	TR97487	45.06
8	1/32 o/s	903	.1950	7/32	.3020	3/4	5	TR97504	45.06
10	std.	901	.1900	1/4	.3120	7/8	5-1/4	TR97474	46.03
10	1/64 o/s	902	.2050	1/4	.3280	7/8	5-1/4	TR97488	46.03
10	1/32 o/s	903	.2210	1/4	.3440	7/8	5-1/4	TR97505	46.03
1/4	std.	901	.2500	9/32	.3800	1	5-5/8	TR97475	48.40
1/4	1/64 o/s	902	.2650	9/32	.3960	1	5-5/8	TR97489	48.40
1/4	1/32 o/s	903	.2810	9/32	.4120	1	5-5/8	TR97506	48.40
5/16	std.	901	.3125	5/16	.4740	1	6-1/8	TR97476	60.47
5/16	1/64 o/s	902	.3280	5/16	.4890	1	6-1/8	TR97490	60.47
5/16	1/32 o/s	903	.3430	5/16	.5040	1	6-1/8	TR97507	60.47
3/8	std.	901	.3750	3/8	.5690	1-1/4	6-1/2	TR97477	66.04
3/8	1/64 o/s	902	.3900	3/8	.5850	1-1/4	6-1/2	TR97491	66.04
3/8	1/32 o/s	903	.4060	3/8	.6010	1-1/4	6-1/2	TR97508	66.04
7/16	std.	901	.4370	7/16	.6610	1-1/4	7	TR97478	79.44
7/16	1/64 o/s	902	.4520	7/16	.6760	1-1/4	7	TR97492	79.44
7/16	1/32 o/s	903	.4680	7/16	.6910	1-1/4	7	TR97509	79.44
1/2	std.	901	.5000	1/2	.7550	1-1/2	7-1/2	TR97479	90.91
1/2	1/64 o/s	902	.5150	1/2	.7710	1-1/2	7-1/2	TR97493	90.91
1/2	1/32 o/s	903	.5310	1/2	.7870	1-1/2	7-1/2	TR97510	90.91
5/8	std.	901	.6250	5/8	.9430	1-1/2	7-5/8	TR97480	148.33
5/8	1/64 o/s	902	.6400	5/8	.9590	1-1/2	7-5/8	TR97494	148.33
5/8	1/32 o/s	903	.6560	5/8	1.0000	1-1/2	7-5/8	TR97511	148.33
3/4	std.	901	.7500	3/4	1.1310	1-5/8	7-3/4	TR97481	172.57
3/4	1/64 o/s	902	.7650	3/4	1.1720	1-5/8	7-3/4	TR97495	172.57
3/4	1/32 o/s	903	.7810	3/4	1.1630	1-5/8	7-3/4	TR97512	172.57
7/8	std.	901	.8750	7/8	1.3200	1-7/8	8	TR97482	210.21
7/8	1/64 o/s	902	.8910	7/8	1.3360	1-7/8	8	TR97496	210.21
7/8	1/32 o/s	903	.9060	7/8	1.3520	1-7/8	8	TR97513	210.21
1	std.	901	1.0000	1	1.5080	2	8-1/2	TR97483	266.66
1	1/64 o/s	902	1.0150	1	1.5240	2	8-1/2	TR97497	266.66
1	1/32 o/s	903	1.0310	1	1.5400	2	8-1/2	TR97514	266.66

MADE IN THE
USA

Reamers



**TAKE
55% OFF
LIST
PRICES!**

**CONSTRUCTION
REAMERS****SERIES 9950****HIGH SPEED STEEL****LEFT HAND SPIRAL****RIGHT HAND CUT****BLACK & GOLD****3 FLATS**

SIZE	FLUTE LENGTH	# OF FLUTES	OVERALL LENGTH	SHANK DIA.	ITEM#	LIST PRICE
3/8	2-1/2	5	4-5/8	3/8	TR97595	77.68
7/16	3-1/4	5	5-3/8	7/16	TR97596	83.83
1/2	3-3/4	5	5-7/8	1/2	TR97597	92.78
9/16	3-3/4	5	5-7/8	1/2	TR97598	96.56
5/8	4-1/4	5	6-3/8	1/2	TR97599	107.40
11/16	4-1/4	5	6-3/8	1/2	TR97600	117.08
3/4	4-1/2	5	6-7/8	1/2	TR97601	135.58
13/16	4-1/2	5	6-7/8	1/2	TR97602	135.58
7/8	4-1/2	5	6-7/8	1/2	TR97603	153.79
15/16	4-1/2	5	6-7/8	1/2	TR97604	153.79
1	4-1/2	5	6-7/8	1/2	TR97605	175.60
1-1/16	4-1/2	5	6-7/8	1/2	TR97660	206.58

**SAFETY REAMERS WITH
MAGNETIC HEX SHANK****SERIES 996****HIGH SPEED STEEL****LEFT HAND SPIRAL****RIGHT HAND CUT**

Magnetic Hex Shank has been designed to protect against danger and loss of falling objects such as reamers.

See OSHA 29CFR Part 1926.759 (falling object protection)

SIZE	FLUTE LENGTH	# OF FLUTES	OVERALL LENGTH	HEX SHANK DIAMETER	ITEM#	LIST PRICE
9/16	4	5	5-1/2	1-1/16	TR99050	163.74
11/16	4-1/2	5	6-3/8	1-1/16	TR99052	198.00
13/16	5	5	7	1-1/4	TR99054	236.77
15/16	5	5	7	1-7/16	TR99056	267.53
1-1/16	5	5	7	1-5/8	TR99058	354.35
1-3/16	5	5	7	1-13/16	TR99060	456.46
1-5/16	5	5	7-7/8	2	TR99062	545.28

**BRIDGE REAMERS****SERIES 9850****HIGH SPEED STEEL****LEFT HAND SPIRAL****RIGHT HAND CUT**

SIZE	FLUTE LENGTH	# OF FLUTES	OVERALL LENGTH	MORSE TAPER #	SMALL DIAMETER	ITEM#	LIST PRICE
7/16	5-1/8	5	9	2	.3050	TR98974	83.63
1/2	5-1/8	5	9	2	.3125	TR98976	93.10
9/16	5-1/8	5	9	2	.3430	TR97589	93.10
5/8	6-1/8	5	10	2	.3750	TR98978	100.52
11/16	7-1/8	5	11-3/4	3	.3906	TR97590	107.53
3/4	7-3/8	5	12	3	.5000	TR97591	140.01
13/16	7-3/8	5	12	3	.5000	TR97592	140.01
7/8	7-3/8	5	12	3	.5625	TR98980	153.49
15/16	7-3/8	5	12	3	.6250	TR97593	163.84
1	7-3/8	5	12	3	.6875	TR98982	178.06
1-1/16	7-3/8	5	12	3	.7500	TR97594	184.85
1-1/8	7-3/8	5	12	3	.8125	TR98984	225.57
1-3/16	7-3/8	5	12	3	.8750	TR98986	288.34
1-1/4	7-3/8	5	13	4	.9375	TR98988	328.10
1-5/16	7-3/8	5	13	4	1.0000	TR98990	387.67
1-3/8	7-3/8	5	13	4	1.0625	TR99000	402.52
1-7/16	7-3/8	6	13	4	1.1250	TR99001	418.48
1-1/2	7-3/8	6	13	4	1.1875	TR99002	475.13
1-9/16	7-3/8	6	13	4	1.2500	TR99003	571.01
1-5/8	7-3/8	6	13	4	1.3125	TR99008	658.35

Reamer Sets

MADE IN THE
USA



ITEM# TR96286
60 PC. #1 - #60
HIGH SPEED STEEL



ITEM# TR96283
29 PC. 1/16" - 1/2" BY 64ths
HIGH SPEED STEEL

**TAKE
55% OFF
LIST
PRICES!**

HSS & COBALT - REAMER SETS

DESCRIPTION	FLUTE STYLE	ITEM#	LIST PRICE
29Pc • 1/16" - 1/2" by 64ths • HSS	Straight	TR96283	1,154.67
29Pc • 1/16" - 1/2" by 64ths • M42 Cobalt	Straight	TR96284	1,512.61
60Pc • #1 - #60 • HSS	Straight	TR96286	1,713.02
60Pc • #1 - #60 • M42 Cobalt	Straight	TR96287	1,859.86
26Pc • A-Z • HSS	Straight	TR96290	1,068.48
26Pc • A-Z • M42 Cobalt	Straight	TR96291	1,487.33
14Pc • Dowel Pin • .1230 - .4995 • HSS	Straight	TR96279	598.88
14Pc • Dowel Pin • .1230 - .4995 • M42 Cobalt	Straight	TR96280	785.56
14Pc • O/U • .1240 - .5010 • HSS	Straight	TR96293	598.88
14Pc • O/U • .1240 - .5010 • M42 Cobalt	Straight	TR96294	750.66
20Pc • #61 - #80 • HSS	Straight	TR96305	702.00
10Pc • #4 - 1/2" • Std • Ctr Bore Set • HSS	RH Spiral	TR96307	588.67
10Pc • #4 - 1/2" • 1/64" OS • Ctr Bore Set • HSS	RH Spiral	TR96308	588.67
10Pc • #4 - 1/2" • 1/32" OS • Ctr Bore Set • HSS	RH Spiral	TR96309	588.67

VI-PRO ENDMILLS - SOLID MICROGRAIN CARBIDE

VI-PRO

- Running @ higher SFM; heavier chip loads than conventional endmills
- Speed and feed chart parameters are for 4 flute full diameter slotting
- Recommended slotting depth = 1 x diameter
- Tool holding important for maximizing tool life. Minimize TIR
- Max ramp angle recommended 3° or less

Speed and Feed Calculation:

$$\text{RPM} = (3.82 \times \text{SFM}) \div \text{Dia.}$$

$$\text{IPR} = \text{IPM} \div \text{RPM}$$

$$\text{SFM} = (\text{RPM} \times \text{Dia.}) \div 3.82$$

$$\text{IPM} = \text{IPT}(\text{chip load}) \times \text{No. of Teeth} \times \text{RPM}$$

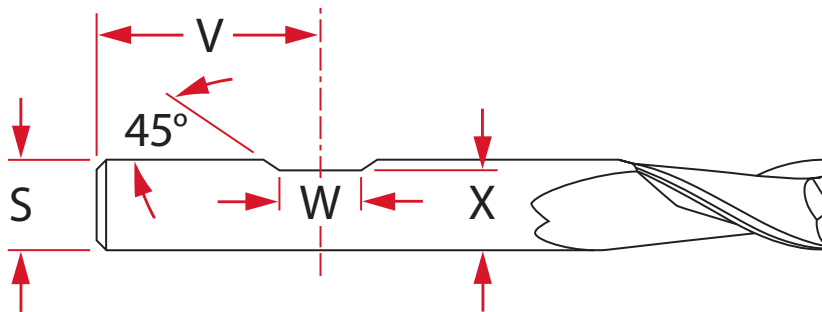
$$\text{IPT}(\text{chip load}) = \text{IPM} \div (\text{No. of teeth} \times \text{RPM})$$

ALTIN & ALCRO-MAX coating for the VI-PRO

ALTIN - is a high performance coating for milling, tapping and drilling in stainless steels, carbon steels, alloy steels, and cast iron. This coating is extremely heat resistant and can be used with or without coolant. It is exceptional in difficult to machine materials where adhesive wear is particularly high.

ALCRO-MAX - has remarkable wear resistance at higher speeds and feeds due to excellent thermal properties under high mechanical loads, and can be used for roughing and finishing operations. Because of its titanium addition, surface finish of the work piece (Ra, Rz) remains consistent and low during the life of the tool. ALCRO-MAX particularly excels when machining under wet or MQL (minimum quantity lubrication) conditions. This coating is highly recommended for titanium, high temperature alloys, and hardened and tempered tool steels with 35 HRC or greater.

Weldon Flat specifications for the VI-PRO



STUB LENGTH				
S SHANK DIAMETER	V	W MIN	MAX	X
1/2"	.750"	.330"	.332"	.440"
5/8"	.750"	.400"	.402"	.560"
3/4"	.750"	.455"	.457"	.675"

REGULAR LENGTH				
S SHANK DIAMETER	V	W MIN	MAX	X
1/2" (1-1/4" LOC)	.750"	.330"	.332"	.440"
1/2"	.875"	.330"	.332"	.440"
5/8"	.875"	.400"	.402"	.560"
3/4"	.875"	.455"	.457"	.675"
1"	.875"	.515"	.517"	.925"

LONG LENGTH				
S SHANK DIAMETER	V	W MIN	MAX	X
1/2" (2" LOC)	.875"	.330"	.332"	.440"
1/2"	1.250"	.330"	.332"	.440"
5/8"	1.250"	.400"	.402"	.560"
3/4"	1.250"	.455"	.457"	.675"
1"	1.250"	.515"	.517"	.925"

EXTRA LONG LENGTH				
S SHANK DIAMETER	V	W MIN	MAX	X
1/2"	1.5"	.330"	.332"	.440"
5/8"	1.5"	.400"	.402"	.560"
3/4"	1.5"	.455"	.457"	.675"
1"	1.5"	.515"	.517"	.925"
-	-	-	-	-

VI-PRO ENDMILLS - SOLID MICROGRAIN CARBIDE

VI-PRO 4 FLUTE

SFM FOR ALTiN, FOR ALCo-MAX +20%

MATERIAL / TYPE	Rc HARDNESS	4 FLUTE STUB LENGTH	4 FLUTE REG LENGTH	4 FLUTE LONG LENGTH	4 FLUTE EXTRA LONG
COBALT BASE ALLOYS					
STELLITE, HS-21,	UNDER 32	125 - 175	125 - 175	80 - 125	80 - 125
HAYNES 25/188, X-40, L-605	OVER 32	80 - 100	80 - 100	55 - 70	55 - 70
NICKEL BASE ALLOYS					
INCONEL-625/718, WASPALLOY,	UNDER 32	125 - 175	125 - 175	80 - 125	80 - 125
RENE, HASTELLOY	OVER 32	80 - 100	80 - 100	55 - 70	55 - 70
IRON BASE ALLOYS					
INCOLOY 800-802, MULTIMET N-155,	UNDER 32	125 - 175	125 - 175	80 - 125	80 - 125
TIMKIN 16-25-6, CARPENTER 22-b3	OVER 32	80 - 100	80 - 100	55 - 70	55 - 70
MONEL					
MONEL-65% NICKEL	-	150 - 200	150 - 200	105 - 140	105 - 140
TITANIUM ALLOYS					
COMMERCIALLY PURE, 6Al-4V,	-	-	-	-	-
ASTM 1/2/3, 6Al-25N-4Zr-2Mo-Si	-	200 - 325	200 - 325	140 - 230	140 - 230
STAINLESS STEEL (PRECIPITATION)					
12/8, 15/5, 17/4, AM-350/355	UNDER 32	250 - 300	250 - 300	175 - 210	175 - 210
	OVER 32	200 - 250	200 - 250	140 - 175	140 - 175
STAINLESS STEEL (AUSTENITIC)					
200 SERIES, 302, 303, 304, 316	-	290 - 375	290 - 375	200 - 260	200 - 260
STAINLESS STEEL (AUSTENITIC)					
304L, 316L	UNDER 32	250 - 300	250 - 300	175 - 210	175 - 210
	OVER 32	200 - 250	200 - 250	140 - 175	140 - 175
STAINLESS STEEL (MARTENSITIC)					
403, 410, 416, 440	-	250 - 300	250 - 300	175 - 210	175 - 210
HIGH STRENGTH TOOL STEELS					
4140, 4340, 6150, 5210, A2,	UNDER 32	250 - 350	250 - 350	175 - 210	175 - 210
D2, P20, H11, H13, S2, 01	OVER 32	150 - 200	150 - 200	100 - 140	100 - 140
CARBON STEELS					
1000's, 1100's, 1300's	-	560 - 595	560 - 595	300 - 500	300 - 500
DUCTILE					
DUCTILE CAST IRONS	-	560 - 595	560 - 595	400 - 500	400 - 500
CAST IRONS					
GRAY CAST IRONS	-	560 - 595	560 - 595	400 - 500	400 - 500

Speed and feed chart parameters are for 4 flute full diameter slotting

Recommended slotting depth = 1 x diameter

Tool holding important for maximizing tool life. Minimize TIR

Max ramp angle recommended 3° or less

VI-PRO ENDMILLS - SOLID MICROGRAIN CARBIDE

VI-PRO

4 FLUTE

I.P.T. (Inch Per Tooth)

MATERIAL / TYPE	1/8"	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	3/4"	1"
COBALT BASE ALLOYS										
STELLITE, HS-21, HAYNES 25/188, X-40, L-605	.0004 - .0008	.0005 - .0011	.0009 - .0016	.0010 - .0018	.0012 - .0019	.0014 - .0021	.0016 - .0028	.0019 - .0031	.0024 - .0037	.0029 - .0041
NICKEL BASE ALLOYS										
INCONEL-625/718, WASPALLOY, RENE, HASTELLOY	.0004 - .0008	.0005 - .0011	.0009 - .0016	.0010 - .0018	.0012 - .0019	.0014 - .0021	.0016 - .0028	.0019 - .0031	.0024 - .0037	.0029 - .0041
IRON BASE ALLOYS										
INCOLOY 800-802, MULTIMET N-155, TIMKIN 16-25-6, CARPENTER 22-b3	.0004 - .0008	.0005 - .0011	.0009 - .0016	.0010 - .0018	.0012 - .0019	.0014 - .0021	.0016 - .0028	.0019 - .0031	.0024 - .0037	.0029 - .0041
MONEL										
MONEL-65% NICKEL	.0004 - .0008	.0009 - .0011	.0014 - .0016	.0018 - .0020	.0017 - .0019	.0019 - .0021	.0026 - .0028	.0029 - .0031	.0035 - .0037	.0039 - .0041
TITANIUM ALLOYS										
COMMERCIALLY PURE, 6Al-4V, ASTM 1/2/3, 6Al-25N-4Zr-2Mo-Si	.0004 - .0008	.0009 - .0011	.0014 - .0016	.0018 - .0020	.0017 - .0019	.0019 - .0021	.0026 - .0028	.0029 - .0031	.0035 - .0037	.0039 - .0041
STAINLESS STEEL (PRECIPITATION)										
12/8, 15/5, 17/4, AM-350/355	.0004 - .0008	.0009 - .0011	.0014 - .0016	.0016 - .0020	.0017 - .0025	.0019 - .0031	.0026 - .0032	.0029 - .0037	.0035 - .0039	.0039 - .0041
STAINLESS STEEL (AUSTENITIC)										
200 SERIES, 302, 303, 304, 316	.0004 - .0008	.0009 - .0011	.0014 - .0016	.0016 - .0020	.0017 - .0025	.0019 - .0031	.0026 - .0032	.0029 - .0037	.0035 - .0039	.0039 - .0041
STAINLESS STEEL (AUSTENITIC)										
304L, 316L	.0004 - .0008	.0009 - .0011	.0014 - .0016	.0016 - .0020	.0017 - .0025	.0019 - .0031	.0026 - .0032	.0029 - .0037	.0035 - .0039	.0039 - .0041
STAINLESS STEEL (MARTENSITIC)										
403, 410, 416, 440	.0004 - .0008	.0009 - .0011	.0014 - .0016	.0016 - .0020	.0017 - .0025	.0019 - .0031	.0026 - .0032	.0029 - .0037	.0035 - .0039	.0039 - .0041
HIGH STRENGTH TOOL STEELS										
4140, 4340, 6150, 5210, A2, D2, P20, H11, H13, S2, O1	.0004 - .0008	.0009 - .0011	.0014 - .0016	.0016 - .0020	.0017 - .0025	.0019 - .0031	.0026 - .0032	.0029 - .0037	.0035 - .0039	.0039 - .0041
CARBON STEELS										
1000's, 1100's, 1300's	.0004 - .0008	.0011 - .0013	.0018 - .0020	.0024 - .0026	.0030 - .0032	.0033 - .0035	.0035 - .0037	.0039 - .0041	.0041 - .0043	.0054 - .0056
DUCTILE										
DUCTILE CAST IRONS	.0004 - .0008	.0011 - .0013	.0018 - .0020	.0024 - .0026	.0030 - .0032	.0033 - .0035	.0035 - .0037	.0039 - .0041	.0041 - .0043	.0054 - .0056
CAST IRONS										
GRAY CAST IRONS	.0004 - .0008	.0011 - .0013	.0018 - .0020	.0024 - .0026	.0030 - .0032	.0033 - .0035	.0035 - .0037	.0039 - .0041	.0041 - .0043	.0054 - .0056

Chip Thinning recommended for 4 Flute to optimize tool life:

5% of Diameter Radial engaged: Multiply Feed 3X
 10% of Diameter Radial engaged: Multiply Feed 2X
 20% of Diameter Radial engaged: Multiply Feed 1.5X

VI-PRO ENDMILLS - SOLID MICROGRAIN CARBIDE

VI-PRO 5 FLUTE

**SFM FOR ALTiN, FOR ALCRO-MAX INCREASE UP TO +20%
FINISHING PASSES ONLY, 10% OF DIAMETER MAX**

MATERIAL / TYPE	Rc HARDNESS	5 FLUTE STUB LENGTH	5 FLUTE REG LENGTH	5 FLUTE LONG LENGTH	5 FLUTE EXTRA LONG
COBALT BASE ALLOYS					
STELLITE, HS-21,	UNDER 32	550 - 570	550 - 570	385 - 400	385 - 400
HAYNES 25/188, X-40, L-605	OVER 32	200 - 225	200 - 225	140 - 160	140 - 160
NICKEL BASE ALLOYS					
INCONEL-625/718, WASPALLOY,	UNDER 32	550 - 570	550 - 570	385 - 400	385 - 400
RENE, HASTELLOY	OVER 32	200 - 225	200 - 225	140 - 160	140 - 160
IRON BASE ALLOYS					
INCOLOY 800-802, MULTIMET N-155,	UNDER 32	550 - 570	550 - 570	385 - 400	385 - 400
TIMKIN 16-25-6, CARPENTER 22-b3	OVER 32	200 - 225	200 - 225	140 - 160	140 - 160
MONEL					
MONEL-65% NICKEL	-	550 - 570	550 - 570	385 - 400	385 - 400
TITANIUM ALLOYS					
COMMERCIALLY PURE, 6Al-4V,	-	-	-	-	-
ASTM 1/2/3, 6Al-25N-4Zr-2Mo-Si	-	550 - 570	550 - 570	385 - 400	385 - 400
STAINLESS STEEL (PRECIPITATION)					
12/8, 15/5, 17/4, AM-350/355	UNDER 32	600 - 625	600 - 625	420 - 440	420 - 440
	OVER 32	550 - 570	550 - 570	385 - 400	385 - 400
STAINLESS STEEL (AUSTENITIC)					
200 SERIES, 302, 303, 304, 316	-	600 - 625	600 - 625	420 - 440	420 - 440
STAINLESS STEEL (AUSTENITIC)					
304L, 316L	UNDER 32	600 - 625	600 - 625	420 - 440	420 - 440
	OVER 32	550 - 570	550 - 570	385 - 400	385 - 400
STAINLESS STEEL (MARTENSITIC)					
403, 410, 416, 440	-	600 - 625	600 - 625	420 - 440	420 - 440
HIGH STRENGTH TOOL STEELS					
4140, 4340, 6150, 5210, A2,	UNDER 32	600 - 625	600 - 625	420 - 440	420 - 440
D2, P20, H11, H13, S2, 01	OVER 32	550 - 570	550 - 570	385 - 400	385 - 400
CARBON STEELS					
1000's, 1100's, 1300's	-	800 - 850	800 - 850	560 - 595	560 - 595
DUCTILE					
DUCTILE CAST IRONS	-	800 - 850	800 - 850	560 - 595	560 - 595
CAST IRONS					
GRAY CAST IRONS	-	800 - 850	800 - 850	560 - 595	560 - 595

VI-PRO ENDMILLS - SOLID MICROGRAIN CARBIDE

VI-PRO

5 FLUTE

I.P.T. (Inch Per Tooth)										
MATERIAL / TYPE	1/8"	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	3/4"	1"
COBALT BASE ALLOYS										
STELLITE, HS-21, HAYNES 25/188, X-40, L-605	.0004 - .0008	.0005 - .0011	.0009 - .0016	.0010 - .0018	.0012 - .0019	.0014 - .0021	.0016 - .0028	.0019 - .0031	.0024 - .0037	.0029 - .0041
NICKEL BASE ALLOYS										
INCONEL-625/718, WASSPALLOY, RENE, HASTELLOY	.0004 - .0008	.0005 - .0011	.0009 - .0016	.0010 - .0018	.0012 - .0019	.0014 - .0021	.0016 - .0028	.0019 - .0031	.0024 - .0037	.0029 - .0041
IRON BASE ALLOYS										
INCOLOY 800-802, MULTIMET N-155, TIMKIN 16-25-6, CARPENTER 22-b3	.0004 - .0008	.0005 - .0011	.0009 - .0016	.0010 - .0018	.0012 - .0019	.0014 - .0021	.0016 - .0028	.0019 - .0031	.0024 - .0037	.0029 - .0041
MONEL										
MONEL-65% NICKEL	.0004 - .0008	.0009 - .0011	.0014 - .0016	.0018 - .0020	.0017 - .0019	.0019 - .0021	.0026 - .0028	.0029 - .0031	.0035 - .0037	.0039 - .0041
TITANIUM ALLOYS										
COMMERCIALLY PURE, 6Al-4V, ASTM 1/2/3, 6Al-25N-4Zr-2Mo-Si	.0004 - .0008	.0009 - .0011	.0014 - .0016	.0018 - .0020	.0017 - .0019	.0019 - .0021	.0026 - .0028	.0029 - .0031	.0035 - .0037	.0039 - .0041
STAINLESS STEEL (PRECIPITATION)										
12/8, 15/5, 17/4, AM-350/355	.0004 - .0008	.0009 - .0011	.0014 - .0016	.0016 - .0020	.0017 - .0025	.0019 - .0031	.0026 - .0032	.0029 - .0037	.0035 - .0039	.0039 - .0041
STAINLESS STEEL (AUSTENITIC)										
200 SERIES, 302, 303, 304, 316	.0004 - .0008	.0009 - .0011	.0014 - .0016	.0016 - .0020	.0017 - .0025	.0019 - .0031	.0026 - .0032	.0029 - .0037	.0035 - .0039	.0039 - .0041
STAINLESS STEEL (AUSTENITIC)										
304L, 316L	.0004 - .0008	.0009 - .0011	.0014 - .0016	.0016 - .0020	.0017 - .0025	.0019 - .0031	.0026 - .0032	.0029 - .0037	.0035 - .0039	.0039 - .0041
STAINLESS STEEL (MARTENSITIC)										
403, 410, 416, 440	.0004 - .0008	.0009 - .0011	.0014 - .0016	.0016 - .0020	.0017 - .0025	.0019 - .0031	.0026 - .0032	.0029 - .0037	.0035 - .0039	.0039 - .0041
HIGH STRENGTH TOOL STEELS										
4140, 4340, 6150, 5210, A2, D2, P20, H11, H13, S2, O1	.0004 - .0008	.0009 - .0011	.0014 - .0016	.0016 - .0020	.0017 - .0025	.0019 - .0031	.0026 - .0032	.0029 - .0037	.0035 - .0039	.0039 - .0041
CARBON STEELS										
1000's, 1100's, 1300'S	.0004 - .0008	.0011 - .0013	.0018 - .0020	.0024 - .0026	.0030 - .0032	.0033 - .0035	.0035 - .0037	.0039 - .0041	.0041 - .0043	.0054 - .0056
DUCTILE										
DUCTILE CAST IRONS	.0004 - .0008	.0011 - .0013	.0018 - .0020	.0024 - .0026	.0030 - .0032	.0033 - .0035	.0035 - .0037	.0039 - .0041	.0041 - .0043	.0054 - .0056
CAST IRONS										
GRAY CAST IRONS	.0004 - .0008	.0011 - .0013	.0018 - .0020	.0024 - .0026	.0030 - .0032	.0033 - .0035	.0035 - .0037	.0039 - .0041	.0041 - .0043	.0054 - .0056



HIGH PERFORMANCE ENDMILLS - SOLID MICROGRAIN CARBIDE

THESE VALUES ARE FOR UNCOATED TOOLS (EXCEPT FOR TERMINATOR).

FOR COATED TOOLS INCREASE SFM: ZRN = +30% ALTIN = +40%

SFM FOR HIGH PERFORMANCE CARBIDE ENDMILLS
TERMINATOR FINISHING PASSES ONLY, 10% OF DIAMETER MAX

MATERIAL / TYPE	Rc HARDNESS	2 Fl, 3 Fl 45° Helix Aluminum	3 Flute 45° & 60° Helix	5 Flute 45° Helix	TERMINATOR ALTIN COATING	TERMINATOR ALCRO-MAX COATING
COBALT BASE ALLOYS						
STELLITE, HS-21, HAYNES 25/188, X-40, L-605	UNDER 32 OVER 32	- -	200 - 275 125 - 175	250 - 300 150 - 200	220 - 270 150 - 200	265 - 325 180 - 240
NICKEL BASE ALLOYS						
INCONEL-625/718, Waspalloy, RENE, HASTELLOY	UNDER 32 OVER 32	- -	150 - 200 90 - 125	250 - 300 150 - 200	220 - 270 150 - 200	265 - 325 180 - 240
IRON BASE ALLOYS						
INCOLOY 800-802, MULTIMET N-155, TIMKIN 16-25-6, CARPENTER 22-b3	UNDER 32 OVER 32	- -	250 - 300 150 - 200	250 - 300 150 - 200	220 - 270 150 - 200	265 - 325 180 - 240
MONEL						
MONEL-65% NICKEL	-	-	200 - 300	225 - 350	200 - 245	240 - 295
TITANIUM ALLOYS						
COMMERCIAL PURE, 6Al-4V, ASTM 1/2/3, 6Al-25N-4Zr-2Mo-Si	- -	500 min. -	250 - 400 -	250 - 400 -	245 - 400 -	295 - 480 -
STAINLESS STEEL (PRECIPITATION)						
12/8, 15/5, 17/4, AM-350/355	UNDER 32 OVER 32	- -	200 - 350 150 - 250	200 - 350 150 - 250	200 - 350 150 - 245	240 - 420 180 - 295
STAINLESS STEEL (AUSTENITIC)						
200 SERIES, 302, 303, 304, 316	UNDER 32 OVER 32	- -	250 - 350 175 - 275	250 - 350 175 - 275	245 - 345 170 - 270	295 - 415 200 - 325
STAINLESS STEEL (AUSTENITIC)						
304L, 316L	UNDER 32 OVER 32	- -	125 - 200 90 - 125	125 - 200 90 - 125	120 - 200 90 - 120	145 - 240 110 - 145
STAINLESS STEEL (MARTENSITIC)						
403, 410, 416, 440	UNDER 32 OVER 32	- -	200 - 350 150 - 250	200 - 350 150 - 250	200 - 350 150 - 250	240 - 420 180 - 300
HIGH STRENGTH TOOL STEELS						
4140, 4340, 6150, 5210, A2, D2, P20, H11, H13, S2, O1	UNDER 32 OVER 32	- -	225 - 300 125 - 200	225 - 300 125 - 200	220 - 300 120 - 200	265 - 360 145 - 240
MEDIUM ALLOY STEELS						
200, 250, 300	UNDER 32 OVER 32	- -	250 - 350 150 - 200	250 - 350 150 - 200	245 - 345 150 - 200	295 - 415 180 - 240
CARBON STEELS						
1000's, 1100's, 1300's	UNDER 32 OVER 32	- -	250 - 350 150 - 200	250 - 350 150 - 200	245 - 345 150 - 200	295 - 415 180 - 240
DUCTILE						
DUCTILE CAST IRONS	-	-	350 - 450	300 - 400	200 - 300	240 - 360
CAST IRONS						
GRAY CAST IRONS	-	-	300 - 400	250 - 350	170 - 245	200 - 295
ALUMINUM						
2014, 2024, 6061-(T1-T6) 7075, DIE CAST, EXTRUDED	- -	500 min. -	500 min. -	500 min. -	- -	- -
MAGNESIUM						
	-	500 min.	500 min.	500 min.	-	-
COPPER, COPPER ALLOYS						
	-	400 - 500	400 - 500	250 - 350	-	-
BRASS BRONZE						
BRASS, ALUM/BRONZE, LOW SILICON BRONZE	- -	300 - 400 -	300 - 400 -	- -	- -	- -
COMPOSITES						
G-10 FIBERGLASS, GRAPHITE, GRAPHITE/EPOXY, PLASTICS	- -	250 - 1000 -	- -	- -	- -	- -

HIGH PERFORMANCE ENDMILLS - SOLID MICROGRAIN CARBIDE

I.P.T. (Inch Per Tooth)					
MATERIAL / TYPE	Rc HARDNESS	1/8"	1/8" - 1/4"	1/4" - 1/2"	1/2" - 1"
COBALT BASE ALLOYS					
STELLITE, HS-21, HAYNES 25/188, X-40, L-605	UNDER 32 OVER 32	.0005"-.0010" .0003"-.0005"	.0005"-.0010" .0003"-.0005"	.0008"-.0020" .0005"-.0015"	.0020"-.0040" .0010"-.0030"
NICKEL BASE ALLOYS					
INCONEL-625/718, WASPALLOY, RENE, HASTELLOY	UNDER 32 OVER 32	.0005"-.0010" .0003"-.0005"	.0005"-.0010" .0003"-.0005"	.0008"-.0020" .0005"-.0015"	.0020"-.0040" .0010"-.0030"
IRON BASE ALLOYS					
INCOLOY 800-802, MULTIMET N-155, TIMKIN 16-25-6, CARPENTER 22-b3	UNDER 32 OVER 32	.0005"-.0010" .0003"-.0005"	.0005"-.0010" .0003"-.0005"	.0008"-.0020" .0005"-.0015"	.0020"-.0040" .0010"-.0030"
MONEL					
MONEL-65% NICKEL	-	.0007"-.0015"	.0007"-.0015"	.0010"-.0025"	.0030"-.0050"
TITANIUM ALLOYS					
COMMERCIALLY PURE, 6Al-4V, ASTM 1/2/3, 6Al-25N-4Zr-2Mo-Si	- -	.0007"-.0015" -	.0007"-.0015" -	.0010"-.0025" -	.0030"-.0050" -
STAINLESS STEEL (PRECIPITATION)					
12/8, 15/5, 17/4, AM-350/355	UNDER 32 OVER 32	.0005"-.0010" .0003"-.0005"	.0005"-.0010" .0003"-.0005"	.0008"-.0020" .0005"-.0015"	.0020"-.0040" .0010"-.0030"
STAINLESS STEEL (AUSTENITIC)					
200 SERIES, 302, 303, 304, 316	UNDER 32 OVER 32	.0005"-.0010" .0003"-.0005"	.0005"-.0010" .0003"-.0005"	.0008"-.0020" .0005"-.0015"	.0020"-.0040" .0010"-.0030"
STAINLESS STEEL (AUSTENITIC)					
304L, 316L	UNDER 32 OVER 32	.0005"-.0008" .0003"-.0005"	.0005"-.0008" .0003"-.0005"	.0008"-.0015" .0005"-.0010"	.0015"-.0030" .0010"-.0020"
STAINLESS STEEL (MARTENSITIC)					
403, 410, 416, 440	UNDER 32 OVER 32	.0005"-.0010" .0003"-.0005"	.0005"-.0010" .0003"-.0005"	.0008"-.0020" .0005"-.0015"	.0020"-.0040" .0010"-.0030"
HIGH STRENGTH TOOL STEELS					
4140, 4340, 6150, 5210, A2, D2, P20, H11, H13, S2, O1	UNDER 32 OVER 32	.0005"-.0010" .0003"-.0005"	.0005"-.0010" .0003"-.0005"	.0008"-.0020" .0005"-.0015"	.0020"-.0040" .0010"-.0030"
MEDIUM ALLOY STEELS					
200, 250, 300	UNDER 32 OVER 32	.0007"-.0015" .0005"-.0010"	.0007"-.0015" .0005"-.0010"	.0010"-.0025" .0008"-.0020"	.0030"-.0050" .0020"-.0040"
CARBON STEELS					
1000's, 1100's, 1300's	UNDER 32 OVER 32	.0007"-.0015" .0005"-.0010"	.0007"-.0015" .0005"-.0010"	.0010"-.0025" .0008"-.0020"	.0030"-.0050" .0020"-.0040"
DUCTILE					
DUCTILE CAST IRONS	-	.0010"-.0020"	.0010"-.0020"	.0015"-.0040"	.0030"-.0100"
CAST IRONS					
GRAY CAST IRONS	-	.0010"-.0020"	.0010"-.0020"	.0015"-.0040"	.0030"-.0100"
ALUMINUM					
2014, 2024, 6061-(T1-T6) 7075, DIE CAST, EXTRUDED	- -	.0010"-.0020" -	.0010"-.0020" -	.0015"-.0040" -	.0030"-.0150" -
MAGNESIUM					
	-	.0010"-.0020"	.0010"-.0020"	.0015"-.0040"	.0030"-.0100"
COPPER, COPPER ALLOYS					
	-	.0007"-.0015"	.0007"-.0015"	.0010"-.0025"	.0020"-.0080"
BRASS BRONZE					
BRASS, ALUM/BRONZE, LOW SILICON BRONZE	- -	.0007"-.0015" -	.0007"-.0015" -	.0010"-.0025" -	.0020"-.0080" -
COMPOSITES					
G-10 FIBERGLASS, GRAPHITE, GRAPHITE/EPOXY, PLASTICS	- -	.0010"-.0020" -	.0010"-.0020" -	.0015"-.0040" -	.0030"-.0100" -

HIGH PERFORMANCE ROUGHING ENDMILLS - SOLID MICROGRAIN CARBIDE

SOLID CARBIDE ROUGHERS - SFM & CHIP LOAD

MATERIAL	HARDNESS HRC	SFM UNCOATED	SFM ALTIN	CHIP LOAD PER TOOTH 1/4" - 1/2" 1/2" - 1"	
LOW AND PLAIN CARBON, ALLOY & TOOL STEELS	<19	258 - 345	430 - 575	.0015 - .003	.003 - .0045
LOW AND PLAIN CARBON, ALLOY & TOOL STEELS	20 - 30	210 - 258	350 - 430	.0015 - .003	.003 - .0045
LOW AND PLAIN CARBON, ALLOY & TOOL STEELS	31 - 40	126 - 192	210 - 320	.0011 - .0021	.0021 - .0032
AUSTENITIC STAINLESS STEELS, 200 AND 300 SERIES 135-275	<28	150 - 300	250 - 500	.0010 - .0025	.0025 - .0040
FERRITIC, MARTENSITIC 400, 500, & PH STAINLESS STEELS	<35	135 - 258	225 - 430	.0015 - .0030	.0030 - .0045
TITANIUM ALLOYS	32 - 43	75 - 129	125 - 215	.0009 - .0018	.0018 - .0027
NICKEL-BASED HIGH TEMPERATURE ALLOYS	<32	39 - 87	65 - 145	.0009 - .0018	.0018 - .0027
NICKEL-BASED HIGH TEMPERATURE ALLOYS	32 - 50	33 - 66	55 - 110	.0009 - .0018	.0018 - .0027
COBALT-BASED HIGH TEMPERATURE ALLOYS	<45	27 - 45	45 - 75	.0009 - .0018	.0018 - .0027

For the long length carbide rougher the SFM should be reduced by 20%.

ENDMILLS - SOLID MICROGRAIN CARBIDE

GENERAL RECOMMENDATIONS

All speed and feed recommendations should be considered only as a starting point. The suggested speed & feed values are recommended for uncoated tools only (except for those of the TERMINATOR whose values are for its Altin coating). When various coatings are applied, SFM may be increased accordingly. These general percentages are as follows under optimal conditions:

TICN = +25% ZRN = +30% ALTIN = +40% ALCRO-MAX = +60%

RIGIDITY

Maximize rigidity to reduce chatter and increase tool life. Ways to improve rigidity include choosing the largest diameter possible to perform your milling task, use the shortest LOC (Length of Cut) available, and always use the tool holder which offers the shortest gage line (Shortest Tool Holder Length).

CHATTER

If chatter is present increase feed or reduce speed.

Speed and Feed Calculations:

$$\text{RPM} = (3.82 \times \text{SFM}) \div \text{Dia.}$$

$$\text{IPR} = \text{IPM} \div \text{RPM}$$

$$\text{SFM} = (\text{RPM} \times \text{Dia.}) \div 3.82$$

$$\text{IPM} = \text{IPT(chip load)} \times \text{No. of Teeth} \times \text{RPM}$$

$$\text{IPT(chip load)} = \text{IPM} \div (\text{No. of teeth} \times \text{RPM})$$



Technical Information



THREADMILLS - SOLID MICROGRAIN CARBIDE

THREADMILLS - SFM & CHIP LOAD

MATERIAL	SPEED SFM	FEEDRATE (INCHES/TOOTH) PER CUTTING TOOL DIAMETER						
		1/8	3/16	1/4	5/16	3/8	1/2	5/8
ALUMINUM	800 - 1400	.0005-.0010	.0010-.0015	.0015-.0025	.0020-.0030	.0030-.0045	.0035-.0055	.0050-.0070
MAGNESIUM	800 - 1400	.0005-.0010	.0010-.0015	.0015-.0025	.0020-.0030	.0030-.0045	.0035-.0055	.0050-.0070
BRASS	600 - 800	.0005-.0010	.0010-.0015	.0015-.0025	.0020-.0030	.0030-.0045	.0035-.0045	.0050-.0060
BRONZE	500 - 600	.0005-.0010	.0010-.0015	.0015-.0025	.0020-.0030	.0030-.0045	.0035-.0045	.0050-.0060
HARD BRONZE	200 - 300	.0004-.0008	.0007-.0012	.0010-.0020	.0010-.0020	.0015-.0025	.0020-.0030	.0030-.0040
LOW ALLOY STEEL <25RC	350 - 500	.0005-.0010	.0010-.0015	.0015-.0025	.0020-.0030	.0025-.0035	.0030-.0040	.0040-.0050
HIGH ALLOY STEEL >25RC	250 - 400	.0003-.0006	.0005-.0010	.0008-.0015	.0010-.0020	.0015-.0025	.0020-.0030	.0030-.0040
STAINLESS	150 - 250	.0004-.0008	.0006-.0010	.0010-.0015	.0015-.0020	.0015-.0030	.0020-.0035	.0030-.0040
CAST IRON - SOFT	250 - 350	.0004-.0008	.0007-.0013	.0007-.0013	.0015-.0020	.0020-.0030	.0020-.0040	.0030-.0050
CAST IRON - HARD	200 - 300	.0003-.0006	.0005-.0010	.0008-.0015	.0010-.0020	.0015-.0025	.0020-.0030	.0030-.0040
TITANIUM	80 - 150	.0003-.0006	.0005-.0010	.0008-.0015	.0010-.0020	.0015-.0025	.0015-.0025	.0025-.0035
INCONEL	60 - 100	.0003-.0006	.0005-.0010	.0008-.0015	.0010-.0020	.0015-.0025	.0015-.0025	.0020-.0030

THREADMILLS - CALCULATION FORMULAS

TO CALCULATE	USE THIS FORMULA
FEEDRATE ADJUSTMENT	$\frac{(\text{THREAD MAJOR DIA. TO BE CUT}) - (\text{THREADMILL DIA.})}{(\text{THREAD MAJOR DIA. TO BE CUT})} \times \text{LINEAR FEEDRATE}$
RPM	$\frac{3.8}{(\text{THREADMILL DIAMETER})} \times \text{SFM}$
LINEAR IPM	$(\text{INCHES PER TOOTH}) \times (\text{NUMBER OF FLUTES}) \times \text{RPM}$

BURS - SOLID MICROGRAIN CARBIDE

SELECTION BY CUT

SINGLE CUT:

- Provides the best surface finish and largest contact patch on the work piece.
- Demands greater operator skill since the single flute direction pulls the bur into the work piece.

DOUBLE CUT:

- Most popular geometry as the dual flute direction reduces the contact patch on the work piece and therefore provides easier operator control while still maintaining a good surface finish.

ALUMINUM CUT:

- These burs employ a Coarser flute which results in improved cutting performance for Aluminum and Aluminum Alloys.

CARBIDE BURS - SPEEDS

CUTTING DIA.	SUGGESTED RPM	MAXIMUM RPM
1/16	55,000 – 85,000	90,000
1/8	35,000 – 65,000	80,000
3/16	30,000 – 55,000	70,000
1/4	25,000 – 50,000	70,000
5/16	20,000 – 40,000	67,000
3/8	18,000 – 40,000	63,000
7/16	16,000 – 38,000	58,000
1/2	14,000 – 36,000	50,000
5/8	12,000 – 25,000	40,000
3/4	10,000 – 20,000	33,000
1	7,500 – 20,000	25,000

When using double cut: Reduce speeds by 25% approximately.
For stainless steel material: Increase speeds by 50% approximately.

Technical Information

GENERAL PURPOSE ENDMILLS - SOLID MICROGRAIN CARBIDE

THESE VALUES ARE FOR UNCOATED TOOLS.
FOR COATED TOOLS INCREASE SFM: **TICN = +25%** **ALTIN = +40%**

SFM FOR GENERAL PURPOSE CARBIDE ENDMILLS

MATERIAL / TYPE	Rc HARDNESS	2 Flute 30° Helix Stub, Reg	2 Flute 30° Helix Long, X-Long	4 Flute 30° Helix Stub, Reg	4 Flute 30° Helix Long, X-Long
COBALT BASE ALLOYS					
STELLITE, HS-21, HAYNES 25/188, X-40, L-605	UNDER 32 OVER 32	- -	- -	175 - 225 125 - 175	150 - 200 100 - 150
NICKEL BASE ALLOYS					
INCONEL-625/718, WASPALLOY, RENE, HASTELLOY	UNDER 32 OVER 32	- -	- -	125 - 175 70 - 115	150 - 200 100 - 150
IRON BASE ALLOYS					
INCOLOY 800-802, MULTIMET N-155, TIMKIN 16-25-6, CARPENTER 22-b3	UNDER 32 OVER 32	- -	- -	175 - 225 125 - 175	150 - 200 100 - 150
MONEL					
MONEL-65% NICKEL	-	175 - 300	125 - 175	175 - 300	125 - 175
TITANIUM ALLOYS					
COMMERCIALLY PURE, 6Al-4V, ASTM 1/2/3, 6Al-25N-4Zr-2Mo-Si	- -	200 - 300 -	125 - 250 -	200 - 300 -	125 - 250 -
STAINLESS STEEL (PRECIPITATION)					
12/8, 15/5, 17/4, AM-350/355	UNDER 32 OVER 32	- -	- -	150 - 250 125 - 175	100 - 150 80 - 150
STAINLESS STEEL (AUSTENITIC)					
200 SERIES, 302, 303, 304, 316	UNDER 32 OVER 32	- -	- -	200 - 250 150 - 200	125 - 175 100 - 150
STAINLESS STEEL (AUSTENITIC)					
304L, 316L	UNDER 32 OVER 32	- -	- -	90 - 125 75 - 110	80 - 120 60 - 90
STAINLESS STEEL (MARTENSITIC)					
403, 410, 416, 440	UNDER 32 OVER 32	- -	- -	150 - 250 125 - 175	100 - 150 80 - 150
HIGH STRENGTH TOOL STEELS					
4140, 4340, 6150, 5210, A2, D2, P20, H11, H13, S2, 01	UNDER 32 OVER 32	- -	- -	150 - 225 60 - 125	125 - 175 80 - 120
MEDIUM ALLOY STEELS					
200, 250, 300	UNDER 32 OVER 32	- -	- -	200 - 250 125 - 175	150 - 200 100 - 150
CARBON STEELS					
1000's, 1100's, 1300's	UNDER 32 OVER 32	- -	- -	200 - 250 125 - 175	150 - 200 100 - 150
DUCTILE					
DUCTILE CAST IRONS	-	250 - 350	200 - 300	300 - 400	200 - 300
CAST IRONS					
GRAY CAST IRONS	-	225 - 325	175 - 250	250 - 350	175 - 250
ALUMINUM					
2014, 2024, 6061-(T1-T6) 7075, DIE CAST, EXTRUDED	- -	500 min. -	500 min. -	500 min. -	500 min. -
MAGNESIUM					
	-	500 min.	500 min.	500 min.	500 min.
COPPER, COPPER ALLOYS					
	-	400 - 500	400 - 500	300 - 400	250 - 350
BRASS BRONZE					
BRASS, ALUM/BRONZE, LOW SILICON BRONZE	- -	300 - 400 -	300 - 400 -	250 - 350 -	200 - 300 -
COMPOSITES					
G-10 FIBERGLASS, GRAPHITE, GRAPHITE/EPOXY, PLASTICS	- -	250 - 1000 -	250 - 1000 -	250 - 1000 -	250 - 1000 -



Technical Information



GENERAL PURPOSE ENDMILLS - SOLID MICROGRAIN CARBIDE

CHIP LOAD FOR GENERAL PURPOSE CARBIDE ENDMILLS						
MATERIAL / TYPE	Rc HARDNESS	UP TO 1/8"	1/8" - 1/4"	1/4" - 1/2"	1/2" - 1"	1" - 1-1/4"
COBALT BASE ALLOYS						
STELLITE, HS-21, HAYNES 25/188, X-40, L-605	UNDER 32 OVER 32	.0005"-.0010" .0003"-.0005"	.0005"-.0010" .0003"-.0005"	.0008"-.0020" .0005"-.0015"	.0020"-.0040" .0010"-.0030"	.0030"-.0050" .0020"-.0040"
NICKEL BASE ALLOYS						
INCONEL-625/718, Waspalloy, RENE, HASTELLOY	UNDER 32 OVER 32	.0005"-.0010" .0003"-.0005"	.0005"-.0010" .0003"-.0005"	.0008"-.0020" .0005"-.0015"	.0020"-.0040" .0010"-.0030"	.0030"-.0050" .0020"-.0040"
IRON BASE ALLOYS						
INCOLOY 800-802, MULTIMET N-155, TIMKIN 16-25-6, CARPENTER 22-b3	UNDER 32 OVER 32	.0005"-.0010" .0003"-.0005"	.0005"-.0010" .0003"-.0005"	.0008"-.0020" .0005"-.0015"	.0020"-.0040" .0010"-.0030"	.0030"-.0050" .0020"-.0040"
MONEL						
MONEL-65% NICKEL	-	.0007"-.0015"	.0007"-.0015"	.0010"-.0025"	.0030"-.0050"	.0040"-.0060"
TITANIUM ALLOYS						
COMMERCIALLY PURE, 6Al-4V, ASTM 1/2/3, 6Al-25N-4Zr-2Mo-Si	- -	.0007"-.0015" -	.0007"-.0015" -	.0010"-.0025" -	.0030"-.0050" -	.0040"-.0060" -
STAINLESS STEEL (PRECIPITATION)						
12/8, 15/5, 17/4, AM-350/355	UNDER 32 OVER 32	.0005"-.0010" .0003"-.0005"	.0005"-.0010" .0003"-.0005"	.0008"-.0020" .0005"-.0015"	.0020"-.0040" .0010"-.0030"	.0030"-.0050" .0020"-.0040"
STAINLESS STEEL (AUSTENITIC)						
200 SERIES, 302, 303, 304, 316	UNDER 32 OVER 32	.0005"-.0010" .0003"-.0005"	.0005"-.0010" .0003"-.0005"	.0008"-.0020" .0005"-.0015"	.0020"-.0040" .0010"-.0030"	.0030"-.0050" .0020"-.0040"
STAINLESS STEEL (AUSTENITIC)						
304L, 316L	UNDER 32 OVER 32	.0005"-.0008" .0003"-.0005"	.0005"-.0008" .0003"-.0005"	.0008"-.0015" .0005"-.0010"	.0015"-.0030" .0010"-.0020"	.0020"-.0040" .0015"-.0030"
STAINLESS STEEL (MARTENSITIC)						
403, 410, 416, 440	UNDER 32 OVER 32	.0005"-.0010" .0003"-.0005"	.0005"-.0010" .0003"-.0005"	.0008"-.0020" .0005"-.0015"	.0020"-.0040" .0010"-.0030"	.0030"-.0050" .0020"-.0040"
HIGH STRENGTH TOOL STEELS						
4140, 4340, 6150, 5210, A2, D2, P20, H11, H13, S2, O1	UNDER 32 OVER 32	.0005"-.0010" .0003"-.0005"	.0005"-.0010" .0003"-.0005"	.0008"-.0020" .0005"-.0015"	.0020"-.0040" .0010"-.0030"	.0030"-.0050" .0020"-.0040"
MEDIUM ALLOY STEELS						
200, 250, 300	UNDER 32 OVER 32	.0007"-.0015" .0005"-.0010"	.0007"-.0015" .0005"-.0010"	.0010"-.0025" .0008"-.0020"	.0030"-.0050" .0020"-.0040"	.0040"-.0060" .0030"-.0050"
CARBON STEELS						
1000's, 1100's, 1300's	UNDER 32 OVER 32	.0007"-.0015" .0005"-.0010"	.0007"-.0015" .0005"-.0010"	.0010"-.0025" .0008"-.0020"	.0030"-.0050" .0020"-.0040"	.0040"-.0060" .0030"-.0050"
DUCTILE						
DUCTILE CAST IRONS	-	.0010"-.0020"	.0010"-.0020"	.0015"-.0040"	.0030"-.0100"	.0050"-.0100"
CAST IRONS						
GRAY CAST IRONS	-	.0010"-.0020"	.0010"-.0020"	.0015"-.0040"	.0030"-.0100"	.0050"-.0100"
ALUMINUM						
2014, 2024, 6061-(T1-T6) 7075, DIE CAST, EXTRUDED	- -	.0010"-.0020" -	.0010"-.0020" -	.0015"-.0040" -	.0030"-.0150" -	.0050"-.0150" -
MAGNESIUM						
	-	.0010"-.0020"	.0010"-.0020"	.0015"-.0040"	.0030"-.0100"	.0050"-.0100"
COPPER, COPPER ALLOYS						
	-	.0007"-.0015"	.0007"-.0015"	.0010"-.0025"	.0020"-.0080"	.0040"-.0100"
BRASS BRONZE						
BRASS, ALUM/BRONZE, LOW SILICON BRONZE	- -	.0007"-.0015" -	.0007"-.0015" -	.0010"-.0025" -	.0020"-.0080" -	.0040"-.0100" -
COMPOSITES						
G-10 FIBERGLASS, GRAPHITE, GRAPHITE/EPOXY, PLASTICS	- -	.0010"-.0020" -	.0010"-.0020" -	.0015"-.0040" -	.0030"-.0100" -	.0050"-.0100" -

Technical Information

DRILLS - SOLID MICROGRAIN CARBIDE

THESE VALUES ARE FOR UNCOATED TOOLS. FOR ALTiN COATED TOOLS INCREASE SFM +40%

SOLID CARBIDE DRILLING - SFM & CHIP LOAD

MATERIAL / TYPE	Rc HARDNESS	25° HELIX	15° HELIX STR FLT	SUGGESTED CHIP LOAD PER TOOTH				
				1/16" - 1/8"	1/8" - 1/4"	1/4" - 3/8"	3/8" - 1/2"	1/2" - 5/8"
COBALT BASE ALLOYS								
STELLITE, HS-21, HAYNES 25/188, X-40, L-605	UNDER 32 OVER 32	100 - 150 80 - 110	100 - 150 80 - 110	.0004"-.0010" .0004"-.0010"	.0008"-.0020" .0005"-.0010"	.0015"-.0025" .0010"-.0015"	.0020"-.0040" .0010"-.0020"	.0025"-.0050" .0015"-.0030"
NICKEL BASE ALLOYS								
INCONEL-625/718, WASPALLOY, RENE, HASTELLOY	UNDER 32 OVER 32	125 - 150 100 - 125	125 - 175 100 - 125	.0005"-.0015" .0004"-.0010"	.0010"-.0015" .0008"-.0015"	.0015"-.0025" .0010"-.0015"	.0020"-.0040" .0015"-.0030"	.0025"-.0050" .0020"-.0040"
IRON BASE ALLOYS								
INCOLOY 800-802, MULTIMET N-155, TIMKIN 16-25-6, CARPENTER 22-b3	UNDER 32 OVER 32	150 - 200 150 - 175	175 - 200 150 - 200	.0010"-.0015" .0008"-.0015"	.0010"-.0020" .0010"-.0020"	.0015"-.0035" .0015"-.0025"	.0020"-.0020" .0020"-.0040"	.0030"-.0060" .0025"-.0050"
MONEL								
MONEL-65% NICKEL	-	100 - 150	100 - 150	.0004"-.0010"	.0008"-.0015"	.0010"-.0015"	.0015"-.0030"	.0020"-.0040"
TITANIUM ALLOYS								
COMMERCIALLY PURE, 6Al-4V, ASTM 1/2/3, 6Al-25N-4Zr-2Mo-Si	- -	150 - 200 -	150 - 200 -	.0008"-.0015" -	.0010"-.0020" -	.0015"-.0030" -	.0020"-.0040" -	.0025"-.0050" -
STAINLESS STEEL (PRECIPITATION)								
12/8, 15/5, 17/4, AM-350/355	UNDER 32 OVER 32	125 - 175 80 - 125	150 - 200 100 - 150	.0005"-.0015" .0004"-.0010"	.0010"-.0020" .0008"-.0015"	.0015"-.0035" .0010"-.0015"	.0020"-.0040" .0015"-.0030"	.0025"-.0050" .0020"-.0040"
STAINLESS STEEL (AUSTENITIC)								
200 SERIES, 302, 303, 304, 316	UNDER 32 OVER 32	100 - 175 100 - 125	150 - 200 125 - 150	.0005"-.0015" .0004"-.0010"	.0010"-.0020" .0008"-.0015"	.0015"-.0035" .0010"-.0015"	.0020"-.0040" .0015"-.0030"	.0025"-.0050" .0020"-.0040"
STAINLESS STEEL (AUSTENITIC)								
304L, 316L	UNDER 32 OVER 32	80 - 100 60 - 90	90 - 125 80 - 100	.0004"-.0010" .0003"-.0008"	.0008"-.0015" .0005"-.0010"	.0010"-.0015" .0010"-.0015"	.0015"-.0030" .0010"-.0020"	.0020"-.0040" .0015"-.0030"
STAINLESS STEEL (MARTENSITIC)								
403, 410, 416, 440	UNDER 32 OVER 32	100 - 150 80 - 125	125 - 175 100 - 140	.0005"-.0015" .0004"-.0010"	.0010"-.0020" .0008"-.0015"	.0015"-.0035" .0010"-.0015"	.0020"-.0040" .0015"-.0030"	.0025"-.0050" .0020"-.0040"
HIGH STRENGTH TOOL STEELS								
4140, 4340, 6150, 5210, A2, D2, P20, H11, H13, S2, 01	UNDER 32 OVER 32	100 - 175 80 - 130	125 - 175 80 - 130	.0005"-.0015" .0004"-.0010"	.0010"-.0020" .0010"-.0020"	.0015"-.0025" .0010"-.0020"	.0015"-.0030" .0015"-.0030"	.0020"-.0040" .0020"-.0040"
MEDIUM ALLOY STEELS								
200, 250, 300	UNDER 32 OVER 32	125 - 175 100 - 150	125 - 175 100 - 150	.0010"-.0015" .0005"-.0010"	.0015"-.0025" .0010"-.0020"	.0020"-.0030" .0010"-.0025"	.0020"-.0040" .0015"-.0030"	.0025"-.0050" .0020"-.0040"
CARBON STEELS								
1000's, 1100's, 1300's	UNDER 32 OVER 32	125 - 175 100 - 125	150 - 200 100 - 175	.0010"-.0015" .0005"-.0010"	.0015"-.0025" .0010"-.0020"	.0020"-.0030" .0010"-.0025"	.0020"-.0040" .0015"-.0035"	.0025"-.0050" .0020"-.0040"
DUCTILE								
DUCTILE CAST IRONS	-	125 - 200	150 - 250	.0010"-.0020"	.0010"-.0030"	.0015"-.0035"	.0025"-.0040"	.0030"-.0050"
CAST IRONS								
GRAY CAST IRONS	-	100 - 200	150 - 250	.0010"-.0020"	.0010"-.0030"	.0015"-.0035"	.0025"-.0040"	.0030"-.0050"
ALUMINUM								
2014, 2024, 6061-(T1-T6) 7075, DIE CAST, EXTRUDED	- -	150 - 300 -	- -	.0010"-.0020" -	.0015"-.0040" -	.0020"-.0020" -	.0030"-.0060" -	.0035"-.0070" -
MAGNESIUM								
	-	200 - 500	-	.0010"-.0020"	.0010"-.0030"	.0015"-.0035"	.0025"-.0040"	.0030"-.0050"
COPPER, COPPER ALLOYS								
	-	150 - 300	-	.0010"-.0020"	.0010"-.0030"	.0015"-.0035"	.0025"-.0040"	.0030"-.0050"
BRASS BRONZE								
BRASS, ALUM/BRONZE	-	150 - 300	-	.0010"-.0020"	.0010"-.0030"	.0015"-.0035"	.0025"-.0040"	.0030"-.0050"
BRASS BRONZE								
LOW SILICON BRONZE	-	125 - 200	-	.0008"-.0015"	.0010"-.0020"	.0015"-.0030"	.0020"-.0040"	.0025"-.0050"
COMPOSITES								
G-10 FIBERGLASS, GRAPHITE, GRAPHITE/EPOXY, PLASTICS	- -	150 - 300 -	150 - 300 -	.0010"-.0020" -	.0010"-.0030" -	.0015"-.0035" -	.0025"-.0040" -	.0030"-.0050" -

MADE IN THE
USA

Technical Information



GENERAL PURPOSE TAPS

MACHINE SCREW TAPS (NC & NF)

SIZE	OVERALL LENGTH	THREAD LENGTH	SQUARE LENGTH	SHANK DIAMETER	SQUARE
#0 (.060)	1-5/8	5/16	3/16	.141	.110
#1 (.073)	1-11/16	3/8	3/16	.141	.110
#2 (.066)	1-3/4	7/16	3/16	.141	.110
#3 (.099)	1-13/16	1/2	3/16	.141	.110
#4 (.112)	1-7/8	9/16	3/16	.141	.110
#5 (.125)	1-15/16	5/8	3/16	.141	.110
#6 (.138)	2	11/16	3/16	.141	.110
#8 (.164)	2-1/8	3/4	1/4	.168	.131
#10 (.190)	2-3/8	7/8	1/4	.194	.152
#12 (.216)	2-3/8	15/16	9/32	.220	.165

FRACTIONAL SIZE TAPS (NC & NF)

SIZE	OVERALL LENGTH	THREAD LENGTH	SQUARE LENGTH	SHANK DIAMETER	SQUARE
1/4	2-1/2	1	5/16	.255	.191
5/16	2-23/32	1-1/8	3/8	.318	.238
3/8	2-15/16	1-1/4	7/16	.381	.286
7/16	3-5/32	1-7/16	13/32	.323	.242
1/2	3-3/8	1-21/32	7/16	.367	.275
9/16	3-19/32	1-21/32	1/2	.429	.322
5/8	3-13/16	1-13/16	9/16	.480	.360
11/16	4-1/32	1-13/16	5/8	.542	.406
3/4	4-1/4	2	11/16	.590	.442
7/8	4-11/16	2-7/32	3/4	.697	.523
1	5-1/8	2-1/2	13/16	.800	.600
1-1/8	5-7/16	2-9/16	7/8	.896	.672
1-1/4	5-3/4	2-9/16	1	1.021	.766
1-3/8	6-1/16	3	1-1/16	1.108	.831
1-1/2	6-3/8	3	1-1/8	1.233	.925

PIPE TAPS - STRAIGHT & TAPER

SIZE	OVERALL LENGTH	THREAD LENGTH	SQUARE LENGTH	SHANK DIAMETER	SQUARE
1/16 - 27	2-1/8	11/16	3/8	.3125	.234
1/8 - 27	2-1/8	3/4	3/8	.3125(SS)	.234
1/8 - 27	2-1/8	3/4	3/8	.4375(LS)	.328
1/4 - 18	2-7/16	1-1/16	7/16	.5625	.421
3/8 - 18	2-9/16	1-1/16	1/2	.7000	.531
1/2 - 14	3-1/8	1-3/8	5/8	.6875	.515
3/4 - 14	3-1/4	1-3/8	11/16	.9063	.679
1 - 11-1/2	3-3/4	1-3/4	13/16	1.1250	.843
1-1/4 - 11-1/2	4	1-3/4	15/16	1.3125	.984
1-1/2 - 11-1/2	4-1/4	1-3/4	1	1.5000	1.125
2 - 11-1/2	4-1/2	1-3/4	1-1/8	1.8750	1.406

(SS) = SMALL SHANK (LS) = LARGE SHANK

PULLEY TAPS

SIZE	THREAD LENGTH	SQUARE LENGTH	SHANK DIAMETER	SQUARE	NECK LENGTH	GROUND LENGTH
1/4	1	5/16	.255	.191	3/8	1-1/2
5/16	1-1/8	3/8	.318	.238	3/8	1-9/16
3/8	1-1/4	7/16	.381	.286	3/8	1-5/8
7/16	1-7/16	1/2	.444	.333	7/16	1-11/16
1/2	1-21/32	9/16	.507	.380	1/2	1-11/16
5/8	1-13/16	11/16	.633	.475	5/8	2
3/4	2	3/4	.759	.569	3/4	2-1/4

SEE PAGE 129 FOR OVERALL LENGTHS AVAILABLE.

SMALL SHANK EXTENSION TAPS

SIZE	NC/NF	THREAD LENGTH	SQUARE LENGTH	SHANK DIAMETER	SQUARE
6 - 32	NC	11/16	3/16	0.097	0.073
8 - 32	NC	3/4	1/4	0.123	0.092
10 - 24	NC	7/8	1/4	0.136	0.102
10 - 32	NF	7/8	1/4	0.136	0.102
1/4 - 20	NC	1	5/16	0.185	0.139
1/4 - 28	NF	1	5/16	0.185	0.139
5/16 - 18	NC	1-1/8	3/8	0.240	0.180
5/16 - 24	NF	1-1/8	3/8	0.240	0.180
3/8 - 16	NC	1-1/4	7/16	0.275	0.206
3/8 - 24	NF	1-1/4	7/16	0.275	0.206
7/16 - 14	NC	1-7/16	13/32	0.323	0.242
7/16 - 20	NF	1-7/16	13/32	0.323	0.242
1/2 - 13	NC	1-21/32	7/16	0.367	0.275
1/2 - 20	NF	1-21/32	7/16	0.367	0.275
5/8 - 11	NC	1-13/16	9/16	0.480	0.360
5/8 - 18	NF	1-13/16	9/16	0.480	0.360
3/4 - 10	NC	2	11/16	0.590	0.442
3/4 - 16	NF	2	11/16	0.590	0.442

METRIC TAPS

SIZE	OVERALL LENGTH	THREAD LENGTH	SQUARE LENGTH	SHANK DIAMETER	SQUARE	INCH BLANK
M1.6 x 0.35	1-5/8	5/16	3/16	.141	.110	#0
M2 x 0.40	1-3/4	7/16	3/16	.141	.110	#2
M2.5 x 0.45	1-13/16	1/2	3/16	.141	.110	#3
M3 x 0.50	1-15/16	5/8	3/16	.141	.110	#5
M3.5 x 0.60	2	11/16	3/16	.141	.110	#6
M4 x 0.70	2-1/8	3/4	1/4	.168	.131	#8
M4.5 x 0.75	2-3/8	7/8	1/4	.194	.152	#10
M5 x 0.80	2-3/8	7/8	1/4	.194	.152	#10
M6 x 1	2-1/2	1	5/16	.255	.191	1/4
M6.3 x 1	2-1/2	1	5/16	.255	.191	1/4
M7 x 1	2-23/32	1-1/8	3/8	.318	.238	5/16
M8 x 1.25	2-23/32	1-1/8	3/8	.318	.238	5/16
M10 x 1.50	2-15/16	1-1/4	7/16	.381	.286	3/8
M12 x 1.75	3-3/8	1-21/32	7/16	.367	.275	1/2
M14 x 2	3-19/32	1-21/32	1/2	.429	.322	9/16
M16 x 2	3-13/16	1-13/16	9/16	.480	.360	5/8
M18 x 2.50	4-1/32	1-13/16	5/8	.542	.406	11/16
M20 x 2.50	4-15/32	2	11/16	.652	.489	13/16
M24 x 3	4-29/32	2-7/32	3/4	.760	.570	15/16
M30 x 3.50	5-7/16	2-9/16	1	1.021	.766	1-3/16
M36 x 4	6-1/16	3	1-1/8	1.233	.925	1-7/16

FOR ADDITIONAL PRODUCT INFORMATION GO TO TITANMAN.COM

PREDATOR TAPS - HIGH VANADIUM POWDERED METAL

SPEED CHART FOR THE PREDATOR TAPS				
MATERIAL / TYPE	HARDNESS		CUTTING SPEED (fpm)	CUTTING FLUID *
	Bhn	Rc		
ALUMINUM ALLOYS				
UNALLOYED - 1000 SERIES	-	-	40 - 65	WS, CO
CAST - 360, A380	-	-	30 - 65	WS, CO
WROUGHT - 2000-7000 SERIES	-	-	25 - 40	WS, CO
BRASS				
HIGH-LEADED, FREE CUTTING - C34000, C36000	-	-	30 - 50	WS
NAVAL, RED - C46400-C46700, C23000	-	-	25 - 40	WS
CAST IRON				
PEARLITIC, GRAY CAST IRON, FERRITIC - A48 CLASS 20, CLASS 25, CLASS 40	< 253	< 25	20 - 50	WS
MALLEABLE - ASTM A47 GRADE 32510, SAE J158 GRADE M3210	< 253	< 25	15 - 40	CO
NICKEL ALLOYS				
NICKEL BASE ALLOY, WROUGHT & CAST - NICKEL 200, MONEL ALLOY 400	< 253	< 25	20 - 30	CO
HIGH TEMPERATURE ALLOY, WROUGHT & CAST - INCONEL 600, 718, HASTALLOY B & C	253 - 390	25 - 42	15 - 20	CO
STEEL				
LOW CARBON - 1010, 1018, 1029, 1513, 1522	< 190	< 10	25 - 50	WS, CO
MEDIUM CARBON - 1030, 1040, 1045, 1050	< 208	< 15	20 - 40	WS, CO
HIGH CARBON - 1050, 1070, 1080, 1090, 1561, 1572	< 253	< 25	20 - 30	CO
HIGH STRENGTH STEEL - 4140, 4340	327 - 390	35 - 42	15 - 20	CO
STAINLESS STEEL				
AUSTENITIC - SAE (300 SERIES)	< 253	< 25	20 - 30	CO
MARTENSITIC & FERRITIC - 400 SERIES, 416, 420F, 446	253 - 301	25 - 32	15 - 25	CO
HARDENED - 15-5PH, 17-4PH, A286	< 327 - 390	< 35 - 42	12 - 20	CO
TITANIUM ALLOYS				
ALPHA & ALPHA-BETA ALLOYS ANNEALED - Ti-6Al-4V	253 - 301	25 - 32	15 - 20	CO
ALPHA & ALPHA-BETA ALLOYS SOLUTION TREATED & AGED - Ti-6Al-6V	327 - 390	35 - 42	8 - 15	CO
TOOL STEEL				
HOT WORK, COLD WORK & MOLD - A2, D2, H10, H14, P2, P13	190 - 253	10 - 25	15 - 20	CO
HOT WORK, COLD WORK & MOLD - A2, D2, H10, H14, P2, P13	327 - 390	35 - 42	12 - 20	CO

Your individual manufacturing conditions will greatly influence speeds.

* WS - Water Soluble

CO - Cutting Oil

In most instances cutting fluid manufacturers recommend specific fluid for different materials.



Technical Information



DRILLS - HIGH SPEED STEEL

ELEMENT & DIMENSIONAL TOLERANCES FOR 2, 3 & 4 FLUTE DRILLS

DIAMETER AT POINT

SIZE (INCLUSIVE)	TOLERANCE
OVER #81 TO 1/8	+ .0000 TO - .0005
OVER 1/8 TO 1/4	+ .0000 TO - .0007
OVER 1/4 TO 1/2	+ .0000 TO - .0010
OVER 1/2 TO 1	+ .0000 TO - .0012
OVER 1 TO 2	+ .0000 TO - .0015
OVER 2 TO 3-1/2	+ .0000 TO - .0020

SHANK DIAMETER

SIZE (INCLUSIVE)	TOLERANCE
OVER #81 TO 1/8	- .0000 TO - .0025
OVER 1/8 TO 1/4	- .0005 TO - .0030
OVER 1/4 TO 1/2	- .0005 TO - .0045
OVER 1/2 TO 2	- .0005 TO - .0030

BACK TAPER

SIZE (INCLUSIVE)	TOLERANCE PER INCH
OVER #81 TO 1/8	.0000 TO .0008
OVER 1/8 TO 1/4	.0002 TO .0008
OVER 1/4 TO 1/2	.0002 TO .0009
OVER 1/2 TO 1	.0003 TO .0011
OVER 1 TO 3-1/2	.0004 TO .0015

FLUTE LENGTH

SIZE (INCLUSIVE)	TOLERANCE
OVER #81 TO 1/8	+1/8 TO -1/16
OVER 1/8 TO 1/2	+1/8 TO -1/8
OVER 1/2 TO 1	+1/4 TO -1/8
OVER 1 TO 2	+1/4 TO -1/4
OVER 2 TO 3-1/2	+3/8 TO -3/8

OVERALL LENGTH

SIZE (INCLUSIVE)	TOLERANCE
OVER #81 TO 1/8	+1/8 TO -1/16
OVER 1/8 TO 1/2	+1/8 TO -1/8
OVER 1/2 TO 1	+1/4 TO -1/8
OVER 1 TO 2	+1/4 TO -1/4
OVER 2 TO 3-1/2	+3/8 TO -3/8

INCLUDED POINT ANGLE

SIZE (INCLUSIVE)	INCLUDED ANGLE	TOLERANCE
1/16 TO 1/2	118°	±5°
OVER 1/2 TO 1-1/2	118°	±3°
OVER 1-1/2 TO 3-1/2	118°	±2°

LIP HEIGHT

SIZE (INCLUSIVE)	TIV (TOTAL INDICATOR VARIATION)
1/16 TO 1/8	.0020
OVER 1/8 TO 1/4	.0030
OVER 1/4 TO 1/2	.0040
OVER 1/2 TO 1	.0050
OVER 1 TO 3-1/2	.0060

NOTE: 95% of drills in any one lot to fall within tolerances above.

SUGGESTED METHOD OF MEASUREMENT:

1. Rotate the drill in a vee block against a back end stop.
2. Measure the cutting lip height variation on a comparator, or with an indicator set at allocation approximately 75% of the distance from the center to the periphery of the drill.

CENTRALITY OF WEB

SIZE (INCLUSIVE)	TIV (TOTAL INDICATOR VARIATION)
1/16 TO 1/8	.0030
OVER 1/8 TO 1/4	.0040
OVER 1/4 TO 1/2	.0050
OVER 1/2 TO 1	.0070
OVER 1 TO 3-1/2	.0100

NOTE: 95% of drills in any one lot to fall within tolerances above.

SUGGESTED METHOD OF MEASUREMENT:

1. Rotate the drill in a close fitting bushing.
2. Record the difference in indicator readings of the web at the point as the drill is indexed 180°.

FLUTE SPACING

SIZE (INCLUSIVE)	TOLERANCE (TIV)	ACTUAL DEVIATION
1/16 TO 1/8	.0030	.0015
OVER 1/8 TO 1/4	.0060	.0030
OVER 1/4 TO 1/2	.0100	.0050
OVER 1/2 TO 1	.0140	.0070
OVER 1 TO 3-1/2	.0260	.0130

NOTE: 95% of drills in any one lot to fall within tolerances above.

SUGGESTED METHOD OF MEASUREMENT:

1. Place the drill in a vee block against a back end stop, and rotate it against a radial finger stop.
2. Take an indicator reading at the leading edge of the margin on the opposite flute.
3. Repeat for the other flute and note the difference between the two readings.
4. The deviation in flute spacing is equal to one-half the difference between the two readings.

FOR ADDITIONAL PRODUCT INFORMATION GO TO TITANMAN.COM

Technical Information

DRILLS - HIGH SPEED STEEL

SFM & CHIP LOAD

MATERIAL / TYPE	SFM			FEED in INCHES PER REVOLUTION (IPR) +/-25%									
	GENERAL PURPOSE	HSS HEAVY DUTY	COBALT	1/32"	3/32"	1/8"	5/32"	3/16"	1/4"	5/16"	3/8"	1/2"	9/16"
STEEL													
12L14, 12L15	115	115	115	.0008-.0009	.0026-.0033	.0040-.0053	.0046-.0060	.0051-.0067	.0059-.0078	.0075-.0098	.009-.0117	.0096-.0124	.0107-.0137
1005-1025, 1214, 1215, A36	98	98	98	0.0008	0.0026	0.004	0.0046	0.0051	0.0059	0.0075	0.009	0.0096	0.0107
1000'S, 1100'S	82	89	89	0.0007	.0020-.0022	.0029-.0033	.0033-.0038	.0037-.0043	.0043-.0050	.0054-.0063	.0065-.0075	.0070-.0081	.0080-.0091
4140, 4340, 52100, 8620, H11-H41, A2, D2, 01, P20, 420	30-66	33-79	33-79	.0006-.0007	.0015-.0020	.0021-.0029	.0024-.0033	.0027-.0037	.0031-.0043	.0039-.0054	.0047-.0065	.0051-.0070	.0059-.0080
STAINLESS STEEL													
200, 303, 416, 440	49	72	72	0.0007	0.0017	0.0024	0.0028	0.0031	0.0037	0.0045	0.0055	0.0059	0.0068
300 SERIES	26	36	36	0.0007	0.0022	0.0033	0.0038	0.0043	0.005	0.0063	0.0075	0.0081	0.0091
318-329, 400-446, DUPLEX	30	49	49	0.0006	0.0013	0.0017	0.002	0.0022	0.0025	0.0031	0.0039	0.0043	0.0049
CAST IRON													
GREY, G10, Gg40, J431C, A48 CLASS 20	79-98	92-115	92-115	.0006-.0008	.0013-.0026	.0021-.0040	.0024-.0046	.0027-.0051	.0031-.0059	.0039-.0075	.0047-.009	.0051-.0096	.0059-.0107
A220, A436, A439, A602, BLACK	66	72	72	0.0007	0.0017	0.0024	0.0028	0.0031	0.0037	0.0045	0.0055	0.0059	0.0068
BLACK Gts/Gtw, J434C	46	56	56	0.0007	0.0017	0.0024	0.0028	0.0031	0.0037	0.0045	0.0055	0.0059	0.0068
TITANIUM													
COMMERCIALLY PURE	75	92	92	0.0007	.0017-.0020	.0024-.0029	.0028-.0033	.0031-.0037	.0037-.0043	.0045-.0054	.0055-.0065	.0059-.0070	.0068-.0080
6Al4V, 6A14V-2SnMonel, Monel K	20-39	36-66	36-66	0.0006	.0011-.0015	.0015-.0021	.0016-.0024	.0018-.0027	.0021-.0031	.0026-.0039	.0031-.0047	.0035-.0051	.0041-.0059
NICKEL													
COMMERCIALLY PURE, 17644, 200, 5553	33	49	49	0.0007	0.0022	0.0033	0.0038	0.0043	0.005	0.0063	0.0075	0.0081	0.0091
Monel 400, Hastelloy C, Inconel 625, Waspalloy	20	23	23	0.0007	0.0017	0.0024	0.0028	0.0031	0.0037	0.0045	0.0055	0.0059	0.0068
Inconel 718, Nimonic 75-95, Rene 41, Inconel 825, A286	10	20	20	.0004-.0006	.0009-.0011	.0011-.0015	.0013-.0016	.0014-.0018	.0017-.0021	.0021-.0026	.0024-.0031	.0027-.0035	.0032-.0041
COPPER													
COMMERCIALLY PURE	108	125	125	.0007-.0008	.0022-.0026	.0033-.0040	.0038-.0046	.0043-.0051	.0050-.0059	.0063-.0075	.0075-.0090	.0081-.0096	.0091-.0107
BRASS, BRONZE 314-340, 350-370	115	131	131	.0007-.0008	.0020-.0030	.0029-.0047	.0033-.0053	.0037-.0059	.0043-.0068	.0054-.0087	.0065-.0104	.0070-.0110	.008-.0122
BRASS ALLOYED Cu+Al+Fe, LONG CHIPPING	89	89	89	0.0008	0.0026	0.004	0.0046	0.0051	0.0059	0.0075	0.009	0.0096	0.0107
High Strength Bronze	52	69	69	0.0007	.0020-.0022	.0029-.0033	.0033-.0038	.0037-.0043	.0043-.0050	.0054-.0063	.0065-.0075	.0070-.0081	.0080-.0091
ALUMINUM, MAGNESIUM													
Commercially Pure	108	108	108	0.0009	0.0033	0.0053	0.006	0.0067	0.0078	0.0098	0.0117	0.0124	0.0137
6061, T6	89-98	98	98	.0007-.0009	.0022-.0033	.0033-.0053	.0038-.0060	.0043-.0067	.0050-.0078	.0063-.0098	.0075-.0117	.0081-.0124	.0091-.0137
SYNTHETIC MATERIALS													
Thermoplastics	98	-	-	0.0009	0.0033	0.0053	0.006	0.0067	0.0078	0.0098	0.0117	0.0124	0.0137
Thermosetting Plastics	92	-	-	0.0008	0.0026	0.004	0.0046	0.0051	0.0059	0.0075	0.009	0.0096	0.0107
Reinforced Plastic Material	46	-	-	0.0007	0.002	0.0029	0.0033	0.0037	0.0043	0.0054	0.0065	0.007	0.008

Decimal Equivalent Chart

DECIMAL EQUIVALENTS AND TAP SIZES OF FRACTION, WIRE, LETTER AND METRIC SIZES

DRILL SIZE	DECIMAL INCHES	DRILL SIZE	DECIMAL INCHES	TAP SIZE	DRILL SIZE	DECIMAL INCHES	TAP SIZE	DRILL SIZE	DECIMAL INCHES	TAP SIZE	DRILL SIZE	DECIMAL INCHES	TAP SIZE
.97	.0059	58	.0420		27	.1440		H	.2660		17/32	.5312	5/8-11
.15mm	.0059	57	.0430		3.7mm	.1457		6.8mm	.2677		13.5mm	.5315	
96	.0063	1.1mm	.0433		26	.1470	3/16-24NS	6.9mm	.2717		35/64	.5469	
.16mm	.0063	1.15mm	.0453		3.75mm	.1476	m4.5x0.75	I	.2720	5/16-24NF	14mm	.5512	m16x2
95	.0067	56	.0465		25	.1495	#10-24	7mm	.2756	m8x1	9/16	.5625	3/8-18NPT
.17mm	.0067	3/64	.0469	#0-80	3.8mm	.1496		J	.2770		14.5mm	.5709	m16x1.5
94	.0071	1.2mm	.0472		24	.1520		7.1mm	.2795		37/64	.5781	5/8-18NF
.18mm	.0071	1.25mm	.0492	m1.6x0.35	3.9mm	.1535		K	.2810		15mm	.5906	
93	.0075	1.3mm	.0512		23	.1540		9/32	.2812	5/16-32NS	19/32	.5938	3/8-18 NPS PIPE
.19mm	.0075	55	.0520		5/32	.1562		7.2mm	.2835		39/64	.6094	
92	.0079	1.35mm	.0531		22	.1570	3/16-32NS	7.25mm	.2854		15.5mm	.6102	m18x2.5
.2mm	.0079	54	.0550		4mm	.1575		7.3mm	.2874		5/8	.6250	11/16-16NS
91	.0083	1.4mm	.0551		21	.1590	#10-32	L	.2900		16mm	.6299	m18x2.0
.21mm	.0083	1.45mm	.0571	m1.8x0.35	20	.1610		7.4mm	.2913		41/64	.6406	
90	.0087	1.5mm	.0591		4.1mm	.1614		M	.2950		16.5mm	.6496	
.22mm	.0087	53	.0595	#1-64,72	4.2mm	.1654	m5x0.8	7.5mm	.2953		21/32	.6562	3/4-10NC
89	.0091	1.55mm	.0610		19	.1660		19/64	.2969		17mm	.6693	
.23mm	.0091	1/16	.0625		4.25mm	.1673		7.6mm	.2992		43/64	.6719	
.24mm	.0094	1.6mm	.0630	m2x0.4	4.3mm	.1693		N	.3020		11/16	.6875	3/4-16NF
88	.0095	52	.0635		18	.1695		7.7mm	.3031		17.5mm	.6890	m20x2.5
.25mm	.0098	1.65mm	.0650		11/64	.1719		7.75mm	.3051	m9x1.25	45/64	.7031	1/2-14NPT PIPE
87	.0100	1.7mm	.0669		17	.1730		7.8mm	.3071		18mm	.7087	m20x2.0
.26mm	.0102	51	.0670	#2-56	4.4mm	.1732		7.9mm	.3110		23/32	.7188	
86	.0105	1.75mm	.0689	m2.2x0.45	16	.1770	#12-24	5/16	.3125	3/8-16NC	18.5mm	.7283	m20x1.5
.27mm	.0106	50	.0700	#2-64	4.5mm	.1772		8mm	.3150		47/64	.7344	1/2-14NPS PIPE
85	.0110	1.8mm	.0709		15	.1800		O	.3160		19mm	.7480	
.28mm	.0110	1.85mm	.0728		4.6mm	.1811		8.1mm	.3189		3/4	.7500	
.29mm	.0114	49	.0730		14	.1820	#12-28	8.2mm	.3228		49/64	.7656	7/8-9NC
84	.0115	1.9mm	.0748	m2.3x.04	13	.1850		P	.3230		19.5mm	.7677	m22x2.5
.3mm	.0118	48	.0760		4.7mm	.1850		8.25mm	.3248		25/32	.7812	
83	.0120	1.95mm	.0768		4.75mm	.1870		8.3mm	.3268		20mm	.7874	m22x2.0
82	.0125	5/64	.0781		3/16	.1875		21/64	.3281		51/64	.7969	
.32mm	.0126	47	.0785	#3-48	4.8mm	.1890		8.4mm	.3307		20.5mm	.8071	m22x1.5
81	.0130	2mm	.0787		12	.1890	7/32-32NS	Q	.3320	1/8-27NPT PIPE 3/8-24NF	13/16	.8125	7/8-14NF
.34mm	.0134	2.05mm	.0807	m2.5x0.45	11	.1910		8.5mm	.3346	m10x1.5	21mm	.8268	m24x3
80	.0135	46	.0810		4.9mm	.1929		8.6mm	.3386		53/64	.8281	
.35mm	.0138	45	.0820	#3-56	10	.1935		R	.3390		27/32	.8438	
.36mm	.0142	2.1mm	.0827		9	.1960		8.7mm	.3425		21.5mm	.8465	
79	.0145	2.15mm	.0846	m2.6x0.45	5mm	.1969	m6x1	11/32	.3438		55/64	.8594	
.38mm	.0150	44	.0860	#4-36	8	.1990		8.75mm	.3445	m10x1.25	22mm	.8661	m24x2
1/64	.0156	2.2mm	.0866		5.1mm	.2008		8.8mm	.3465		7/8	.8750	1-8NC
.4mm	.0157	2.25mm	.0886		7	.2010	1/4-20	S	.3480	1/8-27NPS PIPE	22.25mm	.8760	
78	.0160	43	.0890	#4-40	13/64	.2031		8.9mm	.3504		22.5mm	.8858	m24x1.50
.42mm	.0165	2.3mm	.0906		6	.2040		9mm	.3543	m10x1.00	57/64	.8906	
.44mm	.0173	2.35mm	.0925		5.2mm	.2047		T	.3580		23mm	.9055	
.45mm	.0177	42	.0935	#4-48	5	.2055		9.1mm	.3583		29/32	.9062	3/4-14NPT PIPE
77	.0180	3/32	.0938		5.25mm	.2067	m6x0.75	23/64	.3594		59/64	.9219	
.46mm	.0181	2.4mm	.0945		5.3mm	.2087		9.2mm	.3622		23.5mm	.9252	
.48mm	.0189	41	.0960		4	.2090	1/4-24	9.25mm	.3642		15/16	.9375	3/4-14 NPS 1-14 NF
.5mm	.0197	2.45mm	.0965		5.4mm	.2126		9.3mm	.3661		24mm	.9449	m27x3
76	.0200	40	.0980		3	.2130	1/4-28	U	.3680	7/16-14NC	61/64	.9531	
75	.0210	2.5mm	.0984	m3x0.5	5.5mm	.2165		9.4mm	.3701		24.5mm	.9646	
.55mm	.0217	39	.0995		7/32	.2188		9.5mm	.3740	m11x1.50	31/32	.9688	
74	.0225	38	.1015	#5-40	5.6mm	.2205		3/8	.3750		25mm	.9843	m27x2
.6mm	.0236	2.6mm	.1024		2	.2210		V	.3770		63/64	.9844	1-1/8-7NC
73	.0240	37	.1040	#5-44	5.7mm	.2244		9.6mm	.3780		1	1.0000	
72	.0250	2.7mm	.1063		5.75mm	.2264		9.7mm	.3819		25.5mm	1.0039	
.65mm	.0256	36	.1065	#6-32	1	.2280		9.75mm	.3839		1-1/64	1.0156	
71	.0260	2.75mm	.1083		5.8mm	.2283		9.8mm	.3858		26mm	1.0236	
.7mm	.0276	7/64	.1094		5.9mm	.2323		W	.3860		1-1/32	1.0312	
70	.0280	35	.1100		A	.2340		9.9mm	.3898		26.5mm	1.0433	m30x3.5
69	.0292	2.8mm	.1102		15/64	.2344		25/64	.3906	7/16-20	1-3/64	1.0469	1-1/8-12NF
.75mm	.0295	34	.1110		6mm	.2362	m7x1	10mm	.3937	m12x1.75	1-1/16	1.0625	
68	.0310	33	.1130	#6-40	B	.2380		X	.3970		27mm	1.0630	
1/32	.0312	2.9mm	.1142	m3.5x0.6	6.1mm	.2402		Y	.4040		1-5/64	1.0781	
.8mm	.0315	32	.1160		C	.2420	1/16-27 NPT PIPE	13/32	.4062		27.5mm	1.0827	
67	.0320	3mm	.1181		6.2mm	.2441		Z	.4130		1-3/32	1.0938	
66	.0330	31	.1200		D	.2460		10.5mm	.4134	m12x1.25	28mm	1.1024	m30x2.0
.85mm	.0335	3.1mm	.1220		6.25mm	.2461		27/64	.4219	1/2-13	1-7/64	1.1094	1-1/4-7NC
65	.0350	1/8	.1250	5/32-32NS	6.3mm	.2480		11mm	.4331		28.5mm	1.1220	
.9mm	.0354	3.2mm	.1260		E	.2500	1/16-27 NPS PIPE	7/16	.4375	1/4-18 NPT PIPE	1-1/8	1.1250	
64	.0360	3.25mm	.1280		1/4	.2500		11.5mm	.4528		1-9/64	1.1406	
63	.0370	30	.1285	5/32-36NS	6.4mm	.2520		29/64	.4531	1/4-18NPS PIPE 1/2-20	29mm	1.1417	
.95mm	.0374	3.3mm	.1299	m4x0.70	6.5mm	.2559		15/32	.4688		1-5/32	1.1562	1-11/2NPT PIPE
62	.0380	3.4mm	.1339		F	.2570	5/16-18NC	12mm	.4724	m14x2	29.5mm	1.1614	
61	.0390	29	.1360	#8-32	6.6mm	.2598		31/64	.4844	9/16-12	1-11/64	1.1719	1-1/4-12NF
1mm	.0394	3.5mm	.1378		G	.2610		12.5mm	.4921	m14x1.5			
60	.0400	28	.1405		6.7mm	.2638		1/2	.5000				
59	.0410	9/64	.1406		17/64	.2656		13mm	.5118	m14x1.25			
1.05mm	.0413	3.6mm	.1417		6.75mm	.2657	m8x1.25	33/64	.5156	9/16-18			

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