



# ***North American Tool***



*"In The Pursuit of Perfection"*



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## LIMITED WARRANTY

North American Tool Corporation, hereafter denoted as NATC, and its subsidiaries, 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 NATC, to the user of our products. Determination as to defective product rests solely with NATC. NATC shall have no obligation to repair or replace products damaged by misuse, improper operating conditions, products altered or repaired by parties other than NATC, or the failure of the user to apply appropriate preventative maintenance or service. No product shall be returned to NATC without its prior consent. Product which NATC consents to be returned shall be sent freight prepaid. Complete information regarding the complaint must be furnished to NATC prior to consent to be returned. NATC will not assume responsibility or accept invoices for unauthorized repairs to its products. NATC makes no warranty as to fitness of its products for specific applications by the user unless NATC specifically agrees otherwise in writing after review of the proposed usage, nor does NATC 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. NATC 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 NATC BE LIABLE FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES. NATC makes no warranty, express or implied, except as set forth above; and NATC 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.**

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## GENERAL INFORMATION

*We consider the relationship between North American Tool Corporation and the Industrial Distributor the most important part of our future.*

*Together, as "Value Added Partners", we are focused on satisfying the cutting tool requirements of your customers through:*

- Outstanding Customer Service
- Quality Tools
- Shipped On Time

**SALES & SERVICE POLICY :** North American Tool Corporation will sell only through recognized Industrial Distributors. We will accept direct emergency orders from customers when they agree to send confirming orders to a North American Tool Corporation distributor in their trading area.

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

North American Tool Corporation 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 full special tools unless otherwise specified at time of order. QUOTED prices on full special 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 customer's 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 North American Tool Corporation, we will issue credit on the original test tool order.

**CATALOG ON CD :** We offer our Popular Specials section of the catalog (pages 6-89) on CD for integration into your computer system. Call for details.

**CREDIT CARD ORDERS :** We accept the following credit cards:

American Express



Master Card



VISA



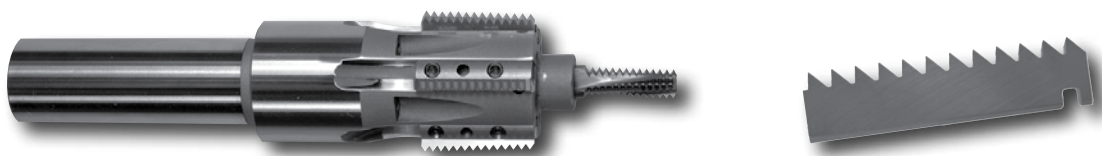
## SOLID AND REPLACEABLE INSERT CARBIDE THREAD MILLS

North American Tool offers thread milling systems and solutions for discerning machinists using CNC machines with helical interpolation. The machine must be capable of three axes simultaneous movement, where two of the axes perform circular interpolation, while the third axis moves perpendicular to the circular plane.



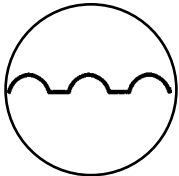
### Thread Mill features:

- Available as solid carbide thread mills or replaceable carbide insert thread mills;
- Cut internal and external threads;
- Thread different hole diameters with same tool;
- Hardened and CNC ground;
- Standard Weldon shanks (with Weldon flats);
- Through-coolant designs available;
- Programming and technical support;
- Exceptional thread finish on a wide range of materials, including tough exotic materials;
- Special sizes/designs available to suit your application;
- Tool coatings available for extended tool life and enhanced production...ask for details;
- Wide array of thread forms and sizes including pipe, stub and full acme, buttress, metric sizes, and specials;
- Multiple insert styles available for replaceable insert thread mills;
- Depending on the threading application, thread mills can reduce cycle times and increase parts throughput over using conventional taps, especially in medium to long runs.

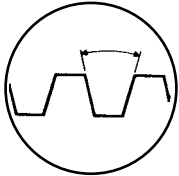


# BLUEPRINT-SPECIALS: APPLICATION SPECIFIC TAPS

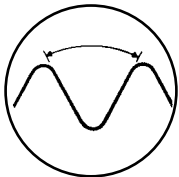
## SPECIAL THREAD FORMS



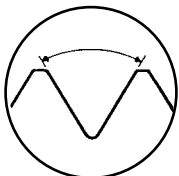
BALL SCREW  
(GOTHIC ARCH)



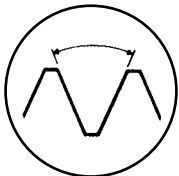
ACME, STUB ACME



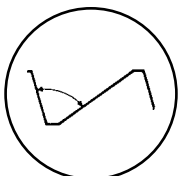
FULL FORM RADIUS



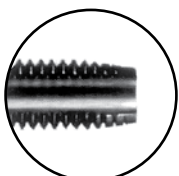
RADIUS ROOT



SPECIAL ANGLES



BUTTRESS



VARYING CHAMFER  
ANGLES

North American Tool Corporation continues a commitment to quality and service by offering you a complete line of blueprint special taps - shipped fast! Our experienced team of cutting tool specialists will provide design expertise or work from your blueprint specifications to manufacture reliable special taps that meet your exact specifications, in as few as seven days, depending on the specialty of design and quantity ordered.

Our bar steel is available in a broad range of grades and diameters, and is made of top quality High Speed Steel, or material specified to best fit the threading application at hand. Our dedication to quality, rapid shipments and customer service has made North American Tool the fastest growing producer of special taps, dies and gages.

Our experienced tool designers will provide any design assistance you may require, or can work directly from your blueprint specifications to manufacture special taps that precisely meet your requirements.

The majority of Special Taps can be produced from a standard design hardened blank.

There are, however, many tools which have special features requiring they be custom manufactured from bar steel, such as...

- Special Overall Lengths either in shank, thread length, or piloted;
- Special Shank and Drive dimensions: Morse taper shanks, threaded, whistle-notch;
- Special Flute Design - straight or spiral;
- Holes - drilled, reamed, ground, cross, coolant-hole, through-hole;
- Flats - notches, keyways, necks;
- Tapered thread, including pipe taps;
- Tandem style
- Combination tools, to eliminate secondary or finishing operations;
- Reamer point / Drill point / Core Drill
- Special Forms & Angles - Acme, buttress, square thread, full form, modified Whitworth form, custom thread form;
- Special steels available, in combination with numerous surface treatment possibilities, depending on application at hand.





- 60° THREAD FORMS
- PIPE THREADS
- FORM TAPS
- S.T.I. (SCREW THREAD INSERT) TAPS



Why North American Tool Carbide Taps?

- Outstanding Customer Service and Technical Support;
- Quality Products;
- On-Time Shipments;
- Experienced engineers and thread tool craftsmen provide value-added solutions to your challenging tapping requirements;
- Special design criteria (unique characteristics and geometry) can be incorporated to allow unmatched efficiencies in tough materials such as titanium, beryllium, ceramics, plastics, fiberglass, resins, stellite, inconel and more.

North American Tool carbide taps are available from stock in popular sizes. See catalog pages 96-97 for complete listings. Carbide taps are also available as full specials.

**Carbide Taps & "Carbi-I-Sert"™ Carbide Insert Taps**

# POPULAR SPECIAL: TAPS, DIES & GAGES

For tap standards and dimensions,  
see 'Tables for Tap Dimensions'  
on pages 122-131.

SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>#00-90 NS</b>						<i>Recommended Hole Size Based on 75% Thread = .0362"</i>							
SPIRAL POINT	1	3B	0	15001		158.40	120.90	86.90	60.80	50.80	45.60	37.10	33.30
<b>#00-96 NS</b>						<i>Recommended Hole Size Based on 75% Thread = .0370"</i>							
SPIRAL POINT	1	3B	0	15003		158.40	120.90	86.90	60.80	50.80	45.60	37.10	33.30
<b>#0-80 NF</b>						<i>Recommended Hole Size based on 75% Thread = .0479" TRU-FLO at 65% Thread = .0545"</i>							
L.H. HAND TAP	1	3B	2	17951	17952	63.40	63.40	63.40	45.90	45.90	28.00	22.50	20.20
L.H. SPIRAL POINT	1	3B	0	15012		63.40	63.40	63.40	45.90	45.90	28.00	22.50	20.20
L.H. SPIRAL POINT	1	3B	2	17953		68.50	68.50	68.50	47.90	47.90	29.90	25.60	22.90
SPIRAL POINT	3		0	15008		64.40	62.00	59.50	41.80	31.40	25.50	21.00	19.10
"TRU-FLO" FORM TAP	2	3B	0		19000	33.40	33.40	33.40	33.40	33.40	33.40	28.70	24.90
"TRU-FLO" FORM TAP	3	2B	0		19001	33.40	33.40	33.40	33.40	33.40	33.40	28.70	24.90
SOLID CARBIDE / HAND	2	2B	2	41579	41580	96.90	92.40	84.60	83.10	79.70	76.60	72.30	68.70
GAGE - Taperlock Style		2B		23003		98.70							
GAGE - Taperlock Style		3B		23004		98.70							
GAGE - Reversible Style		2B		24194		126.60							
GAGE - Reversible Style		3B		24195		126.60							
GAGE - Ring-Go		2A		23350		137.30							
GAGE - Ring-Go		3A		23351		137.30							
GAGE - Ring-NoGo		2A		23352		137.30							
GAGE - Ring-NoGo		3A		23353		137.30							
GAGE - L.H. Taperlock Style		2B		22000		189.00							
GAGE - L.H. Taperlock Style		3B		22001		189.00							
GAGE - L.H. Reversible Style		2B		22002		234.00							
GAGE - L.H. Reversible Style		3B		22003		234.00							
<b>#1-56 NS</b>						<i>Recommended Hole Size based on 75% Thread = .0559"</i>							
SPIRAL POINT	1	3B	0	15020		64.40	62.00	59.50	41.80	31.40	25.50	21.00	19.10
<b>#1-64 NC</b>						<i>Recommended Hole Size Based on TRU-FLO at 65% Thread = .0661"</i>							
"TRU-FLO" FORM TAP	2	3B	0		19002	32.10	32.10	32.10	32.10	32.10	32.10	27.30	23.50
"TRU-FLO" FORM TAP	3	2B	0		19003	32.10	32.10	32.10	32.10	32.10	32.10	27.30	23.50
GAGE - Taperlock Style		2B		23008		98.70							
GAGE - Taperlock Style		3B		23009		98.70							
GAGE - Reversible Style		2B		24199		126.60							
GAGE - Reversible Style		3B		24200		126.60							
GAGE - Ring-Go		2A		23356		125.30							
GAGE - Ring-Go		3A		23357		125.30							
GAGE - Ring-NoGo		2A		23358		125.30							
GAGE - Ring-NoGo		3A		23359		125.30							
GAGE - L.H. Taperlock Style		2B		22004		189.00							
GAGE - L.H. Taperlock Style		3B		22005		189.00							
GAGE - L.H. Reversible Style		2B		22006		234.00							
GAGE - L.H. Reversible Style		3B		22007		234.00							
<b>#1-72 NF</b>						<i>Recommended Hole Size Based on TRU-FLO at 65% Thread = .0669"</i>							
"TRU-FLO" FORM TAP	2	3B	0		19004	32.10	32.10	32.10	32.10	32.10	32.10	27.30	23.50
"TRU-FLO" FORM TAP	3	2B	0		19005	32.10	32.10	32.10	32.10	32.10	32.10	27.30	23.50
GAGE - Taperlock Style		2B		23013		98.70							
GAGE - Taperlock Style		3B		23014		98.70							
GAGE - Reversible Style		2B		24204		126.60							

- The suggested tap drill sizes shown are reference values, and depending on specific tapping requirements and conditions, may have to be altered.
- North American Tool Corporation assumes no responsibility or liability of any kind as a result of the selection of tap drill sizes from this catalog.
- GAGE PRICES SHOWN are for 'Double-End with Handle' gages, except where specified. Contact North American Tool for pricing on single gage members, handles, and special gages to your specifications. Truncated thread setting plug gages are available from stock.
- Note: For Unified, Metric and Pipe EXTENSION taps, S.T.I. taps and gage sizes, or SPECIAL taps NOT LISTED, please contact our Customer Service Dept.
- FOR QUESTIONS, SIZES OR PRICES NOT LISTED, PLEASE CONTACT OUR CUSTOMER SERVICE DEPT.



**North American Tool**

"In The Pursuit of Perfection"



For tap standards and dimensions,  
see 'Tables for Tap Dimensions'  
on pages 122-131.

# POPULAR SPECIAL: TAPS, DIES & GAGES

SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>#1-72 NF</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - Reversible Style		3B		24205		126.60							
GAGE - Ring-Go		2A		23362		125.30							
GAGE - Ring-Go		3A		23363		125.30							
GAGE - Ring-NoGo		2A		23364		125.30							
GAGE - Ring-NoGo		3A		23365		125.30							
GAGE - L.H. Taperlock Style		2B		22008		189.00							
GAGE - L.H. Taperlock Style		3B		22009		189.00							
GAGE - L.H. Reversible Style		2B		22010		234.00							
GAGE - L.H. Reversible Style		3B		22011		234.00							
<b>#2-56 NC</b>					<i>Recommended Hole Size based on 75% Thread = .0689" TRU-FLO at 65% Thread = .0781"</i>								
L.H. HAND TAP	2	2B	2	15038	15039	62.70	58.70	57.00	40.90	29.60	24.00	19.10	17.60
L H. SPIRAL POINT	2	2B	2	15036		64.30	60.20	58.50	42.30	31.10	25.60	20.50	19.30
SPIRAL POINT	3		2	17734		88.30	64.10	60.40	44.10	32.60	26.60	21.20	19.80
HAND TAP	4		2	17763	17764	86.50	62.40	59.00	42.50	30.90	25.10	19.70	18.90
SPIRAL POINT	4		2	17735		88.30	64.10	60.40	44.10	32.60	26.60	21.20	20.30
SPIRAL POINT	5		2	17668		88.30	64.10	60.40	44.10	32.60	26.60	21.20	20.30
SPIRAL POINT +.003	7		2	17691		88.30	64.10	60.40	44.10	32.60	26.60	21.20	20.30
"TRU-FLO" FORM TAP	2	3B	0		19006	31.30	31.30	31.30	31.30	31.30	31.30	26.50	22.70
"TRU-FLO" FORM TAP	3	2B	0		19007	31.30	31.30	31.30	31.30	31.30	31.30	26.50	22.70
SOLID CARBIDE / HAND	2	2B	2	41536	41537	90.80	86.20	80.90	76.30	73.20	69.60	65.90	65.40
SOLID CARBIDE / SP PT	2	2B	2	41538		93.90	89.40	84.00	79.40	76.30	72.80	69.20	68.50
GAGE - Taperlock Style		2B		23018		96.00							
GAGE - Taperlock Style		3B		23019		96.00							
GAGE - Reversible Style		2B		24209		126.60							
GAGE - Reversible Style		3B		24210		126.60							
GAGE - Ring-Go		2A		23368		119.90							
GAGE - Ring-Go		3A		23369		119.90							
GAGE - Ring-NoGo		2A		23370		119.90							
GAGE - Ring-NoGo		3A		23371		119.90							
GAGE - STI Plug Taperlock		2B		24597		127.90							
GAGE - STI Plug Taperlock		3B		24598		127.90							
GAGE - L.H. Taperlock Style		2B		22012		189.00							
GAGE - L.H. Taperlock Style		3B		22013		189.00							
GAGE - L.H. Reversible Style		2B		22014		234.00							
GAGE - L.H. Reversible Style		3B		22015		234.00							
GAGE - L.H. Ring-Go		2A		22016		244.50							
GAGE - L.H. Ring-NoGo		2A		22017		244.50							
GAGE - L.H. Ring-Go		3A		22018		244.50							
GAGE - L.H. Ring-NoGo		3A		22019		244.50							
<b>#2-64 NF</b>					<i>Recommended Hole Size Based on TRU-FLO at 65% Thread = .0791"</i>								
"TRU-FLO" FORM TAP	2	3B	0		19008	31.31	31.30	31.30	31.30	31.30	31.30	26.50	22.70
"TRU-FLO" FORM TAP	3	2B	0		19009	31.30	31.30	31.30	31.30	31.30	31.30	26.50	22.70
GAGE - Taperlock Style		2B		23023		96.00							
GAGE - Taperlock Style		3B		23024		96.00							
GAGE - Reversible Style		2B		24214		126.60							
GAGE - Reversible Style		3B		24215		126.60							
GAGE - Ring-Go		2A		23374		119.90							
GAGE - Ring-Go		3A		23375		119.90							
GAGE - Ring-NoGo		2A		23376		119.90							
GAGE - Ring-NoGo		3A		23377		119.90							

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# POPULAR SPECIAL: TAPS, DIES & GAGES

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on pages 122-131.

SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>#2-64 NF</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - L.H. Taperlock Style		2B		22020		189.00							
GAGE - L.H. Taperlock Style		3B		22021		189.00							
GAGE - L.H. Reversible Style		2B		22022		234.00							
GAGE - L.H. Reversible Style		3B		22023		234.00							
GAGE - L.H. Ring-Go		2A		22024		244.50							
GAGE - L.H. Ring-NoGo		2A		22025		244.50							
GAGE - L.H. Ring-Go		3A		22026		244.50							
GAGE - L.H. Ring-NoGo		3A		22027		244.50							

<b>#3-48 NC</b>					<i>Recommended Hole Size based on 75% Thread = .079" TRU-FLO at 65% Thread = .0898"</i>								
L.H. HAND TAP	2	2B	2	15050	15051	59.30	58.70	54.40	35.80	25.80	20.40	17.30	15.90
L.H. SPIRAL POINT	2	2B	2	15048		60.30	59.70	55.60	37.00	27.00	21.70	18.40	17.00
"TRU-FLO" FORM TAP	2	3B	0		19010	27.10	27.10	27.10	27.10	27.10	27.10	22.50	19.70
"TRU-FLO" FORM TAP	3	2B	0		19011	27.10	27.10	27.10	27.10	27.10	27.10	22.50	19.70
GAGE - Taperlock Style		2B		23028		90.60							
GAGE - Taperlock Style		3B		23029		90.60							
GAGE - Reversible Style		2B		24219		118.70							
GAGE - Reversible Style		3B		24220		118.70							
GAGE - Ring-Go		2A		23380		119.90							
GAGE - Ring-Go		3A		23381		119.90							
GAGE - Ring-NoGo		2A		23382		119.90							
GAGE - Ring-NoGo		3A		23383		119.90							
GAGE - STI Taperlock		2B		22028		99.00							
GAGE - STI Taperlock		3B		22029		99.00							
GAGE - L.H. Taperlock Style		2B		22030		180.00							
GAGE - L.H. Taperlock Style		3B		22031		180.00							
GAGE - L.H. Reversible Style		2B		22032		223.00							
GAGE - L.H. Reversible Style		3B		22033		223.00							
GAGE - L.H. Ring-Go		2A		22034		239.00							
GAGE - L.H. Ring-NoGo		2A		22035		239.00							
GAGE - L.H. Ring-Go		3A		22036		239.00							
GAGE - L.H. Ring-NoGo		3A		22037		239.00							

<b>#3-56 NF</b>					<i>Recommended Hole Size Based on TRU-FLO at 65% Thread = .0911"</i>								
"TRU-FLO" FORM TAP	2	3B	0		19012	27.10	27.10	27.10	27.10	27.10	27.10	22.50	19.70
"TRU-FLO" FORM TAP	3	2B	0		19013	27.10	27.10	27.10	27.10	27.10	27.10	22.50	19.70
GAGE - Taperlock Style		2B		23033		90.60							
GAGE - Taperlock Style		3B		23034		90.60							
GAGE - Reversible Style		2B		24224		118.70							
GAGE - Reversible Style		3B		24225		118.70							
GAGE - Ring-Go		2A		23386		119.90							
GAGE - Ring-Go		3A		23387		119.90							
GAGE - Ring-NoGo		2A		23388		119.90							
GAGE - Ring-NoGo		3A		23389		119.90							
GAGE - STI Taperlock		2B		22038		99.00							
GAGE - STI Taperlock		3B		22039		99.00							
GAGE - L.H. Taperlock Style		2B		22040		180.00							
GAGE - L.H. Taperlock Style		3B		22041		180.00							
GAGE - L.H. Reversible Style		2B		22042		223.00							
GAGE - L.H. Reversible Style		3B		22043		223.00							
GAGE - L.H. Ring-Go		2A		22044		267.00							
GAGE - L.H. Ring-NoGo		2A		22045		267.00							

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# POPULAR SPECIAL: TAPS, DIES & GAGES

SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>#3-56 NF</b>						<i>See Previous Page for Recommended Hole Size</i>							
GAGE - L.H. Ring-Go		3A		22046		267.00							
GAGE - L.H. Ring-NoGo		3A		22047		267.00							
<b>#4-32 NS</b>						<i>Recommended Hole Size based on 75% Thread = .0817"</i>							
HAND TAP	2	2B	3	15062	15063	49.60	48.20	47.00	32.50	25.80	19.30	15.30	13.80
<b>#4-36 NS</b>						<i>Recommended Hole Size based on 75% Thread = .0850"</i>							
HAND TAP	2	2B	3	17946	17947	49.70	48.90	47.70	39.00	33.90	27.60	24.80	20.30
<b>#4-40 NC</b>						<i>Recommended Hole Size based on 75% Thread = .0878" for STI = .1200" / TRU-FLO at 65% Thread = .1009"</i>							
FAST SPIRAL FLUTE	3		2	17672	17673	63.40	59.40	57.20	37.90	27.30	21.90	18.60	16.80
L.H. HAND TAP	2	2B	3	15074	15075	25.50	24.90	24.40	24.20	23.70	17.80	15.00	13.60
L.H. SPIRAL POINT	2	2B	2	15072		26.60	25.80	25.50	25.30	25.00	18.90	16.30	14.80
HAND TAP	3		3	15080	15081	49.80	49.20	42.90	26.60	23.70	15.20	11.50	10.50
SPIRAL POINT	3		2	15078		51.10	50.20	44.10	27.90	25.00	16.50	12.60	11.80
SPIRAL POINT	4		2	17910		51.10	50.20	44.10	27.90	25.00	16.50	12.60	11.80
SPIRAL POINT	5		2	17593		51.10	50.20	44.10	27.90	25.00	16.50	12.60	11.80
+.003 SPIRAL POINT	7		2	17670		52.70	51.80	50.30	35.10	25.00	18.90	16.30	14.80
+.005 SPIRAL POINT	11	PLATING	2	17557		52.70	51.80	50.30	35.10	25.00	18.90	16.30	14.80
"TRU-FLO" FORM TAP	3	3B	0	19014	19015	24.20	24.20	24.20	24.20	24.20	24.20	19.50	15.20
"TRU-FLO" FORM TAP	5	2B	0	19016	19017	24.20	24.20	24.20	24.20	24.20	24.20	19.50	15.20
SOLID CARBIDE / HAND	2	2B	2	41007	41008	84.60	80.20	74.90	70.30	67.10	63.50	59.80	59.30
SOLID CARBIDE / SP PT	2	2B	2	41009		87.70	83.20	78.10	73.40	70.30	66.90	63.10	62.40
"COST CUTTER" DRILL/TAP	2	2B	2	29000		12.90	12.90	12.90	12.90	12.90	12.90	12.90	12.90
TIN COAT/SP PT	4		2	50034		52.30	51.50	45.20	29.00	26.20	17.60	13.80	12.90
STI HAND TAP	1	3B	3	17794	17795	17.30	17.30	17.30	17.30	13.80	12.60	11.80	10.60
STI SPIRAL POINT	1	3B	2	17796		18.60	18.60	18.60	18.60	15.00	13.70	12.80	11.70
STI HAND TAP	2	2B	3	17798	17799	17.30	17.30	17.30	17.30	13.80	12.60	11.80	10.60
STI SPIRAL POINT	2	2B	2	17800		18.60	18.60	18.60	18.60	15.00	13.70	12.80	11.70
GAGE - Taperlock Style		2B		23038		90.60							
GAGE - Taperlock Style		3B		23039		90.60							
GAGE - Reversible Style		2B		24229		118.70							
GAGE - Reversible Style		3B		24230		118.70							
GAGE - Ring-Go		2A		23392		106.70							
GAGE - Ring-Go		3A		23393		106.70							
GAGE - Ring-NoGo		2A		23394		106.70							
GAGE - Ring-NoGo		3A		23395		106.70							
GAGE - STI Plug Taperlock		2B		24617		122.80							
GAGE - STI Plug Taperlock		3B		24618		122.80							
GAGE - L.H. Taperlock Style		2B		22048		180.00							
GAGE - L.H. Taperlock Style		3B		22049		180.00							
GAGE - L.H. Reversible Style		2B		22050		223.00							
GAGE - L.H. Reversible Style		3B		22051		223.00							
GAGE - L.H. Ring-Go		2A		22052		239.00							
GAGE - L.H. Ring-NoGo		2A		22053		239.00							
GAGE - L.H. Ring-Go		3A		22054		239.00							
GAGE - L.H. Ring-NoGo		3A		22055		239.00							
<b>#4-48 NF</b>						<i>Recommended Hole Size based on 75% Thread = .092" TRU-FLO at 65% Thread = .1028"</i>							
L.H. HAND TAP	2	2B	3	15086	15087	49.70	49.20	48.30	33.70	23.70	17.80	15.00	13.60
L.H. SPIRAL POINT	2	2B	2	15083		51.00	50.30	49.50	35.00	25.00	18.90	16.30	14.80

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<b>#4-48 NF</b>					<i>See Previous Page for Recommended Hole Size</i>								
"TRU-FLO" FORM TAP	3	3B	0	19018	19019	24.20	24.20	24.20	24.20	24.20	24.20	19.50	15.20
"TRU-FLO" FORM TAP	5	2B	0	19020	19021	24.20	24.20	24.20	24.20	24.20	24.20	19.50	15.20
SOLID CARBIDE / HAND	2	2B	2	41017	41018	84.60	80.20	74.90	70.30	67.10	63.50	59.80	59.30
SOLID CARBIDE / SP PT	2	2B	2	41019		87.70	83.20	78.10	73.40	70.30	66.90	63.10	62.40
GAGE - Taperlock Style		2B		23043		90.60							
GAGE - Taperlock Style		3B		23044		90.60							
GAGE - Reversible Style		2B		24234		118.70							
GAGE - Reversible Style		3B		24235		118.70							
GAGE - Ring-Go		2A		23398		106.70							
GAGE - Ring-Go		3A		23399		106.70							
GAGE - Ring-NoGo		2A		23400		106.70							
GAGE - Ring-NoGo		3A		23401		106.70							
GAGE - STI Plug Taperlock		2B		24622		122.80							
GAGE - STI Plug Taperlock		3B		24623		122.80							
GAGE - L.H. Taperlock Style		2B		22056		180.00							
GAGE - L.H. Taperlock Style		3B		22057		180.00							
GAGE - L.H. Reversible Style		2B		22058		223.00							
GAGE - L.H. Reversible Style		3B		22059		223.00							
GAGE - L.H. Ring-Go		2A		22060		239.00							
GAGE - L.H. Ring-NoGo		2A		22061		239.00							
GAGE - L.H. Ring-Go		3A		22062		239.00							
GAGE - L.H. Ring-NoGo		3A		22063		239.00							
<b>#5-40 NC</b>					<i>Recommended Hole Size based on 75% Thread = .1008" TRU-FLO at 65% Thread = .1139"</i>								
L.H. HAND TAP	2	3B	3	15098	15099	49.70	49.20	48.30	33.70	23.70	17.80	15.00	13.60
L.H. SPIRAL POINT	2	3B	2	15096		51.00	50.30	49.50	35.00	25.00	18.90	16.30	14.80
SPIRAL POINT	5		2	17697		51.00	50.30	49.50	35.00	25.00	18.90	16.30	14.80
+.003 SPIRAL POINT	7		2	17954		55.10	55.10	55.10	37.00	25.00	20.20	17.00	16.50
+.005 SPIRAL POINT	11	PLATING	2	17675		51.00	50.30	49.50	35.00	25.00	18.90	16.30	14.80
"TRU-FLO" FORM TAP	3	3B	0	19022	19023	24.20	24.20	24.20	24.20	24.20	24.20	19.50	15.20
"TRU-FLO" FORM TAP	5	2B	0	19024	19025	24.20	24.20	24.20	24.20	24.20	24.20	19.50	15.20
SOLID CARBIDE / HAND	2	3B	3	41034	41035	82.30	78.50	74.10	70.00	67.00	63.30	59.70	59.20
SOLID CARBIDE / SP PT	2	3B	2	41032		85.60	81.70	77.30	73.20	70.10	66.50	63.00	62.30
TIN COAT/SP PT	5		2	50029		54.00	51.60	50.80	36.20	26.20	20.10	17.40	15.90
R.H. ROUND DIE 13/16"OD				13020		25.60	25.60	25.60	24.40	23.30	21.30	20.50	20.40
GAGE - Taperlock Style		2B		23048		82.60							
GAGE - Taperlock Style		3B		23049		82.60							
GAGE - Reversible Style		2B		24239		105.30							
GAGE - Reversible Style		3B		24240		105.30							
GAGE - Ring-Go		2A		23404		97.40							
GAGE - Ring-Go		3A		23405		97.40							
GAGE - Ring-NoGo		2A		23406		97.40							
GAGE - Ring-NoGo		3A		23407		97.40							
GAGE - STI Plug Taperlock		2B		24627		122.80							
GAGE - STI Plug Taperlock		3B		24628		122.80							
GAGE - L.H. Taperlock Style		2B		22064		153.00							
GAGE - L.H. Taperlock Style		3B		22065		153.00							
GAGE - L.H. Reversible Style		2B		22066		189.00							
GAGE - L.H. Reversible Style		3B		22067		189.00							
GAGE - L.H. Ring-Go		2A		22068		206.00							
GAGE - L.H. Ring-NoGo		2A		22069		206.00							
GAGE - L.H. Ring-Go		3A		22070		206.00							
GAGE - L.H. Ring-NoGo		3A		22071		206.00							

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>#5-44 NF</b>						<i>Recommended Hole Size Based on TRU-FLO at 65% Thread = .1150"</i>							
"TRU-FLO" FORM TAP	3	3B	0	19026	19027	24.20	24.20	24.20	24.20	24.20	24.20	19.50	15.20
"TRU-FLO" FORM TAP	5	2B	0	19028	19029	24.20	24.20	24.20	24.20	24.20	24.20	19.50	15.20
GAGE - Taperlock Style		2B		23053		82.60							
GAGE - Taperlock Style		3B		23054		82.60							
GAGE - Reversible Style		2B		24244		105.30							
GAGE - Reversible Style		3B		24245		105.30							
GAGE - Ring-Go		2A		23410		97.40							
GAGE - Ring-Go		3A		23411		97.40							
GAGE - Ring-NoGo		2A		23412		97.40							
GAGE - Ring-NoGo		3A		23413		97.40							
GAGE - L.H. Taperlock Style		2B		22072		166.00							
GAGE - L.H. Taperlock Style		3B		22073		166.00							
GAGE - L.H. Reversible Style		2B		22074		207.00							
GAGE - L.H. Reversible Style		3B		22075		207.00							
GAGE - L.H. Ring-Go		2A		22076		244.50							
GAGE - L.H. Ring-NoGo		2A		22077		244.50							
GAGE - L.H. Ring-Go		3A		22078		244.50							
GAGE - L.H. Ring-NoGo		3A		22079		244.50							
<b>#6-32 NC</b>						<i>Recommended Hole Size based on 75% Thread = .1077" for STI = .1495" / TRU-FLO at 65% Thread = .1242"</i>							
L.H. HAND TAP	3	2B	3	15110	15111	7.20	7.20	7.20	7.20	7.20	7.20	7.20	7.20
L.H. SPIRAL POINT	3	2B	2	15108		14.30	14.30	14.30	14.30	14.30	14.30	11.90	11.70
HAND TAP	5		3	15122	15123	40.80	39.50	38.90	23.90	16.80	13.40	11.10	10.10
SPIRAL POINT	5		2	15120		41.80	40.60	40.00	25.00	17.80	14.30	11.90	11.20
+.003 HAND TAP	7		3	15128	15129	8.40	8.40	8.40	8.40	8.40	7.50	7.50	7.50
+.003 SPIRAL POINT	7		2	15126		9.40	9.40	9.40	9.40	9.40	8.60	8.60	8.60
+.005 HAND TAP	11	PLATING	3	15134	15135	7.50	7.50	7.50	7.50	6.80	5.60	5.30	5.30
+.005 SPIRAL POINT	11	PLATING	2	15132		8.30	8.30	8.30	8.30	7.50	6.30	6.30	6.30
4" EXT SPIRAL POINT	3	2B	2	17605		25.20	25.20	25.20	25.20	25.20	25.20	25.20	21.80
6" EXTENSION HAND TAP	3	2B	3	15140	15141	23.20	23.20	23.20	23.20	23.20	23.20	23.20	20.70
6" EXT SPIRAL POINT	3	2B	2	15138		24.20	24.20	24.20	24.20	24.20	24.20	24.20	21.80
"TRU-FLO" FORM TAP	3	3B	0	19030	19031	22.20	22.20	22.20	22.20	22.20	22.20	17.50	13.40
"TRU-FLO" FORM TAP	5	2B	0	19032	19033	22.20	22.20	22.20	22.20	22.20	22.20	17.50	13.40
"TRU-FLO" FORM TAP	10	PLATING	0	19034	19035	96.50	91.60	61.90	39.10	28.80	22.20	17.50	13.40
SOLID CARBIDE / HAND	3	2B	3	41074	41075	82.30	78.50	74.10	70.00	67.00	63.30	59.70	59.20
SOLID CARBIDE / SP PT	3	2B	2	41072		83.90	80.10	75.70	71.60	68.50	64.90	61.50	60.70
"COST CUTTER" DRILL/TAP	3	2B	2	29004		12.70	12.70	12.70	12.70	12.70	12.70	12.70	12.70
STI HAND TAP	2	3B	3	17802	17803	17.30	17.30	17.30	17.30	13.80	12.60	11.80	10.60
STI SPIRAL POINT	2	3B	2	17804		18.60	18.60	18.60	18.60	15.00	13.70	12.80	11.70
STI HAND TAP	3	2B	3	17806	17807	17.30	17.30	17.30	17.30	13.80	12.60	11.80	10.60
STI SPIRAL POINT	3	2B	2	17808		18.60	18.60	18.60	18.60	15.00	13.70	12.80	11.70
R.H. ROUND DIE 1"OD				13022		31.70	31.70	31.70	27.00	25.70	23.50	22.70	22.50
L.H. ROUND DIE 1"OD				13023		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
GAGE - Taperlock Style		2B		23058		82.60							
GAGE - Taperlock Style		3B		23059		82.60							
GAGE - Reversible Style		2B		24249		105.30							
GAGE - Reversible Style		3B		24250		105.30							
GAGE - Ring-Go		2A		23416		97.40							
GAGE - Ring-Go		3A		23417		97.40							
GAGE - Ring-NoGo		2A		23418		97.40							
GAGE - Ring-NoGo		3A		23419		97.40							
GAGE - STI Plug Taperlock		2B		24637		122.80							

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# POPULAR SPECIAL: TAPS, DIES & GAGES

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>#6-32 NC</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - STI Plug Taperlock		3B		24638		122.80							
GAGE - L.H. Taperlock Style		2B		22080		144.00							
GAGE - L.H. Taperlock Style		3B		22081		144.00							
GAGE - L.H. Reversible Style		2B		22082		178.00							
GAGE - L.H. Reversible Style		3B		22083		178.00							
GAGE - L.H. Ring-Go		2A		22084		206.00							
GAGE - L.H. Ring-NoGo		2A		22085		206.00							
GAGE - L.H. Ring-Go		3A		22086		206.00							
GAGE - L.H. Ring-NoGo		3A		22087		206.00							
<b>#6-40 NF</b>					<i>Recommended Hole Size based on 75% Thread = .1138" TRU-FLO at 65% Thread = .1269"</i>								
L.H. HAND TAP	2	3B	3	15146	15147	30.60	29.80	29.10	22.00	16.80	12.90	11.10	10.10
SPIRAL POINT	3		2	15150		40.40	39.10	38.50	25.00	17.80	14.10	11.90	11.20
"TRU-FLO" FORM TAP	3	3B	0	19036	19037	22.20	22.20	22.20	22.20	22.20	22.20	17.50	13.40
"TRU-FLO" FORM TAP	5	2B	0	19038	19039	22.20	22.20	22.20	22.20	22.20	22.20	17.50	13.40
SOLID CARBIDE / HAND	2	3B	3	41092	41093	82.30	78.50	74.10	70.00	67.00	63.30	59.70	59.20
R.H. ROUND DIE 1"OD				13024		31.70	31.70	31.70	27.00	25.70	23.50	22.70	22.50
L.H. ROUND DIE 1"OD				13025		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
GAGE - Taperlock Style		2B		23063		82.60							
GAGE - Taperlock Style		3B		23064		82.60							
GAGE - Reversible Style		2B		24254		105.30							
GAGE - Reversible Style		3B		24255		105.30							
GAGE - Ring-Go		2A		23422		97.40							
GAGE - Ring-Go		3A		23423		97.40							
GAGE - Ring-NoGo		2A		23424		97.40							
GAGE - Ring-NoGo		3A		23425		97.40							
GAGE - STI Plug Taperlock		2B		24642		122.80							
GAGE - STI Plug Taperlock		3B		24643		122.80							
GAGE - L.H. Taperlock Style		2B		22088		153.00							
GAGE - L.H. Taperlock Style		3B		22089		153.00							
GAGE - L.H. Reversible Style		2B		22090		189.00							
GAGE - L.H. Reversible Style		3B		22091		189.00							
GAGE - L.H. Ring-Go		2A		22092		211.50							
GAGE - L.H. Ring-NoGo		2A		22093		211.50							
GAGE - L.H. Ring-Go		3A		22094		211.50							
GAGE - L.H. Ring-NoGo		3A		22095		211.50							
<b>#6-48 NS</b>					<i>Recommended Hole Size based on 75% Thread = .118"</i>								
HAND TAP	2	3B	3	15158	15159	40.80	39.50	38.90	23.90	16.80	13.40	11.10	10.10
SPIRAL POINT	2	3B	2	15156		41.80	40.60	40.00	25.00	17.80	14.30	11.90	11.20
R.H. ROUND DIE 1"OD				13026		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
<b>#8-24 NS</b>					<i>Recommended Hole Size based on 75% Thread = .123"</i>								
HAND TAP	3	3B	4	15164	15165	40.80	39.50	38.90	23.90	16.80	13.40	11.10	10.10
<b>#8-32 NC</b>					<i>Recommended Hole Size based on 75% Thread = .1337" for STI = .1770" / TRU-FLO at 65% Thread = .1502"</i>								
L.H. HAND TAP	3	2B	4	15170	15171	7.20	7.20	7.20	7.20	7.20	6.50	6.50	6.50
L.H. SPIRAL POINT	3	2B	2	15168		41.80	40.60	40.00	25.00	17.80	14.30	11.90	11.20
HAND TAP	5		4	15182	15183	40.80	39.50	38.90	23.90	16.80	13.40	11.10	10.10
SPIRAL POINT	5		2	15180		41.80	40.60	40.00	25.00	17.80	14.30	11.90	11.20
+ .003 HAND TAP	7		4	15188	15189	8.40	8.40	8.40	8.40	8.40	7.50	7.50	7.50

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>#8-32 NC</b>				<i>See Previous Page for Recommended Hole Size</i>									
+ .003 SPIRAL POINT	7		2	<b>15186</b>		10.20	10.20	10.20	10.20	10.20	9.20	9.20	9.20
+ .005 HAND TAP	11	PLATING	4	<b>15194</b>	<b>15195</b>	7.80	7.80	7.80	7.80	7.30	5.90	5.90	5.90
+ .005 SPIRAL POINT	11	PLATING	2	<b>15192</b>		8.80	8.80	8.80	8.80	8.00	6.60	6.60	6.60
4" EXT SPIRAL POINT	3	2B	2	<b>17582</b>		25.20	25.20	25.20	25.20	25.20	25.20	25.20	21.80
6" EXTENSION HAND TAP	3	2B	4	<b>15200</b>	<b>15201</b>	23.20	23.20	23.20	23.20	23.20	23.20	23.20	20.70
6" EXT SPIRAL POINT	3	2B	2	<b>15198</b>		24.20	24.20	24.20	24.20	24.20	24.20	24.20	21.80
"TRU-FLO" FORM TAP	3	3B	0	<b>19040</b>	<b>19041</b>	22.20	22.20	22.20	22.20	22.20	22.20	17.50	13.40
"TRU-FLO" FORM TAP	5	2B	0	<b>19042</b>	<b>19043</b>	22.20	22.20	22.20	22.20	22.20	22.20	17.50	13.40
"TRU-FLO" FORM TAP	10	PLATING	0	<b>19044</b>	<b>19045</b>	96.50	91.60	61.90	39.10	28.80	22.20	17.50	13.40
SOLID CARBIDE / HAND	3	2B	4	<b>41125</b>	<b>41126</b>	87.30	81.10	78.40	72.30	70.80	68.40	67.00	66.20
SOLID CARBIDE / SP PT	3	2B	2	<b>41120</b>		90.70	84.50	81.70	75.50	74.10	71.60	70.10	69.60
"COST CUTTER" DRILL/TAP	3	2B	2	<b>29006</b>		12.70	12.70	12.70	12.70	12.70	12.70	12.70	12.70
TIN COAT/SP PT	5		2	<b>50000</b>		43.70	42.50	41.90	26.80	19.80	16.40	13.80	12.90
STI HAND TAP	2	3B	3	<b>17810</b>	<b>17811</b>	18.00	18.00	18.00	18.00	14.20	12.90	12.40	11.30
STI SPIRAL POINT	2	3B	2	<b>17812</b>		19.30	19.30	19.30	19.30	15.20	14.10	13.40	12.40
STI HAND TAP	3	2B	3	<b>17814</b>	<b>17815</b>	18.00	18.00	18.00	18.00	14.20	12.90	12.40	11.30
STI SPIRAL POINT	3	2B	2	<b>17816</b>		19.30	19.30	19.30	19.30	15.20	14.10	13.40	12.40
R.H. ROUND DIE 1"OD				<b>13028</b>		31.70	31.70	31.70	27.00	25.70	23.50	22.70	22.50
L.H. ROUND DIE 1"OD				<b>13029</b>		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
GAGE - Taperlock Style		2B		<b>23068</b>		82.60							
GAGE - Taperlock Style		3B		<b>23069</b>		82.60							
GAGE - Reversible Style		2B		<b>24259</b>		105.30							
GAGE - Reversible Style		3B		<b>24260</b>		105.30							
GAGE - Ring-Go		2A		<b>23428</b>		96.00							
GAGE - Ring-Go		3A		<b>23429</b>		96.00							
GAGE - Ring-NoGo		2A		<b>23430</b>		96.00							
GAGE - Ring-NoGo		3A		<b>23431</b>		96.00							
GAGE - STI Plug Taperlock		2B		<b>24647</b>		114.60							
GAGE - STI Plug Taperlock		3B		<b>24648</b>		114.60							
GAGE - L.H. Taperlock Style		2B		<b>22096</b>		144.00							
GAGE - L.H. Taperlock Style		3B		<b>22097</b>		144.00							
GAGE - L.H. Reversible Style		2B		<b>22098</b>		178.00							
GAGE - L.H. Reversible Style		3B		<b>22099</b>		178.00							
GAGE - L.H. Ring-Go		2A		<b>22100</b>		189.00							
GAGE - L.H. Ring-NoGo		2A		<b>22101</b>		189.00							
GAGE - L.H. Ring-Go		3A		<b>22102</b>		189.00							
GAGE - L.H. Ring-NoGo		3A		<b>22103</b>		189.00							
<b>#8-36 NF</b>				<i>Recommended Hole Size based on 75% Thread = .137" TRU-FLO at 65% Thread = .1517"</i>									
L.H. HAND TAP	2	3B	4	<b>15206</b>	<b>15207</b>	40.80	39.50	38.90	23.90	16.80	13.40	11.10	10.10
L.H. SPIRAL POINT	2	3B	2	<b>15204</b>		41.80	40.60	40.00	25.00	17.80	14.30	11.90	11.20
"TRU-FLO" FORM TAP	3	3B	0	<b>19046</b>	<b>19047</b>	22.20	22.20	22.20	22.20	22.20	22.20	17.50	13.40
"TRU-FLO" FORM TAP	5	2B	0	<b>19048</b>	<b>19049</b>	22.20	22.20	22.20	22.20	22.20	22.20	17.50	13.40
SOLID CARBIDE / HAND	2	3B	4	<b>41147</b>	<b>41148</b>	87.30	81.10	78.40	72.30	70.80	68.40	67.00	66.20
GAGE - Taperlock Style		2B		<b>23073</b>		82.60							
GAGE - Taperlock Style		3B		<b>23074</b>		82.60							
GAGE - Reversible Style		2B		<b>24264</b>		105.30							
GAGE - Reversible Style		3B		<b>24265</b>		105.30							
GAGE - Ring-Go		2A		<b>23434</b>		96.00							
GAGE - Ring-Go		3A		<b>23435</b>		96.00							
GAGE - Ring-NoGo		2A		<b>23436</b>		96.00							
GAGE - Ring-NoGo		3A		<b>23437</b>		96.00							
GAGE - STI Plug Taperlock		2B		<b>24652</b>		114.60							

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>#8-36 NF</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - STI Plug Taperlock		3B		24653		114.60							
GAGE - L.H. Taperlock Style		2B		22104		213.00							
GAGE - L.H. Taperlock Style		3B		22105		213.00							
GAGE - L.H. Reversible Style		2B		22106		207.00							
GAGE - L.H. Reversible Style		3B		22107		207.00							
GAGE - L.H. Ring-Go		2A		22108		206.00							
GAGE - L.H. Ring-NoGo		2A		22109		206.00							
GAGE - L.H. Ring-Go		3A		22110		206.00							
GAGE - L.H. Ring-NoGo		3A		22111		206.00							
<b>#8-40 NS</b>					<i>Recommended Hole Size based on 75% Thread = .1398"</i>								
HAND TAP	2	3B	4	15218	15219	40.80	39.50	38.90	23.90	16.80	13.40	11.10	10.10
SPIRAL POINT	2	3B	2	15216		41.80	40.60	40.00	25.00	17.80	14.30	11.90	11.20
R.H. ROUND DIE 1"OD				13032		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
<b>#10-24 NC</b>					<i>Recommended Hole Size based on 75% Thread = .149" for STI = .2055" / TRUFLO at 65% Thread = .1716"</i>								
L.H. HAND TAP	3	3B	4	15230	15231	7.20	7.20	7.20	7.20	7.20	6.50	6.50	6.50
L.H. SPIRAL POINT	3	3B	2	15228		41.80	40.60	40.00	25.00	17.80	14.30	11.90	11.20
HAND TAP	5		4	15236	15237	40.80	39.50	38.90	23.90	16.80	13.40	11.10	10.10
SPIRAL POINT	5		2	15234		41.80	40.60	40.00	25.00	17.80	14.30	11.90	11.20
+ .003 HAND TAP	7		4	15242	15243	9.10	9.10	9.10	9.10	9.10	8.40	8.40	8.40
+ .003 SPIRAL POINT	7		2	15240		10.30	10.30	10.30	10.30	10.30	9.70	9.70	9.70
+ .005 HAND TAP	11	PLATING	4	15248	15249	7.80	7.80	7.80	7.80	7.30	5.90	5.90	5.90
+ .005 SPIRAL POINT	11	PLATING	2	15246		8.80	8.80	8.80	8.80	7.90	6.60	6.60	6.60
DOUBLE LEAD	3	3B	4	15254	15255	107.80	84.00	57.00	35.40	25.30	20.30	16.40	14.70
4" EXT SPIRAL POINT	3	3B	2	17606		25.20	25.20	25.20	25.20	25.20	25.20	25.20	21.80
6" EXTENSION HAND TAP	3	3B	4	15260	15261	23.20	23.20	23.20	23.20	23.20	23.20	23.20	20.70
6" EXT SPIRAL POINT	3	3B	2	15258		24.20	24.20	24.20	24.20	24.20	24.20	24.20	21.80
"TRU-FLO" FORM TAP	4	3B	0	19050	19051	22.20	22.20	22.20	22.20	22.20	22.20	17.50	13.40
"TRU-FLO" FORM TAP	6	2B	0	19052	19053	22.20	22.20	22.20	22.20	22.20	22.20	17.50	13.40
"TRU-FLO" FORM TAP	10	PLATING	0	19054	19055	96.50	91.60	61.90	39.10	28.80	22.20	17.50	13.40
SOLID CARBIDE / HAND	3	3B	4	41180	41181	96.60	88.80	82.00	74.70	73.10	72.30	67.90	67.20
SOLID CARBIDE / SP PT	3	3B	2	41175		102.60	94.80	88.00	80.70	78.80	78.20	73.80	73.20
"COST CUTTER" DRILL/TAP	3	3B	2	29008		12.70	12.70	12.70	12.70	12.70	12.70	12.70	12.70
STI HAND TAP	2	3B	3	17818	17819	18.60	18.60	18.60	18.60	14.40	13.00	12.90	12.50
STI SPIRAL POINT	2	3B	2	17820		19.80	19.80	19.80	19.80	15.50	14.30	14.20	13.60
STI HAND TAP	3	2B	3	17822	17823	18.60	18.60	18.60	18.60	14.40	13.00	12.90	12.50
STI SPIRAL POINT	3	2B	2	17824		19.80	19.80	19.80	19.80	15.50	14.30	14.20	13.60
R.H. ROUND DIE 1"OD				13036		31.70	31.70	31.70	27.00	25.70	23.50	22.70	22.50
L.H. ROUND DIE 1"OD				13037		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
GAGE - Taperlock Style		2B		23078		82.60							
GAGE - Taperlock Style		3B		23079		82.60							
GAGE - Reversible Style		2B		24269		106.70							
GAGE - Reversible Style		3B		24270		106.70							
GAGE - Ring-Go		2A		23440		96.00							
GAGE - Ring-Go		3A		23441		96.00							
GAGE - Ring-NoGo		2A		23442		96.00							
GAGE - Ring-NoGo		3A		23443		96.00							
GAGE - STI Plug Taperlock		2B		24657		114.60							
GAGE - STI Plug Taperlock		3B		24658		114.60							
GAGE - L.H. Taperlock Style		2B		22112		144.00							
GAGE - L.H. Taperlock Style		3B		22113		144.00							

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<b>#10-24 NC</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - L.H. Reversible Style		2B		22114		178.00							
GAGE - L.H. Reversible Style		3B		22115		178.00							
GAGE - L.H. Ring-Go		2A		22116		189.00							
GAGE - L.H. Ring-NoGo		2A		22117		189.00							
GAGE - L.H. Ring-Go		3A		22118		189.00							
GAGE - L.H. Ring-NoGo		3A		22119		189.00							
<b>#10-28 NS</b>					<i>Recommended Hole Size based on 75% Thread = .1553"</i>								
HAND TAP	3	3B	4	15266	15267	40.80	39.50	38.90	23.90	16.80	13.40	11.10	10.10
<b>#10-30 NS</b>					<i>Recommended Hole Size based on 75% Thread = .1574"</i>								
HAND TAP	3	3B	4	15272	15273	40.80	39.50	38.90	23.90	16.80	13.40	11.10	10.10
<b>#10-32 NF</b>					<i>Recommended Hole Size based on 75% Thread = .1597" for STI = .2031" / TRU-FLO at 65% Thread = .1762"</i>								
L.H. HAND TAP	3	2B	4	15278	15279	7.20	7.20	7.20	7.20	7.20	6.50	6.50	6.50
L.H. SPIRAL POINT	3	2B	2	15276		41.80	40.60	40.00	25.00	17.80	14.30	11.90	11.20
HAND TAP	4		4	17898	17899	40.80	39.50	38.90	23.90	16.80	13.40	11.10	10.10
SPIRAL POINT	4		2	15282		41.80	40.60	40.00	25.00	17.80	14.30	11.90	11.20
HAND TAP	5		4	15290	15291	40.80	39.50	38.90	23.90	16.80	13.40	11.10	10.10
SPIRAL POINT	5		2	15288		41.80	40.60	40.00	25.00	17.80	14.30	11.90	11.20
+.003 HAND TAP	7		4	15296	15297	9.10	9.10	9.10	9.10	9.10	8.40	8.40	8.40
+.003 SPIRAL POINT	7		2	15294		10.30	10.30	10.30	10.30	10.30	9.70	9.70	9.70
+.005 HAND TAP	11	PLATING	4	15302	15303	6.60	6.60	6.60	6.60	6.60	6.10	6.10	6.10
+.005 SPIRAL POINT	11	PLATING	2	15300		7.60	7.60	7.60	7.40	7.40	6.50	6.50	6.50
4" EXT SPIRAL POINT	3	2B	2	17583		25.20	25.20	25.20	25.20	25.20	25.20	25.20	21.80
6" EXTENSION HAND TAP	3	2B	4	15314	15315	23.20	23.20	23.20	23.20	23.20	23.20	23.20	20.70
6" EXT SPIRAL POINT	3	2B	2	15312		24.20	24.20	24.20	24.20	24.20	24.20	24.20	21.80
"TRU-FLO" FORM TAP	4	3B	0	19056	19057	22.20	22.20	22.20	22.20	22.20	22.20	17.50	13.40
"TRU-FLO" FORM TAP	6	2B	0	19058	19059	22.20	22.20	22.20	22.20	22.20	22.20	17.50	13.40
"TRU-FLO" FORM TAP	10	PLATING	0	19060	19061	96.50	91.60	61.90	39.10	28.80	22.20	17.50	13.40
SOLID CARBIDE / HAND	3	2B	4	41213	41214	96.60	88.80	82.00	74.70	73.10	72.30	67.90	67.20
SOLID CARBIDE / SP PT	3	2B	2	41208		102.60	94.80	88.00	80.70	78.80	78.40	73.80	73.20
"COST CUTTER" DRILL/TAP	3	2B	2	29009		12.70	12.70	12.70	12.70	12.70	12.70	12.70	12.70
TiN COAT/SP PT x 4"	3	2B	2	50025		28.30	28.30	28.30	28.30	28.30	28.30	28.30	25.10
TiN COAT/SP PT	4		2	50001		43.70	42.50	41.90	26.80	19.80	16.40	13.80	12.90
TiN COAT/SP PT	5		2	50002		43.70	42.50	41.90	26.80	19.80	16.40	13.80	12.90
TiN COAT/SP PT+.005	11	PLATING	2	50003		9.60	9.60	9.60	9.20	9.20	8.40	8.40	8.40
STI HAND TAP	2	3B	3	17826	17827	18.60	18.60	18.60	18.60	14.40	13.00	12.90	12.50
STI SPIRAL POINT	2	3B	2	17828		19.80	19.80	19.80	19.80	15.50	14.30	14.20	13.60
STI HAND TAP	3	2B	3	17830	17831	18.60	18.60	18.60	18.60	14.40	13.00	12.90	12.50
STI SPIRAL POINT	3	2B	2	17832		19.80	19.80	19.80	19.80	15.50	14.30	14.20	13.60
R.H. ROUND DIE 1"OD				13038		31.70	31.70	31.70	27.00	25.70	23.50	22.70	22.50
L.H. ROUND DIE 1"OD				13039		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
GAGE - Taperlock Style		2B		23083		82.60							
GAGE - Taperlock Style		3B		23084		82.60							
GAGE - Reversible Style		2B		24274		106.70							
GAGE - Reversible Style		3B		24275		106.70							
GAGE - Ring-Go		2A		23446		96.00							
GAGE - Ring-Go		3A		23447		96.00							
GAGE - Ring-NoGo		2A		23448		96.00							
GAGE - Ring-NoGo		3A		23449		96.00							
GAGE - STI Plug Taperlock		2B		24662		114.60							

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>#10-32 NF</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - STI Plug Taperlock		3B		24663		114.60							
GAGE - L.H. Taperlock Style		2B		22120		144.00							
GAGE - L.H. Taperlock Style		3B		22121		144.00							
GAGE - L.H. Reversible Style		2B		22122		178.00							
GAGE - L.H. Reversible Style		3B		22123		178.00							
GAGE - L.H. Ring-Go		2A		22124		194.50							
GAGE - L.H. Ring-NoGo		2A		22125		194.50							
GAGE - L.H. Ring-Go		3A		22126		194.50							
GAGE - L.H. Ring-NoGo		3A		22127		194.50							
<b>#10-36 NS</b>					<i>Recommended Hole Size based on 75% Thread = .163"</i>								
HAND TAP	2	3B	4	15320	15321	40.80	39.50	38.90	23.90	16.80	13.40	11.10	9.80
R.H. ROUND DIE 1"OD				13040		71.30	53.50	47.30	32.40		28.20	24.20	24.00
<b>#10-40 NS</b>					<i>Recommended Hole Size based on 75% Thread = .1658"</i>								
HAND TAP	2	3B	4	15326	15327	40.80	39.50	38.90	23.90	16.80	13.40	11.10	10.10
SPIRAL POINT	2	3B	2	15324		41.80	40.60	40.00	25.00	17.80	14.30	11.90	11.20
R.H. ROUND DIE 1"OD				13042		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
<b>#10-48 NS</b>					<i>Recommended Hole Size based on 75% Thread = .1700"</i>								
HAND TAP	2	3B	4	15332	15333	40.80	39.50	38.90	23.90	16.80	13.40	11.10	10.10
<b>#10-56 NS</b>					<i>Recommended Hole Size based on 75% Thread = .1729"</i>								
HAND TAP	2	3B	4	15338	15339	40.80	39.50	38.90	23.90	16.80	13.40	11.10	10.10
R.H. ROUND DIE 1"OD				13046		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
<b>#10-64 NS</b>					<i>Recommended Hole Size based on 75% Thread = .1749"</i>								
HAND TAP	2	3B	4	15344	15345	40.80	39.50	38.90	23.90	16.80	13.40	11.10	10.10
<b>.210-36 NS</b>					<i>Recommended Hole Size based on 75% Thread = .183"</i>								
HAND TAP	3	3B	4	17646	17647	93.90	61.80	42.90	27.40	19.10	15.00	11.80	11.10
HAND TAP	4	2B	4	17901	17902	93.90	61.80	42.90	27.40	19.10	15.00	11.80	11.10
<b>#12-24 NC</b>					<i>Recommended Hole Size based on 75% Thread = .175" TRU-FLO at 65% Thread = .1976"</i>								
L.H. HAND TAP	3	3B	4	15374	15375	42.10	41.90	41.30	27.40	19.10	15.00	11.80	11.10
"TRU-FLO" FORM TAP	4	3B	0	19062	19063	23.30	23.30	23.30	23.30	23.30	23.30	19.50	15.20
"TRU-FLO" FORM TAP	6	2B	0	19064	19065	23.30	23.30	23.30	23.30	23.30	23.30	19.50	15.20
SOLID CARBIDE / HAND	3	3B	4	41246	41247	111.30	104.60	100.40	96.30	94.00	92.90	78.10	77.60
SOLID CARBIDE SP PT	3		2	41241		118.40	111.60	107.60	103.40	101.20	100.00	85.30	85.30
"COST CUTTER" DRILL/TAP	3	3B	2	29010		12.70	12.70	12.70	12.70	12.70	12.70	12.70	12.70
L.H. ROUND DIE 1"OD				13049		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
GAGE - Taperlock Style		2B		23088		82.60							
GAGE - Taperlock Style		3B		23089		82.60							
GAGE - Reversible Style		2B		24279		106.70							
GAGE - Reversible Style		3B		24280		106.70							
GAGE - Ring-Go		2A		23452		96.00							
GAGE - Ring-Go		3A		23453		96.00							
GAGE - Ring-NoGo		2A		23454		96.00							
GAGE - Ring-NoGo		3A		23455		96.00							
GAGE - STI Plug Taperlock		2B		24667		114.60							

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>#12-24 NC</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - STI Plug Taperlock		3B		24668		114.60							
GAGE - L.H. Taperlock Style		2B		22128		144.00							
GAGE - L.H. Taperlock Style		3B		22129		144.00							
GAGE - L.H. Reversible Style		2B		22130		178.00							
GAGE - L.H. Reversible Style		3B		22131		178.00							
GAGE - L.H. Ring-Go		2A		22132		189.00							
GAGE - L.H. Ring-NoGo		2A		22133		189.00							
GAGE - L.H. Ring-Go		3A		22134		189.00							
GAGE - L.H. Ring-NoGo		3A		22135		189.00							
<b>#12-28 NF</b>					<i>Recommended Hole Size based on 75% Thread = .1813" TRU-FLO at 65% Thread = .2002"</i>								
L.H. HAND TAP	3	3B	4	15380	15381	42.10	41.90	41.30	27.40	19.10	15.00	11.80	11.10
"TRU-FLO" FORM TAP	4	3B	0	19066	19067	23.30	23.30	23.30	23.30	23.30	23.30	19.50	15.20
"TRU-FLO" FORM TAP	6	2B	0	19068	19069	23.30	23.30	23.30	23.30	23.30	23.30	19.50	15.20
SOLID CARBIDE / HAND	3	3B	4	41279	41280	111.30	104.60	100.40	96.30	94.00	92.90	78.10	77.60
SOLID CARBIDE SP PT	3		2	41274		118.40	111.60	107.60	103.40	101.20	100.00	85.30	85.30
L.H. ROUND DIE 1"OD				13051		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
GAGE - Taperlock Style		2B		23093		82.60							
GAGE - Taperlock Style		3B		23094		82.60							
GAGE - Reversible Style		2B		24284		106.70							
GAGE - Reversible Style		3B		24285		106.70							
GAGE - Ring-Go		2A		23458		96.00							
GAGE - Ring-Go		3A		23459		96.00							
GAGE - Ring-NoGo		2A		23460		96.00							
GAGE - Ring-NoGo		3A		23461		96.00							
GAGE - L.H. Taperlock Style		2B		22136		144.00							
GAGE - L.H. Taperlock Style		3B		22137		144.00							
GAGE - L.H. Reversible Style		2B		22138		178.00							
GAGE - L.H. Reversible Style		3B		22139		178.00							
GAGE - L.H. Ring-Go		2A		22140		194.50							
GAGE - L.H. Ring-NoGo		2A		22141		194.50							
GAGE - L.H. Ring-Go		3A		22142		194.50							
GAGE - L.H. Ring-NoGo		3A		22143		194.50							
<b>#12-32 NEF</b>					<i>Recommended Hole Size based on 75% Thread = .1857"</i>								
HAND TAP	3	3B	4	15386	15387	18.60	16.80	13.20	8.00	6.70	6.30	5.80	5.80
SPIRAL POINT	3	3B	2	15384		43.40	42.80	41.90	28.00	20.50	15.70	12.50	11.20
R.H. ROUND DIE 1"OD				13052		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
GAGE - Taperlock Style		2B		23098		125.30							
GAGE - Taperlock Style		3B		23099		125.30							
GAGE - Reversible Style		2B		22144		118.00							
GAGE - Reversible Style		3B		22145		118.00							
GAGE - Ring-Go		2A		23464		133.20							
GAGE - Ring-Go		3A		23465		133.20							
GAGE - Ring-NoGo		2A		23466		133.20							
GAGE - Ring-NoGo		3A		23467		133.20							
<b>#12-36 NS</b>					<i>Recommended Hole Size based on 75% Thread = .189"</i>								
HAND TAP	2	3B	4	15392	15393	42.10	41.90	41.30	27.40	19.10	15.00	11.80	11.10
R.H. ROUND DIE 1"OD				13054		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00

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<b>#14-20 NS</b>				<i>Recommended Hole Size based on 75% Thread = .1935"</i>									
HAND TAP	3	3B	4	15398	15399	44.00	43.50	43.10	29.00	20.70	16.70	13.00	11.80
<b>#14-24 NS</b>				<i>Recommended Hole Size based on 75% Thread = .201"</i>									
HAND TAP	3	3B	4	15404	15405	44.00	43.50	43.10	29.00	20.70	16.70	13.00	11.80
R.H. ROUND DIE 1"OD				13060		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
<b>1/16"-27 PIPE TAP NPSI NPSF NPT/F NPS</b>				<i>Recommended Hole Size: NPT/NPTF = .246"</i>									
NPT/F LEFT HAND TAPER			4	15407		80.80	58.00	40.20	27.50	21.20	17.50	16.80	15.20
NPT/F INT. THD			5	17677		96.50	67.40	47.00	31.80	25.60	22.40	21.70	19.30
NPT/F 4" EXT TAPER			4	17665		99.60	81.00	69.40	48.60	39.50	31.40	27.60	25.60
NPT/F 6" EXT TAPER			4	15410		119.90	94.00	82.60	59.80	48.50	41.30	36.80	32.60
SOLID CARBIDE - NPT/F			4	41800		220.20	216.10	215.60	215.00	203.10	195.90	185.20	180.10
NPT/F "COST CUTTER" DRILL/TAP			4	29040		55.80	53.40	52.30	50.90	40.80	33.60	29.60	26.40
NPS R.H. ROUND DIE 1" OD				13064		88.60	71.80	52.00	38.30				
GAGE L1 NPT PLG w/hdle				24368		78.90							
GAGE L1 NPT RING				24366		149.50							
GAGE L1 NPTF PLG w/hdle				24418		110.20							
GAGE L3 NPTF PLG w/hdle				24420		110.20							
GAGE NPTF 6 step Plain Plug w/handle				24524		155.00							
GAGE L1 NPTF RING				24486		155.00							
GAGE L2 NPTF RING				24488		217.60							
GAGE NPTF 6 step Plain Ring				24558		251.50							
<b>1/8"-27 PIPE TAP NPSI NPSF NPT/F NPS</b>				<i>Recommended Hole Size: NPT/NPTF = .332" NPSF/NPSI = .3438"</i>									
NPT/F REG SPR FLT TAPER			4	17554		38.80	38.80	38.80	38.80	38.80	38.80	38.80	34.90
NPT/F LEFT HAND TAPER			4	15413		86.00	62.40	42.90	30.90	26.50	24.00	22.50	20.50
NPT/F 4" EXT TAPER			4	15416		78.90	73.10	68.50	55.50	43.30	37.10	32.80	29.10
NPT/F 6" EXT TAPER			4	15419		37.50	35.80	35.80	35.60	28.00	24.00	20.50	20.40
NPT/F 6" EXT INT TAPER			5	15422		43.40	41.90	41.80	41.40	35.50	31.10	27.60	24.40
NPSF EXT x 6"			4	17710		52.70	49.50	46.40	44.10	41.80	40.60	39.00	35.70
NPT/F 8" EXT TAPER			4	17956		34.30	34.30	34.30	34.30	34.30	34.30	34.30	34.30
NPT/F 10" EXT TAPER			4	17959		41.40	41.40	41.40	41.40	41.40	41.40	41.40	41.40
NPT/F 12" EXT TAPER			4	17962		51.70	51.70	51.70	51.70	51.70	51.70	51.70	51.70
NPSI STRAIGHT			4	15431		91.10	65.70	47.10	31.10	27.00	19.90	16.60	14.90
SOLID CARBIDE - NPT/F			4	41801		223.70	219.40	218.90	218.50	206.50	199.30	188.60	188.40
SOLID CARBIDE - NPSF			4	41807		223.70	219.40	218.90	218.50	206.50	199.30	188.60	188.40
TIN COAT / INT. x 6" NPT/F			5	50004		53.10	51.70	51.70	51.50	45.20	40.90	37.50	34.10
NPT/F "COST CUTTER" DRILL/TAP			4	29041		65.80	62.80	61.70	59.80	50.40	42.60	38.80	35.50
NPT R.H. ROUND DIE 1"OD				13070		71.30	53.50	47.30	37.10	35.50	32.60	27.50	27.30
NPS R.H. ROUND DIE 1" OD				13072		88.60	71.80	52.00	38.30				
GAGE L1 NPT PLG w/hdle				24371		55.90							
GAGE L1 NPT RING				24369		102.00							
GAGE L1 NPTF PLG w/hdle				24426		78.90							
GAGE L3 NPTF PLG w/hdle				24428		78.90							
GAGE NPTF 6 step Plain Plug w/handle				24528		155.10							
GAGE L1 NPTF RING				24490		108.90							
GAGE L2 NPTF RING				24492		209.40							
GAGE NPTF 6 step Plain Ring				24562		251.50							

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**North American Tool**

"In The Pursuit of Perfection"

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## POPULAR SPECIAL: TAPS, DIES & GAGES

SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>1/8"-28 55° WHITWORTH PIPE</b>						<i>Recommended Hole Size BSPT = .3281" / BSPP = .3438"</i>							
BSPT TAPER - MODIFIED			4	15434	15435	36.40	27.60	24.90	22.70	21.70	19.50	19.40	19.00
BSPP PARALLEL - MODIFIED			4	15437	15438	36.40	27.60	24.90	22.70	21.70	19.50	19.40	19.00
BSPT TAPER - FULL FORM			4	17932		50.10	50.10	50.10	50.10	48.30	45.70	45.50	44.80
BSPP PARALLEL - FULL FORM			4	17923		50.10	50.10	50.10	50.10	48.30	45.70	45.50	44.80
BSPT R.H. ROUND DIE 1" OD				13692		172.00							
BSPP R.H. ROUND DIE 1" OD				13693		56.50							
GAGE BSPP-Mod. DBL END w/handle				27041		239.40							
GAGE BSPT-Mod. w/handle				27002		195.00							
<b>5/32"-32 NS</b>						<i>Recommended Hole Size based on 75% Thread = .1259"</i>							
HAND TAP	3	2B	4	17560	17561	51.50	49.80	41.40	25.50	18.20	14.80	11.50	11.20
<b>3/16"-24 NS</b>						<i>Recommended Hole Size based on 75% Thread = .1465"</i>							
HAND TAP	3	3B	4	15443	15444	51.50	49.80	41.40	25.50	18.20	14.80	11.50	11.20
<b>3/16"-32 NS</b>						<i>Recommended Hole Size based on 75% Thread = .1572"</i>							
HAND TAP	3	2B	4	15449	15450	51.50	49.80	41.40	25.50	18.20	14.80	11.50	11.20
<b>7/32"-32 NS</b>						<i>Recommended Hole Size based on 75% Thread = .1884"</i>							
HAND TAP	3	2B	4	17565	17566	90.90	61.80	41.40	25.50	18.20	14.80	11.50	11.20
<b>1/4"-18 PIPE TAP NPSI NPSF NPT/F NPS</b>						<i>Recommended Hole Size: NPT/NPTF = .4375" NPSF / NPSI = .4375"</i>							
NPT/F REG. SPR FLT TAPER			4	15452		44.60	44.60	44.60	44.60	44.60	44.60	44.60	38.90
NPT/F LEFT HAND TAPER			4	15455		90.00	66.70	42.50	34.00	27.60	25.20	24.50	23.50
PTF-SAE SHORT PROJ .361			4	17689	17690	90.00	66.70	42.50	34.00	27.60	25.20	24.50	23.50
NPT/F 4" EXT TAPER			4	15458		82.00	76.30	71.30	63.20	51.70	45.80	40.60	35.90
NPT/F 6" EXT TAPER			4	15461		46.90	46.40	45.70	44.80	35.20	28.30	23.70	23.20
NPT/F 6" INT EXT TAPER			5	15464		53.50	52.90	52.30	51.70	40.40	34.20	30.90	27.50
NPT/F 8" EXT TAPER			4	15467		59.60	59.30	58.50	57.80	43.30	37.80	31.40	31.40
NPSF EXT x 6"			4	17703		56.40	52.80	49.80	47.80	46.40	45.70	43.70	39.00
NPSI STRAIGHT			4	15476		99.10	71.80	51.90	37.10	31.10	26.50	23.60	20.10
SOLID CARBIDE - NPT/F			4	41802		239.90	236.10	235.70	230.50	227.50	224.80	223.70	223.00
TiN COAT x 6" NPT/F			4	50005		57.90	57.40	56.90	56.10	46.30	39.40	35.00	34.20
TiN COAT / INT. x 6" NPT/F			5	50006		64.60	64.20	63.40	62.70	51.60	45.50	42.00	38.70
NPT/F "COST CUTTER" DRILL/TAP			4	29042		77.00	74.90	73.10	72.30	70.10	67.30	63.10	59.70
NPT R.H. ROUND DIE 1-1/2"OD				13092		87.00	67.10	62.30	53.20	50.90	46.60	42.10	41.90
NPS R.H. ROUND DIE 1-1/2"OD				13094		88.60	71.80	52.00	38.30				
GAGE L1 NPT PLG w/hdle				24374		65.30							
GAGE L1 NPT RING				24372		111.50							
GAGE L1 NPTF PLG w/hdle				24434		92.40							
GAGE L3 NPTF PLG w/hdle				24436		92.40							
GAGE NPTF 6 step Plain Plug w/handle				24532		155.00							
GAGE L1 NPTF RING				24494		127.80							
GAGE L2 NPTF RING				24496		217.60							
GAGE NPTF 6 step Plain Ring				24566		251.50							

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>1/4"-19 55° WHITWORTH PIPE</b>					<i>Recommended Hole Size: BSPT = .4375" / BSPP = .4531"</i>								
BSPT TAPER - MODIFIED			4	15479	15480	37.90	29.00	26.30	24.00	23.70	23.00	22.40	21.60
BSPP PARALLEL - MODIFIED			4	15482	15483	37.90	29.00	26.30	24.00	23.70	23.00	22.40	21.60
BSPT TAPER - FULL FORM			4	17933		54.90	54.90	54.90	54.90	54.20	52.70	52.40	52.30
BSPP PARALLEL - FULL FORM			4	17924		54.90	54.90	54.90	54.90	54.20	52.70	52.40	52.30
BSPT R.H. ROUND DIE 1-1/2"OD				13694		280.00							
BSPP R.H. ROUND DIE 1-1/2"OD				13695		98.90							
GAGE BSPP-Mod. DBL END w/handle				27044		241.00							
GAGE BSPT-Mod. w/handle				27005		215.30							
<b>1/4"-20 NC</b>					<i>Recommended Hole Size based on 75% Thread = .2015" for STI = .2660" / TRU-Flo at 65% Thread = .2279"</i>								
FAST SPIRAL FLUTE	5	2B	3	17766	17767	83.50	58.20	50.80	37.00	27.00	21.90	18.60	16.80
L.H. HAND TAP	3	3B	4	15488	15489	8.00	8.00	8.00	8.00	8.00	7.40	7.40	7.40
L.H. SPIRAL POINT	3	3B	2	15486		31.30	30.60	29.80	27.50	20.20	16.60	13.20	12.10
+ .003 HAND TAP	7		4	15494	15495	41.90	40.60	40.00	25.20	18.20	14.90	11.50	10.50
+ .003 SPIRAL POINT	7		2	15492		42.90	41.80	40.90	26.30	19.40	15.90	12.60	11.70
+ .005 HAND TAP	11	PLATING	4	15500	15501	8.40	8.40	8.40	8.40	8.40	7.50	7.50	7.50
+ .005 SPIRAL POINT	11	PLATING	2	15498		9.40	9.40	9.40	9.40	9.40	8.70	8.70	8.70
+ .010 HAND TAP	21		4	15506	15507	84.20	60.50	41.20	26.80	19.70	15.90	12.60	11.70
DOUBLE LEAD	3	3B	4	15512	15513	116.80	86.10	59.40	38.50	27.40	21.80	17.20	15.30
4" EXT SP PT SM SHK	3	3B	2	17964		27.40	27.40	27.40	27.40	27.40	27.40	27.40	27.40
4" EXT SPIRAL POINT	3	3B	2	17584		22.20	22.20	22.20	22.20	22.20	22.20	22.20	22.20
6" EXTENSION HAND TAP	3	3B	4	15518	15519	19.70	19.70	19.70	19.70	19.70	19.70	19.70	19.70
6" EXT SM SHK HAND	3	3B	4	17570	17571	31.10	31.10	31.10	31.10	31.10	31.10	31.10	23.20
6" EXT SPIRAL POINT	3	3B	2	15516		21.20	21.20	21.20	21.20	21.20	21.20	21.20	20.40
6" EXT SP PT SM SHK	3	3B	2	17569		32.40	32.40	32.40	32.40	32.40	32.40	32.40	24.30
8" EXTENSION HAND TAP	3	3B	4	15524	15525	24.00	24.00	24.00	24.00	24.00	24.00	24.00	22.50
"TRU-FLO" FORM TAP	4	3B	0	19070	19071	24.50	24.50	24.50	24.50	24.50	24.50	19.80	15.20
"TRU-FLO" FORM TAP	6	2B	0	19072	19073	24.50	24.50	24.50	24.50	24.50	24.50	19.80	15.20
"TRU-FLO" FORM TAP	10	PLATING	0	19074	19075	101.00	97.00	66.10	43.10	32.40	24.50	19.80	15.20
SOLID CARBIDE / HAND	3	3B	4	41312	41313	114.60	107.70	103.50	99.50	97.20	96.20	81.40	80.80
SOLID CARBIDE / SP PT	3	3B	2	41307		121.60	114.90	110.80	106.70	104.50	103.20	88.50	87.70
"COST CUTTER" DRILL/TAP	3	3B	2	29012		12.70	12.70	12.70	12.70	12.70	12.70	12.70	12.70
TIN COAT/SP PT+.003	7		2	50007		45.70	44.40	43.70	29.00	22.00	18.70	15.20	14.70
TIN COAT/SP PT+.005	11	PLATING	2	50008		12.20	12.20	12.20	12.20	12.20	11.40	11.40	11.40
TIN COAT/SP PT x 6"	3	3B	2	50009		26.60	26.60	26.60	26.60	26.60	26.60	26.60	26.60
TIN COAT/SP PT x 6"/SM SHK	3	3B	2	50023		37.80	37.80	37.80	37.80	37.80	37.80	37.80	29.90
TIN COAT/SP PT x 4"	3	3B	2	50026		26.40	26.40	26.40	26.40	26.40	26.40	26.40	26.40
STI HAND TAP	2	3B	3	17834	17835	19.30	19.30	19.30	19.30	15.20	14.00	13.60	12.80
STI SPIRAL POINT	2	3B	2	17836		20.50	20.50	20.50	20.50	16.50	15.10	14.90	14.10
STI HAND TAP	3	2B	3	17838	17839	19.30	19.30	19.30	19.30	15.20	14.00	13.60	12.80
STI SPIRAL POINT	3	2B	2	17840		20.50	20.50	20.50	20.50	16.50	15.10	14.90	14.10
R.H. ROUND DIE 1"OD				13074		31.70	31.70	31.70	27.00	25.70	23.50	22.70	22.50
L.H. ROUND DIE 1"OD				13075		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
GAGE - Taperlock Style		2B		23103		68.10							
GAGE - Taperlock Style		3B		23104		68.10							
GAGE - Reversible Style		2B		24289		98.70							
GAGE - Reversible Style		3B		24290		98.70							
GAGE - Ring-Go		2A		23470		89.30							
GAGE - Ring-Go		3A		23471		89.30							
GAGE - Ring-NoGo		2A		23472		89.30							
GAGE - Ring-NoGo		3A		23473		89.30							
GAGE - STI Plug Taperlock		2B		24677		108.00							

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>1/4"-20 NC</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - STI Plug Taperlock		3B		24678		108.00							
GAGE - L.H. Taperlock Style		2B		22145		144.00							
GAGE - L.H. Taperlock Style		3B		22146		144.00							
GAGE - L.H. Reversible Style		2B		22147		178.00							
GAGE - L.H. Reversible Style		3B		22148		178.00							
GAGE - L.H. Ring-Go		2A		22149		189.00							
GAGE - L.H. Ring-NoGo		2A		22150		189.00							
GAGE - L.H. Ring-Go		3A		22151		189.00							
GAGE - L.H. Ring-NoGo		3A		22152		189.00							
<b>1/4"-20 BSW 55° MOD WHITWORTH</b>					<i>Recommended Hole Size = .2020"</i>								
	3		4	15530	15531	113.30	82.00	56.20	36.50	26.50	20.40	16.70	14.40
<b>1/4"-24 NS</b>					<i>Recommended Hole Size based on 75% Thread = .209"</i>								
HAND TAP	3	3B	4	15536	15537	33.30	24.90	21.00	16.70	12.70	10.50	10.10	9.00
SPIRAL POINT	3	3B	2	15534		35.10	25.80	22.00	17.90	13.80	11.80	11.30	10.10
R.H. ROUND DIE 1"OD				13076		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
<b>1/4"-26 BSF 55° MOD WHITWORTH</b>					<i>Recommended Hole Size = .2130"</i>								
	3		4	17620	17621	113.30	82.00	56.20	36.50	26.50	20.40	16.70	14.40
<b>1/4"-27 NS</b>					<i>Recommended Hole Size based on 75% Thread = .214"</i>								
HAND TAP	3	3B	4	15542	15543	33.30	24.90	21.00	16.70	12.70	10.50	10.10	9.00
R.H. ROUND DIE 1"OD				13078		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
<b>1/4"-28 NF</b>					<i>Recommended Hole Size based on 75% Thread = .2153" for STI = .2638" / TRU-FLO at 65% Thread = .2342"</i>								
L.H. HAND TAP	3	3B	4	15548	15549	8.00	8.00	8.00	8.00	8.00	7.40	7.40	7.40
L.H. SPIRAL POINT	3	3B	2	15546		35.80	34.20	30.20	28.00	21.30	17.90	14.40	12.80
HAND TAP	5		4	15554	15555	83.20	58.40	39.50	25.20	18.20	14.90	11.50	10.50
SPIRAL POINT	5		2	15552		84.20	59.50	40.60	26.30	19.40	15.90	12.60	11.70
+.003 HAND TAP	7		4	15560	15561	83.20	58.40	39.50	25.20	18.20	14.90	11.50	10.50
+.003 SPIRAL POINT	7		2	15558		84.20	59.50	40.60	26.30	19.40	15.90	12.60	11.70
+.005 HAND TAP	11	PLATING	4	15566	15567	8.40	8.40	8.40	8.40	8.40	7.50	7.50	7.50
+.005 SPIRAL POINT	11	PLATING	2	15564		9.40	9.40	9.40	9.40	9.40	8.70	8.70	8.70
DOUBLE LEAD	3	3B	4	15572	15573	116.80	86.10	59.40	38.50	27.40	21.80	17.20	15.30
4" EXT SP PT SM SHK	3	3B	2	17965		27.90	27.90	27.90	27.90	27.90	27.90	27.90	27.90
6" EXTENSION HAND TAP	3	3B	4	15578	15579	19.70	19.70	19.70	19.70	19.70	19.70	19.70	19.70
6" EXT SPIRAL POINT	3	3B	2	15576		21.90	21.90	21.90	21.90	21.90	21.90	21.90	21.20
6" EXT SP PT SM SHK	3	3B	2	17607		32.40	32.40	32.40	32.40	32.40	32.40	32.40	24.30
"TRU-FLO" FORM TAP	4	3B	0	19076	19077	24.50	24.50	24.50	24.50	24.50	24.50	19.80	15.20
"TRU-FLO" FORM TAP	6	2B	0	19078	19079	24.50	24.50	24.50	24.50	24.50	24.50	19.80	15.20
"TRU-FLO" FORM TAP	10	PLATING	0	19080	19081	101.00	97.00	66.10	43.10	32.40	24.50	19.80	15.20
SOLID CARBIDE / HAND	3	3B	4	41345	41346	114.60	107.70	103.50	99.50	97.20	96.20	81.40	80.80
SOLID CARBIDE / SP PT	3	3B	2	41340		121.60	114.90	110.80	106.70	104.50	103.20	88.50	87.70
"COST CUTTER" DRILL/TAP	3	3B	2	29013		13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
TIN COAT/HAND	5		4		50010	86.00	61.10	42.30	28.00	21.10	17.60	14.30	13.40
STI HAND TAP	2	3B	3	17842	17843	19.30	19.30	19.30	19.30	15.20	14.00	13.60	12.80
STI SPIRAL POINT	2	3B	2	17844		20.50	20.50	20.50	20.50	16.50	15.10	14.90	14.10
STI HAND TAP	3	2B	3	17846	17847	19.30	19.30	19.30	19.30	15.20	14.00	13.60	12.80
STI SPIRAL POINT	3	2B	2	17848		20.50	20.50	20.50	20.50	16.50	15.10	14.90	14.10
R.H. ROUND DIE 1"OD				13080		31.70	31.70	31.70	27.00	25.70	23.50	22.70	22.50

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>1/4"-28 NF</b>					<i>See Previous Page for Recommended Hole Size</i>								
L.H. ROUND DIE 1"OD				<b>13081</b>		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
GAGE - Taperlock Style		2B		<b>23108</b>		68.10							
GAGE - Taperlock Style		3B		<b>23109</b>		68.10							
GAGE - Reversible Style		2B		<b>24294</b>		98.70							
GAGE - Reversible Style		3B		<b>24295</b>		98.70							
GAGE - Ring-Go		2A		<b>23476</b>		89.30							
GAGE - Ring-Go		3A		<b>23477</b>		89.30							
GAGE - Ring-NoGo		2A		<b>23478</b>		89.30							
GAGE - Ring-NoGo		3A		<b>23479</b>		89.30							
GAGE - STI Plug Taperlock		2B		<b>24682</b>		108.00							
GAGE - STI Plug Taperlock		3B		<b>24683</b>		108.00							
GAGE - L.H. Taperlock Style		2B		<b>22153</b>		144.00							
GAGE - L.H. Taperlock Style		3B		<b>22154</b>		144.00							
GAGE - L.H. Reversible Style		2B		<b>22155</b>		178.00							
GAGE - L.H. Reversible Style		3B		<b>22156</b>		178.00							
GAGE - L.H. Ring-Go		2A		<b>22157</b>		189.00							
GAGE - L.H. Ring-NoGo		2A		<b>22158</b>		189.00							
GAGE - L.H. Ring-Go		3A		<b>22159</b>		189.00							
GAGE - L.H. Ring-NoGo		3A		<b>22160</b>		189.00							
<b>1/4"-32 NEF</b>					<i>Recommended Hole Size based on 75% Thread = .2197"</i>								
HAND TAP	3	3B	4	<b>15584</b>	<b>15585</b>	9.20	9.20	9.20	9.20	7.30	6.40	6.30	6.00
L.H. HAND TAP	3	3B	4	<b>17784</b>	<b>17785</b>	81.80	55.10	52.10	33.60	23.60	18.60	15.10	14.10
SPIRAL POINT	3	3B	2	<b>15588</b>		26.20	21.70	15.30	13.70	12.60	9.40	9.40	8.70
HAND TAP	5		4	<b>15590</b>	<b>15591</b>	25.10	20.50	14.40	11.50	11.10	8.30	7.90	7.50
R.H. ROUND DIE 1"OD				<b>13082</b>		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
GAGE - Taperlock Style		2B		<b>23113</b>		121.30							
GAGE - Taperlock Style		3B		<b>23114</b>		121.30							
GAGE - Reversible Style		2B		<b>24937</b>		170.60							
GAGE - Reversible Style		3B		<b>24938</b>		170.60							
GAGE - Ring-Go		2A		<b>23482</b>		129.30							
GAGE - Ring-Go		3A		<b>23483</b>		129.30							
GAGE - Ring-NoGo		2A		<b>23484</b>		129.30							
GAGE - Ring-NoGo		3A		<b>23485</b>		129.30							
<b>1/4"-36 NS</b>					<i>Recommended Hole Size based on 75% Thread = .2230"</i>								
HAND TAP	2	3B	4	<b>15596</b>	<b>15597</b>	33.30	24.90	21.00	16.70	12.70	10.50	10.10	9.00
SPIRAL POINT	2	3B	2	<b>15594</b>		35.10	25.80	22.00	17.90	13.80	11.80	11.30	10.10
HAND TAP	3	2B	4	<b>17759</b>	<b>17760</b>	82.00	62.30	42.60	26.40	19.10	15.30	11.80	10.40
SPIRAL POINT	3	2B	2	<b>17572</b>		83.20	63.30	43.70	27.50	20.20	16.50	12.80	12.40
TiN COAT / SP PT	3	2B	2	<b>50024</b>		86.00	66.10	46.50	30.30	22.90	19.30	15.60	15.10
R.H. ROUND DIE 1"OD				<b>13451</b>		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
<b>1/4"-40 NS</b>					<i>Recommended Hole Size based on 75% Thread = .2258"</i>								
HAND TAP	2	3B	4	<b>15602</b>	<b>15603</b>	33.30	24.90	21.00	16.70	12.70	10.50	10.10	9.00
SPIRAL POINT	2	3B	3	<b>17573</b>		35.10	25.80	22.00	17.90	13.80	11.80	11.30	10.10
HAND TAP	3	2B	4	<b>15608</b>	<b>15609</b>	82.00	62.30	42.60	26.40	19.10	15.30	11.80	10.40
R.H. ROUND DIE 1"OD				<b>13084</b>		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
<b>1/4"-48 NS</b>					<i>Recommended Hole Size based on 75% Thread = .230"</i>								
HAND TAP	2	3B	4	<b>15614</b>	<b>15615</b>	33.30	24.90	21.00	16.70	12.70	10.50	10.10	9.00
R.H. ROUND DIE 1"OD				<b>13086</b>		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>1/4"-56 NS</b>						<i>Recommended Hole Size based on 75% Thread = .2329"</i>							
HAND TAP	2	3B	4	15620	15621	33.30	24.90	21.00	16.70	12.70	10.50	10.10	9.00
R.H. ROUND DIE 1"OD				13088		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
<b>1/4"-80 NS</b>						<i>Recommended Hole Size based on 75% Thread = .2379"</i>							
HAND TAP	2	3B	4	15638	15639	85.00	66.20	45.20	29.30	22.00	18.40	14.80	13.20
R.H. ROUND DIE 1"OD				13090		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
<b>9/32"-32 NS</b>						<i>Recommended Hole Size based on 75% Thread = .2509"</i>							
HAND TAP	3	2B	4	17589	17590	102.70	73.60	50.80	34.00	25.10	18.40	14.80	13.20
<b>5/16"-18 NC</b>						<i>Recommended Hole Size based on 75% Thread = .2589" for STI = .3320" / TRU-FLO at 65% Thread = .2879"</i>							
L.H. HAND TAP	3	3B	4	15644	15645	9.10	9.10	9.10	9.10	9.10	8.40	8.40	8.40
L.H. SPIRAL POINT	3	3B	2	15642		17.80	17.80	17.80	17.80	17.80	17.80	14.40	12.80
+.003 HAND TAP	7		4	15650	15651	83.30	63.40	43.40	26.80	19.40	15.30	12.10	9.70
+.003 SPIRAL POINT	7		2	15648		84.50	64.60	44.40	28.00	20.40	16.60	13.20	11.00
+.005 HAND TAP	11	PLATING	4	15656	15657	10.50	10.50	10.50	10.50	10.50	9.70	9.70	9.70
+.005 SPIRAL POINT	11	PLATING	2	15654		11.10	11.10	11.10	11.10	11.10	10.10	10.10	10.10
+.010 HAND TAP	21		4	15662	15663	102.70	73.60	50.80	34.00	25.10	20.10	16.30	14.90
DOUBLE LEAD	3	3B	4	15668	15669	117.80	87.10	59.80	41.60	29.10	23.00	18.40	18.00
4" EXT SPIRAL POINT	3	3B	2	17585		22.80	22.80	22.80	22.80	22.80	22.80	22.80	22.80
4" EXT SP PT SM SHK	3	3B	2	17966		28.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00
6" EXTENSION HAND TAP	3	3B	4	15673	15674	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00
6" EXT SM SHK HAND	3	3B	4	17608	17609	31.90	31.90	31.90	31.90	31.90	31.90	31.90	28.70
6" EXT SPIRAL POINT	3	3B	2	15671		22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00
6" EXT SP PT SM SHK	3	3B	2	17610		32.60	32.60	32.60	32.60	32.60	32.60	32.60	29.90
8" EXTENSION HAND TAP	3	3B	4	15678	15679	24.90	24.40	23.90	23.20	23.20	23.20	23.20	22.50
"TRU-FLO" FORM TAP	5	3B	0	19082	19083	25.20	25.20	25.20	25.20	25.20	25.20	20.50	17.90
"TRU-FLO" FORM TAP	7	2B	0	19084	19085	25.20	25.20	25.20	25.20	25.20	25.20	20.50	17.90
"TRU-FLO" FORM TAP	10	PLATING	0	19086	19087	101.70	97.70	67.30	44.20	33.10	25.20	20.50	17.90
SOLID CARBIDE / HAND	3	3B	4	41378	41379	159.20	144.00	134.80	123.40	117.90	113.30	103.00	102.40
SOLID CARBIDE / SP PT	3	3B	2	41373		166.50	151.00	142.00	130.60	125.20	120.30	110.10	109.50
"COST CUTTER" DRILL/TAP	3	3B	2	29014		19.30	19.30	19.30	19.30	19.30	19.30	19.30	19.30
TIN COAT / SP PT x 6"	3	3B	2	50011		27.90	27.90	27.90	27.90	27.90	27.90	27.90	27.90
STI HAND TAP	3	3B	4	17850	17851	21.30	21.30	16.60	16.60	15.10	15.10	14.90	14.40
STI SPIRAL POINT	3	3B	3	17852		22.70	22.70	17.80	16.40	16.40	16.40	16.00	15.50
STI HAND TAP	4	2B	4	17854	17855	21.30	21.30	16.60	16.60	15.10	15.10	14.90	14.40
STI SPIRAL POINT	4	2B	3	17856		22.70	22.70	17.80	16.40	16.40	16.40	16.00	15.50
R.H. ROUND DIE 1"OD				13100		31.70	31.70	31.70	27.00	25.70	23.50	22.70	22.50
L.H. ROUND DIE 1"OD				13101		67.40	50.40	44.70	30.40	29.00	26.60	22.80	22.60
GAGE - Taperlock Style		2B		23118		68.10							
GAGE - Taperlock Style		3B		23119		68.10							
GAGE - Reversible Style		2B		24299		98.70							
GAGE - Reversible Style		3B		24300		98.70							
GAGE - Ring-Go		2A		23488		89.30							
GAGE - Ring-Go		3A		23489		89.30							
GAGE - Ring-NoGo		2A		23490		89.30							
GAGE - Ring-NoGo		3A		23491		89.30							
GAGE - STI Plug Taperlock		2B		24687		108.00							
GAGE - STI Plug Taperlock		3B		24688		108.00							
GAGE - L.H. Taperlock Style		2B		22161		144.00							
GAGE - L.H. Taperlock Style		3B		22162		144.00							
GAGE - L.H. Reversible Style		2B		22163		179.00							

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>5/16"-18 NC</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - L.H. Reversible Style		3B		22164		179.00							
GAGE - L.H. Ring-Go		2A		22165		200.00							
GAGE - L.H. Ring-NoGo		2A		22166		200.00							
GAGE - L.H. Ring-Go		3A		22167		200.00							
GAGE - L.H. Ring-NoGo		3A		22168		200.00							
<b>5/16"-18 BSW 55° MOD WHITWORTH</b>					<i>Recommended Hole Size = .2591"</i>								
	3		4	17625	17626	114.60	83.20	57.10	37.70	28.70	21.30	16.80	14.90
<b>5/16"-20 NS</b>					<i>Recommended Hole Size based on 75% Thread = .264"</i>								
HAND TAP	3	3B	4	15684	15685	31.20	26.80	26.00	18.40	14.40	12.40	11.10	9.80
R.H. ROUND DIE 1"OD				13102		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
GAGE - Taperlock Style		2B		22169		144.00							
GAGE - Taperlock Style		3B		22170		144.00							
GAGE - Ring-Go		2A		22171		184.00							
GAGE - Ring-Go		3A		22172		184.00							
GAGE - Ring-NoGo		2A		22173		184.00							
GAGE - Ring-NoGo		3A		22174		184.00							
<b>5/16"-22 BSF 55° MOD WHITWORTH</b>					<i>Recommended Hole Size .2688"</i>								
	3		4	15690	15691	114.60	83.20	57.10	37.70	28.70	21.30	16.80	14.90
<b>5/16"-24 NF</b>					<i>Recommended Hole Size based on 75% Thread = .2715" for STI = .3281" / TRU-FLO at 65% Thread = .2941"</i>								
L.H. HAND TAP	3	3B	4	15696	15697	9.10	9.10	9.10	9.10	9.10	8.40	8.40	8.40
L.H. SPIRAL POINT	3	3B	2	15694		17.80	17.80	17.80	17.80	17.80	17.80	14.40	12.80
4" EXT SP PT SM SHK	3	3B	2	17967		28.70	28.70	28.70	28.70	28.70	28.70	28.70	28.70
HAND TAP	5		4	17650	17651	102.70	73.60	50.80	34.00	25.10	20.10	16.30	14.90
SPIRAL POINT	5		2	17737		104.00	74.90	51.80	35.20	26.30	21.20	17.30	16.00
HAND TAP	6		4	17707	17708	102.70	73.60	50.80	34.00	25.10	20.10	16.30	14.90
+ .005 HAND TAP	11	PLATING	4	15708	15709	10.50	10.50	10.50	10.50	10.50	9.70	9.70	9.70
+ .005 SPIRAL POINT	11	PLATING	2	15706		11.10	11.10	11.10	11.10	11.10	10.10	10.10	10.10
6" EXTENSION HAND TAP	3	3B	4	15713	15714	21.30	21.30	21.30	21.30	21.30	21.30	21.30	21.30
6" EXT SPIRAL POINT	3	3B	2	15711		22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00
6" EXT SP PT SM SHK	3	3B	2	17611		32.60	32.60	32.60	32.60	32.60	32.60	32.60	29.90
"TRU-FLO" FORM TAP	5	3B	0	19088	19089	25.20	25.20	25.20	25.20	25.20	25.20	20.50	17.90
"TRU-FLO" FORM TAP	7	2B	0	19090	19091	25.20	25.20	25.20	25.20	25.20	25.20	20.50	17.90
"TRU-FLO" FORM TAP	10	PLATING	0	19092	19093	101.70	97.70	67.30	44.20	33.10	25.20	20.50	17.90
SOLID CARBIDE / HAND	3	3B	4	41411	41412	159.20	144.00	134.80	123.40	117.90	113.30	103.00	102.40
SOLID CARBIDE SP PT	3	3B	2	41406		166.50	151.00	142.00	130.60	125.20	120.50	110.20	109.60
"COST CUTTER" DRILL/TAP	3	3B	2	29015		19.30	19.30	19.30	19.30	19.30	19.30	19.30	19.30
STI HAND TAP	2	3B	4	17858	17859	21.30	21.30	16.60	15.10	15.10	15.10	14.90	14.40
STI SPIRAL POINT	2	3B	3	17860		22.70	22.70	17.80	16.40	16.40	16.40	16.00	15.50
STI HAND TAP	3	2B	4	17862	17863	21.30	21.30	16.60	15.10	15.10	15.10	14.90	14.40
STI SPIRAL POINT	3	2B	3	17864		22.70	22.70	17.80	16.40	16.40	16.40	16.00	15.50
R.H. ROUND DIE 1"OD				13104		31.70	31.70	31.70	27.00	25.70	23.50	22.70	22.50
L.H. ROUND DIE 1"OD				13105		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
GAGE - Taperlock Style		2B		23123		68.10							
GAGE - Taperlock Style		3B		23124		68.10							
GAGE - Reversible Style		2B		24304		98.70							
GAGE - Reversible Style		3B		24305		98.70							
GAGE - Ring-Go		2A		23494		89.30							

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<b>5/16"-24 NF</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - Ring-Go		3A		23495		89.30							
GAGE - Ring-NoGo		2A		23496		89.30							
GAGE - Ring-NoGo		3A		23497		89.30							
GAGE - STI Plug Taperlock		2B		24692		108.00							
GAGE - STI Plug Taperlock		3B		24693		108.00							
GAGE - L.H. Taperlock Style		2B		22175		144.00							
GAGE - L.H. Taperlock Style		3B		22176		144.00							
GAGE - L.H. Reversible Style		2B		22177		179.00							
GAGE - L.H. Reversible Style		3B		22178		179.00							
GAGE - L.H. Ring-Go		2A		22179		189.00							
GAGE - L.H. Ring-NoGo		2A		22180		189.00							
GAGE - L.H. Ring-Go		3A		22181		189.00							
GAGE - L.H. Ring-NoGo		3A		22182		189.00							
<b>5/16"-27 NS</b>					<i>Recommended Hole Size based on 75% Thread = .2765"</i>								
HAND TAP	3	3B	4	15719	15720	31.20	26.80	26.00	18.40	14.40	12.40	11.10	9.80
R.H. ROUND DIE 1"OD				13106		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
<b>5/16"-28 NS</b>					<i>Recommended Hole Size based on 75% Thread = .2778"</i>								
HAND TAP	3	3B	4	15725	15726	31.20	26.80	26.00	18.40	14.40	12.40	11.10	9.80
GAGE - Taperlock Style		2B		22183		155.00							
GAGE - Taperlock Style		3B		22184		155.00							
GAGE - Ring-Go		2A		22185		189.00							
GAGE - Ring-Go		3A		22186		189.00							
GAGE - Ring-NoGo		2A		22187		189.00							
GAGE - Ring-NoGo		3A		22188		189.00							
<b>5/16"-32 NEF</b>					<i>Recommended Hole Size based on 75% Thread = .2822"</i>								
HAND TAP	3	3B	4	15730	15731	9.70	9.70	9.70	9.70	7.90	7.20	6.50	6.50
SPIRAL POINT	3	3B	2	15728		27.50	23.20	16.60	12.90	12.40	10.50	10.20	9.90
HAND TAP	5		4	15735	15736	26.30	22.00	15.30	11.90	11.30	9.40	8.60	8.00
R.H. ROUND DIE 1"OD				13108		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
GAGE - Taperlock Style		2B		23128		121.30							
GAGE - Taperlock Style		3B		23129		121.30							
GAGE - Reversible Style		2B		24942		170.60							
GAGE - Reversible Style		3B		24943		170.60							
GAGE - Ring-Go		2A		23500		129.30							
GAGE - Ring-Go		3A		23501		129.30							
GAGE - Ring-NoGo		2A		23502		129.30							
GAGE - Ring-NoGo		3A		23503		129.30							
<b>5/16"-40 NS</b>					<i>Recommended Hole Size based on 75% Thread = .2883"</i>								
HAND TAP	2	3B	4	15740	15741	31.20	26.80	26.00	18.40	14.40	12.40	11.10	9.80
R.H. ROUND DIE 1"OD				13110		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
<b>11/32"-32 NS</b>					<i>Recommended Hole Size based on 75% Thread = .3134"</i>								
HAND TAP	3	3B	4	15750	15751	94.30	71.70	50.30	33.40	23.50	18.40	15.00	13.40

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>3/8"-12 ACME</b>					<i>Recommended Hole Size = .2917"</i>								
TANDEM		2G	4	15752		137.00	119.40	98.70	82.40	79.30	76.40	62.70	56.40
<b>3/8"-16 NC</b>					<i>Recommended Hole Size based on 75% Thread = .3144" for STI = .3970" / TRU-FLO at 65% Thread = .3474"</i>								
FAST SPIRAL FLUTE	5	2B	3	17912	17913	87.30	62.10	54.20	42.00	32.80	25.30	21.90	19.50
L.H. HAND TAP	3	3B	4	15756	15757	11.80	11.80	11.80	11.80	11.80	11.00	11.00	11.00
L.H. SPIRAL POINT	3	3B	3	15754		18.40	18.40	18.40	18.40	18.40	18.40	15.00	13.40
SPIRAL POINT	3	3B	2	17738		18.40	18.40	18.40	18.40	18.40	18.40	15.00	13.40
+ .003 HAND TAP	7		4	15766	15767	89.10	68.20	48.10	31.30	22.20	17.60	14.30	12.70
+ .003 SPIRAL POINT	7		3	15764		90.20	69.50	49.40	32.60	23.50	18.90	15.30	14.00
+ .005 HAND TAP	11	PLATING	4	15771	15772	12.10	12.10	12.10	12.10	12.10	11.10	11.10	11.10
+ .005 SPIRAL POINT	11	PLATING	3	15769		12.50	12.50	12.50	12.50	12.50	11.50	11.50	11.50
+ .010 HAND TAP	21		4	15776	15777	89.10	68.20	48.10	31.30	22.20	17.60	14.30	12.70
SMALL SHANK	3	3B	4	15761	15762	89.10	68.20	48.10	31.80	23.70	19.30	15.90	14.30
DOUBLE LEAD	3	3B	4	15781	15782	117.80	87.10	59.80	41.60	29.10	23.00	18.40	18.00
4" EXT SP PT SM SHK	3	3B	3	17969		32.10	32.10	32.10	32.10	32.10	32.10	32.10	32.10
4" EXT SPIRAL POINT	3	3B	3	17586		26.20	26.20	26.20	26.20	26.20	26.20	26.20	26.20
6" EXTENSION HAND TAP	3	3B	4	15786	15787	22.50	22.50	22.50	22.50	22.50	22.50	22.50	22.50
6" EXT SM SHANK	3	3B	4	15801	15802	35.10	35.10	35.10	35.10	35.10	35.10	35.10	33.40
6" EXT SPIRAL POINT	3	3B	3	15784		23.90	23.90	23.90	23.90	23.90	23.90	23.90	23.90
6" EXT SP PT SM SHK	3	3B	3	15799		35.50	35.50	35.50	35.50	35.50	35.50	35.50	33.90
6" EXTENSION HAND TAP	5	2B	4	17658	17659	82.60	58.90	43.50	37.10	33.20	31.10	28.30	27.10
6" EXT SPIRAL POINT	5	2B	3	17666		83.80	59.80	44.70	38.30	34.20	32.40	29.60	28.20
8" EXTENSION HAND TAP	3	3B	4	15791	15792	29.30	29.30	29.30	29.30	29.30	29.30	29.30	29.30
10" EXTENSION HAND TAP	3	3B	4	15796	15797	68.60	65.80	64.60	62.70	54.00	49.40	43.70	38.50
"TRU-FLO" FORM TAP	5	3B	0	19094	19095	27.50	27.50	27.50	27.50	27.50	27.50	22.90	19.10
"TRU-FLO" FORM TAP	7	2B	0	19096	19097	27.50	27.50	27.50	27.50	27.50	27.50	22.90	19.10
"TRU-FLO" FORM TAP	10	PLATING	0	19098	19099	105.80	102.30	71.60	47.80	35.60	27.50	22.90	19.10
SOLID CARBIDE / HAND	3	3B	4	41444	41445	168.40	159.40	152.70	147.80	146.60	145.60	131.10	130.60
SOLID CARBIDE / SP PT	3	3B	3	41442		175.70	166.60	159.80	155.10	153.50	152.80	138.00	137.60
"COST CUTTER" DRILL/TAP	3	3B	2	29016		23.30	23.30	23.30	23.30	23.30	23.30	23.30	23.30
TIN COAT/SP PT x 6"	3	3B	3	50012		29.50	29.50	29.50	29.50	29.50	29.50	29.50	29.50
TIN COAT/SP PT x 6"/SM SHK	3	3B	3	50013		41.20	41.20	41.20	41.20	41.20	41.20	41.20	40.20
STI HAND TAP	3	3B	4	17866	17867	26.40	26.40	21.30	19.40	19.40	19.40	19.30	19.00
STI SPIRAL POINT	3	3B	3	17868		28.30	28.30	23.20	21.30	21.30	21.30	21.10	21.00
STI HAND TAP	4	2B	4	17870	17871	26.40	26.40	21.30	19.40	19.40	19.40	19.30	19.00
STI SPIRAL POINT	4	2B	3	17872		28.30	28.30	23.20	21.30	21.30	21.30	21.10	21.00
R.H. ROUND DIE 1"OD				13116		31.70	31.70	31.70	27.00	25.70	23.50	22.70	22.50
L.H. ROUND DIE 1"OD				13117		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
GAGE - Taperlock Style		2B		23133		73.40							
GAGE - Taperlock Style		3B		23134		73.40							
GAGE - Reversible Style		2B		24309		106.70							
GAGE - Reversible Style		3B		24310		106.70							
GAGE - Ring-Go		2A		23506		97.40							
GAGE - Ring-Go		3A		23507		97.40							
GAGE - Ring-NoGo		2A		23508		97.40							
GAGE - Ring-NoGo		3A		23509		97.40							
GAGE - STI Plug Taperlock		2B		24697		108.00							
GAGE - STI Plug Taperlock		3B		24698		108.00							
GAGE - L.H. Taperlock Style		2B		22189		144.00							
GAGE - L.H. Taperlock Style		3B		22190		144.00							
GAGE - L.H. Reversible Style		2B		22191		179.00							
GAGE - L.H. Reversible Style		3B		22192		179.00							
GAGE - L.H. Ring-Go		2A		22193		200.00							

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# POPULAR SPECIAL: TAPS, DIES & GAGES

SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>3/8"-16 NC</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - L.H. Ring-NoGo		2A		22194		200.00							
GAGE - L.H. Ring-Go		3A		22195		200.00							
GAGE - L.H. Ring-NoGo		3A		22196		200.00							
<b>3/8"-18 NS</b>					<i>Recommended Hole Size based on 75% Thread = .3214"</i>								
HAND TAP	3	3B	4	15806	15807	46.40	28.30	27.60	20.50	16.00	13.70	12.80	11.30
R.H. ROUND DIE 1"OD				13118		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
<b>3/8"-18 PIPE TAP NPSI NPSF NPT/F NPS</b>					<i>Recommended Hole Size: NPT = .5625" / NPTF = .5781" NPSF/NPSI = .5781"</i>								
NPT/F REGULAR SP FLT TAPER			4	15809		55.20	55.20	55.20	55.20	55.20	55.20	55.20	55.20
NPT/F LEFT HAND TAPER			4	15812		89.70	68.80	52.00	40.90	35.70	31.30	30.50	30.10
NPT/F 6" EXT TAPER			4	15815		54.70	54.20	53.60	53.10	39.70	32.70	32.40	31.70
NPT/F 6" INT EXT TAPER			5	15818		61.70	60.90	60.20	59.70	47.80	39.40	36.20	35.70
NPT/F 8" EXT TAPER			4	15821		68.40	67.30	66.90	66.10	60.90	52.70	48.90	48.30
NPSI STRAIGHT			4	15827		105.40	76.60	57.40	43.40	36.30	32.80	30.50	28.30
NPSF 6" EXTENSION			4	17922		176.20	137.40	108.50	84.90	70.10	61.70	54.90	48.60
NPT/F CARB-I-SERT TAP			4	41808		363.60	330.10	299.40	278.30	259.70	250.60	240.50	232.80
NPT/F "COST CUTTER" DRILL/TAP			4	29043		94.10	91.50	89.70	88.30	85.60	83.90	80.80	77.30
NPT/F TiN COAT x 6"			4	50014		68.70	68.20	67.60	67.10	54.00	46.60	46.30	45.80
NPT/F TiN COAT/INT. THD x 6"			5	50015		75.70	75.00	74.20	73.60	61.80	53.40	50.20	49.70
NPT R.H. ROUND DIE 1-1/2"OD				13136		87.00	67.10	62.30	53.20	50.90	46.60	42.10	41.90
NPS R.H. ROUND DIE 1-1/2"OD				13138		129.80	107.90	71.20	62.50				
GAGE L1 NPT PLG w/hdle				24377		72.20							
GAGE L1 NPT RING				24375		130.50							
GAGE L1 NPTF PLG w/hdle				24442		110.20							
GAGE L3 NPTF PLG w/hdle				24444		110.20							
GAGE NPTF 6 step Plain Plug w/handle				24536		155.00							
GAGE L1 NPTF RING				24498		134.60							
GAGE L2 NPTF RING				24500		229.70							
GAGE NPTF 6 step Plain Ring				24570		251.50							
<b>3/8"-19 55° WHITWORTH PIPE</b>					<i>Recommended Hole Size: BSPT = .5781" / BSPP = .5938"</i>								
BSPT TAPER - MODIFIED			4	15830	15831	27.30	27.30	27.30	27.30	27.30	27.30	27.30	27.30
BSPP PARALLEL - MODIFIED			4	15833	15834	27.30	27.30	27.30	27.30	27.30	27.30	27.30	27.30
BSPT TAPER - FULL FORM			4	17934		69.40	69.40	69.40	69.40	67.10	64.30	64.10	63.10
BSPP PARALLEL - FULL FORM			4	17925		69.40	69.40	69.40	69.40	67.10	64.30	64.10	63.10
BSPT R.H. ROUND DIE 1-1/2"OD				13696		280.00							
BSPP R.H. ROUND DIE 1-1/2"OD				13697		98.90							
GAGE BSPP-Mod. DBL END w/handle				27047		268.20							
GAGE BSPT-Mod. w/handle				27008		215.30							
<b>3/8"-20 NS</b>					<i>Recommended Hole Size based on 75% Thread = .3265"</i>								
HAND TAP	3	3B	4	15838	15839	46.40	28.30	27.60	20.50	16.00	13.70	12.80	11.30
R.H. ROUND DIE 1"OD				13120		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
GAGE - Taperlock Style		2B		22197		144.00							
GAGE - Taperlock Style		3B		22198		144.00							
GAGE - Ring-Go		2A		22199		189.00							
GAGE - Ring-Go		3A		22200		189.00							
GAGE - Ring-NoGo		2A		22201		189.00							
GAGE - Ring-NoGo		3A		22202		189.00							

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>3/8"-20 BSF 55° MOD WHITWORTH</b>					<i>Recommended Hole Size = .327"</i>								
	3		4	17630	17631	118.50	86.10	60.90	40.60	31.30	23.30	19.00	16.30
<b>3/8"-24 NF</b>					<i>Recommended Hole Size based on 75% Thread = .3340" for STI = .3906" / TRU-FLO at 65% Thread = .3566"</i>								
REGULAR SPIRAL FLT	5		3	17724	17725	87.30	62.10	54.20	42.00	32.80	25.30	21.90	19.50
L.H. HAND TAP	3	3B	4	15843	15844	12.10	12.10	12.10	12.10	12.10	11.10	11.10	11.10
L.H. SPIRAL POINT	3	3B	3	15841		18.40	18.40	18.40	18.40	18.40	18.40	15.00	13.40
HAND TAP	5		4	15848	15849	89.10	68.20	48.10	31.30	22.20	17.60	14.30	12.70
HAND TAP	8		4	17915	17916	89.10	68.20	48.10	31.30	22.20	17.60	14.30	12.70
SPIRAL POINT	5		3	15846		90.20	69.50	49.40	32.60	23.50	18.90	15.30	14.00
+ .003 HAND TAP	7		4	15853	15854	89.10	68.20	48.10	31.30	22.20	17.60	14.30	12.70
+ .003 SPIRAL POINT	7		3	15851		90.20	69.50	49.40	32.60	23.50	18.90	15.30	14.00
+ .005 HAND TAP	11	PLATING	4	15858	15859	12.10	12.10	12.10	12.10	12.10	11.10	11.10	11.10
+ .005 SPIRAL POINT	11	PLATING	3	15856		12.50	12.50	12.50	12.50	12.50	11.40	11.40	11.40
4" EXT SP PT SM SHK	3	3B	3	17970		33.10	33.10	33.10	33.10	33.10	33.10	33.10	33.10
6" EXTENSION HAND TAP	3	3B	4	15863	15864	23.60	23.60	23.60	23.60	23.60	23.60	23.60	23.60
6" EXT SPIRAL POINT	3	3B	3	15861		24.80	24.80	24.80	24.80	24.80	24.80	24.80	24.80
"TRU-FLO" FORM TAP	5	3B	0	19100	19101	27.50	27.50	27.50	27.50	27.50	27.50	22.90	19.10
"TRU-FLO" FORM TAP	7	2B	0	19102	19103	27.50	27.50	27.50	27.50	27.50	27.50	22.90	19.10
"TRU-FLO" FORM TAP	10	PLATING	0	19104	19105	105.80	102.30	71.60	47.80	35.60	27.50	22.90	19.10
SOLID CARBIDE / HAND	3	3B	4	41476	41477	168.40	159.40	152.70	147.80	146.60	145.60	131.10	130.60
"COST CUTTER" DRILL/TAP	3	3B	2	29017		23.30	23.30	23.30	23.30	23.30	23.30	23.30	23.30
TIN COAT / +.003 HAND TAP	7		4		50016	92.30	71.30	51.50	34.40	25.50	21.00	17.50	16.00
STI HAND TAP	2	3B	4	17874	17875	26.40	26.40	21.30	19.40	19.40	19.40	19.30	19.00
STI SPIRAL POINT	2	3B	3	17876		28.30	28.30	23.20	21.30	21.30	21.30	21.10	21.00
STI HAND TAP	3	2B	4	17878	17879	26.40	26.40	21.30	19.40	19.40	19.40	19.30	19.00
STI SPIRAL POINT	3	2B	3	17880		28.30	28.30	23.20	21.30	21.30	21.30	21.10	21.00
R.H. ROUND DIE 1"OD				13122		31.70	31.70	31.70	27.00	25.70	23.50	22.70	22.50
L.H. ROUND DIE 1"OD				13123		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
GAGE - Taperlock Style		2B		23138		73.40							
GAGE - Taperlock Style		3B		23139		73.40							
GAGE - Reversible Style		2B		24314		106.70							
GAGE - Reversible Style		3B		24315		106.70							
GAGE - Ring-Go		2A		23512		97.40							
GAGE - Ring-Go		3A		23513		97.40							
GAGE - Ring-NoGo		2A		23514		97.40							
GAGE - Ring-NoGo		3A		23515		97.40							
GAGE - STI Plug Taperlock		2B		24702		108.00							
GAGE - STI Plug Taperlock		3B		24703		108.00							
GAGE - L.H. Taperlock Style		2B		22203		144.00							
GAGE - L.H. Taperlock Style		3B		22204		144.00							
GAGE - L.H. Reversible Style		2B		22205		179.00							
GAGE - L.H. Reversible Style		3B		22206		179.00							
GAGE - L.H. Ring-Go		2A		22207		189.00							
GAGE - L.H. Ring-NoGo		2A		22208		189.00							
GAGE - L.H. Ring-Go		3A		22209		189.00							
GAGE - L.H. Ring-NoGo		3A		22210		189.00							
<b>3/8"-27 NS</b>					<i>Recommended Hole Size based on 75% Thread = .339"</i>								
HAND TAP	3	3B	4	15868	15869	46.40	28.30	27.60	20.50	16.00	13.70	12.80	11.30
R.H. ROUND DIE 1"OD				13124		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>3/8"-28 NS</b>						<i>Recommended Hole Size based on 75% Thread = .3403"</i>							
HAND TAP	3	3B	4	15873	15874	46.40	28.30	27.60	20.50	16.00	13.70	12.80	11.30
GAGE - Taperlock Style		2B		22211		155.00							
GAGE - Taperlock Style		3B		22212		155.00							
GAGE - Ring-Go		2A		22213		195.00							
GAGE - Ring-Go		3A		22214		195.00							
GAGE - Ring-NoGo		2A		22215		195.00							
GAGE - Ring-NoGo		3A		22216		195.00							
<b>3/8"-32 NEF</b>						<i>Recommended Hole Size based on 75% Thread = .3447"</i>							
HAND TAP	3	3B	4	15878	15879	11.00	11.00	11.00	11.00	9.20	7.90	7.20	7.20
SPIRAL POINT	3	3B	3	15876		34.90	23.30	17.00	14.10	13.60	11.80	11.20	11.10
HAND TAP	5		4	15883	15884	33.60	22.20	15.90	12.80	12.50	10.60	9.90	9.80
R.H. ROUND DIE 1"OD				13128		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
GAGE - Taperlock Style		2B		23143		139.90							
GAGE - Taperlock Style		3B		23144		139.90							
GAGE - Reversible Style		2B		24947		186.60							
GAGE - Reversible Style		3B		24948		186.60							
GAGE - Ring-Go		2A		23518		132.00							
GAGE - Ring-Go		3A		23519		132.00							
GAGE - Ring-NoGo		2A		23520		132.00							
GAGE - Ring-NoGo		3A		23521		132.00							
<b>3/8"-40 NS</b>						<i>Recommended Hole Size based on 75% Thread = .3508"</i>							
HAND TAP	2	3B	4	15888	15889	46.40	28.30	27.60	20.50	16.00	13.70	12.80	11.30
HAND TAP	3	2B	4	17615	17616	83.70	64.70	45.10	30.10	21.30	17.00	13.70	12.20
R.H. ROUND DIE 1"OD				13132		71.30	53.50	47.30	32.40	30.80	28.20	24.20	24.00
<b>3/8"-48 NS</b>						<i>Recommended Hole Size based on 75% Thread = .355"</i>							
HAND TAP	2	3B	4	15893	15894	83.70	64.70	45.10	30.10	21.30	17.00	13.70	12.20
<b>13/32"-32 NS</b>						<i>Recommended Hole Size based on 75% Thread = .3759"</i>							
HAND TAP	3	3B	4	15898	15899	85.80	68.60	47.90	33.60	24.90	20.40	16.40	14.70
<b>7/16"-14 NC</b>						<i>Recommended Hole Size based on 75% Thread = .3681" for STI = .4531" / TRU-FLO at 65% Thread = .4059"</i>							
L.H. HAND TAP	3	3B	4	15903	15904	17.00	17.00	17.00	17.00	17.00	16.00	16.00	16.00
L.H. SPIRAL POINT	3	3B	3	15901		85.80	68.60	47.90	33.60	24.90	20.40	18.20	17.30
+ .005 HAND TAP	11	PLATING	4	15908	15909	17.00	17.00	17.00	17.00	17.00	16.00	16.00	16.00
+ .005 SPIRAL POINT	11	PLATING	3	15906		18.10	18.10	18.10	18.10	18.10	16.70	16.70	16.70
6" EXTENSION HAND TAP	3	3B	4	15933	15934	49.00	49.00	49.00	44.70	41.00	39.40	33.40	27.50
6" EXT SPIRAL POINT	3	3B	3	15931		50.20	50.20	50.20	46.00	42.30	40.80	34.90	28.70
"TRU-FLO" FORM TAP	5	3B	0	19106	19107	31.40	31.40	31.40	31.40	31.40	31.40	26.60	21.60
"TRU-FLO" FORM TAP	8	2B	0	19108	19109	31.40	31.40	31.40	31.40	31.40	31.40	26.60	21.60
SOLID CARBIDE / HAND	3	3B	4	41520	41521	206.40	199.10	197.30	191.80	185.10	181.30	171.60	167.40
SOLID CARBIDE / SP PT	3	3B	3	41522		220.00	212.90	211.00	205.30	198.80	195.00	185.20	181.20
"COST CUTTER" DRILL/TAP	3	3B	2	29018		28.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00
STI HAND TAP	3	3B	4	17882	17883	30.40	30.40	24.90	22.50	22.50	22.50	22.50	21.90
STI SPIRAL POINT	3	3B	3	17884		33.20	33.20	27.30	25.10	25.10	25.10	25.10	24.50
R.H. ROUND DIE 1-1/2"OD				13142		48.80	48.80	48.80	42.10	40.40	37.00	35.60	35.40
L.H. ROUND DIE 1-1/2"OD				13143		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
GAGE - Taperlock Style		2B		23148		73.40							
GAGE - Taperlock Style		3B		23149		73.40							

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>7/16"-14 NC</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - Reversible Style		2B		24319		108.00							
GAGE - Reversible Style		3B		24320		108.00							
GAGE - Ring-Go		2A		23524		97.40							
GAGE - Ring-Go		3A		23525		97.40							
GAGE - Ring-NoGo		2A		23526		97.40							
GAGE - Ring-NoGo		3A		23527		97.40							
GAGE - STI Plug Taperlock		2B		24707		110.70							
GAGE - STI Plug Taperlock		3B		24708		110.70							
GAGE - L.H. Taperlock Style		2B		22217		144.00							
GAGE - L.H. Taperlock Style		3B		22218		144.00							
GAGE - L.H. Reversible Style		2B		22219		179.00							
GAGE - L.H. Reversible Style		3B		22220		179.00							
GAGE - L.H. Ring-Go		2A		22221		189.00							
GAGE - L.H. Ring-NoGo		2A		22222		189.00							
GAGE - L.H. Ring-Go		3A		22223		189.00							
GAGE - L.H. Ring-NoGo		3A		22224		189.00							
<b>7/16"-16 NS</b>					<i>Recommended Hole Size based on 75% Thread = .3769"</i>								
HAND TAP	3	3B	4	15938	15939	56.40	33.40	33.10	22.90	18.40	16.30	16.00	16.00
R.H. ROUND DIE 1-1/2"OD				13144		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
GAGE - Taperlock Style		2B		22225		144.00							
GAGE - Taperlock Style		3B		22226		144.00							
GAGE - Ring-Go		2A		22227		189.00							
GAGE - Ring-Go		3A		22228		189.00							
GAGE - Ring-NoGo		2A		22229		189.00							
GAGE - Ring-NoGo		3A		22230		189.00							
<b>7/16"-18 NS</b>					<i>Recommended Hole Size based on 75% Thread = .3839"</i>								
HAND TAP	3	3B	4	15943	15944	56.40	33.40	33.10	22.90	18.40	16.30	16.00	16.00
R.H. ROUND DIE 1-1/2"OD				13146		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
<b>7/16"-20 NF</b>					<i>Recommended Hole Size based on 75% Thread = .389" for STI = .4531" / TRU-FLO at 65% Thread = .4154"</i>								
L.H. HAND TAP	3	3B	4	15948	15949	17.00	17.00	17.00	17.00	17.00	16.00	16.00	16.00
HAND TAP	6		4	17741	17742	85.80	68.60	47.90	33.60	24.90	20.40	16.40	16.00
+ .005 HAND TAP	11	PLATING	4	15963	15964	17.00	17.00	17.00	17.00	17.00	16.00	16.00	16.00
+ .005 SPIRAL POINT	11	PLATING	3	15961		18.10	18.10	18.10	18.10	18.10	16.70	16.70	16.70
6" PULLEY	3	3B	4	15968	15969	49.00	49.00	49.00	44.70	41.00	39.40	33.40	27.50
6" EXT HAND TAP	3	3B	4	15973	15974	49.00	49.00	49.00	44.70	41.00	39.40	33.40	27.50
6" EXT SPIRAL POINT	3	3B	3	15971		50.20	50.20	50.20	46.00	42.30	40.80	34.90	28.70
"TRU-FLO" FORM TAP	5	3B	0	19144	19145	31.40	31.40	31.40	31.40	31.40	31.40	26.60	21.60
"TRU-FLO" FORM TAP	8	2B	0	19146	19147	31.40	31.40	31.40	31.40	31.40	31.40	26.60	21.60
SOLID CARBIDE / HAND	3	3B	4	41524	41525	206.40	199.10	197.30	191.80	185.10	181.30	171.60	167.40
SOLID CARBIDE / SP PT	3	3B	3	41526		220.00	212.90	211.00	205.30	198.80	195.00	185.20	181.20
"COST CUTTER" DRILL/TAP	3	3B	2	29019		28.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00
STI HAND TAP	3	3B	4	17886	17887	30.40	30.40	24.90	22.50	22.50	22.50	22.50	21.90
STI SPIRAL POINT	3	3B	3	17888		33.20	33.20	27.30	25.10	25.10	25.10	25.10	24.50
R.H. ROUND DIE 1-1/2"OD				13148		48.80	48.80	48.80	42.10	40.40	37.00	35.60	35.40
L.H. ROUND DIE 1-1/2"OD				13149		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
GAGE - Taperlock Style		2B		23153		73.40							
GAGE - Taperlock Style		3B		23154		73.40							
GAGE - Reversible Style		2B		24324		108.00							
GAGE - Reversible Style		3B		24325		108.00							

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# POPULAR SPECIAL: TAPS, DIES & GAGES

SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>7/16"-20 NF</b>						<i>See Previous Page for Recommended Hole Size</i>							
GAGE - Ring-Go		2A		23530		97.40							
GAGE - Ring-Go		3A		23531		97.40							
GAGE - Ring-NoGo		2A		23532		97.40							
GAGE - Ring-NoGo		3A		23533		97.40							
GAGE - STI Plug Taperlock		2B		24712		110.70							
GAGE - STI Plug Taperlock		3B		24713		110.70							
GAGE - L.H. Taperlock Style		2B		22231		144.00							
GAGE - L.H. Taperlock Style		3B		22232		144.00							
GAGE - L.H. Reversible Style		2B		22233		179.00							
GAGE - L.H. Reversible Style		3B		22234		179.00							
GAGE - L.H. Ring-Go		2A		22235		189.00							
GAGE - L.H. Ring-NoGo		2A		22236		189.00							
GAGE - L.H. Ring-Go		3A		22237		189.00							
GAGE - L.H. Ring-NoGo		3A		22238		189.00							
<b>7/16"-24 NS</b>						<i>Recommended Hole Size based on 75% Thread = .3965"</i>							
HAND TAP	3	3B	4	15978	15979	56.40	33.40	33.10	22.90	18.40	16.30	16.00	16.00
HAND TAP	5	2B	4	15983	15984	85.80	68.60	47.90	33.60	24.90	20.40	16.40	16.00
R.H. ROUND DIE 1-1/2"OD				13150		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
GAGE - Taperlock Style		2B		22239		155.00							
GAGE - Taperlock Style		3B		22240		155.00							
GAGE - Ring-Go		2A		22241		200.00							
GAGE - Ring-Go		3A		22242		200.00							
GAGE - Ring-NoGo		2A		22243		200.00							
GAGE - Ring-NoGo		3A		22244		200.00							
<b>7/16"-27 NS</b>						<i>Recommended Hole Size based on 75% Thread = .4015"</i>							
HAND TAP	3	3B	4	15988	15989	56.40	33.40	33.10	22.90	18.40	16.30	16.00	16.00
R.H. ROUND DIE 1-1/2"OD				13152		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
<b>7/16"-28 NEF</b>						<i>Recommended Hole Size based on 75% Thread = .4028"</i>							
HAND TAP	3	3B	4	15993	15994	24.40	22.40	20.20	17.20	16.70	16.30	16.00	16.00
HAND TAP	5	2B	4	15998	15999	35.40	23.30	20.20	17.20	16.70	16.30	16.00	16.00
R.H. ROUND DIE 1-1/2"OD				13154		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
GAGE - Taperlock Style		2B		23158		145.20							
GAGE - Taperlock Style		3B		23159		145.20							
GAGE - Reversible Style		2B		24952		187.90							
GAGE - Reversible Style		3B		24953		187.90							
GAGE - Ring-Go		2A		23536		134.60							
GAGE - Ring-Go		3A		23537		134.60							
GAGE - Ring-NoGo		2A		23538		134.60							
GAGE - Ring-NoGo		3A		23539		134.60							
<b>7/16"-32 NS</b>						<i>Recommended Hole Size based on 75% Thread = .4072"</i>							
HAND TAP	3	3B	4	16003	16004	56.40	33.40	33.10	22.90	18.40	16.30	16.00	16.00
R.H. ROUND DIE 1-1/2"OD				13156		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
GAGE - Taperlock Style		2B		22245		155.00							
GAGE - Taperlock Style		3B		22246		155.00							
GAGE - Ring-Go		2A		22247		217.00							
GAGE - Ring-Go		3A		22248		217.00							
GAGE - Ring-NoGo		2A		22249		217.00							
GAGE - Ring-NoGo		3A		22250		217.00							

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<b>7/16"-40 NS</b>					<i>Recommended Hole Size based on 75% Thread = .4133"</i>								
HAND TAP	2	3B	4	16008	16009	56.40	33.40	33.10	22.90	18.40	16.30	16.00	16.00
R.H. ROUND DIE 1-1/2"OD				13158		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
<b>15/32"-32 NS</b>					<i>Recommended Hole Size based on 75% Thread = .4384"</i>								
HAND TAP	3	3B	6	16013	16014	86.80	70.70	51.30	35.90	27.10	22.70	18.20	16.40
SPIRAL POINT	3	3B	3	16011		88.50	72.40	52.90	37.90	28.90	24.40	20.10	18.10
R.H. ROUND DIE 1-1/2"OD				13160		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
<b>1/2"-10 ACME</b>					<i>Recommended Hole Size = .4000"</i>								
HAND TAP		2G	4	16017		106.20	84.20	60.50	52.00	44.30	31.90	31.20	28.80
L.H. HAND TAP		2G	4	16021		106.20	84.20	60.50	52.00	44.30	31.90	31.20	28.80
TANDEM		2G	4	16023		130.70	115.40	95.00	81.10	76.30	73.10	60.50	54.70
L.H. TANDEM		2G	4	16024		156.60	136.60	112.50	93.70	87.20	84.00	72.00	65.70
<b>1/2"-12 NS</b>					<i>Recommended Hole Size based on 75% Thread = .4192"</i>								
HAND TAP	3	3B	4	16028	16029	59.60	35.40	34.50	25.50	20.60	18.40	18.20	17.60
R.H. ROUND DIE 1-1/2"OD				13162		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
<b>1/2"-12 BSW 55° MOD WHITWORTH</b>					<i>Recommended Hole Size = .4200"</i>								
	3		4	16033	16034	125.60	93.10	66.50	46.30	35.40	28.80	24.20	21.00
<b>1/2"-13 NC</b>					<i>Recommended Hole Size based on 75% Thread = .4251" for STI = .5312" / TRU-FLO at 65% Thread = .4660"</i>								
L.H. HAND TAP	3	3B	4	16038	16039	20.10	20.10	20.10	18.20	18.20	18.20	18.20	17.60
L.H. SPIRAL POINT	3	3B	3	16036		21.90	21.90	21.90	20.10	20.10	20.10	20.10	19.40
+ .003 HAND TAP	7		4	16043	16044	65.50	51.80	38.00	27.00	21.70	18.40	18.20	17.60
+ .005 HAND TAP	11	PLATING	4	16048	16049	20.10	20.10	20.10	18.20	18.20	18.20	18.20	17.60
+ .005 SPIRAL POINT	11	PLATING	3	16046		21.90	21.90	21.90	20.10	20.10	20.10	20.10	19.40
+ .010 HAND TAP	21		4	16053	16054	101.60	72.80	52.70	35.90	27.10	22.70	18.20	17.60
DOUBLE LEAD	3	3B	4	16058	16059	129.20	97.50	70.50	49.80	37.80	31.60	30.90	26.20
6" EXTENSION HAND TAP	3	3B	4	16083	16084	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20
6" EXT SPIRAL POINT	3	3B	3	16081		31.80	31.80	31.80	31.80	31.80	31.80	31.80	31.80
8" EXTENSION HAND TAP	3	3B	4	17973	17974	61.10	61.10	61.10	61.10	61.10	61.10	61.10	61.10
10" EXTENSION HAND TAP	3	3B	4	17978	17979	73.40	73.40	73.40	73.40	73.40	73.40	73.40	73.40
12" EXTENSION HAND TAP	3	3B	4	17983	17984	91.80	91.80	91.80	91.80	91.80	91.80	91.80	91.80
"TRU-FLO" FORM TAP	5	3B	0	19110	19111	35.10	35.10	35.10	35.10	35.10	35.10	29.10	25.20
"TRU-FLO" FORM TAP	8	2B	0	19112	19113	35.10	35.10	35.10	35.10	35.10	35.10	29.10	25.20
SOLID CARBIDE / HAND	3	3B	4	41528	41529	211.00	204.60	201.60	196.20	192.40	190.50	182.60	179.20
SOLID CARBIDE / SP PT	3	3B	3	41530		226.10	219.80	217.10	211.40	207.60	205.70	197.70	194.50
"COST CUTTER" DRILL/TAP	3	3B	2	29020		31.60	31.60	31.60	31.60	31.60	31.60	31.60	31.60
TIN COAT/SP PT+.005	11	PLATING	3	50017		26.30	26.30	26.30	24.20	24.20	24.20	24.20	23.60
TIN COAT HAND x 6"	3	3B	4	50019		36.70	36.70	36.70	36.70	36.70	36.70	36.70	36.70
TIN COAT/SP PT x 6"	3	3B	3	50018		38.70	38.70	38.70	38.70	38.70	38.70	38.70	38.70
STI HAND TAP	3	3B	4	17890	17891	35.60	35.60	31.80	28.90	28.90	28.90	28.30	27.00
STI SPIRAL POINT	3	3B	3	17892		38.30	38.30	34.30	31.60	31.60	31.60	31.10	29.60
R.H. ROUND DIE 1-1/2"OD				13164		48.80	48.80	48.80	42.10	40.40	37.00	35.60	35.40
L.H. ROUND DIE 1-1/2"OD				13165		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
GAGE - Taperlock Style		2B		23163		75.90							
GAGE - Taperlock Style		3B		23164		75.90							
GAGE - Reversible Style		2B		24329		113.40							
GAGE - Reversible Style		3B		24330		113.40							
GAGE - Ring-Go		2A		23542		102.60							

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<b>1/2"-13 NC</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - Ring-Go		3A		23543		102.60							
GAGE - Ring-NoGo		2A		23544		102.60							
GAGE - Ring-NoGo		3A		23545		102.60							
GAGE - STI Plug Taperlock		2B		24717		124.00							
GAGE - STI Plug Taperlock		3B		24718		124.00							
GAGE - L.H. Taperlock Style		2B		22251		144.00							
GAGE - L.H. Taperlock Style		3B		22252		144.00							
GAGE - L.H. Reversible Style		2B		22253		182.00							
GAGE - L.H. Reversible Style		3B		22254		182.00							
GAGE - L.H. Ring-Go		2A		22255		189.00							
GAGE - L.H. Ring-NoGo		2A		22256		189.00							
GAGE - L.H. Ring-Go		3A		22257		189.00							
GAGE - L.H. Ring-NoGo		3A		22258		189.00							
<b>1/2"-14 PIPE TAP NPSI NPSF NPT/F NPS</b>					<i>Recommended Hole Size: NPT/NPTF = .703" NPSF/NPSI = .7188"</i>								
NPT/F REG. SPR FLT TAPER			4	16086		68.60	68.60	68.60	68.60	68.60	63.30	62.40	59.40
NPT/F LEFT HAND TAPER			4	16089		93.70	79.60	65.30	54.90	48.60	40.50	39.50	36.50
NPT/F 6" EXT TAPER			4	16092		73.60	73.30	72.60	70.70	67.20	64.20	60.20	55.10
NPT/F 6" EXT INT TAPER			5	16095		82.30	81.50	80.80	80.00	71.80	66.10	64.40	61.60
NPSF EXT x 6"			4	17720		94.00	93.30	92.40	90.90	76.90	73.40	70.70	66.90
NPT/F 8" EXT TAPER			4	16098		94.00	93.30	92.40	90.90	77.70	74.50	73.80	67.30
NPT/F 10" EXT TAPER			4	17987		112.70	112.70	112.70	112.70	112.70	112.70	112.70	112.70
NPT/F CARB-I-SERT TAP			4	41809		377.10	344.40	323.10	298.90	291.10	277.50	261.90	258.30
NPT/F "COST CUTTER" DRILL/TAP			4	29044		139.40	135.70	133.20	130.70	126.80	124.50	119.40	116.30
NPSI STRAIGHT			4	16104		93.70	79.60	65.30	54.90	48.60	40.50	39.50	34.30
NPT R.H. ROUND DIE 2"OD				13184		102.40	85.80	80.50	62.40	62.40	62.40	62.40	62.40
NPS R.H. ROUND DIE 2"OD				13186		202.90	171.10	107.50	93.50				
GAGE L1 NPT PLG w/hdle				24380		82.90							
GAGE L1 NPT RING				24378		145.40							
GAGE L1 NPTF PLG w/hdle				24450		122.30							
GAGE L3 NPTF PLG w/hdle				24452		122.30							
GAGE NPTF 6 step Plain Plug w/handle				24540		156.40							
GAGE L1 NPTF RING				24502		150.90							
GAGE L2 NPTF RING				24504		239.30							
GAGE NPTF 6 step Plain Ring				24574		251.50							
<b>1/2"-14 55° WHITWORTH PIPE</b>					<i>Recommended Hole Size: BSPT = .7188" / BSPP = .7344"</i>								
BSPT TAPER - MODIFIED			4	16107	16108	44.10	44.10	44.10	44.10	44.10	44.10	44.10	44.10
BSPP PARALLEL - MODIFIED			4	16110	16111	44.10	44.10	44.10	44.10	44.10	44.10	44.10	44.10
BSPT TAPER - FULL FORM			4	17935		107.70	107.70	107.70	107.70	89.50	76.30	59.00	52.10
BSPP PARALLEL - FULL FORM			4	17926		107.70	107.70	107.70	107.70	89.50	76.30	59.00	52.10
BSPT FULL FORM DIE 2"OD				13698		343.70							
BSPP FULL FORM DIE 2"OD				13699		146.60							
GAGE BSPT-Mod. w/handle				27011		235.60							
GAGE BSPP-Mod. DBL END w/handle				27050		279.10							
<b>1/2"-14 NS</b>					<i>Recommended Hole Size based on 75% Thread = .4306"</i>								
HAND TAP	3	3B	4	16115	16116	59.60	35.40	34.50	25.50	20.60	18.40	18.20	17.60
R.H. ROUND DIE 1-1/2"OD				13166		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>1/2"-16 NS</b>						<i>Recommended Hole Size based on 75% Thread = .4394"</i>							
HAND TAP	3	3B	4	<b>16120</b>	<b>16121</b>	59.60	35.40	34.50	25.50	20.60	18.40	18.20	17.60
R.H. ROUND DIE 1-1/2"OD				<b>13168</b>		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
GAGE - Taperlock Style		2B		<b>22259</b>		144.00							
GAGE - Taperlock Style		3B		<b>22260</b>		144.00							
GAGE - Ring-Go		2A		<b>22261</b>		189.00							
GAGE - Ring-Go		3A		<b>22262</b>		189.00							
GAGE - Ring-NoGo		2A		<b>22263</b>		189.00							
GAGE - Ring-NoGo		3A		<b>22264</b>		189.00							
<b>1/2"-18 NS</b>						<i>Recommended Hole Size based on 75% Thread = .4464"</i>							
HAND TAP	3	3B	4	<b>16125</b>	<b>16126</b>	59.60	35.40	34.50	25.50	20.60	18.40	18.20	17.60
R.H. ROUND DIE 1-1/2"OD				<b>13170</b>		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
<b>1/2"-20 NF</b>						<i>Recommended Hole Size based on 75% Thread = .4515" for STI = .5156" / TRU-FLO at 65% Thread = .4779"</i>							
L.H. HAND TAP	3	3B	4	<b>16130</b>	<b>16131</b>	20.10	20.10	20.10	18.20	18.20	18.20	18.20	17.60
L.H. SPIRAL POINT	3	3B	3	<b>16128</b>		23.90	23.90	23.90	23.90	22.80	22.80	20.10	19.40
HAND TAP	5	2B	4		<b>17634</b>	101.60	72.80	52.70	35.90	27.10	22.70	18.20	17.60
+ .003 HAND TAP	7		4	<b>16135</b>	<b>16136</b>	67.20	53.10	39.00	27.50	22.20	19.40	18.20	17.60
+ .005 HAND TAP	11	PLATING	4	<b>16140</b>	<b>16141</b>	20.10	20.10	20.10	18.20	18.20	18.20	18.20	17.60
+ .005 SPIRAL POINT	11	PLATING	3	<b>16138</b>		21.90	21.90	21.90	20.10	20.10	20.10	20.10	19.40
6" PULLEY	3	3B	4	<b>16145</b>	<b>16146</b>	37.50	37.50	37.50	37.50	37.50	37.50	37.50	37.50
6" EXTENSION HAND TAP	3	3B	4	<b>16150</b>	<b>16151</b>	30.20	30.20	30.20	30.20	30.20	30.20	30.20	30.20
6" EXT SPIRAL POINT	3	3B	3	<b>16148</b>		31.80	31.80	31.80	31.80	31.80	31.80	31.80	31.80
"TRU-FLO" FORM TAP	5	3B	0	<b>19114</b>	<b>19115</b>	35.10	35.10	35.10	35.10	35.10	35.10	29.10	25.20
"TRU-FLO" FORM TAP	8	2B	0	<b>19116</b>	<b>19117</b>	35.10	35.10	35.10	35.10	35.10	35.10	29.10	25.20
"TRU-FLO" FORM TAP	10	PLATING	0	<b>19118</b>	<b>19119</b>	116.30	109.90	78.90	55.70	44.10	35.10	29.10	25.20
SOLID CARBIDE / HAND	3	3B	4	<b>41532</b>	<b>41533</b>	211.00	204.60	201.60	196.20	192.40	190.50	182.60	179.20
SOLID CARBIDE / SP PT	3	3B	3	<b>41534</b>		226.10	219.80	217.10	211.40	207.60	205.70	197.70	194.50
"COST CUTTER" DRILL/TAP	3	3B	2	<b>29022</b>		31.60	31.60	31.60	31.60	31.60	31.60	31.60	31.60
STI HAND TAP	3	3B	4	<b>17894</b>	<b>17895</b>	35.60	35.60	31.80	28.90	28.90	28.90	28.30	27.00
STI SPIRAL POINT	3	3B	3	<b>17896</b>		38.30	38.30	34.30	31.60	31.60	31.60	31.10	29.60
R.H. ROUND DIE 1-1/2"OD				<b>13172</b>		48.80	48.80	48.80	42.10	40.40	37.00	35.60	35.40
L.H. ROUND DIE 1-1/2"OD				<b>13173</b>		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
GAGE - Taperlock Style		2B		<b>23168</b>		75.90							
GAGE - Taperlock Style		3B		<b>23169</b>		75.90							
GAGE - Reversible Style		2B		<b>24334</b>		113.40							
GAGE - Reversible Style		3B		<b>24335</b>		113.40							
GAGE - Ring-Go		2A		<b>23548</b>		102.60							
GAGE - Ring-Go		3A		<b>23549</b>		102.60							
GAGE - Ring-NoGo		2A		<b>23550</b>		102.60							
GAGE - Ring-NoGo		3A		<b>23551</b>		102.60							
GAGE - STI Plug Taperlock		2B		<b>24722</b>		124.00							
GAGE - STI Plug Taperlock		3B		<b>24723</b>		124.00							
GAGE - L.H. Taperlock Style		2B		<b>22265</b>		144.00							
GAGE - L.H. Taperlock Style		3B		<b>22266</b>		144.00							
GAGE - L.H. Reversible Style		2B		<b>22267</b>		182.00							
GAGE - L.H. Reversible Style		3B		<b>22268</b>		182.00							
GAGE - L.H. Ring-Go		2A		<b>22269</b>		189.00							
GAGE - L.H. Ring-NoGo		2A		<b>22270</b>		189.00							
GAGE - L.H. Ring-Go		3A		<b>22271</b>		189.00							
GAGE - L.H. Ring-NoGo		3A		<b>22272</b>		189.00							

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>1/2"-24 NS</b>						<i>Recommended Hole Size based on 75% Thread = .459"</i>							
HAND TAP	3	3B	4	16155	16156	59.60	35.40	34.50	25.50	20.60	18.40	18.20	17.60
R.H. ROUND DIE 1-1/2"OD				13174		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
<b>1/2"-27 NS</b>						<i>Recommended Hole Size based on 75% Thread = .464"</i>							
HAND TAP	3	3B	4	16160	16161	59.60	35.40	34.50	25.50	20.60	18.40	18.20	17.60
R.H. ROUND DIE 1-1/2"OD				13176		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
<b>1/2"-28 NEF</b>						<i>Recommended Hole Size based on 75% Thread = .4653"</i>							
HAND TAP	3	3B	4	16165	16166	26.30	24.20	19.80	14.70	12.60	11.70	11.50	11.50
SPIRAL POINT	3	3B	3	16163		28.10	26.00	24.00	18.20	17.60	16.60	16.40	15.70
HAND TAP	5	2B	4	16170	16171	28.60	25.30	19.80	18.70	18.00	16.70	16.50	16.30
R.H. ROUND DIE 1-1/2"OD				13178		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
GAGE - Taperlock Style		2B		23173		142.60							
GAGE - Taperlock Style		3B		23174		142.60							
GAGE - Reversible Style		2B		24957		198.60							
GAGE - Reversible Style		3B		24958		198.60							
GAGE - Ring-Go		2A		23554		136.00							
GAGE - Ring-Go		3A		23555		136.00							
GAGE - Ring-NoGo		2A		23556		136.00							
GAGE - Ring-NoGo		3A		23557		136.00							
<b>1/2"-32 NS</b>						<i>Recommended Hole Size based on 75% Thread = .4697"</i>							
HAND TAP	3	3B	6	16175	16176	59.60	35.40	34.50	25.50	20.60	18.40	18.20	17.60
R.H. ROUND DIE 1-1/2"OD				13180		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
GAGE - Taperlock Style		2B		22273		166.00							
GAGE - Taperlock Style		3B		22274		166.00							
GAGE - Ring-Go		2A		22275		217.00							
GAGE - Ring-Go		3A		22276		217.00							
GAGE - Ring-NoGo		2A		22277		217.00							
GAGE - Ring-NoGo		3A		22278		217.00							
<b>1/2"-40 NS</b>						<i>Recommended Hole Size based on 75% Thread = .4758"</i>							
HAND TAP	2	3B	6	16180	16181	59.60	35.40	34.50	25.50	20.60	18.40	18.20	17.60
R.H. ROUND DIE 1-1/2"OD				13182		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
<b>33/64"-13 NS</b>						<i>Recommended Hole Size based on 75% Thread = .4407"</i>							
HAND TAP	3	3B	4	16185	16186	101.60	72.80	52.70	35.90	27.10	22.70	18.20	17.60
<b>9/16"-12 NC</b>						<i>Recommended Hole Size based on 75% Thread = .4817"</i> <i>TRU-FLO at 65% Thread = .5257"</i>							
L.H. HAND TAP	3	3B	4	16190	16191	27.00	27.00	23.20	23.20	23.20	23.20	23.20	22.80
SPIRAL POINT	3	3B	3	18331		28.00	28.00	25.60	25.60	25.60	25.60	25.60	25.10
6" EXTENSION HAND TAP	3	3B	4	17653	17654	70.70	69.50	68.70	47.80	44.40	40.80	37.50	34.10
"TRU-FLO" FORM TAP	7	3B	0	19120	19121	38.00	38.00	38.00	38.00	38.00	38.00	32.10	28.60
"TRU-FLO" FORM TAP	10	2B	0	19122	19123	38.00	38.00	38.00	38.00	38.00	38.00	32.10	28.60
CARB-I-SERT TAP	3	3B	4	41540	41541	246.60	246.60	246.60	226.70	223.00	216.00	214.30	209.20
R.H. ROUND DIE 1-1/2"OD				13188		48.80	48.80	48.80	42.10	40.40	37.00	35.60	35.40
L.H. ROUND DIE 1-1/2"OD				13189		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
GAGE - Taperlock Style		2B		23178		97.40							

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<b>9/16"-12 NC</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - Taperlock Style		3B		23179		97.40							
GAGE - Reversible Style		2B		24339		125.30							
GAGE - Reversible Style		3B		24340		125.30							
GAGE - Ring-Go		2A		23560		114.60							
GAGE - Ring-Go		3A		23561		114.60							
GAGE - Ring-NoGo		2A		23562		114.60							
GAGE - Ring-NoGo		3A		23563		114.60							
GAGE - STI Plug Taperlock		2B		22279		110.00							
GAGE - STI Plug Taperlock		3B		22280		110.00							
GAGE - L.H. Taperlock Style		2B		22281		144.00							
GAGE - L.H. Taperlock Style		3B		22282		144.00							
GAGE - L.H. Reversible Style		2B		22283		184.00							
GAGE - L.H. Reversible Style		3B		22284		184.00							
GAGE - L.H. Ring-Go		2A		22285		194.50							
GAGE - L.H. Ring-NoGo		2A		22286		194.50							
GAGE - L.H. Ring-Go		3A		22287		194.50							
GAGE - L.H. Ring-NoGo		3A		22288		194.50							
<b>9/16"-16 NS</b>					<i>Recommended Hole Size based on 75% Thread = .5019"</i>								
HAND TAP	3	3B	4	16200	16201	66.20	38.20	37.90	27.10	24.50	23.50	23.20	22.80
R.H. ROUND DIE 1-1/2"OD				13190		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
GAGE - Taperlock Style		2B		22289		133.00							
GAGE - Taperlock Style		3B		22290		133.00							
GAGE - Ring-Go		2A		22291		195.00							
GAGE - Ring-Go		3A		22292		195.00							
GAGE - Ring-NoGo		2A		22293		195.00							
GAGE - Ring-NoGo		3A		22294		195.00							
<b>9/16"-18 NF</b>					<i>Recommended Hole Size based on 75% Thread = .5089" TRU-FLO at 65% Thread = .5379"</i>								
L.H. HAND TAP	3	3B	4	16205	16206	25.50	25.50	23.20	23.20	23.20	23.20	23.20	22.80
SPIRAL POINT	3	3B	3	18337		28.00	28.00	25.60	25.60	25.60	25.60	25.60	25.10
HAND TAP	5	2B	4		17769	88.90	64.30	48.10	36.60	32.00	23.50	22.00	21.70
SPIRAL POINT	5	2B	3	17655		96.00	70.00	52.90	40.90	36.20	27.00	25.50	25.10
+ .005 HAND TAP	11	PLATING	4	16215	16216	93.50	67.60	50.50	38.50	33.70	24.80	23.20	22.80
+ .005 SPIRAL POINT	11	PLATING	3	16213		96.00	70.00	52.90	40.90	36.20	27.00	25.50	25.10
6" EXTENSION HAND TAP	3	3B	4	16220	16221	70.70	69.50	68.70	47.80	44.40	40.60	37.50	34.10
"TRU-FLO" FORM TAP	7	3B	0	19124	19125	38.00	38.00	38.00	38.00	38.00	38.00	32.10	28.60
"TRU-FLO" FORM TAP	10	2B	0	19126	19127	38.00	38.00	38.00	38.00	38.00	38.00	32.10	28.60
CARB-I-SERT TAP	3	3B	4	41543	41544	246.60	246.60	246.60	226.70	223.00	216.00	214.30	209.20
R.H. ROUND DIE 1-1/2"OD				13192		48.80	48.80	48.80	42.10	40.40	37.00	35.60	35.40
L.H. ROUND DIE 1-1/2"OD				13193		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
GAGE - Taperlock Style		2B		23183		97.40							
GAGE - Taperlock Style		3B		23184		97.40							
GAGE - Reversible Style		2B		24344		125.30							
GAGE - Reversible Style		3B		24345		125.30							
GAGE - Ring-Go		2A		23566		114.60							
GAGE - Ring-Go		3A		23567		114.60							
GAGE - Ring-NoGo		2A		23568		114.60							
GAGE - Ring-NoGo		3A		23569		114.60							
GAGE - STI Plug Taperlock		2B		22295		108.00							
GAGE - STI Plug Taperlock		3B		22296		108.00							
GAGE - L.H. Taperlock Style		2B		22297		144.00							

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# POPULAR SPECIAL: TAPS, DIES & GAGES

SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>9/16"-18 NF</b>						<i>See Previous Page for Recommended Hole Size</i>							
GAGE - L.H. Taperlock Style		3B		22298		144.00							
GAGE - L.H. Reversible Style		2B		22299		184.00							
GAGE - L.H. Reversible Style		3B		22300		184.00							
GAGE - L.H. Ring-Go		2A		22301		200.00							
GAGE - L.H. Ring-NoGo		2A		22302		200.00							
GAGE - L.H. Ring-Go		3A		22303		200.00							
GAGE - L.H. Ring-NoGo		3A		22304		200.00							
<b>9/16"-20 NS</b>						<i>Recommended Hole Size based on 75% Thread = .514"</i>							
HAND TAP	3	3B	4	16225	16226	66.20	38.20	37.90	27.10	24.50	23.50	23.20	22.80
SPIRAL POINT	3	3B	3	16223		96.00	70.00	52.90	40.90	36.20	27.00	25.50	25.10
R.H. ROUND DIE 1-1/2"OD				13194		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
GAGE - Taperlock Style		2B		22305		144.00							
GAGE - Taperlock Style		3B		22306		144.00							
GAGE - Ring-Go		2A		22307		200.00							
GAGE - Ring-Go		3A		22308		200.00							
GAGE - Ring-NoGo		2A		22309		200.00							
GAGE - Ring-NoGo		3A		22310		200.00							
<b>9/16"-24 NEF</b>						<i>Recommended Hole Size based on 75% Thread = .5215"</i>							
HAND TAP	3	3B	4	16230	16231	28.90	25.30	21.70	16.40	15.00	14.30	14.00	13.80
HAND TAP	5	2B	4	16235	16236	40.00	29.60	22.40	18.60	17.60	16.00	14.90	14.70
R.H. ROUND DIE 1-1/2"OD				13196		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
GAGE - Taperlock Style		2B		23188		145.20							
GAGE - Taperlock Style		3B		23189		145.20							
GAGE - Reversible Style		2B		24962		221.20							
GAGE - Reversible Style		3B		24963		221.20							
GAGE - Ring-Go		2A		23572		141.40							
GAGE - Ring-Go		3A		23573		141.40							
GAGE - Ring-NoGo		2A		23574		141.40							
GAGE - Ring-NoGo		3A		23575		141.40							
<b>9/16"-27 NS</b>						<i>Recommended Hole Size based on 75% Thread = .5265"</i>							
HAND TAP	3	3B	6	16240	16241	66.20	38.20	37.90	27.10	24.80	23.50	23.20	22.80
R.H. ROUND DIE 1-1/2"OD				13198		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
<b>9/16"-32 NS</b>						<i>Recommended Hole Size based on 75% Thread = .5322"</i>							
HAND TAP	3	3B	6	16245	16246	66.20	38.20	37.90	27.10	24.80	23.50	23.20	22.80
R.H. ROUND DIE 1-1/2"OD				13200		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
GAGE - Taperlock Style		2B		22311		177.00							
GAGE - Taperlock Style		3B		22312		177.00							
GAGE - Ring-Go		2A		22313		223.00							
GAGE - Ring-Go		3A		22314		223.00							
GAGE - Ring-NoGo		2A		22315		223.00							
GAGE - Ring-NoGo		3A		22316		223.00							
<b>5/8"-8 ACME</b>						<i>Recommended Hole Size = .5000"</i>							
HAND TAP		2G	4	16249		124.20	97.10	69.60	55.50	51.00	39.50	38.50	35.70
L.H. HAND TAP		2G	4	16253		124.20	97.10	69.60	55.50	51.00	39.50	38.50	35.70
TANDEM		2G	4	16255		151.40	134.80	110.60	100.10	94.10	90.10	78.10	69.00
L.H. TANDEM		2G	4	16256		174.60	155.60	128.70	116.30	109.90	106.30	88.40	80.50

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>5/8"-11 NC</b>					<i>Recommended Hole Size based on 75% Thread = .5365" TRU-FLO at 65% Thread = .5848"</i>								
REGULAR SPIRAL FLUTE	3	3B	4	16284	16285	114.00	88.50	67.00	52.00	41.60	36.30	32.40	28.10
FAST SPIRAL FLUTE	3	3B	4	17717	17718	114.00	88.50	67.00	52.00	41.60	36.30	32.40	28.10
L.H. HAND TAP	3	3B	4	16270	16271	26.20	26.20	23.70	23.70	23.70	23.70	23.70	23.00
L.H. SPIRAL POINT	3	3B	3	16268		32.10	32.10	29.90	29.90	29.90	29.90	29.90	29.90
+ .005 HAND TAP	11	PLATING	4	16275	16276	26.20	26.20	23.70	23.70	23.70	23.70	23.70	23.00
+ .005 SPIRAL POINT	11	PLATING	3	16273		28.70	28.70	26.40	26.40	26.40	26.40	26.40	25.50
+ .010 HAND TAP	21		4	16280	16281	104.70	73.90	54.10	41.80	31.40	26.20	24.30	23.00
6" EXTENSION HAND TAP	3	3B	4	16309	16310	75.90	74.30	73.30	51.90	48.10	46.00	42.90	40.00
6" EXT SPIRAL POINT	3	3B	3	16307		78.60	76.90	75.90	54.40	50.80	48.90	45.50	42.30
8" EXTENSION HAND TAP	3	3B	4	16314	16315	91.10	89.50	87.20	67.00	62.80	62.10	58.70	56.40
10" EXTENSION HAND TAP	3	3B	4	17991	17992	96.50	96.50	96.50	96.50	96.50	96.50	96.50	96.50
12" EXTENSION HAND TAP	3	3B	4	17996	17997	120.60	120.60	120.60	120.60	120.60	120.60	120.60	120.60
"TRU-FLO" FORM TAP	7	3B	0	19128	19129	44.20	44.20	44.20	44.20	44.20	44.20	38.20	35.00
"TRU-FLO" FORM TAP	10	2B	0	19130	19131	44.20	44.20	44.20	44.20	44.20	44.20	38.20	35.00
"COST CUTTER" DRILL/TAP	3	3B	4	29036		98.70	97.10	95.30	73.30	68.70	62.10	59.80	54.90
CARB-I-SERT TAP	3	3B	4	41546	41547	291.10	291.10	291.10	276.00	266.20	247.80	233.50	230.50
TIN COAT/SP PT x 6"	3	3B	3	50020		88.50	86.90	85.80	64.30	60.40	58.50	55.20	52.10
R.H. ROUND DIE 1-1/2"OD				13204		48.80	48.80	48.80	42.10	40.40	37.00	35.60	35.40
L.H. ROUND DIE 1-1/2"OD				13205		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
GAGE - Taperlock Style		2B		23193		94.60							
GAGE - Taperlock Style		3B		23194		94.60							
GAGE - Reversible Style		2B		24349		136.00							
GAGE - Reversible Style		3B		24350		136.00							
GAGE - Ring-Go		2A		23578		114.60							
GAGE - Ring-Go		3A		23579		114.60							
GAGE - Ring-NoGo		2A		23580		114.60							
GAGE - Ring-NoGo		3A		23581		114.60							
GAGE - STI Plug Taperlock		2B		24737		150.70							
GAGE - STI Plug Taperlock		3B		24738		150.70							
GAGE - L.H. Taperlock Style		2B		22317		168.00							
GAGE - L.H. Taperlock Style		3B		22318		168.00							
GAGE - L.H. Ring-Go		2A		22319		200.00							
GAGE - L.H. Ring-NoGo		2A		22320		200.00							
GAGE - L.H. Ring-Go		3A		22321		200.00							
GAGE - L.H. Ring-NoGo		3A		22322		200.00							

<b>5/8"-11 BSW 55° MOD WHITWORTH</b>					<i>Recommended Hole Size = .5377"</i>								
	3		4	16265	16266	133.20	100.10	73.60	55.60	46.60	37.80	32.50	29.60

<b>5/8"-12 NS</b>					<i>Recommended Hole Size based on 75% Thread = .5442"</i>								
HAND TAP	3	3B	4	16320	16321	71.10	43.40	42.90	32.70	27.10	24.30	23.70	23.00
GAGE - Taperlock Style		2B		22323		144.00							
GAGE - Taperlock Style		3B		22324		144.00							
GAGE - Ring-Go		2A		22325		200.00							
GAGE - Ring-Go		3A		22326		200.00							
GAGE - Ring-NoGo		2A		22327		200.00							
GAGE - Ring-NoGo		3A		22328		200.00							

<b>5/8"-16 NS</b>					<i>Recommended Hole Size based on 75% Thread = .5644"</i>								
HAND TAP	3	3B	4	16325	16326	71.10	43.40	42.90	32.70	27.10	24.30	23.70	23.00
GAGE - Taperlock Style		2B		22329		144.00							
GAGE - Taperlock Style		3B		22330		144.00							

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<b>5/8"-16 NS</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - Ring-Go		2A		<b>22331</b>		200.00							
GAGE - Ring-Go		3A		<b>22332</b>		200.00							
GAGE - Ring-NoGo		2A		<b>22333</b>		200.00							
GAGE - Ring-NoGo		3A		<b>22334</b>		200.00							
<b>5/8"-18 NF</b>					<i>Recommended Hole Size based on 75% Thread = .5714" TRU-FLO at 65% Thread = .6004"</i>								
REGULAR SPIRAL FLUTE	3	3B	4	<b>16339</b>	<b>16340</b>	114.00	88.50	67.00	52.00	41.60	36.30	32.40	28.10
FAST SPIRAL FLUTE	3	3B	4	<b>17727</b>	<b>17728</b>	114.00	88.50	67.00	52.00	41.60	36.30	32.40	28.10
L.H. HAND TAP	3	3B	4	<b>16330</b>	<b>16331</b>	26.20	26.20	23.70	23.70	23.70	23.70	23.70	23.00
SPIRAL POINT	3	3B	3	<b>18353</b>		107.20	76.60	56.70	44.30	34.00	28.80	26.20	25.50
SPIRAL POINT	5	2B	3	<b>17683</b>		107.20	76.60	56.70	44.30	34.00	28.80	26.20	25.50
+.003 HAND TAP	7		4	<b>17681</b>	<b>17682</b>	104.70	73.90	54.10	41.80	31.40	26.20	23.70	23.00
HAND TAP	8		4	<b>17904</b>	<b>17905</b>	104.70	73.90	54.10	41.80	31.40	26.20	23.70	23.00
+.005 HAND TAP	11	PLATING	4	<b>16335</b>	<b>16336</b>	26.20	26.20	23.70	23.70	23.70	23.70	23.70	23.00
6" EXTENSION HAND TAP	3	3B	4	<b>16344</b>	<b>16345</b>	75.90	74.30	73.30	51.90	48.10	46.00	42.90	40.00
"TRU-FLO" FORM TAP	7	3B	0	<b>19132</b>	<b>19133</b>	44.20	44.20	44.20	44.20	44.20	44.20	38.20	35.00
"TRU-FLO" FORM TAP	10	2B	0	<b>19134</b>	<b>19135</b>	44.20	44.20	44.20	44.20	44.20	44.20	38.20	35.00
CARB-I-SERT TAP	3	3B	4	<b>41549</b>	<b>41550</b>	291.10	291.10	291.10	276.00	266.20	247.80	233.50	230.50
TiN COAT/FAST SP FLT	3	3B	4		<b>50032</b>	121.30	95.60	74.10	59.30	48.90	43.50	39.40	35.40
TiN COAT/SP PT	5	2B	3	<b>50028</b>		114.20	83.80	63.80	51.60	41.20	35.90	33.30	33.30
R.H. ROUND DIE 1-1/2"OD				<b>13212</b>		48.80	48.80	48.80	42.30	40.40	37.00	35.60	35.40
L.H. ROUND DIE 1-1/2"OD				<b>13213</b>		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
GAGE - Taperlock Style		2B		<b>23198</b>		94.60							
GAGE - Taperlock Style		3B		<b>23199</b>		94.60							
GAGE - Reversible Style		2B		<b>24354</b>		136.00							
GAGE - Reversible Style		3B		<b>24355</b>		136.00							
GAGE - Ring-Go		2A		<b>23584</b>		114.60							
GAGE - Ring-Go		3A		<b>23585</b>		114.60							
GAGE - Ring-NoGo		2A		<b>23586</b>		114.60							
GAGE - Ring-NoGo		3A		<b>23587</b>		114.60							
GAGE - STI Plug Taperlock		2B		<b>24742</b>		150.70							
GAGE - STI Plug Taperlock		3B		<b>24743</b>		150.70							
GAGE - L.H. Taperlock Style		2B		<b>22335</b>		153.00							
GAGE - L.H. Taperlock Style		3B		<b>22336</b>		153.00							
GAGE - L.H. Reversible Style		2B		<b>22337</b>		195.00							
GAGE - L.H. Reversible Style		3B		<b>22338</b>		195.00							
GAGE - L.H. Ring-Go		2A		<b>22339</b>		200.00							
GAGE - L.H. Ring-NoGo		2A		<b>22340</b>		200.00							
GAGE - L.H. Ring-Go		3A		<b>22341</b>		200.00							
GAGE - L.H. Ring-NoGo		3A		<b>22342</b>		200.00							
<b>5/8"-20 NS</b>					<i>Recommended Hole Size based on 75% Thread = .5765"</i>								
HAND TAP	3	3B	4	<b>16349</b>	<b>16350</b>	71.10	43.40	42.90	32.70	27.10	24.30	23.70	23.00
R.H. ROUND DIE 1-1/2"OD				<b>13214</b>		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
GAGE - Taperlock Style		2B		<b>22343</b>		155.00							
GAGE - Taperlock Style		3B		<b>22344</b>		155.00							
GAGE - Ring-Go		2A		<b>22345</b>		200.00							
GAGE - Ring-Go		3A		<b>22346</b>		200.00							
GAGE - Ring-NoGo		2A		<b>22347</b>		200.00							
GAGE - Ring-NoGo		3A		<b>22348</b>		200.00							
GAGE - L.H. Taperlock Style		2B		<b>22349</b>		153.00							
GAGE - L.H. Taperlock Style		3B		<b>22350</b>		153.00							

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<b>5/8"-20 NS</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - L.H. Ring-Go		2A		22351		200.00							
GAGE - L.H. Ring-NoGo		2A		22352		200.00							
GAGE - L.H. Ring-Go		3A		22353		200.00							
GAGE - L.H. Ring-NoGo		3A		22354		200.00							
<b>5/8"-24 NEF</b>					<i>Recommended Hole Size based on 75% Thread = .5840"</i>								
HAND TAP	3	3B	6	16354	16355	32.70	30.20	27.80	20.10	17.80	16.50	15.50	15.30
HAND TAP	5	2B	6	16359	16360	42.80	32.80	30.80	25.10	21.80	19.50	17.60	16.80
R.H. ROUND DIE 1-1/2"OD				13216		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
GAGE - Taperlock Style		2B		23203		145.20							
GAGE - Taperlock Style		3B		23204		145.20							
GAGE - Reversible Style		2B		24967		221.20							
GAGE - Reversible Style		3B		24968		221.20							
GAGE - Ring-Go		2A		23590		146.60							
GAGE - Ring-Go		3A		23591		146.60							
GAGE - Ring-NoGo		2A		23592		146.60							
GAGE - Ring-NoGo		3A		23593		146.60							
<b>5/8"-27 NS</b>					<i>Recommended Hole Size based on 75% Thread = .5890"</i>								
HAND TAP	3	3B	6	16364	16365	71.10	43.40	42.90	32.70	27.10	24.30	23.70	23.00
R.H. ROUND DIE 1-1/2"OD				13218		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
<b>5/8"-28 NS</b>					<i>Recommended Hole Size based on 75% Thread = .5903"</i>								
HAND TAP	3	3B	6	16369	16370	71.10	43.40	42.90	32.70	27.10	24.30	23.70	23.00
R.H. ROUND DIE 1-1/2"OD				13220		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
GAGE - Taperlock Style		2B		22355		177.00							
GAGE - Taperlock Style		3B		22356		177.00							
GAGE - Ring-Go		2A		22357		250.00							
GAGE - Ring-Go		3A		22358		250.00							
GAGE - Ring-NoGo		2A		22359		250.00							
GAGE - Ring-NoGo		3A		22360		250.00							
<b>5/8"-32 NS</b>					<i>Recommended Hole Size based on 75% Thread = .5947"</i>								
HAND TAP	3	3B	6	16374	16375	71.10	43.40	42.90	32.70	27.10	24.30	23.70	23.00
R.H. ROUND DIE 1-1/2"OD				13222		83.00	70.50	56.40	46.90	44.80	41.00	37.70	37.20
GAGE - Taperlock Style		2B		22361		177.00							
GAGE - Taperlock Style		3B		22362		177.00							
GAGE - Ring-Go		2A		22363		250.00							
GAGE - Ring-Go		3A		22364		250.00							
GAGE - Ring-NoGo		2A		22365		250.00							
GAGE - Ring-NoGo		3A		22366		250.00							
<b>41/64"-11 NS</b>					<i>Recommended Hole Size based on 75% Thread = .5521"</i>								
HAND TAP	4	3B	4	16379	16380	104.70	73.90	54.10	41.80	31.40	26.20	23.70	23.00
<b>11/16"-11 NS</b>					<i>Recommended Hole Size based on 75% Thread = .5990"</i>								
L.H. HAND TAP	3	3B	4	16384	16385	43.20	43.20	39.10	39.10	39.10	39.10	32.80	32.10
<b>11/16"-16 NS</b>					<i>Recommended Hole Size based on 75% Thread = .6269"</i>								
L.H. HAND TAP	3	3B	4	16389	16390	43.20	43.20	39.10	39.10	39.10	39.10	32.80	32.10
L.H. ROUND DIE 2"OD				13229		102.40	85.80	80.50	76.10	72.60	66.50	58.70	58.20

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**North American Tool**

"In The Pursuit of Perfection"

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# POPULAR SPECIAL: TAPS, DIES & GAGES

SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>11/16"-16 NS</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - Taperlock Style		2B		22367		155.00							
GAGE - Taperlock Style		3B		22368		155.00							
GAGE - Ring-Go		2A		22369		200.00							
GAGE - Ring-Go		3A		22370		200.00							
GAGE - Ring-NoGo		2A		22371		200.00							
GAGE - Ring-NoGo		3A		22372		200.00							
<b>11/16"-18 NS</b>					<i>Recommended Hole Size based on 75% Thread = .6339"</i>								
L.H. HAND TAP	3	3B	4	17576	17577	114.00	85.30	63.50	48.60	38.70	33.40	28.30	25.10
HAND TAP	3	3B	4	16394	16395	75.00	49.30	48.60	36.40	31.20	28.60	27.00	24.00
R.H. ROUND DIE 2"OD				13230		102.40	85.80	80.50	76.10	72.60	66.50	58.70	58.20
<b>11/16"-20 NS</b>					<i>Recommended Hole Size based on 75% Thread = .6390"</i>								
HAND TAP	3	3B	6	16399	16400	75.00	49.30	48.60	36.40	31.20	28.60	27.00	24.00
R.H. ROUND DIE 2"OD				13232		102.40	85.80	80.50	76.10	72.60	66.50	58.70	58.20
GAGE - Taperlock Style		2B		22373		155.00							
GAGE - Taperlock Style		3B		22374		155.00							
GAGE - Ring-Go		2A		22375		200.00							
GAGE - Ring-Go		3A		22376		200.00							
GAGE - Ring-NoGo		2A		22377		200.00							
GAGE - Ring-NoGo		3A		22378		200.00							
<b>11/16"-24 NEF</b>					<i>Recommended Hole Size based on 75% Thread = .6465"</i>								
HAND TAP	3	3B	6	16404	16405	32.80	29.00	25.60	23.00	23.00	23.00	23.00	22.60
HAND TAP	5	2B	6	16409	16410	45.70	35.70	32.80	27.50	24.20	23.00	23.00	22.60
R.H. ROUND DIE 2"OD				13234		102.40	85.80	80.50	76.10	72.60	66.50	58.70	58.20
GAGE - Taperlock Style		2B		23208		147.80							
GAGE - Taperlock Style		3B		23209		147.80							
GAGE - Reversible Style		2B		24972		221.20							
GAGE - Reversible Style		3B		24973		221.20							
GAGE - Ring-Go		2A		23596		169.30							
GAGE - Ring-Go		3A		23597		169.30							
GAGE - Ring-NoGo		2A		23598		169.30							
GAGE - Ring-NoGo		3A		23599		169.30							
<b>11/16"-28 NS</b>					<i>Recommended Hole Size based on 75% Thread = .6528"</i>								
HAND TAP	3	3B	6	16419	16420	75.00	49.30	48.60	36.40	31.20	28.60	27.00	24.00
GAGE - Taperlock Style		2B		22379		188.00							
GAGE - Taperlock Style		3B		22380		188.00							
GAGE - Ring-Go		2A		22381		250.00							
GAGE - Ring-Go		3A		22382		250.00							
GAGE - Ring-NoGo		2A		22383		250.00							
GAGE - Ring-NoGo		3A		22384		250.00							
<b>11/16"-32 NS</b>					<i>Recommended Hole Size based on 75% Thread = .6572"</i>								
HAND TAP	3	3B	6	16424	16425	75.00	49.30	48.60	36.40	31.20	28.60	27.00	24.00
R.H. ROUND DIE 2"OD				13238		102.40	85.80	80.50	76.10	72.60	66.50	58.70	58.20
GAGE - Taperlock Style		2B		22385		188.00							
GAGE - Taperlock Style		3B		22386		188.00							
GAGE - Ring-Go		2A		22387		250.00							
GAGE - Ring-Go		3A		22388		250.00							
GAGE - Ring-NoGo		2A		22389		250.00							

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<b>11/16"-32 NS</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - Ring-NoGo		3A		<b>22390</b>		250.00							
<b>3/4"-5 ACME</b>					<i>Recommended Hole Size = .550"</i>								
HAND TAP		2G	4	<b>18102</b>	<b>18103</b>	156.70	114.90	82.30	65.80	65.80	47.70	47.70	42.90
<b>3/4"-6 ACME</b>					<i>Recommended Hole Size = .5833"</i>								
HAND TAP		2G	4	<b>16432</b>		117.20	94.50	73.00	59.40	52.70	43.50	42.60	38.80
L.H. HAND TAP		2G	4	<b>16436</b>		117.20	94.50	73.00	59.40	52.70	43.50	42.60	38.80
TANDEM		2G	4	<b>16438</b>		164.40	145.50	134.30	128.30	121.00	113.40	100.80	91.10
L.H. TANDEM		2G	4	<b>16439</b>		195.90	173.60	157.70	151.30	139.40	133.80	120.20	108.30
<b>3/4"-8 ACME</b>					<i>Recommended Hole Size = .625"</i>								
HAND TAP		2G	4	<b>16442</b>		132.10	105.00	75.40	60.20	54.90	44.60	42.60	38.80
TANDEM		2G	4	<b>16444</b>		178.00	155.20	140.00	134.10	127.40	115.30	101.70	91.10
L.H. TANDEM		2G	4	<b>16445</b>		195.90	173.60	157.70	151.30	139.40	133.80	120.20	108.30
<b>3/4"-10 NC</b>					<i>Recommended Hole Size based on 75% Thread = .6526"</i> <i>TRU-FLO at 65% Thread = .7058"</i>								
REGULAR SPIRAL FLUTE	3	3B	4	<b>16463</b>	<b>16464</b>	130.20	102.70	71.70	55.70	51.60	46.00	41.40	37.20
L.H. HAND TAP	3	3B	4	<b>16449</b>	<b>16450</b>	45.90	45.10	44.10	37.10	34.90	33.10	31.10	28.20
+ .005 HAND TAP	11	PLATING	4	<b>16454</b>	<b>16455</b>	31.10	31.10	30.40	26.20	25.20	23.60	22.50	22.20
+ .005 SPIRAL POINT	11	PLATING	3	<b>16452</b>		35.10	35.10	34.20	30.10	29.00	27.50	26.40	26.20
+ .010 HAND TAP	21		4	<b>16459</b>	<b>16460</b>	115.40	85.30	65.30	37.10	34.90	33.10	31.10	28.20
6" EXT HAND TAP	3	3B	4	<b>16478</b>	<b>16479</b>	87.10	86.50	85.80	61.70	57.80	55.60	52.30	48.60
6" EXT SP PT	3	3B	3	<b>17632</b>		91.40	90.90	90.10	65.80	61.90	59.80	56.60	52.60
8" EXT HAND TAP	3	3B	4	<b>16483</b>	<b>16484</b>	102.50	100.40	97.20	76.40	72.60	70.70	67.20	61.10
10" EXT HAND TAP	3	3B	4	<b>16488</b>	<b>16489</b>	115.00	114.20	113.80	88.60	84.70	82.60	79.30	73.00
"TRU-FLO" FORM TAP	7	3B	0	<b>19136</b>	<b>19137</b>	54.10	54.10	54.10	54.10	54.10	54.10	48.10	44.40
"TRU-FLO" FORM TAP	10	2B	0	<b>19138</b>	<b>19139</b>	54.10	54.10	54.10	54.10	54.10	54.10	48.10	44.40
CARB-I-SERT TAP	3	3B	4	<b>41552</b>	<b>41553</b>	318.00	318.00	318.00	298.90	293.30	281.90	277.50	273.30
TIN COAT/SPPTx6"	3	3B	3	<b>50027</b>		102.50	101.90	101.20	76.90	73.10	71.00	67.80	63.50
R.H. ROUND DIE 2"OD				<b>13240</b>		79.40	79.40	79.40	64.40	61.70	56.50	54.20	53.90
L.H. ROUND DIE 2"OD				<b>13241</b>		102.40	85.80	80.50	76.10	72.60	66.50	58.70	58.20
GAGE - Taperlock Style		2B		<b>23213</b>		108.00							
GAGE - Taperlock Style		3B		<b>23214</b>		108.00							
GAGE - Reversible Style		2B		<b>24359</b>		149.30							
GAGE - Reversible Style		3B		<b>24360</b>		149.30							
GAGE - Ring-Go		2A		<b>23602</b>		149.30							
GAGE - Ring-Go		3A		<b>23603</b>		149.30							
GAGE - Ring-NoGo		2A		<b>23604</b>		149.30							
GAGE - Ring-NoGo		3A		<b>23605</b>		149.30							
GAGE - STI Plug Taperlock		2B		<b>24747</b>		158.60							
GAGE - STI Plug Taperlock		3B		<b>24748</b>		158.60							
GAGE - L.H. Taperlock Style		2B		<b>22392</b>		166.00							
GAGE - L.H. Taperlock Style		3B		<b>22393</b>		166.00							
GAGE - L.H. Reversible Style		2B		<b>22394</b>		213.00							
GAGE - L.H. Reversible Style		3B		<b>22395</b>		213.00							
GAGE - L.H. Ring-Go		2A		<b>22396</b>		200.00							
GAGE - L.H. Ring-NoGo		2A		<b>22397</b>		200.00							
GAGE - L.H. Ring-Go		3A		<b>22398</b>		200.00							
GAGE - L.H. Ring-NoGo		3A		<b>22399</b>		200.00							

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>3/4"-10 ACME</b>					<i>Recommended Hole Size = .6500"</i>								
HAND TAP		2G	4	<b>16493</b>		132.10	105.00	75.40	60.20	54.90	44.60	42.60	38.80
<b>3/4"-11 1/2 NH</b>					<i>Recommended Hole Size = .9688"</i>								
GARDEN HOSE			6	<b>16497 16498</b>		122.30	102.60	80.00	73.30	66.30	53.10	51.90	50.80
<b>3/4"-12 NS</b>					<i>Recommended Hole Size based on 75% Thread = .6692"</i>								
HAND TAP	4	3B	4	<b>16502 16503</b>		80.00	51.70	51.00	37.70	33.20	30.90	28.90	26.30
R.H. ROUND DIE 2"OD				<b>13242</b>		102.40	85.80	80.50	76.10	72.60	66.50	58.70	58.20
GAGE - Taperlock Style		2B		<b>22400</b>		155.00							
GAGE - Taperlock Style		3B		<b>22401</b>		155.00							
GAGE - Ring-Go		2A		<b>22402</b>		200.00							
GAGE - Ring-Go		3A		<b>22403</b>		200.00							
GAGE - Ring-NoGo		2A		<b>22404</b>		200.00							
GAGE - Ring-NoGo		3A		<b>22405</b>		200.00							
<b>3/4"-14 PIPE TAP NPSI NPSF NPT/F NPS</b>					<i>Recommended Hole Size: NPT = .9063" / NPTF = .9219" NPSI = .9283"</i>								
NPT/F REG. SPR FLT TAPER			5	<b>16505</b>		104.50	101.70	99.80	77.30	74.70	70.30	66.70	60.50
NPT/F LEFT HAND TAPER			5	<b>16508</b>		121.30	90.90	74.20	64.40	61.00	51.50	50.80	50.30
NPT/F 6" EXT TAPER			5	<b>16511</b>		89.10	89.10	89.10	86.50	82.00	78.40	73.10	71.80
NPT/F 6" EXT INT TAPER			5	<b>16514</b>		105.80	105.80	105.80	102.70	97.20	92.50	85.80	81.80
NPT/F 8" EXT TAPER			5	<b>16517</b>		111.60	111.60	111.60	111.60	103.30	99.10	87.20	85.80
NPT/F 10" EXT TAPER			5	<b>18105</b>		134.00	134.00	134.00	134.00	134.00	134.00	134.00	134.00
NPSI STRAIGHT			5	<b>16523</b>		134.60	100.70	82.30	72.80	63.40	54.70	50.80	50.30
NPT/F CARB-I-SERT TAP			4	<b>41810</b>		526.50	519.50	410.10	372.90	365.70	353.00	333.00	327.50
NPT/F "COST CUTTER" DRILL/TAP			4	<b>29045</b>		190.30	181.70	178.10	173.10	161.50	149.30	144.30	141.30
NPT R.H. ROUND DIE 2"OD				<b>13258</b>		102.40	85.80	80.50	76.10	72.60	66.50	58.70	58.20
NPS R.H. ROUND DIE 2"OD				<b>13260</b>		202.90	171.10	107.50	93.50				
GAGE L1 NPT PLG w/hdle				<b>24383</b>		93.80							
GAGE L1 NPT RING				<b>24381</b>		165.90							
GAGE L1 NPTF PLG w/hdle				<b>24458</b>		138.80							
GAGE L3 NPTF PLG w/hdle				<b>24460</b>		138.80							
GAGE NPTF 6 step Plain Plug w/handle				<b>24544</b>		163.10							
GAGE L1 NPTF RING				<b>24506</b>		174.10							
GAGE L2 NPTF RING				<b>24508</b>		263.80							
GAGE NPTF 6 step Plain Ring				<b>24578</b>		282.70							
<b>3/4-14 55° WHITWORTH PIPE</b>					<i>Recommended Hole Size: BSPT = .9219" / BSPP = .9531"</i>								
BSPT TAPER - MODIFIED			5	<b>16526 16527</b>		60.30	60.30	60.30	60.30	60.30	60.30	60.30	60.30
BSPP PARALLEL - MODIFIED			5	<b>16529 16530</b>		60.30	60.30	60.30	60.30	60.30	60.30	60.30	60.30
BSPT TAPER - FULL FORM			5	<b>17936</b>		120.30	120.30	120.30	120.30	99.20	82.60	70.30	63.40
BSPP PARALLEL - FULL FORM			5	<b>17927</b>		120.30	120.30	120.30	120.30	99.20	82.60	70.30	63.40
BSPT FULL FORM DIE 2" OD				<b>13700</b>		343.70							
BSPP FULL FORM DIE 2" OD				<b>13701</b>		184.90							
GAGE BSPT-Mod. w/handle				<b>27014</b>		242.20							
GAGE BSPP-Mod. DBL END w/handle				<b>27053</b>		290.00							

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<b>3/4"-16 NF</b>					<i>Recommended Hole Size based on 75% Thread = .6894" TRU-FLO at 65% Thread = .7224"</i>								
REGULAR SPIRAL FLUTE	3	3B	4	16543	16544	130.20	102.70	85.80	63.30	51.60	46.00	41.40	37.10
L.H. HAND TAP	3	3B	4	16534	16535	45.90	45.10	44.10	37.10	34.90	33.10	31.10	28.20
SPIRAL POINT	3	3B	3	18374		74.10	59.30	58.00	42.60	38.90	37.20	35.70	34.00
SPIRAL POINT	5	2B	3	17692		74.10	59.30	58.00	42.60	38.90	37.20	35.70	34.00
L.H. HAND TAP	5	2B	4	17788	17789	109.50	85.30	78.90	62.10	48.50	43.40	38.80	35.60
+ .003 HAND TAP	7		4	17637	17638	102.50	77.60	65.30	51.50	40.60	35.70	31.60	29.80
HAND TAP	8		4	17745	17746	102.50	77.60	65.30	51.50	40.60	35.70	31.60	29.80
+ .005 HAND TAP	11	PLATING	4	16539	16540	31.10	31.10	30.40	26.20	25.20	23.60	22.50	22.20
"TRU-FLO" FORM TAP	7	3B	0	19140	19141	54.10	54.10	54.10	54.10	54.10	54.10	48.10	44.40
"TRU-FLO" FORM TAP	10	2B	0	19142	19143	54.10	54.10	54.10	54.10	54.10	54.10	48.10	44.40
CARB-I-SERT TAP	3	3B	4	41555	41556	318.00	318.00	318.00	298.90	293.30	281.90	277.50	273.30
TiN COAT/HAND	8		4	50033		110.30	85.50	76.90	61.90	49.60	43.50	39.40	37.70
R.H. ROUND DIE 2"OD				13246		79.40	79.40	79.40	64.40	61.70	56.50	54.20	53.90
L.H. ROUND DIE 2"OD				13247		102.40	85.80	80.50	76.10	72.60	66.50	58.70	58.20
GAGE - Taperlock Style		2B		23218		108.00							
GAGE - Taperlock Style		3B		23219		108.00							
GAGE - Reversible Style		2B		24364		149.30							
GAGE - Reversible Style		3B		24365		149.30							
GAGE - Ring-Go		2A		23608		149.30							
GAGE - Ring-Go		3A		23609		149.30							
GAGE - Ring-NoGo		2A		23610		149.30							
GAGE - Ring-NoGo		3A		23611		149.30							
GAGE - STI Plug Taperlock		2B		24752		158.60							
GAGE - STI Plug Taperlock		3B		24753		158.60							
GAGE - L.H. Taperlock Style		2B		22406		153.00							
GAGE - L.H. Taperlock Style		3B		22407		153.00							
GAGE - L.H. Reversible Style		2B		22408		196.00							
GAGE - L.H. Reversible Style		3B		22409		196.00							
GAGE - L.H. Ring-Go		2A		22410		200.00							
GAGE - L.H. Ring-NoGo		2A		22411		200.00							
GAGE - L.H. Ring-Go		3A		22412		200.00							
GAGE - L.H. Ring-NoGo		3A		22413		200.00							
<b>3/4"-18 NS</b>					<i>Recommended Hole Size based on 75% Thread = .6964"</i>								
HAND TAP	3	3B	4	16548	16549	80.00	51.70	51.00	36.80	33.10	30.90	28.90	26.30
R.H. ROUND DIE 2"OD				13248		102.40	85.80	80.50	76.10	72.60	66.50	58.70	58.20
<b>3/4"-20 NEF</b>					<i>Recommended Hole Size based on 75% Thread = .7015"</i>								
L.H. HAND TAP	3	3B	6	17663	17664	109.50	85.30	78.90	62.10	48.50	43.40	38.80	35.60
HAND TAP	3	3B	6	16553	16554	35.10	31.70	28.80	24.30	24.30	24.30	24.30	24.30
HAND TAP	5	2B	6	16558	16559	48.50	37.90	31.80	24.30	24.30	24.30	24.30	24.30
R.H. ROUND DIE 2"OD				13250		102.40	85.80	80.50	76.10	72.60	66.50	58.70	58.20
GAGE - Taperlock Style		2B		23223		153.30							
GAGE - Taperlock Style		3B		23224		153.30							
GAGE - Reversible Style		2B		24977		229.20							
GAGE - Reversible Style		3B		24978		229.20							
GAGE - Ring-Go		2A		23614		182.50							
GAGE - Ring-Go		3A		23615		182.50							
GAGE - Ring-NoGo		2A		23616		182.50							
GAGE - Ring-NoGo		3A		23617		182.50							

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## POPULAR SPECIAL: TAPS, DIES & GAGES

SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>3/4"-24 NS</b>						<i>Recommended Hole Size based on 75% Thread = .709"</i>							
HAND TAP	3	3B	6	16563	16564	80.00	51.70	51.00	36.80	33.20	30.90	28.90	26.30
R.H. ROUND DIE 2"OD				13252		102.40	85.80	80.50	76.10	72.60	66.50	58.70	58.20
<b>3/4"-27 NS</b>						<i>Recommended Hole Size based on 75% Thread = .714"</i>							
HAND TAP	3	3B	6	16568	16569	80.00	51.70	51.00	36.80	33.10	30.90	28.90	26.30
R.H. ROUND DIE 2"OD				13254		102.40	85.80	80.50	76.10	72.60	66.50	58.70	58.20
<b>3/4"-32 NS</b>						<i>Recommended Hole Size based on 75% Thread = .7197"</i>							
HAND TAP	3	3B	6	16573	16574	80.00	51.70	51.00	36.80	33.10	30.90	28.90	26.30
R.H. ROUND DIE 2"OD				13256		102.40	85.80	80.50	76.10	72.60	66.50	58.70	58.20
GAGE - Taperlock Style		2B		22414		188.00							
GAGE - Taperlock Style		3B		22415		188.00							
GAGE - Ring-Go		2A		22416		250.00							
GAGE - Ring-Go		3A		22417		250.00							
GAGE - Ring-NoGo		2A		22418		250.00							
GAGE - Ring-NoGo		3A		22419		250.00							
<b>3/4"-40 NS</b>						<i>Recommended Hole Size based on 75% Thread = .7258"</i>							
HAND TAP	3	3B	6	16578	16579	102.50	77.60	65.30	51.50	40.60	35.70	31.60	29.80
<b>49/64"-10 NS</b>						<i>Recommended Hole Size based on 75% Thread = .6682"</i>							
HAND TAP	4	3B	4	16583	16584	115.40	85.30	72.40	58.40	47.70	42.90	38.70	36.70
<b>.800"-36 A.M.O. MOD. WHITWORTH</b>						<i>Recommended Hole Size = .7644"</i>							
HAND TAP	2		6	16592	16593	117.70	87.30	67.30	53.50	42.80	37.90	33.70	33.20
<b>13/16"-10 NS</b>						<i>Recommended Hole Size based on 75% Thread = .7151"</i>							
HAND TAP	4	3B	4	16597	16598	83.70	55.70	55.20	42.80	36.80	33.90	32.50	30.90
<b>13/16"-12 NS</b>						<i>Recommended Hole Size based on 75% Thread = .7317"</i>							
HAND TAP	4	3B	4	16602	16603	83.70	55.70	55.20	42.80	36.80	33.90	32.50	30.90
GAGE - Taperlock Style		2B		22420		156.00							
GAGE - Taperlock Style		3B		22421		156.00							
GAGE - Ring-Go		2A		22422		212.00							
GAGE - Ring-Go		3A		22423		212.00							
GAGE - Ring-NoGo		2A		22424		212.00							
GAGE - Ring-NoGo		3A		22425		212.00							
<b>13/16"-16 NS</b>						<i>Recommended Hole Size based on 75% Thread = .7519"</i>							
HAND TAP	3	3B	4	16607	16608	83.70	55.70	55.20	42.80	36.80	33.90	32.50	30.90
R.H. ROUND DIE 2"OD				13264		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
GAGE - Taperlock Style		2B		22426		166.00							
GAGE - Taperlock Style		3B		22427		166.00							
GAGE - Ring-Go		2A		22428		212.00							
GAGE - Ring-Go		3A		22429		212.00							
GAGE - Ring-NoGo		2A		22430		212.00							
GAGE - Ring-NoGo		3A		22431		212.00							

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>13/16"-18 NS</b>					<i>Recommended Hole Size based on 75% Thread = .7589"</i>								
HAND TAP	3	3B	4	<b>16612</b>	<b>16613</b>	83.70	55.70	55.20	42.80	36.80	33.90	32.50	30.90
R.H. ROUND DIE 2"OD				<b>13266</b>		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
<b>13/16"-20 NEF</b>					<i>Recommended Hole Size based on 75% Thread = .7640"</i>								
HAND TAP	3	3B	6	<b>16617</b>	<b>16618</b>	41.70	39.10	36.20	29.30	29.30	29.30	29.30	29.30
HAND TAP	5	2B	6	<b>16622</b>	<b>16623</b>	64.40	53.50	40.00	36.20	31.70	29.30	29.30	29.30
R.H. ROUND DIE 2"OD				<b>13268</b>		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
GAGE - Taperlock Style		2B		<b>23228</b>		174.60							
GAGE - Taperlock Style		3B		<b>23229</b>		174.60							
GAGE - Ring-Go		2A		<b>23620</b>		185.20							
GAGE - Ring-Go		3A		<b>23621</b>		185.20							
GAGE - Ring-NoGo		2A		<b>23622</b>		185.20							
GAGE - Ring-NoGo		3A		<b>23623</b>		185.20							
<b>13/16"-24 NS</b>					<i>Recommended Hole Size based on 75% Thread = .7715"</i>								
HAND TAP	3	3B	6	<b>16627</b>	<b>16628</b>	83.70	55.70	55.20	42.80	36.80	33.90	32.50	30.90
R.H. ROUND DIE 2"OD				<b>13270</b>		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
<b>7/8"-6 ACME</b>					<i>Recommended Hole Size = .7083"</i>								
HAND TAP		2G	4	<b>16631</b>		125.70	102.30	77.90	64.40	63.10	60.20	58.40	58.10
L.H. HAND TAP		2G	4	<b>16635</b>		125.70	102.30	77.90	64.40	63.10	60.20	58.40	58.10
TANDEM		2G	4	<b>16637</b>		178.40	163.10	142.90	133.80	131.80	118.60	116.10	109.80
LEFT HAND TANDEM		2G	4	<b>16638</b>		214.90	195.00	170.00	159.10	150.40	142.80	127.50	114.90
<b>7/8"-9 NC</b>					<i>Recommended Hole Size based on 75% Thread = .7667"</i>								
REGULAR SPIRAL FLUTE	4	3B	4	<b>16656</b>	<b>16657</b>	142.80	118.60	96.50	81.10	70.00	61.80	57.80	53.10
L.H. HAND TAP	4	3B	4	<b>16642</b>	<b>16643</b>	52.00	52.00	52.00	51.60	44.30	40.60	39.30	34.20
SPIRAL POINT	4	3B	3	<b>16645</b>		129.80	98.80	79.20	64.10	53.50	48.20	43.50	39.50
+ .005 HAND TAP	11	PLATING	4	<b>16652</b>	<b>16653</b>	44.60	44.60	44.60	35.90	35.20	33.10	32.70	32.60
8" EXTENSION HAND TAP	4	3B	4	<b>17700</b>	<b>17701</b>	105.50	103.50	100.00	82.40	79.20	77.40	72.30	71.30
CARB-I-SERT TAP	4	3B	4	<b>41558</b>	<b>41559</b>	348.70	336.00	330.20	313.40	311.50	307.40	303.90	299.50
TIN COAT x 8"	4	3B	4	<b>50030</b>		125.70	123.80	120.30	102.60	99.40	97.60	92.50	91.60
R.H. ROUND DIE 2"OD				<b>13272</b>		79.40	79.40	79.40	64.40	61.70	56.50	54.20	53.90
L.H. ROUND DIE 2"OD				<b>13273</b>		79.40	79.40	79.40	64.40	61.70	56.50	54.20	53.90
GAGE - Taperlock Style		2B		<b>23233</b>		114.60							
GAGE - Taperlock Style		3B		<b>23234</b>		114.60							
GAGE - Ring-Go		2A		<b>23626</b>		154.60							
GAGE - Ring-Go		3A		<b>23627</b>		154.60							
GAGE - Ring-NoGo		2A		<b>23628</b>		154.60							
GAGE - Ring-NoGo		3A		<b>23629</b>		154.60							
GAGE - L.H. Taperlock Style		2B		<b>22432</b>		167.00							
GAGE - L.H. Taperlock Style		3B		<b>22433</b>		167.00							
GAGE - L.H. Ring-Go		2A		<b>22434</b>		211.50							
GAGE - L.H. Ring-NoGo		2A		<b>22435</b>		211.50							
GAGE - L.H. Ring-Go		3A		<b>22436</b>		211.50							
GAGE - L.H. Ring-NoGo		3A		<b>22437</b>		211.50							
<b>7/8"-10 NS</b>					<i>Recommended Hole Size based on 75% Thread = .7776"</i>								
HAND TAP	4	3B	4	<b>16661</b>	<b>16662</b>	88.70	63.20	61.80	51.60	44.30	40.60	39.30	34.20

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<b>7/8"-12 NS</b>						<i>Recommended Hole Size based on 75% Thread = .7942"</i>							
HAND TAP	4	3B	4	16666	16667	88.70	63.20	61.80	51.60	44.20	40.60	39.30	34.20
R.H. ROUND DIE 2"OD				13274		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
GAGE - Taperlock Style		2B		22438		156.00							
GAGE - Taperlock Style		3B		22439		156.00							
GAGE - Ring-Go		2A		22440		212.00							
GAGE - Ring-Go		3A		22441		212.00							
GAGE - Ring-NoGo		2A		22442		212.00							
GAGE - Ring-NoGo		3A		22443		212.00							
<b>7/8"-14 NF</b>						<i>Recommended Hole Size based on 75% Thread = .8056"</i>							
L.H. HAND TAP	4	3B	4	16671	16672	52.00	52.00	52.00	51.60	44.30	40.60	39.30	34.20
SPIRAL POINT	4	3B	3	17656		129.80	98.80	79.20	64.10	53.50	48.20	43.50	39.50
HAND TAP	5		4	17749	17750	123.90	92.90	75.70	60.30	56.10	54.00	50.30	48.50
HAND TAP	6	2B	4	17686	17687	123.90	92.90	75.70	60.30	56.10	54.00	50.30	48.50
+.005 HAND TAP	11	PLATING	4	16676	16677	44.60	44.60	44.60	35.90	35.20	33.10	32.70	32.60
CARB-I-SERT TAP	4	3B	4	41561	41562	348.70	336.00	330.20	313.40	311.50	307.40	303.90	299.50
R.H. ROUND DIE 2"OD				13276		79.40	79.40	79.40	64.40	61.70	56.50	54.20	53.90
L.H. ROUND DIE 2"OD				13277		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
GAGE - Taperlock Style		2B		23238		114.60							
GAGE - Taperlock Style		3B		23239		114.60							
GAGE - Ring-Go		2A		23632		154.60							
GAGE - Ring-Go		3A		23633		154.60							
GAGE - Ring-NoGo		2A		23634		154.60							
GAGE - Ring-NoGo		3A		23635		154.60							
GAGE - L.H. Taperlock Style		2B		22444		167.00							
GAGE - L.H. Taperlock Style		3B		22445		167.00							
GAGE - L.H. Ring-Go		2A		22446		212.00							
GAGE - L.H. Ring-NoGo		2A		22447		212.00							
GAGE - L.H. Ring-Go		3A		22448		212.00							
GAGE - L.H. Ring-NoGo		3A		22449		212.00							
<b>7/8"-16 NS</b>						<i>Recommended Hole Size based on 75% Thread = .8144"</i>							
HAND TAP	3	3B	4	16681	16682	88.70	63.20	61.80	51.60	44.20	40.60	39.30	34.20
R.H. ROUND DIE 2"OD				13278		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
GAGE - Taperlock Style		2B		22450		167.00							
GAGE - Taperlock Style		3B		22451		167.00							
GAGE - Ring-Go		2A		22452		212.00							
GAGE - Ring-Go		3A		22453		212.00							
GAGE - Ring-NoGo		2A		22454		212.00							
GAGE - Ring-NoGo		3A		22455		212.00							
<b>7/8"-18 NS</b>						<i>Recommended Hole Size based on 75% Thread = .8214"</i>							
HAND TAP	3	3B	4	16686	16687	88.70	63.20	61.80	51.60	44.20	40.60	39.30	34.20
R.H. ROUND DIE 2"OD				13280		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
<b>7/8"-20 NEF</b>						<i>Recommended Hole Size based on 75% Thread = .8265"</i>							
HAND TAP	3	3B	6	16691	16692	38.00	38.00	38.00	32.50	30.30	29.30	28.60	28.30
HAND TAP	5	2B	6	16696	16697	57.40	44.60	40.00	35.10	34.10	31.80	30.30	30.10
R.H. ROUND DIE 2"OD				13282		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
GAGE - Taperlock Style		2B		23243		173.30							
GAGE - Taperlock Style		3B		23244		173.30							
GAGE - Ring-Go		2A		23638		189.20							

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<b>7/8"-20 NEF</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - Ring-Go		3A		23639		189.20							
GAGE - Ring-NoGo		2A		23640		189.20							
GAGE - Ring-NoGo		3A		23641		189.20							
<b>7/8"-24 NS</b>					<i>Recommended Hole Size based on 75% Thread = .834"</i>								
HAND TAP	3	3B	6	16701	16702	124.00	93.10	73.60	61.50	50.50	45.20	39.30	34.20
R.H. ROUND DIE 2"OD				13284		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
<b>7/8"-27 NS</b>					<i>Recommended Hole Size based on 75% Thread = .839"</i>								
HAND TAP	3	3B	6	16706	16707	124.00	93.10	73.60	61.50	50.50	45.20	39.30	34.20
<b>7/8"-32 NS</b>					<i>Recommended Hole Size based on 75% Thread = .847"</i>								
HAND TAP	3	3B	6	16711	16712	124.00	93.10	73.60	61.50	50.50	45.20	39.30	34.20
R.H. ROUND DIE 2"OD				13286		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
GAGE - Taperlock Style		2B		22456		200.00							
GAGE - Taperlock Style		3B		22457		200.00							
GAGE - Ring-Go		2A		22458		267.00							
GAGE - Ring-Go		3A		22459		267.00							
GAGE - Ring-NoGo		2A		22460		267.00							
GAGE - Ring-NoGo		3A		22461		267.00							
<b>15/16"-12 NS</b>					<i>Recommended Hole Size based on 75% Thread = .8567"</i>								
HAND TAP	4	3B	4	16716	16717	92.20	66.70	65.30	54.80	45.90	41.40	40.30	35.60
R.H. ROUND DIE 2"OD				13288		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
GAGE - Taperlock Style		2B		22462		167.00							
GAGE - Taperlock Style		3B		22463		167.00							
GAGE - Ring-Go		2A		22464		212.00							
GAGE - Ring-Go		3A		22465		212.00							
GAGE - Ring-NoGo		2A		22466		212.00							
GAGE - Ring-NoGo		3A		22467		212.00							
<b>15/16"-14 NS</b>					<i>Recommended Hole Size based on 75% Thread = .8681"</i>								
HAND TAP	4	3B	4	16721	16722	92.20	66.70	65.30	54.80	45.90	41.40	40.30	35.60
R.H. ROUND DIE 2"OD				13290		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
<b>15/16"-16 NS</b>					<i>Recommended Hole Size based on 75% Thread = .8769"</i>								
HAND TAP	3	3B	6	16726	16727	92.20	66.70	65.30	54.80	45.90	41.40	40.30	35.60
R.H. ROUND DIE 2"OD				13292		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
<b>15/16"-18 NS</b>					<i>Recommended Hole Size based on 75% Thread = .8839"</i>								
HAND TAP	3	3B	6	16731	16732	92.20	66.70	65.30	54.80	45.90	41.40	40.30	35.60
R.H. ROUND DIE 2"OD				13294		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
<b>15/16"-20 NEF</b>					<i>Recommended Hole Size based on 75% Thread = .889"</i>								
HAND TAP	3	3B	6	16736	16737	47.90	45.70	44.10	37.00	35.10	33.20	31.10	31.10
HAND TAP	5	2B	6	16741	16742	59.30	47.30	41.90	37.10	36.40	34.50	32.40	31.10
R.H. ROUND DIE 2"OD				13296		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
GAGE - Taperlock Style		2B		23248		181.30							
GAGE - Taperlock Style		3B		23249		181.30							
GAGE - Ring-Go		2A		23644		199.90							

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"In The Pursuit of Perfection"

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**POPULAR SPECIAL:  
TAPS, DIES & GAGES**

SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>15/16"-20 NEF</b>						<i>See Previous Page for Recommended Hole Size</i>							
GAGE - Ring-Go		3A		23645		199.90							
GAGE - Ring-NoGo		2A		23646		199.90							
GAGE - Ring-NoGo		3A		23647		199.90							
<b>15/16"-32 NS</b>						<i>Recommended Hole Size based on 75% Thread = .9702"</i>							
HAND TAP	3	3B	6	16756	16757	126.50	100.10	77.00	65.70	54.60	48.20	45.70	40.60
R.H. ROUND DIE 2"OD				13298		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
GAGE - Taperlock Style		2B		22468		212.00							
GAGE - Taperlock Style		3B		22469		212.00							
GAGE - Ring-Go		2A		22470		273.00							
GAGE - Ring-Go		3A		22471		273.00							
GAGE - Ring-NoGo		2A		22472		273.00							
GAGE - Ring-NoGo		3A		22473		273.00							
<b>.969"-32</b>													
N-05 LOCKNUT HEX DIE				13702		200.10	146.70	111.30	78.80				
<b>1"-5 ACME</b>						<i>Recommended Hole Size = .800"</i>							
HAND TAP		2G	4	16760		155.40	122.90	96.40	77.40	76.80	75.40	72.20	68.40
L.H. HAND TAP		2G	4	16764		155.40	122.90	96.40	77.40	76.80	75.40	72.20	68.40
TANDEM		2G	4	16766		234.40	209.50	192.80	163.30	159.00	154.10	141.40	127.20
L.H. TANDEM		2G	4	16767		270.20	247.00	229.20	196.50	191.30	186.50	169.30	152.10
<b>1"-8 ACME</b>						<i>Recommended Hole Size = .875"</i>							
HAND TAP		2G	4	16770		155.40	122.90	96.40	77.40	76.80	75.40	72.20	68.40
<b>1"-8 NC</b>						<i>Recommended Hole Size based on 75% Thread = .8781"</i>							
REGULAR SPIRAL FLUTE	4	3B	4	16789	16790	158.40	132.90	110.40	98.90	83.80	78.00	70.10	61.50
FAST SPIRAL FLUTE	4	3B	4	17791	17792	158.40	132.90	110.40	98.90	83.80	78.00	70.10	61.50
L.H. HAND TAP	4	3B	4	16775	16776	68.70	68.70	68.70	68.70	68.70	68.70	59.30	59.30
HAND TAP	6	2B	4	17918	17919	133.90	102.70	81.00	72.80	60.20	54.10	48.90	48.50
SPIRAL POINT	4	3B	3	16778		137.70	103.30	84.80	75.10	63.10	56.20	51.00	50.40
+.005 HAND TAP	11	PLATING	4	16785	16786	57.30	57.30	57.30	46.90	42.90	39.00	38.90	38.90
+.005 SPIRAL POINT	11	PLATING	3	16783		131.10	98.40	80.80	71.60	60.00	53.40	48.50	48.00
+.010 HAND TAP	21		4	17732	17733	141.60	115.00	113.00	95.30	79.30	71.20	63.80	59.30
8" EXTENSION HAND TAP	4	3B	4	16794	16795	125.30	123.60	121.70	99.40	95.40	93.50	89.90	83.10
10" EXTENSION HAND TAP	4	3B	4	16799	16800	151.00	149.20	147.00	127.20	120.90	117.80	104.20	96.00
12" EXTENSION HAND TAP	4	3B	4	18109	18110	188.10	188.10	188.10	188.10	188.10	188.10	188.10	188.10
CARB-I-SERT TAP	4	3B	4	41564	41565	397.70	390.10	377.10	350.70	347.30	340.10	326.00	323.10
TiN COAT x 8"	4	3B	4	50021		147.10	146.90	145.10	122.60	118.70	116.80	113.30	106.30
R.H. ROUND DIE 2"OD				13300		108.60	92.90	87.00	76.10	72.60	66.50	58.70	53.90
L.H. ROUND DIE 2"OD				13301		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
GAGE - Taperlock Style		2B		23253		130.60							
GAGE - Taperlock Style		3B		23254		130.60							
GAGE - Ring-Go		2A		23650		194.60							
GAGE - Ring-Go		3A		23651		194.60							
GAGE - Ring-NoGo		2A		23652		194.60							
GAGE - Ring-NoGo		3A		23653		194.60							
GAGE - L.H. Taperlock Style		2B		22474		180.00							
GAGE - L.H. Taperlock Style		3B		22475		180.00							
GAGE - L.H. Ring-Go		2A		22476		206.00							
GAGE - L.H. Ring-NoGo		2A		22477		206.00							

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>1"-8 NC</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - L.H. Ring-Go		3A		22478		352.10							
GAGE - L.H. Ring-NoGo		3A		22479		246.50							
<b>1"-10 NS</b>					<i>Recommended Hole Size based on 75% Thread = .9026"</i>								
HAND TAP	4	3B	4	16809	16810	104.60	73.50	76.20	57.80	50.90	44.20	41.00	39.30
<b>1"-11 55° WHITWORTH PIPE</b>					<i>Recommended Hole Size: BSPT = 1.1719" / BSPP = 1.1875"</i>								
BSPT TAPER - MODIFIED			5	16812	16813	91.50	91.50	91.50	91.50	91.50	91.50	91.50	91.50
BSPP PARALLEL - MODIFIED			5	16815	16816	91.50	91.50	91.50	91.50	91.50	91.50	91.50	91.50
BSPT TAPER - FULL FORM			5	17937		225.00	219.10	197.20	148.90	128.60	112.50	97.30	97.30
BSPP PARALLEL - FULL FORM			5	17928		225.00	219.10	197.20	148.90	128.60	112.50	97.30	97.30
GAGE BSPP-Mod. DBL END w/handle				27056		352.10							
GAGE BSPT-Mod. w/handle				27017		246.50							
<b>1"-11 1/2 PIPE NPT NPT/F NPS</b>					<i>Recommended Hole Size: NPT = 1.1406" / NPTF = 1.1563"</i>								
NPT/F LEFT HAND TAPER			5	16818		146.00	116.70	109.00	89.10	81.10	78.20	73.40	71.30
NPT/F 6" EXT TAPER			5	16821		129.40	128.60	126.30	123.70	116.80	113.60	100.70	99.40
NPT/F 10" EXT TAPER			5	16824		176.10	173.70	171.50	166.50	158.10	153.90	149.40	148.30
CARB-I-SERT TAP			6	41811		665.90	653.10	555.00	512.50	499.50	474.00	455.40	452.70
NPT/F "COST CUTTER" DRILL/TAP			4	29046		280.40	267.70	262.60	254.80	244.20	232.50	224.60	213.00
NPT R.H. ROUND DIE 2-1/2"OD				13302		153.80	130.10	124.80	121.00	120.00	110.00	97.00	96.20
NPS R.H. ROUND DIE 2-1/2"OD				13304		250.50	217.70	151.30	132.80				
GAGE L1 NPT PLG w/hdle				24386		104.70							
GAGE L1 NPT RING				24384		190.30							
GAGE L1 NPTF PLG w/hdle				24466		153.70							
GAGE L3 NPTF PLG w/hdle				24468		153.70							
GAGE NPTF 6 step Plain Plug w/handle				24548		176.80							
GAGE L1 NPTF RING				24510		195.70							
GAGE L2 NPTF RING				24512		288.10							
GAGE NPTF 6 step Plain Ring				24582		282.70							
<b>1"-12 NF</b>					<i>Recommended Hole Size based on 75% Thread = .9192"</i>								
L.H. HAND TAP	4	3B	4	16829	16830	68.70	68.70	68.70	68.70	68.70	68.70	59.30	59.30
HAND TAP	6	2B	4	16834	16835	133.90	102.70	81.00	72.80	60.20	54.10	48.90	48.50
+ .005 HAND TAP	11	PLATING	4	16839	16840	57.30	57.30	57.30	46.90	42.90	39.00	38.90	38.90
CARB-I-SERT TAP	4	3B	4	41567	41568	397.70	390.10	377.10	350.70	347.30	340.10	326.00	323.10
R.H. ROUND DIE 2"OD				13306		108.60	92.90	87.00	76.10	72.60	66.50	58.70	53.90
L.H. ROUND DIE 2"OD				13307		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
GAGE - Taperlock Style		2B		23258		130.60							
GAGE - Taperlock Style		3B		23259		130.60							
GAGE - Ring-Go		2A		23656		194.60							
GAGE - Ring-Go		3A		23657		194.60							
GAGE - Ring-NoGo		2A		23658		194.60							
GAGE - Ring-NoGo		3A		23659		194.60							
GAGE - L.H. Taperlock Style		2B		22480		167.00							
GAGE - L.H. Taperlock Style		3B		22481		167.00							
GAGE - L.H. Ring-Go		2A		22482		211.50							
GAGE - L.H. Ring-NoGo		2A		22483		211.50							

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<b>1"-12 NF</b>						<i>See Previous Page for Recommended Hole Size</i>							
GAGE - L.H. Ring-Go		3A		22484		211.50							
GAGE - L.H. Ring-NoGo		3A		22485		211.50							
<b>1"-14 NS</b>						<i>Recommended Hole Size based on 75% Thread = .9306"</i>							
L.H. HAND TAP	4	3B	4	16844	16845	68.70	68.70	68.70	68.70	68.70	68.70	59.30	59.30
SPIRAL POINT	4	3B	3	17906		137.70	103.30	84.80	75.10	63.10	56.20	51.00	50.40
HAND TAP	6	2B	4	16849	16850	133.90	102.70	81.00	72.80	60.20	54.10	48.90	48.50
+.005 HAND TAP	11	PLATING	4	16854	16855	57.30	57.30	57.30	46.90	42.90	39.00	38.90	38.90
R.H. ROUND DIE 2"OD				13308		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
L.H. ROUND DIE 2"OD				13309		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
GAGE - Taperlock Style		2B		23263		130.60							
GAGE - Taperlock Style		3B		23264		130.60							
GAGE - Ring-Go		2A		23662		194.60							
GAGE - Ring-Go		3A		23663		194.60							
GAGE - Ring-NoGo		2A		23664		194.60							
GAGE - Ring-NoGo		3A		23665		194.60							
<b>1"-16 NS</b>						<i>Recommended Hole Size based on 75% Thread = .9394"</i>							
L.H. HAND TAP	3	3B	6	17695	17696	104.60	76.90	76.20	57.30	48.90	44.40	40.90	37.10
HAND TAP	3	3B	6	16859	16860	104.60	76.90	76.20	57.30	48.90	44.40	40.90	37.10
R.H. ROUND DIE 2"OD				13310		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
GAGE - Taperlock Style		2B		22486		167.00							
GAGE - Taperlock Style		3B		22487		167.00							
GAGE - Ring-Go		2A		22488		212.00							
GAGE - Ring-Go		3A		22489		212.00							
GAGE - Ring-NoGo		2A		22490		212.00							
GAGE - Ring-NoGo		3A		22491		212.00							
<b>1"-18 NS</b>						<i>Recommended Hole Size based on 75% Thread = .9464"</i>							
HAND TAP	3	3B	6	16864	16865	104.60	76.90	76.20	57.30	48.90	44.40	40.90	37.10
R.H. ROUND DIE 2"OD				13312		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
<b>1"-20 NEF</b>						<i>Recommended Hole Size based on 75% Thread = .9515"</i>							
L.H. HAND TAP	3	3B	6	17580	17581	104.60	76.90	76.20	57.30	48.90	44.40	40.90	37.10
HAND TAP	3	3B	6	16869	16870	54.40	51.00	47.70	44.10	40.00	38.50	36.60	36.40
HAND TAP	5	2B	6	16874	16875	80.40	67.00	55.20	50.30	44.70	41.90	40.30	37.10
R.H. ROUND DIE 2"OD				13314		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
GAGE - Taperlock Style		2B		23268		189.20							
GAGE - Taperlock Style		3B		23269		189.20							
GAGE - Ring-Go		2A		23668		218.60							
GAGE - Ring-Go		3A		23669		218.60							
GAGE - Ring-NoGo		2A		23670		218.60							
GAGE - Ring-NoGo		3A		23671		218.60							
<b>1"-24 NS</b>						<i>Recommended Hole Size based on 75% Thread = .959"</i>							
HAND TAP	3	3B	6	16879	16880	104.60	76.90	76.20	57.30	48.90	44.40	40.90	37.10
R.H. ROUND DIE 2"OD				13316		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
<b>1"-27 NS</b>						<i>Recommended Hole Size based on 75% Thread = .964"</i>							
HAND TAP	3	3B	6	16884	16885	104.60	76.90	76.20	57.30	48.90	44.40	40.90	37.10
R.H. ROUND DIE 2"OD				13318		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20

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<b>1"-32 NS</b>					<i>Recommended Hole Size based on 75% Thread = .9697"</i>								
HAND TAP	3	3B	6	<b>16889</b>	<b>16890</b>	104.60	76.90	76.20	57.30	48.90	44.40	40.90	37.10
R.H. ROUND DIE 2"OD				<b>13320</b>		108.60	92.90	87.00	76.10	72.60	66.50	58.70	58.20
GAGE - Taperlock Style		2B		<b>22492</b>		212.00							
GAGE - Taperlock Style		3B		<b>22493</b>		212.00							
GAGE - Ring-Go		2A		<b>22494</b>		273.00							
GAGE - Ring-Go		3A		<b>22495</b>		273.00							
GAGE - Ring-NoGo		2A		<b>22496</b>		273.00							
GAGE - Ring-NoGo		3A		<b>22497</b>		273.00							
<b>1 1/16"-12 NS</b>					<i>Recommended Hole Size based on 75% Thread = .9817"</i>								
HAND TAP	4		4	<b>17714</b>	<b>17715</b>	122.30	104.70	91.20	78.10	71.80	68.70	67.60	
HAND TAP	5	3B	4	<b>16893</b>	<b>16894</b>	60.20	60.20	60.20	57.00	57.00	57.00	51.50	
HAND TAP	7	2B	4	<b>16897</b>	<b>16898</b>	60.20	60.20	60.20	57.00	57.00	57.00	51.50	
TIN COAT/HAND	4		4		<b>50031</b>	136.80	119.00	105.70	92.40	86.30	83.30	82.00	
R.H. ROUND DIE 2"OD				<b>13322</b>		116.80	99.40	93.70	76.10	72.60	66.50	58.70	
GAGE - Taperlock Style		2B		<b>24982</b>		207.90							
GAGE - Taperlock Style		3B		<b>24983</b>		207.90							
GAGE - Ring-Go		2A		<b>22498</b>		195.00							
GAGE - Ring-Go		3A		<b>22499</b>		195.00							
GAGE - Ring-NoGo		2A		<b>22500</b>		195.00							
GAGE - Ring-NoGo		3A		<b>22501</b>		195.00							
<b>1 1/16"-14 NS</b>					<i>Recommended Hole Size based on 75% Thread = .9931"</i>								
HAND TAP	5	3B	6	<b>16901</b>	<b>16902</b>	110.30	83.50	82.00	57.00	57.00	57.00	51.50	
<b>1 1/16"-16 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.002"</i>								
HAND TAP	4	3B	6	<b>16905</b>	<b>16906</b>	110.30	83.50	82.00	57.00	57.00	57.00	51.50	
HAND TAP	6	2B	6	<b>16909</b>	<b>16910</b>	110.30	83.50	82.00	57.00	57.00	57.00	51.50	
R.H. ROUND DIE 2"OD				<b>13326</b>		116.80	99.40	93.70	76.10	72.60	66.50	58.70	
GAGE - Taperlock Style		2B		<b>22502</b>		178.00							
GAGE - Taperlock Style		3B		<b>22503</b>		178.00							
GAGE - Ring-Go		2A		<b>22504</b>		212.00							
GAGE - Ring-Go		3A		<b>22505</b>		212.00							
GAGE - Ring-NoGo		2A		<b>22506</b>		212.00							
GAGE - Ring-NoGo		3A		<b>22507</b>		212.00							
<b>1 1/16"-18 NEF</b>					<i>Recommended Hole Size based on 75% Thread = 1.008"</i>								
HAND TAP	4	3B	6	<b>16913</b>	<b>16914</b>	67.60	65.90	64.80	57.00	57.00	57.00	51.50	
HAND TAP	6	2B	6	<b>16917</b>	<b>16918</b>	92.60	80.40	68.10	57.00	57.00	57.00	51.50	
R.H. ROUND DIE 2"OD				<b>13330</b>		116.80	99.40	93.70	76.10	72.60	66.50	58.70	
GAGE - Taperlock Style		2B		<b>23273</b>		210.70							
GAGE - Taperlock Style		3B		<b>23274</b>		210.70							
GAGE - Ring-Go		2A		<b>23674</b>		241.20							
GAGE - Ring-Go		3A		<b>23675</b>		241.20							
GAGE - Ring-NoGo		2A		<b>23676</b>		241.20							
GAGE - Ring-NoGo		3A		<b>23677</b>		241.20							

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**POPULAR SPECIAL:  
TAPS, DIES & GAGES**

SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>1 1/16"-20 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.014"</i>								
HAND TAP	4	3B	6	16921	16922	133.90	108.30	89.30	74.90	63.40	57.00	51.50	
R.H. ROUND DIE 2"OD				13332		116.80	99.40	93.70	76.10	72.60	66.50	58.70	
GAGE - Taperlock Style		2B		22508		189.00							
GAGE - Taperlock Style		3B		22509		189.00							
GAGE - Ring-Go		2A		22510		212.00							
GAGE - Ring-Go		3A		22511		212.00							
GAGE - Ring-NoGo		2A		22512		212.00							
GAGE - Ring-NoGo		3A		22513		212.00							
<b>1 1/16"-24 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.021"</i>								
HAND TAP	4	3B	6	16925	16926	133.90	108.30	89.30	74.90	63.40	57.00	51.50	
<b>1 1/8"-5 ACME</b>					<i>Recommended Hole Size = .925"</i>								
HAND TAP		2G	4	16929		166.70	143.00	119.10	96.40	79.30	77.60		
L.H. HAND TAP		2G	4	16933		166.70	143.00	119.10	96.40	79.30	77.60	76.10	
TANDEM		2G	4	16935		273.20	235.10	206.60	186.30	177.40	168.50	155.50	
L.H. TANDEM		2G	4	16936		321.20	284.70	248.10	223.60	199.70	190.70	186.50	
<b>1 1/8"-7 NC</b>					<i>Recommended Hole Size based on 75% Thread = .9857"</i>								
L.H. HAND TAP	4	3B	4	16939	16940	114.10	110.90	109.50	102.50	92.30	81.10	77.60	
R.H. ROUND DIE 2-1/2"OD				13334		153.80	130.10	124.80	109.20	104.20	95.60	85.00	
L.H. ROUND DIE 2-1/2"OD				13335		153.80	130.10	124.80	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		23278		162.70							
GAGE - Taperlock Style		3B		23279		162.70							
GAGE - Ring-Go		2A		23680		226.60							
GAGE - Ring-Go		3A		23681		226.60							
GAGE - Ring-NoGo		2A		23682		226.60							
GAGE - Ring-NoGo		3A		23683		226.60							
GAGE - L.H. Taperlock Style		2B		22514		225.00							
GAGE - L.H. Taperlock Style		3B		22515		225.00							
GAGE - L.H. Ring-Go		2A		22516		267.00							
GAGE - L.H. Ring-NoGo		2A		22517		267.00							
GAGE - L.H. Ring-Go		3A		22518		267.00							
GAGE - L.H. Ring-NoGo		3A		22519		267.00							
<b>1 1/8"-8 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.003"</i>								
HAND TAP	5	3B	4	16943	16944	61.80	61.80	61.80	61.80	61.80	61.80	61.80	
TiN COAT/HAND	5	3B	4		50022	76.20	76.20	76.20	76.20	76.20	76.20	76.20	
R.H. ROUND DIE 2-1/2"OD				13464		153.80	130.10	124.80	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		22520		178.00							
GAGE - Taperlock Style		3B		22521		178.00							
GAGE - Ring-Go		2A		22522		212.00							
GAGE - Ring-Go		3A		22523		212.00							
GAGE - Ring-NoGo		2A		22524		212.00							
GAGE - Ring-NoGo		3A		22525		212.00							
<b>1 1/8"-10 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.027"</i>								
HAND TAP	5	3B	4	16947	16948	158.30	122.50	105.30	89.70	75.80	68.60	61.80	

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>1 1/8"-12 NF</b>					<i>Recommended Hole Size based on 75% Thread = 1.044"</i>								
L.H. HAND TAP	4	3B	4	16951	16952	114.10	110.90	109.50	102.50	92.30	81.10	77.60	
HAND TAP	6	2B	4	16955	16956	158.30	122.50	105.30	89.70	75.80	68.60	61.80	
+ .005 HAND TAP	12	PLATING	4	17776	17777	158.30	122.50	105.30	89.70	75.80	68.60	61.80	
R.H. ROUND DIE 2-1/2"OD				13336		153.80	130.10	124.80	109.20	104.20	95.60	85.00	
L.H. ROUND DIE 2-1/2"OD				13337		153.80	130.10	124.80	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		23283		163.00							
GAGE - Taperlock Style		3B		23284		163.00							
GAGE - Ring-Go		2A		23686		227.20							
GAGE - Ring-Go		3A		23687		227.20							
GAGE - Ring-NoGo		2A		23688		227.20							
GAGE - Ring-NoGo		3A		23689		227.20							
GAGE - L.H. Taperlock Style		2B		22526		180.00							
GAGE - L.H. Taperlock Style		3B		22527		180.00							
GAGE - L.H. Ring-Go		2A		22528		211.50							
GAGE - L.H. Ring-Go		3A		22529		211.50							
GAGE - L.H. Ring-NoGo		2A		22530		211.50							
GAGE - L.H. Ring-NoGo		3A		22531		211.50							
<b>1 1/8"-14 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.055"</i>								
HAND TAP	5	3B	6	16959	16960	142.40	112.50	91.10	76.90	65.60	60.90	57.70	
<b>1 1/8"-16 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.064"</i>								
HAND TAP	4	3B	6	16963	16964	57.70	57.70	57.70	57.70	57.70	57.70	57.70	
R.H. ROUND DIE 2-1/2"OD				13340		153.80	130.10	124.80	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		22532		178.00							
GAGE - Taperlock Style		3B		22533		178.00							
GAGE - Ring-Go		2A		22534		212.00							
GAGE - Ring-Go		3A		22535		212.00							
GAGE - Ring-NoGo		2A		22536		212.00							
GAGE - Ring-NoGo		3A		22537		212.00							
<b>1 1/8"-18 NEF</b>					<i>Recommended Hole Size based on 75% Thread = 1.071"</i>								
HAND TAP	4	3B	6	16967	16968	66.70	65.00	63.50	57.70	57.70	57.70	57.70	
HAND TAP	6	2B	6	16971	16972	91.00	81.20	69.00	61.80	61.80	60.90	57.70	
R.H. ROUND DIE 2-1/2"OD				13342		153.80	130.10	124.80	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		23288		209.20							
GAGE - Taperlock Style		3B		23289		209.20							
GAGE - Ring-Go		2A		23692		241.20							
GAGE - Ring-Go		3A		23693		241.20							
GAGE - Ring-NoGo		2A		23694		241.20							
GAGE - Ring-NoGo		3A		23695		241.20							
<b>1 1/8"-20 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.076"</i>								
HAND TAP	4	3B	6	16975	16976	82.40	81.20	69.00	61.80	61.80	60.90	57.70	
R.H. ROUND DIE 2-1/2"OD				13344		153.80	130.10	124.80	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		22538		189.00							
GAGE - Taperlock Style		3B		22539		189.00							
GAGE - Ring-Go		2A		22540		212.00							
GAGE - Ring-Go		3A		22541		212.00							
GAGE - Ring-NoGo		2A		22542		212.00							
GAGE - Ring-NoGo		3A		22543		212.00							

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>1 1/8"-24 NS</b>						<i>Recommended Hole Size based on 75% Thread = 1.084"</i>							
HAND TAP	4	3B	6	16979	16980	143.90	113.40	91.10	77.70	67.00	60.90	57.70	
<b>1 1/8"-28 NS</b>						<i>Recommended Hole Size based on 75% Thread = 1.0903"</i>							
HAND TAP	4	3B	6	18114	18115	150.50	118.50	96.10	80.70	80.70	69.40	58.40	54.20
GAGE - Taperlock Style		2B		22544		225.00							
GAGE - Taperlock Style		3B		22545		225.00							
GAGE - Ring-Go		2A		22546		313.00							
GAGE - Ring-Go		3A		22547		313.00							
GAGE - Ring-NoGo		2A		22548		313.00							
GAGE - Ring-NoGo		3A		22549		313.00							
<b>1 1/8"-32 NS</b>						<i>Recommended Hole Size based on 75% Thread = 1.095"</i>							
HAND TAP	4	3B	8	16987	16988	143.90	113.40	91.10	77.70	67.00	60.90	57.70	
<b>1.173"-18</b>													
N-06 LOCKNUT HEX DIE				13703		245.60	199.10	152.90	115.50				
<b>1 3/16"-12 NS</b>						<i>Recommended Hole Size based on 75% Thread = 1.106"</i>							
HAND TAP	5	3B	6	16991	16992	89.30	89.30	89.30	84.00	81.10	81.10	81.10	
R.H. ROUND DIE 2-1/2"OD				13346		153.80	130.10	124.80	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		24987		220.00							
GAGE - Taperlock Style		3B		24988		220.00							
GAGE - Ring-Go		2A		22550		217.00							
GAGE - Ring-Go		3A		22551		217.00							
GAGE - Ring-NoGo		2A		22552		217.00							
GAGE - Ring-NoGo		3A		22553		217.00							
<b>1 3/16"-14 NS</b>						<i>Recommended Hole Size based on 75% Thread = 1.118"</i>							
HAND TAP	5	3B	6	16995	16996	158.50	121.60	99.80	84.90	72.30	69.00	65.70	
<b>1 3/16"-16 NS</b>						<i>Recommended Hole Size based on 75% Thread = 1.127"</i>							
HAND TAP	4	3B	6	16999	17000	89.30	89.30	89.30	84.00	72.30	69.00	65.70	
HAND TAP	6	2B	6	17003	17004	89.30	89.30	89.30	84.00	72.30	69.00	65.70	
GAGE - Taperlock Style		2B		22554		178.00							
GAGE - Taperlock Style		3B		22555		178.00							
GAGE - Ring-Go		2A		22556		223.00							
GAGE - Ring-Go		3A		22557		223.00							
GAGE - Ring-NoGo		2A		22558		223.00							
GAGE - Ring-NoGo		3A		22559		223.00							
<b>1 3/16"-18 NEF</b>						<i>Recommended Hole Size based on 75% Thread = 1.134"</i>							
HAND TAP	4	3B	6	17007	17008	80.90	79.20	77.60	74.10	72.30	69.00	65.70	
HAND TAP	6	2B	6	17011	17012	110.90	97.00	84.90	78.40	73.90	69.00	65.70	
R.H. ROUND DIE 2-1/2"OD				13350		153.80	130.10	124.80	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		23293		259.00							
GAGE - Taperlock Style		3B		23294		225.20							
GAGE - Ring-Go		2A		23698		258.50							
GAGE - Ring-Go		3A		23699		258.50							
GAGE - Ring-NoGo		2A		23700		258.50							
GAGE - Ring-NoGo		3A		23701		258.50							

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<b>1 3/16"-20 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.139"</i>								
HAND TAP	4	3B	6	17015	17016	258.50	121.60	99.80	84.90	72.30	69.00	65.70	
GAGE - Taperlock Style		2B		22560		189.00							
GAGE - Taperlock Style		3B		22561		189.00							
GAGE - Ring-Go		2A		22562		223.00							
GAGE - Ring-Go		3A		22563		223.00							
GAGE - Ring-NoGo		2A		22564		223.00							
GAGE - Ring-NoGo		3A		22565		223.00							
<b>1 1/4"-5 ACME</b>					<i>Recommended Hole Size = 1.050"</i>								
HAND TAP		2G	4	17019		185.20	158.60	133.30	111.50	107.80	103.40	98.30	
L.H. HAND TAP		2G	4	17023		185.20	158.60	133.30	111.50	107.80	103.40	98.30	
TANDEM		2G	4	17025		282.00	243.40	217.10	216.50	201.00	192.30	185.00	
L.H. TANDEM		2G	4	17026		339.20	292.30	261.60	255.60	235.50	213.30	197.70	
<b>1 1/4"-7 NC</b>					<i>Recommended Hole Size based on 75% Thread = 1.110"</i>								
L.H. HAND TAP	4	3B	4	17029	17030	145.90	143.90	121.90	108.70	92.20	83.70	78.60	
SPIRAL POINT	4	3B	3	17920		176.80	174.40	153.30	140.10	123.40	106.70	102.30	
HAND TAP	8	2B	4	17033	17034	169.20	143.90	121.90	108.70	92.20	83.70	78.60	
+ .005 HAND TAP	12	PLATING	4	17753	17754	169.20	143.90	121.90	108.70	92.20	83.70	78.60	
10" EXTENSION	4	3B	4	17037	17038	222.30	219.20	217.30	191.30	176.60	169.00	149.10	
12" EXTENSION	4	3B	4	17041	17042	253.90	250.40	248.30	222.30	208.70	201.50	180.90	
CARB-I-SERT TAP	4	3B	4	41570	41571	473.30	469.50	462.60	454.00	438.20	422.70	415.70	
R.H. ROUND DIE 2-1/2"OD				13352		153.80	130.10	124.80	109.20	104.20	95.60	85.00	
L.H. ROUND DIE 2-1/2"OD				13353		153.80	130.10	124.80	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		23298		174.60							
GAGE - Taperlock Style		3B		23299		174.60							
GAGE - Ring-Go		2A		23704		245.30							
GAGE - Ring-Go		3A		23705		245.30							
GAGE - Ring-NoGo		2A		23706		245.30							
GAGE - Ring-NoGo		3A		23707		245.30							
GAGE - L.H. Taperlock Style		2B		22566		226.00							
GAGE - L.H. Taperlock Style		3B		22567		226.00							
GAGE - L.H. Ring-Go		2A		22568		289.00							
GAGE - L.H. Ring-NoGo		2A		22569		289.00							
GAGE - L.H. Ring-Go		3A		22570		289.00							
GAGE - L.H. Ring-NoGo		3A		22571		289.00							
<b>1 1/4"-8 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.128"</i>								
HAND TAP	5	3B	4	17045	17046	74.10	74.10	74.10	74.10	74.10	74.10	74.10	
10" EXTENSION	5	3B	4	17049	17050	222.30	219.20	217.30	191.30	176.60	169.00	149.10	
12" EXTENSION	5	3B	4	17053	17054	253.90	250.40	248.30	222.30	208.70	201.50	180.90	
R.H. ROUND DIE 2-1/2"OD				13466		153.80	130.10	124.80	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		22572		178.00							
GAGE - Taperlock Style		3B		22573		178.00							
GAGE - Ring-Go		2A		22574		223.00							
GAGE - Ring-Go		3A		22575		223.00							
GAGE - Ring-NoGo		2A		22576		223.00							
GAGE - Ring-NoGo		3A		22577		223.00							
<b>1 1/4"-10 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.152"</i>								
HAND TAP	5	3B	4	17057	17058	169.20	143.90	121.90	108.70	92.20	83.70	78.60	

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>1 1/4"-11 55° WHITWORTH PIPE</b>						<i>Recommended Hole Size: BSPT = 1.500" / BSPP = 1.5469"</i>							
BSPT TAPER - MODIFIED			5	17060	17061	134.40	134.40	134.40	134.40	134.40	134.40	134.40	134.40
BSPP PARALLEL - MODIFIED			5	17063	17064	134.40	134.40	134.40	134.40	134.40	134.40	134.40	134.40
BSPT TAPER - FULL FORM			5	17938		322.20	322.20	258.80	204.40	182.00	163.00	136.90	
BSPP PARALLEL - FULL FORM			5	17929		322.20	322.20	258.80	204.40	182.00	163.00	136.90	
GAGE BSPP-Mod. DBL END w/handle				27059		406.20							
GAGE BSPT-Mod. w/handle				27020		258.50							
<b>1 1/4"-11 1/2 PIPE TAP NPS NPSF NPT/F</b>						<i>Recommended Hole Size: NPT = 1.4844" / NPTF = 1.500" / NPS = 1.500" / NPSM = 1.5469" / NPSF = 1.5050"</i>							
NPT/F LEFT HAND TAPER			5	17066		203.70	155.40	142.50	125.30	116.50	112.30	99.40	
NPS STRAIGHT			5	17069		203.70	155.40	142.50	125.30	116.50	112.30	99.40	
NPSF STRAIGHT			5	17072		203.70	155.40	142.50	125.30	116.50	112.30	99.40	
GAGE L1 NPT PLG w/hdle				24389		116.90							
GAGE L1 NPT RING				24387		207.90							
GAGE L1 NPTF PLG w/hdle				24474		167.20							
GAGE L3 NPTF PLG w/hdle				24476		167.20							
GAGE NPTF 6 step Plain Plug w/handle				24552		197.10							
GAGE L1 NPTF RING				24514		217.60							
GAGE L2 NPTF RING				24516		316.80							
GAGE NPTF 6 step Plain Ring				24586		285.30							
<b>1 1/4"-12 NF</b>						<i>Recommended Hole Size based on 75% Thread = 1.169"</i>							
L.H. HAND TAP	4	3B	6	17076	17077	145.90	143.90	121.90	108.70	92.20	83.70	78.60	
HAND TAP	6	2B	6	17080	17081	171.20	143.90	121.90	108.70	92.20	83.70	78.60	
R.H. ROUND DIE 2-1/2"OD				13354		153.80	130.10	124.80	109.20	104.20	95.60	85.00	
L.H. ROUND DIE 2-1/2"OD				13355		153.80	130.10	124.80	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		23303		174.60							
GAGE - Taperlock Style		3B		23304		174.60							
GAGE - Ring-Go		2A		23710		245.30							
GAGE - Ring-Go		3A		23711		245.30							
GAGE - Ring-NoGo		2A		23712		245.30							
GAGE - Ring-NoGo		3A		23713		245.30							
GAGE - L.H. Taperlock Style		2B		22578		182.00							
GAGE - L.H. Taperlock Style		3B		22579		182.00							
GAGE - L.H. Ring-Go		2A		22580		222.50							
GAGE - L.H. Ring-NoGo		2A		22581		222.50							
GAGE - L.H. Ring-Go		3A		22582		222.50							
GAGE - L.H. Ring-NoGo		3A		22583		222.50							
<b>1 1/4"-14 NS</b>						<i>Recommended Hole Size based on 75% Thread = 1.180"</i>							
HAND TAP	5	3B	6	17084	17085	102.50	99.60	83.40	74.90	67.80	64.30	62.00	
<b>1 1/4"-16 NS</b>						<i>Recommended Hole Size based on 75% Thread = 1.189"</i>							
HAND TAP	4	3B	6	17088	17089	102.50	99.60	83.40	74.90	67.80	64.30	62.00	
R.H. ROUND DIE 2-1/2"OD				13356		150.80	127.60	122.50	107.10	102.30	93.80	83.50	
GAGE - Taperlock Style		2B		22584		178.00							
GAGE - Taperlock Style		3B		22585		178.00							
GAGE - Ring-Go		2A		22586		223.00							
GAGE - Ring-Go		3A		22587		223.00							
GAGE - Ring-NoGo		2A		22588		223.00							
GAGE - Ring-NoGo		3A		22589		223.00							

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# POPULAR SPECIAL: TAPS, DIES & GAGES

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on pages 122-131.

SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>1 1/4"-18 NEF</b>					<i>Recommended Hole Size based on 75% Thread = 1.196"</i>								
HAND TAP	4	3B	6	<b>17092</b>	<b>17093</b>	81.70	80.10	76.90	74.90	67.80	64.30	62.00	
HAND TAP	6	2B	6	<b>17096</b>	<b>17097</b>	102.50	99.60	83.40	74.90	67.80	64.30	62.00	
R.H. ROUND DIE 2-1/2"OD				<b>13358</b>		150.80	127.60	122.50	107.10	102.30	93.80	83.50	
GAGE - Taperlock Style		2B		<b>23308</b>		225.20							
GAGE - Taperlock Style		3B		<b>23309</b>		225.20							
GAGE - Ring-Go		2A		<b>23716</b>		258.50							
GAGE - Ring-Go		3A		<b>23717</b>		258.50							
GAGE - Ring-NoGo		2A		<b>23718</b>		258.50							
GAGE - Ring-NoGo		3A		<b>23719</b>		258.50							
<b>1 1/4"-20 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.201"</i>								
HAND TAP	4	3B	6	<b>17100</b>	<b>17101</b>	102.50	99.60	83.40	74.90	67.80	64.30	62.00	
R.H. ROUND DIE 2-1/2"OD				<b>13360</b>		153.80	130.10	124.80	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		<b>22590</b>		189.00							
GAGE - Taperlock Style		3B		<b>22591</b>		189.00							
GAGE - Ring-Go		2A		<b>22592</b>		223.00							
GAGE - Ring-Go		3A		<b>22593</b>		223.00							
GAGE - Ring-NoGo		2A		<b>22594</b>		223.00							
GAGE - Ring-NoGo		3A		<b>22595</b>		223.00							
<b>1 1/4"-24 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.209"</i>								
HAND TAP	4	3B	8	<b>17104</b>	<b>17105</b>	153.90	125.70	104.20	90.90	69.00	65.50	63.20	
R.H. ROUND DIE 2-1/2"OD				<b>13362</b>		153.80	130.10	124.80	109.20	104.20	95.60	85.00	
<b>1 1/4"-32 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.219"</i>								
HAND TAP	4	3B	10	<b>17108</b>	<b>17109</b>	150.90	123.40	102.30	89.10	67.80	64.30	62.00	
<b>1 5/16"-12 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.232"</i>								
HAND TAP	5	3B	6	<b>17112</b>	<b>17113</b>	72.80	72.80	72.80	72.80	72.80	72.80	72.80	
HAND TAP	8	2B	6	<b>17116</b>	<b>17117</b>	77.40	77.40	77.40	72.80	72.80	72.80	72.80	
R.H. ROUND DIE 2-1/2"OD				<b>13364</b>		159.90	137.50	129.10	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		<b>24992</b>		241.20							
GAGE - Taperlock Style		3B		<b>24993</b>		241.20							
GAGE - Ring-Go		2A		<b>22596</b>		222.00							
GAGE - Ring-Go		3A		<b>22597</b>		222.00							
GAGE - Ring-NoGo		2A		<b>22598</b>		222.00							
GAGE - Ring-NoGo		3A		<b>22599</b>		222.00							
<b>1 5/16"-16 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.252"</i>								
HAND TAP	4	3B	6	<b>17124</b>	<b>17125</b>	112.70	110.40	102.40	92.00	79.40	71.20	66.70	
HAND TAP	6	2B	6	<b>17128</b>	<b>17129</b>	112.70	110.40	102.40	92.00	79.40	71.20	66.70	
GAGE - Taperlock Style		2B		<b>22600</b>		189.00							
GAGE - Taperlock Style		3B		<b>22601</b>		189.00							
GAGE - Ring-Go		2A		<b>22602</b>		234.00							
GAGE - Ring-Go		3A		<b>22603</b>		234.00							
GAGE - Ring-NoGo		2A		<b>22604</b>		234.00							
GAGE - Ring-NoGo		3A		<b>22605</b>		234.00							
<b>1 5/16"-18 NEF</b>					<i>Recommended Hole Size based on 75% Thread = 1.259"</i>								
HAND TAP	4	3B	6	<b>17132</b>	<b>17133</b>	94.50	90.70	89.70	88.40	79.40	71.20	66.70	
HAND TAP	6	2B	6	<b>17136</b>	<b>17137</b>	127.00	110.40	102.40	92.00	79.40	71.20	66.70	
R.H. ROUND DIE 2-1/2"OD				<b>13370</b>		159.90	137.50	129.10	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		<b>23313</b>		249.20							

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## POPULAR SPECIAL: TAPS, DIES & GAGES

SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>1 5/16"-18 NEF</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - Taperlock Style		3B		23314		249.20							
GAGE - Ring-Go		2A		23722		266.50							
GAGE - Ring-Go		3A		23723		266.50							
GAGE - Ring-NoGo		2A		23724		266.50							
GAGE - Ring-NoGo		3A		23725		266.50							
<b>1 5/16"-20 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.264"</i>								
HAND TAP	4	3B	6	17140	17141	127.00	110.40	102.40	92.00	79.40	71.20	66.70	
GAGE - Taperlock Style		2B		22606		200.00							
GAGE - Taperlock Style		3B		22607		200.00							
GAGE - Ring-Go		2A		22608		234.00							
GAGE - Ring-Go		3A		22609		234.00							
GAGE - Ring-NoGo		2A		22610		234.00							
GAGE - Ring-NoGo		3A		22611		234.00							
<b>1 3/8"-4 ACME</b>					<i>Recommended Hole = 1.1250"</i>								
HAND TAP		2G	4	17144		209.20	176.90	146.00	128.20	114.70	109.50	107.00	
L.H. HAND TAP		2G	4	17148		209.20	176.90	146.00	128.20	114.70	109.50	107.00	
TANDEM		2G	4	17150		316.00	279.00	251.20	226.80	218.70	212.60	210.50	
<b>1 3/8"-6 NC</b>					<i>Recommended Hole Size based on 75% Thread = 1.212"</i>								
L.H. HAND TAP	4	3B	4	17154	17155	179.40	174.40	172.40	153.00	137.00	120.50	108.30	
R.H. ROUND DIE 2-1/2"OD				13372		159.90	137.50	129.10	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		23318		195.90							
GAGE - Taperlock Style		3B		23319		195.90							
GAGE - Ring-Go		2A		23728		253.20							
GAGE - Ring-Go		3A		23729		253.20							
GAGE - Ring-NoGo		2A		23730		253.20							
GAGE - Ring-NoGo		3A		23731		253.20							
GAGE - L.H. Taperlock Style		2B		22612		235.00							
GAGE - L.H. Taperlock Style		3B		22613		235.00							
GAGE - L.H. Ring-Go		2A		22614		267.00							
GAGE - L.H. Ring-NoGo		2A		22615		267.00							
GAGE - L.H. Ring-Go		3A		22616		267.00							
GAGE - L.H. Ring-NoGo		3A		22617		267.00							
<b>1 3/8"-8 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.253"</i>								
HAND TAP	5	3B	4	17158	17159	98.80	98.80	98.80	98.80	98.80	98.80	98.80	
R.H. ROUND DIE 2-1/2"OD				13468		159.90	137.50	129.10	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		22618		189.00							
GAGE - Taperlock Style		3B		22619		189.00							
GAGE - Ring-Go		2A		22620		268.00							
GAGE - Ring-Go		3A		22621		268.00							
GAGE - Ring-NoGo		2A		22622		268.00							
GAGE - Ring-NoGo		3A		22623		268.00							
<b>1 3/8"-12 NF</b>					<i>Recommended Hole Size based on 75% Thread = 1.294"</i>								
L.H. HAND TAP	4	3B	6	17166	17167	179.40	174.40	172.40	153.00	137.00	120.50	108.30	
CARB-I-SERT TAP	4	3B	4	41573	41574	526.50	509.50	497.30	476.80	469.60	456.80	439.80	
R.H. ROUND DIE 2-1/2"OD				13374		159.90	137.50	129.10	109.20	104.20	95.60	85.00	
L.H. ROUND DIE 2-1/2"OD				13375		159.90	137.50	129.10	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		23323		195.90							
GAGE - Taperlock Style		3B		23324		195.90							

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<b>1 3/8"-12 NF</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - Ring-Go		2A		23734		253.20							
GAGE - Ring-Go		3A		23735		253.20							
GAGE - Ring-NoGo		2A		23736		253.20							
GAGE - Ring-NoGo		3A		23737		253.20							
GAGE - L.H. Taperlock Style		2B		22624		190.00							
GAGE - L.H. Taperlock Style		3B		22625		190.00							
GAGE - L.H. Ring-Go		2A		22626		233.50							
GAGE - L.H. Ring-NoGo		2A		22627		233.50							
GAGE - L.H. Ring-Go		3A		22628		233.50							
GAGE - L.H. Ring-NoGo		3A		22629		233.50							
<b>1 3/8"-16 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.314"</i>								
HAND TAP	4	3B	6	17170	17171	109.50	108.00	100.80	88.00	81.00	77.60	71.30	
R.H. ROUND DIE 2-1/2"OD				13378		159.90	137.50	129.10	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		22630		189.00							
GAGE - Taperlock Style		3B		22631		189.00							
GAGE - Ring-Go		2A		22632		234.00							
GAGE - Ring-Go		3A		22633		234.00							
GAGE - Ring-NoGo		2A		22634		234.00							
GAGE - Ring-NoGo		3A		22635		234.00							
<b>1 3/8"-18 NEF</b>					<i>Recommended Hole Size based on 75% Thread = 1.321"</i>								
HAND TAP	4	3B	6	17174	17175	91.50	91.10	90.70	88.00	81.00	77.60	71.30	
HAND TAP	6	2B	6	17178	17179	109.50	108.00	100.80	88.00	81.00	77.60	71.30	
R.H. ROUND DIE 2-1/2"OD				13380		159.90	137.50	129.10	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		23328		249.20							
GAGE - Taperlock Style		3B		23329		249.20							
GAGE - Ring-Go		2A		23740		266.50							
GAGE - Ring-Go		3A		23741		266.50							
GAGE - Ring-NoGo		2A		23742		266.50							
GAGE - Ring-NoGo		3A		23743		266.50							
<b>1 3/8"-20 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.326"</i>								
HAND TAP	4	3B	6	17182	17183	173.00	137.10	115.40	98.80	86.00	79.40	74.70	
R.H. ROUND DIE 2-1/2"OD				13382		159.90	137.50	129.10	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		22636		200.00							
GAGE - Taperlock Style		3B		22637		200.00							
GAGE - Ring-Go		2A		22638		235.00							
GAGE - Ring-Go		3A		22639		235.00							
GAGE - Ring-NoGo		2A		22640		235.00							
GAGE - Ring-NoGo		3A		22641		235.00							
<b>1 7/16"-18 NEF</b>					<i>Recommended Hole Size based on 75% Thread = 1.384"</i>								
HAND TAP	4	3B	6	17186	17187	104.70	104.20	103.90	99.60	92.40	91.20	75.60	
HAND TAP	6	2B	6	17190	17191	146.90	133.30	118.50	109.50	100.70	91.20	75.60	
GAGE - Taperlock Style		2B		23333		259.90							
GAGE - Taperlock Style		3B		23334		259.90							
GAGE - Ring-Go		2A		23746		286.40							
GAGE - Ring-Go		3A		23747		286.40							
GAGE - Ring-NoGo		2A		23748		286.40							
GAGE - Ring-NoGo		3A		23749		286.40							

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>1 1/2"-4 ACME</b>						<i>Recommended Hole Size = 1.250"</i>							
HAND TAP		2G	4	17194		230.40	191.30	152.70	139.40	137.00	136.10	134.00	
L.H. HAND TAP		2G	4	17198		230.40	191.30	152.70	139.40	137.00	136.10	134.00	
TANDEM		2G	4	17200		337.50	314.80	274.30	269.70	265.10	259.70	253.70	
L.H. TANDEM		2G	4	17201		407.30	378.10	325.30	300.10	288.10	273.40	253.70	
<b>1 1/2"-6 NC</b>						<i>Recommended Hole Size based on 75% Thread = 1.337"</i>							
L.H. HAND TAP	4	3B	4	17204	17205	209.20	203.30	200.70	189.80	159.10	143.90	123.20	
10" EXTENSION	4	3B	4	17208	17209	285.40	281.70	279.00	254.70	236.70	227.60	206.10	
12" EXTENSION	4	3B	4	17212	17213	330.30	326.10	323.00	299.30	281.20	272.30	246.30	
CARB-I-SERT TAP	4	3B	4	41576	41577	532.30	519.50	509.50	486.70	476.80	461.00	448.90	
R.H. ROUND DIE 2-1/2"OD				13392		159.90	137.50	129.10	109.20	104.20	95.60	85.00	
L.H. ROUND DIE 2-1/2"OD				13393		159.90	137.50	129.10	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		23338		214.50							
GAGE - Taperlock Style		3B		23339		214.50							
GAGE - Ring-Go		2A		23752		270.60							
GAGE - Ring-Go		3A		23753		270.60							
GAGE - Ring-NoGo		2A		23754		270.60							
GAGE - Ring-NoGo		3A		23755		270.60							
GAGE - L.H. Taperlock Style		2B		22642		246.00							
GAGE - L.H. Taperlock Style		3B		22643		246.00							
GAGE - L.H. Ring-Go		2A		22644		289.00							
GAGE - L.H. Ring-NoGo		2A		22645		289.00							
GAGE - L.H. Ring-Go		3A		22646		289.00							
GAGE - L.H. Ring-NoGo		3A		22647		289.00							
<b>1 1/2"-8 NS</b>						<i>Recommended Hole Size based on 75% Thread = 1.378"</i>							
HAND TAP	5	3B	6	17216	17217	106.80	106.80	106.80	106.80	106.80	106.80	106.80	
10" EXTENSION	5	3B	4	17220	17221	285.40	281.70	279.00	254.70	236.70	227.60	206.10	
12" EXTENSION	5	3B	4	17224	17225	330.30	326.10	323.00	299.30	281.20	272.30	246.30	
R.H. ROUND DIE 2-1/2"OD				13470		159.90	137.50	129.10	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		22648		200.00							
GAGE - Taperlock Style		3B		22649		200.00							
GAGE - Ring-Go		2A		22650		250.00							
GAGE - Ring-Go		3A		22651		250.00							
GAGE - Ring-NoGo		2A		22652		250.00							
GAGE - Ring-NoGo		3A		22653		250.00							
<b>1 1/2"-10 NS</b>						<i>Recommended Hole Size based on 75% Thread = 1.402"</i>							
HAND TAP	5	3B	6	17228	17229	213.80	181.20	156.10	146.00	129.30	120.30	106.80	
<b>1 1/2"-11 55° WHITWORTH PIPE</b>						<i>Recommended Hole Size: BSPT = 1.750" / BSPP = 1.7656"</i>							
BSPT TAPER - MODIFIED			7	17231	17232	175.90	175.90	175.90	175.90	175.90	175.90	175.90	
BSPP PARALLEL - MODIFIED			7	17234	17235	175.90	175.90	175.90	175.90	175.90	175.90	175.90	
BSPT TAPER - FULL FORM			7	17939		377.10	366.60	302.70	248.90	227.20	207.70	181.70	
BSPP PARALLEL - FULL FORM			7	17930		377.10	366.60	302.70	248.90	227.20	207.70	181.70	
GAGE BSPP DBL END w/handle				27062		445.10							
GAGE BSPT w/handle				27023		277.60							
<b>1 1/2"-11 1/2 PIPE NPS NPT/F</b>						<i>Recommended Hole Size: NPT/NPTF = 1.7344" NPS = 1.750" / NPSM = 1.7913"</i>							
NPT/F LEFT HAND TAPER			7	17237		249.40	206.40	189.30	155.30	148.50	145.30	128.60	
NPS STRAIGHT			7	17240		249.40	206.40	189.30	155.30	148.50	145.30	128.60	

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# POPULAR SPECIAL: TAPS, DIES & GAGES

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>1 1/2"-11 1/2 PIPE NPS NPT/F</b>				<i>See Previous Page for Recommended Hole Size</i>									
GAGE L1 NPT PLG w/handle				24392		127.80							
GAGE L1 NPT RING				24390		247.40							
GAGE L1 NPTF PLG w/handle				24482		194.50							
GAGE L3 NPTF PLG w/handle				24484		194.50							
GAGE NPTF 6 step Plain Plug w/handle				24556		217.60							
GAGE L1 NPTF RING				24518		258.30							
GAGE L2 NPTF RING				24520		346.70							
GAGE NPTF 6 step Plain Ring				24590		329.00							
<b>1 1/2"-12 NF</b>				<i>Recommended Hole Size based on 75% Thread = 1.419"</i>									
L.H. HAND TAP	4	3B	6	17244	17245	247.90	242.80	207.20	187.00	159.10	143.90	123.20	
HAND TAP	6	2B	6	17248	17249	218.30	181.20	157.60	147.50	129.30	112.60	101.20	
R.H. ROUND DIE 2-1/2" OD				13394		159.90	137.50	129.10	109.20	104.20	95.60	85.00	
L.H. ROUND DIE 2-1/2" OD				13395		159.90	137.50	129.10	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		23343		214.50							
GAGE - Taperlock Style		3B		23344		214.50							
GAGE - Ring-Go		2A		23758		270.60							
GAGE - Ring-Go		3A		23759		270.60							
GAGE - Ring-NoGo		2A		23760		270.60							
GAGE - Ring-NoGo		3A		23761		270.60							
GAGE - L.H. Taperlock Style		2B		22654		202.00							
GAGE - L.H. Taperlock Style		3B		22655		202.00							
GAGE - L.H. Ring-Go		2A		22656		250.00							
GAGE - L.H. Ring-NoGo		2A		22657		250.00							
GAGE - L.H. Ring-Go		3A		22658		250.00							
GAGE - L.H. Ring-NoGo		3A		22659		250.00							
<b>1 1/2"-16 NS</b>				<i>Recommended Hole Size based on 75% Thread = 1.439"</i>									
HAND TAP	4	3B	6	17252	17253	167.10	123.90	122.50	97.10	90.90	87.70	87.00	
R.H. ROUND DIE 2-1/2" OD				13398		159.90	137.50	129.10	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		22660		200.00							
GAGE - Taperlock Style		3B		22661		200.00							
GAGE - Ring-Go		2A		22662		250.00							
GAGE - Ring-Go		3A		22663		250.00							
GAGE - Ring-NoGo		2A		22664		250.00							
GAGE - Ring-NoGo		3A		22665		250.00							
<b>1 1/2"-18 NEF</b>				<i>Recommended Hole Size based on 75% Thread = 1.446"</i>									
HAND TAP	4	3B	6	17256	17257	100.30	99.40	98.10	97.10	90.90	87.70	87.00	
HAND TAP	6	2B	6	17260	17261	146.40	123.90	122.50	97.10	90.90	87.70	87.00	
R.H. ROUND DIE 2-1/2" OD				13400		159.90	137.50	129.10	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		23348		262.60							
GAGE - Taperlock Style		3B		23349		262.60							
GAGE - Ring-Go		2A		23764		286.40							
GAGE - Ring-Go		3A		23765		286.40							
GAGE - Ring-NoGo		2A		23766		286.40							
GAGE - Ring-NoGo		3A		23767		286.40							
<b>1 1/2"-20 NS</b>				<i>Recommended Hole Size based on 75% Thread = 1.451"</i>									
HAND TAP	4	3B	6	17264	17265	167.10	123.90	122.50	97.10	90.90	87.70	87.00	
R.H. ROUND DIE 2-1/2" OD				13402		159.90	137.50	129.10	109.20	104.20	95.60	85.00	
GAGE - Taperlock Style		2B		22666		212.00							

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## POPULAR SPECIAL: TAPS, DIES & GAGES

SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>1 1/2"-20 NS</b>						<i>See Previous Page for Recommended Hole Size</i>							
GAGE - Taperlock Style		3B		22667		212.00							
GAGE - Ring-Go		2A		22668		250.00							
GAGE - Ring-Go		3A		22669		250.00							
GAGE - Ring-NoGo		2A		22670		250.00							
GAGE - Ring-NoGo		3A		22671		250.00							
<b>1 1/2"-24 NS</b>						<i>Recommended Hole Size based on 75% Thread = 1.459"</i>							
HAND TAP	4	3B	8	17268	17269	182.10	138.00	122.50	97.10	90.90	87.70	87.00	
<b>1 9/16"-16 NS</b>						<i>Recommended Hole Size based on 75% Thread = 1.502"</i>							
HAND TAP	5	3B	6	17272	17273	225.60	187.70	159.10	149.80	132.80	121.90	116.70	
<b>1 9/16"-18 NEF</b>						<i>Recommended Hole Size based on 75% Thread = 1.509"</i>							
HAND TAP	5	3B	6	17276	17277	162.80	159.20	159.10	149.80	132.80	121.90	116.70	
R.H. ROUND DIE 3" OD				13408		235.30	228.10	220.30	184.30	175.90	161.20	148.70	
<b>1 5/8"-5 1/2 NS</b>						<i>Recommended Hole Size based on 75% Thread = 1.448"</i>							
HAND TAP	7	3B	6	17280	17281	222.30	184.30	158.60	154.60	142.80	141.60	138.70	
<b>1 5/8"-8 NS</b>						<i>Recommended Hole Size based on 75% Thread = 1.503"</i>							
HAND TAP	6	3B	6	17284	17285	143.80	143.80	143.80	143.80	142.10	140.60	137.70	
<b>1 5/8"-12 NS</b>						<i>Recommended Hole Size based on 75% Thread = 1.544"</i>							
HAND TAP	4	3B	6	17908	17909	180.60	133.90	132.10	109.00	109.00	109.00	109.00	
HAND TAP	6	2B	6	17288	17289	109.00	109.00	109.00	109.00	109.00	109.00	109.00	
R.H. ROUND DIE 3" OD				13412		235.30	228.10	220.30	184.30	175.90	161.20	148.70	
GAGE - Trilock Style		2B		22672		228.00							
GAGE - Trilock Style		3B		22673		228.00							
GAGE - Ring-Go		2A		22674		262.00							
GAGE - Ring-Go		3A		22675		262.00							
GAGE - Ring-NoGo		2A		22676		262.00							
GAGE - Ring-NoGo		3A		22677		262.00							
<b>1 5/8"-16 NS</b>						<i>Recommended Hole Size based on 75% Thread = 1.564"</i>							
HAND TAP	5	3B	6	17292	17293	180.60	133.90	132.10	109.00	109.00	109.00	109.00	
R.H. ROUND DIE 3" OD				13414		235.30	228.10	220.30	184.30	175.90	161.20	148.70	
<b>1 5/8"-18 NEF</b>						<i>Recommended Hole Size based on 75% Thread = 1.571"</i>							
HAND TAP	5	3B	6	17296	17297	180.60	133.90	132.10	109.00	109.00	109.00	109.00	
R.H. ROUND DIE 3" OD				13416		235.30	228.10	220.30	184.30	175.90	161.20	148.70	
<b>1 3/4"-5 NC</b>						<i>Recommended Hole Size based on 75% Thread = 1.555"</i>							
HAND TAP	7	3B	6	17300	17301	230.40	192.70	167.80	160.40	149.10	145.40	142.20	
R.H. ROUND DIE 3" OD				13420		235.30	228.10	220.30	184.30	175.90	161.20	148.70	
<b>1 3/4"-8 NS</b>						<i>Recommended Hole Size based on 75% Thread = 1.628"</i>							
HAND TAP	6	3B	6	17304	17305	167.80	167.80	167.80	160.40	149.10	145.40	142.20	
R.H. ROUND DIE 3" OD				13474		235.30	228.10	220.30	184.30	175.90	161.20	148.70	
<b>1 3/4"-10 NS</b>						<i>Recommended Hole Size based on 75% Thread = 1.652"</i>							
HAND TAP	6	3B	6	17308	17309	227.40	178.50	163.50	157.30	145.90	142.50	139.30	

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>1 3/4"-12 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.669"</i>								
HAND TAP	6	3B	6	17312	17313	132.10	132.10	132.10	132.10	132.10	132.10	132.10	132.10
HAND TAP	8	2B	6	17316	17317	199.30	167.70	163.50	157.30	145.90	136.80	135.90	
R.H. ROUND DIE 3" OD				13422		235.30	228.10	220.30	184.30	175.90	161.20	148.70	
GAGE - Trilock Style		2B		22678		239.00							
GAGE - Trilock Style		3B		22679		239.00							
GAGE - Ring-Go		2A		22680		273.00							
GAGE - Ring-Go		3A		22681		273.00							
GAGE - Ring-NoGo		2A		22682		273.00							
GAGE - Ring-NoGo		3A		22683		273.00							
<b>1 3/4"-16 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.689"</i>								
HAND TAP	5	3B	6	17320	17321	199.30	167.70	163.50	135.90	135.90	135.90	135.90	
HAND TAP	7	2B	6	17324	17325	214.10	178.50	163.50	157.30	145.90	142.50	139.30	
R.H. ROUND DIE 3" OD				13426		235.30	228.10	220.30	184.30	175.90	161.20	148.70	
<b>1 3/4"-18 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.696"</i>								
HAND TAP	5	3B	6	17328	17329	214.10	178.50	163.50	157.30	145.90	142.50	139.30	
R.H. ROUND DIE 3" OD				13428		235.30	228.10	220.30	184.30	175.90	161.20	148.70	
<b>1 7/8"-5 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.680"</i>								
HAND TAP	7	3B	6	17332	17333	262.40	233.70	230.20	190.60	186.70	184.50	174.50	
<b>1 7/8"-8 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.753"</i>								
HAND TAP	6	3B	6	17336	17337	191.80	191.80	191.80	189.30	186.70	184.50	174.50	
R.H. ROUND DIE 3" OD				13476		235.30	228.10	220.30	184.30	175.90	161.20	148.70	
<b>1 7/8"-12 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.794"</i>								
HAND TAP	6	3B	6	17340	17341	139.40	139.40	139.40	139.40	139.40	139.40	139.40	
HAND TAP	8	2B	6	17344	17345	224.10	200.70	179.60	165.90	153.00	139.40	139.40	
R.H. ROUND DIE 3" OD				13436		235.30	228.10	220.30	184.30	175.90	161.20	148.70	
GAGE - Trilock Style		2B		22684		250.00							
GAGE - Trilock Style		3B		22685		250.00							
GAGE - Ring-Go		2A		22686		284.00							
GAGE - Ring-Go		3A		22687		284.00							
GAGE - Ring-NoGo		2A		22688		284.00							
GAGE - Ring-NoGo		3A		22689		284.00							
<b>1 7/8"-16 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.814"</i>								
HAND TAP	5	3B	6	17348	17349	213.90	177.40	173.80	143.20	143.20	139.40	139.40	
R.H. ROUND DIE 3" OD				13438		235.30	228.10	220.30	184.30	175.90	161.20	148.70	
<b>2"-4 1/2 NC</b>					<i>Recommended Hole Size based on 75% Thread = 1.783"</i>								
HAND TAP	7	3B	6	17354	17355	269.40	236.90	234.10	200.70	195.10	192.30	182.20	
R.H. ROUND DIE 3" OD				13446		241.40	234.10	226.40	184.30	175.90	161.20	148.70	
<b>2"-8 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.878"</i>								
HAND TAP	6	3B	6	17358	17359	207.00	207.00	207.00	200.70	195.10	192.30	182.20	
R.H. ROUND DIE 3" OD				13478		241.40	234.10	226.40	184.30	175.90	161.20	148.70	

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>2"-11 55° WHITWORTH PIPE</b>					<i>Recommended Hole Size: BSPT = 2.2188" / BSPP = 2.250"</i>								
BSPT TAPER - MODIFIED			7	17361	17362	261.30	249.70	241.50	234.90	234.90	234.90	234.90	234.90
BSPP PARALLEL - MODIFIED			7	17364	17365	261.30	249.70	241.50	234.90	234.90	234.90	234.90	234.90
BSPT TAPER - FULL FORM			7	17940		559.90	443.10	372.40	310.40	288.90	267.70	238.10	
BSPP PARALLEL - FULL FORM			7	17931		559.90	443.10	372.40	310.40	288.90	267.70	238.10	
<b>2"-11 1/2 NPS NPT</b>					<i>Recommended Hole Size: NPSC = 2.2188" / NPSM = 2.2638"</i>								
NPS STRAIGHT			7	17370		297.40	270.30	239.10	222.10	209.20	196.40	196.40	
GAGE L1 NPT PLG w/handle				24395		153.70							
GAGE L1 NPT RING				24393		299.10							
<b>2"-12 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.919"</i>								
HAND TAP	6	3B	6	17374	17375	155.20	155.20	155.20	155.20	155.20	155.20	155.20	155.20
HAND TAP	8	2B	6	17378	17379	230.60	202.90	200.60	182.20	168.30	155.20	155.20	
R.H. ROUND DIE 3" OD				13452		241.40	234.10	226.40	184.30	175.90	161.20	148.70	
GAGE - Trilock Style		2B		22690		273.00							
GAGE - Trilock Style		3B		22691		273.00							
GAGE - Ring-Go		2A		22692		300.00							
GAGE - Ring-Go		3A		22693		300.00							
GAGE - Ring-NoGo		2A		22694		300.00							
GAGE - Ring-NoGo		3A		22695		300.00							
<b>2"-16 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.939"</i>								
HAND TAP	5	3B	6	17382	17383	155.20	155.20	155.20	155.20	155.20	155.20	155.20	155.20
R.H. ROUND DIE 3" OD				13456		241.40	234.10	226.40	184.30	175.90	161.20	148.70	
<b>2"-20 NS</b>					<i>Recommended Hole Size based on 75% Thread = 1.951"</i>								
HAND TAP	5	3B	8	17386	17387	250.70	222.30	207.70	189.00	168.30	155.20	155.20	
R.H. ROUND DIE 3" OD				13460		241.40	234.10	226.40	184.30	175.90	161.20	148.70	
<b>2 1/8"-8 NS</b>					<i>Recommended Hole Size based on 75% Thread = 2.003"</i>								
HAND TAP	6	3B	6	17390	17391	229.90	229.90	229.90	229.90	229.90	229.90	229.90	229.90
<b>2 1/8"-12 NS</b>					<i>Recommended Hole Size based on 75% Thread = 2.044"</i>								
HAND TAP	6	3B	6	17394	17395	200.80	196.40	193.60	183.90	181.20	178.00	170.80	
<b>2-1/8"-16 NS</b>					<i>Recommended Hole Size based on 75% Thread = 2.064"</i>								
HAND TAP	5	3B	6	17398	17399	256.50	239.40	217.30	183.90	181.20	178.00	170.80	
<b>2-1/4"-4 1/2 NC</b>					<i>Recommended Hole Size based on 75% Thread = 2.033"</i>								
HAND TAP	7	3B	6	17402	17403	327.80	327.80	327.80	260.80	257.60	255.90	252.80	
<b>2 1/4"-8 NS</b>					<i>Recommended Hole Size based on 75% Thread = 2.128"</i>								
HAND TAP	6	3B	6	17406	17407	250.40	250.40	250.40	250.40	250.40	250.40	250.40	250.40
<b>2 1/4"-12 NS</b>					<i>Recommended Hole Size based on 75% Thread = 2.169"</i>								
HAND TAP	6	3B	6	17410	17411	206.40	200.40	197.80	195.80	195.80	195.80	195.80	195.80
GAGE - Trilock Style		2B		22696		252.00							
GAGE - Trilock Style		3B		22697		252.00							
GAGE - Ring-Go		2A		22698		328.00							
GAGE - Ring-Go		3A		22699		328.00							

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# POPULAR SPECIAL: TAPS, DIES & GAGES

For tap standards and dimensions,  
see 'Tables for Tap Dimensions'  
on pages 122-131.

SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>2 1/4"-12 NS</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - Ring-NoGo		2A		22700		328.00							
GAGE - Ring-NoGo		3A		22701		328.00							
<b>2 1/4"-16 NS</b>					<i>Recommended Hole Size based on 75% Thread = 2.189"</i>								
HAND TAP	5	3B	6	17414	17415	288.80	245.10	241.70	222.30	209.20	205.20	195.80	
<b>2 3/8"-8 NS</b>					<i>Recommended Hole Size based on 75% Thread = 2.253"</i>								
HAND TAP	6	3B	6	17418	17419	306.60	306.60	306.60	293.30	293.30	293.30	293.30	
<b>2 3/8"-12 NS</b>					<i>Recommended Hole Size based on 75% Thread = 2.294"</i>								
HAND TAP	6	3B	6	17422	17423	259.10	259.10	259.10	249.10	249.10	249.10	249.10	
<b>2 3/8"-16 NS</b>					<i>Recommended Hole Size based on 75% Thread = 2.314"</i>								
HAND TAP	5	3B	6	17426	17427	320.00	278.30	259.10	249.10	249.10	249.10	249.10	
<b>2 1/2"-4 NC</b>					<i>Recommended Hole Size based on 75% Thread = 2.256"</i>								
HAND TAP	7	3B	6	17430	17431	371.70	371.70	371.70	329.40	326.30	321.70	316.00	
<b>2 1/2"-8 NS</b>					<i>Recommended Hole Size based on 75% Thread = 2.378"</i>								
HAND TAP	6	3B	6	17434	17435	360.80	360.80	360.80	329.40	326.30	321.70	316.00	
<b>2 1/2"-8 NPT/F</b>					<i>Recommended Hole Size: NPT = 2.625" / NPTF = 2.6406"</i>								
NPT/F TAPER			7	17437		533.60	435.40	415.70	389.90	364.40	345.90	343.10	
GAGE L1 NPT PLG w/handle				24398		211.30							
GAGE L1 NPT RING				24396		362.50							
<b>2 1/2"-12 NS</b>					<i>Recommended Hole Size based on 75% Thread = 2.419"</i>								
HAND TAP	6	3B	6	17444	17445	259.40	259.40	259.40	259.40	259.40	259.40	259.40	
GAGE - Trilock Style		2B		22702		317.00							
GAGE - Trilock Style		3B		22703		317.00							
GAGE - Ring-Go		2A		22704		339.00							
GAGE - Ring-Go		3A		22705		339.00							
GAGE - Ring-NoGo		2A		22706		339.00							
GAGE - Ring-NoGo		3A		22707		339.00							
<b>2 1/2"-16 NS</b>					<i>Recommended Hole Size based on 75% Thread = 2.439"</i>								
HAND TAP	5	3B	6	17448	17449	361.60	317.10	312.80	274.40	259.40	259.40	259.40	
<b>2 3/4"-12 NS</b>					<i>Recommended Hole Size based on 75% Thread = 2.669"</i>								
HAND TAP	7	3B	6	17460	17461	307.20	307.20	307.20	307.20	307.20	307.20	307.20	
<b>3"-4 NC</b>					<i>Recommended Hole Size based on 75% Thread = 2.756"</i>								
HAND TAP	9	3B	6	17468	17469	570.80	558.90	526.40					
<b>3"-8 NS</b>					<i>Recommended Hole Size based on 75% Thread = 2.878"</i>								
HAND TAP	8	3B	6	17472	17473	570.80	558.90	526.40					

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**North American Tool**

"In The Pursuit of Perfection"

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## POPULAR SPECIAL: TAPS, DIES & GAGES

SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>3"-8 NPT/F</b>						<i>Recommended Hole Size: NPT/F = 3.265"</i>							
NPT/F TAPER			7	17475		627.70	550.30	518.80	518.80	518.80	518.80	518.80	518.80
NPT/F TAPER INT THD			7	17478		676.00	597.40	566.20	566.20	566.20	566.20	566.20	566.20
GAGE L1 NPT PLG w/handle				24401		246.30							
GAGE L1 NPT RING				24399		450.30							
<b>3"-12 NS</b>						<i>Recommended Hole Size based on 75% Thread = 2.919"</i>							
HAND TAP	7	3B	8	17482	17483	457.40	428.40	428.40					
<b>3"-16 NS</b>						<i>Recommended Hole Size based on 75% Thread = 2.939"</i>							
HAND TAP	5	3B	8	17486	17487	486.70	451.20	428.40					
<b>3 1/8"-12 NS</b>						<i>Recommended Hole Size based on 75% Thread = 3.0442"</i>							
HAND TAP	7	2B	8	17490	17491	772.60	708.80	692.20	678.50				
<b>3 1/4"-8 NS</b>						<i>Recommended Hole Size based on 75% Thread = 3.1281"</i>							
HAND TAP	8	3B	6	17499	17500	988.10	915.30	897.00	883.40	783.80	751.60	744.30	
<b>3 1/4"-12 NS</b>						<i>Recommended Hole Size based on 75% Thread = 3.1692"</i>							
HAND TAP	7	2B	8	17503	17504	813.70	745.40	727.10	713.40				
<b>3 1/2"-4 NC</b>						<i>Recommended Hole Size based on 75% Thread = 3.256"</i>							
HAND TAP	9	3B	6	17507	17508	1168.70	1095.90	1077.70	1064.00	1014.00			
<b>3 1/2"-8 NS</b>						<i>Recommended Hole Size based on 75% Thread = 3.378"</i>							
HAND TAP	8	3B	6	17511	17512	1168.70	1095.90	1077.70	1064.00	1014.00			
<b>3 1/2"-8 NPT/F</b>						<i>Recommended Hole Size: NPT/F = 3.25"</i>							
NPT/F TAPER			7	17514		866.60	742.70	664.50	664.50	664.50	664.50	664.50	664.50
NPT/F TAPER INT THD			7	17517		932.50	808.70	730.40	730.40	730.40	730.40	730.40	730.40
GAGE L1 NPT PLG w/handle				24404		457.20							
GAGE L1 NPT RING				24402		704.90							
<b>3 1/2"-12 NS</b>						<i>Recommended Hole Size based on 75% Thread = 3.4192"</i>							
HAND TAP	7	2B	8	17521	17522	942.60	874.40	857.60	843.90				
<b>3 3/4"-4 NC</b>						<i>Recommended Hole Size based on 75% Thread = 3.506"</i>							
HAND TAP	9	3B	10	17525	17526	1602.60	1581.80	1572.10					
<b>3 3/4"-8 NS</b>						<i>Recommended Hole Size based on 75% Thread = 3.6281"</i>							
HAND TAP	8	3B	10	17529	17530	2086.00	2061.10	2041.80					
<b>3 3/4"-12 NS</b>						<i>Recommended Hole Size based on 75% Thread = 3.6692"</i>							
HAND TAP	7	2B	10	17533	17534	1602.60	1581.80	1572.10					
<b>4"-4 NC</b>						<i>Recommended Hole Size based on 75% Thread = 3.756"</i>							
HAND TAP	9	3B	10	17537	17538	1671.60	1650.90						
<b>4"-8 NS</b>						<i>Recommended Hole Size based on 75% Thread = 3.8781"</i>							
HAND TAP	8	3B	10	17541	17542	2189.60	2164.70	2161.90					

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SIZE / DESCRIPTION	GH#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>4"-8 NPT/F</b>						<i>Recommended Hole Size: NPT/F = 4.25"</i>							
NPT/F TAPER			9	17544		1073.20	908.80	784.50	784.50	784.50	784.50	784.50	784.50
NPT/F TAPER INT THD			9	17547		1155.70	991.20	868.20	868.20	868.20	868.20	868.20	868.20
GAGE L1 NPT PLG w/handle				24407		510.30							
GAGE L1 NPT RING				24405		854.20							
<b>4"-12 NS</b>						<i>Recommended Hole Size based on 75% Thread = 3.9192"</i>							
HAND TAP	7	2B	10	17551	17552	1671.60	991.20						

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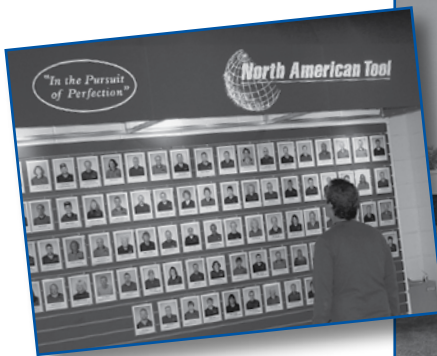


North American Tool Corporation is "In The Pursuit of Perfection" as we continue to be your 24-hour source for Special Taps, Dies and Gages. The one thing that remains constant is our commitment to:

- Outstanding Customer Service
- Quality Products
- Shipped On Time

Visit North American Tool's user-friendly web site at [www.natool.com](http://www.natool.com), where you will find features such as a product selector, an online quote request system, distributor locator, access to product literature and a thread mill configurator/programming guide.

We welcome the opportunity to work with you as your trusted source for special threading tools. Feel free to contact us to discuss your cutting tool requirements.



North American Tool's modern customer service and manufacturing facility located in South Beloit, Illinois.

# ENGINEERING DATA: METRIC CONVERSIONS

*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				

# METRIC POPULAR SPECIAL: TAPS, DIES & GAGES

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SIZE / DESCRIPTION	D#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>M1.6 x 0.35</b>					<i>Recommended Hole Size Based on 75% Thread = 1.25mm</i>								
HAND TAP	3	6H	2	20010		14.40	14.40	14.40	14.40	14.40	13.00	13.00	11.30
SPIRAL POINT	3	6H	0	20008		17.90	17.90	17.90	17.90	17.90	16.40	16.40	14.30
GAGE - Taperlock Style		6H		25003		192.50							
GAGE - Reversible Style		6H		25645		286.10							
GAGE - Ring-Go		6g		25205		246.50							
GAGE - Ring-NoGo		6g		25206		246.50							
GAGE - L.H. Taperlock Style		6H		22708		187.00							
GAGE - L.H. Taperlock Style		4H		22709		187.00							
GAGE - L.H. Reversible Style		6H		22710		230.00							
GAGE - L.H. Reversible Style		4H		22711		230.00							
<b>M1.8 x 0.35</b>					<i>Recommended Hole Size Based on 75% Thread = 1.45mm</i>								
HAND TAP	3	6H	2	20022	20023	13.60	13.60	13.60	13.60	13.60	12.40	12.40	10.80
SPIRAL POINT	3	6H	0	20020		16.30	16.30	16.30	16.30	16.30	14.80	14.80	12.80
GAGE - Taperlock Style		6H		25008		192.50							
GAGE - Reversible Style		6H		25650		286.10							
GAGE - Ring-Go		6g		25210		246.50							
GAGE - Ring-NoGo		6g		25211		246.50							
GAGE - L.H. Taperlock Style		6H		22712		187.00							
GAGE - L.H. Taperlock Style		4H		22713		187.00							
GAGE - L.H. Reversible Style		6H		22714		230.00							
GAGE - L.H. Reversible Style		4H		22715		230.00							
<b>M2 x 0.4</b>					<i>Recommended Hole Size Based on 75% Thread = 1.6mm</i>								
HAND TAP	3	6H	3	20034	20035	12.90	12.90	12.90	12.90	12.90	11.80	11.80	9.90
SPIRAL POINT	3	6H	2	20032		14.90	14.90	14.90	14.90	14.90	13.60	13.60	11.80
GAGE - Taperlock Style		6H		25013		130.90							
GAGE - Reversible Style		6H		25655		181.50							
GAGE - Ring-Go		6g		25215		157.10							
GAGE - Ring-NoGo		6g		25216		157.10							
GAGE - L.H. Taperlock Style		6H		22716		187.00							
GAGE - L.H. Taperlock Style		4H		22717		187.00							
GAGE - L.H. Reversible Style		6H		22718		230.00							
GAGE - L.H. Reversible Style		4H		22719		230.00							
GAGE - L.H. Ring-Go		4g		22720		242.00							
GAGE - L.H. Ring-NoGo		4g		22721		242.00							
GAGE - L.H. Ring-Go		6g		22722		242.00							
GAGE - L.H. Ring-NoGo		6g		22723		242.00							
<b>M2.2 x 0.45</b>					<i>Recommended Hole Size Based on 75% Thread = 1.75mm</i>								
HAND TAP	3	6H	3	20046	20047	11.20	11.20	11.20	11.20	11.20	10.20	10.20	9.70
SPIRAL POINT	3	6H	2	20044		12.60	12.60	12.60	12.60	12.60	11.70	11.70	11.20
GAGE - Taperlock Style		6H		25018		130.90							
GAGE - Reversible Style		6H		25660		181.50							
GAGE - Ring-Go		6g		25220		157.10							
GAGE - Ring-NoGo		6g		25221		157.10							
GAGE - L.H. Taperlock Style		6H		22724		187.00							
GAGE - L.H. Taperlock Style		4H		22725		187.00							
GAGE - L.H. Reversible Style		6H		22726		230.00							
GAGE - L.H. Reversible Style		4H		22727		230.00							
GAGE - L.H. Ring-Go		4g		22728		264.00							
GAGE - L.H. Ring-NoGo		4g		22729		264.00							
GAGE - L.H. Ring-Go		6g		22730		264.00							
GAGE - L.H. Ring-NoGo		6g		22731		264.00							
<b>M2.5 x 0.45</b>					<i>Recommended Hole Size Based on 75% Thread = 2.05mm</i>								
HAND TAP	3	6H	3	20058	20059	9.60	9.60	9.60	9.60	9.60	8.90	8.90	7.80
SPIRAL POINT	3	6H	2	20056		11.40	11.40	11.40	11.40	11.40	10.50	10.50	9.70
HAND TAP	1	4H	3	20052	20053	33.70	20.10	14.00	11.70	10.50	9.90	9.00	7.80

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# METRIC POPULAR SPECIAL: TAPS, DIES & GAGES

SIZE / DESCRIPTION	D#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>M2.5 x 0.45</b>						<i>See Previous Page for Recommended Hole Size</i>							
SPIRAL POINT	1	4H	2	20050		35.10	21.30	15.10	12.80	11.80	11.20	10.10	9.70
GAGE - Taperlock Style		6H		25023		118.60							
GAGE - Reversible Style		6H		25665		181.50							
GAGE - Ring-Go		6g		25225		157.10							
GAGE - Ring-NoGo		6g		25226		157.10							
GAGE - L.H. Taperlock Style		6H		22732		187.00							
GAGE - L.H. Taperlock Style		4H		22733		187.00							
GAGE - L.H. Reversible Style		6H		22734		230.00							
GAGE - L.H. Reversible Style		4H		22735		230.00							
GAGE - L.H. Ring-Go		4g		22736		264.00							
GAGE - L.H. Ring-NoGo		4g		22737		264.00							
GAGE - L.H. Ring-Go		6g		22738		264.00							
GAGE - L.H. Ring-NoGo		6g		22739		264.00							
<b>M2.6 x 0.45</b>						<i>Recommended Hole Size Based on 75% Thread = 2.15mm</i>							
HAND TAP	3	6H	3	21179	21180	47.50	31.40	13.80	13.00	13.00	10.30	9.10	8.40
<b>M3 x 0.5</b>						<i>Recommended Hole Size Based on 75% Thread = 2.5mm TRU-FLO at 65% Thread = 2.78mm</i>							
HAND TAP	3	6H	3	20070	20071	7.60	7.60	7.60	7.60	7.60	7.10	7.10	6.70
SPIRAL POINT	3	6H	2	20068		9.70	9.70	9.70	9.70	9.70	9.00	9.00	7.90
REGULAR SPIRAL FLUTE	3	6H	2	20074	20075	17.40	17.40	17.40	17.40	17.40	15.90	15.90	12.70
FAST SPIRAL FLUTE	3	6H	2	20078	20079	18.10	18.10	18.10	18.10	18.10	16.60	16.60	13.40
SPIRAL POINT	5		2	21021		80.50	47.70	35.70	26.60	22.40	19.80	16.80	13.80
+ .076mm SPIRAL POINT	7		2	20938		80.50	47.70	35.70	26.60	22.40	19.80	16.80	13.80
HAND TAP	1	4H	3	20064	20065	30.60	17.00	11.70	9.90	9.60	8.30	7.50	6.70
SPIRAL POINT	1	4H	2	20062		31.80	18.10	12.80	11.20	10.50	9.40	8.80	7.90
"TRU-FLO" FORM TAP	5	6H	0	19200	19201	24.20	24.20	24.20	24.20	24.20	24.20	19.50	15.20
SOLID CARBIDE / HAND	3	6H	3	43001	43002	88.50	84.60	80.20	75.90	73.10	69.50	65.80	65.30
SOLID CARBIDE / SP PT	3	6H	2	43003		91.60	87.70	83.40	79.20	76.20	72.60	69.00	68.40
"COST CUTTER" DRILL/TAP	3	6H	2	29024		13.20	13.20	13.20	13.20	13.20	13.20	13.20	13.20
R.H. ROUND DIE 20.6mm OD				13518		24.80	23.30	22.20	22.20	22.20	22.20	22.20	22.20
GAGE - Taperlock Style		6H		25028		118.60							
GAGE - Reversible Style		6H		25670		143.20							
GAGE - Ring-Go		6g		25230		135.60							
GAGE - Ring-NoGo		6g		25231		135.60							
GAGE - L.H. Taperlock Style		6H		22740		178.00							
GAGE - L.H. Taperlock Style		4H		22741		178.00							
GAGE - L.H. Reversible Style		6H		22742		220.00							
GAGE - L.H. Reversible Style		4H		22743		220.00							
GAGE - L.H. Ring-Go		4g		22744		242.00							
GAGE - L.H. Ring-NoGo		4g		22745		242.00							
GAGE - L.H. Ring-Go		6g		22746		242.00							
GAGE - L.H. Ring-NoGo		6g		22747		242.00							
<b>M3.5 x 0.6</b>						<i>Recommended Hole Size Based on 75% Thread = 2.9mm TRU-FLO at 65% Thread = 3.24mm</i>							
HAND TAP	4	6H	3	20091	20092	7.30	7.30	7.30	7.30	7.30	6.60	6.60	6.50
SPIRAL POINT	4	6H	2	20089		8.00	8.00	8.00	8.00	8.00	7.40	7.40	7.30
HAND TAP	1	4H	3	20085	20086	30.60	17.00	11.70	9.90	9.60	8.70	8.00	7.20
SPIRAL POINT	1	4H	2	20083		31.80	18.10	12.80	11.20	10.50	9.80	9.10	8.40
REGULAR SPIRAL FLUTE	4	6H	2	20101	20102	14.10	14.10	14.10	14.10	14.10	12.80	12.80	11.80
FAST SPIRAL FLUTE	4	6H	2	20105	20106	14.90	14.90	14.90	14.90	14.90	13.60	13.60	12.60
6" EXTENSION HAND	4	6H	3	20118	20119	33.70	33.70	33.70	33.70	33.70	33.70	33.70	20.70
6" EXT SPIRAL POINT	4	6H	2	20116		35.00	35.00	35.00	35.00	35.00	35.00	35.00	21.80
+ .127mm HAND TAP	11	PLATING	3	20112	20113	14.20	14.20	14.20	14.20	14.20	12.90	12.90	11.80
+ .127mm SPIRAL POINT	11	PLATING	2	20110		15.30	15.30	15.30	15.30	15.30	14.10	14.10	12.80
"TRU-FLO" FORM TAP	6	6H	0	19202	19203	22.20	22.20	22.20	22.20	22.20	22.20	17.50	13.40
SOLID CARBIDE / HAND	4	6H	3	43005	43006	82.30	78.50	74.10	70.00	67.00	63.30	59.70	59.20
SOLID CARBIDE / SP PT	4	6H	2	43007		83.90	80.10	75.70	71.60	68.50	64.90	61.50	60.70
"COST CUTTER" DRILL/TAP	4	6H	2	29025		12.70	12.70	12.70	12.70	12.70	12.70	12.70	12.70

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SIZE / DESCRIPTION	D#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>M3.5 x 0.6</b>				<i>See Previous Page for Recommended Hole Size</i>									
R.H. ROUND DIE 20.6mm OD				13522		24.80	23.30	22.20	22.20	22.20	22.20	22.20	22.20
GAGE - Taperlock Style		6H		25033		103.20							
GAGE - Reversible Style		6H		25675		132.20							
GAGE - Ring-Go		6g		25235		135.60							
GAGE - Ring-NoGo		6g		25236		135.60							
GAGE - L.H. Taperlock Style		6H		22748		184.00							
GAGE - L.H. Taperlock Style		4H		22749		184.00							
GAGE - L.H. Reversible Style		6H		22750		187.00							
GAGE - L.H. Reversible Style		4H		22751		187.00							
GAGE - L.H. Ring-Go		4g		22752		209.00							
GAGE - L.H. Ring-NoGo		4g		22753		209.00							
GAGE - L.H. Ring-Go		6g		22754		209.00							
GAGE - L.H. Ring-NoGo		6g		22755		209.00							

<b>M4 x 0.75</b>				<i>Recommended Hole Size Based on 75% Thread = 3.25mm</i>									
HAND TAP	4	6H	4	21035	21036	89.40	58.10	39.70	24.90	17.60	14.20	11.30	10.30

<b>M4 x 0.7</b>				<i>Recommended Hole Size Based on 75% Thread = 3.3mm TRU-FLO at 65% Thread = 3.69mm</i>									
HAND TAP	4	6H	4	20130	20131	6.40	6.40	6.40	6.40	6.40	5.80	5.80	5.80
SPIRAL POINT	4	6H	2	20128		8.00	8.00	8.00	8.00	8.00	7.40	7.40	7.40
SPIRAL POINT	5	2	2	21033		69.90	49.70	47.50	28.80	21.00	16.40	14.00	12.90
HAND TAP	2	4H	4	20124	20125	30.60	17.00	11.70	9.90	9.60	8.70	8.00	7.20
SPIRAL POINT	2	4H	2	20122		31.80	18.10	12.80	11.20	10.50	9.80	9.10	8.40
REGULAR SPIRAL FLUTE	4	6H	2	20140	20141	14.10	14.10	14.10	14.10	14.10	12.80	12.80	11.80
FAST SPIRAL FLUTE	4	6H	3	20144	20145	14.90	14.90	14.90	14.90	14.90	13.60	13.60	12.60
+0.076mm SPIRAL POINT	7	2	2	20923		69.90	49.70	47.50	28.80	21.00	16.40	14.00	12.90
L.H. HAND TAP	4	6H	4	20136	20137	7.20	7.20	7.20	7.20	7.20	6.50	6.50	6.10
6" EXTENSION HAND TAP	4	6H	4	20157	20158	32.60	32.60	32.60	32.60	32.60	32.60	32.60	22.80
6" EXT SPIRAL POINT	4	6H	2	20155		33.60	33.60	33.60	33.60	33.60	33.60	33.60	23.70
+127mm HAND TAP	11	PLATING	4	20151	20152	14.20	14.20	14.20	14.20	14.20	12.90	12.90	11.80
+127mm SPIRAL POINT	11	PLATING	2	20149		15.30	15.30	15.30	15.30	15.30	14.10	14.10	12.90
"TRU-FLO" FORM TAP	6	6H	0	19204	19205	22.20	22.20	22.20	22.20	22.20	22.20	17.50	13.40
SOLID CARBIDE / HAND	4	6H	4	43009	43010	93.50	87.20	84.50	78.40	76.90	74.50	67.00	66.20
SOLID CARBIDE / SP PT	4	6H	2	43011		96.60	90.70	87.60	81.50	80.20	77.70	70.10	69.60
"COST CUTTER" DRILL/TAP	4	6H	2	29026		12.70	12.70	12.70	12.70	12.70	12.70	12.70	12.70
R.H. ROUND DIE 20.6mm OD				13524		24.80	23.30	22.20	22.20	22.20	22.20	22.20	22.20
L.H. ROUND DIE 20.6mm OD				13525		47.20	41.60	38.50	35.60	34.10	30.50	22.20	22.20
GAGE - Taperlock Style		6H		25038		103.20							
GAGE - Reversible Style		6H		25680		132.20							
GAGE - Ring-Go		6g		25240		126.40							
GAGE - Ring-NoGo		6g		25241		126.40							
GAGE - L.H. Taperlock Style		6H		22756		164.00							
GAGE - L.H. Taperlock Style		4H		22757		164.00							
GAGE - L.H. Reversible Style		6H		22758		205.00							
GAGE - L.H. Reversible Style		4H		22759		205.00							
GAGE - L.H. Ring-Go		4g		22760		209.00							
GAGE - L.H. Ring-NoGo		4g		22761		209.00							
GAGE - L.H. Ring-Go		6g		22762		209.00							
GAGE - L.H. Ring-NoGo		6g		22763		209.00							

<b>M4.5 x 0.75</b>				<i>Recommended Hole Size Based on 75% Thread = 3.75mm TRU-FLO at 65% Thread = 4.17mm</i>									
HAND TAP	4	6H	4	20169	20170	7.40	7.40	7.40	7.40	7.40	6.70	6.70	6.30
SPIRAL POINT	4	6H	2	20167		9.00	9.00	9.00	9.00	9.00	8.30	8.30	7.40
HAND TAP	2	4H	4	20163	20164	30.60	17.00	11.70	9.90	9.60	8.70	8.00	7.20
SPIRAL POINT	2	4H	2	20161		31.80	18.10	12.80	11.20	10.50	9.80	9.10	8.40
REGULAR SPIRAL FLUTE	4	6H	2	20179	20180	14.10	14.10	14.10	14.10	14.10	12.80	12.80	11.80
FAST SPIRAL FLUTE	4	6H	3	20183	20184	14.90	14.90	14.90	14.90	14.90	13.60	13.60	12.60
L.H. HAND TAP	4	6H	4	20175	20176	6.80	6.80	6.80	6.80	6.80	6.30	6.30	6.30
6" EXTENSION HAND	4	6H	4	20196	20197	30.90	30.90	30.90	30.90	30.90	30.90	30.90	21.30

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SIZE / DESCRIPTION	D#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>M4.5 x 0.75</b>						<i>See Previous Page for Recommended Hole Size</i>							
6" EXT SPIRAL POINT	4	6H	2	<b>20194</b>		32.10	32.10	32.10	32.10	32.10	32.10	32.10	22.40
+.127mm HAND TAP	11	PLATING	4	<b>20190</b>	<b>20191</b>	14.20	14.20	14.20	14.20	14.20	12.90	12.90	11.80
+.127mm SPIRAL POINT	11	PLATING	2	<b>20188</b>		15.30	15.30	15.30	15.30	15.30	14.10	14.10	12.80
"TRU-FLO" FORM TAP	6	6H	0	<b>19206</b>	<b>19207</b>	22.20	22.20	22.20	22.20	22.20	22.20	17.50	13.40
SOLID CARBIDE / HAND	4	6H	4	<b>43013</b>	<b>43014</b>	104.20	96.40	89.50	82.20	80.70	80.00	75.50	74.80
SOLID CARBIDE / SP PT	4	6H	2	<b>43015</b>		110.10	102.40	95.40	88.30	86.50	85.80	81.40	80.80
"COST CUTTER" DRILL/TAP	4	6H	2	<b>29027</b>		12.70	12.70	12.70	12.70	12.70	12.70	12.70	12.70
R.H. ROUND DIE 20.6mm OD				<b>13528</b>		24.80	23.30	22.20	22.20	22.20	22.20	22.20	22.20
GAGE - Taperlock Style		6H		<b>25043</b>		103.20							
GAGE - Reversible Style		6H		<b>25685</b>		132.20							
GAGE - Ring-Go		6g		<b>25245</b>		126.40							
GAGE - Ring-NoGo		6g		<b>25246</b>		126.40							
GAGE - L.H. Taperlock Style		6H		<b>22764</b>		164.00							
GAGE - L.H. Taperlock Style		4H		<b>22765</b>		164.00							
GAGE - L.H. Reversible Style		6H		<b>22766</b>		205.00							
GAGE - L.H. Reversible Style		4H		<b>22767</b>		205.00							
GAGE - L.H. Ring-Go		4g		<b>22768</b>		209.00							
GAGE - L.H. Ring-NoGo		4g		<b>22769</b>		209.00							
GAGE - L.H. Ring-Go		6g		<b>22770</b>		209.00							
GAGE - L.H. Ring-NoGo		6g		<b>22771</b>		209.00							
<b>M5 x 0.9</b>						<i>Recommended Hole Size Based on 75% Thread = 4.1mm</i>							
HAND TAP	3	4H	4	<b>21184</b>	<b>21185</b>	46.40	22.60	11.20	9.00	9.00	8.40	8.40	7.50
SPIRAL POINT	3	4H	2	<b>21186</b>		47.10	23.20	12.10	9.90	9.90	9.20	9.20	8.40
<b>M5 x 0.8</b>						<i>Recommended Hole Size Based on 75% Thread = 4.2mm TRU-FLO at 65% Thread = 4.65mm</i>							
HAND TAP	4	6H	4	<b>20208</b>	<b>20209</b>	6.00	6.00	6.00	6.00	6.00	5.60	5.60	5.60
SPIRAL POINT	4	6H	2	<b>20206</b>		7.40	7.40	7.40	7.40	7.40	6.60	6.60	6.60
HAND TAP	2	4H	4	<b>20202</b>	<b>20203</b>	41.80	20.40	19.90	19.30	17.20	14.40	11.70	9.00
SPIRAL POINT	2	4H	2	<b>20200</b>		42.80	21.30	21.00	20.20	18.10	15.30	12.60	9.90
REGULAR SPIRAL FLUTE	4	6H	2	<b>20218</b>	<b>20219</b>	14.10	14.10	14.10	14.10	14.10	12.80	12.80	11.80
FAST SPIRAL FLUTE	4	6H	3	<b>20222</b>	<b>20223</b>	14.90	14.90	14.90	14.90	14.90	13.60	13.60	12.60
+.076mm SPIRAL POINT	7		2	<b>20924</b>		73.50	49.80	34.90	18.90	17.80	15.10	13.40	12.50
L.H. HAND TAP	4	6H	4	<b>20214</b>	<b>20215</b>	7.20	7.20	7.20	7.20	7.20	6.50	6.50	6.50
6" EXTENSION HAND TAP	4	6H	4	<b>20235</b>	<b>20236</b>	30.90	30.90	30.90	30.90	30.90	30.90	30.90	21.30
6" EXT SPIRAL POINT	4	6H	2	<b>20233</b>		32.10	32.10	32.10	32.10	32.10	32.10	32.10	22.40
+.127mm HAND TAP	11	PLATING	4	<b>20229</b>	<b>20230</b>	14.70	14.70	14.70	14.70	14.70	13.20	13.20	12.10
+.127mm SPIRAL POINT	11	PLATING	2	<b>20227</b>		15.60	15.60	15.60	15.60	15.60	14.30	14.30	13.00
"TRU-FLO" FORM TAP	7	6H	0	<b>19208</b>	<b>19209</b>	22.20	22.20	22.20	22.20	22.20	22.20	17.50	13.40
SOLID CARBIDE / HAND	4	6H	4	<b>43017</b>	<b>43018</b>	104.20	96.40	89.50	82.20	80.70	80.00	75.50	74.80
SOLID CARBIDE / SP PT	4	6H	2	<b>43019</b>		110.10	102.40	95.40	88.30	86.50	85.80	81.40	80.80
"COST CUTTER" DRILL/TAP	4	6H	2	<b>29028</b>		12.70	12.70	12.70	12.70	12.70	12.70	12.70	12.70
TIN COAT / +.076mm SP PT	7		2	<b>55009</b>		75.50	51.90	36.60	20.70	19.80	17.20	15.20	14.40
R.H. ROUND DIE 20.6mm OD				<b>13530</b>		24.80	23.30	22.20	22.20	22.20	22.20	22.20	22.20
L.H. ROUND DIE 20.6mm OD				<b>13531</b>		47.20	41.60	38.50	35.60	34.10	30.50	22.20	22.20
GAGE - Taperlock Style		6H		<b>25048</b>		103.20							
GAGE - Reversible Style		6H		<b>25690</b>		132.20							
GAGE - Ring-Go		6g		<b>25250</b>		126.40							
GAGE - Ring-NoGo		6g		<b>25251</b>		126.40							
GAGE - L.H. Taperlock Style		6H		<b>22772</b>		142.00							
GAGE - L.H. Taperlock Style		4H		<b>22773</b>		142.00							
GAGE - L.H. Reversible Style		6H		<b>22774</b>		176.00							
GAGE - L.H. Reversible Style		4H		<b>22775</b>		176.00							
GAGE - L.H. Ring-Go		4g		<b>22776</b>		193.00							
GAGE - L.H. Ring-NoGo		4g		<b>22777</b>		193.00							
GAGE - L.H. Ring-Go		6g		<b>22778</b>		193.00							
GAGE - L.H. Ring-NoGo		6g		<b>22779</b>		193.00							

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# METRIC POPULAR SPECIAL: TAPS, DIES & GAGES

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on pages 122-131.

SIZE / DESCRIPTION	D#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>M5 x 0.5</b>					<i>Recommended Hole Size Based on 75% Thread = 4.5mm</i>								
HAND TAP	3	6H	4	20910	20911	72.30	48.90	33.60	17.60	16.60	14.10	12.10	11.40
SPIRAL POINT	3	6H	2	20912		73.50	49.80	34.90	18.90	17.80	15.10	13.40	12.60
GAGE - Taperlock Style		6H		22780		174.00							
GAGE - Reversible Style		6H		22781		220.00							
GAGE - Ring-Go		6g		22782		259.00							
GAGE - Ring-NoGo		6g		22783		259.00							
<b>M5.5 x 0.9</b>					<i>Recommended Hole Size Based on 75% Thread = 4.6mm</i>								
HAND TAP	3	4H	4	21189	21190	48.60	24.30	12.20	10.20	10.20	9.40	9.40	8.60
SPIRAL POINT	3	4H	2	21191		48.60	24.30	12.20	10.20	10.20	9.40	9.40	8.60
<b>M6 x 1.0</b>					<i>Recommended Hole Size Based on 75% Thread = 5mm TRU-FLO at 65% Thread = 5.56mm</i>								
HAND TAP	5	6H	4	20247	20248	6.50	6.50	6.50	6.50	6.50	5.90	5.90	5.90
SPIRAL POINT	5	6H	2	20245		7.40	7.40	7.40	7.40	7.40	6.70	6.70	6.70
HAND TAP	3	4H	4	20241	20242	31.30	17.60	12.10	9.90	9.60	8.60	7.80	7.40
SPIRAL POINT	3	4H	2	20239		32.50	18.90	13.40	11.30	10.30	9.70	9.10	8.70
REGULAR SPIRAL FLUTE	5	6H	3	20257	20258	15.20	15.20	15.20	15.20	15.20	14.00	14.00	12.70
FAST SPIRAL FLUTE	5	6H	3	20261	20262	16.30	16.30	16.30	16.30	16.30	14.80	14.80	13.60
L.H. HAND TAP	5	6H	4	20253	20254	7.80	7.80	7.80	7.80	7.80	7.30	7.30	6.50
6" EXTENSION HAND TAP	5	6H	4	20274	20275	27.10	27.10	27.10	27.10	27.10	27.10	27.10	19.70
6" EXT SPIRAL POINT	5	6H	2	20272		27.90	27.90	27.90	27.90	27.90	27.90	27.90	21.20
+ .127mm HAND TAP	11	PLATING	4	20268	20269	7.90	7.90	7.90	7.90	7.90	7.30	7.30	6.70
+ .127mm SPIRAL POINT	11	PLATING	2	20266		9.00	9.00	9.00	9.00	9.00	8.00	8.00	7.60
"TRU-FLO" FORM TAP	8	6H	0	19210	19211	24.50	24.50	24.50	24.50	24.50	24.50	19.80	15.20
SOLID CARBIDE / HAND	5	6H	4	43021	43022	121.70	115.50	111.60	107.80	105.70	104.70	90.90	88.10
SOLID CARBIDE / SP PT	5	6H	2	43023		129.00	122.60	118.70	114.90	112.90	111.60	97.80	95.20
"COST CUTTER" DRILL/TAP	5	6H	2	29029		12.70	12.70	12.70	12.70	12.70	12.70	12.70	12.70
R.H. ROUND DIE 25.4mm OD				13538		31.30	27.80	26.60	25.00	25.00	25.00	25.00	24.80
L.H. ROUND DIE 25.4mm OD				13539		47.20	41.60	38.50	35.60	34.10	30.50	25.00	24.80
GAGE - Taperlock Style		6H		25053		72.10							
GAGE - Reversible Style		6H		25695		93.30							
GAGE - Ring-Go		6g		25255		93.30							
GAGE - Ring-NoGo		6g		25256		93.30							
GAGE - L.H. Taperlock Style		6H		22784		142.00							
GAGE - L.H. Taperlock Style		4H		22785		142.00							
GAGE - L.H. Reversible Style		6H		22786		176.00							
GAGE - L.H. Reversible Style		4H		22787		176.00							
GAGE - L.H. Ring-Go		4g		22788		187.00							
GAGE - L.H. Ring-NoGo		4g		22789		187.00							
GAGE - L.H. Ring-Go		6g		22790		187.00							
GAGE - L.H. Ring-NoGo		6g		22791		187.00							
<b>M6 x 0.75</b>					<i>Recommended Hole Size Based on 75% Thread = 5.25mm</i>								
HAND TAP	3	4H	4	20280	20281	31.30	17.60	12.10	9.90	9.60	8.60	7.80	7.40
SPIRAL POINT	3	4H	2	20278		32.50	18.90	13.40	11.30	10.30	9.70	9.10	8.70
R.H. ROUND DIE 25.4mm OD				13536		47.20	41.60	38.50	29.00	28.00	25.00	22.20	22.20
GAGE - Taperlock Style		6H		22792		163.90							
GAGE - Reversible Style		6H		22793		198.00							
GAGE - Ring-Go		6g		22794		220.00							
GAGE - Ring-NoGo		6g		22795		220.00							
<b>M6 x 0.5</b>					<i>Recommended Hole Size Based on 75% Thread = 5.5mm</i>								
HAND TAP	3	6H	4	20976	20977	79.60	53.90	41.00	34.50	24.30	19.30	15.60	13.60
TiN COAT / BTM	3	6H	4		55011	82.30	56.50	43.90	37.50	27.10	21.90	18.40	16.40
<b>M7 x 1.0</b>					<i>Recommended Hole Size Based on 75% Thread = 6mm TRU-FLO at 65% Thread = 6.56mm</i>								
HAND TAP	5	6H	4	20290	20291	8.00	8.00	8.00	7.50	7.50	7.50	7.50	7.50
SPIRAL POINT	5	6H	2	20288		9.20	9.20	9.20	8.70	8.70	8.70	8.70	8.70

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## METRIC POPULAR SPECIAL: TAPS, DIES & GAGES

SIZE / DESCRIPTION	D#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>M7 x 1.0</b>						<i>See Previous Page for Recommended Hole Size</i>							
L.H. HAND TAP	5	6H	4	<b>20295</b>	<b>20296</b>	8.80	8.80	8.80	7.90	7.90	7.90	7.90	7.90
+.127mm HAND TAP	11	PLATING	4	<b>20309</b>	<b>20310</b>	9.80	9.80	9.80	8.90	8.90	8.90	8.90	7.80
+.127mm SPIRAL POINT	11	PLATING	2	<b>20307</b>		11.10	11.10	11.10	9.90	9.90	9.90	9.90	9.00
"TRU-FLO" FORM TAP	8	6H	0	<b>19212</b>	<b>19213</b>	25.20	25.20	25.20	25.20	25.20	25.20	20.50	17.90
SOLID CARBIDE / HAND	5	6H	4	<b>43025</b>	<b>43026</b>	167.70	152.30	143.10	131.70	126.30	121.60	111.40	110.80
SOLID CARBIDE / SP PT	5	6H	2	<b>43027</b>		174.70	159.40	150.20	139.00	133.60	128.70	118.50	117.80
"COST CUTTER" DRILL/TAP	5	6H	2	<b>29030</b>		19.30	19.30	19.30	19.30	19.30	19.30	19.30	19.30
R.H. ROUND DIE 25.4mm OD				<b>13542</b>		47.20	41.60	38.50	35.60	34.10	30.50	25.00	24.80
L.H. ROUND DIE 25.4mm OD				<b>13543</b>		47.20	41.60	38.50	35.60	34.10	30.50	25.00	24.80
GAGE - Taperlock Style		6H		<b>25058</b>		70.70							
GAGE - Reversible Style		6H		<b>25700</b>		93.30							
GAGE - Ring-Go		6g		<b>25260</b>		93.30							
GAGE - Ring-NoGo		6g		<b>25261</b>		93.30							
GAGE - L.H. Taperlock Style		6H		<b>22796</b>		142.00							
GAGE - L.H. Taperlock Style		4H		<b>22797</b>		142.00							
GAGE - L.H. Reversible Style		6H		<b>22798</b>		176.00							
GAGE - L.H. Reversible Style		4H		<b>22799</b>		176.00							
GAGE - L.H. Ring-Go		4g		<b>22800</b>		182.00							
GAGE - L.H. Ring-NoGo		4g		<b>22801</b>		182.00							
GAGE - L.H. Ring-Go		6g		<b>22802</b>		182.00							
GAGE - L.H. Ring-NoGo		6g		<b>22803</b>		182.00							
<b>M8 x 1.25</b>						<i>Recommended Hole Size Based on 75% Thread = 6.75mm TRU-FLO at 65% Thread = 7.45mm</i>							
HAND TAP	5	6H	4	<b>20324</b>	<b>20325</b>	7.90	7.90	7.90	7.30	7.30	7.30	7.30	7.30
SPIRAL POINT	5	6H	2	<b>20322</b>		9.00	9.00	9.00	8.00	8.00	8.00	8.00	8.00
HAND TAP	3	4H	4	<b>20319</b>	<b>20320</b>	32.40	18.70	13.00	10.50	10.20	9.80	9.20	8.40
SPIRAL POINT	3	4H	2	<b>20317</b>		33.40	19.80	14.30	11.80	11.40	11.10	10.30	9.60
REGULAR SPIRAL FLUTE	5	6H	3	<b>20333</b>	<b>20334</b>	19.00	19.00	19.00	17.30	17.30	17.30	17.30	16.30
FAST SPIRAL FLUTE	5	6H	3	<b>20337</b>	<b>20338</b>	19.80	19.80	19.80	18.00	18.00	18.00	18.00	16.80
L.H. HAND TAP	5	6H	4	<b>20329</b>	<b>20330</b>	8.80	8.80	8.80	7.90	7.90	7.90	7.90	7.50
6" EXTENSION HAND TAP	5	6H	4	<b>20348</b>	<b>20349</b>	31.10	31.10	31.10	31.10	31.10	31.10	31.10	21.80
6" EXT SPIRAL POINT	5	6H	2	<b>21022</b>		32.50	32.50	32.50	32.50	32.50	32.50	32.50	22.00
+.127mm HAND TAP	11	PLATING	4	<b>20343</b>	<b>20344</b>	9.70	9.70	9.70	8.90	8.90	8.90	8.90	7.80
+.127mm SPIRAL POINT	11	PLATING	2	<b>20341</b>		10.30	10.30	10.30	9.60	9.60	9.60	9.60	8.60
"TRU-FLO" FORM TAP	9	6H	0	<b>19214</b>	<b>19215</b>	25.20	25.20	25.20	25.20	25.20	25.20	20.50	17.90
SOLID CARBIDE / HAND	5	6H	4	<b>43029</b>	<b>43030</b>	167.70	152.30	143.10	131.70	126.30	121.60	111.40	110.80
SOLID CARBIDE / SP PT	5	6H	2	<b>43031</b>		174.70	159.40	150.20	139.00	133.60	128.70	118.50	117.80
"COST CUTTER" DRILL/TAP	5	6H	2	<b>29031</b>		19.30	19.30	19.30	19.30	19.30	19.30	19.30	19.30
TIN COAT / PLUG	5	6H	4	<b>55002</b>		11.30	11.30	11.30	10.40	10.40	10.40	10.40	10.40
TIN COAT / SP PT	5	6H	2	<b>55001</b>		12.20	12.20	12.20	11.40	11.40	11.40	11.40	11.40
R.H. ROUND DIE 25.4mm OD				<b>13546</b>		32.90	28.00	26.40	25.00	25.00	25.00	25.00	24.80
L.H. ROUND DIE 25.4mm OD				<b>13547</b>		47.20	41.60	38.50	35.60	34.10	30.50	25.00	24.80
GAGE - Taperlock Style		6H		<b>25063</b>		70.70							
GAGE - Reversible Style		6H		<b>25705</b>		94.60							
GAGE - Ring-Go		6g		<b>25265</b>		93.30							
GAGE - Ring-NoGo		6g		<b>25266</b>		93.30							
GAGE - L.H. Taperlock Style		6H		<b>22804</b>		142.00							
GAGE - L.H. Taperlock Style		4H		<b>22805</b>		142.00							
GAGE - L.H. Reversible Style		6H		<b>22806</b>		178.00							
GAGE - L.H. Reversible Style		4H		<b>22807</b>		178.00							
GAGE - L.H. Ring-Go		4g		<b>22808</b>		187.00							
GAGE - L.H. Ring-NoGo		4g		<b>22809</b>		187.00							
GAGE - L.H. Ring-Go		6g		<b>22810</b>		187.00							
GAGE - L.H. Ring-NoGo		6g		<b>22811</b>		187.00							
<b>M8 x 1.0</b>						<i>Recommended Hole Size Based on 75% Thread = 7mm TRU-FLO at 65% Thread = 7.56mm</i>							
HAND TAP	5	6H	4	<b>20358</b>	<b>20359</b>	7.90	7.90	7.90	7.30	7.30	7.30	7.30	7.30
SPIRAL POINT	5	6H	2	<b>20356</b>		9.00	9.00	9.00	8.00	8.00	8.00	8.00	8.00
HAND TAP	3	4H	4	<b>20353</b>	<b>20354</b>	32.40	18.70	13.00	10.50	10.20	9.80	9.20	8.40

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SIZE / DESCRIPTION	D#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>M8 x 1.0</b>					<i>See Previous Page for Recommended Hole Size</i>								
SPIRAL POINT	3	4H	2	20351		33.40	19.80	14.30	11.80	11.40	11.10	10.30	9.60
L.H. HAND TAP	5	6H	4	20363	20364	8.80	8.80	8.80	7.90	7.90	7.90	7.90	7.50
+ .127mm HAND TAP	11	PLATING	4	20376	20377	9.70	9.70	9.70	8.90	8.90	8.90	8.90	7.80
+ .127mm SPIRAL POINT	11	PLATING	2	20374		11.10	11.10	11.10	10.10	10.10	10.10	10.10	8.60
REGULAR SPIRAL FLUTE	5	6H	3	20367	20368	19.00	19.00	19.00	17.30	17.30	17.30	17.30	16.30
FAST SPIRAL FLUTE	5	6H	3	20371	20372	19.80	19.80	19.80	18.00	18.00	18.00	18.00	16.80
"TRU-FLO" FORM TAP	8	6H	0	19216	19217	25.20	25.20	25.20	25.20	25.20	25.20	20.50	17.90
SOLID CARBIDE / HAND	5	6H	4	43033	43034	167.70	152.30	143.10	131.70	126.30	121.60	111.40	110.80
R.H. ROUND DIE 25.4mm OD				13548		47.20	41.60	38.50	35.60	34.10	30.50	25.00	24.80
L.H. ROUND DIE 25.4mm OD				13549		47.20	41.60	38.50	35.60	34.10	30.50	25.00	24.80
GAGE - Taperlock Style		6H		25068		70.70							
GAGE - Reversible Style		6H		25710		94.60							
GAGE - Ring-Go		6g		25270		93.30							
GAGE - Ring-NoGo		6g		25271		93.30							
GAGE - L.H. Taperlock Style		6H		22812		142.00							
GAGE - L.H. Taperlock Style		4H		22813		142.00							
GAGE - L.H. Reversible Style		6H		22814		178.00							
GAGE - L.H. Reversible Style		4H		22815		178.00							
GAGE - L.H. Ring-Go		4g		22816		187.00							
GAGE - L.H. Ring-NoGo		4g		22817		187.00							
GAGE - L.H. Ring-Go		6g		22818		187.00							
GAGE - L.H. Ring-NoGo		6g		22819		187.00							
<b>M8 x 0.75</b>					<i>Recommended Hole Size Based on 75% Thread = 7.25mm</i>								
HAND TAP	5	6H	4	20941	20942	75.80	53.20	51.30	34.90	25.20	19.90	15.00	13.60
GAGE - Taperlock Style		6H		22820		175.00							
GAGE - Reversible Style		6H		22821		221.00							
GAGE - Ring-Go		6g		22822		237.00							
GAGE - Ring-NoGo		6g		22823		237.00							
GAGE - L.H. Taperlock Style		6H		22824		178.00							
GAGE - L.H. Taperlock Style		4H		22825		178.00							
GAGE - L.H. Reversible Style		6H		22826		222.00							
GAGE - L.H. Reversible Style		4H		22827		222.00							
GAGE - L.H. Ring-Go		4g		22828		237.00							
GAGE - L.H. Ring-NoGo		4g		22829		237.00							
GAGE - L.H. Ring-Go		6g		22830		237.00							
GAGE - L.H. Ring-NoGo		6g		22831		237.00							
<b>M8 x 0.5</b>					<i>Recommended Hole Size Based on 75% Thread = 7.5mm</i>								
HAND TAP	4	6H	4	21024	21025	75.80	53.20	51.30	34.90	25.20	19.90	15.00	13.60
<b>M9 x 1.25</b>					<i>Recommended Hole Size Based on 75% Thread = 7.75mm</i>								
HAND TAP	5	6H	4	21038	21039	83.40	57.10	44.20	38.00	27.90	22.60	18.10	16.00
GAGE - Taperlock Style		6H		22832		87.00							
GAGE - Reversible Style		6H		22833		100.00							
GAGE - Ring-Go		6g		22834		198.00							
GAGE - Ring-NoGo		6g		22835		198.00							
GAGE - L.H. Taperlock Style		6H		22836		142.00							
GAGE - L.H. Taperlock Style		4H		22837		142.00							
GAGE - L.H. Reversible Style		6H		22838		178.00							
GAGE - L.H. Reversible Style		4H		22839		178.00							
GAGE - L.H. Ring-Go		4g		22840		187.00							
GAGE - L.H. Ring-NoGo		4g		22841		187.00							
GAGE - L.H. Ring-Go		6g		22842		187.00							
GAGE - L.H. Ring-NoGo		6g		22843		187.00							

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## METRIC POPULAR SPECIAL: TAPS, DIES & GAGES

SIZE / DESCRIPTION	D#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>M9 x 1.0</b>						<i>Recommended Hole Size Based on 75% Thread = 8mm</i>							
HAND TAP	5	6H	4	21041	21042	83.40	57.10	44.20	38.00	27.90	22.60	18.10	16.00
GAGE - Taperlock Style		6H		22844		142.00							
GAGE - Reversible Style		6H		22845		177.00							
GAGE - Ring-Go		6g		22846		187.00							
GAGE - Ring-NoGo		6g		22847		187.00							
<b>M10 x 1.5</b>						<i>Recommended Hole Size Based on 75% Thread = 8.5mm TRU-FLO at 65% Thread = 9.34mm</i>							
HAND TAP	6	6H	4	20391	20392	14.10	14.10	14.10	12.70	12.70	12.70	12.70	11.80
SPIRAL POINT	6	6H	3	20389		15.50	15.50	15.50	14.20	14.20	14.20	14.20	13.20
HAND TAP	3	4H	4	20386	20387	44.40	26.80	19.00	16.40	15.90	14.80	14.20	12.60
SPIRAL POINT	3	4H	3	20384		45.70	28.00	20.20	17.60	17.20	16.00	15.20	13.70
+ .076 SPIRAL POINT	7		3	21043		84.60	59.50	56.70	38.80	28.70	23.60	18.60	16.30
REGULAR SPIRAL FLUTE	6	6H	3	20400	20401	25.20	25.20	25.20	21.80	21.80	21.80	21.80	18.10
FAST SPIRAL FLUTE	6	6H	3	20404	20405	27.00	27.00	27.00	23.50	23.50	23.50	23.50	18.90
L.H. HAND TAP	6	6H	4	20396	20397	16.40	16.40	16.40	14.90	14.90	14.90	14.90	12.50
6" EXT HAND .323 SHK	6	6H	4	21194	21195	35.10	35.10	35.10	35.10	35.10	35.10	35.10	35.10
6" EXT SP PT .323 SHK	6	6H	3	21196		40.40	40.40	40.40	40.40	40.40	40.40	40.40	40.40
6" EXTENSION HAND TAP	6	6H	4	20415	20416	33.60	33.60	33.60	33.60	33.60	33.60	33.60	22.50
6" EXT SPIRAL POINT	6	6H	3	21026		34.90	34.90	34.90	34.90	34.90	34.90	34.90	23.70
+ .127mm HAND TAP	11	PLATING	4	20410	20411	15.90	15.90	15.90	14.40	14.40	14.40	14.40	12.90
+ .127mm SPIRAL POINT	11	PLATING	3	20408		17.20	17.20	17.20	15.60	15.60	15.60	15.60	13.70
"TRU-FLO" FORM TAP	10	6H	0	19218	19219	27.50	27.50	27.50	27.50	27.50	27.50	22.90	19.10
SOLID CARBIDE / HAND	6	6H	4	43037	43038	183.70	174.60	167.90	163.10	161.60	160.80	146.20	145.60
SOLID CARBIDE / SP PT	6	6H	3	43039		197.40	188.30	181.60	176.80	175.30	174.50	159.90	159.30
"COST CUTTER" DRILL/TAP	6	6H	2	29032		23.30	23.30	23.30	23.30	23.30	23.30	23.30	23.30
TIN COAT / SP PT x 6"	6	6H	3	55012		41.40	41.40	41.40	41.40	41.40	41.40	41.40	30.40
R.H. ROUND DIE 25.4mm OD				13556		32.90	28.00	26.40	25.00	25.00	25.00	25.00	24.80
L.H. ROUND DIE 38.1mm OD				13557		58.10	49.50	46.60	33.30	31.80	29.00	25.00	24.80
GAGE - Taperlock Style		6H		25073		73.40							
GAGE - Reversible Style		6H		25715		94.60							
GAGE - Ring-Go		6g		25275		101.30							
GAGE - Ring-NoGo		6g		25276		101.30							
GAGE - L.H. Taperlock Style		6H		22848		142.00							
GAGE - L.H. Taperlock Style		4H		22849		142.00							
GAGE - L.H. Reversible Style		6H		22850		178.00							
GAGE - L.H. Reversible Style		4H		22851		178.00							
GAGE - L.H. Ring-Go		4g		22852		198.00							
GAGE - L.H. Ring-NoGo		4g		22853		198.00							
GAGE - L.H. Ring-Go		6g		22854		198.00							
GAGE - L.H. Ring-NoGo		6g		22855		198.00							
<b>M10 x 1.25</b>						<i>Recommended Hole Size Based on 75% Thread = 8.75mm TRU-FLO at 65% Thread = 9.45mm</i>							
HAND TAP	3	4H	4	20420	20421	44.40	26.80	19.00	16.40	15.90	14.80	14.20	12.60
SPIRAL POINT	3	4H	3	20418		45.70	28.00	20.20	17.50	17.20	16.00	15.20	13.70
HAND TAP	5	6H	4	20425	20426	14.80	14.80	14.80	13.40	13.40	13.40	13.40	12.90
SPIRAL POINT	5	6H	3	20423		15.20	15.20	15.20	14.00	14.00	14.00	14.00	13.70
REGULAR SPIRAL FLUTE	5	6H	3	20434	20435	25.20	25.20	25.20	21.80	21.80	21.80	21.80	18.10
FAST SPIRAL FLUTE	5	6H	3	20438	20439	27.00	27.00	27.00	23.50	23.50	23.50	23.50	18.90
L.H. HAND TAP	5	6H	4	20430	20431	16.40	16.40	16.40	14.90	14.90	14.90	14.90	12.50
+ .127mm HAND TAP	11	PLATING	4	20443	20444	15.90	15.90	15.90	14.40	14.40	14.40	14.40	12.90
+ .127mm SPIRAL POINT	11	PLATING	3	20441		17.20	17.20	17.20	15.60	15.60	15.60	15.60	13.70
"TRU-FLO" FORM TAP	9	6H	0	19220	19221	27.50	27.50	27.50	27.50	27.50	27.50	22.90	19.10
SOLID CARBIDE HAND TAP	5	6H	4	43041	43042	197.20	186.90	178.50	172.50	172.50	170.50	153.80	150.60
SOLID CARBIDE SP PT	5	6H	3	43043		204.60	194.60	185.90	180.40	180.40	177.80	160.90	157.80
TIN COAT / SP PT	5	6H	3	55003		19.00	19.00	19.00	17.60	17.60	17.60	17.60	17.40
R.H. ROUND DIE 38.1mm OD				13558		61.00	54.40	51.30	48.30	46.30	42.10	38.90	38.50
L.H. ROUND DIE 38.1mm OD				13559		61.00	54.40	51.30	48.30	46.30	42.10	38.90	38.50
GAGE - Taperlock Style		6H		25078		73.40							

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# METRIC POPULAR SPECIAL: TAPS, DIES & GAGES

For tap standards and dimensions,  
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on pages 122-131.

SIZE / DESCRIPTION	D#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>M10 x 1.25</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - Reversible Style		6H		25720		94.60							
GAGE - Ring-Go		6g		25150		101.30							
GAGE - Ring-NoGo		6g		25151		101.30							
GAGE - L.H. Taperlock Style		6H		22856		142.00							
GAGE - L.H. Taperlock Style		4H		22857		142.00							
GAGE - L.H. Reversible Style		6H		22858		178.00							
GAGE - L.H. Reversible Style		4H		22859		178.00							
GAGE - L.H. Ring-Go		4g		22860		187.00							
GAGE - L.H. Ring-NoGo		4g		22861		187.00							
GAGE - L.H. Ring-Go		6g		22862		187.00							
GAGE - L.H. Ring-NoGo		6g		22863		187.00							
<b>M10 x 1.0</b>					<i>Recommended Hole Size Based on 75% Thread = 9mm</i>								
SPARK PL HAND	3		4	20448	20449	14.30	14.30	14.30	12.90	12.90	12.90	12.90	12.50
HAND TAP	5	6H	4	20945	20946	83.40	57.10	44.20	38.00	27.90	22.60	18.10	16.00
L.H. HAND TAP	5	6H	4	20949	20950	83.40	57.10	44.20	38.00	27.90	22.60	18.10	16.00
SPIRAL POINT	5	6H	3	20978		84.60	58.20	45.50	39.30	28.90	23.70	19.40	17.30
R.H. ROUND DIE 38.1mm OD				13554		61.00	52.00	48.90	48.30	46.30	42.10	38.80	38.50
GAGE - Taperlock Style		6H		22864		76.00							
GAGE - Reversible Style		6H		22865		187.00							
GAGE - Ring-Go		6g		22866		102.00							
GAGE - Ring-NoGo		6g		22867		102.00							
GAGE - L.H. Taperlock Style		6H		22868		151.00							
GAGE - L.H. Taperlock Style		4H		22869		151.00							
GAGE - L.H. Reversible Style		6H		22870		189.00							
GAGE - L.H. Reversible Style		4H		22871		189.00							
GAGE - L.H. Ring-Go		4g		22872		198.00							
GAGE - L.H. Ring-NoGo		4g		22873		198.00							
GAGE - L.H. Ring-Go		6g		22874		198.00							
GAGE - L.H. Ring-NoGo		6g		22875		198.00							
<b>M11 x 1.5</b>					<i>Recommended Hole Size Based on 75% Thread = 9.5mm</i>								
HAND TAP	6	6H	4	20453	20454	47.80	28.00	20.20	17.50	17.00	16.30	15.30	14.90
SPIRAL POINT	6	6H	3	20451		49.20	29.10	21.30	18.70	18.20	17.40	16.70	16.30
R.H. ROUND DIE 38.1mm OD				13560		61.00	54.40	51.30	48.30	46.30	42.10	38.90	38.50
GAGE - Taperlock Style		6H		22876		87.00							
GAGE - Reversible Style		6H		22877		113.00							
GAGE - Ring-Go		6g		22878		110.00							
GAGE - Ring-NoGo		6g		22879		110.00							
GAGE - L.H. Taperlock Style		6H		22880		142.00							
GAGE - L.H. Taperlock Style		4H		22881		142.00							
GAGE - L.H. Reversible Style		6H		22882		178.00							
GAGE - L.H. Reversible Style		4H		22883		178.00							
GAGE - L.H. Ring-Go		4g		22884		198.00							
GAGE - L.H. Ring-NoGo		4g		22885		198.00							
GAGE - L.H. Ring-Go		6g		22886		198.00							
GAGE - L.H. Ring-NoGo		6g		22887		198.00							
<b>M11 x 1.0</b>					<i>Recommended Hole Size Based on 75% Thread = 10mm</i>								
HAND TAP	5	6H	4	20985	20986	86.50	60.40	56.70	38.80	28.70	23.60	18.60	18.20
GAGE - Taperlock Style		6H		22888		153.00							
GAGE - Reversible Style		6H		22889		189.00							
GAGE - Ring-Go		6g		22890		200.00							
GAGE - Ring-NoGo		6g		22891		200.00							
<b>M12 x 1.75</b>					<i>Recommended Hole Size Based on 75% Thread = 10.25mm TRU-FLO at 65% Thread = 11.23mm</i>								
HAND TAP	6	6H	4	20463	20464	15.20	15.20	15.20	14.10	14.10	14.10	14.10	13.70
SPIRAL POINT	6	6H	3	20461		16.80	16.80	16.80	15.20	15.20	15.20	15.20	15.00
HAND TAP	3	4H	4	20458	20459	52.80	30.50	21.20	19.80	18.60	17.50	16.70	16.60

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**North American Tool**

"In The Pursuit of Perfection"



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# METRIC POPULAR SPECIAL: TAPS, DIES & GAGES

SIZE / DESCRIPTION	D#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>M12 x 1.75</b>				<i>See Previous Page for Recommended Hole Size</i>									
SPIRAL POINT	3	4H	3	20456		54.40	32.10	22.90	21.00	19.80	18.60	17.90	17.60
REGULAR SPIRAL FLUTE	6	6H	3	20472	20473	32.80	32.80	32.80	28.70	28.70	28.70	28.70	24.20
FAST SPIRAL FLUTE	6	6H	3	20476	20477	35.00	35.00	35.00	30.50	30.50	30.50	30.50	26.20
L.H. HAND TAP	6	6H	4	20468	20469	19.30	19.30	19.30	17.50	17.50	17.50	17.50	17.40
6" EXTENSION HAND TAP	6	6H	4	20487	20488	36.50	36.50	36.50	36.50	36.50	36.50	36.50	27.10
6" EXT SP PT	6	6H	3	20913		38.50	38.50	38.50	38.50	38.50	38.50	38.50	29.00
+ .127mm HAND TAP	11	PLATING	4	20482	20483	18.90	18.90	18.90	17.30	17.30	17.30	17.30	17.00
+ .127mm SPIRAL POINT	11	PLATING	3	20480		20.30	20.30	20.30	18.70	18.70	18.70	18.70	18.40
"TRU-FLO" FORM TAP	11	6H	0	19222	19223	35.10	35.10	35.10	35.10	35.10	35.10	29.10	25.20
SOLID CARBIDE/HAND	6	6H	4	43045	43046	211.00	204.60	201.60	196.20	192.40	190.50	182.60	179.20
SOLID CARBIDE / SP PT	6	6H	3	43047		226.10	219.80	217.10	211.40	207.60	205.70	197.70	194.50
"COST CUTTER" DRILL/TAP	6	6H	2	29033		31.60	31.60	31.60	31.60	31.60	31.60	31.60	31.60
TIN COAT / SP PT x 6"	6	6H	3	55008		45.10	45.10	45.10	45.10	45.10	45.10	45.10	35.70
R.H. ROUND DIE 38.1mm OD				13564		53.90	45.70	43.20	38.90	38.90	38.90	38.90	38.50
L.H. ROUND DIE 38.1mm OD				13565		61.00	54.40	51.30	48.30	46.30	42.10	38.90	38.50
GAGE - Taperlock Style		6H		25083		78.50							
GAGE - Reversible Style		6H		25725		105.30							
GAGE - Ring-Go		6g		25280		108.00							
GAGE - Ring-NoGo		6g		25281		108.00							
GAGE - L.H. Taperlock Style		6H		22892		142.00							
GAGE - L.H. Taperlock Style		4H		22893		142.00							
GAGE - L.H. Reversible Style		6H		22894		178.00							
GAGE - L.H. Reversible Style		4H		22895		178.00							
GAGE - L.H. Ring-Go		4g		22896		187.00							
GAGE - L.H. Ring-NoGo		4g		22897		187.00							
GAGE - L.H. Ring-Go		6g		22898		187.00							
GAGE - L.H. Ring-NoGo		6g		22899		187.00							
<b>M12 x 1.5</b>				<i>Recommended Hole Size Based on 75% Thread = 10.50mm</i>									
HAND TAP	6	6H	4	20906	20907	84.50	59.60	54.10	36.80	27.30	22.50	17.60	17.50
SPIRAL POINT	6	6H	3	21027		90.70	64.60	58.50	40.60	30.50	25.50	19.70	19.30
TIN COAT / SP PT	6	6H	3	55013		94.80	68.60	62.80	44.70	34.90	29.80	23.70	23.50
GAGE - Taperlock Style		6H		22900		72.00							
GAGE - Reversible Style		6H		22901		98.00							
GAGE - Ring-Go		6g		22902		104.00							
GAGE - Ring-NoGo		6g		22903		104.00							
GAGE - L.H. Taperlock Style		6H		22904		142.00							
GAGE - L.H. Taperlock Style		4H		22905		142.00							
GAGE - L.H. Reversible Style		6H		22906		178.00							
GAGE - L.H. Reversible Style		4H		22907		178.00							
GAGE - L.H. Ring-Go		4g		22908		187.00							
GAGE - L.H. Ring-NoGo		4g		22909		187.00							
GAGE - L.H. Ring-Go		6g		22910		187.00							
GAGE - L.H. Ring-NoGo		6g		22911		187.00							
<b>M12 x 1.25</b>				<i>Recommended Hole Size Based on 75% Thread = 10.75mm TRU-FLO at 65% Thread = 11.45mm</i>									
HAND TAP	5	6H	4	20497	20498	17.60	17.60	17.60	16.30	16.30	16.30	16.30	16.30
SPIRAL POINT	5	6H	3	20495		18.90	18.90	18.90	17.30	17.30	17.30	17.30	17.30
HAND TAP	3	4H	4	20492	20493	52.80	30.50	21.20	19.80	18.60	17.50	16.70	16.60
SPIRAL POINT	3	4H	3	20490		54.40	32.10	22.90	21.00	19.80	18.60	17.90	17.60
REGULAR SPIRAL FLUTE	5	6H	3	20506	20507	32.80	32.80	32.80	28.70	28.70	28.70	28.70	24.20
FAST SPIRAL FLUTE	5	6H	3	20510	20511	35.00	35.00	35.00	30.50	30.50	30.50	30.50	26.20
L.H. HAND TAP	5	6H	4	20502	20503	19.30	19.30	19.30	17.50	17.50	17.50	17.50	17.30
+ .127mm HAND TAP	11	PLATING	4	20515	20516	18.90	18.90	18.90	17.30	17.30	17.30	17.30	17.30
"TRU-FLO" FORM TAP	10	6H	0	19224	19225	35.10	35.10	35.10	35.10	35.10	35.10	29.10	25.20
TIN COAT / REG SPIRAL FLT	5	6H	3	55004		37.00	37.00	37.00	32.80	32.80	32.80	32.80	28.30
R.H. ROUND DIE 38.1mm OD				13566		61.00	54.40	51.30	48.30	46.30	42.10	38.90	38.50
L.H. ROUND DIE 38.1mm OD				13567		61.00	54.40	51.30	48.30	46.30	42.10	38.90	38.50
GAGE - Taperlock Style		6H		25088		78.50							

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SIZE / DESCRIPTION	D#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>M12 x 1.25</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - Reversible Style		6H		25730		105.30							
GAGE - Ring-Go		6g		25285		108.00							
GAGE - Ring-NoGo		6g		25286		108.00							
GAGE - L.H. Taperlock Style		6H		22912		142.00							
GAGE - L.H. Taperlock Style		4H		22913		142.00							
GAGE - L.H. Reversible Style		6H		22914		178.00							
GAGE - L.H. Reversible Style		4H		22915		178.00							
GAGE - L.H. Ring-Go		4g		22916		187.00							
GAGE - L.H. Ring-NoGo		4g		22917		187.00							
GAGE - L.H. Ring-Go		6g		22918		187.00							
GAGE - L.H. Ring-NoGo		6g		22919		187.00							
<b>M12 x 1.0</b>					<i>Recommended Hole Size Based on 75% Thread = 11mm</i>								
HAND TAP	5	6H	4	20890	20891	88.70	62.70	56.70	38.80	28.70	23.60	18.60	18.10
SPIRAL POINT	5	6H	3	20914		90.70	64.60	58.50	40.60	30.50	25.50	19.90	19.70
GAGE - Taperlock Style		6H		22920		153.00							
GAGE - Reversible Style		6H		22921		200.00							
GAGE - Ring-Go		6g		22922		200.00							
GAGE - Ring-NoGo		6g		22923		200.00							
<b>M14 x 2.0</b>					<i>Recommended Hole Size Based on 75% Thread = 12mm TRU-FLO at 65% Thread = 13.13mm</i>								
HAND TAP	7	6H	4	20530	20531	25.80	25.80	23.60	23.60	23.60	23.60	23.60	22.60
SPIRAL POINT	7	6H	3	20528		28.20	28.20	25.80	25.80	25.80	25.80	25.80	25.00
HAND TAP	3	4H	4	20525	20526	59.80	35.50	24.90	24.90	24.90	23.60	23.60	22.60
SPIRAL POINT	3	4H	3	20523		64.80	37.90	27.10	27.10	27.10	25.80	25.80	25.00
L.H. HAND TAP	7	6H	4	20535	20536	27.90	27.90	25.20	25.20	25.20	25.20	25.20	22.60
"TRU-FLO" FORM TAP	12	6H	0	19226	19227	38.00	38.00	38.00	38.00	38.00	38.00	32.10	28.60
R.H. ROUND DIE 38.1mm OD				13570		51.30	47.30	45.10	42.10	42.10	42.10	38.90	38.50
L.H. ROUND DIE 38.1mm OD				13571		61.00	54.40	51.30	48.30	46.30	42.10	38.90	38.50
GAGE - Taperlock Style		6H		25093		97.40							
GAGE - Reversible Style		6H		25735		119.90							
GAGE - Ring-Go		6g		25290		119.90							
GAGE - Ring-NoGo		6g		25291		119.90							
GAGE - L.H. Taperlock Style		6H		22924		142.00							
GAGE - L.H. Taperlock Style		4H		22925		142.00							
GAGE - L.H. Reversible Style		6H		22926		180.00							
GAGE - L.H. Reversible Style		4H		22927		180.00							
GAGE - L.H. Ring-Go		4g		22928		193.00							
GAGE - L.H. Ring-NoGo		4g		22929		193.00							
GAGE - L.H. Ring-Go		6g		22930		193.00							
GAGE - L.H. Ring-NoGo		6g		22931		193.00							
<b>M14 x 1.5</b>					<i>Recommended Hole Size Based on 75% Thread = 12.5mm TRU-FLO at 65% Thread = 13.34mm</i>								
HAND TAP	6	6H	4	20546	20547	25.80	25.80	23.60	23.60	23.60	23.60	23.60	22.60
SPIRAL POINT	6	6H	3	20543		28.20	28.20	25.80	25.80	25.80	25.80	25.80	25.00
HAND TAP	3	4H	4	20540	20541	59.80	35.50	24.90	24.90	24.90	23.60	23.60	22.60
SPIRAL POINT	3	4H	3	20538		64.80	37.90	27.10	27.10	27.10	25.80	25.80	25.00
L.H. HAND TAP	6	6H	4	20551	20552	27.90	27.90	25.20	25.20	25.20	25.20	25.20	22.60
"TRU-FLO" FORM TAP	11	6H	0	19228	19229	38.00	38.00	38.00	38.00	38.00	38.00	32.10	28.60
R.H. ROUND DIE 38.1mm OD				13572		61.00	54.40	51.30	48.30	46.30	42.10	38.90	38.50
L.H. ROUND DIE 38.1mm OD				13573		61.00	54.40	51.30	48.30	46.30	42.10	38.90	38.50
GAGE - Taperlock Style		6H		25098		97.40							
GAGE - Reversible Style		6H		25740		119.90							
GAGE - Ring-Go		6g		25295		119.90							
GAGE - Ring-NoGo		6g		25296		119.90							
GAGE - L.H. Taperlock Style		6H		22932		142.00							
GAGE - L.H. Taperlock Style		4H		22933		142.00							
GAGE - L.H. Reversible Style		6H		22934		180.00							
GAGE - L.H. Reversible Style		4H		22935		180.00							

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# METRIC POPULAR SPECIAL: TAPS, DIES & GAGES

SIZE / DESCRIPTION	D#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>M14 x 1.5</b>						<i>See Previous Page for Recommended Hole Size</i>							
GAGE - L.H. Ring-Go		4g		22936		193.00							
GAGE - L.H. Ring-NoGo		4g		22937		193.00							
GAGE - L.H. Ring-Go		6g		22938		193.00							
GAGE - L.H. Ring-NoGo		6g		22939		193.00							
<b>M14 x 1.25</b>						<i>Recommended Hole Size Based on 75% Thread = 12.75mm</i>							
SPARK PL HAND	4		4	20556	20557	25.80	25.80	23.60	23.60	23.60	23.60	23.60	22.60
R.H. ROUND DIE 38.1mm OD				13568		61.00	54.40	51.30	48.30	46.30	42.10	38.90	38.50
GAGE - Taperlock Style		6H		22940		142.00							
GAGE - Reversible Style		6H		22941		183.00							
GAGE - Ring-Go		6g		22942		198.00							
GAGE - Ring-NoGo		6g		22943		198.00							
<b>M14 x 1.0</b>						<i>Recommended Hole Size Based on 75% Thread = 13mm</i>							
HAND TAP	5	6H	4	20902	20903	90.70	64.30	58.20	41.70	31.80	26.60	23.60	22.60
GAGE - Taperlock Style		6H		22944		153.00							
GAGE - Reversible Style		6H		22945		194.00							
GAGE - Ring-Go		6g		22946		198.00							
GAGE - Ring-NoGo		6g		22947		198.00							
<b>M15 x 1.0</b>						<i>Recommended Hole Size Based on 75% Thread = 14mm</i>							
HAND TAP	5	6H	4	20989	20990	96.30	70.00	64.20	47.30	37.70	32.60	29.30	28.60
GAGE - Taperlock Style		6H		22948		83.00							
GAGE - Reversible Style		6H		22949		117.00							
GAGE - Ring-Go		6g		22950		155.50							
GAGE - Ring-NoGo		6g		22951		115.50							
GAGE - L.H. Taperlock Style		6H		22952		151.00							
GAGE - L.H. Taperlock Style		4H		22953		151.00							
GAGE - L.H. Reversible Style		6H		22954		193.00							
GAGE - L.H. Reversible Style		4H		22955		193.00							
GAGE - L.H. Ring-Go		4g		22956		220.00							
GAGE - L.H. Ring-NoGo		4g		22957		220.00							
GAGE - L.H. Ring-Go		6g		22958		220.00							
GAGE - L.H. Ring-NoGo		6g		22959		220.00							
<b>M16 x 2.0</b>						<i>Recommended Hole Size Based on 75% Thread = 14mm TRU-FLO at 65% Thread = 15.13mm</i>							
HAND TAP	7	6H	4	20566	20567	31.20	31.20	28.30	28.30	28.30	28.30	28.30	27.50
SPIRAL POINT	7	6H	3	20564		33.70	33.70	30.80	30.80	30.80	30.80	30.80	30.10
HAND TAP	4	4H	4	20561	20562	68.00	39.40	29.60	29.60	29.60	28.30	28.30	27.50
SPIRAL POINT	4	4H	3	20559		70.40	41.90	32.10	32.10	32.10	30.80	30.80	30.10
L.H. HAND TAP	7	6H	4	20571	20572	33.70	33.70	30.80	30.80	30.80	30.80	28.90	27.50
6" EXTENSION HAND TAP	7	6H	4	20953	20954	79.40	62.50	54.10	48.50	45.10	43.10	40.90	40.00
6" EXT SPIRAL POINT	7	6H	3	21028		82.00	65.00	56.50	51.00	47.50	45.60	43.40	42.30
"TRU-FLO" FORM TAP	14	6H	0	19230	19231	44.20	44.20	44.20	44.20	44.20	44.20	38.20	35.00
TIN COAT / HAND TAP x 6"	7	6H	4	55010		89.40	72.40	63.60	58.20	54.80	52.80	50.80	49.60
+ .127mm HAND TAP	11	PLATING	4	20576	20577	34.10	34.10	29.60	29.60	29.60	28.30	28.30	27.50
+ .127mm SPIRAL POINT	11	PLATING	3	20574		35.50	35.50	32.10	32.10	32.10	30.80	30.80	30.10
R.H. ROUND DIE 38.1mm OD				13576		53.90	45.70	43.20	42.10	42.10	42.10	38.90	38.50
L.H. ROUND DIE 38.1mm OD				13577		61.00	54.40	51.30	48.30	46.30	42.10	38.90	38.50
GAGE - Taperlock Style		6H		25103		97.40							
GAGE - Reversible Style		6H		25745		119.90							
GAGE - Ring-Go		6g		25300		119.90							
GAGE - Ring-NoGo		6g		25301		119.90							
GAGE - L.H. Taperlock Style		6H		22960		151.00							
GAGE - L.H. Taperlock Style		4H		22961		151.00							
GAGE - L.H. Reversible Style		6H		22962		193.00							
GAGE - L.H. Reversible Style		4H		22963		193.00							
GAGE - L.H. Ring-Go		4g		22964		198.00							
GAGE - L.H. Ring-NoGo		4g		22965		198.00							

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# METRIC POPULAR SPECIAL: TAPS, DIES & GAGES

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SIZE / DESCRIPTION	D#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
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### M16 x 2.0

See Previous Page for Recommended Hole Size

GAGE - L.H. Ring-Go		6g		22966		198.00							
GAGE - L.H. Ring-NoGo		6g		22967		198.00							

### M16 x 1.5

Recommended Hole Size Based on 75% Thread = 14.5mm

HAND TAP	6	6H	4	20586	20587	31.20	31.20	28.30	28.30	28.30	28.30	28.30	27.50
SPIRAL POINT	6	6H	3	20584		33.70	33.70	30.80	30.80	30.80	30.80	30.80	30.10
HAND TAP	3	4H	4	20581	20582	68.00	39.40	29.60	29.60	29.60	28.30	28.30	27.50
SPIRAL POINT	3	4H	3	20579		70.40	41.90	32.10	32.10	32.10	30.80	30.80	30.10
L.H. HAND TAP	6	6H	4	20591	20592	33.70	33.70	30.80	30.80	30.80	30.80	28.90	27.50
R.H. ROUND DIE 38.1mm OD				13578		61.00	54.40	51.30	48.30	46.30	42.10	38.90	38.50
L.H. ROUND DIE 38.1mm OD				13579		61.00	54.40	51.30	48.30	46.30	42.10	38.90	38.50
GAGE - Taperlock Style		6H		25108		97.40							
GAGE - Reversible Style		6H		25750		119.90							
GAGE - Ring-Go		6g		25305		119.90							
GAGE - Ring-NoGo		6g		25306		119.90							
GAGE - L.H. Taperlock Style		6H		22968		151.00							
GAGE - L.H. Taperlock Style		4H		22969		151.00							
GAGE - L.H. Reversible Style		6H		22970		193.00							
GAGE - L.H. Reversible Style		4H		22971		193.00							
GAGE - L.H. Ring-Go		4g		22972		198.00							
GAGE - L.H. Ring-NoGo		4g		22973		198.00							
GAGE - L.H. Ring-Go		6g		22974		198.00							
GAGE - L.H. Ring-NoGo		6g		22975		198.00							

### M16 x 1.0

Recommended Hole Size Based on 75% Thread = 15mm

HAND TAP	5	6H	4	21045	21046	96.30	70.00	64.20	47.30	37.70	32.60	29.30	28.30
GAGE - Taperlock Style		6H		22976		164.00							
GAGE - Reversible Style		6H		22977		205.00							
GAGE - Ring-Go		6g		22978		220.00							
GAGE - Ring-NoGo		6g		22979		220.00							
GAGE - L.H. Taperlock Style		6H		22980		164.00							
GAGE - L.H. Taperlock Style		4H		22981		164.00							
GAGE - L.H. Reversible Style		6H		22982		211.00							
GAGE - L.H. Reversible Style		4H		22983		211.00							
GAGE - L.H. Ring-Go		4g		22984		220.00							
GAGE - L.H. Ring-NoGo		4g		22985		220.00							
GAGE - L.H. Ring-Go		6g		22986		220.00							
GAGE - L.H. Ring-NoGo		6g		22987		220.00							

### M18 x 2.5

Recommended Hole Size Based on 75% Thread = 15.5mm

HAND TAP	7	6H	4	20601	20602	38.10	38.10	33.60	33.60	33.60	33.60	33.60	27.90
SPIRAL POINT	7	6H	3	20599		41.30	41.30	36.80	36.80	36.80	36.80	36.80	31.10
L.H. HAND TAP	7	6H	4	20606	20607	42.50	42.50	38.70	38.70	38.70	38.70	38.70	35.40
R.H. ROUND DIE 38.1mm OD				13584		61.00	54.40	51.30	48.30	46.30	42.10	38.90	38.50
L.H. ROUND DIE 38.1mm OD				13585		61.00	54.40	51.30	48.30	46.30	42.10	38.90	38.50
GAGE - Taperlock Style		6H		25113		110.70							
GAGE - Reversible Style		6H		25755		138.60							
GAGE - Ring-Go		6g		25310		156.00							
GAGE - Ring-NoGo		6g		25311		156.00							

### M18 x 1.5

Recommended Hole Size Based on 75% Thread = 16.5mm  
TRU-FLO at 65% Thread = 17.34mm

HAND TAP	6	6H	4	20621	20622	38.10	38.10	33.60	33.60	33.60	33.60	33.60	27.90
SPARK PL HAND	4		4	20616	20617	38.10	38.10	33.60	33.60	33.60	33.60	33.60	27.90
HAND TAP	3	4H	4	20611	20612	38.10	38.10	33.60	33.60	33.60	33.60	33.60	27.90
L.H. HAND TAP	6	6H	4	20626	20627	42.50	42.50	38.70	38.70	38.70	38.70	38.70	35.40
"TRU-FLO" FORM TAP	12	6H	0	19232	19233	48.60	48.60	48.60	48.60	48.60	48.60	42.90	38.80
R.H. ROUND DIE 38.1mm OD				13586		61.00	54.40	51.30	48.30	46.30	42.10	38.90	38.50
GAGE - Taperlock Style		6H		25118		110.70							
GAGE - Reversible Style		6H		25760		138.60							

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SIZE / DESCRIPTION	D#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>M18 x 1.5</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - Ring-Go		6g		25315		156.00							
GAGE - Ring-NoGo		6g		25316		156.00							
GAGE - L.H. Taperlock Style		6H		21677		151.00							
GAGE - L.H. Taperlock Style		4H		21678		151.00							
GAGE - L.H. Reversible Style		6H		21679		193.00							
GAGE - L.H. Reversible Style		4H		21680		193.00							
GAGE - L.H. Ring-Go		4g		21681		198.00							
GAGE - L.H. Ring-NoGo		4g		21682		198.00							
GAGE - L.H. Ring-Go		6g		21683		198.00							
GAGE - L.H. Ring-NoGo		6g		21684		198.00							
<b>M18 x 1.0</b>					<i>Recommended Hole Size Based on 75% Thread = 17mm</i>								
HAND TAP	5	6H	4	20894	20895	115.60	82.40	63.60	49.20	42.30	35.60	34.50	33.10
GAGE - Taperlock Style		6H		22988		164.00							
GAGE - Reversible Style		6H		22989		206.00							
GAGE - Ring-Go		6g		22990		220.00							
GAGE - Ring-NoGo		6g		22991		220.00							
GAGE - L.H. Taperlock Style		6H		22992		164.00							
GAGE - L.H. Taperlock Style		4H		22993		164.00							
GAGE - L.H. Reversible Style		6H		22994		211.00							
GAGE - L.H. Reversible Style		4H		22995		211.00							
GAGE - L.H. Ring-Go		4g		22996		220.00							
GAGE - L.H. Ring-NoGo		4g		22997		220.00							
GAGE - L.H. Ring-Go		6g		22998		220.00							
GAGE - L.H. Ring-NoGo		6g		22999		220.00							
<b>M20 x 2.5</b>					<i>Recommended Hole Size Based on 75% Thread = 17.5mm</i>								
HAND TAP	7	6H	4	20636	20637	42.90	42.90	39.00	39.00	39.00	39.00	39.00	35.60
SPIRAL POINT	7	6H	3	20634		47.90	47.90	44.10	44.10	44.10	44.10	44.10	40.60
HAND TAP	4	4H	4	20631	20632	81.50	52.80	41.90	41.90	41.90	41.90	41.90	35.60
FAST SPIRAL FLUTE	7	6H	4	21051	21052	145.50	120.90	96.50	81.10	70.00	61.80	57.80	55.20
L.H. HAND TAP	7	6H	4	20641	20642	52.40	52.40	47.70	47.70	47.70	47.70	47.70	41.30
6" EXTENSION HAND TAP	7	6H	4	20933	20934	98.80	80.20	72.30	64.80	60.70	58.00	55.60	50.30
+127mm HAND TAP	11	PLATING	4	20646	20647	49.70	49.70	45.20	45.20	45.20	45.20	45.20	39.70
TIN COAT / SP PT	7	6H	3	55005		57.90	57.90	54.10	54.10	54.10	54.10	54.10	50.50
TIN COAT / HAND TAP	7	6H	4	55006		52.80	52.80	49.20	49.20	49.20	49.20	49.20	45.60
R.H. ROUND DIE 50.8mm OD				13592		82.40	72.80	68.70	66.30	66.30	66.30	60.40	60.00
L.H. ROUND DIE 50.8mm OD				13593		82.40	72.80	68.70	66.30	66.30	66.30	60.40	60.00
GAGE - Taperlock Style		6H		25123		119.90							
GAGE - Ring-Go		6g		25320		182.50							
GAGE - Ring-NoGo		6g		25321		182.50							
GAGE - L.H. Taperlock Style		6H		21500		164.00							
GAGE - L.H. Taperlock Style		4H		21501		164.00							
GAGE - L.H. Ring-Go		4g		21502		210.00							
GAGE - L.H. Ring-NoGo		4g		21503		210.00							
GAGE - L.H. Ring-Go		6g		21504		210.00							
GAGE - L.H. Ring-NoGo		6g		21505		210.00							
<b>M20 x 1.5</b>					<i>Recommended Hole Size Based on 75% Thread = 18.5mm</i>								
HAND TAP	6	6H	4	20656	20657	42.90	42.90	39.00	39.00	39.00	39.00	39.00	35.60
HAND TAP	3	4H	4	20651	20652	81.50	52.80	41.90	41.90	41.90	41.90	41.90	35.60
L.H. HAND TAP	6	6H	4	20661	20662	52.40	52.40	47.70	47.70	47.70	47.70	47.70	41.30
+127mm HAND TAP	11	PLATING	4	20666	20667	49.70	49.70	45.20	45.20	45.20	45.20	45.20	39.70
R.H. ROUND DIE 50.8mm OD				13594		82.40	72.80	68.70	66.30	66.30	66.30	60.40	60.00
L.H. ROUND DIE 50.8mm OD				13595		82.40	72.80	68.70	66.30	66.30	66.30	60.40	60.00
GAGE - Taperlock Style		6H		25128		119.90							
GAGE - Ring-Go		6g		25325		182.50							
GAGE - Ring-NoGo		6g		25326		182.50							
GAGE - L.H. Taperlock Style		6H		21506		180.40							

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# METRIC POPULAR SPECIAL: TAPS, DIES & GAGES

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SIZE / DESCRIPTION	D#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>M20 x 1.5</b>				<i>See Previous Page for Recommended Hole Size</i>									
GAGE - L.H. Taperlock Style		4H		21507		164.00							
GAGE - L.H. Ring-Go		4g		21508		209.00							
GAGE - L.H. Ring-NoGo		4g		21509		209.00							
GAGE - L.H. Ring-Go		6g		21510		209.00							
GAGE - L.H. Ring-NoGo		6g		21511		209.00							
<b>M20 x 1.0</b>				<i>Recommended Hole Size Based on 75% Thread = 19mm</i>									
HAND TAP	6	6H	4	21048	21049	124.10	91.00	72.30	57.70	50.90	44.20	41.90	35.60
GAGE - Taperlock Style		6H		21512		120.00							
GAGE - Ring-Go		6g		21513		193.00							
GAGE - Ring-NoGo		6g		21514		193.00							
GAGE - L.H. Taperlock Style		6H		21515		178.00							
GAGE - L.H. Taperlock Style		4H		21516		178.00							
GAGE - L.H. Ring-Go		4g		21517		231.00							
GAGE - L.H. Ring-NoGo		4g		21518		231.00							
GAGE - L.H. Ring-Go		6g		21519		231.00							
GAGE - L.H. Ring-NoGo		6g		21520		231.00							
<b>M22 x 2.5</b>				<i>Recommended Hole Size Based on 75% Thread = 19.5mm</i>									
HAND TAP	7	6H	4	20676	20677	55.10	55.10	44.60	44.60	44.60	44.60	44.60	38.20
HAND TAP	4	4H	4	20671	20672	92.30	61.50	44.60	44.60	44.60	44.60	44.60	38.20
L.H. HAND TAP	7	6H	4	20681	20682	57.90	57.90	52.80	52.80	52.80	52.80	52.80	46.50
R.H. ROUND DIE 50.8mm OD				13598		82.40	72.80	68.70	66.30	66.30	66.30	60.40	60.00
GAGE - Taperlock Style		6H		25133		119.90							
GAGE - Ring-Go		6g		25330		187.90							
GAGE - Ring-NoGo		6g		25331		187.90							
GAGE - L.H. Taperlock Style		6H		21521		165.00							
GAGE - L.H. Taperlock Style		4H		21522		165.00							
GAGE - L.H. Ring-Go		4g		21523		209.00							
GAGE - L.H. Ring-NoGo		4g		21524		209.00							
GAGE - L.H. Ring-Go		6g		21525		209.00							
GAGE - L.H. Ring-NoGo		6g		21526		209.00							
<b>M22 x 1.5</b>				<i>Recommended Hole Size Based on 75% Thread = 20.5mm</i>									
HAND TAP	6	6H	4	20691	20692	55.10	55.10	44.60	44.60	44.60	44.60	44.60	38.20
HAND TAP	3	4H	4	20686	20687	92.30	61.50	44.60	44.60	44.60	44.60	44.60	38.20
L.H. HAND TAP	6	6H	4	20696	20697	57.90	57.90	52.80	52.80	52.80	52.80	52.80	46.50
+ .127mm HAND TAP	11	PLATING	4	20701	20702	55.60	55.60	50.50	50.50	50.50	50.50	50.50	44.20
R.H. ROUND DIE 50.8mm OD				13600		82.40	72.80	68.70	66.30	66.30	66.30	60.40	60.00
GAGE - Taperlock Style		6H		25138		119.90							
GAGE - Ring-Go		6g		25335		187.90							
GAGE - Ring-NoGo		6g		25336		187.90							
GAGE - L.H. Taperlock Style		6H		21527		165.00							
GAGE - L.H. Taperlock Style		4H		21528		165.00							
GAGE - L.H. Ring-Go		4g		21529		209.00							
GAGE - L.H. Ring-NoGo		4g		21530		209.00							
GAGE - L.H. Ring-Go		6g		21531		209.00							
GAGE - L.H. Ring-NoGo		6g		21532		209.00							
<b>M24 x 3.0</b>				<i>Recommended Hole Size Based on 75% Thread = 21mm</i>									
HAND TAP	8	6H	4	20711	20712	60.30	60.30	54.80	54.80	54.80	54.80	54.80	50.10
SPIRAL POINT	8	6H	3	21029		65.90	65.90	60.50	60.50	60.50	60.50	60.50	55.70
HAND TAP	4	4H	4	20706	20707	94.50	62.70	48.30	48.30	48.30	48.30	48.30	43.40
L.H. HAND TAP	8	6H	4	20716	20717	73.60	73.60	66.20	66.20	66.20	66.20	66.20	61.00
+ .127mm HAND TAP	11	PLATING	4	20721	20722	55.50	55.50	50.80	50.80	50.80	50.80	50.80	45.70
TIN COAT / HAND TAP	8	6H	4	55007		74.80	74.80	69.40	69.40	69.40	69.40	69.40	64.60
R.H. ROUND DIE 50.8mm OD				13604		82.40	72.80	68.70	66.30	66.30	66.30	60.40	60.00
L.H. ROUND DIE 50.8mm OD				13605		82.40	72.80	68.70	66.30	66.30	66.30	60.40	60.00
GAGE - Taperlock Style		6H		25143		136.00							

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# METRIC POPULAR SPECIAL: TAPS, DIES & GAGES

SIZE / DESCRIPTION	D#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>M24 x 3.0</b>					<i>See Previous Page for Recommended Hole Size</i>								
GAGE - Ring-Go		6g		25340		227.80							
GAGE - Ring-NoGo		6g		25341		227.80							
GAGE - L.H. Taperlock Style		6H		21533		179.00							
GAGE - L.H. Taperlock Style		4H		21534		179.00							
GAGE - L.H. Ring-Go		4g		21535		204.00							
GAGE - L.H. Ring-NoGo		4g		21536		204.00							
GAGE - L.H. Ring-Go		6g		21537		204.00							
GAGE - L.H. Ring-NoGo		6g		21538		204.00							
<b>M24 x 2.0</b>					<i>Recommended Hole Size Based on 75% Thread = 22mm</i>								
HAND TAP	7	6H	4	20731	20732	60.30	60.30	54.80	54.80	54.80	54.80	54.80	50.10
HAND TAP	4	4H	4	20726	20727	94.50	62.70	48.30	48.30	48.30	48.30	48.30	43.40
L.H. HAND TAP	7	6H	4	20736	20737	73.60	73.60	66.20	66.20	66.20	66.20	66.20	61.00
R.H. ROUND DIE 50.8mm OD				13606		82.40	72.80	68.70	66.30	66.30	66.30	60.40	60.00
L.H. ROUND DIE 50.8mm OD				13607		82.40	72.80	68.70	66.30	66.30	66.30	60.40	60.00
GAGE - Taperlock Style		6H		25148		136.00							
GAGE - Ring-Go		6g		25345		227.80							
GAGE - Ring-NoGo		6g		25346		227.80							
GAGE - L.H. Taperlock Style		6H		21539		165.00							
GAGE - L.H. Taperlock Style		4H		21540		165.00							
GAGE - L.H. Ring-Go		4g		21541		209.00							
GAGE - L.H. Ring-NoGo		4g		21542		209.00							
GAGE - L.H. Ring-Go		6g		21543		209.00							
GAGE - L.H. Ring-NoGo		6g		21544		209.00							
<b>M24 x 1.5</b>					<i>Recommended Hole Size Based on 75% Thread = 22.5mm</i>								
HAND TAP	6	6H	4	20917	20918	60.30	60.30	54.80	54.80	54.80	54.80	54.80	50.10
GAGE - Taperlock Style		6H		21545		165.00							
GAGE - Ring-Go		6g		21546		211.00							
GAGE - Ring-NoGo		6g		21547		211.00							
<b>M25 x 1.5</b>					<i>Recommended Hole Size Based on 75% Thread = 23.5mm</i>								
HAND TAP	6	6H	4	21031	21032	99.80	91.10	84.90	77.90	77.90	71.10	71.10	68.50
GAGE - Taperlock Style		6H		21548		143.00							
GAGE - Ring-Go		6g		21549		231.00							
GAGE - Ring-NoGo		6g		21550		231.00							
GAGE - L.H. Taperlock Style		6H		21551		165.00							
GAGE - L.H. Taperlock Style		4H		21552		165.00							
GAGE - L.H. Ring-Go		4g		21553		209.00							
GAGE - L.H. Ring-NoGo		4g		21554		209.00							
GAGE - L.H. Ring-Go		6g		21555		209.00							
GAGE - L.H. Ring-NoGo		6g		21556		209.00							
<b>M26 x 1.5</b>					<i>Recommended Hole Size Based on 75% Thread = 24.5mm</i>								
HAND TAP	6	6H	6	20981	20982	131.50	108.30		85.70	72.50	65.80	60.70	54.00
GAGE - Taperlock Style		6H		21557		176.00							
GAGE - Ring-Go		6g		21558		237.00							
GAGE - Ring-NoGo		6g		21559		237.00							
GAGE - L.H. Taperlock Style		6H		21560		179.00							
GAGE - L.H. Taperlock Style		4H		21561		179.00							
GAGE - L.H. Ring-Go		4g		21562		209.00							
GAGE - L.H. Ring-NoGo		4g		21563		209.00							
GAGE - L.H. Ring-Go		6g		21564		209.00							
GAGE - L.H. Ring-NoGo		6g		21565		209.00							
<b>M27 x 3.0</b>					<i>Recommended Hole Size Based on 75% Thread = 24mm</i>								
HAND TAP	8	6H	4	20746	20747	90.90	90.90	73.60	73.60	73.60	73.60	73.60	64.80
HAND TAP	5	4H	4	20741	20742	90.90	90.90	73.60	73.60	73.60	73.60	73.60	64.80
L.H. HAND TAP	8	6H	4	20751	20752	90.90	90.90	73.60	73.60	73.60	73.60	73.60	64.80

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SIZE / DESCRIPTION	D#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>M27 x 3.0</b>				<i>See Previous Page for Recommended Hole Size</i>									
R.H. ROUND DIE 63.5mm OD				<b>13614</b>		117.70	100.10	97.80	95.70	95.70	95.70	87.60	87.00
GAGE - Taperlock Style		6H		<b>25158</b>		168.00							
GAGE - Ring-Go		6g		<b>25350</b>		238.60							
GAGE - Ring-NoGo		6g		<b>25351</b>		238.60							
GAGE - L.H. Taperlock Style		6H		<b>21566</b>		179.00							
GAGE - L.H. Taperlock Style		4H		<b>21567</b>		179.00							
GAGE - L.H. Ring-Go		4g		<b>21568</b>		209.00							
GAGE - L.H. Ring-NoGo		4g		<b>21569</b>		209.00							
GAGE - L.H. Ring-Go		6g		<b>21570</b>		209.00							
GAGE - L.H. Ring-NoGo		6g		<b>21571</b>		209.00							
<b>M27 x 2.0</b>				<i>Recommended Hole Size Based on 75% Thread = 25mm</i>									
HAND TAP	7	6H	4	<b>20761</b>	<b>20762</b>	90.90	90.90	73.60	73.60	73.60	73.60	73.60	64.80
HAND TAP	5	4H	4	<b>20756</b>	<b>20757</b>	90.90	90.90	73.60	73.60	73.60	73.60	73.60	64.80
R.H. ROUND DIE 63.5mm OD				<b>13616</b>		117.70	100.10	97.80	95.70	95.70	95.70	87.60	87.00
GAGE - Taperlock Style		6H		<b>25163</b>		168.00							
GAGE - Ring-Go		6g		<b>25355</b>		238.60							
GAGE - Ring-NoGo		6g		<b>25356</b>		238.60							
GAGE - L.H. Taperlock Style		6H		<b>21572</b>		179.00							
GAGE - L.H. Taperlock Style		4H		<b>21573</b>		179.00							
GAGE - L.H. Ring-Go		4g		<b>21574</b>		209.00							
GAGE - L.H. Ring-NoGo		4g		<b>21575</b>		209.00							
GAGE - L.H. Ring-Go		6g		<b>21576</b>		209.00							
GAGE - L.H. Ring-NoGo		6g		<b>21577</b>		209.00							
<b>M27 x 1.5</b>				<i>Recommended Hole Size Based on 75% Thread = 25.5mm</i>									
HAND TAP	6	6H	6	<b>21057</b>	<b>21058</b>	131.50	108.30	104.20	85.70	72.50	65.80	60.70	54.00
GAGE - Taperlock Style		6H		<b>21578</b>		176.00							
GAGE - Ring-Go		6g		<b>21579</b>		209.00							
GAGE - Ring-NoGo		6g		<b>21580</b>		209.00							
<b>M30 x 3.5</b>				<i>Recommended Hole Size Based on 75% Thread = 26.5mm</i>									
HAND TAP	9	6H	4	<b>20776</b>	<b>20777</b>	144.50	109.30	95.70	91.10	89.90	87.20	86.80	78.70
HAND TAP	5	4H	4	<b>20771</b>	<b>20772</b>	144.50	109.30	95.70	91.10	89.90	87.20	86.80	78.70
L.H. HAND TAP	9	6H	4	<b>20781</b>	<b>20782</b>	144.50	109.30	95.70	91.10	89.90	87.20	86.80	78.70
R.H. ROUND DIE 63.5mm OD				<b>13624</b>		117.70	100.10	97.80	95.70	95.70	95.70	87.60	87.00
L.H. ROUND DIE 63.5mm OD				<b>13625</b>		117.70	100.10	97.80	95.70	95.70	95.70	87.60	87.00
GAGE - Taperlock Style		6H		<b>25168</b>		187.90							
GAGE - Ring-Go		6g		<b>25360</b>		258.50							
GAGE - Ring-NoGo		6g		<b>25361</b>		258.50							
GAGE - L.H. Taperlock Style		6H		<b>21581</b>		224.00							
GAGE - L.H. Taperlock Style		4H		<b>21582</b>		224.00							
GAGE - L.H. Ring-Go		4g		<b>21583</b>		286.00							
GAGE - L.H. Ring-NoGo		4g		<b>21584</b>		286.00							
GAGE - L.H. Ring-Go		6g		<b>21585</b>		286.00							
GAGE - L.H. Ring-NoGo		6g		<b>21586</b>		286.00							
<b>M30 x 2.0</b>				<i>Recommended Hole Size Based on 75% Thread = 28mm</i>									
HAND TAP	7	6H	4	<b>20791</b>	<b>20792</b>	144.50	109.30	95.70	91.10	89.90	87.20	86.80	78.70
HAND TAP	5	4H	4	<b>20786</b>	<b>20787</b>	144.50	109.30	95.70	91.10	89.90	87.20	86.80	78.70
R.H. ROUND DIE 63.5mm OD				<b>13626</b>		117.70	100.10	97.80	95.70	95.70	95.70	87.60	87.00
GAGE - Taperlock Style		6H		<b>25173</b>		187.90							
GAGE - Ring-Go		6g		<b>25365</b>		258.50							
GAGE - Ring-NoGo		6g		<b>25366</b>		258.50							
GAGE - L.H. Taperlock Style		6H		<b>21587</b>		180.00							
GAGE - L.H. Taperlock Style		4H		<b>21588</b>		180.00							
GAGE - L.H. Ring-Go		4g		<b>21589</b>		220.00							
GAGE - L.H. Ring-NoGo		4g		<b>21590</b>		220.00							
GAGE - L.H. Ring-Go		6g		<b>21591</b>		220.00							
GAGE - L.H. Ring-NoGo		6g		<b>21592</b>		220.00							

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<b>M30 x 1.5</b>						<i>Recommended Hole Size Based on 75% Thread = 28.5mm</i>							
HAND TAP	6	6H	6	20898	20899	146.70	142.40	121.30	110.00	96.10	82.20	75.40	70.30
GAGE - Taperlock Style		6H		21593		178.00							
GAGE - Ring-Go		6g		21594		231.00							
GAGE - Ring-NoGo		6g		21595		231.00							
GAGE - L.H. Taperlock Style		6H		21596		180.00							
GAGE - L.H. Taperlock Style		4H		21597		180.00							
GAGE - L.H. Ring-Go		4g		21598		220.00							
GAGE - L.H. Ring-NoGo		4g		21599		220.00							
GAGE - L.H. Ring-Go		6g		21600		220.00							
GAGE - L.H. Ring-NoGo		6g		21601		220.00							
<b>M32 x 2.0</b>						<i>Recommended Hole Size Based on 75% Thread = 30mm</i>							
HAND TAP	7	6H	6	21199	21200	152.90	115.40	100.90	96.40	96.40	92.30	92.30	83.10
GAGE - Taperlock Style		6H		21602		211.00							
GAGE - Ring-Go		6g		21603		253.00							
GAGE - Ring-NoGo		6g		21604		253.00							
GAGE - L.H. Taperlock Style		6H		21605		189.00							
GAGE - L.H. Taperlock Style		4H		21606		189.00							
GAGE - L.H. Ring-Go		4g		21607		231.00							
GAGE - L.H. Ring-NoGo		4g		21608		231.00							
GAGE - L.H. Ring-Go		6g		21609		231.00							
GAGE - L.H. Ring-NoGo		6g		21610		231.00							
<b>M32 x 1.5</b>						<i>Recommended Hole Size Based on 75% Thread = 30.5mm</i>							
HAND TAP	6	6H	6	21060	21061	152.90	148.40	128.80	116.70	103.30	90.00	81.00	75.80
GAGE - Taperlock Style		6H		21611		211.00							
GAGE - Ring-Go		6g		21612		253.00							
GAGE - Ring-NoGo		6g		21613		253.00							
GAGE - L.H. Taperlock Style		6H		21614		189.00							
GAGE - L.H. Taperlock Style		4H		21615		189.00							
GAGE - L.H. Ring-Go		4g		21616		231.00							
GAGE - L.H. Ring-NoGo		4g		21617		231.00							
GAGE - L.H. Ring-Go		6g		21618		231.00							
GAGE - L.H. Ring-NoGo		6g		21619		231.00							
<b>M33 x 3.5</b>						<i>Recommended Hole Size Based on 75% Thread = 29.5mm</i>							
HAND TAP	9	6H	4	20806	20807	158.30	154.00	136.20	113.90	110.30	103.50	101.50	93.10
HAND TAP	5	4H	4	20801	20802	158.30	154.00	136.20	113.90	110.30	103.50	101.50	93.10
GAGE - Taperlock Style		6H		25178		201.30							
GAGE - Ring-Go		6g		25370		267.90							
GAGE - Ring-NoGo		6g		25371		267.90							
GAGE - L.H. Taperlock Style		6H		21620		233.00							
GAGE - L.H. Taperlock Style		4H		21621		233.00							
GAGE - L.H. Ring-Go		4g		21622		286.00							
GAGE - L.H. Ring-NoGo		4g		21623		286.00							
GAGE - L.H. Ring-Go		6g		21624		286.00							
GAGE - L.H. Ring-NoGo		6g		21625		286.00							
<b>M33 x 2.0</b>						<i>Recommended Hole Size Based on 75% Thread = 31mm</i>							
HAND TAP	7	6H	4	20821	20822	158.30	154.00	136.20	113.90	110.30	103.50	101.50	93.10
HAND TAP	5	4H	4	20816	20817	158.30	154.00	136.20	113.90	110.30	103.50	101.50	93.10
R.H. ROUND DIE 63.5mm OD				13634		117.70	100.10	97.80	95.70	95.70	95.70	87.60	87.00
GAGE - Taperlock Style		6H		25183		201.30							
GAGE - Ring-Go		6g		25375		267.90							
GAGE - Ring-NoGo		6g		25376		267.90							
GAGE - L.H. Taperlock Style		6H		21626		189.00							
GAGE - L.H. Taperlock Style		4H		21627		189.00							
GAGE - L.H. Ring-Go		4g		21628		231.00							
GAGE - L.H. Ring-NoGo		4g		21629		231.00							
GAGE - L.H. Ring-Go		6g		21630		231.00							
GAGE - L.H. Ring-NoGo		6g		21631		231.00							

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- Note: For Unified, Metric and Pipe EXTENSION taps, S.T.I. taps and gage sizes, or SPECIAL taps NOT LISTED, please contact our Customer Service Dept.
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# METRIC POPULAR SPECIAL: TAPS, DIES & GAGES

For tap standards and dimensions,  
see 'Tables for Tap Dimensions'  
on pages 122-131.

SIZE / DESCRIPTION	D#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>M35 x 1.5</b>					<i>Recommended Hole Size Based on 75% Thread = 33.5mm</i>								
HAND TAP	6	6H	6	20957	20958	158.30	154.00	136.20	113.90	110.30	97.70	89.50	89.10
GAGE - Taperlock Style		6H		21632		189.00							
GAGE - Ring-Go		6g		21633		270.00							
GAGE - Ring-NoGo		6g		21634		270.00							
GAGE - L.H. Taperlock Style		6H		21635		200.00							
GAGE - L.H. Taperlock Style		4H		21636		200.00							
GAGE - L.H. Ring-Go		4g		21637		248.00							
GAGE - L.H. Ring-NoGo		4g		21638		248.00							
GAGE - L.H. Ring-Go		6g		21639		248.00							
GAGE - L.H. Ring-NoGo		6g		21640		248.00							
<b>M36 x 4.0</b>					<i>Recommended Hole Size Based on 75% Thread = 32mm</i>								
HAND TAP	9	6H	4	20836	20837	197.20	159.40	139.50	136.30	132.50	127.90	116.10	104.10
HAND TAP	5	4H	4	20831	20832	197.20	159.40	139.50	136.30	132.50	127.90	116.10	104.10
R.H. ROUND DIE 63.5mm OD				13638		117.70	100.10	97.80	95.70	95.70	95.70	87.60	87.00
GAGE - Taperlock Style		6H		25188		222.60							
GAGE - Ring-Go		6g		25380		298.50							
GAGE - Ring-NoGo		6g		25381		298.50							
GAGE - L.H. Taperlock Style		6H		21641		244.00							
GAGE - L.H. Taperlock Style		4H		21642		244.00							
GAGE - L.H. Ring-Go		4g		21643		286.00							
GAGE - L.H. Ring-NoGo		4g		21644		286.00							
GAGE - L.H. Ring-Go		6g		21645		286.00							
GAGE - L.H. Ring-NoGo		6g		21646		286.00							
<b>M36 x 3.0</b>					<i>Recommended Hole Size Based on 75% Thread = 33mm</i>								
HAND TAP	8	6H	4	20851	20852	197.20	159.40	139.50	136.30	132.50	127.90	116.10	104.10
HAND TAP	5	4H	4	20846	20847	197.20	159.40	139.50	136.30	132.50	127.90	116.10	104.10
R.H. ROUND DIE 63.5mm OD				13640		117.70	100.10	97.80	95.70	95.70	95.70	87.60	87.00
GAGE - Taperlock Style		6H		25193		222.60							
GAGE - Ring-Go		6g		25385		298.50							
GAGE - Ring-NoGo		6g		25386		298.50							
GAGE - L.H. Taperlock Style		6H		21647		200.00							
GAGE - L.H. Taperlock Style		4H		21648		200.00							
GAGE - L.H. Ring-Go		4g		21649		248.00							
GAGE - L.H. Ring-NoGo		4g		21650		248.00							
GAGE - L.H. Ring-Go		6g		21651		248.00							
GAGE - L.H. Ring-NoGo		6g		21652		248.00							
<b>M36 x 2.0</b>					<i>Recommended Hole Size Based on 75% Thread = 34mm</i>								
HAND TAP	7	6H	6	20921	20922	197.20	159.40	139.50	136.30	132.50	127.90	116.10	104.10
GAGE - Taperlock Style		6H		21653		200.00							
GAGE - Ring-Go		6g		21654		275.00							
GAGE - Ring-NoGo		6g		21655		275.00							
GAGE - L.H. Taperlock Style		6H		21656		200.00							
GAGE - L.H. Taperlock Style		4H		21657		200.00							
GAGE - L.H. Ring-Go		4g		21658		248.00							
GAGE - L.H. Ring-NoGo		4g		21659		248.00							
GAGE - L.H. Ring-Go		6g		21660		248.00							
GAGE - L.H. Ring-NoGo		6g		21661		248.00							
<b>M36 x 1.5</b>					<i>Recommended Hole Size Based on 75% Thread = 34.5mm</i>								
HAND TAP	6	6H	6	20961	20962	171.10	167.10	147.60	133.10	121.00	108.80	101.50	93.10
GAGE - Taperlock Style		6H		21662		200.00							
GAGE - Ring-Go		6g		21663		275.00							
GAGE - Ring-NoGo		6g		21664		275.00							

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**North American Tool**

"In The Pursuit of Perfection"

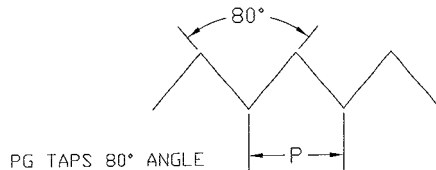
For tap standards and dimensions,  
see 'Tables for Tap Dimensions'  
on pages 122-131.

## METRIC POPULAR SPECIAL: TAPS, DIES & GAGES

SIZE / DESCRIPTION	D#	CLASS OF FIT	# FLUTE	EDP PLUG	EDP BOTTOM	1	2	3	6	9	12	24	48
<b>M39 x 4.0</b>					<i>Recommended Hole Size Based on 75% Thread = 35mm</i>								
HAND TAP	9	6H	6	20866	20867	227.20	193.60	177.30	171.20	168.20	164.20	154.80	139.50
HAND TAP	6	4H	6	20861	20862	227.20	193.60	177.30	171.20	168.20	164.20	154.80	139.50
GAGE - Tri-Lock Style		6H		25198		236.00							
GAGE - Ring-Go		6g		25390		327.80							
GAGE - Ring-NoGo		6g		25391		327.80							
GAGE - L.H. Taperlock Style		6H		21665		258.00							
GAGE - L.H. Taperlock Style		4H		21666		258.00							
GAGE - L.H. Ring-Go		4g		21667		297.00							
GAGE - L.H. Ring-NoGo		4g		21668		297.00							
GAGE - L.H. Ring-Go		6g		21669		297.00							
GAGE - L.H. Ring-NoGo		6g		21670		297.00							
<b>M39 x 3.0</b>					<i>Recommended Hole Size Based on 75% Thread = 36mm</i>								
HAND TAP	8	6H	6	20881	20882	227.20	193.60	177.30	171.20	168.20	164.20	154.80	139.50
HAND TAP	6	4H	6	20876	20877	227.20	193.60	177.30	171.20	168.20	164.20	154.80	139.50
R.H. ROUND DIE 76.2mm OD				13648		161.20	154.80	150.70	95.70	95.70	95.70	87.60	87.00
GAGE - Tri-Lock Style		6H		25203		236.00							
GAGE - Ring-Go		6g		25395		327.80							
GAGE - Ring-NoGo		6g		25396		327.80							
GAGE - L.H. Taperlock Style		6H		21671		227.00							
GAGE - L.H. Taperlock Style		4H		21672		227.00							
GAGE - L.H. Ring-Go		4g		21673		259.00							
GAGE - L.H. Ring-NoGo		4g		21674		259.00							
GAGE - L.H. Ring-Go		6g		21675		259.00							
GAGE - L.H. Ring-NoGo		6g		21676		259.00							
<b>M40 x 1.5</b>					<i>Recommended Hole Size Based on 75% Thread = 38.5mm</i>								
HAND TAP	6	6H	6	20972	20973	223.50	185.80	166.70	153.30	142.10	138.60	135.30	121.40
<b>M42 x 4.5</b>					<i>Recommended Hole Size Based on 75% Thread = 37.5mm</i>								
HAND TAP	10	6H	6	20965	20966	280.10	258.50	231.80	223.70	215.80	200.40	182.60	170.40
<b>M42 x 1.5</b>					<i>Recommended Hole Size Based on 75% Thread = 40.5mm</i>								
HAND TAP	6	6H	6	21063	21064	227.40	189.70	170.60	157.30	145.90	142.50	139.30	125.40

## PRICING TABLES: SPECIAL TAPS

**CONDUIT THREAD TAPS**  
Per DIN STD. #40430 • 80° Included Angle  
'PG' Series To Tables 302/303



TYPE	SIZE	# of Flutes	EDP# Plug	EDP# Bottom	LIST PRICE IN QUANTITIES OF						
					1	2	3	6	9	12	24
PG 7	M12.5 x 1.27	4	20992	20993	188.30	139.70	99.90	69.40	52.80	42.80	36.20
PG 9	M15.2 x 1.41	4	20995	20996	201.40	150.50	110.40	83.30	70.00	56.50	49.60
PG 11	M18.6 x 1.41	4	20998	20999	215.00	166.60	126.30	99.40	83.30	69.40	60.80
PG 13.5	M20.4 x 1.41	4	21001	21002	228.40	174.70	137.00	110.10	91.20	74.90	69.40
PG 16	M22.5 x 1.41	4	21004	21005	239.10	185.40	147.90	120.90	100.70	86.10	80.40
PG 21	M28.3 x 1.588	6	21007	21008	264.50	205.80	168.10	141.30	120.90	104.50	97.00
PG 29	M37 x 1.588	6	21010	21011	341.10	276.60	237.80	207.60	189.50	171.60	157.70
PG 36	M47 x 1.588	6	21013	21014	443.10	400.10	349.00	308.90	287.40	266.00	238.20
PG 42	M54 x 1.588	6	21016	21017	558.80	520.40	448.00	411.50	388.40	365.10	332.60
PG 48	M59.3 x 1.588	6	21019	21020	628.50	601.80	534.00	495.90	476.00	456.30	413.50

Refer to page 122 for tap dimensions.

# PRICING TABLES: SPECIAL TAPS

For tap standards and dimensions,  
see 'Tables for Tap Dimensions'  
on pages 122-131.

## H.S.S. SPECIAL SPIRAL FLUTE TAPS

PLUG & BOTTOM STYLE - INCLUDING METRIC SIZES TO TABLE 302

These taps are available in a variety of helix angles from 'low' through 'medium' to 'high' spiral. • For L.H. low spiral, add 10%

SIZE INCHES	MAX. TPI	SIZE MM	MIN. PITCH MM	LIST PRICE IN QUANTITIES OF									LH 52° SPFL ADD
				1	2	3-5	6-8	9-11	12-23	24-47	48-71	72-95	
#3	100	M2.3, M2.5 M2.6	0.3	123.80	91.40	64.60	43.10	35.10	27.00	23.30	21.20	19.50	6.00
#4	100	-----	-----	118.40	86.10	59.30	39.40	30.80	23.90	19.80	18.00	17.20	6.00
#5	100	M3	0.3	118.40	86.10	59.30	39.40	30.80	23.90	19.80	18.00	17.20	6.00
#6	100	M3.5	0.3	116.40	84.20	57.30	36.50	28.30	21.90	18.00	15.50	15.00	6.60
#8	100	M4	0.3	116.40	84.20	57.30	36.50	28.30	21.90	18.00	15.50	15.00	6.60
#10	100	M4.5, M5	0.3	116.40	84.20	57.30	36.50	28.30	21.90	18.00	15.50	15.00	6.60
#12	100	M5.5	0.3	119.90	87.40	60.40	39.10	29.90	23.00	19.50	17.00	15.60	6.60
#14	80	M6	0.3	120.10	87.70	60.90	39.40	30.20	23.30	19.50	17.30	16.00	6.60
1/4	80	M6	0.3	120.10	87.70	60.90	39.40	30.20	23.30	19.50	17.30	16.00	6.60
5/16	80	M7, M8	0.3	121.10	89.40	61.70	41.30	31.80	24.80	20.20	18.00	16.50	6.60
3/8	80	M9, M10	0.3	125.50	93.10	66.30	44.80	35.00	27.00	23.30	19.80	18.90	6.60
7/16	80	M11	0.3	129.00	97.80	70.00	48.30	39.30	30.50	27.00	23.30	21.60	6.60
1/2	80	M12	0.3	132.50	101.50	73.40	54.00	44.00	35.00	30.40	27.00	25.20	7.40
9/16	64	M14	0.4	141.60	107.60	78.90	57.30	47.50	38.00	33.90	30.30	28.70	8.10
5/8	64	M16	0.4	146.90	113.60	86.10	64.60	54.70	44.80	39.40	36.40	34.10	8.10
11/16	64	M18	0.4	154.00	119.60	91.00	71.60	60.90	50.30	44.80	41.30	39.40	8.80
3/4	64	-----	0.4	159.40	127.20	105.70	78.80	67.20	55.60	51.70	48.50	44.80	8.80
13/16	64	M20	-----	170.80	136.90	112.70	89.40	77.30	65.30	60.80	57.20	53.10	13.20
7/8	64	M22	0.4	179.20	143.20	116.40	97.00	84.20	71.70	66.30	62.70	58.10	13.20
15/16	64	M24	-----	192.30	156.40	128.70	110.00	97.00	82.30	78.60	74.90	69.70	13.20
1"	64	M25	-----	200.70	163.30	136.20	121.70	104.60	90.80	85.70	82.40	76.40	13.20

Refer to page 122 for tap dimensions.

## H.S.S. SPECIAL HAND TAPS

RIGHT AND LEFT HAND INCLUDING METRIC SIZES TO TABLE 302

MAX. SIZE	MACH. SCREW AND FRACT.		METRIC		LIST PRICE IN QUANTITIES OF									SP. PT. ADD
	SIZE	MAX. TPI	SIZE MM	MIN. PITCH MM	1	2	3-5	6-8	9-11	12-23	24-47	48-71	72-95	
.065	0	100	M1.5, M1.6	0.3	123.80	91.40	64.70	44.80	33.30	27.90	22.70	20.60	18.60	2.00
.078	1	100	M1.8	0.3	123.40	91.00	64.30	44.40	33.10	27.40	22.40	20.10	18.00	1.70
.091	2	100	M2, M2.2	0.3	121.70	89.60	62.80	43.10	33.10	26.00	20.70	18.90	17.20	1.70
.104	3	100	M2.3, M2.5 M2.6	0.3	116.40	84.20	58.90	38.80	29.00	22.50	18.60	16.40	14.40	1.30
.117	4	100	-----	---	111.80	80.80	54.90	35.00	25.50	19.70	16.50	14.30	11.20	1.30
.130	5	100	M3	0.3	111.80	80.80	54.90	35.00	25.50	19.70	16.50	14.30	11.20	1.30
.145	6	100	M3.5	0.3	109.20	78.10	52.70	32.10	22.70	17.60	14.90	12.60	10.60	1.10
.171	8	100	M4	0.3	109.20	78.10	52.70	32.10	22.70	17.60	14.90	12.60	10.60	1.10
.197	10	100	M4.5, M5	0.3	109.20	78.10	52.70	32.10	22.70	17.60	14.90	12.60	10.60	1.10
.223	12	100	M5.5	0.3	112.50	80.80	55.50	35.10	24.80	19.10	15.70	13.00	11.30	1.10
.260	14	80	M6	0.3	113.30	82.00	56.20	36.50	26.50	20.40	16.70	14.40	12.50	1.20
.260	1/4	80	M6	0.3	113.30	82.00	56.20	36.50	26.50	20.40	16.70	14.40	12.50	1.20
.323	5/16	80	M7, M8	0.3	114.60	83.20	57.10	37.70	28.70	21.30	16.80	14.90	12.80	1.30
.385	3/8	80	M9, M10	0.3	118.50	86.10	60.90	40.60	31.20	23.30	18.90	16.30	14.40	1.30
.448	7/16	80	M11	0.3	121.40	89.60	64.30	42.60	34.30	26.50	21.10	18.90	17.90	1.40
.510	1/2	80	M12	0.3	125.60	93.10	66.50	46.30	35.40	28.80	24.20	21.00	19.40	2.00
.573	9/16	64	M14	0.4	127.50	94.90	68.40	49.30	40.40	31.60	26.60	22.70	21.90	2.50
.635	5/8	64	M16	0.4	131.80	100.10	73.60	55.60	46.60	37.80	32.50	29.60	27.00	2.60
.709	11/16	64	M18	0.4	137.90	105.70	78.80	60.90	51.10	41.30	36.50	33.10	30.60	3.50
.760	3/4	64	-----	---	142.60	111.10	84.20	66.30	55.60	45.80	40.60	37.10	34.40	4.10
.823	13/16	64	M20	0.4	151.80	116.40	91.40	73.40	60.90	49.80	45.80	42.50	39.10	5.20
.885	7/8	64	M22	0.4	158.50	116.80	98.70	80.80	67.10	57.30	53.20	49.50	45.70	5.60
.948	15/16	64	M24	0.4	160.90	127.50	102.20	84.20	72.60	61.70	56.40	51.80	48.90	6.00
1.010	1"	64	M25	0.4	175.70	140.50	114.80	97.00	84.20	72.30	66.10	60.70	55.80	7.30

Refer to page 122 for tap dimensions.



For tap standards and dimensions,  
see 'Tables for Tap Dimensions'  
on pages 122-131.

**PRICING TABLES:  
SPECIAL TAPS**

**H.S.S. SPECIAL HAND TAPS**

RIGHT AND LEFT HAND INCLUDING METRIC SIZES TO TABLES 302-303

INCHES SIZE	METRIC			Length Overall	Length of Full Thread	† TAP DIMEN. TABLE	* NUMBER OF FLUTES	LIST PRICE IN QUANTITIES OF							
	MAX. TPI	SIZE MM	MIN. PITCH MM					1	2	3-5	6-8	9-11	12-23	24-47	48-71
1 1/16	13	M27	2	5 1/8	2 1/2	302	4-6	192.80	156.30	129.90	111.00	92.30	83.00	77.10	71.80
	55	M27	0.5	4	1 1/2	303	6-8-10	175.40	137.60	112.30	92.40	79.70	68.70	63.30	60.30
1 1/8	13	M28	2	5 7/16	2 9/16	302	4-6	196.40	159.90	133.60	114.80	96.10	86.40	80.90	75.50
	55	M28	0.5	4	1 1/2	303	6-8-10	176.70	138.70	113.30	93.50	80.90	70.00	64.60	61.60
1 3/16	13	M30	2	5 7/16	2 9/16	302	4-6	215.40	178.30	152.50	133.80	113.70	103.50	96.10	90.70
	55	M30	0.5	4	1 1/2	303	6-8-10	193.00	155.20	129.40	110.00	95.70	82.30	77.60	73.20
1 1/4	13	M32	2	5 3/4	2 9/16	302	4-6	219.00	181.90	156.10	137.40	117.50	107.30	99.60	94.10
	55	M32	0.5	4	1 1/2	303	6-8-10	195.50	157.60	131.50	111.50	97.70	84.90	79.70	74.90
1 5/16	13	M33	2	5 3/4	2 9/16	302	4-6	240.60	203.90	176.80	140.80	131.60	120.10	105.50	100.80
	55	M33	0.5	4	1 1/2	303	6-8-10	207.60	166.80	140.80	122.20	110.10	97.80	89.70	76.90
1 3/8	13	M35	2	6 1/16	3	302	4-6	243.70	206.90	179.30	147.70	134.10	121.60	107.20	102.40
	55	M35	0.5	4	1 1/2	303	6-8-10	209.60	169.20	143.00	123.90	111.40	99.40	90.90	79.30
1 7/16	13	M36	2	6 1/16	3	302	4-6	274.20	250.20	214.90	187.00	166.00	142.40	123.40	116.80
	55	M36	0.5	4	1 1/2	303	6-8-10	224.00	180.00	155.10	136.10	123.90	111.80	103.70	93.10
1 1/2	13	M38	2	6 3/8	3	302	4-6	276.90	253.90	216.40	195.10	168.40	143.50	124.80	118.40
	55	M38	0.5	4	1 1/2	303	6-8-10	227.50	183.60	156.80	137.60	125.40	113.30	104.90	98.90
1 5/8	9	M39	3	6 11/16	3 3/16	302	6	302.60	277.80	241.70	215.40	201.10	183.20	160.20	148.90
	55	M39	0.5	5	2	303	6-8-10	268.70	240.40	204.10	179.30	164.00	149.80	129.40	119.30
1 3/4	9	M42	3	7	3 3/16	302	6	338.60	294.40	258.50	231.10	217.10	203.40	183.20	170.40
	55	M42	0.5	5	2	303	6-8-10	283.10	255.30	218.80	192.80	178.60	164.00	146.40	126.70
1 7/8	9	M45	3	7 5/16	3 9/16	302	6	365.40	344.00	296.30	271.60	256.80	242.40	218.70	207.90
	55	M45	0.5	5	2	303	6-8-10	295.60	269.50	234.80	207.60	193.00	178.50	159.00	148.30
2"	9	M48	3	7 5/8	3 9/16	302	6	383.20	360.20	312.30	287.90	273.10	258.50	235.00	227.90
	47	M48	0.5	5	2	303	6-8-10	309.90	284.10	247.60	222.50	209.20	196.20	173.60	164.60
2 1/8	9	M54	3	8	3 9/16	302	6	419.10	393.60	345.60	318.40	304.60	290.80	267.20	260.20
	47	M54	0.5	5 1/4	2	303	6	372.60	347.60	299.40	274.40	259.70	243.30	221.80	213.30
2 1/4	9	M56	3	8 1/4	3 9/16	302	6	517.50	491.30	432.80	389.40	371.80	354.50	330.60	317.20
	47	M56	0.5	5 1/4	2	303	6	397.50	379.20	336.80	307.60	293.10	278.60	255.30	241.30
2 3/8	9	M60	3	8 1/2	4	302	6	542.60	518.80	458.40	416.50	396.50	376.20	350.70	341.10
	47	M60	0.5	5 1/4	2	303	6	419.10	401.20	356.00	330.60	317.40	304.30	275.70	260.20
2 1/2	9	M63	3	8 3/4	4	302	6	576.50	553.50	490.30	447.70	430.10	413.10	389.30	377.00
	47	M63	0.5	5 1/4	2	303	6	503.30	469.40	412.80	369.00	349.60	330.60	306.60	285.50
2 5/8	9	M64	3	8 3/4	4	302	6	612.40	594.40	531.80	489.90	471.70	453.80	430.00	**
	47	M64	0.5	5 1/2	2	303	6	524.80	496.20	434.40	390.90	376.20	361.80	334.50	**
2 3/4	9	M70	3	9 1/4	4	302	6	759.20	695.80	602.90	553.80	536.10	518.50	494.70	**
	47	M70	0.5	5 1/2	2	303	6	546.30	519.50	463.80	416.10	398.50	380.80	357.10	**
2 7/8	9	M72	3	9 1/4	4	302	6	789.80	738.30	637.10	590.80	570.30	551.80	527.90	**
	47	M72	0.5	5 1/2	2	303	6	567.70	546.30	485.00	442.80	425.30	407.70	384.30	**
3"	9	M76	3	9 3/4	4 9/16	302	6	838.20	785.60	683.80	**	**	**	**	**
	47	M76	0.5	5 1/2	2	303	8	599.90	578.60	518.60	**	**	**	**	**
3 1/8	9	M79	3	9 3/4	4 9/16	302	6	951.70	881.90	865.20	**	**	**	**	**
	35	M79	0.7	5 3/4	2"	303	8	772.60	708.80	692.20	**	**	**	**	**
3 1/4	9	M82	3	10"	4 9/16	302	6	988.10	915.30	897.00	**	**	**	**	**
	35	M82	0.7	5 3/4	2"	303	6-8	813.70	745.40	727.10	**	**	**	**	**
3 1/2	9	M89	3	10 1/4	4 15/16	302	6	1168.70	1095.90	1077.70	**	**	**	**	**
	35	M89	0.7	5 3/4	2"	303	6-8	942.60	874.40	857.60	**	**	**	**	**
3 5/8	9	M92	3	10 1/4	4 15/16	302	8	1989.30	1961.70	1940.90	**	**	**	**	**
	35	M92	0.7	6"	2"	303	8	1574.90	1547.30	1529.30	**	**	**	**	**
3 3/4	9	M95	3	10 1/2	5 5/16	302	10	2086.00	2061.10	2041.80	**	**	**	**	**
	35	M95	0.7	6"	2"	303	10	1602.60	1581.80	1572.10	**	**	**	**	**
3 7/8	9	M98	3	10 1/2	5 5/16	302	10	2155.10	2130.30	2124.70	**	**	**	**	**
	35	M98	0.7	6"	2"	303	10	1637.10	1620.40	1619.10	**	**	**	**	**
4"	9	M101	3	10 1/2	5 5/16	302	10	2189.60	2164.70	2161.90	**	**	**	**	**
	35	M101	0.7	6"	2"	303	10	1671.60	1650.90	**	**	**	**	**	**

† Refer to pages 122, 123, 125 for tap dimensions of Tables 302, 303.

TABLE 302 = LONG SERIES BLANK

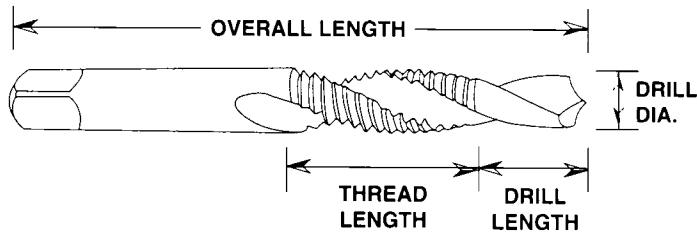
TABLE 303 = SHORT SERIES BLANK

\* NOTE: 303 Blanks 1 1/16" through 4", number of flutes used will depend on TPI.

\*\*Consult factory for pricing.

# PRICING TABLES: SPECIAL TAPS

## COST CUTTER™ Drill & Tap ENGINEERING DATA AND DIMENSIONS



# COST CUTTER™

Combination Drill & Tap

### INCH SIZES

SIZE	PITCH	LIMIT	EDP#	OVERALL LENGTH	THREAD LENGTH	DRILL LENGTH	DRILL DIAMETER	PRICE EACH
4	40 NC	GH-2	29000	1 7/8	3/8	1/4	.091	12.90
6	32 NC	GH-3	29004	2	7/16	5/16	.112	12.70
8	32 NC	GH-3	29006	2 1/8	1/2	3/8	.138	12.70
10	24 NC	GH-3	29008	2 3/8	5/8	13/32	.155	12.70
10	32 NF	GH-3	29009	2 3/8	5/8	13/32	.164	12.70
12	24 NC	GH-3	29010	2 3/8	21/32	15/32	.180	12.70
1/4	20 NC	GH-3	29012	2 1/2	25/32	17/32	.208	12.70
1/4	28 NF	GH-3	29013	2 1/2	25/32	17/32	.220	13.00
5/16	18 NC	GH-3	29014	2 23/32	15/16	11/16	.266	19.30
5/16	24 NF	GH-3	29015	2 23/32	15/16	11/16	.277	19.30
3/8	16 NC	GH-3	29016	2 15/16	1 1/8	13/16	.322	23.30
3/8	24 NF	GH-3	29017	2 15/16	1 1/8	13/16	.340	23.30
7/16	14NC	GH-3	29018	3 3/4	1 1/4	1	.377	28.00
7/16	20NF	GH-3	29019	3 3/4	1 1/4	1	.395	28.00
1/2	13NC	GH-3	29020	4 1/16	1 3/8	1 1/8	.435	31.60
1/2	20NF	GH-3	29022	4 1/16	1 3/8	1 1/8	.458	31.60
5/8	11 NC	GH-3	29036	5 1/16	1 3/4	1 1/2	.548	98.70

### METRIC SIZES

SIZE	PITCH	LIMIT	EDP#	OVERALL LENGTH	THREAD LENGTH	DRILL LENGTH	DRILL DIAMETER	PRICE EACH
M3	.5	D3	29024	1 15/16	13/32	9/32	.102	13.20
M3.5	.6	D4	29025	2	7/16	5/16	.120	12.70
M4	.7	D4	29026	2 1/8	1/2	3/8	.134	12.70
M4.5	.75	D4	29027	2 3/8	5/8	13/32	.152	12.70
M5	.8	D4	29028	2 3/8	5/8	13/32	.172	12.70
M6	1	D5	29029	2 1/2	25/32	17/32	.203	12.70
M7	1	D5	29030	2 23/32	15/16	11/16	.242	19.30
M8	1.25	D5	29031	2 23/32	15/16	11/16	.274	19.30
M10	1.50	D6	29032	2 15/16	1 1/8	13/16	.344	23.30
M12	1.75	D6	29033	4 1/16	1 3/8	1 1/8	.414	31.60

### PIPE SIZES (NPT/F)

SIZE	PITCH	EDP#	OVERALL LENGTH	THREAD LENGTH	DRILL LENGTH	DRILL DIAMETER	PRICE EACH
1/16	27	29040	2 13/16	11/16	11/16	.242	55.80
1/8	27	29041	2 7/8	3/4	3/4	.332	65.80
1/4	18	29042	3 5/16	1 1/16	7/8	.438	77.00
3/8	18	29043	3 1/2	1 1/16	15/16	.562	94.10
1/2	14	29044	4 3/8	1 3/8	1 1/4	.703	139.40
3/4	14	29045	4 9/16	1 3/8	1 5/16	.906	190.30
1	11 1/2	29046	5 3/8	1 3/4	1 5/8	1.141	280.40

### NOTES

- For use on through-hole applications only.
- Drill point must break through part prior to threading.
- Stock Cost Cutters are designed to drill and tap 'through-holes' up to 2X the nominal diameter.
- Spindle speeds should be set at normal speed for tapping specific material being machined; as with any tapping operation, a reversing spindle is required.

- *Significantly increases part throughput in production runs.*
- *Drill designed with a split point, which eliminates a center-drilling/punching operation.*
- *Available as popular specials in inch, metric and pipe sizes; blueprint specials to exact specifications also available.*



For tap standards and dimensions,  
see 'Tables for Tap Dimensions'  
on pages 122-131.

**PRICING TABLES:**  
**SPECIAL TAPS**

**TRU-FLO® THREAD FORMING TAPS**  
TO TABLE 302-A

SIZE	SIZE MM	LIST PRICE IN QUANTITIES OF								MULTI LEAD
		1	2	3-5	6-8	9-11	12-23	24-47	48-71	
#0	M1.5, M1.6	144.90	108.00	77.30	53.90	42.30	33.40	28.70	24.90	12.10
#1	M1.8	143.90	107.10	76.40	53.90	40.60	32.10	27.30	23.50	12.10
#2	M2, M2.2	143.00	106.10	75.40	51.30	39.70	31.30	26.50	22.70	12.10
#3	M2.3, M2.5, M2.6	136.10	100.20	68.70	45.50	35.00	27.10	22.50	19.70	12.10
#4	-----	131.10	94.70	64.70	41.00	31.40	24.20	19.50	15.20	10.60
#5	M3	131.10	94.70	64.70	41.00	31.40	24.20	19.50	15.20	10.60
#6	M3.5	127.90	91.60	61.90	39.10	28.80	22.20	17.50	13.40	9.20
#8	M4	127.90	91.60	61.90	39.10	28.80	22.20	17.50	13.40	9.20
#10	M4.5, M5	127.90	91.60	61.90	39.10	28.80	22.20	17.50	13.40	9.20
#12	M5.5	132.30	96.20	65.40	42.10	30.20	23.30	19.50	15.20	9.20
1/4	M6	133.10	97.00	66.10	43.10	32.40	24.50	19.80	15.20	9.20
5/16	M7, M8	133.90	97.70	67.30	44.20	33.10	25.20	20.50	17.90	9.20
3/8	M9, M10	138.90	102.30	71.60	47.80	35.60	27.50	22.90	19.10	10.60
7/16	M11	143.20	106.30	75.60	51.60	39.60	31.40	26.60	21.60	11.40
1/2	M12	147.20	109.90	78.90	55.70	44.10	35.10	29.10	25.20	13.00
9/16	M14	150.10	112.70	81.90	59.40	47.50	38.00	32.10	28.60	13.80
5/8	M16	156.10	118.40	88.40	65.60	53.20	44.20	38.20	35.00	13.80
11/16	M18	161.50	123.70	92.40	72.20	58.10	48.60	42.90	38.80	14.70
3/4	-----	167.30	130.10	100.10	78.80	64.30	54.10	48.10	44.40	15.20
13/16	M20	178.40	137.40	107.90	86.80	71.00	59.50	53.90	50.10	16.80
7/8	M22	186.00	145.60	116.70	95.30	79.40	67.60	62.40	58.20	17.50
15/16	M24	189.50	149.70	120.60	99.50	83.00	72.20	64.20	60.40	18.20
1"	M25	205.40	163.90	134.10	113.60	97.20	84.60	77.40	72.60	19.70

Refer to page 124 for tap dimensions.

*Multiple leads, special chamfer, and spiral lobes are available.*  
"TRU-FLO" Thread Forming Taps are available in SOLID CARBIDE. Call for pricing.

**COOLANT-THROUGH TAPS**  
TO TABLE 302-A



SIZE	METRIC	MAX THD.	LIST PRICE IN QUANTITIES OF							
			1	2	3-5	6-8	9-11	12-23	24-47	48-71
1/4	M6	80	123.90	93.70	68.50	49.40	39.60	33.40	29.10	25.10
5/16	M8	80	125.20	94.30	69.50	50.10	40.80	33.70	29.30	25.10
3/8	M10	80	126.10	122.30	70.10	50.40	41.30	33.70	29.50	26.80
		80	126.10	122.30	70.10	50.40	41.30	33.70	29.50	26.80
7/16	M11	80	129.50	98.80	74.10	53.20	45.20	37.70	32.40	30.20
1/2	M12	80	134.50	102.90	77.10	57.40	46.70	40.50	36.20	32.80
9/16	M14	64	139.00	107.20	81.40	62.80	53.10	45.60	40.80	37.80
5/8	M16	64	143.20	111.30	85.60	68.00	59.40	50.80	45.60	42.80
3/4	M16	64	154.40	123.80	97.60	80.40	69.90	60.40	55.20	52.00
7/8	M22	64	253.90	192.20	156.60	142.20	124.70	110.00	100.80	93.90
1"	M25	64	263.90	203.30	168.10	154.60	125.20	111.00	102.50	96.60

Refer to page 124 for tap dimensions.

# PRICING TABLES: SPECIAL TAPS

For tap standards and dimensions,  
see 'Tables for Tap Dimensions'  
on pages 122-131.

## H.S.S. SPECIAL PIPE TAPS - NPS, NPT & BSPP, BSPT RIGHT AND LEFT HAND • FULL OR INTERRUPTED THREAD TO TABLE 311

### BRITISH STRAIGHT PIPE (BSP)

Also referred to as British Gas, British Pipe Parallel or Parallel Fastening Thread. Various Symbols: BSP, BSPP, BSPP1, BSPP, BSPG, PS, R,G, R<sub>P</sub>

### BRITISH TAPER PIPE (BSPT)

Also referred to as British Standard Taper Pipe, or Pipe Taper, or Conical Thread. Various Symbols: BSPT, BSPT<sub>r</sub>, PT, KR, Rc.

NPS NPT PIPE	BSPP BSPT PIPE	EQUIV. HAND TAP SIZE	MIN. PROJ.	# OF FLUTES	FULL OR NPT INT. THD.	LIST PRICE IN QUANTITIES OF						
						1	2	3-5	6-8	9-11	12-23	24-47
1/16-27	1/16-28	5/16	.060	4	NPS FULL THD	119.00	87.40	60.80	40.00	29.90	22.80	18.70
					NPT FULL THD	120.70	89.30	62.50	41.70	31.60	24.50	20.40
					NPT INT THD	124.80	93.40	66.70	45.80	35.70	28.70	24.50
1/8-27	1/8-28	7/16	.060	4	NPS FULL THD	121.80	90.30	63.60	42.90	33.60	25.60	21.80
					NPT FULL THD	123.90	92.40	65.80	44.80	35.60	27.80	23.90
					NPT INT THD	128.60	97.10	70.40	49.50	40.30	32.40	28.30
1/4-18	1/4-19	9/16	.120	4	NPS FULL THD	127.90	96.30	70.00	49.70	40.90	31.80	27.60
					NPT FULL THD	131.00	99.40	73.20	52.90	44.10	35.10	30.80
					NPT INT THD	137.80	106.20	80.00	59.70	50.90	41.80	37.70
3/8-18	3/8-19	11/16	.140	4	NPS FULL THD	136.10	103.40	77.30	59.00	49.20	39.50	35.10
					NPT FULL THD	139.40	107.00	80.80	62.40	52.60	43.10	38.50
					NPT INT THD	146.70	114.00	88.00	69.60	59.70	50.20	45.70
1/2-14	1/2-14	7/8	.260	4	NPS FULL THD	155.60	121.70	97.60	78.40	69.70	61.10	50.90
					NPT FULL THD	159.30	125.60	101.40	82.00	73.40	65.00	54.70
					NPT INT THD	168.20	134.30	110.10	90.90	82.20	73.60	63.30
3/4-14	3/4-14	1 1/16	.245	5	NPS FULL THD	168.60	133.70	108.60	90.70	78.90	66.90	61.90
					NPT FULL THD	173.50	138.60	113.40	95.40	83.90	71.70	66.90
					NPT INT THD	184.20	149.20	124.00	106.10	94.60	82.30	77.40
1"-11 1/2	1"-11	1 5/16	.310	5	NPS FULL THD	202.80	163.10	138.00	119.90	113.10	97.20	89.40
					NPT FULL THD	208.90	169.20	144.40	126.00	119.30	103.40	95.60
					NPT INT THD	224.20	184.50	159.70	141.30	134.50	118.60	110.80
1 1/4-11 1/2	1 1/4-11	1 11/16	.370	5	NPS FULL THD	260.40	236.50	201.90	176.90	163.70	149.10	129.40
					NPT FULL THD	268.90	245.00	210.20	185.20	172.10	157.30	137.70
					NPT INT THD	290.10	266.20	231.40	206.50	193.40	178.50	159.10
1 1/2-11 1/2	1 1/2-11	2"	.380	7	NPS FULL THD	302.80	282.60	247.60	222.80	210.50	195.30	175.90
					NPT FULL THD	312.60	292.30	257.10	232.60	220.20	205.00	185.50
					NPT INT THD	339.90	319.70	284.60	259.70	247.60	232.30	212.90
2"-11 1/2	2"-11	2 1/2	.380	7	NPS FULL THD	388.70	363.00	320.40	287.40	275.40	258.10	234.90
					NPT FULL THD	399.80	374.00	331.50	298.50	286.30	269.10	245.90
					NPT INT THD	436.20	410.40	367.90	334.80	322.70	305.40	282.40
2 1/2-8	2 1/2-11	3"	.525	7	NPS FULL THD	583.30	534.30	487.00	PRICE ON APPLICATION			
					NPT FULL THD	599.90	550.80	503.50				
					NPT INT THD	668.20	619.30	571.80				

Refer to page 128 for tap dimensions.



**H.S.S. SPECIAL ACME HAND TAPS TO TABLE 302**

For your special application needs, consult us for tap design and layout. Please furnish specific material being tapped, type of hole (through, blind or cleared) and depth of hole before threading.

SIZE	LIST PRICE IN QUANTITIES OF							MULTI LEAD (EA)
	1	2	3-5	6-8	9-11	12-23	24-47	
1/4	133.40	97.10	66.10	42.90	33.70	24.70	21.10	11.80
5/16	134.10	97.90	66.90	44.00	34.50	25.10	23.60	17.50
3/8	139.20	99.80	71.70	47.80	37.80	27.50	24.30	17.50
7/16	143.80	100.90	75.60	51.60	41.40	31.40	27.40	26.40
1/2	147.60	102.50	78.90	55.70	47.80	35.10	31.90	35.20
9/16	150.50	105.50	81.90	59.40	51.30	38.20	35.10	35.20
5/8	156.80	110.30	88.10	65.60	55.00	44.20	39.10	35.20
11/16	159.30	111.60	90.10	72.20	59.70	48.60	42.80	35.20
3/4	161.60	114.80	92.70	75.00	62.70	51.10	45.20	35.20
13/16	165.40	118.50	97.00	78.70	70.10	60.20	57.00	46.90
7/8	174.40	127.60	102.90	85.60	73.00	66.50	62.40	58.60
15/16	176.50	143.80	113.30	93.90	80.10	73.00	69.70	58.50
1"	192.90	156.20	125.90	101.90	86.80	79.20	75.90	58.60
1 1/8	217.60	185.00	159.20	137.00	131.00	121.50	113.70	70.30
1 1/4	230.90	195.20	169.30	150.20	147.50	144.80	142.20	70.30
1 3/8	256.30	214.60	179.90	160.70	157.90	155.30	152.70	70.30
1 1/2	283.20	254.70	213.50	194.50	191.80	189.10	186.30	70.30

Refer to page 122 for tap dimensions.

Taps shown in above table are designed for blind or through holes in free machining steels, cast iron, zinc and aluminum die cast where the length of the hole does not exceed 1-1/2 times the diameter and the threads per inch are not coarser than the standard 60 degree NC threads.

**H.S.S. SPECIAL TANDEM STYLE ACME TAPS**  
*RIGHT AND LEFT HAND • CLASS OF FIT OTHER THAN 2G*

SIZE	LIST PRICE IN QUANTITIES OF							MULTI LEAD (EA)
	1	2	3-5	6-8	9-11	12-23	24-47	
1/4	191.30	160.60	132.90	120.90	106.20	98.30	84.20	23.50
5/16	191.30	160.60	132.90	120.90	106.20	98.30	84.20	23.50
3/8	203.70	172.20	140.60	125.50	112.90	100.20	88.00	29.30
1/2	203.70	172.20	140.60	125.50	112.90	100.20	88.00	43.90
5/8	215.00	188.10	158.70	145.90	135.30	124.60	107.80	70.20
3/4	249.00	221.70	193.20	181.20	169.60	158.50	142.40	79.10
7/8	258.00	231.50	202.60	189.00	178.40	167.50	150.00	105.30
1"	339.30	307.70	272.50	239.00	227.50	216.20	193.20	128.60
1 1/8	384.80	342.60	295.40	261.80	254.50	246.30	227.50	128.60
1 1/4	391.90	351.60	307.70	288.20	278.60	272.90	267.70	128.60
1 3/8	444.60	393.70	341.00	323.40	PRICE ON APPLICATION			140.20
1 1/2	499.00	444.60	373.00	353.30				140.20
1 3/4	584.90	513.30	438.70	397.00				210.30
2"	696.20	604.10	507.90	455.10				265.70

Refer to page 131 for tap dimensions.

**PRICING TABLES:**  
**SPECIAL TAPS**

*For tap standards and dimensions,  
see 'Tables for Tap Dimensions'  
on pages 122-131.*

**SOLID CARBIDE TAPS - INCH**  
*TO TABLE 302-A*

Size	H Limit	# of Flutes	EDP# Plug	EDP# Bottom	Price Each in Quantities of						
					1	2	3	6	9	12	24
#0-80	H2	2	41579	41580	96.90	92.40	84.60	83.10	79.70	76.60	72.30
#2-56	H2	2	41536	41537	90.80	86.20	80.90	76.30	73.20	69.60	65.90
#2-56 SPPT	H2	2	41538		93.90	89.40	84.00	79.40	76.30	72.80	69.20
#4-40	H2	2	41007	41008	84.60	80.20	74.90	70.30	67.10	63.50	59.80
#4-40 SPPT	H2	2	41009		87.70	83.20	78.10	73.40	70.30	66.90	63.10
#4-48	H2	2	41017	41018	84.60	80.20	74.90	70.30	67.10	63.50	59.80
#4-48 SPPT	H2	2	41019		87.70	83.20	78.10	73.40	70.30	66.90	63.10
#5-40	H2	3	41034	41035	82.30	78.50	74.10	70.00	67.00	63.30	59.70
#5-40 SPPT	H2	2	41032		85.60	81.70	77.30	73.20	70.10	66.50	63.00
#6-32	H3	3	41074	41075	82.30	78.50	74.10	70.00	67.00	63.30	59.70
#6-32 SPPT	H3	2	41072		83.90	80.10	75.70	71.60	68.50	64.90	61.50
#6-40	H2	3	41092	41093	82.30	78.50	74.10	70.00	67.00	63.30	59.70
#8-32	H3	4	41125	41126	87.30	81.10	78.40	72.30	70.80	68.40	67.00
#8-32 SPPT	H3	2	41120		90.70	84.50	81.70	75.50	74.10	71.60	70.10
#8-36	H2	4	41147	41148	87.30	81.10	78.40	72.30	70.80	68.40	67.00
#10-24	H3	4	41180	41181	96.60	88.80	82.00	74.70	73.10	72.30	67.90
#10-24 SPPT	H3	2	41175		102.60	94.80	88.00	80.70	78.80	78.20	73.80
#10-32	H3	4	41213	41214	96.60	88.80	82.00	74.70	73.10	72.30	67.90
#10-32 SPPT	H3	2	41208		102.60	94.80	88.00	80.70	78.80	78.40	73.80
#12-24	H3	4	41246	41247	111.30	104.60	100.40	96.30	94.00	92.90	78.10
#12-24 SPPT	H3	2	41241		118.40	111.60	107.60	103.40	101.20	100.00	85.30
#12-28	H3	4	41279	41280	111.30	104.60	100.40	96.30	94.00	92.90	78.10
#12-28 SPPT	H3	2	41274		118.40	111.60	107.60	103.40	101.20	100.00	85.30
1/16-27 NPT/F		4	41800		220.20	216.10	215.60	215.00	203.10	195.90	185.20
1/8-27 NPT		4	41801		223.70	219.40	218.90	218.50	206.50	199.30	188.60
1/8-27 NPSF		4	41807		223.70	219.40	218.90	218.50	206.50	199.30	188.60
1/4-18 NPT		4	41802		239.90	236.10	235.70	230.50	227.50	224.80	223.70
1/4-20	H3	4	41312	41313	114.60	107.70	103.50	99.50	97.20	96.20	81.40
1/4-20 SPPT	H3	2	41307		121.60	114.90	110.80	106.70	104.50	103.20	88.50
1/4-28	H3	4	41345	41346	114.60	107.70	103.50	99.50	97.20	96.20	81.40
1/4-28 SPPT	H3	2	41340		121.60	114.90	110.80	106.70	104.50	103.20	88.50
5/16-18	H3	4	41378	41379	159.20	144.00	134.80	123.40	117.90	113.30	103.00
5/16-18 SPPT	H3	2	41373		166.50	151.00	142.00	130.60	125.20	120.30	110.10
5/16-24	H3	4	41411	41412	159.20	144.00	134.80	123.40	117.90	113.30	103.00
3/8-16	H3	4	41444	41445	168.40	159.40	152.70	147.80	146.60	145.60	131.10
3/8-16 SPPT	H3	3	41442		175.70	166.60	159.80	155.10	153.50	152.80	138.00
3/8-24	H3	4	41476	41477	168.40	159.40	152.70	147.80	146.60	145.60	131.10
7/16-14	H3	4	41520	41521	206.40	199.10	197.30	191.80	185.10	181.30	171.60
7/16-14 SPPT	H3	3	41522		220.00	212.90	211.00	205.30	198.80	195.00	185.20
7/16-20	H3	4	41524	41525	206.40	199.10	197.30	191.80	185.10	181.30	171.60
7/16-20 SPPT	H3	3	41526		220.00	212.90	211.00	205.30	198.80	195.00	185.20
1/2-13	H3	4	41528	41529	211.00	204.60	201.60	196.20	192.40	190.50	182.60
1/2-13 SPPT	H3	3	41530		226.10	219.80	217.10	211.40	207.60	205.70	197.70
1/2-20	H3	4	41532	41533	211.00	204.60	201.60	196.20	192.40	190.50	182.60
1/2-20 SPPT	H3	3	41534		226.10	219.80	217.10	211.40	207.60	205.70	197.70

Refer to page 124 for tap dimensions

**SOLID CARBIDE TAPS - METRIC**  
TO TABLE 302-A

Size	H Limit	# of Flutes	EDP# Plug	EDP# Bottom	Price Each in Quantities of						
					1	2	3	6	9	12	24
M3 x .5	D3	3	43001	43002	88.50	84.60	80.20	75.90	73.10	69.50	65.80
M3 x .5 SPPT	D3	2	43003		91.60	87.70	83.40	79.20	76.20	72.60	69.00
M3.5 x 0.6	D4	3	43005	43006	82.30	78.50	74.10	70.00	67.00	63.30	59.70
M3.5 x 0.6 SPPT	D4	2	43007		83.90	80.10	75.70	71.60	68.50	64.90	61.50
M4 x 0.7	D4	4	43009	43010	93.50	87.20	84.50	78.40	76.90	74.50	67.00
M4 x 0.7 SPPT	D4	2	43011		96.60	90.70	87.60	81.50	80.20	77.70	70.10
M4.5 x 0.75	D4	4	43013	43014	104.20	96.40	89.50	82.20	80.70	80.00	75.50
M4.5 x 0.75 SPPT	D4	2	43015		110.10	102.40	95.40	88.30	86.50	85.80	81.40
M5 x 0.8	D4	4	43017	43018	104.20	96.40	89.50	82.20	80.70	80.00	75.50
M5 x 0.8 SPPT	D4	2	43019		110.10	102.40	95.40	88.30	86.50	85.80	81.40
M6 x 1.0	D5	4	43021	43022	121.70	115.50	111.60	107.80	105.70	104.70	90.90
M6 x 1.0 SPPT	D5	2	43023		129.00	122.60	118.70	114.90	112.90	111.60	97.80
M7 x 1.0	D5	4	43025	43026	167.70	152.30	143.10	131.70	126.30	121.60	111.40
M7 x 1.0 SPPT	D5	2	43027		174.70	159.40	150.20	139.00	133.60	128.70	118.50
M8 x 1.25	D5	4	43029	43030	167.70	152.30	143.10	131.70	126.30	121.60	111.40
M8 x 1.25 SPPT	D5	2	43031		174.70	159.40	150.20	139.00	133.60	128.70	118.50
M8 x 1.0	D5	4	43033	43034	167.70	152.30	143.10	131.70	126.30	121.60	111.40
M10 x 1.5	D6	4	43037	43038	183.70	174.60	167.90	163.10	161.60	160.80	146.20
M10 x 1.5 SPPT	D6	3	43039		197.40	188.30	181.60	176.80	175.30	174.50	159.90
M12 x 1.75	D6	4	43045	43046	211.00	204.60	201.60	196.20	192.40	190.50	182.60
M12 x 1.75 SPPT	D6	3	43047		226.10	219.80	217.10	211.40	207.60	205.70	197.70

Refer to page 124 for tap dimensions.

**CARB-I-SERT™**  
**CARBIDE INSERT TAPS**

Size	# of Flutes	EDP# Plug	EDP# Bottom	Price Each in Quantities of						
				1	2	3	6	9	12	24
3/8-18 NPT/F	4	41808		363.60	330.10	299.40	278.30	259.70	250.60	240.50
1/2-14 NPT/F	4	41809		377.10	344.40	323.10	298.90	291.10	277.50	261.90
9/16-12	4	41540	41541	246.60	246.60	246.60	226.70	223.00	216.00	214.30
9/16-18	4	41543	41544	246.60	246.60	246.60	226.70	223.00	216.00	214.30
5/8-11	4	41546	41547	291.10	291.10	291.10	276.00	266.20	247.80	233.50
5/8-18	4	41549	41550	291.10	291.10	291.10	276.00	266.20	247.80	233.50
3/4-10	4	41552	41553	318.00	318.00	318.00	298.90	293.30	281.90	277.50
3/4-14 NPT/F	4	41810		526.50	519.50	410.10	372.90	365.70	353.00	333.00
3/4-16	4	41555	41556	318.00	318.00	318.00	298.90	293.30	281.90	277.50
7/8-9	4	41558	41559	348.70	336.00	330.20	313.40	311.50	307.40	303.90
7/8-14	4	41561	41562	348.70	336.00	330.20	313.40	311.50	307.40	303.90
1"-8	4	41564	41565	397.70	390.10	377.10	350.70	347.30	340.10	326.00
1"-11-1/2 NPT/F	6	41811		665.90	653.10	555.00	512.50	499.50	474.00	455.40
1"-12	4	41567	41568	397.70	390.10	377.10	350.70	347.30	340.10	326.00
1-1/4-7	4	41570	41571	473.30	469.50	462.60	454.00	438.20	422.70	415.70
1-3/8-12	4	41573	41574	526.50	509.50	497.30	476.80	469.60	456.80	439.80
1-1/2-8	4	41576	41577	532.30	524.90	509.50	486.70	476.80	461.00	448.90

**PRICING TABLES:**  
**SPECIAL DIES**

**SPECIAL DIES AND ADAPTERS**

ROUND ADAPTERS

EDP #	DESCRIPTION	PRICE EACH
13656	Die O.D. = 1" / Adapter O.D. = 1-1/2"	36.80
13657	Die O.D. = 1" / Adapter O.D. = 2"	46.00
13658	Die O.D. = 1 1/2" / Adapter O.D. = 2"	46.00
13659	Die O.D. = 1 1/2" / Adapter O.D. = 2 1/2"	52.40
13660	Die O.D. = 2" / Adapter O.D. = 2 1/2"	52.40
13661	Die O.D. = 2 1/2" / Adapter O.D. = 3"	68.80

HEX ADAPTERS

EDP #	DESCRIPTION	PRICE EACH
13650	Die OD 1"	36.80
13651	Die OD 1-1/2"	46.00
13652	Die OD 2"	52.40
13653	Die OD 2-1/2"	68.80
13654	(Fine) Die OD 3"	101.90
13655	(Coarse) Die OD 3"	101.90

HEX DIES

SIZE	METRIC	PRICE EACH IN QUANTITIES OF			
		1	2	3	6
1/4	M6	89.70	62.00	41.80	30.60
5/16	M8	94.10	65.90	45.70	34.40
3/8, 7/16	M11	98.90	70.30	50.30	38.50
1/2, 9/16	M14	129.40	91.20	64.40	49.20
5/8	M16	139.40	100.20	73.40	58.00
11/16, 3/4	M18	148.70	109.00	81.80	65.80
7/8	M22	158.90	117.80	91.60	74.70
1"	M25	200.10	146.70	111.30	78.80
1 1/8	M28	219.40	175.30	131.50	83.10
1 1/4	M31	245.60	199.10	152.90	115.50
1 3/8	M33	265.90	220.50	175.30	131.30
1 1/2	M38	274.20	225.10	184.30	143.00
1 5/8, 1 3/4, 1 7/8	M45	381.30	320.00	257.80	185.20
2", 2 1/8, 2 1/4	M56	437.60	370.90	309.20	230.30
2 3/8, 2 1/2, 2 5/8, 2 3/4	M69	663.70	484.10	418.80	POA
2 7/8, 3", 3 1/4, 3 3/8, 3 1/2	M88	725.00	545.50	466.80	POA

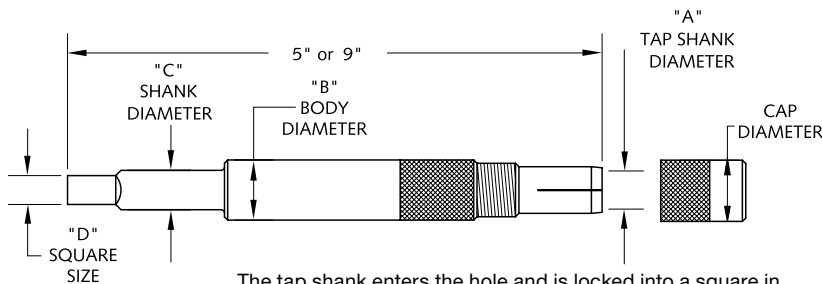
ROUND ADJUSTABLE DIES

SIZE	METRIC	OD	MAX TPI	PRICE EACH IN QUANTITIES OF			
				1	2	3	6
#4 - 3/8"	M3 - M9	1"	80	88.60	71.80	52.00	38.30
7/16" - 5/8"	M10 - M18	1 1/2"	40	129.80	107.90	71.20	62.50
11/16" - 1 1/16"	M19 - M27	2"	40	202.90	171.10	107.50	93.50
1 1/8" - 1 1/2"	M30 - M38	2 1/2"	28	250.50	217.70	151.30	132.80
1 9/16" - 2"	M39 - M48	3"	28	298.10	264.40	242.10	172.00

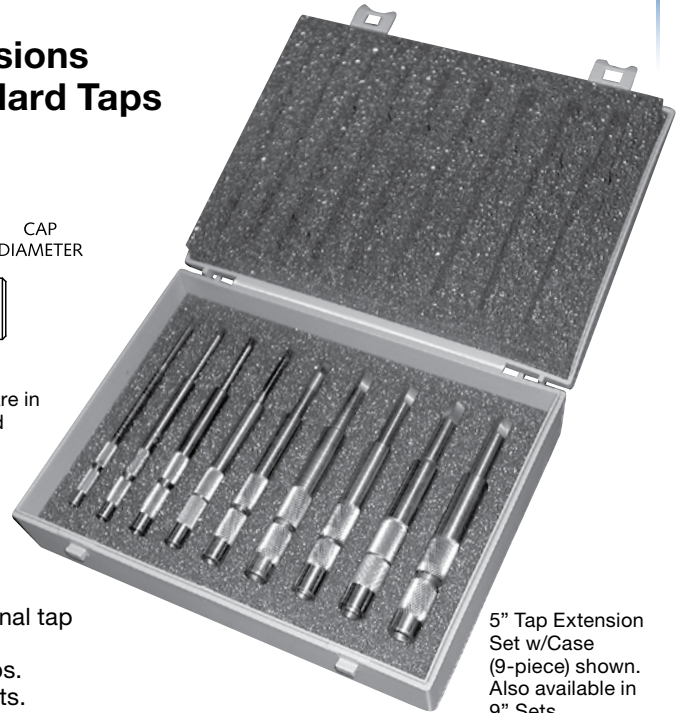


# TAP EXTENSIONS: for ANSI STANDARD TAPS

## 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.



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

- 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.	List Price	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	42.15	#0-#6	M1.6-M3.5	.141	1/4"	.194	.152	7/8"
21701	42.15	#8	M4	.168	5/16"	.194	.152	7/8"
21702	42.15	#10	M4.5-M5	.194	3/8"	.194	.152	1"
21703	42.15	#12		.220	3/8"	.194	.152	1"
21704	42.15	1/4"	M6-M6.3	.255	7/16"	.255	.191	1"
21705	51.70	5/16"	M7 & M8	.318	1/2"	.318	.238	1-1/16"
21706	51.70	3/8"	M10	.381	9/16"	.381	.286	1-1/8"
21707	51.70	7/16"		.323	1/2"	.323	.242	1-1/16"
21708	51.70	1/2"	M12	.367	9/16"	.367	.275	1-1/8"
21709	51.70	1/16 & 1/8 RS NPT		.312	1/2"	.312	.234	1"
21796	393.25	5" Tap Extension Set w/Case (9-piece set includes No. 21700 thru 21708)						

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

21805	44.40	#0-#6	M1.6-M3.5	.141	1/4"	.194	.152	7/8"
21710	44.40	#8	M4	.168	5/16"	.194	.152	7/8"
21711	44.40	#10	M4.5-M5	.194	3/8"	.194	.152	1"
21712	44.40	#12		.220	3/8"	.194	.152	1"
21713	44.40	1/4"	M6	.255	7/16"	.255	.191	1"
21714	54.55	5/16"	M7 & M8	.318	1/2"	.318	.238	1-1/16"
21715	54.55	3/8"	M10	.381	9/16"	.381	.286	1-1/8"
21716	54.55	7/16"		.323	1/2"	.323	.242	1-1/16"
21717	54.55	1/2"	M12	.367	9/16"	.367	.275	1-1/8"
21718	54.55	1/16 & 1/8 RS NPT		.312	1/2"	.312	.234	1"
21797	410.10	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)

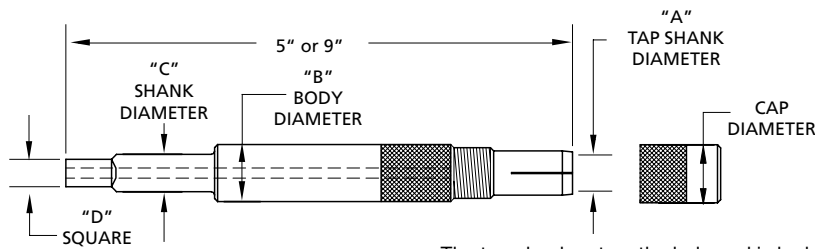
21719	77.30	9/16"		.429	3/4"	.429	.320	1-1/4"
21720	77.30	1/8 NPT		.437	3/4"	.437	.328	1"
21721	77.30	5/8"	M16	.480	3/4"	.480	.360	1-1/4"
21722	88.40	11/16"		.542	7/8"	.542	.406	1-1/4"
21723	96.60	1/4 NPT		.562	7/8"	.562	.420	1"
21724	88.40	3/4"		.590	7/8"	.590	.440	1-3/8"
21725	88.40	7/8"		.697	1"	.697	.520	1-3/8"
21726	88.40	3/8 NPT		.700	1"	.700	.530	1-3/16"
21727	88.40	1/2 NPT		.687	1"	.687	.515	1-1/4"
21798	88.40	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

### Tap Extensions for Coolant-Through 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.



- 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.	List Price	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	125.00	#0-#6	M1.6-M3.5	.141	1/4"	.194	.152	7/8"	7/64
21729	125.00	#8	M4	.168	5/16"	.194	.152	7/8"	7/64
21730	125.00	#10	M4.5-M5	.194	3/8"	.194	.152	1"	7/64
21731	125.00	#12		.220	3/8"	.194	.152	1"	7/64
21732	98.00	1/4"	M6-M6.3	.255	7/16"	.255	.191	1"	3/32
21733	98.00	5/16"	M7 & M8	.318	1/2"	.318	.238	1-1/16"	5/32
21734	98.00	3/8"	M10	.381	9/16"	.381	.286	1-1/8"	5/32
21735	98.00	7/16"		.323	1/2"	.323	.242	1-1/16"	5/32
21736	98.00	1/2"	M12	.367	9/16"	.367	.275	1-1/8"	5/32
21799	98.00	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	175.00	#0-#6	M1.6-M3.5	.141	1/4"	.194	.152	7/8"	7/64
21738	175.00	#8	M4	.168	5/16"	.194	.152	7/8"	7/64
21739	175.00	#10	M4.5-M5	.194	3/8"	.194	.152	1"	7/64
21740	175.00	#12		.220	3/8"	.194	.152	1"	7/64
21741	175.00	1/4"	M6	.255	7/16"	.255	.191	1"	3/32
21742	175.00	5/16"	M7 & M8	.318	1/2"	.318	.238	1-1/16"	5/32
21743	175.00	3/8"	M10	.381	9/16"	.381	.286	1-1/8"	5/32
21744	175.00	7/16"		.323	1/2"	.323	.242	1-1/16"	5/32
21745	175.00	1/2"	M12	.367	9/16"	.367	.275	1-1/8"	5/32
21800	175.00	1/16 & 1/8 RS NPT		.312	1/2"	.312	.234	1"	5/32

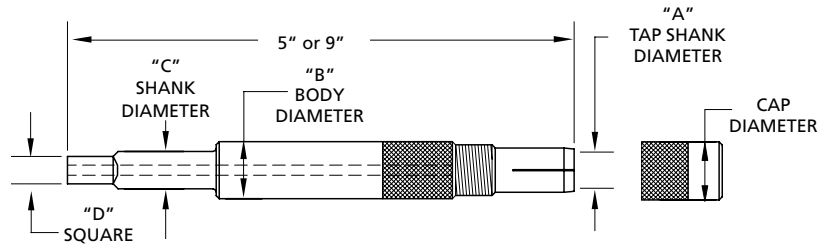
#### 6" COOLANT-THROUGH TAP EXTENSIONS (For Taps Larger Than 1/2") (CAP Diameter = 1/8" Greater than "B" Body Diameter)

21746	200.00	9/16"		.429	3/4"	.429	.320	1-1/4"	3/16
21747	200.00	1/8 NPT		.437	3/4"	.437	.328	1"	3/16
21748	200.00	5/8"	M16	.480	3/4"	.480	.360	1-1/4"	3/16
21749	200.00	11/16"		.542	7/8"	.542	.406	1-1/4"	3/16
21750	200.00	1/4 NPT		.562	7/8"	.562	.420	1"	3/16
21751	200.00	3/4"		.590	7/8"	.590	.440	1-3/8"	3/16
21752	200.00	7/8"		.697	1"	.697	.520	1-3/8"	3/16
21753	200.00	3/8 NPT		.700	1"	.700	.530	1-3/16"	3/16
21754	200.00	1/2 NPT		.687	1"	.687	.515	1-1/4"	3/16
21755	200.00	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



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.

- 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.	List Price	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.	List Price	Coolant Hole Size

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

21756	104.25	M2-M2.6	M4	2.8mm (.110)	7/8"	1/4"	6mm (.236)	4.9mm (.193)	21776	154.25	2.36mm
21757	104.25	M3	M4.5-M5	3.5mm (.137)	7/8"	5/16"	6mm (.236)	4.9mm (.193)	21777	154.25	2.36mm
21758	104.25	M3.5	M5.5	4.0mm (.157)	7/8"	3/8"	6mm (.236)	4.9mm (.193)	21778	154.25	2.36mm
21759	104.25	M4	M6	4.5mm (.177)	7/8"	3/8"	6mm (.236)	4.9mm (.193)	21779	154.25	2.36mm
21760	104.25	M4.5-M6	M8	6.0mm (.236)	1"	7/16"	7mm (.275)	5.5mm (.216)	21780	154.25	3.96mm
21761	104.25	M7	M9-M10	7.0mm (.275)	1"	1/2"	7mm (.275)	5.5mm (.216)	21781	154.25	3.96mm
21762	104.25	M8	M11	8.0mm (.315)	1-1/8"	1/2"	8mm (.315)	6.2mm (.244)	21782	154.25	3.96mm
21763	104.25	M9	M12	9.0mm (.354)	1-3/16"	5/8"	9mm (.354)	7mm (.275)	21783	154.25	3.96mm
21764	104.25	M10		10.0mm (.393)	1-1/4"	5/8"	10mm (.393)	8mm (.315)	21784	154.25	3.96mm
21765	104.25		M14	11.0mm (.433)	1-3/8"	3/4"	11mm (.433)	9mm (.354)	21785	154.25	3.96mm
21801	104.25	M12	M16	12.0mm (.472)	1-3/8"	3/4"	12mm (.472)	9mm (.354)	21803	154.25	3.96mm

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

21766	138.75	M2-M2.6	M4	2.8mm (.110)	7/8"	1/4"	6mm (.236)	4.9mm (.193)	21786	222.25	2.36mm
21767	138.75	M3	M4.5-M5	3.5mm (.137)	7/8"	5/16"	6mm (.236)	4.9mm (.193)	21787	222.25	2.36mm
21768	138.75	M3.5	M5.5	4.0mm (.157)	7/8"	3/8"	6mm (.236)	4.9mm (.193)	21788	222.25	2.36mm
21769	138.75	M4	M6	4.5mm (.177)	7/8"	3/8"	6mm (.236)	4.9mm (.193)	21789	222.25	2.36mm
21770	138.75	M4.5-M6	M8	6.0mm (.236)	1"	7/16"	7mm (.275)	5.5mm (.216)	21790	222.25	3.96mm
21771	138.75	M7	M9-M10	7.0mm (.275)	1"	1/2"	7mm (.275)	5.5mm (.216)	21791	222.25	3.96mm
21772	138.75	M8	M11	8.0mm (.315)	1-1/8"	1/2"	8mm (.315)	6.2mm (.244)	21792	222.25	3.96mm
21773	138.75	M9	M12	9.0mm (.354)	1-3/16"	5/8"	9mm (.354)	7mm (.275)	21793	222.25	3.96mm
21774	138.75	M10		10.0mm (.393)	1-1/4"	5/8"	10mm (.393)	8mm (.315)	21794	222.25	3.96mm
21775	138.75		M14	11.0mm (.433)	1-3/8"	3/4"	11mm (.433)	9mm (.354)	21795	222.25	3.96mm
21802	138.75	M12	M16	12.0mm (.472)	1-3/8"	3/4"	12mm (.472)	9mm (.354)	21804	222.25	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	Each	Case	Case Qty
<b>Smart Cut™ Tapping &amp; Drilling Fluid</b>					
Smart Cut 16 Ounce Bottle	FL110	FL115	9.30	104.20	12
Smart Cut Gallon Container	FL120	FL125	57.10	220.80	4
Smart Cut 5 Gallon Bucket	FL130		223.70		
Smart Cut 55 Gallon Drum	FL135		2305.70		
<b>Smart Clean Cleaner Degreaser</b>					
Smart Clean Quart Spray Bottle w/Trigger Grip	FL200	FL205	10.50	126.00	12
Smart Clean Gallon Container	FL210	FL215	13.80	55.20	4
<b>Smart Clean/A Aqueous Parts Washer</b>					
Smart Clean Gallon Container	FL300	FL305	20.30	81.20	4
<b>Smart Pro Rust Preventative</b>					
Smart Pro Quart Spray Bottle w/Trigger Grip	FL400	FL405	18.50	222.00	12
Smart Pro Gallon Container	FL410	FL415	48.00	192.00	4

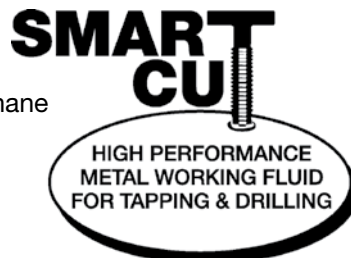
## SMART CUT™: TAPPING, DRILLING, CUTTING FLUID



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.

### 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!





# **INDUSTRIAL CUTTING FLUIDS, CLEANERS/DEGREASERS, RUST PREVENTATIVES**

**NEW!**

## **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!

**NEW!**

## **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!

**NEW!**

## **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

# ENGINEERING DATA: SPECIAL TAPS

## STANDARD SYSTEM OF TAP MARKING

Taps, dies and other types of threading tools are marked according to the Standard System of Marking Ground Thread Taps. Tools are marked with the nominal size, number of threads per inch (pitch), and the appropriate thread form symbol and pitch diameter symbol. Symbols typically used are listed.



NOMINAL SIZE - THREADS PER INCH

TAP MATERIAL

THREAD FORM SYMBOL

See listing below.

PITCH DIAMETER LIMIT

See listing below.

## PITCH DIAMETER LIMIT SYMBOLS

All standard ground thread taps are marked with the letter "G" to designate Ground Thread. The letter G will be followed by the letter "H" to designate above basic; or the letter "L" to designate below basic. The number following H or L signifies the number of .0005" steps above or below the basic pitch diameter. For instance, the tap pictured above is a 3/8" dia. tap with 20 threads per inch (pitch), and has a NS (American National Special Thread) thread form. The tap is made from High Speed Steel, and the GH-3 pitch diameter limit symbol indicates a Ground Thread tap with pitch diameter limits .0010 to .0015 over basic.

Pitch Diameter Limits for taps to 1" diameter inclusive:

- L1 = Basic to Basic minus .0005
- H1 = Basic to Basic plus .0005
- H2 = Basic plus .0005 to Basic plus .0010
- H3 = Basic plus .0010 to Basic plus .0015
- H4 = Basic plus .0015 to Basic plus .0020
- H5 = Basic plus .0020 to Basic plus .0025
- H6 = Basic plus .0025 to Basic plus .0030

Taps larger than 1" dia. are ground to a .0010" tolerance on the pitch diameter and are, for example, H4 (Basic plus .0010" to Basic plus .0020").

## THREAD FORM SYMBOLS

ACME-C	Acme Thread-Centralizing	NPTF	Dryseal American National Standard Taper Pipe Thread
ACME-G	Acme Thread-General Purpose	NPTR	American National Standard Taper Pipe Thread for Railing Joints (Tap marked NPT)
AMO	American Standard Microscope Objective Thread	NS	American National Thread-Special
ANPT	Aeronautical National Form Taper Pipe Thread (Ground thread tap marked NPT)	PG	Panzer Gewinde
BA	British Association Standard Thread	PTF	Dryseal SAE Short Taper Pipe Thread
BSF	British Standard Fine Thread Series	SGT	Special Gas Taper Thread
BSP	British Standard Pipe	SPL-PTF	Dryseal Special Taper Pipe Thread
BSPB	British Standard Pipe (Parallel) Thread	STI	Special Thread for Helical Coil Wire Screw Thread Inserts
BSPT	British Standard Taper Pipe Thread	Stub Acme	Stub Acme Thread
BSW	British Standard Whitworth Coarse Thread Series	*UN	Unified Constant Pitch Thread Series
M	Metric Screw Thread Series	*UNC	Unified Coarse Thread Series
N	American National 8, 12 and 16 Thread Series (8N, 12N, 16N)	*UNEF	Unified Extra Fine Thread Series
N	BUTT American Buttress Screw Thread	*UNF	Unified Fine Thread Series
NC	American National Coarse Thread Series	UNJ**	Unified Thread Series with a 0.15011P to 0.18042P Controlled Root Radius on External Thread only.
NEF	American National Extra Fine Thread Series	UNJC	Unified Coarse Thread Series with a 0.15011P to 0.18042P Controlled Root Radius on External Thread only.
NF	American National Fine Thread Series	UNJF	Unified Fine Thread Series with a 0.15011P to 0.18042P Controlled Root Radius on External Thread only.
NGO	National Gas Outlet Thread	UNM	Unified Miniature Thread Series
NGT	National Gas Taper Thread (see "SGT")	UNR	Unified Constant Pitch Thread Series with a 0.108P to 0.144P Controlled Root Radius; Ext. thread only.
NH	American National Hose Coupling and Fire Hose Coupling Threads	UNRC	Unified Coarse Thread Series with a 0.108P to 0.144P Controlled Root Radius; Ext. thread only.
NPS	For tap marking only (See NPSC, NPSM)	UNRF	Unified Fine Thread Series with a 0.108P to 0.144P Controlled Root Radius; External thread only.
NPSC	American National Standard Straight Pipe Thread in Pipe Couplings (Tap marked NPS)	*UNS	Unified Thread-Special
NPSF	Dryseal American National Standard Fuel Internal Straight Pipe Thread	V	A 60° "V" thread with Truncated Crest and Root. The theoretical "V" Form is usually flattened to the user's specifications.
NPSH	American National Standard Straight Pipe Thread for Hose Couplings	WHIT	British Standard Whitworth Special Thread
NPSI	Dryseal American National Standard Intermediate Internal Straight Pipe Thread		
NPSL	American National Standard Straight Pipe Thread for Loose Fitting Mechanical Joints with Locknuts		
NPSM	American National Standard Straight Pipe Threads for Free-Fitting Mechanical Joints for Fixtures (Tap marked NPS)		
NPT	American National Standard Taper Pipe Thread (See ANPT, NPTR)		

\*Taps are not marked with "U" but with the symbol for the corresponding American Standard thread form with which it is compatible.  
\*\* See page 105 for additional information on UNJ taps.



## INCH SCREW THREADS - UNJ PROFILE

### Controlled Root Radius with Increased Minor Diameter

The UNJ thread standard (ASME B1.15) defines a system of threads for highly stressed applications requiring high fatigue strength. It was derived from a military specification (MIL-S-8879). MIL-S-8879 was primarily thought of and used for aerospace fastener and threaded component applications. Due to the increase in both its use and types of applications, the American Society of Mechanical Engineers developed and published ASME B1.15 in 1995.

**Form.** UNJ screw threads are of the same form as Unified Screw Threads to ASME/ANSI B1.1 except:

*External threads:* the root has a maximum and minimum prescribed continuous radius, and is not merely rounded due to tool wear.

*Internal threads:* the minor diameter is increased to accommodate the maximum root radius of the external thread. There is no radius requirement for either the crest or the root of the internal thread.

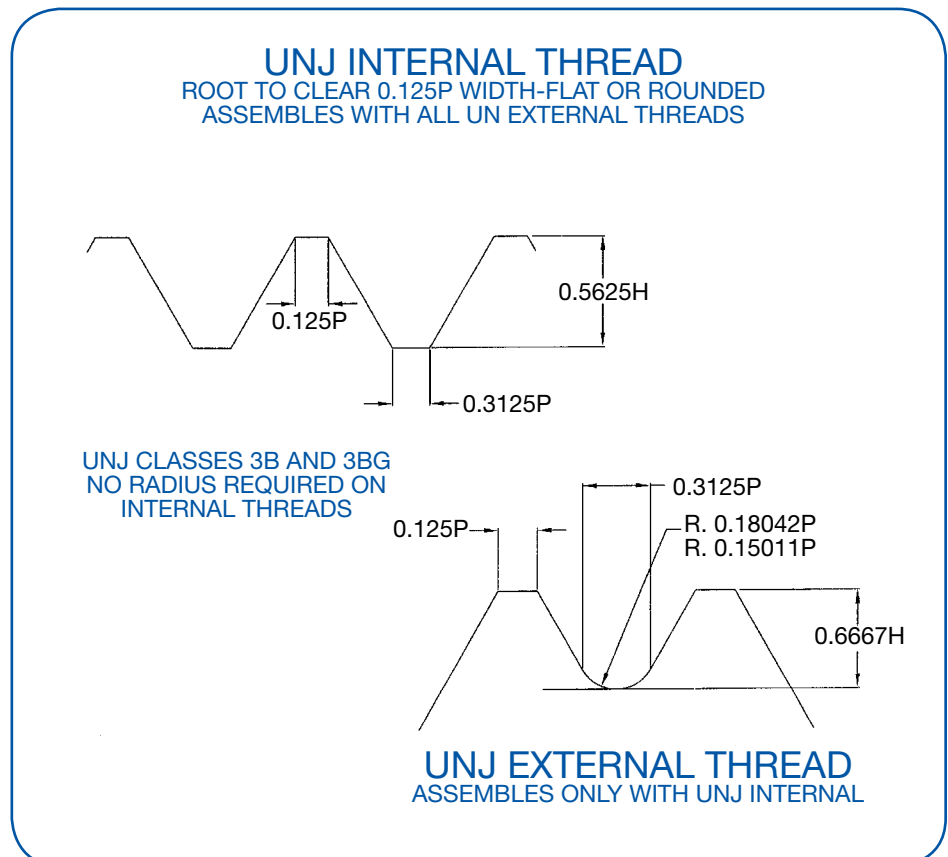
**Designation.** UNJ product threads are identified by the letter “J” in the thread symbol, and a thread class symbol including an “A” for external threads or a “B” for internal threads.

**Use of Unified Tooling.** Many of the UNJ thread form characteristics are the same as for UN threads. Therefore, some of the tooling used to produce one form can be used to produce the other.

*External UNJ threads* must be produced with a prescribed root radius; therefore, standard Unified Screw Thread (UN) tooling may not be used.

*Internal UNJ threads* are not required to have a root radius; therefore, ground thread taps designed to produce Unified Screw Threads of the proper class of fit may be used. The letter “J” need not be marked on the tap. The larger product minor diameter of the UNJ internal thread requires the use of a larger tap drill than is used when producing Unified Screw Threads.

- UNJ Thread Form: Unified Thread Series with a 0.15011P to 0.18042P controlled root radius on external thread only. (As defined by MIL-S-8879C)
- UNJ internal threads do not require radius; only external thread requires radius on root.
- UNJ external thread assemblies only with UNJ internal thread.
- UNJ tap is standard 3B class of fit.



**SPECIAL TAPS & GAGES**

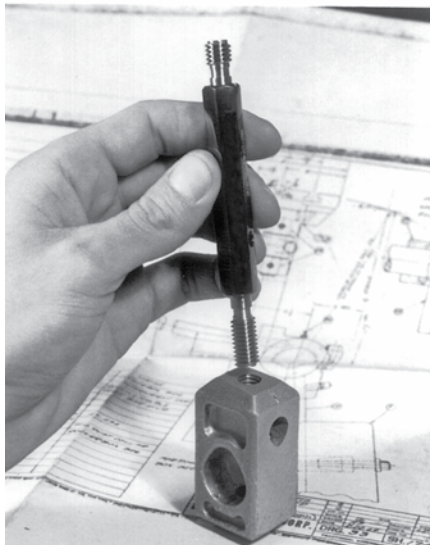
**CLASSES OF THREADS AND TAP SIZE:**

There is a direct relationship between the size of a tap and the size of the thread that it cuts. Size refers to pitch diameter and its relationship to the class of fit required. If two threaded parts are assembled, the looseness or tightness of the fit is determined by contact on the flanks of the threads only. This contact is controlled by the pitch diameters of each part.

**CLASSES OF THREAD:**

When threaded parts are mated, the two parts must assemble with a degree of tightness dictated by the use of the fastener. In addition, the internal thread must be large enough to allow the external thread to enter it for the required length of engagement. A system of thread classes, each representing a comparative degree of tightness, has been established and universally adopted, to provide manufacturers and users of threaded products with a common language of specification. The thread classes designate minimum and maximum pitch diameters for internal and external threads. It is important to remember that classes of thread actually represents manufacturing tolerances. The closer the tolerance required, the higher the cost involved in producing the parts. Therefore, designers and engineers should always try to select the class of thread with the widest permissible tolerance.

**TAP SIZE:** Due to material variability and machining conditions, taps rarely cut their own size. The thread size produced is usually larger, but can be smaller due



to shrinkage. Tap manufacturers realized that to tap a specified class of thread, several different ground thread tap limits would be required. These limits represent small, defined variations in tap size. A numbering system was developed to designate each series of limits, but these limit numbers are not to be confused with the classes of threads. Ground thread tap limits are designated by the letter H (high) above basic pitch diameter, or L (low) below basic pitch diameter, and these numbers establish the tolerance range in relation to basic pitch diameter. As an example, in sizes 1" and smaller, an H1 tap has a tolerance range of from basic to .0005" over basic;

an H2 tap from .0005" over basic to .001" over basic, (see chart 1A on this page). In addition, metric threads are also designated in much the same way. The thread tap limits are designated by the letter D (ground, high) above basic pitch diameter, or U (ground, low) below basic pitch diameter. As an example, in sizes M25 and smaller, a D1 tap has a size of .0005" over basic to tap max. P.D.; a D2 tap has a size of .001" over basic to tap max. P.D., (see Chart 1B). The Tables on pages 115-117 list recommended limit numbers for different classes of thread. Several different limit numbers are available for each diameter and pitch combination. Consequently, it is possible to select the "H" or "L" limit, or the "D" or "U" limit most suitable for the required tapping operation. Please contact our Customer Service Dept. for questions regarding tap limits and their relation to classes of fit.

**CHART 1A**

Pitch Diameter Limits for taps to 1" diameter inclusive:

- L1 = Basic to Basic minus .0005
- H1 = Basic to Basic plus .0005
- H2 = Basic plus .0005 to Basic plus .0010
- H3 = Basic plus .0010 to Basic plus .0015
- H4 = Basic plus .0015 to Basic plus .0020
- H5 = Basic plus .0020 to Basic plus .0025
- H6 = Basic plus .0025 to Basic plus .0030

Taps larger than 1" dia. are ground to a .0010" tolerance on the pitch diameter and are, for example,

H4 (Basic plus .0010" to Basic plus .0020").

**CHART 1B**

Pitch Diameter Limits for taps to 1" diameter inclusive:

(Metric taps generally have more manufacturing tolerance than .0005 to the minus side.)

- U1 = Basic minus .0005 = min. tap P.D.
- D1 = Basic plus .0005 = max. tap P.D.
- D2 = Basic plus .0010 = max. tap P.D.
- D3 = Basic plus .0015 = max. tap P.D.
- D4 = Basic plus .0020 = max. tap P.D.
- D5 = Basic plus .0025 = max. tap P.D.
- D6 = Basic plus .0030 = max. tap P.D.



On Charts 2A and 2B (below), examples of the relationship of Class of Fit to various tap limit sizes is shown for both Imperial and Metric sizes. In chart 2A, using a 1/4"-20NC or UNC thread size, it is obvious that an H5 limit (+.0025" over basic pitch diameter) can be used to cut the tightest class of thread in most machining

situations, as can the H1 limit (+.0005" over basic P.D.). However, tool wear would force the discarding of the H1 tap long before the H5 would be worn to an undersize condition. **The rule is obvious: always select the largest "H" limit possible to achieve proper class of fit, and maximum tool life.**

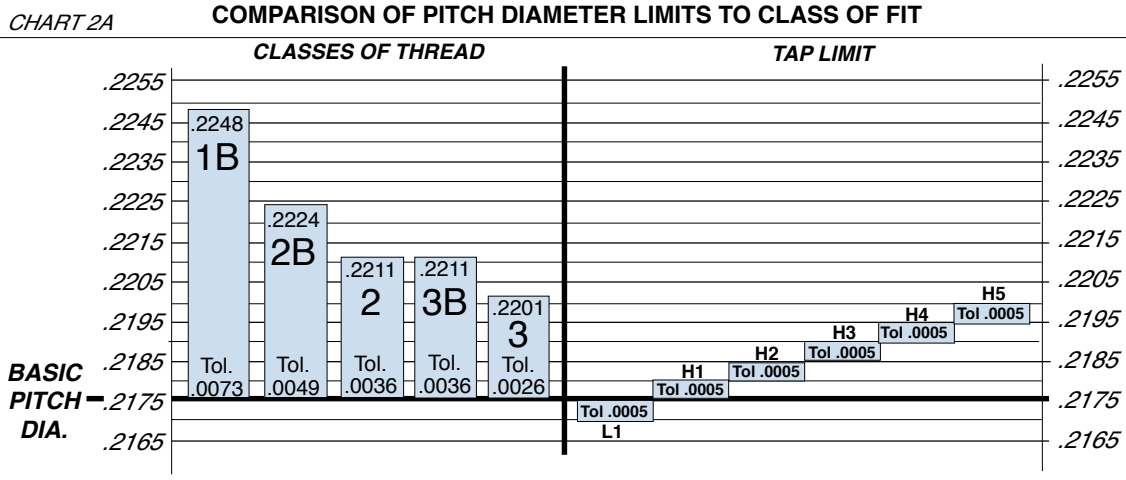
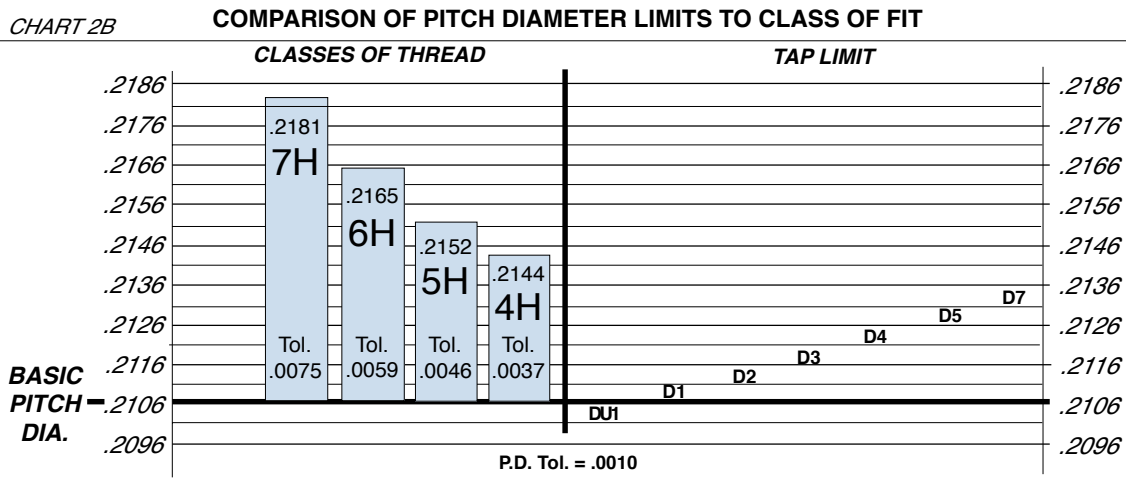


Chart 2B shows the same relationship with a metric thread. Using a M6 X 1.0, it is obvious that a D5 limit (+.0025" over basic pitch diameter) can be used to cut the standard class of thread in most machining situations, as can the D1 limit (+.0005" over basic P.D.).

However, tool wear would force the discarding of the D1 tap long before the D5 would be worn to an undersize condition. **The rule is obvious: always select the largest "D" limit possible to achieve proper class of fit, and maximum tool life.**



## SCREW THREAD CLASSES OVERVIEW

Screw thread classes are distinguished from each other by the amount of tolerance and allowance.

**Class 1A and Class 1B:** The combination of Class 1A for external threads and Class 1B for internal threads is intended to cover the manufacture of threaded parts where quick and easy assembly is necessary or desired, and an allowance is provided to permit ready assembly.

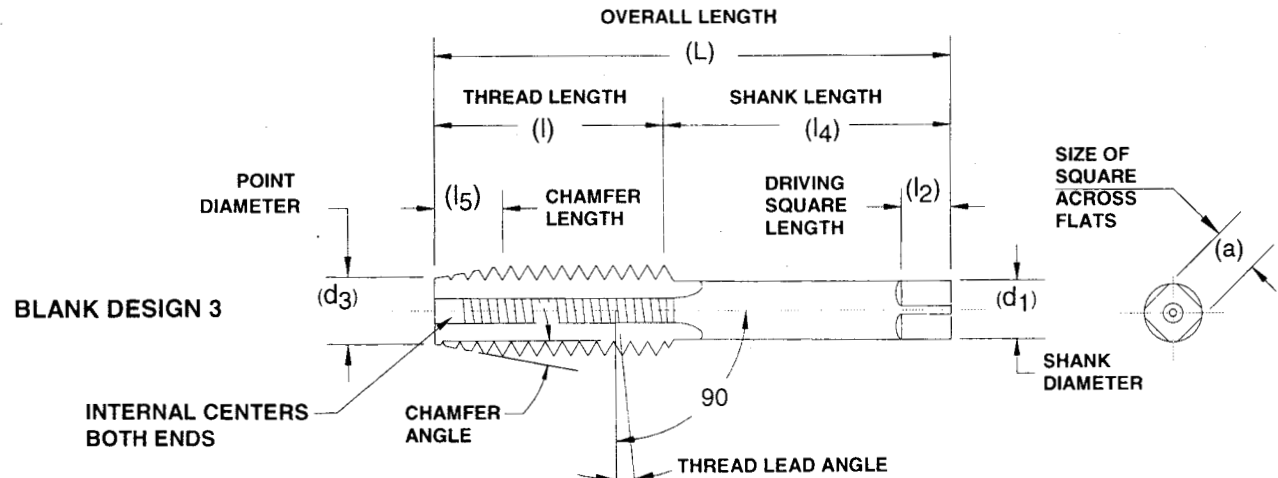
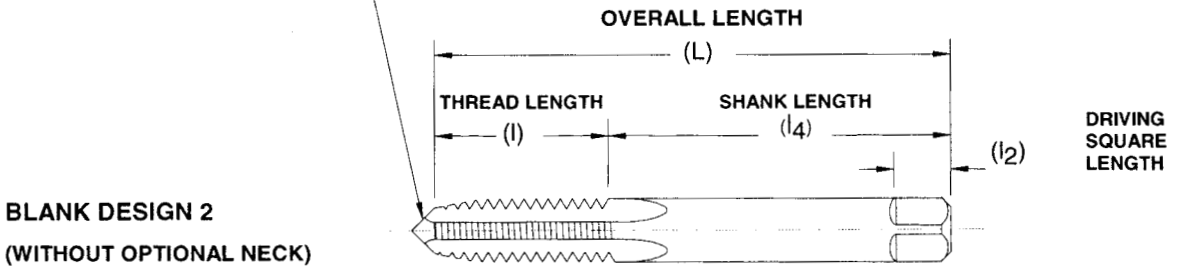
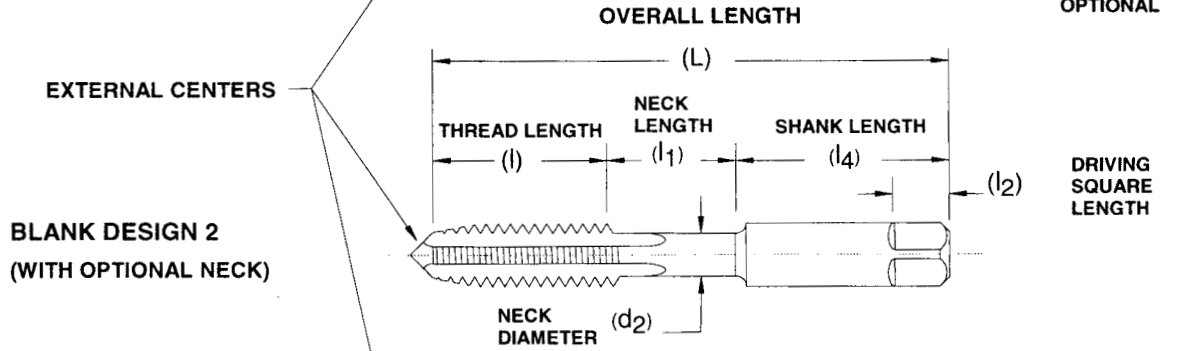
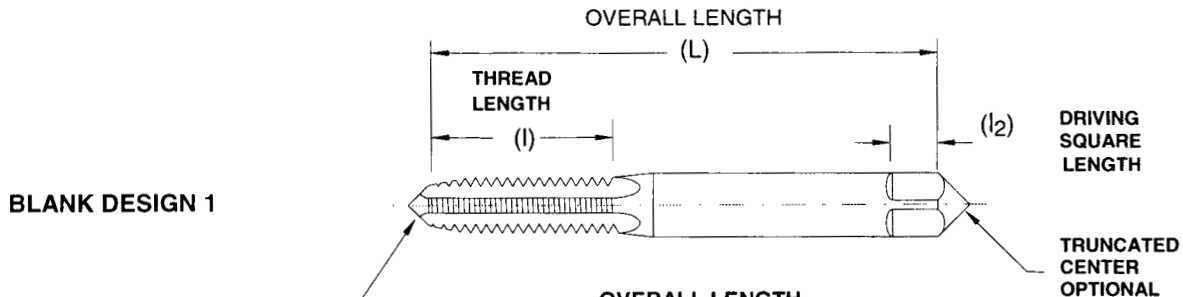
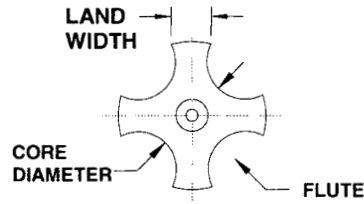
**Class 2A and Class 2B:** The combination of Class 2A for external threads and Class 2B for internal threads designed for screws, bolts and nuts, is also suitable for a variety of other applications. A similar allowance is provided which minimiz-

es galling and seizure encountered in assembly and use. It also accommodates, to a limited extent, plating, finishes or coatings.

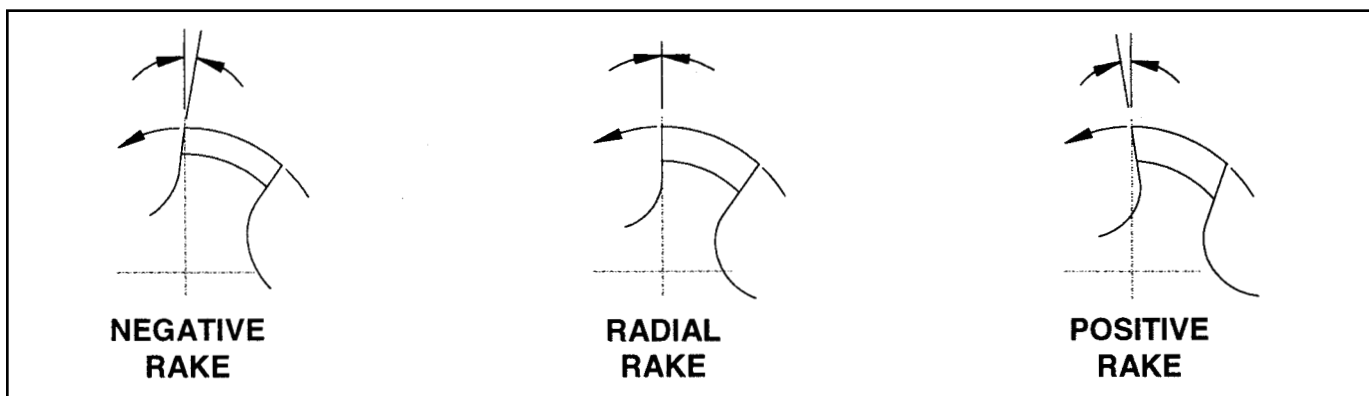
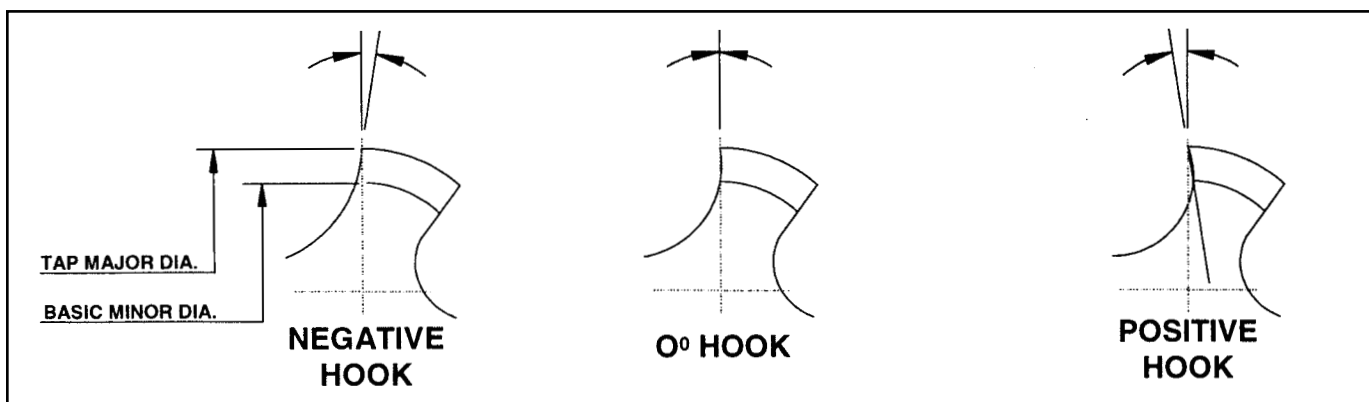
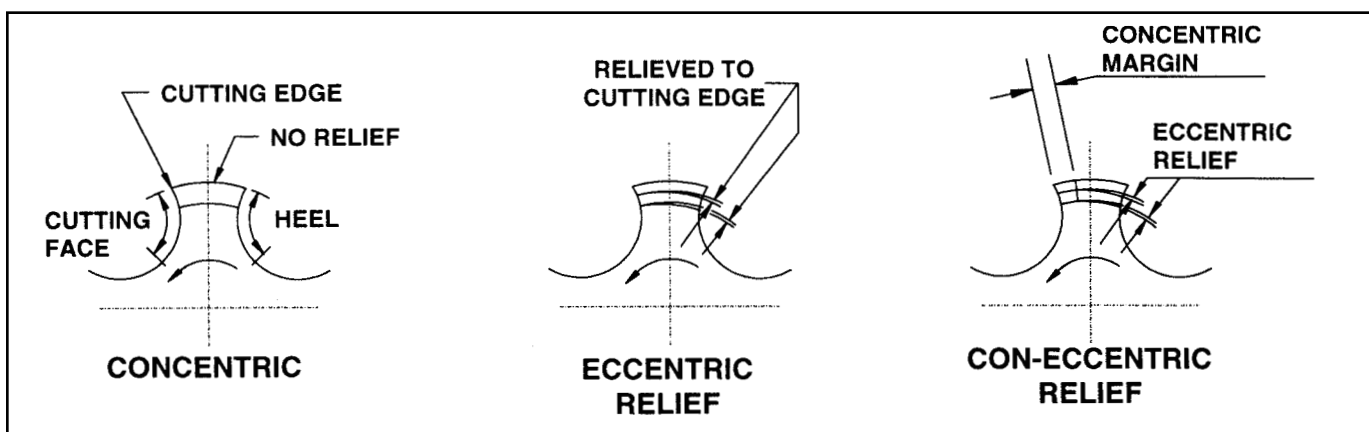
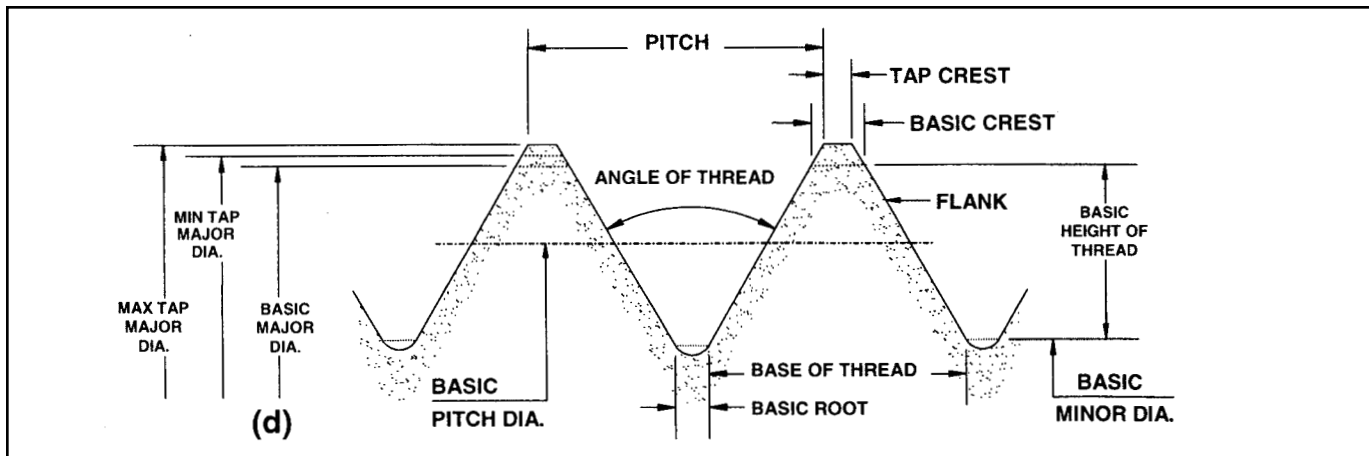
**Class 3A and 3B:** The combination of Class 3A for external threads and Class 3B for internal threads is provided for those applications where closeness of fit and accuracy of lead and angle of thread are important. These threads are obtained consistently only by use of high quality production equipment supported by a very efficient system of gauging and inspection.

No allowance is provided.

**ILLUSTRATION OF TERMS APPLYING TO TAPS**



**ILLUSTRATION OF TERMS APPLYING TO TAPS**



**DEFINITION OF TERMS APPLYING TO TAPS****ALLOWANCE**

Minimum clearance between two mating parts; the prescribed variations from the basic size.

**ANGLE OF THREAD**

The angle included between the sides of the thread measured in an axial plane.

**AXIS**

The imaginary straight line that forms the longitudinal centerline of the tool or threaded part.

**BACK TAPER**

A gradual decrease in the diameter of the thread form on a tap from the chamfered end of the land towards the back which creates a slight radial relief in the threads.

**BASE OF THREAD**

The bottom section of the thread; the greatest section between the two adjacent roots.

**BASIC SIZE**

The theoretical or nominal standard size from which all variations are derived by application of allowances and tolerances.

**CHAMFER**

The tapering of the threads at the front end of each land of a tap by cutting away and relieving the crest of the first few teeth to distribute the cutting action over several teeth; *Taper taps* are chamfered 7-10 threads; *plug taps* are chamfered 3-5 threads; *bottoming taps* are chamfered 1-2 threads; *taper pipe taps* are chamfered 2-3.5 threads.

**CHAMFER RELIEF**

The gradual decrease in land height from cutting edge to heel on the chamfered portion, to provide clearance for the cutting action as the tap advances.

**CREST**

The top surface joining the two sides or flanks of the thread; the crest of an external thread is at its major diameter, while the crest of an internal thread is at its minor diameter.

**CUTTING FACE**

The leading side of the land in the direction of cutting rotation on which the chip forms.

**FLUTE**

The longitudinal channels formed in a tap to create cutting edges on the thread profile, and to provide chip spaces and cutting fluid passages.

**HEEL**

The edge of the land opposite the cutting edge.

**HEIGHT OF THREAD**

The distance, measured radially, between the crest and the base of a thread.

**HELIX ANGLE**

The angle made by the advance of the thread as it wraps around an imaginary cylinder.

**HOOK**

The undercut on the face of the teeth.

**HOOK ANGLE**

The inclination of a concave cutting face, usually specified either as Chordal Hook or Tangential Hook.

**Chordal Hook Angle:** The angle between the chord passing through the root and crest of a thread form at the cutting face, and a radial line through the crest at the cutting edge.

**Tangential Hook Angle:** The angle between a line tangent to a hook cutting face at the cutting edge and a radial line to the same point.

**INTERRUPTED THREAD TAP**

A tap having an odd number of lands with alternate teeth along the thread helix removed. In some cases alternate teeth are removed only for a portion of the thread length.

**LAND**

The part of the tap body which remains after the flutes are cut, and on which the threads are finally ground. The threaded section between the flutes of a tap.

**LEAD**

The axial distance a tap will advance along its axis in one complete turn. On a single start, the lead and the pitch are identical; on a double start, the lead is twice the pitch.

**MAJOR DIAMETER**

Commonly known as the "outside diameter." It is the largest diameter of the thread.

**MINOR DIAMETER**

Commonly known as the "root diameter." It is the smallest diameter of the thread.

**PERCENT OF THREAD**

One-half the difference between the basic major diameter and the actual minor diameter of an internal thread, divided by the basic thread height, expressed as a percentage.

**PITCH**

The distance from any point on a screw thread to a corresponding point on the next thread, measured parallel to the axis and on the same side of the axis. The pitch equals one divided by the number of threads per inch.





**DEFINITION OF TERMS APPLYING TO TAPS****PITCH DIAMETER**

On a straight thread, the pitch diameter is the diameter of the imaginary co-axial cylinder...the surface of which would pass through the thread profiles at such points as to make the width of the groove equal to one-half of the basic pitch. On a perfect thread this occurs at the point where the widths of the thread and groove are equal. On a taper thread, the pitch diameter at a given position on the thread axis is the diameter of the pitch cone at that position.

**RAKE**

The angular relationship of the straight cutting face of a tooth with respect to a radial line through the crest of the tooth at the cutting edge. *Positive rake* means that the crest of the cutting face is angularly ahead of the balance of the cutting face of the tooth. *Negative rake* means that the crest of the cutting face is angularly behind the balance of the cutting face of the tooth. *Zero rake* means that the cutting face is directly on a radial line.

**RELIEF (or Thread Relief)**

The removal of metal from behind the cutting edge to provide clearance and reduce friction between the part being threaded and the threaded land.

**ROOT**

The bottom surface joining the sides of two adjacent threads, and is identical with or immediately adjacent to the cylinder or cone from which the thread projects.

**SPIRAL FLUTE**

A flute with uniform axial lead in a spiral path around the axis of a tap.

**SPIRAL POINT**

The angular fluting in the cutting face of the land at the chamfered end; formed at an angle with respect to the tap axis of opposite hand to that of rotation. Its length is usually greater than the chamfer length and its angle with respect to the tap axis is usually made great enough to direct the chips ahead of the taps cutting action.

**STRAIGHT FLUTE**

A flute that forms a cutting edge lying in an axial plane.

**TOLERANCE**

In producing a tap to given specifications, tolerance is: (a.) the total permissible variation of a size; (b.) the difference between the limits of size.

**CHAMFERS FOR THREAD CUTTING TAPS**

The tap chamfer is the tapering of the threads to distribute cutting action over several teeth. The type of hole to be tapped has much to do with the chamfer style of that tap that's best suited. Some holes go all the way through; some, while not through-holes, are relatively deep; some are quite shallow (a little deeper than diameter). Each of these three kinds of holes - through, deep-bottoming blind, and shallow bottoming - has a tap chamfer best suited to threading requirements.



**Taper Taps** - This style, with a **7-10 thread chamfer**, has the longest chamfer of the three to distribute action over the maximum number of teeth; and the taper also acts as a guide in starting the cutting action in the hole. Taper style taps start the thread square with the work-piece. Taper taps are commonly used in through holes and in materials where a tapered guide is necessary.



**Plug Taps** - This style, with a **3-5 thread chamfer**, is most widely used in through holes and where there is sufficient room at the bottom in blind holes.

**Semi-Bottoming Taps** - This style, with a **2 to 2-1/2 thread chamfer**, should be used whenever possible in difficult material applications in blind holes, when threads are not required to the bottom of the hole.



**Bottoming Taps** - This style, designed with a **1 to 2 thread chamfer**, is made with just enough chamfer for starting in the hole; as the name implies, it is designed to thread blind holes to the bottom.

**NOTE:** Taper, plug and bottoming taps as a set, in a given size (for example: 1/4-20 NC) are identical as to size, length and vital measurements; the difference is in the chamfered threaded portion at the point. As a rule, such taps when used by hand are furnished in sets of three of a given size...namely, taper, plug and bottoming (and should be used in that order).

## ENGINEERING DATA: TAP STYLE GUIDE



### HAND TAP

These standard style taps have straight flutes of a number specified as either standard or optional. Hand taps are for general purpose applications such as production tapping or hand tapping operations. Taper, plug and bottoming styles provide versatility in tough materials, blind and through holes.



### SPIRAL POINT TAP

As to general physical dimensions, spiral point taps are identical with the standard hand tap. However, the spiral point tap has the cutting face of the first few threads cut at a predetermined angle relative to the tap's axis angle to force the evacuation of chips ahead of the cutting action. This feature, plus the excellent shearing action of the flute, make spiral pointed taps ideal for production tapping of through holes. Typically, this type of tap has a shallower flute passage than conventional taps. This gives the spiral point tap more cross-sectional area, which means greater strength, allows higher tapping speeds, and requires less power to drive.



Regular (or Slow) Spiral Tap



Fast Spiral Tap

### SPIRAL FLUTED TAP

These taps, as the name implies, are made with spiral flutes instead of straight flutes. This spiral fluting feature aids in drawing chips out of a hole, or serves to bridge a gap inside the hole such as a keyway or cross-hole. Commonly available in *slow spiral* (25-30° helix angle) or *fast spiral* (45-60°).



### INTERRUPTED THREAD TAP

These taps have an odd number of lands with alternate teeth in the thread helix removed. The removal of every other tooth helps to break the chip and allows a greater supply of lubrication to reach the cutting teeth, reducing the incidence of torn threads. Ideal for tapping non-ferrous metals and low carbon steel; as well as use in titanium and high hardness alloys.



### THREAD FORMING TAP (TRU-FLO™)

These taps are fluteless except as optionally designed with one or more lubrication grooves. The thread form is lobed so there is a finite number of points contacting the work. This tap does not cut, so it is 'chipless', and consequently will not cause a chip problem. The tool forms the thread by extrusion, thus thread size can be closely maintained. The fluteless design allows high quality threads, faster tapping speeds, higher production, and generates no chips which simplifies tapping of blind bottoming holes (threads can be formed the full depth of the hole).



Straight Pipe Tap



Taper Pipe Tap

### PIPE TAP

These taps are for producing standard straight or tapered pipe threads in a wide range of pipe connections. Manufactured with the appropriate design variations to cut specified pipe thread forms.



### COMBINED DRILL & TAP (COST CUTTER™)

This high production tool is specially designed to drill and tap in one pass only. By design, this value-added tool reduces machining operations and subsequent parts handling. The drill end features a split point, and the tool shank and square fit standard tap holders.



### ACME THREAD TAP

Acme screw threads were devised to allow rotary and transversing motion on machines; and are also used in jacks, valves, presses and other mechanisms where heavy loads are encountered. The acme thread is characterized by a 29° included angle. Acme taps typically require specialized engineering and design due to the nature and severity of cut required in producing Acme threads.



## ENGINEERING DATA: TAP STYLE GUIDE



### TANDEM ACME TAP

These taps combine the initial roughing cut with the final finishing cut, in one pass, to achieve an acme screw thread. These taps are economical and enhance production levels by saving on the operation of two tools. Since acme thread pitches are generally coarse relative to diameters, these taps are subjected to heavy chip loads. To achieve a high quality acme thread in a cost-effective manner, roughing and finishing operations are recommended.

### EXTENSION TAPS (incl. Nut & Pulley Taps)



**Extension Tap** - These taps are made to conventional tap dimensions, except that they have an extended shank to reach inaccessible holes. Thread length, shank diameter, and shank square are made to standard specifications listed in Table 302. Extension taps are available in both hand and spiral point styles, and in small shank style.



**Pulley Tap** - The hub portion of pulley parts contain oil cups and set screw holes, most of which cannot be reached with ordinary hand taps. Pulley taps have the same basic thread dimensions as hand taps, but pulley taps differ in that they have a longer shank which is of the same basic major diameter as the threaded portion. When tapping pulley hub holes, the taps are inserted through holes in the rims which are slightly larger than the shanks of the taps. These holes serve as guides or bushings for the taps to assure proper alignment when tapping. Pulley taps can also be used for general tapping in parts where an extra long length is required to reach the holes being tapped.



**Nut Tap** - Nut taps feature a long chamfer which assists in entering the drilled hole, and distributes the cutting action over several teeth. These taps were initially designed for tapping nuts and have a long thread length. The shank diameter is smaller than the tap's minor diameter to allow the accumulation of several nuts after tapping. Nut taps also feature an extended square length.

## ENGINEERING DATA:

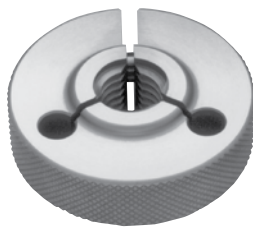
## THREAD PLUG & RING GAGES



Thread Plug Gage



Reversible Thread Plug Gage



Thread Ring Gage

- Thread Plug Gages - UNC, UNF & UNEF  
Class 2B - 3B, Taperlock & Reversible,  
+ Metric Sizes - Class 6H
- Thread Ring Gages - UNC, UNF, UNEF  
Class 2A-3A  
+ Metric Sizes - Class 6g
- Truncated Thread Setting Plug Gages  
Class 2A-3A  
+ Metric Sizes - Class 6g
- Thread Plug Gages - STI  
Screw Thread Insert
- BSP Plug Gages  
(BSPT, BSPP)
- Taper Pipe Gages - Plugs & Rings  
NPT-L1, L1 & L2 Rings,  
NPTF L1 & L3 Plugs,  
NPTF Crest Check Plugs & Rings

...contact North American Tool for your special gaging requirements.

## ENGINEERING DATA:

# TRU-FLO® THREAD FORMING TAPS

### THREAD FORMING TAP ENTRY LENGTHS:

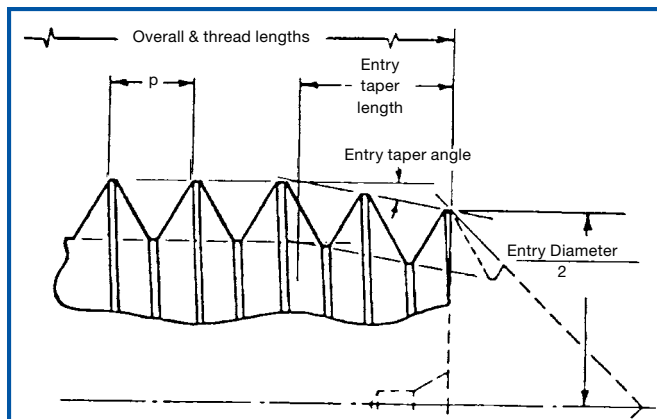
Entry taper length is measured on the full diameter of the thread forming lobes and is the axial distance from the entry diameter position to the theoretical intersection of tap major diameter and entry taper angle. Whenever entry taper length is specified in terms of number of threads, this length is measured in number of pitches (p).

**BOTTOMING LENGTH = 1-1/2 to 2-1/2 PITCHES**  
**PLUG LENGTH = 3 to 5 PITCHES**

The chamfer on Tru-Flo BOTTOM taps is approximately 2 threads long and requires a drilled hole depth 3-4 pitches beyond the full thread required. When a controlled maximum chamfer shorter than 2 threads is required, an additional charge will apply. *We will not guarantee the performance of taps with the shorter chamfer.*

Entry diameter, measured at the thread crest nearest the front of the tap, is an appropriate amount smaller than the diameter of the hole drilled for tapping. See below for tap/drill size formulas, and formulas to determine maximum and minimum drill hole sizes for appropriate percent of thread.

**TAPPING SPEEDS:** TRU-FLO taps operate most efficiently at spindle speeds 1-1/2 to 2 times faster than those recommended for conventional cutting taps, especially in softer materials and/or with fine pitch



TRU-FLO taps. As higher speeds are attained, adequate lubrication is essential for prolonged tap life and thread quality.

**LUBRICATION:** Since it is more important to 'lubricate' the cold-forming tap than to 'cool' the tap, TRU-FLO taps should be used with conventional lubricating cutting oils or EP (extreme pressure) rated oil...soluble oils and similar coolants are not recommended.

**PRE-TAPPED HOLE SIZE:** TRU-FLO cold forming taps require a larger pre-tapped hole size than conventional cutting taps. To insure a properly tapped (cold formed) hole, adhere to the following:

### FORMULA FOR TAP/DRILL SIZES FOR DECIMAL/INCH TRU-FLO TAPS:

$$\text{HOLE SIZE} = \text{Basic Tap O.D.} - \left( \frac{.0068 \times \% \text{ of Thread}^*}{\text{Threads per Inch}} \right)$$

For example:

To determine drill size for a 1/4-20 thread forming tap at 65% of thread:  $.250 - \left( \frac{.0068 \times 65}{20} \right) = .2279$

\* Use whole number for % of thread...for 65%, use 65 (not .65).

### FORMULA FOR TAP/DRILL SIZES FOR METRIC TRU-FLO TAPS:

$$\text{HOLE SIZE (mm)} = \text{Basic Tap O.D.(mm)} - \left( \frac{\% \text{ of Thread} \times \text{mm Pitch}}{147.06} \right)$$

\* Use whole number for % of thread...for 65%, use 65 (not .65).

There is no true method of predicting percent of thread that will be obtained when tapping with forming taps due to the many variables involved. As a starting point, however, 55% for maximum drill size and 75% for minimum drill size can be used as a guide. Any desired percent of thread can be approximated by using drill sizes in between. To determine theoretical maximum and minimum drill sizes (for average operating conditions), see formulas below.

For UNIFIED INCH Threads:

$$\text{Max. Drill Size} = \text{Basic Major Diameter} - \frac{3}{8N}$$

$$\text{Min. Drill Size} = \text{Basic Major Diameter} - \frac{1}{2N}$$

N = T.P.I. (Threads per Inch)

For 60° Metric Threads:

$$\text{Max. Drill Size} = \text{Basic Major Diameter} - 0.375P$$

$$\text{Min. Drill Size} = \text{Basic Major Diameter} - 0.5P$$

P = Pitch

Note: For Basic Major Diameter and Pitch, use millimeter value to obtain drill size in mm. To convert mm to inch value, divide by 25.4:

$$\frac{\text{mm Value}}{25.4} = \text{Inch Value}$$



**TAP RECOMMENDATIONS FOR CLASSES OF THREAD**  
*Unified and American National Screw Threads*

Nominal Size	T.P.I. NC UNC	T.P.I. NF UNF	RECOMMENDED TAP FOR CLASS OF THREAD				PITCH DIAMETER LIMITS FOR CLASS OF THREAD				
			Class 2	Class 3	Class 2B	Class 3B	Min. All Classes (Basic)	Max. Class 2	Max. Class 3	Max. Class 2B	Max. Class 3B
0	—	80	GH1	GH1	GH2	GH1	.0519	.0536	.0532	.0542	.0536
1	64	—	GH1	GH1	GH2	GH1	.0629	.0648	.0643	.0655	.0648
1	—	72	GH1	GH1	GH2	GH1	.0640	.0658	.0653	.0665	.0659
2	56	—	GH1	GH1	GH2	GH1	.0744	.0764	.0759	.0772	.0765
2	—	64	GH1	GH1	GH2	GH1	.0759	.0778	.0773	.0786	.0779
3	48	—	GH1	GH1	GH2	GH1	.0855	.0877	.0871	.0885	.0877
3	—	56	GH1	GH1	GH2	GH1	.0874	.0894	.0889	.0902	.0895
4	40	—	GH2	GH1	GH2	GH2	.0958	.0982	.0975	.0991	.0982
4	—	48	GH1	GH1	GH2	GH1	.0985	.1007	.1001	.1016	.1008
5	40	—	GH2	GH1	GH2	GH2	.1088	.1112	.1105	.1121	.1113
5	—	44	GH1	GH1	GH2	GH1	.1102	.1125	.1118	.1134	.1126
6	32	—	GH2	GH1	GH3	GH2	.1177	.1204	.1196	.1214	.1204
6	—	40	GH2	GH1	GH2	GH2	.1218	.1242	.1235	.1252	.1243
8	32	—	GH2	GH1	GH3	GH2	.1437	.1464	.1456	.1475	.1465
8	—	36	GH2	GH1	GH2	GH2	.1460	.1485	.1478	.1496	.1487
10	24	—	GH3	GH1	GH3	GH3	.1629	.1662	.1653	.1672	.1661
10	—	32	GH2	GH1	GH3	GH2	.1697	.1724	.1716	.1736	.1726
12	24	—	GH3	GH1	GH3	GH3	.1889	.1922	.1913	.1933	.1922
12	—	28	GH3	GH1	GH3	GH3	.1928	.1959	.1950	.1970	.1959
1/4	20	—	GH3	GH2	GH5	GH3	.2175	.2211	.2201	.2224	.2211
1/4	—	28	GH3	GH1	GH4	GH3	.2268	.2299	.2290	.2311	.2300
5/16	18	—	GH3	GH2	GH5	GH3	.2764	.2805	.2794	.2817	.2803
5/16	—	24	GH3	GH1	GH4	GH3	.2854	.2887	.2878	.2902	.2890
3/8	16	—	GH3	GH2	GH5	GH3	.3344	.3389	.3376	.3401	.3387
3/8	—	24	GH3	GH1	GH4	GH3	.3479	.3512	.3503	.3528	.3516
7/16	14	—	GH5	GH3	GH5	GH3	.3911	.3960	.3947	.3972	.3957
7/16	—	20	GH3	GH1	GH5	GH3	.4050	.4086	.4076	.4104	.4091
1/2	13	—	GH5	GH3	GH5	GH3	.4500	.4552	.4537	.4565	.4548
1/2	—	20	GH3	GH1	GH5	GH3	.4675	.4711	.4701	.4731	.4717
9/16	12	—	GH5	GH3	GH5	GH3	.5084	.5140	.5124	.5152	.5135
9/16	—	18	GH3	GH2	GH5	GH3	.5264	.5305	.5294	.5323	.5308
5/8	11	—	GH5	GH3	GH5	GH3	.5660	.5719	.5702	.5732	.5714
5/8	—	18	GH3	GH2	GH5	GH3	.5889	.5930	.5919	.5949	.5934
3/4	10	—	GH5	GH3	GH5	GH5	.6850	.6914	.6895	.6927	.6907
3/4	—	16	GH3	GH2	GH5	GH3	.7094	.7139	.7126	.7159	.7143
7/8	9	—	GH6	GH4	GH6	GH4	.8028	.8098	.8077	.8110	.8089
7/8	—	14	GH4	GH2	GH6	GH4	.8286	.8335	.8322	.8356	.8339
1	8	—	GH6	GH4	GH6	GH4	.9188	.9264	.9242	.9276	.9254
1	—	12	GH4	GH2	GH6	GH4	.9459	.9515	.9499	.9535	.9516
1	—	14*	GH4	GH2	GH6	GH4	.9536	.9585	.9572	.9609	.9590
1 1/8	7	—	GH8	GH4	GH8	GH4	1.0322	1.0407	1.0381	1.0416	1.0393
1 1/8	—	12	GH4	GH4	GH6	GH4	1.0709	1.0765	1.0749	1.0787	1.0768
1 1/4	7	—	GH8	GH4	GH8	GH4	1.1572	1.1657	1.1631	1.1668	1.1644
1 1/4	—	12	GH4	GH4	GH6	GH4	1.1959	1.2015	1.1999	1.2039	1.2019
1 3/8	6	—	GH8	GH4	GH8	GH4	1.2667	1.2768	1.2738	1.2771	1.2745
1 3/8	—	12	GH4	GH4	GH6	GH4	1.3209	1.3265	1.3249	1.3291	1.3270
1 1/2	6	—	GH8	GH4	GH8	GH4	1.3917	1.4018	1.3988	1.4022	1.3996
1 1/2	—	12	GH4	GH4	GH6	GH4	1.4459	1.4515	1.4499	1.4542	1.4522

\*UN

These are general tap recommendations to produce the Class of Thread indicated in average materials when used with reasonable care. However, if the tap specified does not give a satisfactory gage fit in the work, please consult the factory.

**METRIC TAP RECOMMENDATIONS FOR CLASSES OF THREAD  
(ISO)**

SIZE mm	PITCH mm	RECOMMENDED TAP FOR CLASS OF THREAD		PITCH DIAMETER LIMITS FOR CLASS OF THREAD		
		4H	6H	MINIMUM (BASIC)	MAX. 4H	MAX. 6H
M1.5	0.35	D1	D2	1.273	1.326	1.358
M1.6	0.35	D1	D3	1.373	1.426	1.458
M1.8	0.35	D1	D3	1.573	1.626	1.658
M2	0.45	D1	D2	1.708	1.768	1.803
M2	0.40	D1	D3	1.740	1.796	1.830
M2.2	0.45	D1	D3	1.908	1.968	2.003
M2.3	0.40	D1	D2	2.040	2.096	2.130
M2.5	0.45	D1	D3	2.208	2.268	2.303
M2.6	0.45	D1	D2	2.308	2.368	2.403
M3	0.60	D1	D2	2.610	2.681	2.722
M3	0.50	D1	D3	2.675	2.738	2.775
M3.5	0.60	D1	D4	3.110	3.181	3.222
M4	0.75	D2	D3	3.513	3.588	3.631
M4	0.70	D2	D4	3.545	3.620	3.663
M4.5	0.75	D2	D4	4.013	4.088	4.131
M5	1.00	D2	D3	4.350	4.440	4.490
M5	0.90	D2	D3	4.415	4.501	4.549
M5	0.80	D2	D4	4.480	4.560	4.605
M5.5	0.90	D2	D3	4.915	5.002	5.050
M6	1.00	D3	D5	5.350	5.445	5.500
M6	0.75	D3	D4	5.513	5.598	5.645
M7	1.00	D3	D5	6.350	6.445	6.500
M7	0.75	D2	D4	6.513	6.598	6.645
M8	1.25	D3	D5	7.188	7.288	7.348
M8	1.00	D3	D5	7.350	7.445	7.500
M9	1.25	D3	D5	8.188	8.288	8.348
M9	1.00	D3	D5	8.350	8.445	8.500
M10	1.50	D3	D6	9.026	9.138	9.206
M10	1.25	D3	D5	9.188	9.288	9.348
M10	1.00	D3	D5	9.350	9.445	9.500
M11	1.50	D3	D5	10.026	10.138	10.206
M12	1.75	D3	D6	10.863	10.988	11.063
M12	1.50	D3	D5	11.026	11.144	11.216
M12	1.25	D3	D5	11.188	11.300	11.368
M14	2.00	D3	D7	12.701	12.833	12.913
M14	1.50	D3	D6	13.026	13.144	13.216
M14	1.25	D3	D5	13.188	13.300	13.368

cont.

These are general tap recommendations to produce the Class of Thread indicated in average materials when used with reasonable care. However, if the tap specified does not give a satisfactory gage fit in the work, please consult the factory.

**METRIC TAP RECOMMENDATIONS FOR CLASSES OF THREAD**  
*(ISO) cont.*

SIZE mm	PITCH mm	RECOMMENDED TAP FOR CLASS OF THREAD		PITCH DIAMETER LIMITS FOR CLASS OF THREAD		
		4H	6H	MINIMUM (BASIC)	MAX. 4H	MAX. 6H
M16	2.00	D4	D7	14.701	14.833	14.913
M16	1.50	D3	D6	15.026	15.144	15.216
M17	1.50	D3	D5	16.026	16.144	16.216
M18	2.50	D4	D7	16.376	16.516	16.600
M18	2.00	D4	D6	16.701	16.833	16.913
M18	1.50	D3	D6	17.026	17.144	17.216
M19	2.50	D4	D6	17.376	17.516	17.600
M20	2.50	D4	D7	18.376	18.516	18.600
M20	2.00	D4	D6	18.701	18.833	18.913
M20	1.50	D3	D6	19.026	19.144	19.216
M22	2.50	D4	D7	20.376	20.516	20.600
M22	2.00	D4	D6	20.701	20.833	20.913
M22	1.50	D3	D6	21.026	21.144	21.216
M24	3.00	D4	D8	22.051	22.221	22.316
M24	2.00	D4	D7	22.701	22.841	22.925
M24	1.50	D3	D5	23.026	23.151	23.226
M25	2.00	D4	D7	23.701	23.841	23.925
M25	1.50	D3	D5	24.026	24.151	24.226
M26	3.00	D5	D8	24.051	24.221	24.316
M27	3.00	D5	D8	25.051	25.221	25.316
M27	2.00	D5	D7	25.701	25.841	25.925
M28	3.00	D5	D8	26.051	26.221	26.316
M28	2.00	D5	D7	26.701	26.841	26.925
M30	3.50	D5	D9	27.727	27.907	28.007
M30	3.00	D5	D8	28.051	28.221	28.316
M30	2.00	D5	D7	28.701	28.841	28.925
M32	3.50	D5	D9	29.727	29.907	30.007
M32	2.00	D5	D7	30.701	30.841	30.925
M33	3.50	D5	D9	30.727	30.907	31.007
M33	3.00	D5	D8	31.051	31.221	31.316
M33	2.00	D5	D7	31.701	31.841	31.925
M34	3.50	D5	D9	31.727	31.907	32.007
M36	4.00	D5	D9	33.402	33.592	33.702
M36	3.00	D5	D8	34.051	34.221	34.316
M36	2.00	D5	D7	34.701	34.841	34.925
M38	4.00	D5	D9	35.402	35.592	35.702
M39	4.00	D6	D9	36.402	36.592	36.702
M39	3.00	D6	D8	37.051	37.221	37.316
M39	2.00	D6	D7	37.701	37.841	37.925

These are general tap recommendations to produce the Class of Thread indicated in average materials when used with reasonable care. However, if the tap specified does not give a satisfactory gage fit in the work, please consult the factory.

# ENGINEERING DATA: SPECIAL TAPS

## FORMULA FOR TAP/DRILL SIZES (INCH)

### METHOD 1

$$\text{Drilled Hole Size (in.)} = \text{Basic Major Dia. of Thread (in.)} - \frac{.013 \times \% \text{ of Full Thread}^*}{\# \text{ of Threads per Inch (T.P.I.)}$$

\* Use whole number for % of thread...for 65%, use 65 (not .65).

### METHOD 2

$$\text{Nominal O.D.} - (\text{Dbl. Thread Depth} \times \% \text{ of Full Thread}) = \text{Drilled Hole Size}$$

*EXAMPLE: To find the hole size for obtaining 75% of thread in a 1/4-20 tapped hole, follow first column down to 20 threads, then across to 75% of thread. This figure (.0485), when subtracted from the .250 diameter, is .2015, which is the required diameter of hole. See equation:  
.250 - .0485 = .2015*

To figure whether or not pitch is too coarse for diameter:  
(Double thread depth) X 3 = x  
x = the smallest diameter possible for that T.P.I.

Threads per Inch	Double Thread Depth	50% Thread	55% Thread	60% Thread	65% Thread	70% Thread	75% Thread	80% Thread	85% Thread
6	.21651	.1083	.1192	.1300	.1408	.1517	.1625	.1733	.1842
7	.18558	.0929	.1021	.1114	.1207	.1300	.1393	.1486	.1579
8	.16238	.0813	.0894	.0975	.1056	.1138	.1219	.1300	.1381
9	.14434	.0722	.0794	.0866	.0939	.1011	.1083	.1156	.1228
10	.12990	.0649	.0714	.0779	.0844	.0909	.0974	.1039	.1105
11	.11809	.0590	.0649	.0708	.0767	.0826	.0885	.0944	.1005
12	.10825	.0541	.0595	.0649	.0702	.0755	.0808	.0861	.0921
13	.09992	.0499	.0549	.0599	.0649	.0699	.0749	.0799	.0850
14	.09278	.0464	.0510	.0556	.0602	.0648	.0694	.0740	.0789
16	.08119	.0406	.0446	.0486	.0526	.0566	.0606	.0646	.0691
18	.07217	.0361	.0396	.0431	.0466	.0501	.0536	.0571	.0614
20	.06495	.0325	.0357	.0389	.0421	.0453	.0485	.0517	.0553
24	.05412	.0270	.0298	.0326	.0354	.0382	.0410	.0438	.0460
27	.04811	.0240	.0264	.0288	.0312	.0336	.0360	.0384	.0409
28	.04639	.0232	.0254	.0276	.0298	.0324	.0347	.0370	.0395
30	.04330	.0216	.0238	.0260	.0282	.0304	.0326	.0348	.0368
32	.04059	.0203	.0223	.0243	.0263	.0283	.0303	.0323	.0345
36	.03608	.0180	.0198	.0216	.0234	.0252	.0270	.0288	.0307
40	.03247	.0162	.0178	.0194	.0210	.0226	.0242	.0258	.0276
44	.02952	.0147	.0162	.0177	.0192	.0207	.0222	.0237	.0251
48	.02706	.0135	.0148	.0161	.0174	.0187	.0200	.0213	.0230
56	.02319	.0116	.0127	.0138	.0149	.0160	.0171	.0182	.0197
64	.02029	.0101	.0111	.0121	.0131	.0141	.0151	.0161	.0173
72	.01804	.0090	.0099	.0107	.0115	.0123	.0131	.0139	.0153
80	.01623	.0081	.0089	.0097	.0105	.0113	.0121	.0129	.0138

Figures in table show amount to subtract from O.D. of screw to obtain specific percentages of thread.  
Select nearest size commercial stock drill.



**FORMULA FOR TAP/DRILL SIZES**  
*(METRIC)*

**METHOD 1**

$$\text{Drilled Hole Size (mm)} = \text{Basic Major Dia. of Thread (mm)} - \frac{\% \text{ of Full Thread} * \text{X mm Pitch}}{76.98}$$

*\* Use whole number for % of thread...for 65%, use 65 (not .65).*

**METHOD 2**

$$\text{Nominal O.D. - (Dbl. Thread Depth X \% of Full Thread)} = \text{Drilled Hole Size}$$

*EXAMPLE: To find the hole size for obtaining 75% of thread in a (M6) 6mm x 1.00 tapped hole, follow first column down to 1.00 threads, then across to 75% of thread. This figure (.9743), when subtracted from 6mm diameter, is 5.0257, which is the required diameter of hole. See equation:  
M6 - (1.2990 X 75) = (6 - .9743) = 5.0257mm*

*To figure whether or not pitch is too coarse for diameter:  
(Double thread depth) X 3 = x  
x = the smallest diameter possible for that T.P.I.*

NOTE: All numbers are shown in millimeters (mm). To convert metric values to inches, divide by 25.4

mm Pitch	Double Thread Depth	50% Thread	55% Thread	60% Thread	65% Thread	70% Thread	75% Thread	80% Thread	85% Thread
4.0	5.1963	2.5982	2.8580	3.1178	3.3776	3.6374	3.8972	4.1570	4.4169
3.50	4.5466	2.2733	2.5006	2.7280	2.9553	3.1826	3.4100	3.6373	3.8646
3.00	3.8969	1.9485	2.1433	2.3381	2.5330	2.7278	2.9227	3.1175	3.3124
2.50	3.2476	1.6238	1.7862	1.9486	2.1109	2.2733	2.4357	2.5981	2.7605
2.00	2.5979	1.2990	1.4288	1.5587	1.6886	1.8185	1.9484	2.0783	2.2082
1.75	2.2733	1.1367	1.2503	1.3640	1.4776	1.5913	1.7050	1.8186	1.9323
1.50	1.9487	.9744	1.0718	1.1692	1.2667	1.3641	1.4615	1.5590	1.6564
1.25	1.6236	.8118	.8930	.9742	1.0553	1.1365	1.2177	1.2989	1.3801
1.00	1.2990	.6495	.7145	.7794	.8444	.9093	.9743	1.0392	1.1042
.90	1.1687	.5844	.6428	.7012	.7597	.8181	.8765	.9350	.9934
.80	1.0394	.5197	.5717	.6236	.6756	.7276	.7796	.8315	.8835
.75	.9743	.4871	.5359	.5846	.6333	.6820	.7307	.7794	.8282
.70	.9093	.4547	.5001	.5456	.5910	.6365	.6820	.7274	.7729
.60	.7793	.3897	.4286	.4676	.5065	.5455	.5845	.6234	.6624
.50	.6421	.3211	.3532	.3853	.4174	.4495	.4816	.5137	.5458
.45	.5847	.2924	.3216	.3508	.3801	.4093	.4385	.4678	.4970
.40	.5197	.2599	.2858	.3118	.3378	.3638	.3898	.4158	.4417
.35	.4547	.2274	.2501	.2728	.2956	.3183	.3410	.3638	.3865
.30	.3896	.1948	.2143	.2338	.2532	.2727	.2922	.3117	.3312
.25	.3246	.1663	.1785	.1948	.2110	.2272	.2434	.2597	.2759

Figures in table show amount to subtract from O.D. of screw to obtain specific percentages of thread. Select nearest size commercial stock drill.

**Material Hook or Rake Angles • Suggested Surface Treatments**  
**• Cutting Fluids and Cutting Speeds**  
*(STARTING RECOMMENDATIONS ONLY)*

MATERIAL TO BE TAPPED	HOOK OR RAKE ANGLE	SUGGESTED SURFACE TREATMENT**	LUBRICANT/COOLANT	SPEED=SFM
ALUMINUM (WROUGHT)	12° - 15° HOOK	TiN, TiCN	Soluble, Light Base, or Lard Oil	90 - 150 SFM
ALUMINUM DIE CASTING	8° - 10° RAKE	TiCN, TiN, CrN, TiAlN+WC/C	Soluble or Lard Oil	65 - 75 SFM
ALUMINUM BRONZE	0° - 3° RAKE	N, TiN	Mineral Oil w/Lard, or Light Oil	20 - 60 SFM
BAKELITE (HARD PLASTIC)	0° - 3° RAKE	TiCN	Dry or Air Jet	25 - 40 SFM
BERYLLIUM COPPER	12° - 14° HOOK	TiAlN+WC/C, CrN, N	Soluble Light Base Oil	50 - 90 SFM
BRASS	0° - 3° RAKE	None, TiCN	Soluble Light Base Oil	100 - 200 SFM
BRONZE (FREE-MACHINE)	2° - 6° HOOK	None, TiCN, N	Soluble Light Base Oil	80 - 150 SFM
CAST BRASS	2° - 5° RAKE	N, TiCN	Soluble Light Base Oil	100 - 200 SFM
CAST IRON (GRAY)	0° - 3° RAKE	N, TiCN	Dry or Soluble Oil	20 - 80 SFM
COPPER	18° HOOK	TiAlN+WC/C, CrN	Soluble Light Base Oil	80 - 150 SFM
COPPER - NICKEL	12° HOOK	N, TiCN	Soluble Light Base Oil	10 - 20 SFM
DELTRIN	5° - 8° HOOK	TiAlN+WC/C, TiN, N	Dry, Air Jet, or Water Soluble	65 - 100 SFM
DUCTILE IRON	3° - 6° HOOK	N+O, TiN, TiCN	Soluble or Sulphur Based Oils	30 - 50 SFM
DURALUMIN	12° - 14° HOOK	TiAlN+WC/C, CrN	Soluble or Lard Oil	50 - 90 SFM
FERRO-TIC	0° - 3° NEG RAKE	None	Anti-Seize Compound	8 - 20 SFM
FIBERGLASS	0° - 3° RAKE	TiCN	Dry or Air Jet	25 - 40 SFM
HASTELLOY	12° - 15° HOOK	CrN	Sulphur Based Oils	8 - 20 SFM
INCONEL	12° - 15° HOOK	N, CrN	Sulphur Based Oils	8 - 20 SFM
MAGNESIUM	18° - 20° HOOK (MUST)	CrN	Soluble Light Base Oil	100 - 150 SFM
MALLEABLE IRON	3° RAKE	N+O, TiN, TiCN	Soluble or Sulphur Based Oils	30 - 50 SFM
MANGANESE 0	° - 3° RAKE	TiCN	Sulphur Based Oils	8 - 20 SFM
MANGANESE BRONZE	0° - 3° RAKE	N, TiCN	Soluble Light Base Oil	20 - 60 SFM
MOLYBDENUM	12° - 14° HOOK	N, TiN, TiCN	Sulphur Based Oils	20 - 45 SFM
MONEL	12° - 15° HOOK	N, TiCN	Sulphur Based Oils	8 - 20 SFM
NAVAL BRASS	0° - 3° RAKE	N	Soluble Light Base Oil	100 - 200 SFM
NAVAL BRONZE	2° - 6° HOOK	None, TiCN	Soluble Light Base Oil	80 - 150 SFM
NICKEL SILVER	0° - 3° RAKE	N, TiCN	Sulphur Based Oils	20 - 60 SFM
NICKEL (PURE)	12° - 15° HOOK	N, TiCN	Soluble Light Base Oil	5 - 25 SFM
NITRALLOY	0° RAKE	N, TiCN	Sulphur Based Oils	8 - 20 SFM
NITRONIC (*NO GUARANTEE)	12° - 14° POS. RAKE	N, TiN, TiCN	Sulphur Based Oils	8 - 20 SFM
NYLON	5° - 8° HOOK	N, TiN	Dry, Air Jet or Water Soluble	65 - 100 SFM
PLASTICS:				
THERMOPLASTIC (SOFT)	5° - 8° HOOK	N, TiN	Dry, Air Jet or Water Soluble	65 - 100 SFM
ABS, DELTRIN, NYLON, PVC, ETC.				
THERMOSETTING (HARD)	0° - 3° RAKE	TiCN	Dry or Air Jet	25 - 40 SFM
BAKELITE, LAMINATES, PHENOLIC, POLYESTERS, ETC.				
POWDERED METAL (Sintered)	0° RAKE	TiCN	Soluble Light Based Oil	25 - 80 SFM
RUBBER, HARD	0° - 3° RAKE	None	Dry	50 - 200 SFM
SILICON BRONZE	0° - 3° RAKE	N, TiCN	Soluble Light Base Oil	20 - 60 SFM
STEEL:				
CARBON STEEL	10° - 12° HOOK	O, N, TiN	Sulphur Based Oil	40 - 90 SFM
COLD-ROLLED STEEL (1018, ETC.)	10° - 12° HOOK	O, N, TiN	Sulphur Based Oil	40 - 90 SFM
FORGED	10° - 12° HOOK	O, N, TiN	Sulphur Based Oil	20 - 50 SFM
LEADED (12L14, ETC.)	12° HOOK	O, N, TiN	Sulphur Based Oil	40 - 90 SFM
STAINLESS				
FREE MACHINING	12° - 14° HOOK	N, TiN, TiCN	Sulphur Based Oil	20 - 40 SFM
PRECIP. HARDENING	12° - 14° HOOK	N, TiN, TiCN	Sulphur Based Oil	8 - 20 SFM
TOOL	12° - 14° HOOK	N, TiN, TiCN	Sulphur Based Oil	20 - 50 SFM
TITANIUM	15° - 20° HOOK	O, N, CrN	Sulphur Based Oil	20 - 50 SFM
TUNGSTEN	5° RAKE	TiN	Sulphur Based Oil	8 - 20 SFM
TURCITE (SOFT PLASTIC)	5° - 8° HOOK	N, TiN	Dry, Air Jet or Water Soluble	65 - 100 SFM
ZAMAK (ZINC DIE CAST)	10° - 12° RAKE	TiCN, TiN, CrN, TiAlN+WC/C	Soluble Light Based Oil	50 - 200 SFM
ZINC	10° - 12° RAKE	TiCN, TiN, CrN, TiAlN+WC/C	Soluble Light Based Oil	50 - 200 SFM

\* If problems are encountered when tapping nitronic (or any other material), please consult North American Tool's Tool Designers.

\*\* See page 130 for definitions of tool coating abbreviations.



**TABLE OF SPEEDS FOR TAPS**  
*(USE ONLY AS SUGGESTED STARTING R.P.M.)*

**MACHINE SCREW AND FRACTIONAL SIZES**

Tap Size (UNC/UNF)	Taper Pipe Taps (NPT/NPTF)	Surface Feet per Minute (SFM)																	
		5'	10'	15'	20'	25'	30'	40'	50'	60'	70'	80'	90'	100'	110'	120'	130'	140'	150'
		Revolutions per Minute (RPM)																	
0 (.060)		318	637	955	1273	1592	1910	2546	3183	3820	4456	5093	5729	6366	7003	7639	8276	8913	9549
1 (.073)		273	546	819	1046	1308	1570	2093	2617	3140	3663	4186	4710	5233	5756	6279	6805	7326	7849
2 (.086)		212	424	637	888	1110	1333	1777	2221	2665	3109	3554	3999	4442	4886	5330	5774	6218	6662
3 (.099)		191	382	573	772	964	1157	1543	1929	2315	2701	3086	3472	3858	4244	4629	5015	5401	5787
4 (.112)		174	347	521	682	853	1023	1364	1705	2046	2387	2728	3069	3411	3751	4092	4434	4775	5116
5 (.125)		147	294	441	611	764	917	1222	1528	1833	2139	2445	2750	3056	3361	3667	3973	4278	4584
6 (.138)		136	273	409	553	691	829	1106	1382	1659	1935	2212	2488	2766	3042	3318	3595	3871	4148
8 (.164)		119	239	358	466	583	699	932	1165	1398	1631	1864	2097	2330	2563	2796	3029	3262	3495
10 (.190)		101	201	302	402	502	603	804	1005	1205	1406	1607	1808	2009	2210	2411	2612	2813	3014
12 (.216)		87	174	260	354	442	531	707	884	1061	1238	1415	1592	1769	1945	2122	2300	2476	2653
14 (.242)		79	158	237	316	395	474	631	789	947	1105	1263	1421	1579	1736	1894	2052	2210	2368
1/4	1/16	76	153	229	306	382	458	611	764	917	1070	1222	1375	1528	1681	1833	1986	2139	2292
5/16		62	123	185	245	306	367	489	611	733	856	978	1100	1222	1345	1467	1589	1711	1833
3/8		50	101	151	204	255	305	407	509	611	713	815	917	1019	1120	1222	1324	1426	1528
7/16	1/8	43	87	130	175	219	262	349	437	524	611	698	786	873	960	1048	1135	1222	1310
1/2		38	76	115	153	191	229	305	382	458	535	611	688	764	840	917	993	1070	1146
9/16	1/4	34	68	102	137	172	206	274	342	410	478	547	616	683	752	820	888	952	1020
5/8	3/8	32	64	96	122	153	183	244	306	367	428	489	550	611	672	733	794	856	917
11/16		28	55	83	111	138	167	222	278	333	389	444	500	556	611	667	722	778	833
3/4		25	51	76	102	128	153	203	255	305	357	407	458	509	560	611	662	713	764
7/8	1/2	22	43	65	87	109	131	175	218	262	306	350	392	437	480	524	568	611	655
1"	3/4	19	38	57	76	96	115	153	191	230	268	305	344	382	420	458	497	535	573
1 1/8		17	34	51	68	84	102	136	170	204	238	272	306	340	373	407	441	475	509
1 1/4		15	31	46	61	76	92	122	153	183	214	244	275	305	336	367	397	428	458
1 3/8		14	28	42	56	69	83	111	139	167	194	222	250	278	306	333	361	389	417
1 1/2		13	25	38	51	63	76	102	127	153	178	204	229	255	280	305	331	356	382
1 5/8	1 1/4	12	23	35	47	59	71	94	118	141	165	188	212	235	259	282	306	329	353
1 3/4		11	22	33	44	55	65	87	109	131	153	175	196	218	240	262	284	306	327
1 7/8		10	20	30	41	51	61	81	102	122	143	163	183	204	224	244	265	285	306
2"		9	19	29	38	48	57	76	96	115	134	153	172	191	210	229	248	267	287

**METRIC SIZES**

Metric Tap Size	Dec. Equiv. Size	Surface Feet per Minute (SFM)																	
		5'	10'	15'	20'	25'	30'	40'	50'	60'	70'	80'	90'	100'	110'	120'	130'	140'	150'
		Revolutions per Minute (RPM)																	
M1	.0394	490	979	1469	1959	2449	2938	3918	4897	5877	6856	7836	8815	9795	10774	11754	12733	13713	14692
M2	.0787	242	484	725	967	1209	1451	1934	2418	2901	3385	3868	4352	4835	5319	5803	6286	6770	7253
M3	.1181	162	324	486	647	809	971	1295	1619	1942	2266	2590	2914	3237	3561	3885	4208	4532	4856
M3.5	.1378	138	277	415	554	692	830	1107	1384	1661	1938	2214	2491	2768	3045	3322	3599	3875	4152
M4	.1575	122	243	365	487	608	730	973	1217	1460	1703	1946	2190	2433	2676	2920	3163	3406	3650
M5	.1969	97	194	291	388	485	582	776	970	1163	1357	1551	1745	1939	2133	2327	2521	2715	2909
M6	.2362	81	162	243	324	405	486	647	809	971	1133	1295	1457	1619	1781	1942	2104	2266	2428
M7	.2756	69	138	208	277	346	415	554	692	830	969	1107	1246	1384	1522	1661	1799	1938	2076
M8	.3150	61	121	182	243	303	364	485	606	728	849	970	1091	1213	1334	1455	1577	1698	1819
M10	.3937	48	97	145	194	242	291	388	485	582	679	776	873	970	1067	1163	1260	1357	1454
M12	.4724	40	81	121	162	202	243	324	405	486	567	647	728	809	890	971	1052	1133	1214
M14	.5512	35	69	104	139	173	208	277	347	416	485	555	624	693	763	832	901	971	1040
M16	.6299	30	61	91	121	152	182	243	303	364	424	485	546	606	667	728	788	849	910
M18	.7087	27	54	81	108	135	162	216	269	323	377	431	485	539	593	647	700	754	808
M20	.7874	24	49	73	97	121	146	194	243	291	340	388	437	485	534	582	631	680	728
M22	.8661	22	44	66	88	110	132	176	221	265	309	353	397	441	485	529	573	618	662
M24	.9449	20	40	61	81	101	121	162	202	243	283	323	364	404	445	485	526	566	606
M27	1.0630	18	36	54	72	90	108	144	180	216	252	287	323	359	395	431	467	503	539
M30	1.1811	16	32	49	65	81	97	129	162	194	226	259	291	323	356	388	420	453	485

Factors to be considered when determining tapping speeds:

- Material to be tapped
- Depth of hole
- Length of chamfer on tap
- Pitch of thread
- Percentage of full thread to be cut
- Lubrication
- Machine equipment and rigidity
- Horizontal or vertical tapping

**S.F.M. / R.P.M.  
EQUATIONS:**

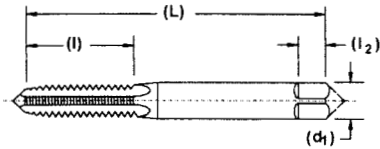
S.F.M. = 0.26 X R.P.M. X TOOL DIAMETER

R.P.M. =  $\frac{3.82 \times \text{S.F.M.}}{\text{TOOL DIAMETER}}$

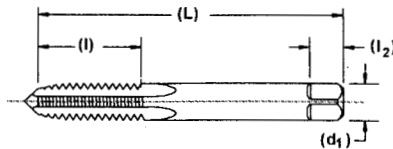
**STANDARD TAP DIMENSIONS • GROUND THREAD**

(Ref. USCTI Table 302)

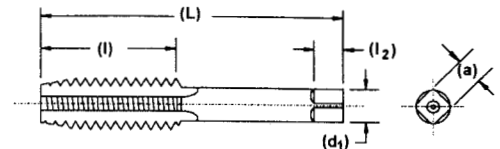
General Dimensions



BLANK DESIGN 1



BLANK DESIGN 2



BLANK DESIGN 3

Nominal Diameter Range - Inches		Machine Screw Size No.	Nominal Fractional Diameter Inches	Nominal Metric Diameter Millimeters, (Inches)	Blank Design No.	Tap Dimensions---Inches				
Over	To (Inc.)					Overall Length L	Thread Length l	Square Length l <sub>2</sub>	Shank Diameter d <sub>1</sub>	Size of Square a
.052	.065	0 (.0600)		M 1.6 (.0630)	1	1.63	.31	.19	.1410	.110
.065	.078	1 (.0730)		M1.8 (.0709)	1	1.69	.38	.19	.1410	.110
.078	.091	2 (.0860)		M2 (0787), M2.2 (.0866)	1	1.75	.44	.19	.1410	.110
.091	.104	3 (.0990)		M2.5 (.0984)	1	1.81	.50	.19	.1410	.110
.104	.117	4 (.1120)			1	1.88	.56	.19	.1410	.110
.117	.130	5 (.1250)		M3 (.1181)	1	1.94	.63	.19	.1410	.110
.130	.145	6 (.1380)		M3.5 (.1378)	1	2.00	.69	.19	.1410	.110
.145	.171	8 (.1640)		M4 (.1575)	1	2.13	.75	.25	.1680	.131
.171	.197	10 (.1900)		M4.5 (.1772), M5 (.1969)	1	2.38	.88	.25	.1940	.152
.197	.223	12 (.2160)			1	2.38	.94	.28	.2200	.165
.223	.260		1/4 (.2500)	M6 (.2362)	2	2.50	1.00	.31	.2550	.191
.260	.323		5/16 (.3125)	M7 (.2756), M8 (.3150)	2	2.72	1.13	.38	.3180	.238
.323	.395		3/8 (.3750)	M10 (.3937)	2	2.94	1.25	.44	.3810	.286
.395	.448		7/16 (.4375)		3	3.16	1.44	.41	.3230	.242
.448	.510		1/2 (.5000)	M12 (.4724)	3	3.38	1.66	.44	.3670	.275
.510	.573		9/16 (.5625)	M14 (.5512)	3	3.59	1.66	.50	.4290	.322
.573	.635		5/8 (.6250)	M16 (.6299)	3	3.81	1.81	.56	.4800	.360
.635	.709		11/16 (.6875)	M18 (.7087)	3	4.03	1.81	.63	.5420	.406
.709	.760		3/4 (.7500)		3	4.25	2.00	.69	.5900	.442
.760	.823		13/16 (.8125)	M20 (.7874)	3	4.47	2.00	.69	.6520	.489
.823	.885		7/8 (.8750)	M22 (.8661)	3	4.69	2.22	.75	.6970	.523
.885	.948		15/16 (.9375)	M24 (.9449)	3	4.91	2.22	.75	.7600	.570
.948	1.010		1 (1.0000)	M25 (.9843)	3	5.13	2.50	.81	.8000	.600
1.010	1.073		1-1/16 (1.0625)	M27 (1.0630)	3	5.13	2.50	.88	.8960	.672
1.073	1.135		1-1/8 (1.1250)		3	5.44	2.56	.88	.8960	.672
1.135	1.198		1-3/16 (1.1875)	M30 (1.1811)	3	5.44	2.56	1.00	1.0210	.766
1.198	1.260		1-1/4 (1.2500)		3	5.75	2.56	1.00	1.0210	.766
1.260	1.323		1-5/16 (1.3125)	M33 (1.2992)	3	5.75	2.56	1.06	1.1080	.831
1.323	1.385		1-3/8 (1.3750)		3	6.06	3.00	1.06	1.1080	.831
1.358	1.448		1-7/16 (1.4375)	M36 (1.4173)	3	6.06	3.00	1.13	1.2330	.925
1.448	1.510		1-1/2 (1.5000)		3	6.38	3.00	1.13	1.2330	.925
1.510	1.635		1-5/8 (1.6250)	M39 (1.5354)	3	6.69	3.19	1.13	1.3050	.979
1.635	1.760		1-3/4 (1.7500)	M42 (1.6535)	3	7.00	3.19	1.25	1.4300	1.072
1.760	1.885		1-7/8 (1.8750)		3	7.31	3.56	1.25	1.5190	1.139
1.885	2.010		2 (2.0000)	M48 (1.8898)	3	7.63	3.56	1.38	1.6440	1.233

(Continued)



**North American Tool**

"In The Pursuit of Perfection"

**STANDARD TAP DIMENSIONS • GROUND THREAD (cont.)**

(Ref. USCTI Table 302)

**General Dimensions**

Nominal Diameter Range - Inches		Machine Screw Size No.	Nominal Fractional Diameter Inches	Nominal Metric Diameter Millimeters, (Inches)	Blank Design No.	Tap Dimensions---Inches				
						Overall Length L	Thread Length l	Square Length l <sub>2</sub>	Shank Diameter d <sub>1</sub>	Size of Square a
2.010	2.135		2 1/8 (2.1250)		3	8.00	3.56	1.38	1.7690	1.327
2.135	2.260		2 1/4 (2.2500)	M56 (2.2047)	3	8.25	3.56	1.44	1.8940	1.420
2.260	2.385		2 3/8 (2.3750)		3	8.50	4.00	1.44	2.0190	1.514
2.385	2.510		2 1/2 (2.5000)		3	8.75	4.00	1.50	2.1000	1.575
2.510	2.635		2 5/8 (2.6250)	M64 (2.5197)	3	8.75	4.00	1.50	2.2250	1.669
2.635	2.760		2 3/4 (2.7500)		3	9.25	4.00	1.56	2.3500	1.762
2.760	2.885		2 7/8 (2.8750)	M72 (2.8346)	3	9.25	4.00	1.56	2.4750	1.856
2.885	3.010		3 (3.0000)		3	9.75	4.56	1.63	2.5430	1.907
3.010	3.135		3 1/8 (3.1250)		3	9.75	4.56	1.63	2.6680	2.001
3.135	3.260		3 1/4 (3.2500)	M80 (3.1496)	3	10.00	4.56	1.75	2.7930	2.095
3.260	3.385		3 3/8 (3.3750)		3	10.00	4.56	1.75	2.8830	2.162
3.385	3.510		3 1/2 (3.5000)		3	10.25	4.94	2.00	3.0080	2.256
3.510	3.635		3 5/8 (3.6250)	M90 (3.5433)	3	10.25	4.94	2.00	3.1330	2.350
3.635	3.760		3 3/4 (3.7500)		3	10.50	5.31	2.13	3.2170	2.413
3.760	3.885		3 7/8 (3.8750)		3	10.50	5.31	2.13	3.3420	2.506
3.885	4.010		4 (4.0000)	M100 (3.9370)	3	10.75	5.31	2.25	3.4670	2.600

**SPECIAL TAPS**

Unless otherwise specified:

Special taps over 1.010" to 1.510" diameter inclusive, having 14 or more threads per inch or 1.75 millimeter pitch and finer, and sizes over 1.510" diameter with 10 or more threads per inch or 2.5 millimeter pitch and finer, are made to general dimensions shown in Table 303.

Special tap thread limits are determined by using the formulas shown in Table 331 for Unified Inch Screw Threads and Table 341 for Metric M-Profile Screw Threads.

**NOTES**

Tap sizes .395" and smaller have an external center on the thread end (may be removed on bottoming taps). Sizes .223" and smaller have an external center on the shank end. Sizes .224" thru .395" have truncated partial cone centers on the shank end (length of cone approx. 1/4 of diameter of shank). Sizes over .395" have internal centers on both the thread and shank ends.

For standard thread limits and tolerances for Unified Inch Screw Threads see table 327 and for Metric Threads see Table 337.

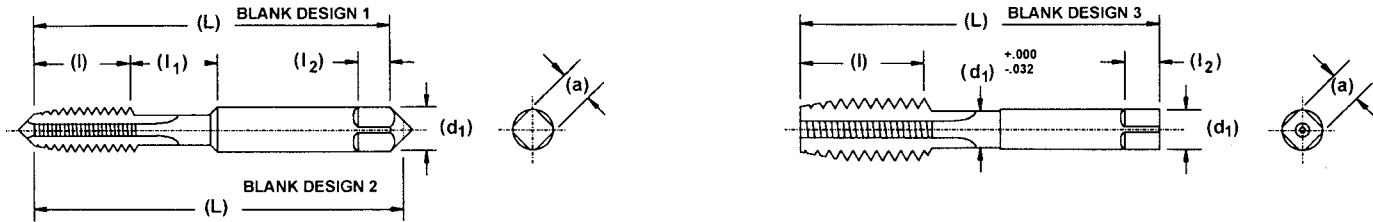
For eccentricity tolerances of tap elements see Table 317.

**Tolerances**

Element	Nominal Diameter Range in Inches		Direction	Tolerance (Inches)
	Over	To (Inc.)		
Length Overall - L	.0520	1.0100	Plus or Minus	.031
	1.0100	4.0100	Plus or Minus	.063
Length of Thread - l	.0520	.2230	Plus or Minus	.047
	.2230	.5100	Plus or Minus	.063
	.5100	1.5100	Plus or Minus	.094
	1.5100	4.0100	Plus or Minus	.125
Length of square - l <sub>2</sub>	.0520	1.0100	Plus or Minus	.031
	1.0100	4.0100	Plus or Minus	.063
Diameter of shank - d <sub>1</sub>	.0520	.2230	Minus	.0015
	.2230	.6350	Minus	.0015
	.6350	1.0100	Minus	.0020
	1.0100	1.5100	Minus	.0020
	1.5100	2.0100	Minus	.0030
	2.0100	4.0100	Minus	.0030
Size of square - a	.0520	.5100	Minus	.004
	.5100	1.0100	Minus	.006
	1.0100	2.0100	Minus	.008
	2.0100	4.0100	Minus	.010

**OPTIONAL NECK AND OPTIONAL SHORTENED THREAD LENGTH  
TAP DIMENSIONS, GROUND THREAD**

(Ref. USCTI Table 302-A)



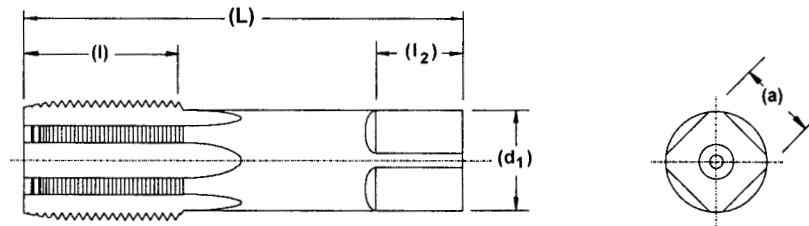
**General Dimensions**

Nominal Diameter Range-Inches		Machine Screw Size No.	Nominal Fractional Diameter Inches	Nominal Metric Diameter Millimeters, (Inches)	Blank Design No.	Tap Dimensions---Inches					
Over	To (Inc.)					Overall Length L	Thread Length l	Neck Length l1	Square Length l2	Shank Diameter d1	Size of Square a
.104	.117	4 (.1120)			1	1.88	.31	.25	.19	.1410	.110
.117	.130	5 (.1250)		M3 (.1181)	1	1.94	.31	.31	.19	.1410	.110
.130	.145	6 (.1380)		M3.5 (.1378)	1	2.00	.38	.31	.19	.1410	.110
.145	.171	8 (.1640)		M4 (.1575)	1	2.13	.38	.38	.25	.1680	.131
.171	.197	10 (.1900)		M4.5 (.1772), M5 (.1969)	1	2.38	.50	.38	.25	.1940	.152
.197	.223	12 (.2160)			1	2.38	.50	.44	.28	.2200	.165
.223	.260		1/4 (.2500)	M6 (.2362)	2	2.50	.63	.38	.31	.2550	.191
.260	.323		5/16 (.3125)	M7 (.2756), M8 (.3150)	2	2.72	.69	.44	.38	.3180	.238
.323	.395		3/8 (.3750)	M10 (.3937)	2	2.94	.75	.50	.44	.3810	.286
.395	.448		7/16 (.4375)		3	3.16	.88	-	.41	.3230	.242
.448	.510		1/2 (.5000)	M12 (.4724)	3	3.38	.94	-	.44	.3670	.275
.510	.573		9/16 (.5625)	M14 (.5512)	3	3.59	1.00	-	.50	.4290	.322
.573	.635		5/8 (.6250)	M16 (.6299)	3	3.81	1.09	-	.56	.4800	.360
.635	.709		11/16 (.6875)	M18 (.7087)	3	4.03	1.09	-	.63	.5420	.406
.709	.760		3/4 (.7500)		3	4.25	1.22	-	.69	.5900	.442
.760	.823		13/16 (.8125)	M20 (.7874)	3	4.47	1.22	-	.69	.6520	.489
.823	.885		7/8 (.8750)	M22 (.8661)	3	4.69	1.34	-	.75	.6970	.523
.885	.948		15/16 (.9375)	M24 (.9449)	3	4.91	1.34	-	.75	.7600	.570
.948	1.010		1 (1.0000)	M25 (.9843)	3	5.13	1.50	-	.81	.8000	.600

**NOTES**

1. Thread Length "l" is based on a length of 12 pitches of the UNC thread series.
2. Thread Length "l" is a minimum value and has no tolerance.
3. When Thread Length "l" is added to Neck Length "l1," the total shall be no less than the minimum Table 302 Thread Length "l".
4. Unless otherwise specified, all tolerances are in accordance with Table 302.
5. For eccentricity tolerances, see Table 317.

**SPECIAL FINE PITCH TAPS, SHORT SERIES, GROUND THREAD**  
(Ref. USCTI Table 303)



Unless otherwise specified, special taps 1.010" to 1.510" diameter inclusive, having 14 or more threads per inch or 1.75 millimeter pitch and finer, and sizes over 1.510" diameter with 10 or more threads per inch, or 2.5 millimeter pitch and finer, will be made to the general dimensions shown below:

**General Dimensions**

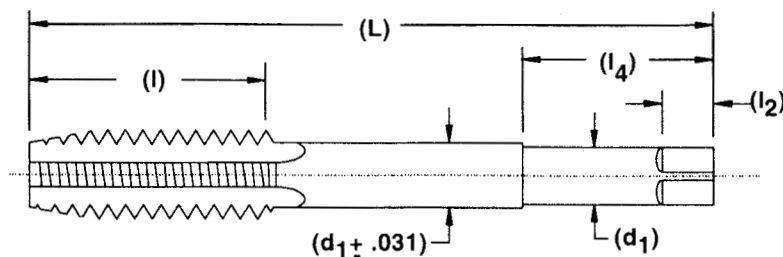
Nominal Diameter Range - Inches		Nominal Fractional Diameter Inches	Nominal Metric Diameter Millimeters	Tap Dimensions - Inches				
Over	To (Incl.)			Overall Length L	Thread Length l	Square Length l <sub>2</sub>	Shank Diameter d <sub>1</sub>	Size of Square a
1.010	1.073	1 1/16	M27	4.00	1.50	.88	.8960	.672
1.073	1.135	1 1/8		4.00	1.50	.88	.8960	.672
1.135	1.198	1 3/16	M30	4.00	1.50	1.00	1.0210	.766
1.198	1.260	1 1/4		4.00	1.50	1.00	1.0210	.766
1.260	1.323	1 5/16	M33	4.00	1.50	1.00	1.1080	.831
1.323	1.385	1 3/8		4.00	1.50	1.00	1.1080	.831
1.385	1.448	1 7/16	M36	4.00	1.50	1.00	1.2330	.925
1.448	1.510	1 1/2		4.00	1.50	1.00	1.2330	.925
1.510	1.635	1 5/8	M39	5.00	2.00	1.13	1.3050	.979
1.635	1.760	1 3/4	M42	5.00	2.00	1.25	1.4300	1.072
1.760	1.885	1 7/8		5.00	2.00	1.25	1.5190	1.139
1.885	2.010	2	M48	5.00	2.00	1.38	1.6440	1.233
2.010	2.135	2 1/8		5.25	2.00	1.38	1.7690	1.327
2.135	2.260	2 1/4	M56	5.25	2.00	1.44	1.8940	1.420
2.260	2.385	2 3/8		5.25	2.00	1.44	2.0190	1.514
2.385	2.510	2 1/2		5.25	2.00	1.50	2.1000	1.575
2.510	2.635	2 5/8	M64	5.50	2.00	1.50	2.1000	1.575
2.635	2.760	2 3/4		5.50	2.00	1.50	2.1000	1.575
2.760	2.885	2 7/8	M72	5.50	2.00	1.50	2.1000	1.575
2.885	3.010	3		5.50	2.00	1.50	2.1000	1.575
3.010	3.135	3 1/8		5.75	2.00	1.50	2.1000	1.575
3.135	3.260	3 1/4	M80	5.75	2.00	1.50	2.1000	1.575
3.260	3.385	3 3/8		5.75	2.00	1.50	2.1000	1.575
3.385	3.510	3 1/2		5.75	2.00	1.50	2.1000	1.575
3.510	3.635	3 5/8	M90	6.00	2.00	1.75	2.1000	1.575
3.635	3.760	3 3/4		6.00	2.00	1.75	2.1000	1.575
3.760	3.885	3 7/8		6.00	2.00	1.75	2.1000	1.575
3.885	4.010	4	M100	6.00	2.00	1.75	2.1000	1.575

**NOTES**

- For tolerances see Table 302.
- For standard thread limits and tolerances for Unified Inch Screw Threads see Table 327A.
- For standard thread limits and tolerances for Metric Threads see Tables 337 and 341.
- For eccentricity tolerances of tap elements see Table 317.

**SPECIAL EXTENSION TAPS, GROUND THREAD**

(Ref. USCTI Table 303-A)



Unless otherwise specified, special extension taps will be furnished with dimensions and tolerances as shown for Machine Screw and Fractional taps in Tables 302 and 303, and for Pipe taps in Table 311.

Exceptions:

1. Types of centers are optional with manufacturer.
2. Tolerances on shank diameter  $d_1$  for  $l_4$  length as shown in the following table.
3. Shank eccentricity tolerance in Table 317 applies only to the  $l_4$  length shown in the following table.
4. Length of Close Tolerance Shank, ( $L_4$ ) is minimum.

Nominal Tap Size		l Thread Length	d <sub>1</sub> Shank Diameter	l <sub>2</sub> Square Length	Square Size	"l <sub>4</sub> " Ground Shank Length
Fractional	Machine Screw					
	6	.688	.141	.188	.110	1.13
	8	.750	.168	.250	.131	1.25
	10 - 12	.875	.194	.250	.152	1.38
1/4	14	1.00	.255	.313	.191	1.50
1/4*		1.00	.185	.250	.138	Full Length
5/16		1.13	.318	.375	.238	1.56
5/16*		1.13	.240	.281	.180	Full Length
3/8		1.25	.381	.438	.286	1.63
3/8*		1.25	.275	.375	.206	Full Length
7/16		1.44	.323	.406	.242	1.69
1/2		1.66	.367	.438	.275	1.69
9/16		1.66	.429	.500	.322	1.88
5/8		1.81	.480	.563	.360	2.00
3/4		2.00	.590	.688	.442	2.25
7/8		2.22	.697	.750	.523	2.50
1"		2.50	.800	.813	.600	2.63
1-1/8		2.56	.896	.875	.672	2.75
1-1/4		2.56	1.021	1.00	.766	2.88
1-3/8		3.00	1.108	1.063	.831	3.00
1-1/2		3.00	1.233	1.125	.925	3.00

NOTE: The "L" dimension is determined by customer requirements. Stocking sizes are 4, 6, 8, 10 and 12 inch overall length depending on diameter.

**Tolerances**

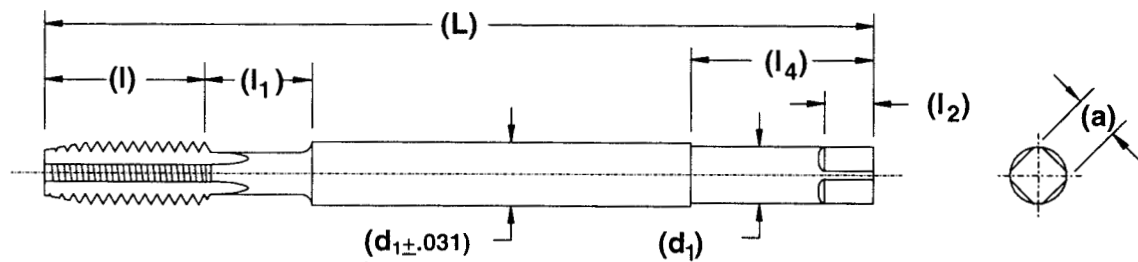
For Shank Diameter,  $d_1$  and  $l_4$  length

Size Range		Direction	Tolerance
Fractional	Machine Screw		
1/4 to 5/8 incl.	0 - 14 incl.	Minus	.003
11/16 to 1-1/2 incl.		Minus	.004



**PULLEY TAP DIMENSIONS • GROUND THREAD**

(Ref. USCTI Table 310)



**General Dimensions**

Nominal Fractional Diameter Inches	Tap Dimensions - Inches						
	Overall Length	Thread Length	Neck Length	Square Length	Length of Shank Close Tol. Section	Shank Diameter	Size of Square
	L	l	l <sub>1</sub>	l <sub>2</sub>	l <sub>4</sub>	d <sub>1</sub>	a
1/4 (.2500)	6,8	1.00	.38	.31	1.50	.2550	.191
5/16 (.3125)	6,8	1.13	.38	.38	1.56	.3180	.238
3/8 (.3750)	6,8,10	1.25	.38	.44	1.63	.3810	.286
7/16 (.4375)	6,8	1.44	.44	.50	1.69	.4440	.333
1/2 (.5000)	6,8,10,12	1.66	.50	.56	1.69	.5070	.380
5/8 (.6250)	6,8,10,12	1.81	.63	.69	2.00	.6330	.475
3/4 (.7500)	10,12	2.00	.75	.75	2.25	.7590	.569

**Tolerances**

Element	Size Range	Direction	Tolerance
Overall Length - L	1/4 to 3/4 inc.	Plus or Minus	.063
Thread Length - l	1/4 to 3/4 inc.	Plus or Minus	.063
Neck Length - l <sub>1</sub>	1/4 to 3/4 inc.	See Note - 1	See Note - 1
Square Length - l <sub>2</sub>	1/4 to 3/4 inc.	Plus or Minus	.031
Length of Shank (close tol.) - l <sub>4</sub>	1/4 to 3/4 inc.	See Note - 2	See Note - 2
Shank Diameter - d <sub>1</sub>	1/4 to 3/4 inc.	Minus	.0050
Size of Square - a	1/4 to 1/2 inc.	Minus	.004
	5/8 to 3/4 inc.	Minus	.006

**NOTES**

- l<sub>1</sub>, (Neck Length); neck and its length is optional with manufacturer.
- l<sub>4</sub>, (Length of Close Tolerance Shank) is minimum length which is held to eccentricity tolerances per Table 317.

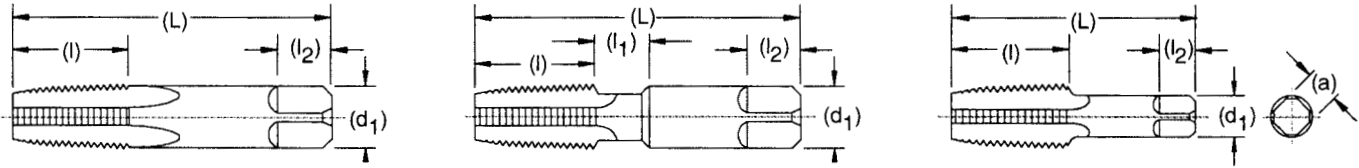
**GENERAL NOTES**

- These taps have an internal center in the thread end.
- These taps are made to the H3 limits shown in Table 327.
- For eccentricity tolerances of taps elements see Table 317.
- d<sub>1</sub>, (Shank diameter) is approximately the same as the maximum major diameter for that size.
- a, (Size of Square) is equal to .75 X d<sub>1</sub> to the nearest .001 inch.

**SPECIAL TAPS**

**STANDARD PIPE TAP DIMENSIONS  
STRAIGHT AND TAPER, GROUND THREAD**

(Ref. USCTI Table 311)



**General Dimensions**

Dimensions - Inches						
Nominal Size Inches	Length Overall L	Length of Thread l	Length of Square l <sub>2</sub>	Dia. of Shank d <sub>1</sub>	Size of Square a	Length Optional Neck l <sub>1</sub>
1/16	2.13	.69	.38	.3125	.234	.375
1/8	2.13	.75	.38	.3125	.234	...
1/8	2.13	.75	.38	.4375	.328	.375
1/4	2.44	1.06	.44	.5625	.421	.375
3/8	2.56	1.06	.50	.7000	.531	.375
1/2	3.13	1.38	.63	.6875	.515	...
3/4	3.25	1.38	.69	.9063	.679	...
1"	3.75	1.75	.81	1.1250	.843	...
1-1/4	4.00	1.75	.94	1.3125	.984	...
1-1/2	4.25	1.75	1.00	1.5000	1.125	...
2"	4.50	1.75	1.13	1.8750	1.406	...
2-1/2	5.50	2.56	1.25	2.2500	1.687	...
3"	6.00	2.63	1.38	2.6250	1.968	...
3-1/2	6.50	2.69	1.50	2.8125	2.108	...
4"	6.75	2.75	1.56	3.0000	2.250	...

**Tolerances**

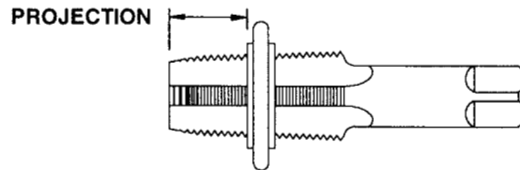
Element	Range	Direction	Tolerance
Length Overall - L	1/16 to 3/4 inc.	Plus or Minus	.031
	1" to 4" inc.	Plus or Minus	.063
Length of Thread - l	1/16 to 3/4 inc.	Plus or Minus	.063
	1" to 1-1/4 inc.	Plus or Minus	.094
	1-1/2 to 4"	Plus or Minus	.125
Length of Square - l <sub>2</sub>	1/16 to 3/4 inc.	Plus or Minus	.031
	1" to 4" inc.	Plus or Minus	.063
Diameter of Shank - d <sub>1</sub>	1/16 to 1/8	Minus	.0015
	1/4 to 1" inc.	Minus	.0020
	1-1/4 to 4" inc.	Minus	.0030
Size of Square - a	1/16 to 1/8	Minus	.004
	1/4 to 3/4 inc.	Minus	.006
	1" to 4" inc.	Minus	.008

**NOTE:** For thread limits and tolerances see USCTI Tables 335, 335A and 338. For eccentricity tolerances of taps see Table 317.

**TAPER PIPE TAP, THREAD LIMITS, GROUND THREAD**

(Ref. USCTI Table 338)

- American National Standard Taper Pipe Thread Form (NPT)
- Aeronautical National Taper Pipe Thread Form (ANPT)
- Dryseal American National Standard Taper Pipe Thread Form (NPTF)



Tap Thread Limits						Reference Dimensions	
Nominal Size Inches	Threads per Inch	Projection* Inches	Projection Tolerance + or -	Taper Per Foot Limits		L <sub>1</sub> Length	Tap Drill Size ** NPT,ANPT,NPTF
				Minimum	Maximum		
1/16	27	.312	.063	.719	.781	.160	C
1/8	27	.312	.063	.719	.781	.1615	Q
1/4	18	.459	.063	.719	.781	.2278	7/16
3/8	18	.454	.063	.719	.781	.240	9/16
1/2	14	.579	.063	.719	.781	.320	45/64
3/4	14	.565	.063	.719	.781	.339	29/32
1"	11-1/2	.678	.094	.719	.781	.400	1-9/64
1-1/4	11-1/2	.686	.094	.719	.781	.420	1-31/64
1-1/2	11-1/2	.699	.094	.719	.781	.420	1-23/32
2"	11-1/2	.667	.094	.719	.781	.436	2-3/16
2-1/2	8	.925	.094	.734	.781	.682	2-39/64
3"	8	.925	.094	.734	.781	.766	3-15/64
3-1/2	8	.938	.125	.734	.781	.821	.....
4	8	.950	.125	.734	.781	.844	.....

**NOTES**

\* Distance small end of tap projects through L<sub>1</sub> Taper Thread Ring Gage.

\*\* Recommended size given permit direct tapping without reaming the hole, but only give a full thread for approx. the L<sub>1</sub> length.

**LEAD TOLERANCE**

A maximum lead deviation of plus or minus .0005" within any two threads not farther than 1" is permitted.

**ECCENTRICITY TOLERANCES OF TAP ELEMENTS  
WHEN TESTED ON DEAD CENTERS**

(Ref. USCTI Table 317)

Applicable to Tables 302,303,303A,and 311

Element	Range			Ground Thread	
	Inch & Mach. Screw	Pipe	Metric	Eccentricity	t.i.v.*
Square (at central point)	#0 - 1/2"	1/16 - 1/8"	M1.6 - M12	.0030	.0060
	Over 1/2" thru 4"	1/4 - 4"	Over M12 Thru M100	.0040	.0080
Shank	#0 - 5/16"	1/16"	M1.6 - M8	.0005	.0010
	Over 5/16" thru 4"	1/8 - 4"	Over M8 thru M100	.0008	.0016
Major Diameter	#0 - 5/16"	1/16"	M1.6 - M8	.0005	.0010
	Over 5/16" thru 4"	1/8 - 4"	Over M8 thru M100	.0008	.0016
Pitch Diameter (at first full thread)	#0 - 1/2"	1/16"	M1.6 - M8	.0005	.0010
	Over 1/2" thru 4"	1/8 - 4"	Over M8 thru M100	.0008	.0016
Chamfer**	#0 - 1/2"	1/16 - 1/8"	M1.6 - M12	.0010	.0020
	Over 1/2" thru 4"	1/4 - 4"	Over M12 Thru M100	.0015	.0030

\* t.i.v. = Total indicator variation. Figures are given for both eccentricity and total indicator variation to avoid misunderstanding.

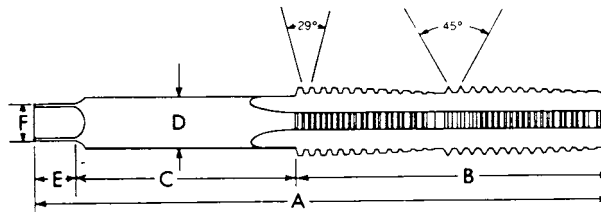
\*\*Chamfer should preferably be inspected by light projection to avoid errors due to indicator contact points dropping into the thread grooves.

**SURFACE TREATMENT ABBREVIATIONS**  
See page 120 for surface treatment recommendations.

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

\*Oxide (Ox) may also be shown as 'O'

**TANDEM ACME TAP DIMENSIONS**



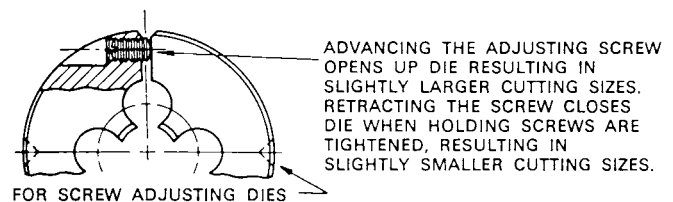
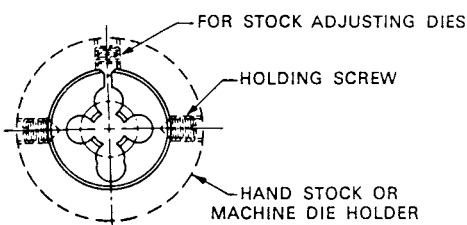
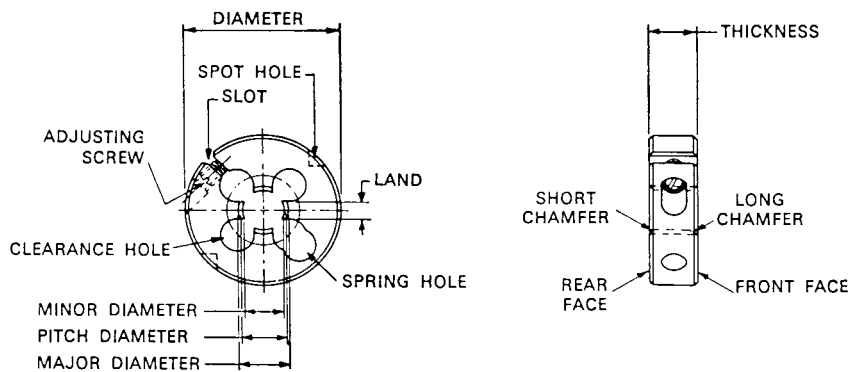
SIZE & PITCH	A OVERALL LENGTH	B LENGTH THREAD END	ROUND SHANK		SQUARE		MAXIMUM DEPTH OF NUT	
			C LENGTH	D DIA.	E LENGTH	F ACROSS FLATS	BRONZE & STEEL	BRASS & CAST IRON
1/4-16	3"	1 3/4	1"	.185	1/4	.138	1/2	3/4
5/16-14	3 13/32	1 7/8	1 1/4	.220	9/32	.165	5/8	7/8
3/8-12	4 1/16	2 1/8	1 5/8	.255	5/16	.191	5/8	1"
1/2-10	5"	2 9/16	2"	.367	7/16	.275	1"	1 1/2
5/8-8	6 1/4	3 3/16	2 1/2	.480	9/16	.360	1 1/4	1 7/8
3/4-6	7 15/16	4 5/16	3"	.542	5/8	.406	1 1/2	2 1/4
7/8-6	8 5/8	4 3/8	3 1/2	.697	3/4	.523	1 3/4	2 5/8
1"-5	10 1/8	5 1/4	4"	.697	3/4	.523	2"	3"
1 1/8-5	10 3/4	5 1/4	4 1/2	.800	13/16	.600	2 1/4	3 3/8
1 1/4-5	11 1/8	5 1/4	4 3/4	.896	7/8	.672	2 1/2	3 3/4
1 3/8-4	12 1/4	5 7/8	5 1/8	1.108	1 1/4	.831	2 3/4	4 1/8
1 1/2-4	12 5/8	5 7/8	5 1/2	1.233	1 1/4	.925	3"	4 1/2
1 3/4-4	13 3/8	5 7/8	6 1/4	1.430	1 1/4	1.072	3 1/2	5"
2"-4	14 7/8	6 1/2	7	1.644	1 3/8	1.233	4"	6"

**ROUND ADJUSTABLE DIES**

*Technical Data*

**Die Thickness Chart**

O.D.(inch)	O.D.(mm)	Thickness
13/16	20.6 mm	1/4
1"	25.4 mm	3/8
1-1/2	38.1 mm	1/2
2"	50.8 mm	5/8
2-1/2	63.5 mm	3/4
3"	76.2 mm	1"
(10 pitch & coarser)	76.2 mm	3/4
3"		
(11 pitch & finer)		



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*Place and date:*

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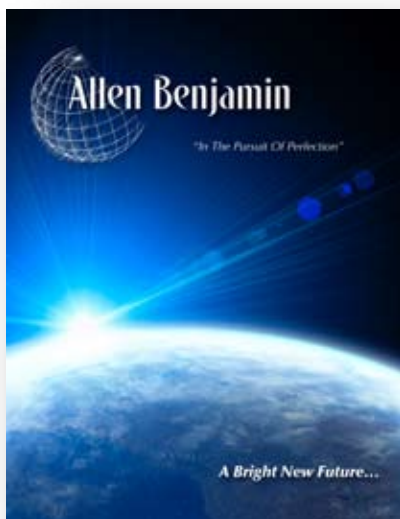
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Catalog No. 10-08  
Effective Date: October 1, 2008

*Printed in U.S.A.*  
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