



Allen Benjamin

"In The Pursuit Of Perfection"

A Bright New Future...



Our “Back-To-Basics” Goals and Ideals:

- Outstanding Customer Service
- Quality Tools
- Shipped On-Time

Contact Ben or Linda at Allen Benjamin
for all of your cutting tool requirements.
Phone: 800-528-7404 • 480-968-7937
Fax: 480-731-9462
E-Mail: info@allenbenjamin.com
Web: www.allenbenjamin.com

Allen Benjamin Inc. is an ISO 9001:2008
Registered Manufacturer



Ben Bernard
Tool Designer

Ben has been with Allen Benjamin since 1994. He has held numerous key positions including Lead Thread Grinder, Department Supervisor, Production Manager and Tool Designer. Ben has spent many years successfully designing taps for specific applications.



Linda Kruse
Customer Service Manager

Linda has been with Allen Benjamin since 2002, and has been involved in all aspects of administration, sales and customer service. She has over 25 years of customer service experience, providing friendly and responsive sales support.

Thank you for your interest in Allen Benjamin, a premier manufacturer of tapping and metalcutting products.

Over the years, Allen Benjamin has earned a reputable position in the cutting tool market through their extensive experience and service. Their line of solid carbide and carbide insert taps has been a mainstay in the industrial tooling market for decades. Today, Allen Benjamin continues their tradition as a perfect fit within the Global Specialty Solutions, Inc. family of companies that epitomize world class industrial products and services.

This new catalog from Allen Benjamin represents an extensive array of:

- Solid carbide and carbide insert taps;
- High performance, application-specific HSSE taps;
- Solid carbide and carbide insert thread chasers;
- Carbide and ceramic thread plug gages;
- Tap extensions, including coolant-fed style;
- “Smart Products” including ‘Smart Cut’ tapping/drilling/cutting fluid; ‘Smart Clean’ industrial cleaner and degreaser; ‘Smart Clean/A’ aqueous parts washer; and ‘Smart Pro’ rust preventative.

We welcome the opportunity to work with you as your trusted source for demanding tapping and metal cutting applications.

Feel free to contact us to discuss your needs further.

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The information on pages 49, 52-53, and 72-79 is excerpted from “Standards & Dimensions for Ground Thread Taps”, March 2000 edition, published by the United States Cutting Tool Institute. Reproduced by permission of the United States Cutting Tool Institute.

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LIMITED WARRANTY

Allen Benjamin, Inc., hereafter denoted as AB, warrants its products to be free from defects in workmanship and material at the time of manufacture. Any products that are found to be defective in workmanship or material, will be repaired, replaced, or credit issued at the option of AB, to the user of our products. Determination as to defective product rests solely with AB. AB shall have no obligation to repair or replace products damaged by misuse, improper operating conditions, products altered or repaired by parties other than AB, or the failure of the user to apply appropriate preventative maintenance or service. No product shall be returned to AB without its prior consent. Product which AB consents to be returned shall be sent freight prepaid. Complete information regarding the complaint must be furnished to AB prior to consent to be returned. AB will not assume responsibility or accept invoices for unauthorized repairs to its products. AB makes no warranty as to fitness of its products for specific applications by the user unless AB specifically agrees otherwise in writing after review of the proposed usage, nor does AB make any warranty as to period of service or productivity of its products. No claims for defective merchandise will be considered after one year from date of purchase. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. AB shall have no liability or responsibility on any claim of any kind, whether in contract, tort or otherwise, for any loss or damage arising out of, connected with, or resulting from the manufacture, sale, delivery or use of any product sold hereunder, in excess of the cost of replacement or repair as provided herein. IN NO EVENT SHALL ‘AB’ BE LIABLE FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES. AB makes no warranty, express or implied, except as set forth above; and AB neither assumes nor authorizes any other person or entity to assume for it any other obligation or liability in connection with any of its products.

WARNING: Cutting tools may shatter or break. Please wear eye protection and use adequate safeguards.

PROUDLY AFFILIATED WITH...



3638 E. Southern Ave. • P.M.B. 202 • Suite C105 • Mesa, AZ 85206
Phone: 800.528.7404 • 480.968.7937 • Fax: 480.731.9462
E-Mail: info@allenbenjamin.com • Web: www.allenbenjamin.com

General Information

We consider the relationship between Allen Benjamin and our customers the most important part of our future. Together, as “Value Added Partners”, we are focused on satisfying your cutting tool requirements through:

- Outstanding Customer Service
- Quality Tools
- On Time Shipments

SALES & SERVICE POLICY : Allen Benjamin Inc. will sell only top quality, performance-proven cutting tool products. Please contact us if your expectations are not met, or the products you ordered do not meet the level of service or performance you expect from Allen Benjamin.

TRANSPORTATION & SHIPPING INFORMATION : There are no additional charges for drop shipments. All international orders, unless otherwise specified, will be shipped via International Express Mail.

Allen Benjamin will not make shipping promises we cannot keep. This means no expediting calls and delayed shipments — at a great loss of time and money to all of us. *Standard industry practice is to over or under ship by 10% on ordered quantities of tools unless otherwise specified at time of order. QUOTED prices on tools also are based on this industry practice, unless exact quantity pricing is requested.* Please advise us of any discrepancy in quantity or pricing within 10 days, so that we can correct it promptly.

RETURNED GOODS : We guarantee all of our products to be of the finest quality; manufactured to standard industry tolerances and dimensions, and consistent with your design criteria and application specifications. Should the need arise to return any cutting tools, please contact us for authorization. A restocking charge may apply.

HOLD FOR RELEASE & BLANKET ORDERS : It is our desire to help our customers with control of costly inventory. We will gladly accept orders for timed release shipments over a reasonable period to satisfy your “just in time” needs.

We do consider these firm orders, subject to shipment of all remaining tools at the end of the contract period.

TRIAL TOOLS : Our many years of experience clearly show that test or trial tool orders without a purchase order are rarely followed to final test conclusion. We can both follow results if a purchase order is issued at current price based upon the quantity being tested. If the test is successful, and additional tools are ordered, they will be priced at the larger quantity and the test tools will be credited to that order. Should the test fail, or performance not be as promised, based upon designs and recommendations made by Allen Benjamin, we will issue credit on the original test tool order.

CATALOG ON CD : We offer our catalog electronically for integration into your computer system. Call for details. The catalog is also available online at: www.allenbenjamin.com

CREDIT CARD ORDERS : We accept the following credit cards:

American Express



Master Card



VISA



Conditions are subject to change without notice.



DET NORSKE VERITAS
MANAGEMENT SYSTEM CERTIFICATE

Certificate No. CERT-03720-2005-AQ-USA-ANAB, Rev. 3

This is to certify that

Global Specialty Solutions, Inc.
North American Tool Corp.
Allen Benjamin Inc.
Gaylee Saws and Bitner Tooling Technologies

at

215 Elmwood Avenue, South Beloit, IL 61080 USA

Additional Locations:

Site Name	Site Address	Site City	Site State	Site Main Activities
Allen Benjamin	3707 East Southern Avenue	Mesa	AZ 85206	Sales, Mktg., Mgmt. Review, Purchasing, Customer Service, Design, Metrology, Manufacturing
Gaylee Saws and Bitner Tooling Technologies	6650 Burroughs Avenue	Sterling Heights	MI 48314	Sales, Mktg., Mgmt. Review, Purchasing, Customer Service, Design, Metrology, Manufacturing

has been found to conform to the Management System Standard:

ISO 9001:2008

This Certificate is valid for the following product or service ranges:

The Design, Manufacture and Marketing of Special and Standard Dimensioned Industrial Cutting Tools to the Order and Specification of customers. The Procurement, Repackaging, Marketing and Distribution of Thread Gages, Taps, Dies, Saws, Thread Mills, Cutting Tool Products and Industrial Fluids and Solvents

Initial Certification date:

July 16, 1997

Place and date:

Houston, Texas, May 07, 2010

This Certificate is valid until:

November 20, 2011

for the Accredited Unit:

DET NORSKE VERITAS

CERTIFICATION INC., HOUSTON TEXAS



The audit has been performed under the supervision of

Greg Spencer
Lead Auditor

Rudy Frueboes
Management Representative

Lack of fulfillment of conditions as set out in the Certification Agreement may render this Certificate invalid.

HEAD OFFICE: Det Norske Veritas Certification, Inc. 1400 Ravello Drive, Katy, Texas 77449. TEL: (281) 396-1000. FAX: (281) 396-1903

HIGH PERFORMANCE HSSE COLOR-RING TAPS FROM ALLEN BENJAMIN



In today's manufacturing environment, it is likely that you will frequently encounter challenging tapping applications due to the type and condition of the material being tapped.

Allen Benjamin color-coded HSSE taps simplify the process of selecting the right tap for specific materials and are designed and manufactured to handle tough tapping applications in a variety of materials. Based on the tap design, most color ring taps can handle several materials with successful results. Special designs are available to suit your specific application.

Each of the six color ring taps - black, white, yellow, green, blue and red - are manufactured with application-specific design criteria based on characteristics and hardness range of various part materials.

These taps are manufactured using HSSE material which is commonly referred to as 'premium high speed steel' as it has a higher content of cobalt and vanadium. As compared to HSS taps, HSSE taps provide greater wear resistance for increased tap life.

See next page for a 'Material Type/Color Code Table' which illustrates which color ring tap is best suited to the material being threaded. Any given list of part materials can be long and tedious, so the reference list in this catalog concentrates on relatively common materials. However, if you do not see a specific material or have questions regarding performance enhancing tool coatings, please contact us with the details or refer to page 80 for a Taps Test Application Data Sheet which can be copied and faxed to Allen Benjamin.

This page is your guide to:

- Material application ranges organized by color coding;
- Available surface treatments or coatings, which are highly recommended when tapping with high performance taps;

Color codes shown in this catalog are not universal, are not based on any standard, and are unique to the Allen Benjamin, Inc. catalog.

MATERIAL TYPE / COLOR CODE TABLE

Work Material*	Color Ring	Brinell Hardness Range**
Aluminum - Wrought	Black	30-80 cold drawn; 75-150 treated/aged
Aluminum - Casting	Black	40-100 as cast; 70-125 treated/aged
Cast Iron - Gray	White	160-260 as cast; 250-320 quenched/tempered
Cast Iron-Ductile, Malleable	White	160-320
Steel - Low Carbon	Yellow	125-275
Steel - Med. Carbon	Yellow	180-425
Steel - High Carbon	Yellow	180-425
Alloy Steel	Green	225-400
Stainless - 300 Series	Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	Red	135-425
Stainless - PH Series	Red	150-440
High Nickel Alloy	Blue	150-360 Monel; 200-400 Inconel
Titanium Alloy	Blue	310-440
Die Steel	Red	250-350
Hardened Steel - <325 BHN	Red	300-350
Hardened Steel - 325-426 BHN	Red	300-440

* NOTE: For material or material group not shown (such as No Lead Brass), please consult Customer Service.

** BHN hardness range may vary depending on steel/workpiece condition. See page 64 for Rockwell-Brinell Hardness Data chart.

SURFACE TREATMENT ABBREVIATIONS

See page 62 in engineering section for surface treatment recommendations.

AlCrN:	Aluminum Chromium Nitride	TiAlN+WC/C:	'Hardlube' - Titanium Aluminum Nitride
CrC:	Chromium Carbide		Aluminum Nitride
CrN:	Chromium Nitride		+Tungsten Carbide/Carbon
DLC:	Diamond-like Carbon	TiCN:	Titanium Carbonitride
N:	Nitride	TiN:	Titanium Nitride
N + Ox:	Nitride + Oxide*	WC/C:	Tungsten Carbide/Carbon
Ox:	Steam Oxide*	WS2:	Tungsten Disulfide
TiAlN:	Titanium Aluminum Nitride	ZrN:	Zirconium Nitride

In many applications, a tap that is properly designed and used under recommended conditions will produce acceptable results without the use of surface treatments. However, under some conditions, such as tapping excessively hard, abrasive or challenging materials, the use of performance enhancing surface treatments will be beneficial to the overall results of your tapping operation in terms of improved tool life and internal thread quality. Coolant-through taps may also be a consideration. Contact Allen Benjamin for tapping and treatment recommendations.

High Performance Taps & Gages

Size / Tool Mat'l	Description	H#	# Flutes / # Lube Grv.	Std. Coat	EDP Plug	EDP Bottom	HSSE Tap EDP					
							Black	White	Yellow	Green	Blue	Red
#0-80 NF							Recommended Hole Size based on 75% Thread = .0479" Form Tap at 65% Thread = .0545"					
HSSE	Form Tap	H2	0	Ox	PLG	BTM	80001		80002	80003	80004	80005
HSSE	Form Tap	H2	0	Ox			80007		80008	80009	80010	80011
HSSE	Form Tap	H3	0	Ox	PLG	BTM	80013		80014	80015	80016	80017
HSSE	Form Tap	H3	0	Ox			80019		80020	80021	80022	80023
HSSE	Form Tap	H5	0	Ox	PLG		80025		80026	80027	80028	80029
HSSE	Form Tap	H7	0	Ox	PLG	80031			80032	80033	80034	80035
Carbide	Str. Flt	H2	2		60000	60001						
Carbide	Gage - Taperlock Style D/E				26000							
Ceramic	Gage - Taperlock Style D/E				26001							
Carbide	Gage - Reversible Style D/E				26220							
Ceramic	Gage - Reversible Style D/E				26221							
#1-64 NC							Recommended Hole Size based on 75% Thread = .0579"					
Carbide	Str. Flt	H2	2		60002	60003						
Carbide	Gage - Taperlock Style D/E				26002							
Ceramic	Gage - Taperlock Style D/E				26003							
Carbide	Gage - Reversible Style D/E				26222							
Ceramic	Gage - Reversible Style D/E				26223							
#1-72 NF							Recommended Hole Size Based on 75% Thread = .0599"					
Carbide	Str. Flt	H2	2		60004	60005						
Carbide	Gage - Taperlock Style D/E				26004							
Ceramic	Gage - Taperlock Style D/E				26005							
Carbide	Gage - Reversible Style D/E				26224							
Ceramic	Gage - Reversible Style D/E				26225							
#2-56 NC							Recommended Hole Size based on 75% Thread = .0689" for STI = .0960" Form Tap at 65% Thread = .0781"					
HSSE	SPPT	H2	2	Ox	PLG	M-B			80037	80038	80039	80040
HSSE	SPPT	H2	2	TiCN	PLG							
HSSE	SPPT	H2	2	CrC	PLG							
HSSE	SPFL	H2	2	Ox								
HSSE	SPFL	H2	2	CrC		M-B			82477	82478	82479	82480
HSSE	SPFL	H2	2	TiCN		M-B					80046	
HSSE	Form Tap	H2	0	Ox	PLG	BTM	80050		80051	80052	80053	80054
HSSE	Form Tap	H2	0	Ox			80056		80057	80058	80059	80060
HSSE	Form Tap	H3	0	Ox	PLG	BTM	80062		80063	80064	80065	80066
HSSE	Form Tap	H3	0	Ox			80068		80069	80070	80071	80072
HSSE	Form Tap	H5	0	Ox	PLG		80074		80075	80076	80077	80078
HSSE	Form Tap	H7	0	Ox	PLG		80080		80081	80082	80083	80084
Carbide	Multi Flute Taps for Plastic	H5	3		60202	60203						
Carbide	PRX SPPT Tap	H2	2		60250							
Carbide	PRC SPPT Tap	H2	2		60251				"PRX" for Stellite & Inconel, etc. "PRC" for Titanium & Beryllium			
Carbide	Form Tap	H2	4 Lobes*		60397	60398						
Carbide	SPPT	H2	2		60252							
Carbide	PRX STI SPPT	H2	2		60253							
Carbide	PRC STI SPPT	H2	2		60254							
Carbide	STI SPPT	H2	2		60256							
Carbide	STI Str. Flt	H2	2		60006	60007						
Carbide	Str. Flt	H2	2		60008	60009						
Carbide	Str. Flt	H2	3		60010	60011						

* Form tap lube grooves will be half the number of lobes unless otherwise specified.
• The suggested tap drill sizes shown are reference values, and depending on specific tapping requirements and conditions, may have to be altered.
• Allen Benjamin Inc. assumes no responsibility or liability of any kind as a result of the selection of tap drill sizes from this catalog.
• HSSE taps listed are designed for application-specific tapping.
• All solid carbide taps listed are manufactured to Table 302-A dimensions, unless otherwise specified. Multi-Flute taps for plastic are made to Table 302 dimensions.
• GAGES shown are 'Double-End with Handle' gages. Contact Allen Benjamin for single gage members, handles, and special gages to your specifications.
• FOR QUESTIONS OR SIZES NOT LISTED, PLEASE CONTACT OUR CUSTOMER SERVICE DEPT.

SPECIALS ARE AVAILABLE UPON REQUEST!
If you do not see the exact tool you require, we can manufacture taps to your specifications:
• Varying chamfers • Oil hole design • Alternate coatings • Special thread forms • Special size, geometry, length, tolerance...call for availability, pricing and delivery.

This page is your guide to:

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- *Available surface treatments or coatings, which are highly recommended when tapping with high performance taps;*

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MATERIAL TYPE / COLOR CODE TABLE

Work Material*	Color Ring	Brinell Hardness Range**
Aluminum - Wrought	● Black	30-80 cold drawn; 75-150 treated/aged
Aluminum - Casting	● Black	40-100 as cast; 70-125 treated/aged
Cast Iron - Gray	◎ White	160-260 as cast; 250-320 quenched/tempered
Cast Iron-Ductile, Malleable	◎ White	160-320
Steel - Low Carbon	● Yellow	125-275
Steel - Med. Carbon	● Yellow	180-425
Steel - High Carbon	● Yellow	180-425
Alloy Steel	● Green	225-400
Stainless - 300 Series	● Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	● Red	135-425
Stainless - PH Series	● Red	150-440
High Nickel Alloy	● Blue	150-360 Monel; 200-400 Inconel
Titanium Alloy	● Blue	310-440
Die Steel	● Red	250-350
Hardened Steel - <325 BHN	● Red	300-350
Hardened Steel - 325-426 BHN	● Red	300-440

* **NOTE:** For material or material group not shown (such as No Lead Brass), please consult Customer Service.

** **BHN hardness range may vary depending on steel/workpiece condition. See page 64 for Rockwell-Brinell Hardness Data chart.**

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CrC:	Chromium Carbide		Aluminum Nitride
CrN:	Chromium Nitride		+Tungsten Carbide/Carbon
DLC:	Diamond-like Carbon	TiCN:	Titanium Carbonitride
N:	Nitride	TiN:	Titanium Nitride
N + Ox:	Nitride + Oxide*	WC/C:	Tungsten Carbide/Carbon
	*Oxide (Ox) may also be shown as 'O'	WS2:	Tungsten Disulfide
Ox:	Steam Oxide*	ZrN:	Zirconium Nitride
TiAlN:	Titanium Aluminum Nitride		

In many applications, a tap that is properly designed and used under recommended conditions will produce acceptable results without the use of surface treatments. However, under some conditions, such as tapping excessively hard, abrasive or challenging materials, the use of performance enhancing surface treatments will be beneficial to the overall results of your tapping operation in terms of improved tool life and internal thread quality. Coolant-through taps may also be a consideration. Contact Allen Benjamin for tapping and treatment recommendations.

High Performance Taps & Gages

Size / Tool Mat'l	Description	H#	# Flutes / # Lube Grv.	Std. Coat	EDP Plug	EDP Bottom	HSSE Tap EDP					
							Black	White	Yellow	Green	Blue	Red
#2-56 NC							See Previous Page for Recommended Hole Size					
Carbide	Gage - Taperlock Style D/E				26006							
Ceramic	Gage - Taperlock Style D/E				26007							
Carbide	Gage - Reversible Style D/E				26226							
Ceramic	Gage - Reversible Style D/E				26227							
#2-64 NF												
Carbide	Gage - Taperlock Style D/E				26008							
Ceramic	Gage - Taperlock Style D/E				26009							
Carbide	Gage - Reversible Style D/E				26228							
Ceramic	Gage - Reversible Style D/E				26229							
#3-48 NC							Recommended Hole Size based on 75% Thread = .079" Form Tap at 65% Thread = .0898"					
Carbide	Multi Flute Taps for Plastic	H5	3		60204	60205						
Carbide	Form Tap	H2	4 Lobes*		60399	60400						
Carbide	SPPT	H2	2		60257							
Carbide	Str. Flt	H2	2		60012	60013						
Carbide	Gage - Taperlock Style D/E				26010							
Ceramic	Gage - Taperlock Style D/E				26011							
Carbide	Gage - Reversible Style D/E				26230							
Ceramic	Gage - Reversible Style D/E				26231							
#3-56 NF							Recommended Hole Size Based on 75% Thread = .0819" for STI .1094"					
Carbide	Multi Flute Taps for Plastic	H5	3		60694	60695						
Carbide	PRX SPPT Tap	H2	2		60258		"PRX" for Stellite & Inconel, etc. "PRC" for Titanium & Beryllium					
Carbide	PRC SPPT Tap	H2	2		60259							
Carbide	SPPT	H2	2		60260							
Carbide	PRX STI SPPT	H2	2		60261		"PRX" for Stellite & Inconel, etc. "PRC" for Titanium & Beryllium					
Carbide	PRC STI SPPT	H2	2		60262							
Carbide	STI SPPT	H2	2		60263							
Carbide	STI Str. Flt	H2	2		60014	60015						
Carbide	Str. Flt	H2	2		60016	60017						
Carbide	Gage - Taperlock Style D/E				26012							
Ceramic	Gage - Taperlock Style D/E				26013							
Carbide	Gage - Reversible Style D/E				26232							
Ceramic	Gage - Reversible Style D/E				26233							
#4-40 NC							Recommended Hole Size based on 75% Thread = .0878" for STI = .1200" / Form Tap at 65% Thread = .1009"					
HSSE	SPPT	H2	3	TiCN	PLG						80086	
HSSE	SPPT	H2	2	Ox	PLG							
HSSE	SPPT	H3	2	Ox	PLG			80088	80089	80090	80091	
HSSE	SPPT	H3	3	TiCN	PLG			80093	80094	80095	80096	
HSSE	SPPT	H4	2	Ox	PLG					80098		
HSSE	SPPT	H5	2	Ox	PLG			80100	80101	80102	80103	
HSSE	SPPT	H2	3	CrC	PLG			80105	80106	80107	80108	
HSSE	SPFL	H2	3	CrC		M-B				80110		
HSSE	SPFL	H2	3	TiCN		M-B				80112		
HSSE	SPPT	H3	3	CrC	PLG					80114		
HSSE	SPFL	H3	3	CrC		M-B				80116		
HSSE	SPFL	H3	3	CrC		M-B				80118		
HSSE	SPFL	H2	2	Ox		M-B		82491	82492	82493	82494	

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Aluminum - Casting	Black	40-100 as cast; 70-125 treated/aged
Cast Iron - Gray	White	160-260 as cast; 250-320 quenched/tempered
Cast Iron-Ductile, Malleable	White	160-320
Steel - Low Carbon	Yellow	125-275
Steel - Med. Carbon	Yellow	180-425
Steel - High Carbon	Yellow	180-425
Alloy Steel	Green	225-400
Stainless - 300 Series	Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	Red	135-425
Stainless - PH Series	Red	150-440
High Nickel Alloy	Blue	150-360 Monel; 200-400 Inconel
Titanium Alloy	Blue	310-440
Die Steel	Red	250-350
Hardened Steel - <325 BHN	Red	300-350
Hardened Steel - 325-426 BHN	Red	300-440

* NOTE: For material or material group not shown (such as No Lead Brass), please consult Customer Service.

** BHN hardness range may vary depending on steel/workpiece condition. See page 64 for Rockwell-Brinell Hardness Data chart.

SURFACE TREATMENT ABBREVIATIONS

See page 62 in engineering section for surface treatment recommendations.

AlCrN:	Aluminum Chromium Nitride	TiAlN+WC/C:	'Hardlube' - Titanium Aluminum Nitride
CrC:	Chromium Carbide		Aluminum Nitride
CrN:	Chromium Nitride		+Tungsten Carbide/Carbon
DLC:	Diamond-like Carbon	TiCN:	Titanium Carbonitride
N:	Nitride	TiN:	Titanium Nitride
N + Ox:	Nitride + Oxide*	WC/C:	Tungsten Carbide/Carbon
Ox:	Steam Oxide*	WS2:	Tungsten Disulfide
TiAlN:	Titanium Aluminum Nitride	ZrN:	Zirconium Nitride

In many applications, a tap that is properly designed and used under recommended conditions will produce acceptable results without the use of surface treatments. However, under some conditions, such as tapping excessively hard, abrasive or challenging materials, the use of performance enhancing surface treatments will be beneficial to the overall results of your tapping operation in terms of improved tool life and internal thread quality. Coolant-through taps may also be a consideration. Contact Allen Benjamin for tapping and treatment recommendations.

High Performance Taps & Gages

Size / Tool Mat'l	Description	H#	# Flutes / # Lube Grv.	Std. Coat	EDP Plug	EDP Bottom	HSSE Tap EDP						
							Black	White	Yellow	Green	Blue	Red	
#4-40 NC							See Previous Page for Recommended Hole Size						
HSSE	SPFL	H3	2	Ox		M-B	80137		80120	80121	80122	80123	
HSSE	SPFL	H3	3	TiCN		M-B					80125		
HSSE	SPFL	H4	2	Ox		M-B				80127	80128	80129	80130
HSSE	SPFL	H5	2	Ox		M-B				80132	80133	80134	80135
HSSE	Form Tap	H3	0	Ox	PLG					80138	80139	80140	80141
HSSE	Form Tap	H3	0	Ox		BTM	80143		80144	80145	80146	80147	
HSSE	Form Tap	H5	0	Ox	PLG		80149		80150	80151	80152	80153	
HSSE	Form Tap	H5	0	Ox		BTM	80155		80156	80157	80158	80159	
HSSE	Form Tap	H7	0	Ox	PLG		80161		80162	80163	80164	80165	
HSSE	Form Tap	H7	0	Ox		BTM	80167		80168	80169	80170	80171	
HSSE	Str. Flt Die Cast	H2	3	N	PLG		80173						
HSSE	Str. Flt Die Cast	H2	3	N		BTM	80175						
Carbide	Multi Flute Taps for Plastic	H5	5		60206	60207							
Carbide	PRX SPPT Tap	H2	2		60264								
Carbide	PRC SPPT Tap	H2	2		60265								
Carbide	Form Tap	H2	4 Lobes*		60401	60402							
Carbide	SPPT	H2	2		60266								
Carbide	PRX STI SPPT	H2	2		60267								
Carbide	PRC STI SPPT	H2	2		60268								
Carbide	STI SPPT	H2	2		60269								
Carbide	STI Str. Flt	H2	2		60018	60019							
Carbide	STI Str. Flt	H2	3		60020	60021							
Carbide	Str. Flt	H2	2		60022	60023							
Carbide	Str. Flt	H2	3		60024	60025							
Carbide	Gage - Taperlock Style D/E				26014								
Ceramic	Gage - Taperlock Style D/E				26015								
Carbide	Gage - Reversible Style D/E				26234								
Ceramic	Gage - Reversible Style D/E				26235								
#4-48 NF							Recommended Hole Size based on 75% Thread = .092" Form Tap at 65% Thread = .1028"						
Carbide	Multi Flute Taps for Plastic	H5	5		60208	60209							
Carbide	Form Tap	H2	4 Lobes*		60403	60404							
Carbide	SPPT	H2	2		60270								
Carbide	SPPT	H2	3		60271								
Carbide	Str. Flt	H2	2		60026	60027							
Carbide	Str. Flt	H2	3		60028	60029							
Carbide	Gage - Taperlock Style D/E				26016								
Ceramic	Gage - Taperlock Style D/E				26017								
Carbide	Gage - Reversible Style D/E				26236								
Ceramic	Gage - Reversible Style D/E				26237								
#5-40 NC							Recommended Hole Size based on 75% Thread = .1008" for STI = .1360" / Form Tap at 65% Thread = .1139"						
HSSE	Form Tap	H3	0	Ox	PLG		80177		80178	80179	80180	80181	
HSSE	Form Tap	H3	0	Ox		BTM	80183		80184	80185	80186	80187	
HSSE	Form Tap	H5	0	Ox	PLG		80189		80190	80191	80192	80193	
HSSE	Form Tap	H5	0	Ox		BTM	80195		80196	80197	80198	80199	
HSSE	Form Tap	H7	0	Ox	PLG		80201		80202	80203	80204	80205	
HSSE	Form Tap	H7	0	Ox		BTM	80207		80208	80209	80210	80211	
Carbide	Multi Flute Taps for Plastic	H5	5		60500	60501							
Carbide	PRX SPPT Tap	H2	2		60272								
Carbide	PRC SPPT Tap	H2	2		60273								

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This page is your guide to:

- *Material application ranges organized by color coding;*
- *Available surface treatments or coatings, which are highly recommended when tapping with high performance taps;*

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MATERIAL TYPE / COLOR CODE TABLE

Work Material*	Color Ring	Brinell Hardness Range**
Aluminum - Wrought	● Black	30-80 cold drawn; 75-150 treated/aged
Aluminum - Casting	● Black	40-100 as cast; 70-125 treated/aged
Cast Iron - Gray	◎ White	160-260 as cast; 250-320 quenched/tempered
Cast Iron-Ductile, Malleable	◎ White	160-320
Steel - Low Carbon	● Yellow	125-275
Steel - Med. Carbon	● Yellow	180-425
Steel - High Carbon	● Yellow	180-425
Alloy Steel	● Green	225-400
Stainless - 300 Series	● Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	● Red	135-425
Stainless - PH Series	● Red	150-440
High Nickel Alloy	● Blue	150-360 Monel; 200-400 Inconel
Titanium Alloy	● Blue	310-440
Die Steel	● Red	250-350
Hardened Steel - <325 BHN	● Red	300-350
Hardened Steel - 325-426 BHN	● Red	300-440

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CrN:	Chromium Nitride		+Tungsten Carbide/Carbon
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N:	Nitride	TiN:	Titanium Nitride
N + Ox:	Nitride + Oxide*	WC/C:	Tungsten Carbide/Carbon
	*Oxide (Ox) may also be shown as 'O'	WS2:	Tungsten Disulfide
Ox:	Steam Oxide*	ZrN:	Zirconium Nitride
TiAlN:	Titanium Aluminum Nitride		

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							Black	White	Yellow	Green	Blue	Red
#5-40 NC							See Previous Page for Recommended Hole Size					
Carbide	SPPT	H2	2		60274		"PRX" for Stellite & Inconel, etc. "PRC" for Titanium & Beryllium					
Carbide	PRX STI SPPT	H2	2		60275							
Carbide	PRC STI SPPT	H2	2		60276							
Carbide	STI SPPT	H2	2		60277							
Carbide	STI SPPT	H2	3		60278							
Carbide	STI Str. Flt	H2	2		60030	60031						
Carbide	STI Str. Flt	H2	3		60032	60033						
Carbide	STI Str. Flt	H2	4		60034	60035						
Carbide	Str. Flt	H2	2		60036	60037						
Carbide	Str. Flt	H2	3		60038	60039						
Carbide	Gage - Taperlock Style D/E				26018							
Ceramic	Gage - Taperlock Style D/E				26019							
Carbide	Gage - Reversible Style D/E				26238							
Ceramic	Gage - Reversible Style D/E				26239							
#5-44 NF												
Carbide	Gage - Taperlock Style D/E				26020							
Ceramic	Gage - Taperlock Style D/E				26021							
Carbide	Gage - Reversible Style D/E				26240							
Ceramic	Gage - Reversible Style D/E				26241							
#6-32 NC							Recommended Hole Size based on 75% Thread = .1077" for STI = .1495" / Form Tap at 65% Thread = .1242"					
HSSE	SPPT	H2	3	CrC	PLG					80213		
HSSE	SPPT	H2	2	Ox	PLG				80215	80216	80217	
HSSE	SPPT	H2	3	TiCN	PLG						80218	
HSSE	SPPT	H3	3	CrC	PLG						80220	
HSSE	SPPT	H3	2	Ox	PLG				80224	80225	80222	
HSSE	SPPT	H3	3	TiCN	PLG						80226	
HSSE	SPPT	H3	3	TiCN	PLG						80227	
HSSE	SPPT	H4	2	Ox	PLG				80231	80232	80229	
HSSE	SPPT	H5	3	CrC	PLG						80233	
HSSE	SPPT	H5	2	Ox	PLG				80238	80239	80236	
HSSE	SPPT	H5	3	TiCN	PLG						80240	
HSSE	SPPT	H6	2	Ox	PLG						80241	
HSSE	SPPT	H7	2	Ox	PLG				80245	80246	80247	
HSSE	SPFL	H2	3	CrC		M-B			80250	80251	80252	
HSSE	SPFL	H2	2	Ox		M-B					80253	
HSSE	SPFL	H2	3	TiCN		M-B			80257	80258	80255	
HSSE	SPFL	H3	3	CrC		M-B					80259	
HSSE	SPFL	H3	2	Ox		M-B					80260	
HSSE	SPFL	H3	3	TiCN		M-B					80262	
HSSE	SPFL	H3	3	CrC		M-B			80245	80246	80264	
HSSE	SPFL	H3	2	Ox		M-B			80250	80251	80265	
HSSE	SPFL	H3	3	TiCN		M-B					80266	
HSSE	SPFL	H4	2	Ox		M-B			80266	80267	80268	
HSSE	SPFL	H4	2	Ox		M-B			80273	80274	80269	
HSSE	SPFL	H5	3	CrC		M-B					80271	
HSSE	SPFL	H5	2	Ox		M-B			80273	80274	80272	
HSSE	SPFL	H5	3	CrC		M-B					80275	
HSSE	SPFL	H5	2	Ox		M-B					80276	
HSSE	SPFL	H5	3	TiCN		M-B			80278	80279	80277	
HSSE	SPFL	H5	2	Ox		M-B			80280	80281	80282	
HSSE	SPFL	H5	3	TiCN		M-B					80283	
HSSE	SPFL	H6	2	Ox		M-B			80287	80288	80285	
HSSE	SPFL	H7	2	Ox		M-B			80287	80288	80289	
HSSE	SPFL	H7	2	Ox		M-B			80292	80293	80290	
HSSE	Form Tap	H3	2	Ox	PLG		80297		80298	80299	80295	
HSSE	Form Tap	H3	2	Ox		BTM	80303		80298	80299	80300	
HSSE	Form Tap	H5	2	Ox	PLG		80309		80304	80305	80301	
HSSE	Form Tap	H5	2	Ox		BTM	80315		80310	80311	80307	
									80316	80317	80312	
											80313	
											80319	

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Cast Iron-Ductile, Malleable	White	160-320
Steel - Low Carbon	Yellow	125-275
Steel - Med. Carbon	Yellow	180-425
Steel - High Carbon	Yellow	180-425
Alloy Steel	Green	225-400
Stainless - 300 Series	Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	Red	135-425
Stainless - PH Series	Red	150-440
High Nickel Alloy	Blue	150-360 Monel; 200-400 Inconel
Titanium Alloy	Blue	310-440
Die Steel	Red	250-350
Hardened Steel - <325 BHN	Red	300-350
Hardened Steel - 325-426 BHN	Red	300-440

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							Black	White	Yellow	Green	Blue	Red	
#6-32 NC							See Previous Page for Recommended Hole Size						
HSSE	Form Tap	H7	2	Ox	PLG	BTM	80321		80322	80323	80324	80325	
HSSE	Form Tap	H7	2	Ox			80327		80328	80329	80330	80331	
HSSE	Form Tap	H9	2	Ox	PLG		80333		80334	80335	80336	80337	
HSSE	Form Tap	H9	2	Ox			80339		80340	80341	80342	80343	
HSSE	Str. Flt Die Cast	H3	3	N	PLG		80345						
HSSE	Str. Flt Die Cast	H3	3	N		BTM	80347	"PRX" for Stellite & Inconel, etc. "PRC" for Titanium & Beryllium					
Carbide	Multi Flute Taps for Plastic	H5	5		60502	60503							
Carbide	PRX SPPT Tap	H3	3		60279								
Carbide	PRC SPPT Tap	H3	3		60280								
Carbide	Form Tap	H3	4 Lobes*		60405	60406							
Carbide	SPPT	H3	2		60281								
Carbide	SPPT	H3	3		60282								
Carbide	PRX STI SPPT	H3	3		60283								
Carbide	PRC STI SPPT	H3	3		60284								
Carbide	STI SPPT	H3	2		60285								
Carbide	STI SPPT	H3	3		60286								
Carbide	STI Str. Flt	H3	2		60040							60041	
Carbide	STI Str. Flt	H3	3		60042							60043	
Carbide	STI Str. Flt	H3	4		60044							60045	
Carbide	Str. Flt	H3	2		60046							60047	
Carbide	Str. Flt	H3	3		60048	60049							
Carbide	Str. Flt	H3	4		60050	60051							
Carbide	Gage - Taperlock Style D/E				26022								
Ceramic	Gage - Taperlock Style D/E				26023								
Carbide	Gage - Reversible Style D/E				26242								
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Carbide	Multi Flute Taps for Plastic	H5	5		60214	60215							
Carbide	Form Tap	H3	4 Lobes*		60407	60408							
Carbide	SPPT	H3	2		60287								
Carbide	SPPT	H3	3		60288								
Carbide	Str. Flt	H3	2		60052	60053							
Carbide	Str. Flt	H3	3		60054	60055							
Carbide	Str. Flt	H3	4		60056	60057							
Carbide	Gage - Taperlock Style D/E				26024								
Ceramic	Gage - Taperlock Style D/E				26025								
Carbide	Gage - Reversible Style D/E				26244								
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#8-32 NC							Recommended Hole Size based on 75% Thread = .1337" for STI = .1770" / Form Tap at 65% Thread = .1502"						
HSSE	SPPT	H2	3	Ox	PLG				80349	80350	80351	80352	
HSSE	SPPT	H2	3	TiCN	PLG						80354		
HSSE	SPPT	H3	3	CrC	PLG						80356		
HSSE	SPPT	H3	3	Ox	PLG					80358	80359	80360	80361
HSSE	SPPT	H3	3	TiCN	PLG							80363	
HSSE	SPPT	H4	3	Ox	PLG				80365	80366	80367	80368	
HSSE	SPPT	H5	3	CrC	PLG						80370		
HSSE	SPPT	H5	3	Ox	PLG					80372	80373	80374	80375
HSSE	SPPT	H5	3	TiCN	PLG							80377	

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Stainless - 400 Series	● Red	135-425
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HSSE	SPPT	H7	3	Ox	PLG				80384	80385	80386	80387
HSSE	SPFL	H2	3	Ox		M-B			80389	80390	80391	80392
HSSE	SPFL	H2	3	TiCN		M-B					80394	
HSSE	SPFL	H3	3	CrC		M-B					80396	
HSSE	SPFL	H3	3	Ox		M-B			80398	80399	80400	80401
HSSE	SPFL	H3	3	TiCN		M-B					80403	
HSSE	SPFL	H4	3	Ox		M-B			80405	80406	80407	80408
HSSE	SPFL	H5	3	CrC		M-B					80410	
HSSE	SPFL	H5	3	Ox		M-B			80412	80413	80414	80415
HSSE	SPFL	H5	3	TiCN		M-B					80417	
HSSE	SPFL	H6	3	Ox		M-B			80419	80420	80421	80422
HSSE	SPFL	H7	3	Ox		M-B			80424	80425	80426	80427
HSSE	Form Tap	H3	2	Ox	PLG		80429		80430	80431	80432	80433
HSSE	Form Tap	H3	2	Ox		BTM	80435		80436	80437	80438	80439
HSSE	Form Tap	H5	2	Ox	PLG		80441		80442	80443	80444	80445
HSSE	Form Tap	H5	2	Ox		BTM	80447		80448	80449	80450	80451
HSSE	Form Tap	H7	2	Ox	PLG		80453		80454	80455	80456	80457
HSSE	Form Tap	H7	2	Ox		BTM	80459		80460	80461	80462	80463
HSSE	Form Tap	H9	2	Ox	PLG		80465		80466	80467	80468	80469
HSSE	Form Tap	H9	2	Ox		BTM	80471		80472	80473	80474	80475
HSSE	Str. Flt Die Cast	H3	3	N	PLG		80477					
HSSE	Str. Flt Die Cast	H3	3	N		BTM	80479					
Carbide	Multi Flute Taps for Plastic	H5	5		60216	60217						
Carbide	PRX SPPT Tap	H3	3		60289			"PRX" for Stellite & Inconel, etc. "PRC" for Titanium & Beryllium				
Carbide	PRC SPPT Tap	H3	3		60290							
Carbide	Form Tap	H3	4 Lobes*		60409	60410						
Carbide	SPPT	H3	2		60291							
Carbide	SPPT	H3	3		60292							
Carbide	PRX STI SPPT	H3	3		60293			"PRX" for Stellite & Inconel, etc. "PRC" for Titanium & Beryllium				
Carbide	PRC STI SPPT	H3	3		60294							
Carbide	STI SPPT	H3	2		60295							
Carbide	STI SPPT	H3	3		60296							
Carbide	STI Str. Flt	H3	2		60058	60059						
Carbide	STI Str. Flt	H3	3		60060	60061						
Carbide	STI Str. Flt	H3	4		60062	60063						
Carbide	Str. Flt	H3	2		60064	60065						
Carbide	Str. Flt	H3	3		60066	60067						
Carbide	Str. Flt	H3	4		60068	60069						
Carbide	Gage - Taperlock Style D/E				26026							
Ceramic	Gage - Taperlock Style D/E				26027							
Carbide	Gage - Reversible Style D/E				26246							
Ceramic	Gage - Reversible Style D/E				26247							
#8-36 NF							Recommended Hole Size based on 75% Thread = .137"					
Carbide	Str. Flt	H2	4		60550	60555						
Carbide	Gage - Taperlock Style D/E				26028							
Ceramic	Gage - Taperlock Style D/E				26029							
Carbide	Gage - Reversible Style D/E				26248							
Ceramic	Gage - Reversible Style D/E				26249							

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Cast Iron - Gray	◎ White	160-260 as cast; 250-320 quenched/tempered
Cast Iron-Ductile, Malleable	◎ White	160-320
Steel - Low Carbon	● Yellow	125-275
Steel - Med. Carbon	● Yellow	180-425
Steel - High Carbon	● Yellow	180-425
Alloy Steel	● Green	225-400
Stainless - 300 Series	● Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	● Red	135-425
Stainless - PH Series	● Red	150-440
High Nickel Alloy	● Blue	150-360 Monel; 200-400 Inconel
Titanium Alloy	● Blue	310-440
Die Steel	● Red	250-350
Hardened Steel - <325 BHN	● Red	300-350
Hardened Steel - 325-426 BHN	● Red	300-440

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See page 62 in engineering section for surface treatment recommendations.

AlCrN:	Aluminum Chromium Nitride	TiAlN+WC/C:	'Hardlube' - Titanium Aluminum Nitride
CrC:	Chromium Carbide		Aluminum Nitride
CrN:	Chromium Nitride		+Tungsten Carbide/Carbon
DLC:	Diamond-like Carbon	TiCN:	Titanium Carbonitride
N:	Nitride	TiN:	Titanium Nitride
N + Ox:	Nitride + Oxide*	WC/C:	Tungsten Carbide/Carbon
	*Oxide (Ox) may also be shown as 'O'	WS2:	Tungsten Disulfide
Ox:	Steam Oxide*	ZrN:	Zirconium Nitride
TiAlN:	Titanium Aluminum Nitride		

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Size / Tool Mat'l	Description	H#	# Flutes / # Lube Grv.	Std. Coat	EDP Plug	EDP Bottom	HSSE Tap EDP					
							Black	White	Yellow	Green	Blue	Red
#10-24 NC							Recommended Hole Size based on 75% Thread = .149" for STI = .2055" / Form Tap at 65% Thread = .1716"					
HSSE	SPPT	H3	3	CrC	PLG					80481		
HSSE	SPPT	H3	3	Ox	PLG				80483	80484	80485	80486
HSSE	SPPT	H3	3	TiCN	PLG						80488	
HSSE	SPPT	H4	3	Ox	PLG				80490	80491	80492	80493
HSSE	SPPT	H5	3	CrC	PLG						80495	
HSSE	SPPT	H5	3	Ox	PLG				80497	80498	80499	80500
HSSE	SPPT	H5	3	TiCN	PLG						80502	
HSSE	SPPT	H7	3	Ox	PLG				80504	80505	80506	80507
HSSE	SPFL	H3	3	CrC		M-B					80509	
HSSE	SPFL	H3	3	Ox		M-B			80511	80512	80513	80514
HSSE	SPFL	H3	3	TiCN		M-B					80516	
HSSE	SPFL	H4	3	Ox		M-B			80518	80519	80520	80521
HSSE	SPFL	H5	3	CrC		M-B					80523	
HSSE	SPFL	H5	3	Ox		M-B			80525	80526	80527	80528
HSSE	SPFL	H5	3	TiCN		M-B					80530	
HSSE	SPFL	H7	3	Ox		M-B			80532	80533	80534	80535
HSSE	Form Tap	H3	2	Ox	PLG		80537		80538	80539	80540	80541
HSSE	Form Tap	H3	2	Ox		BTM	80543		80544	80545	80546	80547
HSSE	Form Tap	H4	2	Ox	PLG		80549		80550	80551	80552	80553
HSSE	Form Tap	H4	2	Ox		BTM	80555		80556	80557	80558	80559
HSSE	Form Tap	H5	2	Ox	PLG		80561		80562	80563	80564	80565
HSSE	Form Tap	H5	2	Ox		BTM	80567		80568	80569	80570	80571
HSSE	Form Tap	H6	2	Ox	PLG		80573		80574	80575	80576	80577
HSSE	Form Tap	H6	2	Ox		BTM	80579		80580	80581	80582	80583
HSSE	Form Tap	H7	2	Ox	PLG		80585		80586	80587	80588	80589
HSSE	Form Tap	H7	2	Ox		BTM	80591		80592	80593	80594	80595
HSSE	Form Tap	H9	2	Ox	PLG		80597		80598	80599	80600	80601
HSSE	Form Tap	H9	2	Ox		BTM	80603		80604	80605	80606	80607
HSSE	Str. Flt Die Cast	H3	3	N	PLG		80609					
HSSE	Str. Flt Die Cast	H3	3	N		BTM	80611					
Carbide	Multi Flute Taps for Plastic	H5	5		60218	60219						
Carbide	PRX SPPT Tap	H3	3		60297			"PRX" for Stellite & Inconel, etc.				
Carbide	PRC SPPT Tap	H3	3		60298			"PRC" for Titanium & Beryllium				
Carbide	Form Tap	H3	4 Lobes*		60411	60412						
Carbide	SPPT	H3	2		60299							
Carbide	SPPT	H3	3		60300							
Carbide	PRX STI SPPT	H3	3		60301			"PRX" for Stellite & Inconel, etc.				
Carbide	PRC STI SPPT	H3	3		60302			"PRC" for Titanium & Beryllium				
Carbide	STI SPPT	H3	2		60303							
Carbide	STI SPPT	H3	3		60304							
Carbide	STI Str. Flt	H3	2		60070	60071						
Carbide	STI Str. Flt	H3	3		60072	60073						
Carbide	STI Str. Flt	H3	4		60074	60075						
Carbide	Str. Flt	H3	2		60076	60077						
Carbide	Str. Flt	H3	3		60078	60079						
Carbide	Str. Flt	H3	4		60080	60081						
Carbide	Gage - Taperlock Style D/E				26030							
Ceramic	Gage - Taperlock Style D/E				26031							
Carbide	Gage - Reversible Style D/E				26250							
Ceramic	Gage - Reversible Style D/E				26251							

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Steel - Med. Carbon	● Yellow	180-425
Steel - High Carbon	● Yellow	180-425
Alloy Steel	● Green	225-400
Stainless - 300 Series	● Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	● Red	135-425
Stainless - PH Series	● Red	150-440
High Nickel Alloy	● Blue	150-360 Monel; 200-400 Inconel
Titanium Alloy	● Blue	310-440
Die Steel	● Red	250-350
Hardened Steel - <325 BHN	● Red	300-350
Hardened Steel - 325-426 BHN	● Red	300-440

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N:	Nitride	TiN:	Titanium Nitride
N + Ox:	Nitride + Oxide*	WC/C:	Tungsten Carbide/Carbon
	*Oxide (Ox) may also be shown as 'O'	WS2:	Tungsten Disulfide
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Size / Tool Mat'l	Description	H#	# Flutes / # Lube Grv.	Std. Coat	EDP Plug	EDP Bottom	HSSE Tap EDP					
							Black	White	Yellow	Green	Blue	Red
#10-32 NF							Recommended Hole Size based on 75% Thread = .1597" for STI = .2031" / Form Tap at 65% Thread = .1762"					
HSSE	SPPT	H2	3	Ox	PLG				80613	80614	80615	80616
HSSE	SPPT	H2	3	TiCN	PLG						80618	
HSSE	SPPT	H3	3	CrC	PLG						80620	
HSSE	SPPT	H3	3	Ox	PLG				80622	80623	80624	80625
HSSE	SPPT	H3	3	TiCN	PLG						80627	
HSSE	SPPT	H4	3	Ox	PLG				80629	80630	80631	80632
HSSE	SPPT	H5	3	CrC	PLG						80634	
HSSE	SPPT	H5	3	Ox	PLG				80636	80637	80638	80639
HSSE	SPPT	H5	3	TiCN	PLG						80641	
HSSE	SPPT	H6	3	Ox	PLG				80643	80644	80645	80646
HSSE	SPPT	H7	3	Ox	PLG				80648	80649	80650	80651
HSSE	SPFL	H2	3	Ox		M-B			80653	80654	80655	80656
HSSE	SPFL	H2	3	TiCN		M-B					80658	
HSSE	SPFL	H3	3	CrC		M-B					80660	
HSSE	SPFL	H3	3	Ox		M-B			80662	80663	80664	80665
HSSE	SPFL	H3	3	TiCN		M-B					80667	
HSSE	SPFL	H4	3	Ox		M-B			80669	80670	80671	80672
HSSE	SPFL	H5	3	CrC		M-B					80674	
HSSE	SPFL	H5	3	Ox		M-B			80676	80677	80678	80679
HSSE	SPFL	H5	3	TiCN		M-B					80683	
HSSE	SPFL	H6	3	Ox		M-B			80686	80687	80688	80689
HSSE	SPFL	H7	3	Ox		M-B			80691	80692	80693	80694
HSSE	Form Tap	H3	2	Ox	PLG		80696		80697	80698	80699	80700
HSSE	Form Tap	H3	2	Ox		BTM	80702		80703	80704	80705	80706
HSSE	Form Tap	H4	2	Ox	PLG		80708		80709	80710	80711	80712
HSSE	Form Tap	H4	2	Ox		BTM	80714		80715	80716	80717	80718
HSSE	Form Tap	H5	2	Ox	PLG		80720		80721	80722	80723	80724
HSSE	Form Tap	H5	2	Ox		BTM	80726		80727	80728	80729	80730
HSSE	Form Tap	H6	2	Ox	PLG		80732		80733	80734	80735	80736
HSSE	Form Tap	H6	2	Ox		BTM	80738		80739	80740	80741	80742
HSSE	Form Tap	H7	2	Ox	PLG		80744		80745	80746	80747	80748
HSSE	Form Tap	H7	2	Ox		BTM	80750		80751	80752	80753	80754
HSSE	Form Tap	H9	2	Ox	PLG		80756		80757	80758	80759	80760
HSSE	Form Tap	H9	2	Ox		BTM	80762		80763	80764	80765	80766
HSSE	Str. Flt Die Cast	H3	3	N	PLG		80768					
HSSE	Str. Flt Die Cast	H3	3	N		BTM	80770					
Carbide	Multi Flute Taps for Plastic	H5	5		60220	60221						
Carbide	PRX SPPT Tap	H3	3		60305			"PRX" for Stellite & Inconel, etc.				
Carbide	PRC SPPT Tap	H3	3		60306			"PRC" for Titanium & Beryllium				
Carbide	Form Tap	H3	4 Lobes*		60413	60414						
Carbide	SPPT	H3	2		60307							
Carbide	SPPT	H3	3		60308							
Carbide	PRX STI SPPT	H3	3		60309			"PRX" for Stellite & Inconel, etc.				
Carbide	PRC STI SPPT	H3	3		60310			"PRC" for Titanium & Beryllium				
Carbide	STI SPPT	H3	2		60311							
Carbide	STI SPPT	H3	3		60312							
Carbide	STI Str. Flt	H3	2		60082	60083						
Carbide	STI Str. Flt	H3	3		60084	60085						
Carbide	STI Str. Flt	H3	4		60086	60087						
Carbide	Str. Flt	H3	2		60088	60089						
Carbide	Str. Flt	H3	3		60090	60091						

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Stainless - 400 Series	Red	135-425
Stainless - PH Series	Red	150-440
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							Black	White	Yellow	Green	Blue	Red
#10-32 NF							See Previous Page for Recommended Hole Size					
Carbide	Str. Flt	H3	4		60092	60093						
Carbide	Gage - Taperlock Style D/E				26032							
Ceramic	Gage - Taperlock Style D/E				26033							
Carbide	Gage - Reversible Style D/E				26252							
Ceramic	Gage - Reversible Style D/E				26253							
#12-24 NC							Recommended Hole Size based on 75% Thread = .175"					
Carbide	Str. Flt	H3	4		60551	60558						
Carbide	SPPT	H3	2		60552							
Carbide	Gage - Taperlock Style D/E				26034							
Ceramic	Gage - Taperlock Style D/E				26035							
Carbide	Gage - Reversible Style D/E				26254							
Ceramic	Gage - Reversible Style D/E				26255							
#12-28 NF							Recommended Hole Size based on 75% Thread = .1813"					
Carbide	Str. Flt	H3	4		60553	60559						
Carbide	SPPT	H3	2		60554							
Carbide	Gage - Taperlock Style D/E				26036							
Ceramic	Gage - Taperlock Style D/E				26037							
Carbide	Gage - Reversible Style D/E				26256							
Ceramic	Gage - Reversible Style D/E				26257							
#12-32 NEF												
Carbide	Gage - Taperlock Style D/E				26038							
Ceramic	Gage - Taperlock Style D/E				26039							
Carbide	Gage - Reversible Style D/E				26258							
Ceramic	Gage - Reversible Style D/E				26259							
1/16"-27 PIPE TAP NPT/F							Recommended Hole Size NPT/NPTF = .246"					
Carbide	Pipe Tap		4		60540							
1/8"-27 PIPE TAP NPT/F							Recommended Hole Size NPT/NPTF = .332" NPSF/NPSI = .3438"					
Carbide	Pipe Tap		4		60539							
1/4"-18 PIPE TAP NPT/F							Recommended Hole Size NPT/NPTF = .4375" NPSF/NPSI = .4375"					
Carbide	Pipe Tap		4		60538							
1/4"-20 NC							Recommended Hole Size based on 75% Thread = .2015" for STI = .2660" / Form Tap at 65% Thread = .2279"					
HSSE	SPPT	H3	3	CrC	PLG					80772		
HSSE	SPPT	H3	3	Ox	PLG			80774	80775	80776	80777	
HSSE	SPPT	H3	3	TiCN	PLG					80779		
HSSE	SPPT	H5	3	CrC	PLG					80781		
HSSE	SPPT	H5	3	Ox	PLG			80783	80784	80785	80786	
HSSE	SPPT	H5	3	TiCN	PLG					80788		

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Aluminum - Casting	Black	40-100 as cast; 70-125 treated/aged
Cast Iron - Gray	White	160-260 as cast; 250-320 quenched/tempered
Cast Iron-Ductile, Malleable	White	160-320
Steel - Low Carbon	Yellow	125-275
Steel - Med. Carbon	Yellow	180-425
Steel - High Carbon	Yellow	180-425
Alloy Steel	Green	225-400
Stainless - 300 Series	Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	Red	135-425
Stainless - PH Series	Red	150-440
High Nickel Alloy	Blue	150-360 Monel; 200-400 Inconel
Titanium Alloy	Blue	310-440
Die Steel	Red	250-350
Hardened Steel - <325 BHN	Red	300-350
Hardened Steel - 325-426 BHN	Red	300-440

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AlCrN:	Aluminum Chromium Nitride	TiAlN+WC/C:	'Hardlube' - Titanium Aluminum Nitride
CrC:	Chromium Carbide		
CrN:	Chromium Nitride		+Tungsten Carbide/Carbon
DLC:	Diamond-like Carbon	TiCN:	Titanium Carbonitride
N:	Nitride	TiN:	Titanium Nitride
N + Ox:	Nitride + Oxide*	WC/C:	Tungsten Carbide/Carbon
	*Oxide (Ox) may also be shown as 'O'	WS2:	Tungsten Disulfide
Ox:	Steam Oxide*	ZrN:	Zirconium Nitride
TiAlN:	Titanium Aluminum Nitride		

In many applications, a tap that is properly designed and used under recommended conditions will produce acceptable results without the use of surface treatments. However, under some conditions, such as tapping excessively hard, abrasive or challenging materials, the use of performance enhancing surface treatments will be beneficial to the overall results of your tapping operation in terms of improved tool life and internal thread quality. Coolant-through taps may also be a consideration. Contact Allen Benjamin for tapping and treatment recommendations.

High Performance Taps & Gages

Size / Tool Mat'l	Description	H#	# Flutes / # Lube Grv.	Std. Coat	EDP Plug	EDP Bottom	HSSE Tap EDP					
							Black	White	Yellow	Green	Blue	Red
1/4"-20 NC							See Previous Page for Recommended Hole Size					
HSSE	SPPT	H7	3	Ox	PLG				80790	80791	80792	80793
HSSE	SPPT	H7	3	TiCN	PLG						80795	
HSSE	SPFL	H3	3	CrC		M-B					80797	
HSSE	SPFL	H3	3	Ox		M-B			80799	80800	80801	80802
HSSE	SPFL	H3	3	TiCN		M-B					80804	
HSSE	SPFL	H5	3	CrC		M-B					80806	
HSSE	SPFL	H5	3	Ox		M-B			80808	80809	80810	80811
HSSE	SPFL	H5	3	TiCN		M-B					80813	
HSSE	SPFL	H7	3	Ox		M-B			80815	80816	80817	80818
HSSE	SPFL	H7	3	TiCN		M-B					80820	
HSSE	Form Tap	H3	4	Ox	PLG		80822		80823	80824	80825	80826
HSSE	Form Tap	H3	4	Ox		BTM	80828		80829	80830	80831	80832
HSSE	Form Tap	H4	4	Ox	PLG		80834		80835	80836	80837	80838
HSSE	Form Tap	H4	4	Ox		BTM	80840		80841	80842	80843	80844
HSSE	Form Tap	H5	4	Ox	PLG		80846		80847	80848	80849	80850
HSSE	Form Tap	H5	4	Ox		BTM	80852		80853	80854	80855	80856
HSSE	Form Tap	H6	4	Ox	PLG		80858		80859	80860	80861	80862
HSSE	Form Tap	H6	4	Ox		BTM	80864		80865	80866	80867	80868
HSSE	Form Tap	H7	4	Ox	PLG		80870		80871	80872	80873	80874
HSSE	Form Tap	H7	4	Ox		BTM	80876		80877	80878	80879	80880
HSSE	Form Tap	H9	4	Ox	PLG		80882		80883	80884	80885	80886
HSSE	Form Tap	H9	4	Ox		BTM	80888		80889	80890	80891	80892
HSSE	Str. Flt Die Cast	H3	3	N	PLG		80894					
HSSE	Str. Flt Die Cast	H3	3	N		BTM	80896					
HSSE	Str. Flt Die Cast	H5	3	N	PLG		80898					
HSSE	Str. Flt Die Cast	H5	3	N		BTM	80900					
HSSE	Cast Iron	H3	4	N+Ox	PLG			80902				
HSSE	Cast Iron	H3	4	N+Ox		BTM		80904				
HSSE	Cast Iron	H5	4	N+Ox	PLG			80906				
HSSE	Cast Iron	H5	4	N+Ox		BTM		80908				
Carbide	Multi Flute Taps for Plastic	H7	5		60222	60223		"PRX" for Stellite & Inconel, etc. "PRC" for Titanium & Beryllium				
Carbide	PRX SPPT Tap	H3	3		60313							
Carbide	PRC SPPT Tap	H3	3		60314							
Carbide	Form Tap	H3	4 Lobes*		60415	60416						
Carbide	SPPT	H3		2			60315					
Carbide	SPPT	H3	3		60316			"PRX" for Stellite & Inconel, etc. "PRC" for Titanium & Beryllium				
Carbide	PRX STI SPPT	H3	3		60317							
Carbide	PRC STI SPPT	H3	3		60318							
Carbide	STI SPPT	H3	3		60319							
Carbide	STI Str. Flt	H3	2		60094	60095						
Carbide	STI Str. Flt	H3	3		60096	60097						
Carbide	STI Str. Flt	H3	4		60098	60099						
Carbide	Str. Flt	H3	2		60100	60101						
Carbide	Str. Flt	H3	3		60102	60103						
Carbide	Str. Flt	H3	4		60104	60105						
Carbide	Gage - Taperlock Style D/E				26040							
Ceramic	Gage - Taperlock Style D/E				26041							
Carbide	Gage - Reversible Style D/E				26260							
Ceramic	Gage - Reversible Style D/E				26261							

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Steel - Med. Carbon	Yellow	180-425
Steel - High Carbon	Yellow	180-425
Alloy Steel	Green	225-400
Stainless - 300 Series	Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	Red	135-425
Stainless - PH Series	Red	150-440
High Nickel Alloy	Blue	150-360 Monel; 200-400 Inconel
Titanium Alloy	Blue	310-440
Die Steel	Red	250-350
Hardened Steel - <325 BHN	Red	300-350
Hardened Steel - 325-426 BHN	Red	300-440

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1/4"-28 NF							Recommended Hole Size based on 75% Thread = .2153" for STI = .2638" / Form Tap at 65% Thread = .2342"						
HSSE	SPPT	H3	3	CrC	PLG						80910		
HSSE	SPPT	H3	3	Ox	PLG					80912	80913		80914
HSSE	SPPT	H3	3	TiCN	PLG								80917
HSSE	SPPT	H4	3	Ox	PLG					80919	80920		80921
HSSE	SPPT	H4	3	TiCN	PLG								80924
HSSE	SPPT	H5	3	CrC	PLG						80926		
HSSE	SPPT	H5	3	Ox	PLG					80928	80929		80930
HSSE	SPPT	H5	3	TiCN	PLG								80933
HSSE	SPPT	H6	3	Ox	PLG					80935	80936		80937
HSSE	SPPT	H7	3	Ox	PLG					80940	80941		80942
HSSE	SPPT	H7	3	TiCN	PLG						80945		
HSSE	SPFL	H3	3	CrC		M-B							80947
HSSE	SPFL	H3	3	Ox		M-B				80949	80950		80951
HSSE	SPFL	H3	3	TiCN		M-B							80954
HSSE	SPFL	H4	3	Ox		M-B				80956	80957		80958
HSSE	SPFL	H4	3	TiCN		M-B					80961		
HSSE	SPFL	H5	3	CrC		M-B							80963
HSSE	SPFL	H5	3	Ox		M-B				80965	80966		80967
HSSE	SPFL	H5	3	TiCN		M-B							80970
HSSE	SPFL	H6	3	Ox		M-B				80972	80973		80974
HSSE	SPFL	H7	3	Ox		M-B			80977	80978	80979	80980	
HSSE	SPFL	H7	3	TiCN		M-B						80982	
HSSE	Form Tap	H3	4	Ox	PLG				80984	80985	80986	80987	
HSSE	Form Tap	H3	4	Ox		BTM			80990	80991	80992	80993	
HSSE	Form Tap	H4	4	Ox	PLG				80996	80997	80998	80999	
HSSE	Form Tap	H4	4	Ox		BTM			81003	81004	81005	81006	
HSSE	Form Tap	H5	4	Ox	PLG				81008	81009	81010	81011	
HSSE	Form Tap	H5	4	Ox		BTM			81014	81015	81016	81017	
HSSE	Form Tap	H6	4	Ox	PLG				81020	81021	81022	81023	
HSSE	Form Tap	H6	4	Ox		BTM			81026	81027	81028	81029	
HSSE	Form Tap	H7	4	Ox	PLG				81033	81034	81035	81036	
HSSE	Form Tap	H7	4	Ox		BTM			81038	81039	81040	81041	
HSSE	Form Tap	H9	4	Ox	PLG				81044	81045	81046	81047	
HSSE	Form Tap	H9	4	Ox		BTM			81050	81051	81052	81053	
HSSE	Str. Flt Die Cast	H3	3	N	PLG				81056				81054
HSSE	Str. Flt Die Cast	H3	3	N		BTM		81060 81062					
HSSE	Cast Iron	H3	4	N+Ox	PLG								
HSSE	Cast Iron	H3	4	N+Ox		BTM							
Carbide	Multi Flute Taps for Plastic	H7	5		60224	60225							
Carbide	PRX SPPT Tap	H3	3		60320					"PRX" for Stellite & Inconel, etc.			
Carbide	PRC SPPT Tap	H3	3		60321				"PRC" for Titanium & Beryllium				
Carbide	Form Tap	H3	4 Lobes*		60417	60418							
Carbide	SPPT	H3		2		60322							
Carbide	SPPT	H3		3		60323							
Carbide	PRX STI SPPT	H3		3		60324					"PRX" for Stellite & Inconel, etc.		
Carbide	PRC STI SPPT	H3	3		60325				"PRC" for Titanium & Beryllium				
Carbide	STI SPPT	H3	3		60326								
Carbide	STI Str. Flt	H3	2		60106	60107							
Carbide	STI Str. Flt	H3	3		60108	60109							
Carbide	STI Str. Flt	H3	4		60110	60111							
Carbide	Str. Flt	H3	2		60112	60113							

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							Black	White	Yellow	Green	Blue	Red
1/4"-28 NF							See Previous Page for Recommended Hole Size					
Carbide	Str. Flt	H3	3		60114	60115						
Carbide	Str. Flt	H3	4		60116	60117						
Carbide	Gage - Taperlock Style D/E				26042							
Ceramic	Gage - Taperlock Style D/E				26043							
Carbide	Gage - Reversible Style D/E				26262							
Ceramic	Gage - Reversible Style D/E				26263							
1/4"-32 NEF												
Carbide	Gage - Taperlock Style D/E				26044							
Ceramic	Gage - Taperlock Style D/E				26045							
Carbide	Gage - Reversible Style D/E				26264							
Ceramic	Gage - Reversible Style D/E				26265							
5/16"-18 NC							Recommended Hole Size based on 75% Thread = .2589" for STI = .3320" / Form Tap at 65% Thread = .2879"					
HSSE	SPPT	H3	3	CrC	PLG					81064		
HSSE	SPPT	H3	3	Ox	PLG				81066	81067	81068	
HSSE	SPPT	H3	3	TiCN	PLG						81071	
HSSE	SPPT	H5	3	CrC	PLG						81073	
HSSE	SPPT	H5	3	Ox	PLG				81075	81076	81077	
HSSE	SPPT	H5	3	TiCN	PLG						81080	
HSSE	SPPT	H7	3	Ox	PLG				81082	81083	81084	
HSSE	SPPT	H7	3	TiCN	PLG						81087	
HSSE	SPFL	H3	3	CrC		M-B					81089	
HSSE	SPFL	H3	3	Ox		M-B			81091	81092	81093	
HSSE	SPFL	H3	3	TiCN		M-B					81096	
HSSE	SPFL	H5	3	CrC		M-B					81098	
HSSE	SPFL	H5	3	Ox		M-B			81100	81101	81102	
HSSE	SPFL	H5	3	TiCN		M-B					81105	
HSSE	SPFL	H7	3	Ox		M-B			81107	81108	81109	
HSSE	SPFL	H7	3	TiCN		M-B					81112	
HSSE	Form Tap	H3	4	Ox	PLG		81114		81115	81116	81117	
HSSE	Form Tap	H3	4	Ox		BTM	81120		81121	81122	81123	
HSSE	Form Tap	H5	4	Ox	PLG		81126		81127	81128	81129	
HSSE	Form Tap	H5	4	Ox		BTM	81132		81133	81134	81135	
HSSE	Form Tap	H7	4	Ox	PLG		81138		81139	81140	81141	
HSSE	Form Tap	H7	4	Ox		BTM	81144		81145	81146	81147	
HSSE	Form Tap	H9	4	Ox	PLG		81150		81151	81152	81153	
HSSE	Form Tap	H9	4	Ox		BTM	81156		81157	81158	81159	
HSSE	Str. Flt Die Cast	H3	4	N	PLG		81162					
HSSE	Str. Flt Die Cast	H3	4	N		BTM	81164					
HSSE	Str. Flt Die Cast	H5	4	N	PLG		81166					
HSSE	Str. Flt Die Cast	H5	4	N		BTM	81168					
HSSE	Cast Iron	H3	4	N+Ox	PLG			81170				
HSSE	Cast Iron	H3	4	N+Ox		BTM	81172					
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Cast Iron-Ductile, Malleable	White	160-320
Steel - Low Carbon	Yellow	125-275
Steel - Med. Carbon	Yellow	180-425
Steel - High Carbon	Yellow	180-425
Alloy Steel	Green	225-400
Stainless - 300 Series	Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	Red	135-425
Stainless - PH Series	Red	150-440
High Nickel Alloy	Blue	150-360 Monel; 200-400 Inconel
Titanium Alloy	Blue	310-440
Die Steel	Red	250-350
Hardened Steel - <325 BHN	Red	300-350
Hardened Steel - 325-426 BHN	Red	300-440

* NOTE: For material or material group not shown (such as No Lead Brass), please consult Customer Service.

** BHN hardness range may vary depending on steel/workpiece condition. See page 64 for Rockwell-Brinell Hardness Data chart.

SURFACE TREATMENT ABBREVIATIONS

See page 62 in engineering section for surface treatment recommendations.

AlCrN:	Aluminum Chromium Nitride	TiAlN+WC/C:	'Hardlube' - Titanium Aluminum Nitride
CrC:	Chromium Carbide		Aluminum Nitride
CrN:	Chromium Nitride		+Tungsten Carbide/Carbon
DLC:	Diamond-like Carbon	TiCN:	Titanium Carbonitride
N:	Nitride	TiN:	Titanium Nitride
N + Ox:	Nitride + Oxide*	WC/C:	Tungsten Carbide/Carbon
	*Oxide (Ox) may also be shown as 'O'	WS2:	Tungsten Disulfide
Ox:	Steam Oxide*	ZrN:	Zirconium Nitride
TiAlN:	Titanium Aluminum Nitride		

In many applications, a tap that is properly designed and used under recommended conditions will produce acceptable results without the use of surface treatments. However, under some conditions, such as tapping excessively hard, abrasive or challenging materials, the use of performance enhancing surface treatments will be beneficial to the overall results of your tapping operation in terms of improved tool life and internal thread quality. Coolant-through taps may also be a consideration. Contact Allen Benjamin for tapping and treatment recommendations.

High Performance Taps & Gages

Size / Tool Mat'l	Description	H#	# Flutes / # Lube Grv.	Std. Coat	EDP Plug	EDP Bottom	HSSE Tap EDP					
							Black	White	Yellow	Green	Blue	Red
5/16"-18 NC							See Previous Page for Recommended Hole Size					
Carbide	Form Tap	H3	5 Lobes*		60419	60420						
Carbide	SPPT	H3	2		60329							
Carbide	SPPT	H3	3		60330							
Carbide	PRX STI SPPT	H3	3		60331		"PRX" for Stellite & Inconel, etc. "PRC" for Titanium & Beryllium					
Carbide	PRC STI SPPT	H3	3		60332							
Carbide	STI SPPT	H3	3		60333							
Carbide	STI Str. Flt	H3	2		60118	60119						
Carbide	STI Str. Flt	H3	3		60120	60121						
Carbide	STI Str. Flt	H3	4		60122	60123						
Carbide	Str. Flt	H3	2		60124	60125						
Carbide	Str. Flt	H3	3		60126	60127						
Carbide	Str. Flt	H3	4		60128	60129						
Carbide	Gage - Taperlock Style D/E				26046							
Ceramic	Gage - Taperlock Style D/E				26047							
Carbide	Gage - Reversible Style D/E				26266							
Ceramic	Gage - Reversible Style D/E				26267							
5/16"-24 NF							Recommended Hole Size based on 75% Thread = .2715" for STI = .3281" / Form Tap at 65% Thread = .2941"					
HSSE	SPPT	H3	3	CrC	PLG						81178	
HSSE	SPPT	H3	3	Ox	PLG				81180	81181	81182	81183
HSSE	SPPT	H3	3	TiCN	PLG						81185	
HSSE	SPPT	H4	3	Ox	PLG				81187	81188	81189	81190
HSSE	SPPT	H4	3	TiCN	PLG						81192	
HSSE	SPPT	H5	3	CrC	PLG						81194	
HSSE	SPPT	H5	3	Ox	PLG				81196	81197	81198	81199
HSSE	SPPT	H5	3	TiCN	PLG						81201	
HSSE	SPPT	H6	3	Ox	PLG				81203	81204	81205	81206
HSSE	SPPT	H7	3	Ox	PLG				81208	81209	81210	81211
HSSE	SPPT	H7	3	TiCN	PLG						81213	
HSSE	SPFL	H3	3	CrC		M-B					81215	
HSSE	SPFL	H3	3	Ox		M-B			81217	81218	81219	81220
HSSE	SPFL	H3	3	TiCN		M-B					81222	
HSSE	SPFL	H4	3	Ox		M-B			81224	81225	81226	81227
HSSE	SPFL	H4	3	TiCN		M-B					81229	
HSSE	SPFL	H5	3	CrC		M-B					81231	
HSSE	SPFL	H5	3	Ox		M-B			81233	81234	81235	81236
HSSE	SPFL	H5	3	TiCN		M-B					81238	
HSSE	SPFL	H6	3	Ox		M-B			81240	81241	81242	81243
HSSE	SPFL	H7	3	Ox		M-B			81245	81246	81247	81248
HSSE	SPFL	H7	3	TiCN		M-B					81250	
HSSE	Form Tap	H3	4	Ox	PLG		81252		81253	81254	81255	81256
HSSE	Form Tap	H3	4	Ox		BTM	81258		81259	81260	81261	81262
HSSE	Form Tap	H5	4	Ox	PLG		81264		81265	81266	81267	81268
HSSE	Form Tap	H5	4	Ox		BTM	81270		81271	81272	81273	81274
HSSE	Form Tap	H7	4	Ox	PLG		81276		81277	81278	81279	81280
HSSE	Form Tap	H7	4	Ox		BTM	81282		81283	81284	81285	81286
HSSE	Form Tap	H9	4	Ox	PLG		81288		81289	81290	81291	81292
HSSE	Form Tap	H9	4	Ox		BTM	81294		81295	81296	81297	81298
HSSE	Str. Flt Die Cast	H3	4	N	PLG		81300					
HSSE	Str. Flt Die Cast	H3	4	N		BTM	81302					

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Stainless - 300 Series	Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	Red	135-425
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							Black	White	Yellow	Green	Blue	Red
5/16"-24 NF							See Previous Page for Recommended Hole Size					
HSSE	Cast Iron	H3	4	N+Ox	PLG			81304				
HSSE	Cast Iron	H3	4	N+Ox		BTM		81306				
Carbide	Multi Flute Taps for Plastic	H7	5		60228	60229						
Carbide	PRX SPPT Tap	H3	3		60334			"PRX" for Stellite & Inconel, etc.				
Carbide	PRC SPPT Tap	H3	3		60335			"PRC" for Titanium & Beryllium				
Carbide	Form Tap	H3	5 Lobes*		60421	60422						
Carbide	SPPT	H3	2		60336							
Carbide	SPPT	H3	3		60337							
Carbide	PRX STI SPPT	H3	3		60338			"PRX" for Stellite & Inconel, etc.				
Carbide	PRC STI SPPT	H3	3		60339			"PRC" for Titanium & Beryllium				
Carbide	STI SPPT	H3	3		60340							
Carbide	STI Str. Flt	H3	2		60130	60131						
Carbide	STI Str. Flt	H3	3		60132	60133						
Carbide	STI Str. Flt	H3	4		60134	60135						
Carbide	Str. Flt	H3	2		60136	60137						
Carbide	Str. Flt	H3	3		60138	60139						
Carbide	Str. Flt	H3	4		60140	60141						
Carbide	Gage - Taperlock Style D/E				26048							
Ceramic	Gage - Taperlock Style D/E				26049							
Carbide	Gage - Reversible Style D/E				26268							
Ceramic	Gage - Reversible Style D/E				26269							
5/16"-32 NEF												
Carbide	Gage - Taperlock Style D/E				26050							
Ceramic	Gage - Taperlock Style D/E				26051							
Carbide	Gage - Reversible Style D/E				26270							
Ceramic	Gage - Reversible Style D/E				26271							
3/8"-16 NC							Recommended Hole Size based on 75% Thread = .3144" for STI = .3970" / Form Tap at 65% Thread = .3474"					
HSSE	SPPT	H3	3	CrC	PLG					81308		
HSSE	SPPT	H3	3	Ox	PLG				81310	81311	81312	
HSSE	SPPT	H3	3	TiCN	PLG						81315	
HSSE	SPPT	H4	3	TiCN	PLG						81317	
HSSE	SPPT	H5	3	CrC	PLG						81319	
HSSE	SPPT	H5	3	Ox	PLG				81321	81322	81323	
HSSE	SPPT	H5	3	TiCN	PLG						81326	
HSSE	SPPT	H7	3	Ox	PLG				81328	81329	81330	
HSSE	SPPT	H7	3	TiCN	PLG						81333	
HSSE	SPFL	H3	3	CrC		M-B					81335	
HSSE	SPFL	H3	3	Ox		M-B			81337	81338	81339	
HSSE	SPFL	H3	3	TiCN		M-B					81342	
HSSE	SPFL	H4	3	TiCN		M-B					81344	
HSSE	SPFL	H5	3	CrC		M-B					81346	
HSSE	SPFL	H5	3	Ox		M-B			81348	81349	81350	
HSSE	SPFL	H5	3	TiCN		M-B					81353	
HSSE	SPFL	H7	3	Ox		M-B			81355	81356	81357	
HSSE	SPFL	H7	3	TiCN		M-B					81360	
HSSE	Form Tap	H3	4	Ox	PLG		81362		81363	81364	81365	
HSSE	Form Tap	H3	4	Ox		BTM	81368		81369	81370	81371	

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Steel - Med. Carbon	Yellow	180-425
Steel - High Carbon	Yellow	180-425
Alloy Steel	Green	225-400
Stainless - 300 Series	Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	Red	135-425
Stainless - PH Series	Red	150-440
High Nickel Alloy	Blue	150-360 Monel; 200-400 Inconel
Titanium Alloy	Blue	310-440
Die Steel	Red	250-350
Hardened Steel - <325 BHN	Red	300-350
Hardened Steel - 325-426 BHN	Red	300-440

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N:	Nitride	TiN:	Titanium Nitride
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Size / Tool Mat'l	Description	H#	# Flutes / # Lube Grv.	Std. Coat	EDP Plug	EDP Bottom	HSSE Tap EDP					
							Black	White	Yellow	Green	Blue	Red
3/8"-16 NC							See Previous Page for Recommended Hole Size					
HSSE	Form Tap	H5	4	Ox	PLG		81374		81375	81376	81377	81378
HSSE	Form Tap	H5	4	Ox		BTM	81380		81381	81382	81383	81384
HSSE	Form Tap	H7	4	Ox	PLG		81386		81387	81388	81389	81390
HSSE	Form Tap	H7	4	Ox		BTM	81392		81393	81394	81395	81396
HSSE	Form Tap	H9	4	Ox	PLG		81398		81399	81400	81401	81402
HSSE	Form Tap	H9	4	Ox		BTM	81404		81405	81406	81407	81408
HSSE	Str. Flt Die Cast	H3	4	N	PLG		81410					
HSSE	Str. Flt Die Cast	H3	4	N		BTM	81412					
HSSE	Str. Flt Die Cast	H5	4	N	PLG		81414					
HSSE	Str. Flt Die Cast	H5	4	N		BTM	81416					
HSSE	Cast Iron	H3	4	N+Ox	PLG			81418				
HSSE	Cast Iron	H3	4	N+Ox		BTM		81420				
HSSE	Cast Iron	H5	4	N+Ox	PLG			81422				
HSSE	Cast Iron	H5	4	N+Ox		BTM		81424				
Carbide	Multi Flute Taps for Plastic	H7	5		60230	60231						
Carbide	PRX SPPT Tap	H3	3		60341			"PRX" for Stellite & Inconel, etc. "PRC" for Titanium & Beryllium				
Carbide	PRC SPPT Tap	H3	3		60342							
Carbide	Form Tap	H3	4 Lobes*		60423	60424						
Carbide	Form Tap	H3	5 Lobes*		60425	60426						
Carbide	Form Tap	H3	6 Lobes*		60427	60428						
Carbide	SPPT	H3	3		60343			"PRX" for Stellite & Inconel, etc. "PRC" for Titanium & Beryllium				
Carbide	PRX STI SPPT	H3	3		60344							
Carbide	PRC STI SPPT	H3	3		60345							
Carbide	STI SPPT	H3	3		60346							
Carbide	STI Str. Flt	H3	3		60142	60143						
Carbide	STI Str. Flt	H3	4		60144	60145						
Carbide	Str. Flt	H3	2		60146	60147						
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Carbide	Str. Flt	H3	4		60150	60151						
Carbide	Gage - Taperlock Style D/E				26052							
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Carbide	Gage - Reversible Style D/E				26272							
Ceramic	Gage - Reversible Style D/E				26273							
3/8"-18 PIPE TAP NPT/F							Recommended Hole Size: NPT = .5625" / NPTF = .5781" NPSF/NPSI = .5781"					
Carbide	Inserted Pipe Tap		4		60537							
3/8"-24 NF							Recommended Hole Size based on 75% Thread = .3340" for STI = .3906" / Form Tap at 65% Thread = .3566"					
HSSE	SPPT	H3	3	CrC	PLG						81426	
HSSE	SPPT	H3	3	Ox	PLG				81428	81429	81430	81431
HSSE	SPPT	H3	3	TiCN	PLG						81433	
HSSE	SPPT	H4	3	Ox	PLG				81435	81436	81437	81438
HSSE	SPPT	H4	3	TiCN	PLG						81440	
HSSE	SPPT	H5	3	CrC	PLG						81442	
HSSE	SPPT	H5	3	Ox	PLG				81444	81445	81446	81447
HSSE	SPPT	H5	3	TiCN	PLG						81449	
HSSE	SPPT	H6	3	Ox	PLG				81451	81452	81453	81454
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HSSE	SPFL	H3	3	Ox		M-B			81465	81466	81467	81468
HSSE	SPFL	H3	3	TiCN		M-B					81470	
HSSE	SPFL	H4	3	Ox		M-B			81472	81473	81474	81475
HSSE	SPFL	H4	3	TiCN		M-B					81477	
HSSE	SPFL	H5	3	CrC		M-B					81479	
HSSE	SPFL	H5	3	Ox		M-B			81481	81482	81483	81484
HSSE	SPFL	H5	3	TiCN		M-B					81486	
HSSE	SPFL	H6	3	Ox		M-B			81488	81489	81490	81491
HSSE	SPFL	H7	3	Ox		M-B			81493	81494	81495	81496
HSSE	SPFL	H7	3	TiCN		M-B					81498	
HSSE	Form Tap	H3	4	Ox	PLG		81500		81501	81502	81503	81504
HSSE	Form Tap	H3	4	Ox		BTM	81506		81507	81508	81509	81510
HSSE	Form Tap	H5	4	Ox	PLG		81512		81513	81514	81515	81516
HSSE	Form Tap	H5	4	Ox		BTM	81518		81519	81520	81521	81522
HSSE	Form Tap	H7	4	Ox	PLG		81524		81525	81526	81527	81528
HSSE	Form Tap	H7	4	Ox		BTM	81530		81531	81532	81533	81534
HSSE	Form Tap	H9	4	Ox	PLG		81536		81537	81538	81539	81540
HSSE	Form Tap	H9	4	Ox		BTM	81542		81543	81544	81545	81546
HSSE	Str. Flt Die Cast	H3	4	N	PLG		81548					
HSSE	Str. Flt Die Cast	H3	4	N		BTM	81550					
HSSE	Cast Iron	H3	4	N+Ox	PLG			81552				
HSSE	Cast Iron	H3	4	N+Ox		BTM		81554				
Carbide	Multi Flute Taps for Plastic	H7	5		60232	60233						
Carbide	PRX SPPT Tap	H3	3		60347			"PRX" for Stellite & Inconel, etc.				
Carbide	PRC SPPT Tap	H3	3		60348			"PRC" for Titanium & Beryllium				
Carbide	Form Tap	H3	4 Lobes*		60429	60430						
Carbide	Form Tap	H3	5 Lobes*		60431	60432						
Carbide	Form Tap	H3	6 Lobes*		60433	60434						
Carbide	SPPT	H3	3		60349							
Carbide	PRX STI SPPT	H3	3		60350			"PRX" for Stellite & Inconel, etc.				
Carbide	PRC STI SPPT	H3	3		60351			"PRC" for Titanium & Beryllium				
Carbide	STI SPPT	H3	3		60352							
Carbide	STI Str. Flt	H3	3		60152	60153						
Carbide	STI Str. Flt	H3	4		60154	60155						
Carbide	Str. Flt	H3	2		60156	60157						
Carbide	Str. Flt	H3	3		60158	60159						
Carbide	Str. Flt	H3	4		60160	60161						
Carbide	Gage - Taperlock Style D/E				26054							
Ceramic	Gage - Taperlock Style D/E				26055							
Carbide	Gage - Reversible Style D/E				26274							
Ceramic	Gage - Reversible Style D/E				26275							
3/8"-32 NEF												
Carbide	Gage - Taperlock Style D/E				26056							
Ceramic	Gage - Taperlock Style D/E				26057							
Carbide	Gage - Reversible Style D/E				26276							
Ceramic	Gage - Reversible Style D/E				26277							

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This page is your guide to:

- *Material application ranges organized by color coding;*
- *Available surface treatments or coatings, which are highly recommended when tapping with high performance taps;*

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Aluminum - Wrought	● Black	30-80 cold drawn; 75-150 treated/aged
Aluminum - Casting	● Black	40-100 as cast; 70-125 treated/aged
Cast Iron - Gray	◎ White	160-260 as cast; 250-320 quenched/tempered
Cast Iron-Ductile, Malleable	◎ White	160-320
Steel - Low Carbon	● Yellow	125-275
Steel - Med. Carbon	● Yellow	180-425
Steel - High Carbon	● Yellow	180-425
Alloy Steel	● Green	225-400
Stainless - 300 Series	● Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	● Red	135-425
Stainless - PH Series	● Red	150-440
High Nickel Alloy	● Blue	150-360 Monel; 200-400 Inconel
Titanium Alloy	● Blue	310-440
Die Steel	● Red	250-350
Hardened Steel - <325 BHN	● Red	300-350
Hardened Steel - 325-426 BHN	● Red	300-440

* **NOTE:** For material or material group not shown (such as No Lead Brass), please consult Customer Service.

** **BHN hardness range may vary depending on steel/workpiece condition. See page 64 for Rockwell-Brinell Hardness Data chart.**

SURFACE TREATMENT ABBREVIATIONS

See page 62 in engineering section for surface treatment recommendations.

AlCrN:	Aluminum Chromium Nitride	TiAlN+WC/C:	'Hardlube' - Titanium Aluminum Nitride
CrC:	Chromium Carbide		Aluminum Nitride
CrN:	Chromium Nitride		+Tungsten Carbide/Carbon
DLC:	Diamond-like Carbon	TiCN:	Titanium Carbonitride
N:	Nitride	TiN:	Titanium Nitride
N + Ox:	Nitride + Oxide*	WC/C:	Tungsten Carbide/Carbon
Ox:	Steam Oxide*	WS2:	Tungsten Disulfide
TiAlN:	Titanium Aluminum Nitride	ZrN:	Zirconium Nitride

In many applications, a tap that is properly designed and used under recommended conditions will produce acceptable results without the use of surface treatments. However, under some conditions, such as tapping excessively hard, abrasive or challenging materials, the use of performance enhancing surface treatments will be beneficial to the overall results of your tapping operation in terms of improved tool life and internal thread quality. Coolant-through taps may also be a consideration. Contact Allen Benjamin for tapping and treatment recommendations.

High Performance Taps & Gages

Size / Tool Mat'l	Description	H#	# Flutes / # Lube Grv.	Std. Coat	EDP Plug	EDP Bottom	HSSE Tap EDP					
							Black	White	Yellow	Green	Blue	Red
7/16"-14 NC							Recommended Hole Size based on 75% Thread = .3681" for STI = .4531" / Form Tap at 65% Thread = .4059"					
HSSE	SPPT	H3	3	CrC	PLG					82475		
HSSE	SPPT	H3	3	Ox	PLG			81557	81558	81559	81560	
HSSE	SPPT	H3	3	TiCN	PLG					81562		
HSSE	SPPT	H5	3	CrC	PLG					81564		
HSSE	SPPT	H5	3	Ox	PLG			81566	81567	81568	81569	
HSSE	SPPT	H5	3	TiCN	PLG					81571		
HSSE	SPPT	H7	3	Ox	PLG			81574	81575	81576	81577	
HSSE	SPPT	H7	3	TiCN	PLG					81579		
HSSE	SPFL	H3	3	CrC		M-B				81581		
HSSE	SPFL	H3	3	Ox		M-B		81583	81584	81585	81586	
HSSE	SPFL	H3	3	TiCN		M-B				81588		
HSSE	SPFL	H5	3	CrC		M-B				81590		
HSSE	SPFL	H5	3	Ox		M-B		81592	81593	81594	81595	
HSSE	SPFL	H5	3	TiCN		M-B				81597		
HSSE	SPFL	H7	3	Ox		M-B		81599	81600	81601	81602	
HSSE	SPFL	H7	3	TiCN		M-B				81604		
HSSE	Form Tap	H5	6	Ox	PLG		81606	81607	81608	81609	81610	
HSSE	Form Tap	H5	6	Ox		BTM	81612	81613	81614	81615	81616	
HSSE	Form Tap	H7	6	Ox	PLG		81618	81619	81620	81621	81622	
HSSE	Form Tap	H7	6	Ox		BTM	81624	81625	81626	81627	81628	
HSSE	Form Tap	H8	6	Ox	PLG		81630	81631	81632	81633	81634	
HSSE	Form Tap	H8	6	Ox		BTM	81636	81637	81638	81639	81640	
HSSE	Form Tap	H9	6	Ox	PLG		81642	81643	81644	81645	81646	
HSSE	Form Tap	H9	6	Ox		BTM	81648	81649	81650	81651	81652	
HSSE	Str. Flt Die Cast	H3	4	N	PLG		81654					
HSSE	Str. Flt Die Cast	H3	4	N		BTM	81656					
HSSE	Cast Iron	H3	4	N+Ox	PLG			81658				
HSSE	Cast Iron	H3	4	N+Ox		BTM		81660				
HSSE	Cast Iron	H5	4	N+Ox	PLG			81662				
HSSE	Cast Iron	H5	4	N+Ox		BTM		81664				
Carbide	Multi Flute Taps for Plastic	H7	6		60234	60235						
Carbide	PRX SPPT Tap	H3	4		60353			"PRX" for Stellite & Inconel, etc.				
Carbide	PRC SPPT Tap	H3	4		60354			"PRC" for Titanium & Beryllium				
Carbide	Form Tap	H3	4 Lobes*		60435	60436						
Carbide	Form Tap	H3	6 Lobes*		60437	60438						
Carbide	SPPT	H3	3		60355							
Carbide	PRX STI SPPT	H3	3		60356			"PRX" for Stellite & Inconel, etc.				
Carbide	PRC STI SPPT	H3	3		60357			"PRC" for Titanium & Beryllium				
Carbide	STI SPPT	H3	3		60358							
Carbide	STI Str. Flt	H3	4		60162	60163						
Carbide	Str. Flt	H3	3		60164	60165						
Carbide	Str. Flt	H3	4		60166	60167						
Carbide	Gage - Taperlock Style D/E				26058							
Ceramic	Gage - Taperlock Style D/E				26059							
Carbide	Gage - Reversible Style D/E				26278							
Ceramic	Gage - Reversible Style D/E				26279							
7/16"-20 NF							Recommended Hole Size based on 75% Thread = .389" for STI = .4351" / Form Tap at 65% Thread = .4154"					
HSSE	SPPT	H3	3	CrC	PLG					81666		
HSSE	SPPT	H3	3	Ox	PLG			81668	81669	81670	81671	

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Steel - Low Carbon	Yellow	125-275
Steel - Med. Carbon	Yellow	180-425
Steel - High Carbon	Yellow	180-425
Alloy Steel	Green	225-400
Stainless - 300 Series	Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	Red	135-425
Stainless - PH Series	Red	150-440
High Nickel Alloy	Blue	150-360 Monel; 200-400 Inconel
Titanium Alloy	Blue	310-440
Die Steel	Red	250-350
Hardened Steel - <325 BHN	Red	300-350
Hardened Steel - 325-426 BHN	Red	300-440

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N:	Nitride	TiN:	Titanium Nitride
N + Ox:	Nitride + Oxide*	WC/C:	Tungsten Carbide/Carbon
Ox:	Steam Oxide*	WS2:	Tungsten Disulfide
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Size / Tool Mat'l	Description	H#	# Flutes / # Lube Grv.	Std. Coat	EDP Plug	EDP Bottom	HSSE Tap EDP					
							Black	White	Yellow	Green	Blue	Red
7/16"-20 NF							See Previous Page for Recommended Hole Size					
HSSE	SPPT	H3	3	TiCN	PLG					81673		
HSSE	SPPT	H5	3	CrC	PLG					81675		
HSSE	SPPT	H5	3	Ox	PLG			81677	81678	81679	81680	
HSSE	SPPT	H5	3	TiCN	PLG					81682		
HSSE	SPPT	H7	3	Ox	PLG			81684	81685	81686	81687	
HSSE	SPPT	H7	3	TiCN	PLG					81689		
HSSE	SPFL	H3	3	CrC		M-B				81691		
HSSE	SPFL	H3	3	Ox		M-B		81693	81694	81695	81696	
HSSE	SPFL	H3	3	TiCN		M-B				81700		
HSSE	SPFL	H5	3	CrC		M-B				81703		
HSSE	SPFL	H5	3	Ox		M-B		81705	81706	81707	81708	
HSSE	SPFL	H5	3	TiCN		M-B				81710		
HSSE	SPFL	H7	3	Ox		M-B		81712	81713	81714	81715	
HSSE	SPFL	H7	3	TiCN		M-B				81717		
HSSE	Form Tap	H5	6	Ox	PLG		81719	81720	81721	81722	81723	
HSSE	Form Tap	H5	6	Ox		BTM	81725	81726	81727	81728	81729	
HSSE	Form Tap	H7	6	Ox	PLG		81731	81732	81733	81734	81735	
HSSE	Form Tap	H7	6	Ox		BTM	81737	81738	81739	81740	81741	
HSSE	Form Tap	H8	6	Ox	PLG		81743	81744	81745	81746	81747	
HSSE	Form Tap	H8	6	Ox		BTM	81749	81750	81751	81752	81753	
HSSE	Form Tap	H9	6	Ox	PLG		81755	81756	81757	81758	81759	
HSSE	Form Tap	H9	6	Ox		BTM	81761	81762	81763	81764	81765	
HSSE	Str. Flt Die Cast	H3	4	N	PLG		81767					
HSSE	Str. Flt Die Cast	H3	4	N		BTM	81769					
HSSE	Cast Iron	H3	4	N+Ox	PLG			81771				
HSSE	Cast Iron	H3	4	N+Ox		BTM		81773				
Carbide	Multi Flute Taps for Plastic	H7	6		60236	60237						
Carbide	PRX SPPT Tap	H3	4		60359			"PRX" for Stellite & Inconel, etc.				
Carbide	PRC SPPT Tap	H3	4		60360			"PRC" for Titanium & Beryllium				
Carbide	Form Tap	H3	6 Lobes*		60439	60440						
Carbide	SPPT	H3	3		60361							
Carbide	PRX STI SPPT	H3	3		60362			"PRX" for Stellite & Inconel, etc.				
Carbide	PRC STI SPPT	H3	3		60363			"PRC" for Titanium & Beryllium				
Carbide	STI SPPT	H3	3		60364							
Carbide	STI Str. Flt	H3	4		60168	60169						
Carbide	Str. Flt	H3	3		60170	60171						
Carbide	Str. Flt	H3	4		60172	60173						
Carbide	Gage - Taperlock Style D/E				26060							
Ceramic	Gage - Taperlock Style D/E				26061							
Carbide	Gage - Reversible Style D/E				26280							
Ceramic	Gage - Reversible Style D/E				26281							
7/16"-28 NEF												
Carbide	Gage - Taperlock Style D/E				26062							
Ceramic	Gage - Taperlock Style D/E				26063							
Carbide	Gage - Reversible Style D/E				26282							
Ceramic	Gage - Reversible Style D/E				26283							

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Stainless - 300 Series	Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	Red	135-425
Stainless - PH Series	Red	150-440
High Nickel Alloy	Blue	150-360 Monel; 200-400 Inconel
Titanium Alloy	Blue	310-440
Die Steel	Red	250-350
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N + Ox:	Nitride + Oxide*	WC/C:	Tungsten Carbide/Carbon
	*Oxide (Ox) may also be shown as 'O'	WS2:	Tungsten Disulfide
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							Black	White	Yellow	Green	Blue	Red			
1/2"-12 NS															
Carbide	Gage - Taperlock Style D/E				26068										
Ceramic	Gage - Taperlock Style D/E				26069										
Carbide	Gage - Reversible Style D/E				26288										
Ceramic	Gage - Reversible Style D/E				26289										
1/2"-13 NC							Recommended Hole Size based on 75% Thread = .4251" for STI = .5312" / Form Tap at 65% Thread = .4660"								
HSSE	SPPT	H3	3	CrC	PLG				81777	81778	81775	81780			
HSSE	SPPT	H3	3	Ox	PLG						81779				
HSSE	SPPT	H3	3	TiCN	PLG						81782				
HSSE	SPPT	H5	3	CrC	PLG						81784				
HSSE	SPPT	H5	3	Ox	PLG		81786	81787	81788	81789					
HSSE	SPPT	H5	3	TiCN	PLG				81793	81794	81791	81796			
HSSE	SPPT	H7	3	Ox	PLG						81795				
HSSE	SPPT	H7	3	TiCN	PLG						81798				
HSSE	SPFL	H3	3	CrC		M-B					81800				
HSSE	SPFL	H3	3	Ox		M-B	81802	81803	81804	81805					
HSSE	SPFL	H3	3	TiCN		M-B			81811	81812	81807	81814			
HSSE	SPFL	H5	3	CrC		M-B					81809				
HSSE	SPFL	H5	3	Ox		M-B					81813				
HSSE	SPFL	H5	3	TiCN		M-B					81816				
HSSE	SPFL	H7	3	Ox		M-B	81818	81819	81820	81821					
HSSE	SPFL	H7	3	TiCN		M-B	81825		81826	81827	81823	81829			
HSSE	Form Tap	H5	6	Ox	PLG						81828				
HSSE	Form Tap	H5	6	Ox		BTM					81832		81833	81834	81835
HSSE	Form Tap	H7	6	Ox	PLG						81837		81838	81839	81840
HSSE	Form Tap	H7	6	Ox		BTM	81843	81844	81845	81846	81847				
HSSE	Form Tap	H8	6	Ox	PLG		81849		81850	81851	81852	81853			
HSSE	Form Tap	H8	6	Ox		BTM	81855		81856	81857	81858	81859			
HSSE	Form Tap	H9	6	Ox	PLG		81861		81862	81863	81864	81865			
HSSE	Form Tap	H9	6	Ox		BTM	81867		81868	81869	81870	81871			
HSSE	Str. Flt Die Cast	H3	4	N	PLG		81873	81877							
HSSE	Str. Flt Die Cast	H3	4	N		BTM	81875								
HSSE	Cast Iron	H3	4	N+Ox	PLG		81879								
HSSE	Cast Iron	H3	4	N+Ox		BTM	81881								
HSSE	Cast Iron	H5	4	N+Ox	PLG		81883								
HSSE	Cast Iron	H5	4	N+Ox		BTM									
Carbide	Multi Flute Taps for Plastic	H7	6		60238	60239		“PRX” for Stellite & Inconel, etc. “PRC” for Titanium & Beryllium							
Carbide	PRX SPPT Tap	H3	4		60365										
Carbide	PRC SPPT Tap	H3	4		60366										
Carbide	Form Tap	H3	6 Lobes*		60441	60442									
Carbide	SPPT	H3	3		60367			“PRX” for Stellite & Inconel, etc. “PRC” for Titanium & Beryllium							
Carbide	PRX STI SPPT	H3	3		60368										
Carbide	PRC STI SPPT	H3	3		60369										
Carbide	STI SPPT	H3	3		60370										
Carbide	STI Str. Flt	H3	4		60174	60175									
Carbide	Str. Flt	H3	3		60176	60177									
Carbide	Str. Flt	H3	3		60178	60179									
Carbide	Str. Flt	H3	4		60178	60179									
Carbide	Gage - Taperlock Style D/E				26064										
Ceramic	Gage - Taperlock Style D/E				26065										
Carbide	Gage - Reversible Style D/E				26284										
Ceramic	Gage - Reversible Style D/E				26285										

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- *Material application ranges organized by color coding;*
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Aluminum - Casting	Black	40-100 as cast; 70-125 treated/aged
Cast Iron - Gray	White	160-260 as cast; 250-320 quenched/tempered
Cast Iron-Ductile, Malleable	White	160-320
Steel - Low Carbon	Yellow	125-275
Steel - Med. Carbon	Yellow	180-425
Steel - High Carbon	Yellow	180-425
Alloy Steel	Green	225-400
Stainless - 300 Series	Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	Red	135-425
Stainless - PH Series	Red	150-440
High Nickel Alloy	Blue	150-360 Monel; 200-400 Inconel
Titanium Alloy	Blue	310-440
Die Steel	Red	250-350
Hardened Steel - <325 BHN	Red	300-350
Hardened Steel - 325-426 BHN	Red	300-440

* NOTE: For material or material group not shown (such as No Lead Brass), please consult Customer Service.

** BHN hardness range may vary depending on steel/workpiece condition. See page 64 for Rockwell-Brinell Hardness Data chart.

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See page 62 in engineering section for surface treatment recommendations.

AlCrN:	Aluminum Chromium Nitride	TiAlN+WC/C:	'Hardlube' - Titanium Aluminum Nitride
CrC:	Chromium Carbide		Aluminum Nitride
CrN:	Chromium Nitride		+Tungsten Carbide/Carbon
DLC:	Diamond-like Carbon	TiCN:	Titanium Carbonitride
N:	Nitride	TiN:	Titanium Nitride
N + Ox:	Nitride + Oxide*	WC/C:	Tungsten Carbide/Carbon
	*Oxide (Ox) may also be shown as 'O'	WS2:	Tungsten Disulfide
Ox:	Steam Oxide*	ZrN:	Zirconium Nitride
TiAlN:	Titanium Aluminum Nitride		

In many applications, a tap that is properly designed and used under recommended conditions will produce acceptable results without the use of surface treatments. However, under some conditions, such as tapping excessively hard, abrasive or challenging materials, the use of performance enhancing surface treatments will be beneficial to the overall results of your tapping operation in terms of improved tool life and internal thread quality. Coolant-through taps may also be a consideration. Contact Allen Benjamin for tapping and treatment recommendations.

High Performance Taps & Gages

Size / Tool Mat'l	Description	H#	# Flutes / # Lube Grv.	Std. Coat	EDP Plug	EDP Bottom	HSSE Tap EDP					
							Black	White	Yellow	Green	Blue	Red
1/2"-14 PIPE TAP NPT/F							Recommended Hole Size NPT/NPTF = .703" NPSF/NPSI = .7188"					
Carbide	Inserted Pipe Tap		4		60505							
1/2"-20 NF							Recommended Hole Size based on 75% Thread = .4515" for STI = .5156" / Form Tap at 65% Thread = .4779"					
HSSE	SPPT	H3	3	CrC	PLG					81885		
HSSE	SPPT	H3	3	Ox	PLG			81887	81888	81889	81890	
HSSE	SPPT	H3	3	TiCN	PLG					81892		
HSSE	SPPT	H5	3	CrC	PLG					81894		
HSSE	SPPT	H5	3	Ox	PLG			81896	81897	81898	81899	
HSSE	SPPT	H5	3	TiCN	PLG					81901		
HSSE	SPPT	H7	3	Ox	PLG			81903	81904	81905	81906	
HSSE	SPPT	H7	3	TiCN	PLG					81908		
HSSE	SPFL	H3	3	CrC		M-B				81910		
HSSE	SPFL	H3	3	Ox		M-B		81912	81913	81914	81915	
HSSE	SPFL	H3	3	TiCN		M-B				81917		
HSSE	SPFL	H5	3	CrC		M-B				81919		
HSSE	SPFL	H5	3	Ox		M-B		81921	81922	81923	81924	
HSSE	SPFL	H5	3	TiCN		M-B				81926		
HSSE	SPFL	H7	3	Ox		M-B		81928	81929	81930	81931	
HSSE	SPFL	H7	3	TiCN		M-B				81933		
HSSE	Form Tap	H5	6	Ox	PLG		81935		81936	81937	81938	
HSSE	Form Tap	H5	6	Ox		BTM	81941		81942	81943	81944	
HSSE	Form Tap	H7	6	Ox	PLG		81947		81948	81949	81950	
HSSE	Form Tap	H7	6	Ox		BTM	81953		81954	81955	81956	
HSSE	Form Tap	H8	6	Ox	PLG		81959		81960	81961	81962	
HSSE	Form Tap	H8	6	Ox		BTM	81965		81966	81967	81968	
HSSE	Form Tap	H9	6	Ox	PLG		81971		81972	81973	81974	
HSSE	Form Tap	H9	6	Ox		BTM	81977		81978	81979	81980	
HSSE	Str. Flt Die Cast	H3	4	N	PLG		81983					
HSSE	Str. Flt Die Cast	H3	4	N		BTM	81989					
HSSE	Cast Iron	H3	4	N+Ox	PLG			81995				
HSSE	Cast Iron	H3	4	N+Ox		BTM	81997					
Carbide	Multi Flute Taps for Plastic	H7	6		60240	60241						
Carbide	PRX SPPT Tap	H3	3		60371		"PRX" for Stellite & Inconel, etc. "PRC" for Titanium & Beryllium					
Carbide	PRC SPPT Tap	H3	3		60372							
Carbide	Form Tap	H3	6 Lobes*		60443	60444						
Carbide	SPPT	H3	4		60373							
Carbide	PRX STI SPPT	H3	3		60374		"PRX" for Stellite & Inconel, etc. "PRC" for Titanium & Beryllium					
Carbide	PRC STI SPPT	H3	3		60375							
Carbide	STI SPPT	H3	3		60376							
Carbide	STI Str. Flt	H3	4		60180	60181						
Carbide	Str. Flt	H3	3		60182	60183						
Carbide	Str. Flt	H3	4		60184	60185						
Carbide	Gage - Taperlock Style D/E				26066							
Ceramic	Gage - Taperlock Style D/E				26067							
Carbide	Gage - Reversible Style D/E				26286							
Ceramic	Gage - Reversible Style D/E				26287							

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Cast Iron-Ductile, Malleable	White	160-320
Steel - Low Carbon	Yellow	125-275
Steel - Med. Carbon	Yellow	180-425
Steel - High Carbon	Yellow	180-425
Alloy Steel	Green	225-400
Stainless - 300 Series	Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	Red	135-425
Stainless - PH Series	Red	150-440
High Nickel Alloy	Blue	150-360 Monel; 200-400 Inconel
Titanium Alloy	Blue	310-440
Die Steel	Red	250-350
Hardened Steel - <325 BHN	Red	300-350
Hardened Steel - 325-426 BHN	Red	300-440

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CrN:	Chromium Nitride		+Tungsten Carbide/Carbon
DLC:	Diamond-like Carbon	TiCN:	Titanium Carbonitride
N:	Nitride	TiN:	Titanium Nitride
N + Ox:	Nitride + Oxide*	WC/C:	Tungsten Carbide/Carbon
	*Oxide (Ox) may also be shown as 'O'	WS2:	Tungsten Disulfide
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							Black	White	Yellow	Green	Blue	Red													
1/2"-28 NEF																									
Carbide	Gage - Taperlock Style D/E				26070																				
Ceramic	Gage - Taperlock Style D/E				26071																				
Carbide	Gage - Reversible Style D/E				26290																				
Ceramic	Gage - Reversible Style D/E				26291																				
9/16"-12 NC							Recommended Hole Size based on 75% Thread = .4817" Form Tap at 65% Thread = .5257"																		
HSSE	SPPT	H3	3	Ox	PLG		82013			81999	82000	82001	82002												
HSSE	SPPT	H3	3	TiCN	PLG									82004											
HSSE	SPFL	H3	4	Ox		M-B									82006	82007	82008	82009							
HSSE	SPFL	H3	3	TiCN		M-B													82014	82015	82016	82017			
HSSE	Form Tap	H7	6	Ox	PLG																		82019	82020	82021
HSSE	Form Tap	H7	6	Ox		BTM	82025	82027																	
HSSE	Cast Iron	H3	4	N+Ox	PLG							82029	82030	82031											
HSSE	Cast Iron	H3	4	N+Ox		BTM									82036	82037	82038	82039							
Carbide	Multi Flute Taps for Plastic	H7	6		60242	60243													82043	82044	82045	82046			
Carbide	PRX SPPT Tap	H3	4		60377																		82049	82050	82051
Carbide	PRX SPPT Tap	H5	4		60378		82055	82057																	
Carbide	PRC SPPT Tap	H3	4		60379							82059	82060	82061											
Carbide	PRC SPPT Tap	H5	4		60380										82063	82064	82065	82066							
Carbide	Form Tap	H3	6 Lobes*		60445	60446													82067	82068	82069	82070			
Carbide	Form Tap	H3	8 Lobes*		60447	60448																	82071	82072	82073
Carbide	Form Tap	H5	6 Lobes*		60449	60450	82075	82076	82077	82078															
Carbide	Form Tap	H5	8 Lobes*		60451	60452					82079	82080	82081	82082											
Carbide	Str. Flt	H3	4		60186	60187									82083	82084	82085	82086							
Carbide	Str. Flt	H5	4		60188	60189													82087	82088	82089	82090			
Carbide	Gage - Taperlock Style D/E				26072																		82091	82092	82093
Ceramic	Gage - Taperlock Style D/E				26073		82095	82096	82097	82098															
Carbide	Gage - Reversible Style D/E				26292						82099	82100	82101	82102											
Ceramic	Gage - Reversible Style D/E				26293										82103	82104	82105	82106							
9/16"-18 NF																			Recommended Hole Size based on 75% Thread = .5089" Form Tap at 65% Thread = .5379"						
HSSE	SPPT	H3	3	Ox	PLG														82043			82029	82030	82031	82032
HSSE	SPPT	H3	3	TiCN	PLG		82034																		
HSSE	SPFL	H3	4	Ox		M-B		82036	82037	82038	82039														
HSSE	SPFL	H3	3	TiCN		M-B						82044	82045	82046	82047										
HSSE	Form Tap	H7	6	Ox	PLG											82049	82050	82051							
HSSE	Form Tap	H7	6	Ox		BTM													82055	82057					
HSSE	Cast Iron	H3	4	N+Ox	PLG		82059																	82060	82061
HSSE	Cast Iron	H3	4	N+Ox		BTM		82063	82064	82065	82066														
Carbide	Multi Flute Taps for Plastic	H7	6		60244	60245						82067	82068	82069	82070										
Carbide	PRX SPPT Tap	H3	3		60381											82071	82072	82073							
Carbide	PRX SPPT Tap	H5	3		60382														82075	82076	82077	82078			
Carbide	PRC SPPT Tap	H3	3		60383		82079																82080	82081	82082
Carbide	PRC SPPT Tap	H5	3		60384			82083	82084	82085	82086														
Carbide	Form Tap	H3	6 Lobes*		60453	60454						82087	82088	82089	82090										
Carbide	Form Tap	H3	8 Lobes*		60455	60456										82091	82092	82093							
Carbide	Form Tap	H5	6 Lobes*		60457	60458													82095	82096	82097	82098			
Carbide	Form Tap	H5	8 Lobes*		60459	60460	82099																82100	82101	82102
Carbide	SPPT	H3	4		60385			82103	82104	82105	82106														
Carbide	SPPT	H5	4		60386							82107	82108	82109	82110										

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Stainless - 400 Series	● Red	135-425
Stainless - PH Series	● Red	150-440
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Hardened Steel - 325-426 BHN	● Red	300-440

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							Black	White	Yellow	Green	Blue	Red
9/16"-18 NF							See Previous Page for Recommended Hole Size					
Carbide	Str. Flt	H3	4		60190	60191						
Carbide	Str. Flt	H5	4		60192	60193						
Carbide	Gage - Taperlock Style D/E				26074							
Ceramic	Gage - Taperlock Style D/E				26075							
Carbide	Gage - Reversible Style D/E				26294							
Ceramic	Gage - Reversible Style D/E				26295							
9/16"-24 NEF												
Carbide	Gage - Taperlock Style D/E				26076							
Ceramic	Gage - Taperlock Style D/E				26077							
Carbide	Gage - Reversible Style D/E				26296							
Ceramic	Gage - Reversible Style D/E				26297							
5/8"-11 NC							Recommended Hole Size based on 75% Thread = .5365" Form Tap at 65% Thread = .5848"					
HSSE	SPPT	H3	3	Ox	PLG				82059	82060	82061	82062
HSSE	SPPT	H3	3	TiCN	PLG						82064	
HSSE	SPPT	H5	3	Ox	PLG				82066	82067	82068	82069
HSSE	SPPT	H5	3	TiCN	PLG						82071	
HSSE	SPPT	H7	3	Ox	PLG				82073	82074	82075	82076
HSSE	SPPT	H7	3	TiCN	PLG						82078	
HSSE	SPFL	H3	3	Ox		M-B			82080	82081	82082	82083
HSSE	SPFL	H3	4	TiCN		M-B					82085	
HSSE	SPFL	H5	3	Ox		M-B			82087	82088	82089	82090
HSSE	SPFL	H5	4	TiCN		M-B					82092	
HSSE	SPFL	H7	3	Ox		M-B			82094	82095	82096	82097
HSSE	SPFL	H7	4	TiCN		M-B					82099	
HSSE	Form Tap	H5	6	Ox	PLG		82101		82102	82103	82104	82105
HSSE	Form Tap	H5	6	Ox		BTM	82107		82108	82109	82110	82111
HSSE	Form Tap	H7	6	Ox	PLG		82113		82114	82115	82116	82117
HSSE	Form Tap	H7	6	Ox		BTM	82119		82120	82121	82122	82123
HSSE	Form Tap	H9	6	Ox	PLG		82125		82126	82127	82128	82129
HSSE	Form Tap	H9	6	Ox		BTM	82131		82132	82133	82134	82135
HSSE	Form Tap	H10	6	Ox	PLG		82137		82138	82139	82140	82141
HSSE	Form Tap	H10	6	Ox		BTM	82143		82144	82145	82146	82147
HSSE	Cast Iron	H3	4	N+Ox	PLG			82149				
HSSE	Cast Iron	H3	4	N+Ox		BTM		82151				
HSSE	Cast Iron	H5	4	N+Ox	PLG			82153				
HSSE	Cast Iron	H5	4	N+Ox		BTM		82155				
Carbide	Multi Flute Taps for Plastic	H7	6		60246	60247						
Carbide	PRX SPPT Tap	H3	4		60387			"PRX" for Stellite & Inconel, etc. "PRX" for Stellite & Inconel, etc. "PRC" for Titanium & Beryllium "PRC" for Titanium & Beryllium				
Carbide	PRX SPPT Tap	H5	4		60388							
Carbide	PRC SPPT Tap	H3	4		60389							
Carbide	PRC SPPT Tap	H5	4		60390							
Carbide	Form Tap	H3	6 Lobes*		60461	60462						
Carbide	Form Tap	H3	8 Lobes*		60463	60464						
Carbide	Form Tap	H5	6 Lobes*		60465	60466						
Carbide	Form Tap	H5	8 Lobes*		60467	60468						
Carbide	SPPT	H3	4		60480							
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Carbide	Str. Flt	H3	4		60194	60195						

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Work Material*	Color Ring	Brinell Hardness Range**
Aluminum - Wrought	Black	30-80 cold drawn; 75-150 treated/aged
Aluminum - Casting	Black	40-100 as cast; 70-125 treated/aged
Cast Iron - Gray	White	160-260 as cast; 250-320 quenched/tempered
Cast Iron-Ductile, Malleable	White	160-320
Steel - Low Carbon	Yellow	125-275
Steel - Med. Carbon	Yellow	180-425
Steel - High Carbon	Yellow	180-425
Alloy Steel	Green	225-400
Stainless - 300 Series	Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	Red	135-425
Stainless - PH Series	Red	150-440
High Nickel Alloy	Blue	150-360 Monel; 200-400 Inconel
Titanium Alloy	Blue	310-440
Die Steel	Red	250-350
Hardened Steel - <325 BHN	Red	300-350
Hardened Steel - 325-426 BHN	Red	300-440

* NOTE: For material or material group not shown (such as No Lead Brass), please consult Customer Service.

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SURFACE TREATMENT ABBREVIATIONS

See page 62 in engineering section for surface treatment recommendations.

AlCrN:	Aluminum Chromium Nitride	TiAlN+WC/C:	'Hardlube' - Titanium Aluminum Nitride
CrC:	Chromium Carbide		Aluminum Nitride
CrN:	Chromium Nitride		+Tungsten Carbide/Carbon
DLC:	Diamond-like Carbon	TiCN:	Titanium Carbonitride
N:	Nitride	TiN:	Titanium Nitride
N + Ox:	Nitride + Oxide*	WC/C:	Tungsten Carbide/Carbon
	*Oxide (Ox) may also be shown as 'O'	WS2:	Tungsten Disulfide
Ox:	Steam Oxide*	ZrN:	Zirconium Nitride
TiAlN:	Titanium Aluminum Nitride		

In many applications, a tap that is properly designed and used under recommended conditions will produce acceptable results without the use of surface treatments. However, under some conditions, such as tapping excessively hard, abrasive or challenging materials, the use of performance enhancing surface treatments will be beneficial to the overall results of your tapping operation in terms of improved tool life and internal thread quality. Coolant-through taps may also be a consideration. Contact Allen Benjamin for tapping and treatment recommendations.

High Performance Taps & Gages

Size / Tool Mat'l	Description	H#	# Flutes / # Lube Grv.	Std. Coat	EDP Plug	EDP Bottom	HSSE Tap EDP						
							Black	White	Yellow	Green	Blue	Red	
5/8"-11 NC							See Previous Page for Recommended Hole Size						
Carbide	Str. Flt	H5	4		60196	60197							
Carbide	Gage - Taperlock Style D/E				26078								
Ceramic	Gage - Taperlock Style D/E				26079								
Carbide	Gage - Reversible Style D/E				26298								
Ceramic	Gage - Reversible Style D/E				26299								
5/8"-18 NF							Recommended Hole Size based on 75% Thread = .5714" Form Tap at 65% Thread = .6004"						
HSSE	SPPT	H3	3	Ox	PLG				82157	82158	82159	82160	
HSSE	SPPT	H3	3	TiCN	PLG						82162		
HSSE	SPPT	H5	3	Ox	PLG				82164	82165	82166	82167	
HSSE	SPPT	H5	3	TiCN	PLG						82169		
HSSE	SPPT	H7	3	Ox	PLG				82171	82172	82173	82174	
HSSE	SPPT	H7	3	TiCN	PLG						82176		
HSSE	SPFL	H3	3	Ox		M-B			82178	82179	82180	82181	
HSSE	SPFL	H3	4	TiCN		M-B					82183		
HSSE	SPFL	H5	3	Ox		M-B			82185	82186	82187	82188	
HSSE	SPFL	H5	4	TiCN		M-B					82190		
HSSE	SPFL	H7	3	Ox		M-B			82192	82193	82194	82195	
HSSE	SPFL	H7	4	TiCN		M-B					82197		
HSSE	Form Tap	H5	6	Ox	PLG		82199		82200	82201	82202	82203	
HSSE	Form Tap	H5	6	Ox		BTM	82205		82206	82207	82208	82209	
HSSE	Form Tap	H7	6	Ox	PLG		82211		82212	82213	82214	82215	
HSSE	Form Tap	H7	6	Ox		BTM	82217		82218	82219	82220	82221	
HSSE	Form Tap	H9	6	Ox	PLG		82223		82224	82225	82226	82227	
HSSE	Form Tap	H9	6	Ox		BTM	82229		82230	82231	82232	82233	
HSSE	Form Tap	H10	6	Ox	PLG		82235		82236	82237	82238	82239	
HSSE	Form Tap	H10	6	Ox		BTM	82241		82242	82243	82244	82245	
HSSE	Cast Iron	H3	4	N+Ox	PLG			82247					
HSSE	Cast Iron	H3	4	N+Ox		BTM		82249					
Carbide	Multi Flute Taps for Plastic	H7	6		60248	60249							
Carbide	PRX SPPT Tap	H3	4		60391			"PRX" for Stellite & Inconel, etc. "PRC" for Titanium & Beryllium					
Carbide	PRX SPPT Tap	H5	4		60392								
Carbide	PRC SPPT Tap	H3	4		60393								
Carbide	PRC SPPT Tap	H5	4		60394								
Carbide	Form Tap	H3	6 Lobes*		60469	60470							
Carbide	Form Tap	H3	8 Lobes*		60471	60472							
Carbide	Form Tap	H5	6 Lobes*		60473	60474							
Carbide	Form Tap	H5	8 Lobes*		60475	60476							
Carbide	SPPT	H3	4		60395								
Carbide	SPPT	H5	4		60396								
Carbide	Str. Flt	H3	4		60198	60199							
Carbide	Str. Flt	H5	4		60200	60201							
Carbide	Gage - Taperlock Style D/E				26080								
Ceramic	Gage - Taperlock Style D/E				26081								
Carbide	Gage - Reversible Style D/E				26300								
Ceramic	Gage - Reversible Style D/E				26301								
5/8"-24 NEF													
Carbide	Gage - Taperlock Style D/E				26082								
Ceramic	Gage - Taperlock Style D/E				26083								

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Alloy Steel	● Green	225-400
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Stainless - 400 Series	● Red	135-425
Stainless - PH Series	● Red	150-440
High Nickel Alloy	● Blue	150-360 Monel; 200-400 Inconel
Titanium Alloy	● Blue	310-440
Die Steel	● Red	250-350
Hardened Steel - <325 BHN	● Red	300-350
Hardened Steel - 325-426 BHN	● Red	300-440

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N:	Nitride	TiN:	Titanium Nitride
N + Ox:	Nitride + Oxide*	WC/C:	Tungsten Carbide/Carbon
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TiAlN:	Titanium Aluminum Nitride	ZrN:	Zirconium Nitride

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5/8"-24 NEF																		
Carbide	Gage - Reversible Style D/E				26302													
Ceramic	Gage - Reversible Style D/E				26303													
11/16"-24 NEF																		
Carbide	Gage - Taperlock Style D/E				26084													
Ceramic	Gage - Taperlock Style D/E				26085													
Carbide	Gage - Reversible Style D/E				26304													
Ceramic	Gage - Reversible Style D/E				26305													
3/4"-10 NC							Recommended Hole Size based on 75% Thread = .6526" Form Tap at 65% Thread = .7058"											
HSSE	SPPT	H3	3	Ox	PLG				82251	82252	82253	82254						
HSSE	SPPT	H3	3	TiCN	PLG						82256							
HSSE	SPPT	H5	3	Ox	PLG				82258	82259	82260	82261						
HSSE	SPPT	H5	3	TiCN	PLG						82263							
HSSE	SPPT	H7	3	Ox	PLG				82265	82266	82267	82268						
HSSE	SPPT	H7	3	TiCN	PLG						82270							
HSSE	SPFL	H3	3	Ox		M-B			82272	82273	82274	82275						
HSSE	SPFL	H3	4	TiCN		M-B					82277							
HSSE	SPFL	H5	3	Ox		M-B			82279	82280	82281	82282						
HSSE	SPFL	H5	4	TiCN		M-B					82284							
HSSE	SPFL	H7	3	Ox		M-B	82293		82286	82287	82288	82289						
HSSE	SPFL	H7	4	TiCN		M-B					82291							
HSSE	Form Tap	H5	6	Ox	PLG				82294	82295	82296	82297						
HSSE	Form Tap	H5	6	Ox		BTM			82300	82301	82302	82303						
HSSE	Form Tap	H7	6	Ox	PLG				82306	82307	82308	82309						
HSSE	Form Tap	H7	6	Ox		BTM	82311		82312	82313	82314	82315						
HSSE	Form Tap	H9	6	Ox	PLG		82317		82318	82319	82320	82321						
HSSE	Form Tap	H9	6	Ox		BTM	82323		82324	82325	82326	82327						
HSSE	Form Tap	H10	6	Ox	PLG		82329		82330	82331	82332	82333						
HSSE	Form Tap	H10	6	Ox		BTM	82335		82336	82337	82338	82339						
HSSE	Cast Iron	H3	4	N+Ox	PLG			82341										
HSSE	Cast Iron	H3	4	N+Ox		BTM		82343										
HSSE	Cast Iron	H5	4	N+Ox	PLG			82345										
HSSE	Cast Iron	H5	4	N+Ox		BTM		82347										
Carbide	Inserted Tap	H3	4		60507	60508												
Carbide	Inserted Tap	H5	4		60509	60510												
Carbide	Gage - Taperlock Style D/E				26086													
Ceramic	Gage - Taperlock Style D/E				26087													
Carbide	Gage - Reversible Style D/E				26306													
Ceramic	Gage - Reversible Style D/E				26307													
3/4"-14 PIPE TAP NPT/F							Recommended Hole Size NPT = .9063"/ NPTF = .9219" NPSI = .9283"											
Carbide	Inserted Pipe Tap		5		60511													
3/4"-16 NF													Recommended Hole Size based on 75% Thread = .6894" Form Tap at 65% Thread = .7224"					
HSSE	SPPT	H3	3	Ox	PLG									82349	82350	82351	82352	
HSSE	SPPT	H3	3	TiCN	PLG						82354							
HSSE	SPPT	H5	3	Ox	PLG						82356		82357	82358	82359			

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Hardened Steel - 325-426 BHN	Red	300-440

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							Black	White	Yellow	Green	Blue	Red							
3/4"-16 NF							See Previous Page for Recommended Hole Size												
HSSE	SPPT	H5	3	TiCN	PLG						82361								
HSSE	SPPT	H7	3	Ox	PLG						82363		82364	82365	82366				
HSSE	SPPT	H7	3	TiCN	PLG									82368					
HSSE	SPFL	H3	3	Ox					M-B		82370		82371	82372	82373				
HSSE	SPFL	H3	4	TiCN					M-B					82375					
HSSE	SPFL	H5	3	Ox		M-B			82377	82378	82379	82380							
HSSE	SPFL	H5	4	TiCN		M-B					82382								
HSSE	SPFL	H7	3	Ox		M-B				82384	82385	82386	82387						
HSSE	SPFL	H7	4	TiCN		M-B						82389							
HSSE	Form Tap	H5	6	Ox	PLG				82391		82392	82393	82394	82395					
HSSE	Form Tap	H5	6	Ox		BTM	82397		82398	82399	82400	82401							
HSSE	Form Tap	H7	6	Ox	PLG		82403			82404	82405	82406	82407						
HSSE	Form Tap	H7	6	Ox		BTM	82409			82410	82411	82412	82413						
HSSE	Form Tap	H9	6	Ox	PLG		82415			82416	82417	82418	82419						
HSSE	Form Tap	H9	6	Ox		BTM	82421			82422	82423	82424	82425						
HSSE	Form Tap	H10	6	Ox	PLG		82427		82428	82429	82430	82431							
HSSE	Form Tap	H10	6	Ox		BTM	82433			82434	82435	82436	82437						
HSSE	Cast Iron	H3	4	N+Ox	PLG				82439										
HSSE	Cast Iron	H3	4	N+Ox		BTM			82441										
Carbide	Inserted Tap	H3	4		60513	60514													
Carbide	Inserted Tap	H5	4		60515	60516													
Carbide	Gage - Taperlock Style D/E				26088														
Ceramic	Gage - Taperlock Style D/E				26089														
Carbide	Gage - Reversible Style D/E				26308														
Ceramic	Gage - Reversible Style D/E				26309														
3/4"-20 NEF																			
Carbide	Gage - Taperlock Style D/E				26090														
Ceramic	Gage - Taperlock Style D/E				26091														
Carbide	Gage - Reversible Style D/E				26310														
Ceramic	Gage - Reversible Style D/E				26311														
13/16"-20 NEF																			
Carbide	Gage - Taperlock Style D/E				26092														
Ceramic	Gage - Taperlock Style D/E				26093														
Carbide	Gage - Reversible Style D/E				26312														
Ceramic	Gage - Reversible Style D/E				26313														
7/8"-9 NC							Recommended Hole Size based on 75% Thread = .7667"												
HSSE	SPPT	H4	4	Ox	PLG														
HSSE	SPFL	H4	4	Ox									M-B			82443	82444	82445	82446
Carbide	Gage - Taperlock Style D/E				26094										82448	82449	82450	82451	
Ceramic	Gage - Taperlock Style D/E				26095														
Carbide	Gage - Reversible Style D/E				26314														
Ceramic	Gage - Reversible Style D/E				26315														
7/8"-14 NF							Recommended Hole Size based on 75% Thread = .8056"												
HSSE	SPPT	H4	4	Ox	PLG														
HSSE	SPFL	H4	4	Ox									M-B			82453	82454	82455	82456
									82458	82459	82460	82461							

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7/8"-14 NF							See Previous Page for Recommended Hole Size					
Carbide	Inserted Tap	H4	4		60517	60518						
Carbide	Gage - Taperlock Style D/E				26096							
Ceramic	Gage - Taperlock Style D/E				26097							
Carbide	Gage - Reversible Style D/E				26316							
Ceramic	Gage - Reversible Style D/E				26317							
7/8"-20 NEF												
Carbide	Gage - Taperlock Style D/E				26098							
Ceramic	Gage - Taperlock Style D/E				26099							
Carbide	Gage - Reversible Style D/E				26318							
Ceramic	Gage - Reversible Style D/E				26319							
15/16"-20 NEF												
Carbide	Gage - Taperlock Style D/E				26100							
Ceramic	Gage - Taperlock Style D/E				26101							
Carbide	Gage - Reversible Style D/E				26320							
Ceramic	Gage - Reversible Style D/E				26321							
1"-8 NC							Recommended Hole Size based on 75% Thread = .8781"					
HSSE	SPPT	H4	4	Ox	PLG			82463	82464	82465	82466	
HSSE	SPFL	H4	4	Ox		M-B		82468	82469	82470	82471	
Carbide	Inserted Tap	H4	4		60519	60520						
Carbide	Gage - Taperlock Style D/E				26102							
Ceramic	Gage - Taperlock Style D/E				26103							
Carbide	Gage - Reversible Style D/E				26322							
Ceramic	Gage - Reversible Style D/E				26323							
1"-11 1/2 PIPE NPT/F							Recommended Hole Size NPT = 1.1406" / NPTF = 1.1563"					
Carbide	Inserted Pipe Tap		5		60521							
1"-12 NF							Recommended Hole Size based on 75% Thread = .9192"					
Carbide	Inserted Tap	H4	4		60660	60682						
Carbide	Gage - Taperlock Style D/E				26104							
Ceramic	Gage - Taperlock Style D/E				26105							
Carbide	Gage - Reversible Style D/E				26324							
Ceramic	Gage - Reversible Style D/E				26325							
1 1/8"-12 NF							Recommended Hole Size based on 75% Thread = 1.044"					
Carbide	Inserted Tap	H4	4		60523	60524						
Carbide	Inserted Tap	H4	6		60525	60526						
Carbide	Gage - Taperlock Style D/E				26114							
Ceramic	Gage - Taperlock Style D/E				26115							
Carbide	Gage - Reversible Style D/E				26334							
Ceramic	Gage - Reversible Style D/E				26335							
1 1/4"-7 NC							Recommended Hole Size based on 75% Thread = 1.110"					
Carbide	Inserted Tap	H4	4		60556	60683						

* Form tap lube grooves will be half the number of lobes unless otherwise specified.
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This page is your guide to:

- *Material application ranges organized by color coding;*
- *Available surface treatments or coatings, which are highly recommended when tapping with high performance taps;*

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Work Material*	Color Ring	Brinell Hardness Range**
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Cast Iron - Gray	◎ White	160-260 as cast; 250-320 quenched/tempered
Cast Iron-Ductile, Malleable	◎ White	160-320
Steel - Low Carbon	● Yellow	125-275
Steel - Med. Carbon	● Yellow	180-425
Steel - High Carbon	● Yellow	180-425
Alloy Steel	● Green	225-400
Stainless - 300 Series	● Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	● Red	135-425
Stainless - PH Series	● Red	150-440
High Nickel Alloy	● Blue	150-360 Monel; 200-400 Inconel
Titanium Alloy	● Blue	310-440
Die Steel	● Red	250-350
Hardened Steel - <325 BHN	● Red	300-350
Hardened Steel - 325-426 BHN	● Red	300-440

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AlCrN:	Aluminum Chromium Nitride	TiAlN+WC/C:	'Hardlube' - Titanium Aluminum Nitride
CrC:	Chromium Carbide		Aluminum Nitride
CrN:	Chromium Nitride		+Tungsten Carbide/Carbon
DLC:	Diamond-like Carbon	TiCN:	Titanium Carbonitride
N:	Nitride	TiN:	Titanium Nitride
N + Ox:	Nitride + Oxide*	WC/C:	Tungsten Carbide/Carbon
	*Oxide (Ox) may also be shown as 'O'	WS2:	Tungsten Disulfide
Ox:	Steam Oxide*	ZrN:	Zirconium Nitride
TiAlN:	Titanium Aluminum Nitride		

In many applications, a tap that is properly designed and used under recommended conditions will produce acceptable results without the use of surface treatments. However, under some conditions, such as tapping excessively hard, abrasive or challenging materials, the use of performance enhancing surface treatments will be beneficial to the overall results of your tapping operation in terms of improved tool life and internal thread quality. Coolant-through taps may also be a consideration. Contact Allen Benjamin for tapping and treatment recommendations.

High Performance Taps & Gages

Size / Tool Mat'l	Description	H#	# Flutes / # Lube Grv.	Std. Coat	EDP Plug	EDP Bottom	HSSE Tap EDP					
							Black	White	Yellow	Green	Blue	Red
1 1/4"-7 NC							See Previous Page for Recommended Hole Size					
Carbide	Gage - Taperlock Style D/E				26122							
Ceramic	Gage - Taperlock Style D/E				26123							
Carbide	Gage - Reversible Style D/E				26342							
Ceramic	Gage - Reversible Style D/E				26343							
1 1/4"-12 NF							Recommended Hole Size based on 75% Thread = 1.169"					
Carbide	Inserted Tap	H4	4		60527	60528						
Carbide	Inserted Tap	H4	6		60529	60530						
Carbide	Gage - Taperlock Style D/E				26124							
Ceramic	Gage - Taperlock Style D/E				26125							
Carbide	Gage - Reversible Style D/E				26344							
Ceramic	Gage - Reversible Style D/E				26345							
1 3/8"-12 NF							Recommended Hole Size based on 75% Thread = 1.294"					
Carbide	Inserted Tap	H4	6		60531	60532						
Carbide	Gage - Taperlock Style D/E				26132							
Ceramic	Gage - Taperlock Style D/E				26133							
Carbide	Gage - Reversible Style D/E				26352							
Ceramic	Gage - Reversible Style D/E				26353							
1 1/2"-6 NC							Recommended Hole Size based on 75% Thread = 1.337"					
Carbide	Inserted Tap	H4	4		60557	60684						
Carbide	Gage - Taperlock Style D/E				26138							
Ceramic	Gage - Taperlock Style D/E				26139							
Carbide	Gage - Reversible Style D/E				26358							
Ceramic	Gage - Reversible Style D/E				26359							
1 1/2"-12 NF							Recommended Hole Size based on 75% Thread = 1.419"					
Carbide	Inserted Tap	H4	6		60533	60534						
Carbide	Gage - Taperlock Style D/E				26140							
Ceramic	Gage - Taperlock Style D/E				26141							
Carbide	Gage - Reversible Style D/E				26360							
Ceramic	Gage - Reversible Style D/E				26361							

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- High Performance Application-Specific HSSE Taps
- Solid Carbide and Ceramic Thread Plug Gages
- Carbide and Carbide Inserted Chasers
- ...and more!

METRIC SIZE X .03937 = DECIMAL EQUIVALENT
DECIMAL SIZE X 25.4 = METRIC (mm) EQUIVALENT

FRACTIONAL, DECIMAL AND METRIC EQUIVALENTS

Fraction Of Inch	Decimal Of Inch	Millimeters	Fraction Of Inch	Decimal of Inch	Millimeters
1/64	.015625	0.3969	33/64	.515625	13.0969
1/32	.03125	0.7938	17/32	.53125	13.4938
3/64	.046875	1.1906	35/64	.546875	13.8906
1/16	.0625	1.5875	9/16	.5625	14.2875
5/64	.078125	1.9844	37/64	.578125	14.6844
3/32	.09375	2.3812	19/32	.59375	15.0812
7/64	.109375	2.7781	39/64	.609375	15.4781
1/8	.125	3.1750	5/8	.625	15.8750
9/64	.140625	3.5719	41/64	.640625	16.2719
5/32	.15625	3.9688	21/32	.65625	16.6688
11/64	.171875	4.3656	43/64	.671875	17.0656
3/16	.1875	4.7625	11/16	.6875	17.4625
13/64	.203125	5.1594	45/64	.703125	17.8594
7/32	.21875	5.5562	23/32	.71875	18.2562
15/64	.234375	5.9531	47/64	.734375	18.6531
1/4	.250	6.3500	3/4	.750	19.0500
17/64	.265625	6.7469	49/64	.765625	19.4469
9/32	.28125	7.1438	25/32	.78125	19.8438
19/64	.296875	7.5406	51/64	.796875	20.2406
5/16	.3125	7.9375	13/16	.8125	20.6375
21/64	.328125	8.3344	53/64	.828125	21.0344
11/32	.34375	8.7312	27/32	.843750	21.4312
23/64	.359375	9.1281	55/64	.859375	21.8281
3/8	.375	9.5250	7/8	.875	22.2250
25/64	.390625	9.9219	57/64	.890625	22.6219
13/32	.40625	10.3188	29/32	.90625	23.0188
27/64	.421875	10.7156	59/64	.921875	23.4156
7/16	.4375	11.1125	15/16	.9375	23.8125
29/64	.453125	11.5094	61/64	.953125	24.2094
15/32	.46875	11.9062	31/32	.96875	24.6062
31/64	.484375	12.3031	63/64	.984375	25.0031
1/2	.500	12.7000	1.000	1.0000	25.4000

MILLIMETER PITCH TO THREADS PER INCH METRIC PITCH CONVERSIONS

Pitch In Millimeters	Pitch In Inches	Threads Per In.	Basic Height	Pitch In Millimeters	Pitch In Inches	Threads Per In.	Basic Height
.25	.00984	101.6000	.00639	1.25	.04921	20.3211	.03196
.30	.01181	84.6668	.00767	1.50	.05906	16.9316	.03836
.35	.01378	72.5689	.00895	1.75	.06890	14.5138	.04475
.40	.01575	63.4921	.01023	2.00	.07874	12.7000	.05114
.45	.01772	56.4334	.01151	2.50	.09843	10.1595	.06393
.50	.01969	50.8000	.01279	3.00	.11811	8.4667	.07671
.60	.02362	42.3370	.01534	3.50	.13780	7.2569	.08950
.70	.02756	36.2845	.01790	4.00	.15748	6.3500	.10229
.75	.02953	33.8639	.01918	4.50	.17717	5.6443	.11508
.80	.03150	31.7460	.02046	5.00	.19685	5.0800	.12785
.90	.03543	28.2247	.02301	6.00	.23622	4.2333	.15344
1.00	.03937	25.4000	.02557				

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Aluminum - Casting	● Black	40-100 as cast; 70-125 treated/aged
Cast Iron - Gray	◎ White	160-260 as cast; 250-320 quenched/tempered
Cast Iron-Ductile, Malleable	◎ White	160-320
Steel - Low Carbon	● Yellow	125-275
Steel - Med. Carbon	● Yellow	180-425
Steel - High Carbon	● Yellow	180-425
Alloy Steel	● Green	225-400
Stainless - 300 Series	● Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	● Red	135-425
Stainless - PH Series	● Red	150-440
High Nickel Alloy	● Blue	150-360 Monel; 200-400 Inconel
Titanium Alloy	● Blue	310-440
Die Steel	● Red	250-350
Hardened Steel - <325 BHN	● Red	300-350
Hardened Steel - 325-426 BHN	● Red	300-440

* **NOTE:** For material or material group not shown (such as No Lead Brass), please consult Customer Service.

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CrN:	Chromium Nitride		+Tungsten Carbide/Carbon
DLC:	Diamond-like Carbon	TiCN:	Titanium Carbonitride
N:	Nitride	TiN:	Titanium Nitride
N + Ox:	Nitride + Oxide*	WC/C:	Tungsten Carbide/Carbon
	*Oxide (Ox) may also be shown as 'O'	WS2:	Tungsten Disulfide
Ox:	Steam Oxide*	ZrN:	Zirconium Nitride
TiAlN:	Titanium Aluminum Nitride		

In many applications, a tap that is properly designed and used under recommended conditions will produce acceptable results without the use of surface treatments. However, under some conditions, such as tapping excessively hard, abrasive or challenging materials, the use of performance enhancing surface treatments will be beneficial to the overall results of your tapping operation in terms of improved tool life and internal thread quality. Coolant-through taps may also be a consideration. Contact Allen Benjamin for tapping and treatment recommendations.

Metric High Performance Taps & Gages

Size / Tool Mat'l	Description	H#	# Flutes / # Lube Grv.	Std. Coat	EDP Plug	EDP Bottom	HSSE Tap EDP						
							Black	White	Yellow	Green	Blue	Red	
M1.6 x 0.35							Recommended Hole Size based on 75% Thread = 1.25mm						
Carbide	Gage - Taperlock Style D/E					26144							
Ceramic	Gage - Taperlock Style D/E					26145							
Carbide	Gage - Reversible Style D/E					26364							
Ceramic	Gage - Reversible Style D/E					26365							
M2 X 0.4							Recommended Hole Size based on 75% Thread = 1.6mm for STI = 2.17mm / Form Tap at 65% Thread = 1.82mm						
Carbide	Multi Flute Taps for Plastic	D3	3			60600							
Carbide	PRX SPPT Tap	D3	2			60616		"PRX" for Stellite & Inconel, etc. "PRC" for Titanium & Beryllium					
Carbide	PRC SPPT Tap	D3	2			60617							
Carbide	Form Tap	D3	4 Lobes*			60690	60691						
Carbide	SPPT	D3	2			60681							
Carbide	PRX STI SPPT	D3	2			60618		"PRX" for Stellite & Inconel, etc. "PRC" for Titanium & Beryllium					
Carbide	PRC STI SPPT	D3	2			60619							
Carbide	STI SPPT	D3	2			60620							
Carbide	STI Str Flt	D3	2			60726	60727						
Carbide	STI Str Flt	D3	3			60728	60729						
Carbide	Str. Flt	D3	2			60730	60731						
Carbide	Str. Flt	D3	3			60732	60733						
Carbide	Gage - Taperlock Style D/E					26146							
Ceramic	Gage - Taperlock Style D/E					26147							
Carbide	Gage - Reversible Style D/E					26366							
Ceramic	Gage - Reversible Style D/E					26367							
M2.5 X 0.45							Recommended Hole Size based on 75% Thread = 2.05mm for STI = 2.64mm / Form Tap at 65% Thread = 2.3mm						
HSSE	SPPT	D3	3	TiCN	PLG						83001		
HSSE	SPFL	D3	3	TiCN		M-B					83003		
HSSE	SPPT	D3	3	CrC	PLG						83005		
HSSE	SPFL	D3	3	CrC		M-B					83007		
Carbide	PRX SPPT Tap	D3	2			60621		"PRX" for Stellite & Inconel, etc. "PRC" for Titanium & Beryllium					
Carbide	PRC SPPT Tap	D3	2			60622							
Carbide	Form Tap	D3	4 Lobes*			60692	60693						
Carbide	SPPT	D3	2			60623		"PRX" for Stellite & Inconel, etc. "PRC" for Titanium & Beryllium					
Carbide	PRX STI SPPT	D3	2			60624							
Carbide	PRC STI SPPT	D3	2			60625							
Carbide	STI SPPT	D3	2			60626							
Carbide	STI Str Flt	D3	2			60734	60735						
Carbide	STI Str Flt	D3	3			60736	60737						
Carbide	Str. Flt	D3	2			60738	60739						
Carbide	Str. Flt	D3	3			60740	60741						
Carbide	Gage - Taperlock Style D/E					26148							
Ceramic	Gage - Taperlock Style D/E					26149							
Carbide	Gage - Reversible Style D/E					26368							
Ceramic	Gage - Reversible Style D/E					26369							
M3 X 0.5							Recommended Hole Size based on 75% Thread = 2.5mm for STI = 3.175mm / Form Tap at 65% Thread = 2.78mm						
HSSE	SPPT	H3	2	Ox	PLG					83009	83010	83011	83012
HSSE	SPFL	D3	3	Ox		M-B				83014	83015	83016	83017
HSSE	Form Tap	D3	0	Ox		BTM	83019			83020	83021	83022	83023

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Steel - Med. Carbon	● Yellow	180-425
Steel - High Carbon	● Yellow	180-425
Alloy Steel	● Green	225-400
Stainless - 300 Series	● Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	● Red	135-425
Stainless - PH Series	● Red	150-440
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HSSE	Form Tap	D5	0	Ox		BTM	83025		83026	83027	83028	83029
HSSE	Form Tap	D3	0	Ox	PLG		83031		83032	83033	83034	83035
HSSE	Form Tap	D5	0	Ox	PLG		83037		83038	83039	83040	83041
HSSE	Str. Flt Die Cast	D3	3	N	PLG		83043					
HSSE	Str. Flt Die Cast	D3	3	N		BTM	83045					
HSSE	SPPT	D3	3	TiCN	PLG						83046	
HSSE	SPFL	D3	3	TiCN		M-B					83048	
HSSE	SPPT	D3	3	CrC	PLG						83050	
HSSE	SPFL	D3	3	CrC		M-B					83052	
Carbide	PRX SPPT Tap	D3	3		60627			"PRX" for Stellite & Inconel, etc.				
Carbide	PRC SPPT Tap	D3	3		60628			"PRC" for Titanium & Beryllium				
Carbide	Form Tap	D3	4 Lobes*		60696	60697						
Carbide	SPPT	D3	2		60629							
Carbide	SPPT	D3	3		60630							
Carbide	PRX STI SPPT	D3	3		60631			"PRX" for Stellite & Inconel, etc.				
Carbide	PRC STI SPPT	D3	3		60632			"PRC" for Titanium & Beryllium				
Carbide	STI SPPT	D3	2		60633							
Carbide	STI SPPT	D3	3		60634							
Carbide	STI Str Flt	D3	2		60742	60743						
Carbide	STI Str Flt	D3	3		60744	60745						
Carbide	STI Str Flt	D3	4		60746	60747						
Carbide	Str. Flt	D3	2		60748	60749						
Carbide	Str. Flt	D3	3		60750	60751						
Carbide	Gage - Taperlock Style D/E				26150							
Ceramic	Gage - Taperlock Style D/E				26151							
Carbide	Gage - Reversible Style D/E				26370							
Ceramic	Gage - Reversible Style D/E				26371							
M3.5 X 0.6							Recommended Hole Size based on 75% Thread = 2.9mm Form Tap at 65% Thread = 3.24mm					
HSSE	SPPT	D4	2	Ox	PLG				83054	83055	83056	83057
HSSE	SPFL	D4	3	Ox		M-B			83059	83060	83061	83062
HSSE	Form Tap	D4	2	Ox		BTM	83064		83065	83066	83067	83068
HSSE	Form Tap	D6	2	Ox		BTM	83070		83071	83072	83073	83074
HSSE	Form Tap	D4	2	Ox	PLG		83076		83077	83078	83079	83080
HSSE	Form Tap	D6	2	Ox	PLG		83082		83083	83084	83085	83086
HSSE	SPPT	D4	3	TiCN	PLG						83088	
HSSE	SPFL	D4	3	TiCN		M-B					83090	
HSSE	SPPT	D4	3	CrC	PLG						83092	
HSSE	SPFL	D4	3	CrC		M-B					83094	
Carbide	SPPT	D3	2		60635							
Carbide	SPPT	D3	3		60636							
Carbide	Gage - Taperlock Style D/E				26152							
Ceramic	Gage - Taperlock Style D/E				26153							
Carbide	Gage - Reversible Style D/E				26372							
Ceramic	Gage - Reversible Style D/E				26373							
M4 X 0.7							Recommended Hole Size based on 75% Thread = 3.3mm for STI = 4.22mm / Form Tap at 65% Thread = 3.69mm					
HSSE	SPPT	D4	3	Ox	PLG				83096	83097	83098	83099
HSSE	SPFL	D4	3	Ox		M-B			83101	83102	83103	83104
HSSE	Form Tap	D4	2	Ox		BTM	83106		83107	83108	83109	83110

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Cast Iron - Gray	◎ White	160-260 as cast; 250-320 quenched/tempered
Cast Iron-Ductile, Malleable	◎ White	160-320
Steel - Low Carbon	● Yellow	125-275
Steel - Med. Carbon	● Yellow	180-425
Steel - High Carbon	● Yellow	180-425
Alloy Steel	● Green	225-400
Stainless - 300 Series	● Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	● Red	135-425
Stainless - PH Series	● Red	150-440
High Nickel Alloy	● Blue	150-360 Monel; 200-400 Inconel
Titanium Alloy	● Blue	310-440
Die Steel	● Red	250-350
Hardened Steel - <325 BHN	● Red	300-350
Hardened Steel - 325-426 BHN	● Red	300-440

* **NOTE:** For material or material group not shown (such as No Lead Brass), please consult Customer Service.

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SURFACE TREATMENT ABBREVIATIONS

See page 62 in engineering section for surface treatment recommendations.

AlCrN:	Aluminum Chromium Nitride	TiAlN+WC/C:	'Hardlube' - Titanium Aluminum Nitride
CrC:	Chromium Carbide		Aluminum Nitride
CrN:	Chromium Nitride		+Tungsten Carbide/Carbon
DLC:	Diamond-like Carbon	TiCN:	Titanium Carbonitride
N:	Nitride	TiN:	Titanium Nitride
N + Ox:	Nitride + Oxide*	WC/C:	Tungsten Carbide/Carbon
Ox:	Steam Oxide*	WS2:	Tungsten Disulfide
TiAlN:	Titanium Aluminum Nitride	ZrN:	Zirconium Nitride

In many applications, a tap that is properly designed and used under recommended conditions will produce acceptable results without the use of surface treatments. However, under some conditions, such as tapping excessively hard, abrasive or challenging materials, the use of performance enhancing surface treatments will be beneficial to the overall results of your tapping operation in terms of improved tool life and internal thread quality. Coolant-through taps may also be a consideration. Contact Allen Benjamin for tapping and treatment recommendations.

Metric High Performance Taps & Gages

Size / Tool Mat'l	Description	D#	# Flute / # Lube Grv.	Std. Coat	EDP Plug	EDP Bottom	HSSE Tap EDP					
							Black	White	Yellow	Green	Blue	Red
M4 X 0.7							See Previous Page for Recommended Hole Size					
HSSE	Form Tap	D6	2	Ox		BTM	83112		83113	83114	83115	83116
HSSE	Form Tap	D4	2	Ox	PLG		83118		83119	83120	83121	83122
HSSE	Form Tap	D6	2	Ox	PLG		83124		83125	83126	83127	83128
HSSE	Str. Flt Die Cast	D4	3	N	PLG		83130					
HSSE	Str. Flt Die Cast	D4	3	N		BTM	83132					
HSSE	SPPT	D4	3	TiCN	PLG						83134	
HSSE	SPFL	D4	3	TiCN		M-B					83136	
HSSE	SPPT	D4	3	CrC	PLG						83138	
HSSE	SPFL	D4	3	CrC		M-B					83140	
Carbide	Multi Flute Taps for Plastic	D4	5		60602	60603						
Carbide	PRX SPPT Tap	D4	3		60637			"PRX" for Stellite & Inconel, etc.				
Carbide	PRC SPPT Tap	D4	3		60638			"PRC" for Titanium & Beryllium				
Carbide	Form Tap	D4	4 Lobes*		60700	60701						
Carbide	SPPT	D4	2		60639							
Carbide	SPPT	D4	3		60640							
Carbide	PRX STI SPPT	D4	3		60641			"PRX" for Stellite & Inconel, etc.				
Carbide	PRC STI SPPT	D4	3		60642			"PRC" for Titanium & Beryllium				
Carbide	STI SPPT	D4	2		60643							
Carbide	STI SPPT	D4	3		60644							
Carbide	STI Str Flt	D4	2		60752	60753						
Carbide	STI Str Flt	D4	3		60754	60755						
Carbide	STI Str Flt	D4	4		60756	60757						
Carbide	Str. Flt	D4	2		60758	60759						
Carbide	Str. Flt	D4	3		60760	60761						
Carbide	Str. Flt	D4	4		60762	60763						
Carbide	Gage - Taperlock Style D/E				26154							
Ceramic	Gage - Taperlock Style D/E				26155							
Carbide	Gage - Reversible Style D/E				26374							
Ceramic	Gage - Reversible Style D/E				26375							
M5 X 0.8							Recommended Hole Size based on 75% Thread = 4.2mm for STI = 5.31mm / Form Tap at 65% Thread = 4.65mm					
HSSE	SPPT	D4	3	Ox	PLG				83142	83143	83144	83145
HSSE	SPFL	D4	3	Ox		M-B			83147	83148	83149	83150
HSSE	Form Tap	D4	2	Ox		BTM	83152		83153	83154	83155	83156
HSSE	Form Tap	D7	2	Ox		BTM	83158		83159	83160	83161	83162
HSSE	Form Tap	D4	2	Ox	PLG		83164		83165	83166	83167	83168
HSSE	Form Tap	D7	2	Ox	PLG		83170		83171	83172	83173	83174
HSSE	Str. Flt Die Cast	D5	3	N	PLG		83176					
HSSE	Str. Flt Die Cast	D5	3	N		BTM	83178					
HSSE	SPPT	D4	3	TiCN	PLG						83180	
HSSE	SPFL	D4	3	TiCN		M-B					83182	
HSSE	SPPT	D4	3	CrC	PLG						83184	
HSSE	SPFL	D4	3	CrC		M-B					83186	
Carbide	Multi Flute Taps for Plastic	D4	5		60604	60605						
Carbide	PRX SPPT Tap	D4	3		60645			"PRX" for Stellite & Inconel, etc.				
Carbide	PRC SPPT Tap	D4	3		60646			"PRC" for Titanium & Beryllium				
Carbide	Form Tap	D4	4 Lobes*		60702	60703						
Carbide	SPPT	D4	2		60647							
Carbide	SPPT	D4	3		60648							
Carbide	PRX STI SPPT	D4	3		60649			"PRX" for Stellite & Inconel, etc.				

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Cast Iron-Ductile, Malleable	◎ White	160-320
Steel - Low Carbon	● Yellow	125-275
Steel - Med. Carbon	● Yellow	180-425
Steel - High Carbon	● Yellow	180-425
Alloy Steel	● Green	225-400
Stainless - 300 Series	● Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	● Red	135-425
Stainless - PH Series	● Red	150-440
High Nickel Alloy	● Blue	150-360 Monel; 200-400 Inconel
Titanium Alloy	● Blue	310-440
Die Steel	● Red	250-350
Hardened Steel - <325 BHN	● Red	300-350
Hardened Steel - 325-426 BHN	● Red	300-440

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N:	Nitride	TiN:	Titanium Nitride
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							Black	White	Yellow	Green	Blue	Red	
M5 X 0.8							See Previous Page for Recommended Hole Size						
Carbide	PRC STI SPPT	D4	3		60650		"PRC" for Titanium & Beryllium						
Carbide	STI SPPT	D4	2		60651								
Carbide	STI SPPT	D4	3		60652								
Carbide	STI Str Flt	D4	2		60764	60765							
Carbide	STI Str Flt	D4	3		60766	60767							
Carbide	STI Str Flt	D4	4		60768	60769							
Carbide	Str. Flt	D4	2		60770	60771							
Carbide	Str. Flt	D4	3		60772	60773							
Carbide	Str. Flt	D4	4		60774	60775							
Carbide	Gage - Taperlock Style D/E				26156								
Ceramic	Gage - Taperlock Style D/E				26157								
Carbide	Gage - Reversible Style D/E				26376								
Ceramic	Gage - Reversible Style D/E				26377								
M6 X 1.0							Recommended Hole Size based on 75% Thread = 5mm for STI = 6.35mm / Form Tap at 65% Thread = 5.56mm						
HSSE	SPPT	D5	3	Ox	PLG		83198		83188	83189	83190	83191	
HSSE	SPFL	D5	3	Ox		M-B		83193	83194	83195	83196		
HSSE	Form Tap	D5	4	Ox		BTM		83199	83200	83201	83202		
HSSE	Form Tap	D8	4	Ox		BTM		83204	83205	83206	83207		
HSSE	Form Tap	D5	4	Ox	PLG			83210	83211	83212	83213		
HSSE	Form Tap	D8	4	Ox	PLG		83216	83217	83218	83219	83220		
HSSE	Str. Flt Die Cast	D5	3	N	PLG		83222						
HSSE	Str. Flt Die Cast	D5	3	N		BTM	83224						
HSSE	SPPT	D5	3	TiCN	PLG						83226		
HSSE	SPFL	D5	3	TiCN		M-B					83228		
HSSE	SPPT	D5	3	CrC	PLG						83230		
HSSE	SPFL	D5	3	CrC		M-B					83550		
HSSE	Cast Iron	D5	4	N+Ox	PLG		83515 83516						
HSSE	Cast Iron	D5	4	N+Ox		BTM							
Carbide	Multi Flute Taps for Plastic	D5	5		60606	60607							
Carbide	PRX SPPT Tap	D5	3		60653		"PRX" for Stellite & Inconel, etc. "PRC" for Titanium & Beryllium						
Carbide	PRC SPPT Tap	D5	3		60654								
Carbide	Form Tap	D5	4 Lobes*		60704	60705							
Carbide	SPPT	D5	2		60655								
Carbide	SPPT	D5	3		60656								
Carbide	PRX STI SPPT	D5	3		60657		"PRX" for Stellite & Inconel, etc. "PRC" for Titanium & Beryllium						
Carbide	PRC STI SPPT	D5	3		60658								
Carbide	STI SPPT	D5	3		60659								
Carbide	STI Str Flt	D5	2		60776	60777							
Carbide	STI Str Flt	D5	3		60778	60779							
Carbide	STI Str Flt	D5	4		60780	60781							
Carbide	Str. Flt	D5	2		60782	60783							
Carbide	Str. Flt	D5	3		60784	60785							
Carbide	Str. Flt	D5	4		60786	60787							
Carbide	Gage - Taperlock Style D/E				26158								
Ceramic	Gage - Taperlock Style D/E				26159								
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Stainless - PH Series	● Red	150-440
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Titanium Alloy	● Blue	310-440
Die Steel	● Red	250-350
Hardened Steel - <325 BHN	● Red	300-350
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N + Ox:	Nitride + Oxide*	WC/C:	Tungsten Carbide/Carbon
	*Oxide (Ox) may also be shown as ‘O’	WS2:	Tungsten Disulfide
Ox:	Steam Oxide*	ZrN:	Zirconium Nitride
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							Black	White	Yellow	Green	Blue	Red
M7 X 1.0							Recommended Hole Size based on 75% Thread = 6mm					
HSSE	SPPT	D5	3	Ox	PLG				83233	83234	83235	83236
HSSE	SPFL	D5	3	Ox		M-B			83238	83239	83240	83241
HSSE	SPPT	D5	3	TiCN	PLG						83243	
HSSE	SPFL	D5	3	TiCN		M-B					83245	
HSSE	SPPT	D5	3	CrC	PLG						83247	
HSSE	SPFL	D5	3	CrC		M-B					83551	
M8 X 1.25							Recommended Hole Size based on 75% Thread = 6.75mm for STI = 8.43mm / Form Tap at 65% Thread = 7.45mm					
HSSE	SPPT	D5	3	Ox	PLG				83250	83251	83252	83253
HSSE	SPFL	D5	3	Ox		M-B			83255	83256	83257	83258
HSSE	Form Tap	D6	4	Ox		BTM	83260		83261	83262	83263	83264
HSSE	Form Tap	D9	4	Ox		BTM	83266		83267	83268	83269	83270
HSSE	Form Tap	D6	4	Ox	PLG		83272		83273	83274	83275	83276
HSSE	Form Tap	D9	4	Ox	PLG		83278		83279	83280	83281	83282
HSSE	Str. Flt Die Cast	D5	4	N	PLG		83284					
HSSE	Str. Flt Die Cast	D5	4	N		BTM	83286					
HSSE	SPPT	D5	3	TiCN	PLG						83288	
HSSE	SPFL	D5	3	TiCN		M-B					83290	
HSSE	SPPT	D5	3	CrC	PLG						83292	
HSSE	SPFL	D5	3	CrC		M-B					83294	
HSSE	Cast Iron	D5	4	N+Ox	PLG			83517				
HSSE	Cast Iron	D5	4	N+Ox		BTM		83518				
Carbide	Multi Flute Taps for Plastic	D5	5		60608	60609						
Carbide	PRX SPPT Tap	D5	3		60660			"PRX" for Stellite & Inconel, etc.				
Carbide	PRC SPPT Tap	D5	3		60661			"PRC" for Titanium & Beryllium				
Carbide	Form Tap	D5	5 Lobes*		60706	60707						
Carbide	SPPT	D5	3		60662							
Carbide	PRX STI SPPT	D5	3		60663			"PRX" for Stellite & Inconel, etc.				
Carbide	PRC STI SPPT	D5	3		60664			"PRC" for Titanium & Beryllium				
Carbide	STI SPPT	D5	3		60665							
Carbide	STI Str Flt	D5	2		60788	60789						
Carbide	STI Str Flt	D5	3		60790	60791						
Carbide	STI Str Flt	D5	4		60792	60793						
Carbide	Str. Flt	D5	2		60794	60795						
Carbide	Str. Flt	D5	3		60796	60797						
Carbide	Str. Flt	D5	4		60798	60799						
Carbide	Gage - Taperlock Style D/E				26160							
Ceramic	Gage - Taperlock Style D/E				26161							
Carbide	Gage - Reversible Style D/E				26380							
Ceramic	Gage - Reversible Style D/E				26381							
M8 X 1.0							Recommended Hole Size based on 75% Thread = 7mm					
HSSE	SPPT	D5	3	Ox	PLG				83296	83297	83298	83299
HSSE	SPFL	D5	3	Ox		M-B			83301	83302	83303	83304
HSSE	SPPT	D5	3	TiCN	PLG						83306	
HSSE	SPFL	D5	3	TiCN		M-B					83308	
HSSE	SPPT	D5	3	CrC	PLG						83310	
HSSE	SPFL	D5	3	CrC		M-B					83312	
Carbide	Str. Flt	D5	4		60820	60685						
Carbide	Gage - Taperlock Style D/E				26162							

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This page is your guide to:

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MATERIAL TYPE / COLOR CODE TABLE

Work Material*	Color Ring	Brinell Hardness Range**
Aluminum - Wrought	Black	30-80 cold drawn; 75-150 treated/aged
Aluminum - Casting	Black	40-100 as cast; 70-125 treated/aged
Cast Iron - Gray	White	160-260 as cast; 250-320 quenched/tempered
Cast Iron-Ductile, Malleable	White	160-320
Steel - Low Carbon	Yellow	125-275
Steel - Med. Carbon	Yellow	180-425
Steel - High Carbon	Yellow	180-425
Alloy Steel	Green	225-400
Stainless - 300 Series	Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	Red	135-425
Stainless - PH Series	Red	150-440
High Nickel Alloy	Blue	150-360 Monel; 200-400 Inconel
Titanium Alloy	Blue	310-440
Die Steel	Red	250-350
Hardened Steel - <325 BHN	Red	300-350
Hardened Steel - 325-426 BHN	Red	300-440

* NOTE: For material or material group not shown (such as No Lead Brass), please consult Customer Service.

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SURFACE TREATMENT ABBREVIATIONS

See page 62 in engineering section for surface treatment recommendations.

AlCrN:	Aluminum Chromium Nitride	TiAlN+WC/C:	'Hardlube' - Titanium Aluminum Nitride
CrC:	Chromium Carbide		Aluminum Nitride
CrN:	Chromium Nitride		+Tungsten Carbide/Carbon
DLC:	Diamond-like Carbon	TiCN:	Titanium Carbonitride
N:	Nitride	TiN:	Titanium Nitride
N + Ox:	Nitride + Oxide*	WC/C:	Tungsten Carbide/Carbon
Ox:	Steam Oxide*	WS2:	Tungsten Disulfide
TiAlN:	Titanium Aluminum Nitride	ZrN:	Zirconium Nitride

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Metric High Performance Taps & Gages

Size / Tool Mat'l	Description	D#	# Flute / # Lube Grv.	Std. Coat	EDP Plug	EDP Bottom	HSSE Tap EDP					
							Black	White	Yellow	Green	Blue	Red
M8 X 1.0							See Previous Page for Recommended Hole Size					
Ceramic	Gage - Taperlock Style D/E				26163							
Carbide	Gage - Reversible Style D/E				26382							
Ceramic	Gage - Reversible Style D/E				26383							
M10 X 1.5							Recommended Hole Size based on 75% Thread = 8.5mm for STI = 10.49mm / Form Tap at 65% Thread = 9.34mm					
HSSE	SPPT	D6	3	Ox	PLG				83314	83315	83316	83317
HSSE	SPFL	D6	3	Ox		M-B			83319	83320	83321	83322
HSSE	Form Tap	D6	4	Ox		BTM	83324		83325	83326	83327	83328
HSSE	Form Tap	D9	4	Ox		BTM	83330		83331	83332	83333	83334
HSSE	Form Tap	D6	4	Ox	PLG		83336		83337	83338	83339	83340
HSSE	Form Tap	D9	4	Ox	PLG		83342		83343	83344	83345	83346
HSSE	Str. Flt Die Cast	D6	4	N	PLG		83348					
HSSE	Str. Flt Die Cast	D6	4	N		BTM	83350					
HSSE	SPPT	D6	3	TiCN	PLG						83352	
HSSE	SPFL	D6	3	TiCN		M-B					83354	
HSSE	SPPT	D6	3	CrC	PLG						83356	
HSSE	SPFL	D6	3	CrC		M-B					83552	
HSSE	Cast Iron	D6	4	N+Ox	PLG			83519				
HSSE	Cast Iron	D6	4	N+Ox		BTM		83520				
Carbide	Multi Flute Taps for Plastic	D6	6		60610	60611						
Carbide	PRX SPPT Tap	D6	3		60666			"PRX" for Stellite & Inconel, etc.				
Carbide	PRC SPPT Tap	D6	3		60667			"PRC" for Titanium & Beryllium				
Carbide	Form Tap	D6	4 Lobes*		60708	60709						
Carbide	Form Tap	D6	5 Lobes*		60710	60711						
Carbide	Form Tap	D6	6 Lobes*		60712	60713						
Carbide	SPPT	D6	3		60668			"PRX" for Stellite & Inconel, etc.				
Carbide	PRX STI SPPT	D6	3		60669			"PRC" for Titanium & Beryllium				
Carbide	PRC STI SPPT	D6	3		60670							
Carbide	STI SPPT	D6	3		60671							
Carbide	STI Str Flt	D6	3		60800	60801						
Carbide	STI Str Flt	D6	4		60802	60803						
Carbide	Str. Flt	D6	3		60804	60805						
Carbide	Str. Flt	D6	4		60806	60807						
Carbide	Gage - Taperlock Style D/E				26164							
Ceramic	Gage - Taperlock Style D/E				26165							
Carbide	Gage - Reversible Style D/E				26384							
Ceramic	Gage - Reversible Style D/E				26385							
M10 X 1.25							Recommended Hole Size based on 75% Thread = 8.75mm					
HSSE	SPPT	D5	3	Ox	PLG				83359	83360	83361	83362
HSSE	SPFL	D5	3	Ox		M-B			83364	83365	83366	83367
HSSE	Str. Flt Die Cast	D5	4	N	PLG		83369					
HSSE	Str. Flt Die Cast	D5	4	N		BTM	83371					
HSSE	SPPT	D5	3	TiCN	PLG						83373	
HSSE	SPFL	D5	3	TiCN		M-B					83375	
HSSE	SPPT	D5	3	CrC	PLG						83377	
HSSE	SPFL	D5	3	CrC		M-B					83379	
Carbide	Gage - Taperlock Style D/E				26166							
Ceramic	Gage - Taperlock Style D/E				26167							
Carbide	Gage - Reversible Style D/E				26386							
Ceramic	Gage - Reversible Style D/E				26387							

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Steel - Low Carbon	Yellow	125-275
Steel - Med. Carbon	Yellow	180-425
Steel - High Carbon	Yellow	180-425
Alloy Steel	Green	225-400
Stainless - 300 Series	Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	Red	135-425
Stainless - PH Series	Red	150-440
High Nickel Alloy	Blue	150-360 Monel; 200-400 Inconel
Titanium Alloy	Blue	310-440
Die Steel	Red	250-350
Hardened Steel - <325 BHN	Red	300-350
Hardened Steel - 325-426 BHN	Red	300-440

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CrN:	Chromium Nitride		+Tungsten Carbide/Carbon
DLC:	Diamond-like Carbon	TiCN:	Titanium Carbonitride
N:	Nitride	TiN:	Titanium Nitride
N + Ox:	Nitride + Oxide*	WC/C:	Tungsten Carbide/Carbon
Ox:	Steam Oxide*	WS2:	Tungsten Disulfide
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Size / Tool Mat'l	Description	D#	# Flute / # Lube Grv.	Std. Coat	EDP Plug	EDP Bottom	HSSE Tap EDP					
							Black	White	Yellow	Green	Blue	Red
M12 X 1.75							Recommended Hole Size based on 75% Thread = 10.25mm Form Tap at 65% Thread = 11.23mm					
HSSE	SPPT	D6	3	Ox	PLG		83391		83381	83382	83383	83384
HSSE	SPFL	D6	3	Ox		M-B			83386	83387	83388	83389
HSSE	Form Tap	D7	6	Ox		BTM			83392	83393	83394	83395
HSSE	Form Tap	D10	6	Ox		BTM			83398	83399	83400	83401
HSSE	Form Tap	D7	6	Ox	PLG		83403		83404	83405	83406	83407
HSSE	Form Tap	D10	6	Ox	PLG		83409		83410	83411	83412	83413
HSSE	Str. Flt Die Cast	D6	4	N	PLG		83415					
HSSE	Str. Flt Die Cast	D6	4	N		BTM	83417					
HSSE	SPPT	D6	3	TiCN	PLG						83419	
HSSE	SPFL	D6	3	TiCN		M-B				83421		
HSSE	SPPT	D6	3	CrC	PLG						83423	
HSSE	SPFL	D6	3	CrC		M-B					83425	
HSSE	Cast Iron	D6	4	N+Ox	PLG							
HSSE	Cast Iron	D6	4	N+Ox		BTM						
Carbide	Multi Flute Taps for Plastic	D6	6		60612	60613						
Carbide	PRX SPPT Tap	D6	4		60672			“PRX” for Stellite & Inconel, etc. “PRC” for Titanium & Beryllium				
Carbide	PRC SPPT Tap	D6	4		60673							
Carbide	Form Tap	D6	6 Lobes*		60714	60715						
Carbide	Form Tap	D6	8 Lobes*		60716	60717						
Carbide	SPPT	D6	3		60674							
Carbide	Str. Flt	D6	3		60808	60809						
Carbide	Str. Flt	D6	4		60810	60811						
Carbide	Gage - Taperlock Style D/E				26170							
Ceramic	Gage - Taperlock Style D/E				26171							
Carbide	Gage - Reversible Style D/E				26390							
Ceramic	Gage - Reversible Style D/E				26391							
M12 X 1.25							Recommended Hole Size based on 75% Thread = 10.75mm					
HSSE	SPPT	D5	3	Ox	PLG				83427	83428	83429	83430
HSSE	SPFL	D5	3	Ox		M-B			83432	83433	83434	83435
HSSE	SPPT	D5	3	TiCN	PLG						83437	
HSSE	SPFL	D5	3	TiCN		M-B					83439	
HSSE	SPPT	D5	3	CrC	PLG						83441	
HSSE	SPFL	D5	3	CrC		M-B					83443	
Carbide	Gage - Taperlock Style D/E				26172							
Ceramic	Gage - Taperlock Style D/E				26173							
Carbide	Gage - Reversible Style D/E				26392							
Ceramic	Gage - Reversible Style D/E				26393							
M12 X 1.0												
Carbide	Gage - Taperlock Style D/E				26174							
Ceramic	Gage - Taperlock Style D/E				26175							
Carbide	Gage - Reversible Style D/E				26394							
Ceramic	Gage - Reversible Style D/E				26395							
M14 X 2.0							Recommended Hole Size based on 75% Thread = 12mm Form Tap at 65% Thread = 13.13mm					
HSSE	SPPT	D7	3	Ox	PLG				83445	83446	83447	83448
HSSE	SPFL	D7	4	Ox		M-B			83450	83451	83452	83453
Carbide	Multi Flute Taps for Plastic	D7	6		60614	60615						
Carbide	PRX SPPT Tap	D7	4		60675				“PRX” for Stellite & Inconel, etc.			

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Steel - Med. Carbon	Yellow	180-425
Steel - High Carbon	Yellow	180-425
Alloy Steel	Green	225-400
Stainless - 300 Series	Blue	135-185 annealed; 225-275 cold drawn
Stainless - 400 Series	Red	135-425
Stainless - PH Series	Red	150-440
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Titanium Alloy	Blue	310-440
Die Steel	Red	250-350
Hardened Steel - <325 BHN	Red	300-350
Hardened Steel - 325-426 BHN	Red	300-440

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N:	Nitride	TiN:	Titanium Nitride
N + Ox:	Nitride + Oxide*	WC/C:	Tungsten Carbide/Carbon
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							Black	White	Yellow	Green	Blue	Red
M14 X 2.0							See Previous Page for Recommended Hole Size					
Carbide	PRC SPPT Tap	D7	4		60676		"PRC" for Titanium & Beryllium					
Carbide	Form Tap	D7	6 Lobes*		60718	60719						
Carbide	Form Tap	D7	8 Lobes*		60720	60721						
Carbide	SPPT	D7	3		60677							
Carbide	Str. Flt	D7	4		60812	60813						
Carbide	Gage - Taperlock Style D/E				26176							
Ceramic	Gage - Taperlock Style D/E				26177							
Carbide	Gage - Reversible Style D/E				26396							
Ceramic	Gage - Reversible Style D/E				26397							
M14 X 1.5							Recommended Hole Size based on 75% Thread = 12.5mm					
HSSE	SPPT	D6	3	Ox	PLG				83455 83460	83456 83461	83457 83462	83458 83463
HSSE	SPFL	D6	4	Ox		M-B						
Carbide	Gage - Taperlock Style D/E				26178							
Ceramic	Gage - Taperlock Style D/E				26179							
Carbide	Gage - Reversible Style D/E				26398							
Ceramic	Gage - Reversible Style D/E				26399							
M15 X 1.0												
Carbide	Gage - Taperlock Style D/E				26180							
Ceramic	Gage - Taperlock Style D/E				26181							
Carbide	Gage - Reversible Style D/E				26400							
Ceramic	Gage - Reversible Style D/E				26401							
M16 X 2.0							Recommended Hole Size based on 75% Thread = 14mm Form Tap at 65% Thread = 15.13mm					
HSSE	SPPT	D7	3	Ox	PLG				83465 83470	83466 83471	83467 83472	83468 83473
HSSE	SPFL	D7	4	Ox		M-B						
Carbide	PRX SPPT Tap	D7	4		60678							
Carbide	PRC SPPT Tap	D7	4		60679							
Carbide	Form Tap	D7	6 Lobes*		60722	60723						
Carbide	Form Tap	D7	8 Lobes*		60724	60725						
Carbide	SPPT	D7	4		60680							
Carbide	Str. Flt	D7	4		60814	60815						
Carbide	Gage - Taperlock Style D/E				26182							
Ceramic	Gage - Taperlock Style D/E				26183							
Carbide	Gage - Reversible Style D/E				26402							
Ceramic	Gage - Reversible Style D/E				26403							
M16 x 1.5							Recommended Hole Size based on 75% Thread = 14.5mm					
HSSE	SPPT	D6	3	Ox	PLG				83475 83480	83476 83481	83477 83482	83478 83483
HSSE	SPFL	D6	4	Ox		M-B						
Carbide	Gage - Taperlock Style D/E				26184							
Ceramic	Gage - Taperlock Style D/E				26185							
Carbide	Gage - Reversible Style D/E				26404							
Ceramic	Gage - Reversible Style D/E				26405							
M18 X 2.5							Recommended Hole Size based on 75% Thread = 15.5mm					
HSSE	SPPT	D7	3	Ox	PLG				83485 83490	83486 83491	83487 83492	83488 83493
HSSE	SPFL	D7	4	Ox		M-B						

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Steel - Med. Carbon	● Yellow	180-425
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Stainless - PH Series	● Red	150-440
High Nickel Alloy	● Blue	150-360 Monel; 200-400 Inconel
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N + Ox:	Nitride + Oxide*	WC/C:	Tungsten Carbide/Carbon
	*Oxide (Ox) may also be shown as 'O'	WS2:	Tungsten Disulfide
Ox:	Steam Oxide*	ZrN:	Zirconium Nitride
TiAlN:	Titanium Aluminum Nitride		

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							Black	White	Yellow	Green	Blue	Red
M18 X 1.5							Recommended Hole Size based on 75% Thread = 16.5mm					
HSSE	SPPT	D6	3	Ox	PLG	M-B			83495	83496	83497	83498
HSSE	SPFL	D6	4	Ox					83500	83501	83502	83503
Carbide	Gage - Taperlock Style D/E				26188							
Ceramic	Gage - Taperlock Style D/E				26189							
Carbide	Gage - Reversible Style D/E				26408							
Ceramic	Gage - Reversible Style D/E				26409							
M20 X 2.5							Recommended Hole Size based on 75% Thread = 17.5mm					
HSSE	SPPT	D7	3	Ox	PLG	M-B			83505	83506	83507	83508
HSSE	SPFL	D7	4	Ox					83510	83511	83512	83513
Carbide	Gage - Taperlock Style D/E				26190							
Ceramic	Gage - Taperlock Style D/E				26191							
Carbide	Gage - Reversible Style D/E				26410							
Ceramic	Gage - Reversible Style D/E				26411							

- The suggested tap drill sizes shown are reference values, and depending on specific tapping requirements and conditions, may have to be altered. Allen Benjamin Inc. assumes no responsibility or liability of any kind as a result of the selection of tap drill sizes from this catalog.
- HSSE taps listed are designed for application-specific tapping.
- All solid carbide taps listed are manufactured to Table 302-A dimensions, unless otherwise specified. Multi-Flute taps for plastic are made to Table 302 dimensions.
- GAGES shown are 'Double-End with Handle' gages. Contact Allen Benjamin for single gage members, handles, and special gages to your specifications.
- FOR QUESTIONS OR SIZES NOT LISTED, PLEASE CONTACT OUR CUSTOMER SERVICE DEPT.

SPECIALS ARE AVAILABLE UPON REQUEST!
If you do not see the exact tool you require, we can manufacture taps to your specifications:
• Varying chamfers • Oil hole design • Alternate coatings • Special thread forms • Special size, geometry, length, tolerance...call for availability, pricing and delivery.

Allen Benjamin is committed to providing:

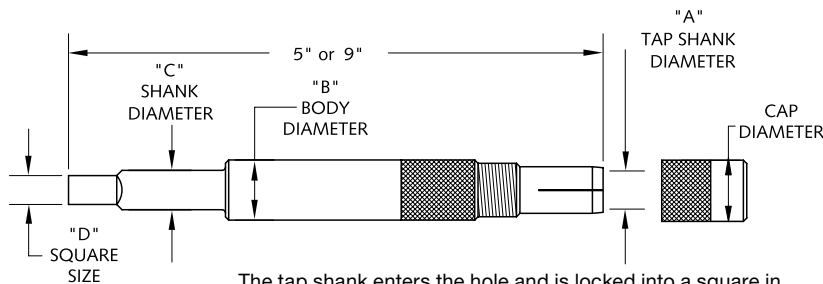
- Outstanding Customer Service
- Quality Products
- On-Time Shipments

Visit our user-friendly web site at www.allenbenjamin.com
where you will find features such as a product selector,
an online quote request system, distributor locator,
and complete engineering data.

The Allen Benjamin tradition of high quality,
high performance cutting tools lives on!

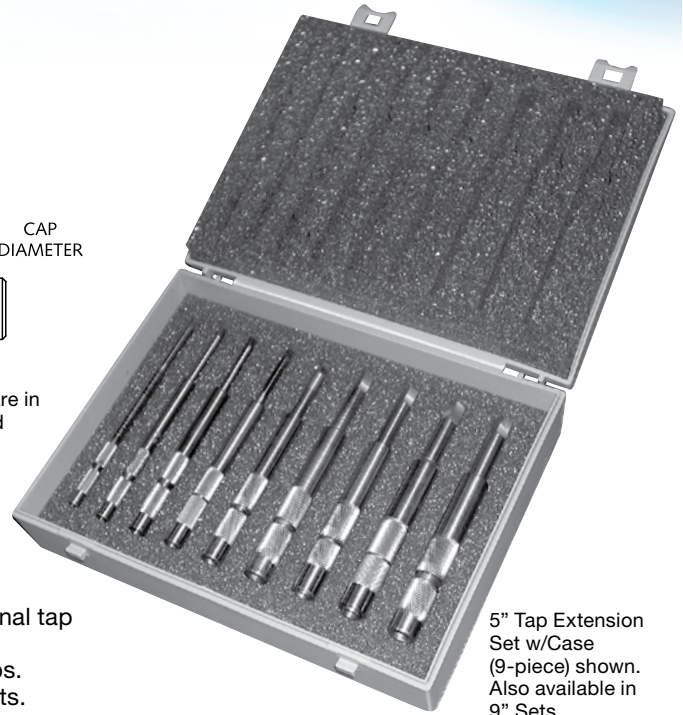
Call us today to discuss
your cutting tool requirements.

Tap Extensions: for ANSI Standard Taps



The tap shank enters the hole and is locked into a square in the bottom of the hole. The tap is then secured by hand tightening the compression cap.

- Hand Tap Extensions 5" & 9" Length
- Made from tool steel.
- Internal square drive for positive tap drive.
- Compression cap for easy tightening. No wrench required.
- A very effective tool at low cost.
- The slim profile lets you fit into places not accessible to conventional tap extensions.
- Eliminates the need for purchasing expensive extended length taps.
- Integral compression collet eliminates the need for bulky collet nuts.



5" Tap Extension Set w/Case (9-piece) shown. Also available in 9" Sets.

EDP No.	Nominal Tap Size	Metric Tap Size ASME/ANSI B94.9 - 1987	"A" Dia. of Tap Shank (inch)	"B" Ext Dia. (inch)	"C" Shank Dia. (inch)	"D" Square Size (inch)	Depth Tap Enters
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5" TAP EXTENSIONS (CAP Diameter = "B" Body Diameter)

21700	#0-#6	M1.6-M3.5	.141	1/4"	.194	.152	7/8"
21701	#8	M4	.168	5/16"	.194	.152	7/8"
21702	#10	M4.5-M5	.194	3/8"	.194	.152	1"
21703	#12		.220	3/8"	.194	.152	1"
21704	1/4"	M6-M6.3	.255	7/16"	.255	.191	1"
21705	5/16"	M7 & M8	.318	1/2"	.318	.238	1-1/16"
21706	3/8"	M10	.381	9/16"	.381	.286	1-1/8"
21707	7/16"		.323	1/2"	.323	.242	1-1/16"
21708	1/2"	M12	.367	9/16"	.367	.275	1-1/8"
21709	1/16 & 1/8 RS NPT		.312	1/2"	.312	.234	1"
21796	5" Tap Extension Set w/Case (9-piece set includes No. 21700 thru 21708)						

9" TAP EXTENSIONS (CAP Diameter = "B" Body Diameter)

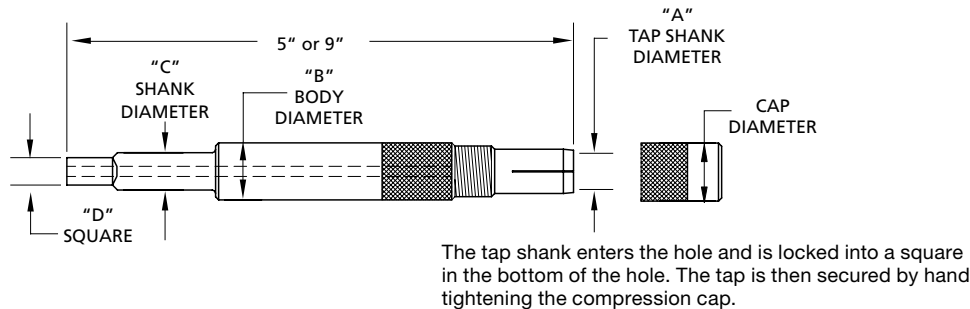
21805	#0-#6	M1.6-M3.5	.141	1/4"	.194	.152	7/8"
21710	#8	M4	.168	5/16"	.194	.152	7/8"
21711	#10	M4.5-M5	.194	3/8"	.194	.152	1"
21712	#12		.220	3/8"	.194	.152	1"
21713	1/4"	M6	.255	7/16"	.255	.191	1"
21714	5/16"	M7 & M8	.318	1/2"	.318	.238	1-1/16"
21715	3/8"	M10	.381	9/16"	.381	.286	1-1/8"
21716	7/16"		.323	1/2"	.323	.242	1-1/16"
21717	1/2"	M12	.367	9/16"	.367	.275	1-1/8"
21718	1/16 & 1/8 RS NPT		.312	1/2"	.312	.234	1"
21797	9" Tap Extension Set w/Case (9-piece set includes No. 21805 thru 21717)						

6" TAP EXTENSIONS (For Taps Larger Than 1/2") (CAP Diameter = 1/8" Greater than "B" Body Diameter)

21719	9/16"		.429	3/4"	.429	.320	1-1/4"
21720	1/8 NPT		.437	3/4"	.437	.328	1"
21721	5/8"	M16	.480	3/4"	.480	.360	1-1/4"
21722	11/16"		.542	7/8"	.542	.406	1-1/4"
21723	1/4 NPT		.562	7/8"	.562	.420	1"
21724	3/4"		.590	7/8"	.590	.440	1-3/8"
21725	7/8"		.697	1"	.697	.520	1-3/8"
21726	3/8 NPT		.700	1"	.700	.530	1-3/16"
21727	1/2 NPT		.687	1"	.687	.515	1-1/4"
21798	1"		.800	1"	.800	.600	1-1/2"

Specify quantity, EDP number, tap size and extension length.

Tap Extensions: for Coolant-Through ANSI Standard Taps



- Coolant-Through Hand Tap Extensions 5" & 9" Length
- Made from tool steel.
- Internal square drive for positive tap drive.
- Compression cap for easy tightening. No wrench required.
- A very effective tool at low cost.
- The slim profile lets you fit into places not accessible to conventional tap extensions.
- Eliminates the need for purchasing expensive extended length taps.
- Integral compression collet eliminates the need for bulky collet nuts.

EDP No.	Nominal Tap Size	Metric Tap Size ASME/ANSI B94.9 - 1987	"A" Dia. of Tap Shank (inch)	"B" Ext Dia. (inch)	"C" Shank Dia. (inch)	"D" Square Size (inch)	Depth Tap Enters	Coolant Hole Dia.
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5" COOLANT-THROUGH TAP EXTENSIONS (CAP Diameter = "B" Body Diameter)

21728	#0-#6	M1.6-M3.5	.141	1/4"	.194	.152	7/8"	7/64
21729	#8	M4	.168	5/16"	.194	.152	7/8"	7/64
21730	#10	M4.5-M5	.194	3/8"	.194	.152	1"	7/64
21731	#12		.220	3/8"	.194	.152	1"	7/64
21732	1/4"	M6-M6.3	.255	7/16"	.255	.191	1"	3/32
21733	5/16"	M7 & M8	.318	1/2"	.318	.238	1-1/16"	5/32
21734	3/8"	M10	.381	9/16"	.381	.286	1-1/8"	5/32
21735	7/16"		.323	1/2"	.323	.242	1-1/16"	5/32
21736	1/2"	M12	.367	9/16"	.367	.275	1-1/8"	5/32
21799	1/16 & 1/8 RS NPT		.312	1/2"	.312	.234	1"	5/32

9" COOLANT-THROUGH TAP EXTENSIONS (CAP Diameter = "B" Body Diameter)

21737	#0-#6	M1.6-M3.5	.141	1/4"	.194	.152	7/8"	7/64
21738	#8	M4	.168	5/16"	.194	.152	7/8"	7/64
21739	#10	M4.5-M5	.194	3/8"	.194	.152	1"	7/64
21740	#12		.220	3/8"	.194	.152	1"	7/64
21741	1/4"	M6	.255	7/16"	.255	.191	1"	3/32
21742	5/16"	M7 & M8	.318	1/2"	.318	.238	1-1/16"	5/32
21743	3/8"	M10	.381	9/16"	.381	.286	1-1/8"	5/32
21744	7/16"		.323	1/2"	.323	.242	1-1/16"	5/32
21745	1/2"	M12	.367	9/16"	.367	.275	1-1/8"	5/32
21800	1/16 & 1/8 RS NPT		.312	1/2"	.312	.234	1"	5/32

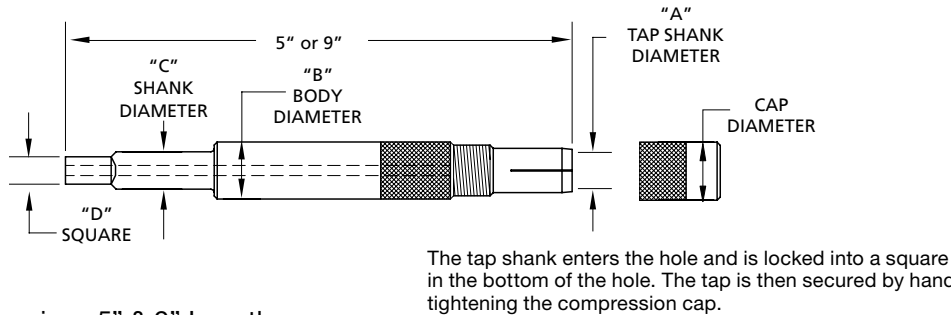
6" COOLANT-THROUGH TAP EXTENSIONS (For Taps Larger Than 1/2") (CAP Diameter = 1/8" Greater than "B" Body Diameter)

21746	9/16"		.429	3/4"	.429	.320	1-1/4"	3/16
21747	1/8 NPT		.437	3/4"	.437	.328	1"	3/16
21748	5/8"	M16	.480	3/4"	.480	.360	1-1/4"	3/16
21749	11/16"		.542	7/8"	.542	.406	1-1/4"	3/16
21750	1/4 NPT		.562	7/8"	.562	.420	1"	3/16
21751	3/4"		.590	7/8"	.590	.440	1-3/8"	3/16
21752	7/8"		.697	1"	.697	.520	1-3/8"	3/16
21753	3/8 NPT		.700	1"	.700	.530	1-3/16"	3/16
21754	1/2 NPT		.687	1"	.687	.515	1-1/4"	3/16
21755	1"		.800	1"	.800	.600	1-1/2"	3/16

Specify quantity, EDP number, tap size and extension length.



Tap Extensions: for DIN Standard Taps



- Metric DIN Hand Tap Extensions 5" & 9" Length
- All popular DIN metric sizes.
- All the most popular sizes available for coolant-through taps.
- Made from tool steel.
- Internal square drive for positive tap drive.
- Compression cap for easy tightening. No wrench required.
- A very effective tool at low cost.
- The slim profile lets you fit into places not accessible to conventional tap extensions.
- Eliminates the need for purchasing expensive extended length taps.
- Integral compression collet eliminates the need for bulky collet nuts.

EDP No.	Taps with DIN 371 Shanks	Taps with DIN 374/376 Shanks	"A" Dia. of Tap Shank (mm) (inch)	Depth Tap Enters	"B" Ext. Dia. (inch)	"C" Shank Dia. (mm) (inch)	"D" Square Size (mm) (inch)	With Coolant Hole	
								EDP No.	Coolant Hole Size

5" (127mm) LONG TAP EXTENSIONS (CAP Diameter = "B" Body Diameter)

21756	M2-M2.6	M4	2.8mm (.110)	7/8"	1/4"	6mm (.236)	4.9mm (.193)	21776	2.36mm
21757	M3	M4.5-M5	3.5mm (.137)	7/8"	5/16"	6mm (.236)	4.9mm (.193)	21777	2.36mm
21758	M3.5	M5.5	4.0mm (.157)	7/8"	3/8"	6mm (.236)	4.9mm (.193)	21778	2.36mm
21759	M4	M6	4.5mm (.177)	7/8"	3/8"	6mm (.236)	4.9mm (.193)	21779	2.36mm
21760	M4.5-M6	M8	6.0mm (.236)	1"	7/16"	7mm (.275)	5.5mm (.216)	21780	3.96mm
21761	M7	M9-M10	7.0mm (.275)	1"	1/2"	7mm (.275)	5.5mm (.216)	21781	3.96mm
21762	M8	M11	8.0mm (.315)	1-1/8"	1/2"	8mm (.315)	6.2mm (.244)	21782	3.96mm
21763	M9	M12	9.0mm (.354)	1-3/16"	5/8"	9mm (.354)	7mm (.275)	21783	3.96mm
21764	M10		10.0mm (.393)	1-1/4"	5/8"	10mm (.393)	8mm (.315)	21784	3.96mm
21765		M14	11.0mm (.433)	1-3/8"	3/4"	11mm (.433)	9mm (.354)	21785	3.96mm
21801	M12	M16	12.0mm (.472)	1-3/8"	3/4"	12mm (.472)	9mm (.354)	21803	3.96mm

9" (228.6mm) TAP EXTENSIONS (CAP Diameter = "B" Body Diameter)

21766	M2-M2.6	M4	2.8mm (.110)	7/8"	1/4"	6mm (.236)	4.9mm (.193)	21786	2.36mm
21767	M3	M4.5-M5	3.5mm (.137)	7/8"	5/16"	6mm (.236)	4.9mm (.193)	21787	2.36mm
21768	M3.5	M5.5	4.0mm (.157)	7/8"	3/8"	6mm (.236)	4.9mm (.193)	21788	2.36mm
21769	M4	M6	4.5mm (.177)	7/8"	3/8"	6mm (.236)	4.9mm (.193)	21789	2.36mm
21770	M4.5-M6	M8	6.0mm (.236)	1"	7/16"	7mm (.275)	5.5mm (.216)	21790	3.96mm
21771	M7	M9-M10	7.0mm (.275)	1"	1/2"	7mm (.275)	5.5mm (.216)	21791	3.96mm
21772	M8	M11	8.0mm (.315)	1-1/8"	1/2"	8mm (.315)	6.2mm (.244)	21792	3.96mm
21773	M9	M12	9.0mm (.354)	1-3/16"	5/8"	9mm (.354)	7mm (.275)	21793	3.96mm
21774	M10		10.0mm (.393)	1-1/4"	5/8"	10mm (.393)	8mm (.315)	21794	3.96mm
21775		M14	11.0mm (.433)	1-3/8"	3/4"	11mm (.433)	9mm (.354)	21795	3.96mm
21802	M12	M16	12.0mm (.472)	1-3/8"	3/4"	12mm (.472)	9mm (.354)	21804	3.96mm

Specify quantity, EDP number, tap size and extension length.



“Smart” Products: Industrial Cutting Fluids, Cleaners/Degreasers, Rust Preventatives

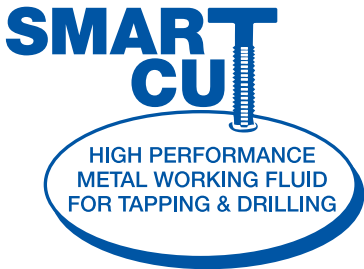
DESCRIPTION	EDP Each	EDP Case	Case Qty
Smart Cut™ Tapping & Drilling Fluid			
Smart Cut 16 Ounce Bottle	FL110	FL115	12
Smart Cut Gallon Container	FL120	FL125	4
Smart Cut 5 Gallon Bucket	FL130		
Smart Cut 55 Gallon Drum	FL135		
Smart Clean Cleaner Degreaser			
Smart Clean Quart Spray Bottle w/Trigger Grip	FL200	FL205	12
Smart Clean Gallon Container	FL210	FL215	4
Smart Clean/A Aqueous Parts Washer			
Smart Clean Gallon Container	FL300	FL305	4
Smart Pro Rust Preventative			
Smart Pro Quart Spray Bottle w/Trigger Grip	FL400	FL405	12
Smart Pro Gallon Container	FL410	FL415	4

SMART CUT™: TAPPING, DRILLING, CUTTING FLUID



An extreme duty drilling, tapping, cutting fluid which is considered environmentally safe. Smart Cut is thick, like honey, and will stick to the tool throughout the cutting operation. Ideal for machining stainless steel, carbon steel, inconel, monel, hastalloy, titanium, aluminum and other alloys and exotic metals. Originally designed as a tapping and drilling fluid, but works well for sawing and other machining/metalcutting operations. Smart Cut is safe for medical/dental machining applications as it does not contain animal-derived components.

- Advantages:
- Increases Productivity
 - Greatly extends tool life
 - Reduces torque
 - Improves finish and size
 - Mild pleasant aroma
 - Does not contain 1,1,1 Trichloroethane
 - Environmentally smart!



“Smart” Products: Industrial Cutting Fluids, Cleaners/Degreasers, Rust Preventatives

SMART CLEAN: INDUSTRIAL CLEANER / DEGREASER

A safe alternative to the ever growing problem of toxic chemical use. This concentrated all purpose cleaner is ideal for maintenance/shop needs...machinery, metallic surfaces, metal parts, walls, windows, floors, vinyl, plastic, engine degreasing. It will not harm any surface not harmed by water. May be diluted up to 1 ounce per gallon. Formulated to a balanced blend of detergents, chelating agents and builders to cut through any grease, dirt, soil, grime and suspended soil. Unique chemical technology works to quickly penetrate, detach and lift soils and greases to leave surfaces clean and residue free. This product is non-hazardous, non-corrosive and biodegradable.



- Advantages:
- Non-toxic
 - Concentrated formula
 - Safe, multi-purpose cleaner
 - Removes all greases, grimes and soils
 - Phenol-free
 - Biodegradable
 - Ideal for general cleaning or heavy duty cleaning
 - Environmentally smart!

SMART CLEAN / A: AQUEOUS PARTS WASHER

Smart Clean/A aqueous parts washer is a specially formulated water-soluble alkaline cleaner specifically designed for high pressure and high temperature parts washers. It will cut oil and sludge from machined parts and provide in-process rust protection to prevent flash rusting. A safe alternative to the ever growing problem of toxic chemical use. It will not harm any surface not harmed by water. May be diluted up to 1 ounce per gallon. Formulated to a balanced blend of detergents, chelating agents and builders to cut through any grease, dirt, soil, grime and suspended soil. Leaves surfaces clean and sparkling with a fresh aroma. Excellent also as a general purpose cleaner for walls and windows.



- Advantages:
- Superior cleaning
 - Easily removes grease and oil
 - Good rust protection
 - Will not harm paint at proper dilutions
 - Breaks down sludge
 - Environmentally smart!

SMART PRO: RUST PREVENTATIVE

Smart Pro is an evaporative, water displacing, non-staining rust preventative and lubricant that leaves behind a thin, non-greasy film. Provides intermediate-term salt spray rust protection and provides short-term outdoor rust protection. Can be applied by spraying, brushing or submersion. Individual tests should be run to check compatibility of rust preventative to paint or other type of coating. Remove by wiping with a light petroleum distillate (i.e. mineral spirits) or other commercial degreaser.



- Advantages:
- Superior rust prevention
 - Excellent salt spray protection
 - Water displacing
 - Non-greasy film residue
 - Moderate outdoor protection

Solid Carbide & Carbide Inserted Chasers

Ordering Information

Available Chaser Styles from Allen Benjamin include:

- **Solid Carbide H & G Style 100 Series**
- **Carbide Insert Geometric Style (Regular or Projection Styles)**
INCLUDING: "D" Style and "S-SJ" Style



All cutting threads are ground from solid sub-micron carbide. Carbide insert chasers are ground and brazed onto high speed steel chaser bodies. The submicron grade of carbide permits high production threading of all ferrous and non-ferrous materials of relatively high strengths without fracturing the cutting edges, as well as yielding superior tooling life in ordinary materials.

It is always best, when changing from steel chasers to carbide chasers, that our recommendations be carefully followed.

The production life of solid carbide and carbide inserted chasers can range from 10 to 40 times that of high speed steel chasers. Substantial savings are realized in change-over and set up times.

Allen Benjamin invites requests to quote standard and special requirements.

Pitch limits not finer than 80 or coarser than 10.

When requesting chasers, the following information is required:

- 1.) Style of collapsible or solid adjustable tap or die head.
- 2.) Major diameter.
- 3.) Number of threads per inch.
- 4.) Thread form (NC, NF, NS, etc.; Decimal/Inch and Metric; R.H. or L.H.).
- 5.) Number of sets.
- 6.) Angle or lead of chamfer.
- 7.) Will chasers be threading up to a shoulder.
- 8.) Construction number etched on die head, if known.
- 9.) Material to be threaded (hardened or heat treated?).
- 10.) Power fed or hand fed.

Chaser sets are non-stock items.
Lead time required on all orders.

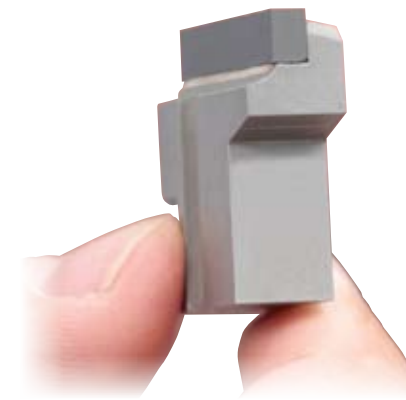
CALL FOR PRICES AND DELIVERY.

See pages 66-67 for chaser engineering data.



Refurbished Carbide Insert Chasers

Ordering Information



REFURBISHED **Geometric Style** **(Regular or Projection Styles)**

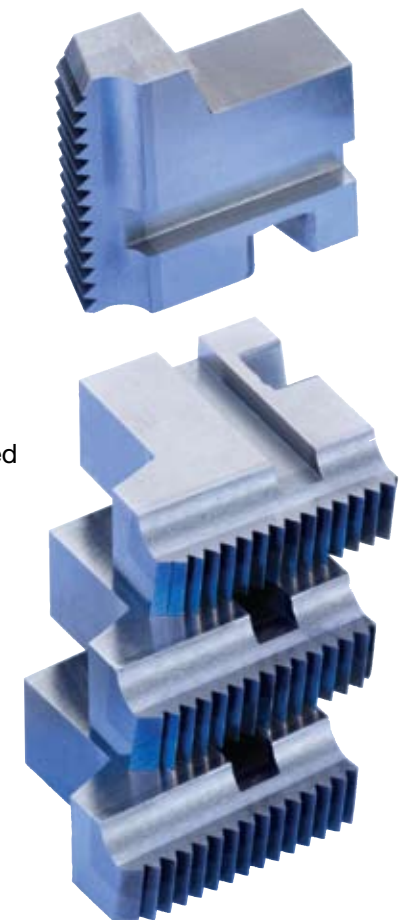
Allen Benjamin has been manufacturing carbide insert chasers for decades. As a service to our customers, most of whom have high speed steel chasers, we are now offering to add carbide inserts into the customer's new or used high speed steel Geometric style chasers.

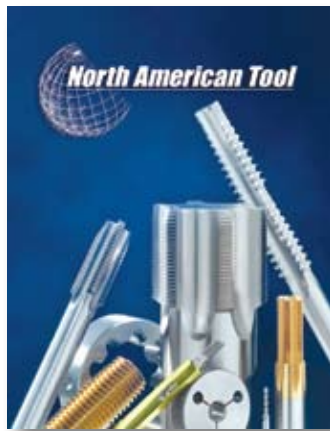
Used chasers, even if completely worn out, can usually be carbide inserted and made as good as new. Used chasers are subject to inspection prior to acceptance for inserting carbide.

Other considerations are:

- 1.) Chasers must be matched set.
- 2.) Tapped form chasers cannot be carbide inserted.
- 3.) We remanufacture only to original size and pitch.
- 4.) Chaser body and cam slot must be undamaged.
- 5.) Chasers received with TiN coating cannot be properly carbide inserted and will not be accepted.
- 6.) Carbide is not suitable for all applications.

- **Refurbishing chasers, in all cases, depends on the type and condition of the chaser.**
- **The chasers must be examined and inspected by Allen Benjamin engineers before price and delivery can be determined. Contact Customer Service for details.**





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- Quality Tools
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Phone: 800.528.7404 • 480.968.7937 • Fax: 480.731.9462
E-Mail: info@allenbenjamin.com • Web: www.allenbenjamin.com

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