

Think threads with
YAMAWA



Spiral Fluted Taps
(For blind hole)



Spiral Pointed Taps



Spiral Fluted Taps
(For through hole)



Roll Taps



Helical Thread Mills
Nut Taps & Others



Cemented Carbide Taps



Center Drills
Centering Tools



Hand Taps



Pipe Taps



Dies & Rolling Dies

2011-2012

YMW U.S.A.

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YAMAWA proposes third option in addition to standard products and special product.



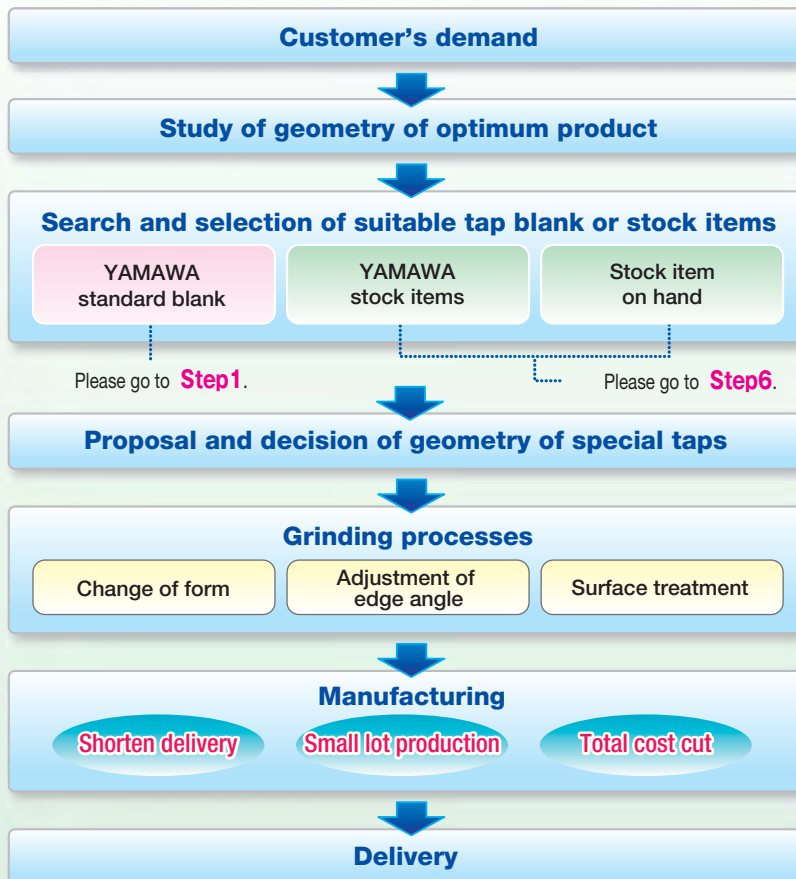
Product
Reborn
According to
Demand

Solution tool

PRAD system

PRAD system is YAMAWA's innovative production system in order to respond flexibly to user's needs diversifying recently such as requests of shorten lead time and small lot production.

Flow chart of PRAD system





Solution tool PRAD system

PRAD system

PRAD system is YAMAWA's innovative production system in order to respond flexibly to user's needs diversifying recently such as requests of shorten lead time and small lot production.

Process from standard blank to delivery of special taps selected by customers

Step 1

Search of size table of available standard blanks

When you decide tentatively geometry of special tap, please search the size table of available standard blanks and confirm this special tap is in the production range or can change tap blank in it.

※Followings are steps of a procedure for the sample case on the right hand.

Confirmation Study	Nominal size	Pitch	Type of thread	Category of taps		Overall length
Requested special tap	No.6	32	Right hand cut	Spiral Pointed	ZELX SS	2"
Result of size table	No.6 in table below means blank is available	Available	Right hand cut Left hand cut are available	Available	Available	Available

Overall length and scope of application for each size							
Nominal size	Applicable pitch size	Applicable threads' direction	Applicable type of taps	OAL(L)	Material of Taps	Maximum Thread length	Maximum P.D. limit
No.6	For any pitch size	Either right-hand or left-hand threads	Spiral flute	2	○ : HSSE ● : HSSP	0.276	Cutting taps: up to GH6
			Spiral flute, Spiral point or Straight flute			0.413	
			Spiral flute, Spiral point, Straight flute or Forming				Cutting taps: up to GH6 Forming taps: up to H5

Complete search and study

YAMAWA staff supports you if you can not search. Please go to **Step3**.

Step 2

Geometry and quotation of special taps

- Please be settled geometry of special taps referred to following technical info of this catalog.
- After geometry was settled, please request us for quotation appointed to "Use standard blank+PRAD system."
- YAMAWA quotes price promptly considering "Shorten delivery", "Small lot production" and "Total cost cut".

(Technical information)

Category of taps	Product table contents - 17
Surface Treatment	contents-73~75
Thread Series	contents - 84~85

Please contact YAMAWA staff. Please go to **Step7**.

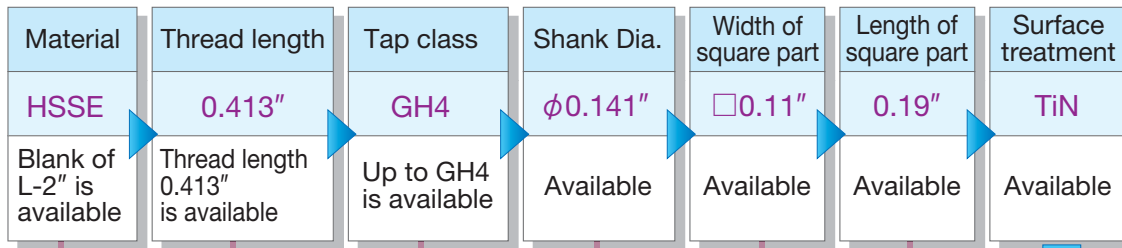
What is standard blank ?



- Blank is generic designation of semi-finished product before forming to tap.
- Standard blank is blank for manufacturing standard tap.
- Special taps is completed after process of edge only (process of flute,thread and chamfer),if standard blank completed process until shank portion is available.

Example of special geometry of tap requested by customer

- Left hand cut, for high speed tapping Geometry of ZELX SS
- Material : HSSE Surface treatment : TiN Tap class : GH4
- Qty.to produce : 20pcs Requested delivery : Urgently
- OAL : 2" Thread length : 0.413" Shank diam : ϕ 0.141"
- No.of flutes : 3 No.of chamfer : 4.5threads



Unit : inch

Common thread sizes and recommendable dimensions						
Size and TPI	l	l_n	D_s	K	ϕ_k	Type of shape
No.6-32UNC	0.276	0.687	0.141	0.11	0.19	1
No.6-40UNF						
No.6-32UNC						
No.6-40UNF						
No.6-32UNC						
No.6-40UNF						

Result

- For other options, standard blank is available.

Geometry of special tap after the result

- Left hand cut, for high speed tapping Geometry of ZELX SS No.6-32UNC
- Material : HSSE Surface treatment : TiN Tap class : GH4
- OAL : 2" Thread length : 0.413" Shank diam : ϕ 0.141"
- No.of flutes : 3 No.of chamfer : 4.5threads
- Quantity : **20pcs are okay** Delivery : **Meet requested delivery**



Solution tool
PRAD system

PRAD system

YAMAWA Staff proposes optimum products if step1 and step2 cannot be used or listed size is not available.

Step 3

Several info related to special tap from customer

- Category of internal thread and dimension
- Name of work material and hardness
- Machine
- Other info

Please contact us after filling the Inquiry sheet for special tap

※Please print out Inquiry sheet for special tap.

After confirmation of several info, please go to **Step4**.

Step 4

Selection of suitable tap blank or stock items by YAMAWA staff

YAMAWA
Standard blank

YAMAWA
Stock items

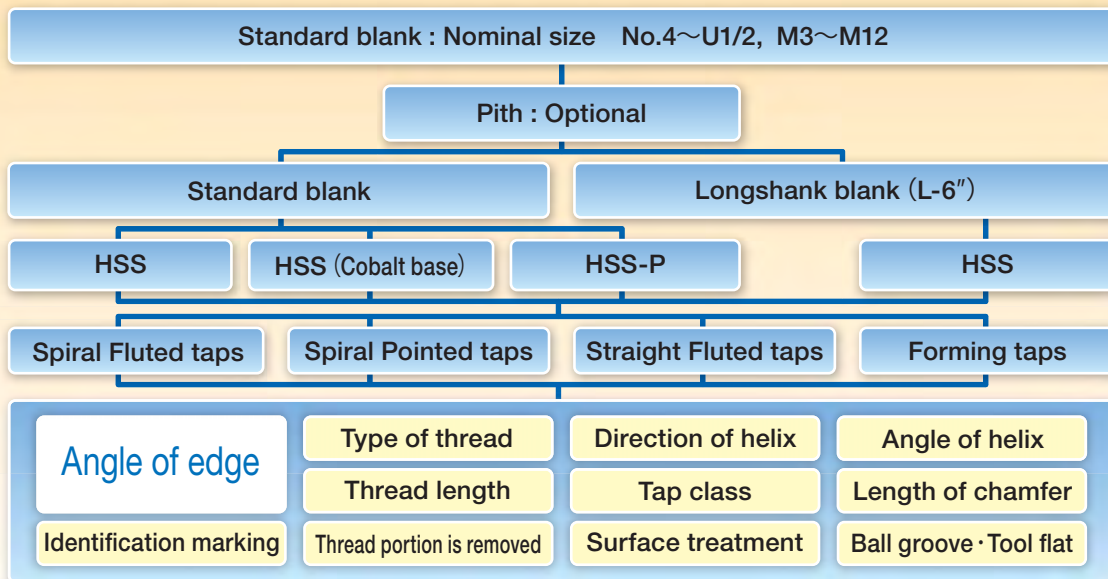
Stock item in
your hand

Please go to **Step5** in the case of usage of standard blank.

Please go to **Step6** in the case of modification process.

Step 5

Flow chart of standard blank by YAMAWA staff



Please go to **Step7** after geometry is confirmed.

PRAD SYSTEM

Step 6

PRAD system Modification process

Optimum of each part

Flute part, Thread part,
Shank part, Chamfer part,
Others

Special modification

- Heel cut
- Tap guidance
- Oil hole
- Others

Surface treatment

OX NI NX TiN
TiCN CrN

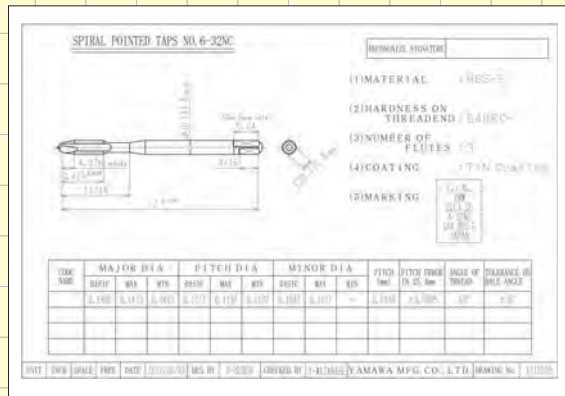


Please go to **Step7** after settled modification process.

Step 7

Proposal of dimension and quotation by temporary drawing

- Temporary drawing
- Quotation
- Schedule to deliver



Please go to **Step8** after dimension is confirmed.

Step 8

Production support

Shorten delivery

Small lot production

Total cost cut

Delivery



Yamawa Universal Taps' Blank based on USCTI

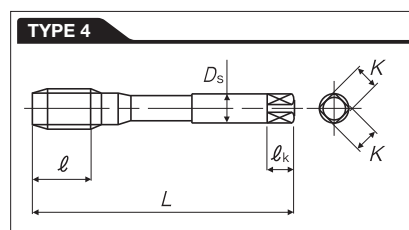
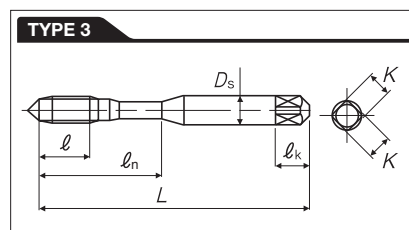
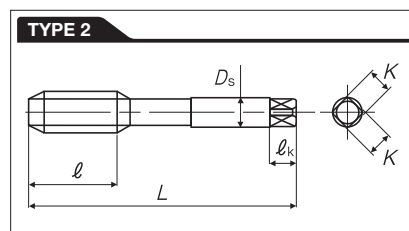
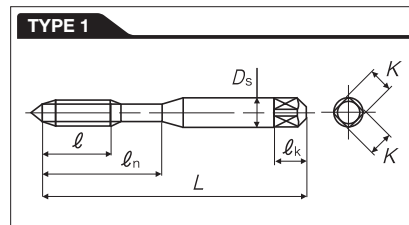
Material of taps HSSE : ○ HSSP : ◎

Overall length and scope of application for each size							
Nominal size	Applicable pitch size	Applicable threads' direction	Applicable type of taps	OAL(L)	Material of Taps	Maximum Thread length	Maximum P.D. limit
No.4	For any pitch size	Either right-hand or left-hand threads	Spiral flute	1.88	○◎	0.236	Cutting taps: up to GH5
			Spiral flute, Spiral point or Straight flute		○	0.335	
			Spiral flute, Spiral point, Straight flute or Forming		◎		Cutting taps: up to GH8 Forming taps: up to H5
No.5	For any pitch size	Either right-hand or left-hand threads	Spiral flute	1.94	○	0.236	Cutting taps: up to GH5
			Spiral flute, Spiral point or Straight flute			0.374	
No.6	For any pitch size	Either right-hand or left-hand threads	Spiral flute	2	○	0.276	Cutting taps: up to GH6
			Spiral flute, Spiral point or Straight flute			0.413	
			Spiral flute, Spiral point, Straight flute or Forming		◎		Cutting taps: up to GH6 Forming taps: up to H5
No.8	For any pitch size	Either right-hand or left-hand threads	Spiral flute	2.13	○	0.276	Cutting taps: up to GH6
			Spiral flute, Spiral point or Straight flute			0.453	
			Spiral flute, Spiral point, Straight flute or Forming		◎		Cutting taps: up to GH6 Forming taps: up to H3
No.10	For any pitch size	Either right-hand or left-hand threads	Spiral flute	2.38	○	0.354	Cutting taps: up to GH6
			Spiral flute, Spiral point or Straight flute			0.531	
			Spiral flute, Spiral point, Straight flute or Forming		◎		Cutting taps: up to GH6 Forming taps: up to H4
No.12	For any pitch size	Either right-hand or left-hand threads	Spiral flute, Spiral point or Straight flute	2.38	○	0.571	Cutting taps: up to GH6

●YAMAWA can produce intermediate size and special size which are not listed above size table. please contact YAMAWA staff for details.

Unit : inch

Common thread sizes and recommendable dimensions										
Size and TPI	l	l_n	D_s	K	l_k	Type of shape				
No.4-40UNC	0.236	0.562	0.141	0.11	0.19	1				
No.4-48UNF										
No.4-36UNS										
No.4-40UNC	0.335	0.562	0.141	0.11	0.19	1				
No.4-48UNF										
No.4-36UNS										
No.4-40UNC										
No.4-48UNF	0.236	0.625	0.141	0.11	0.19	1				
No.5-44UNF										
No.5-40UNC										
No.5-44UNF	0.374	0.687	0.141	0.11	0.19	1				
No.6-32UNC	0.276									
No.6-40UNF										
No.6-32UNC	0.413	0.687	0.141	0.11	0.19	1				
No.6-40UNF										
No.6-32UNC										
No.6-40UNF										
No.8-32UNC	0.276	0.75	0.168	0.131	0.25	1				
No.8-36UNF										
No.8-32UNC	0.453									
No.8-36UNF										
No.8-32UNC										
No.8-36UNF										
No.10-24UNC	0.354	0.875	0.194	0.152	0.25	1				
No.10-32UNF	0.276					3				
No.10-24UNC	0.531					0.875	0.194	0.152	0.25	1
No.10-32UNF										
No.10-24UNC										
No.10-32UNF										
No.12-24UNC	0.571	0.937	0.22	0.165	0.28	1				
No.12-28UNF										
No.12-32UNEF										



● Above dimension is recommended if there is no request of specification.



Yamawa Universal Taps' Blank based on USCTI

Material of taps HSSE : ○ HSSP : ◎

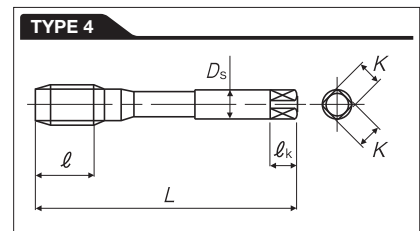
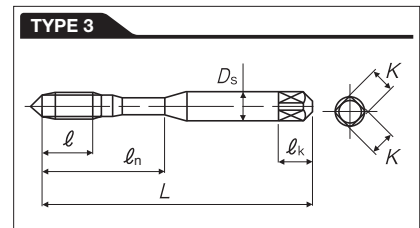
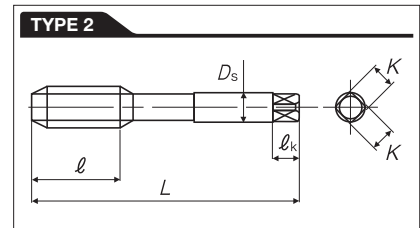
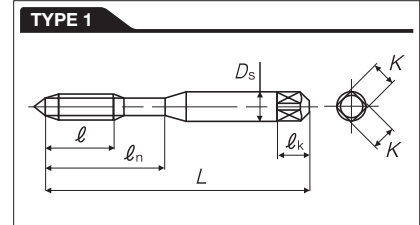
Overall length and scope of application for each size							
Nominal size	Applicable pitch size	Applicable threads' direction	Applicable type of taps	OAL(L)	Material of Taps	Maximum Thread length	Maximum P.D. limit
U1/4	For any pitch size	Either right-hand or left-hand threads	Spiral flute	2.5	○	0.433	Cutting taps: up to GH6
			Spiral flute, Spiral point or Straight flute				
			Spiral flute, Spiral point, Straight flute or Forming	6	◎	0.591	Cutting taps: up to GH6 Forming taps: up to H4
			Spiral flute, Spiral point or Straight flute				
U5/16	For any pitch size	Either right-hand or left-hand threads	Spiral flute	2.72	○	0.472	Cutting taps: up to GH6
			Spiral flute, Spiral point, Straight flute or Forming				
U3/8	For any pitch size	Either right-hand or left-hand threads	Spiral flute	2.94	○	0.551	Cutting taps: up to GH6
			Spiral flute, Spiral point or Straight flute				
U7/16	For any pitch size	Either right-hand or left-hand threads	Spiral flute	3.16	○	0.591	Cutting taps: up to GH6
			Spiral flute, Spiral point or Straight flute			0.866	
U1/2	For any pitch size	Either right-hand or left-hand threads	Spiral flute, Spiral point or Straight flute	3.38	○	0.984	Cutting taps: up to GH6

●YAMAWA can produce intermediate size and special size which are not listed above size table. please contact YAMAWA staff for details.



Unit : inch

Common thread sizes and recommendable dimensions																	
Size and TPI	l	l_n	D_s	K	l_k	Type of shape											
1/4-20UNC	0.433	1	0.255	0.191	0.31	1											
1/4-28UNF	0.354					3											
1/4-32UNEF	0.276					1											
1/4-20UNC	0.591						1										
1/4-28UNF								1									
1/4-32UNEF									1								
1/4-20UNC										1							
1/4-28UNF											1						
1/4-32UNEF												1					
5/16-18UNC													1.125	0.318	0.238	0.38	2
5/16-20UNS																	4
5/16-24UNF						0.394											1
5/16-28UNS	0.354	1															
5/16-32UNEF	0.276		3														
5/16-18UNC	0.669			1													
5/16-20UNS					1												
5/16-24UNF						1											
5/16-28UNS							1										
5/16-32UNEF								1									
3/8-16UNC									1.25	0.381	0.286	0.44					
3/8-20UNS																	4
3/8-24UNF		0.394											1				
3/8-28UNS		0.354	1														
3/8-32UNEF	0.276	3															
3/8-16UNC	0.748			1													
3/8-20UNS					1												
3/8-24UNF						1											
3/8-28UNS							1										
3/8-32UNEF								1									
7/16-14UNC														0.591	0.323	0.242	0.41
7/16-16UNS													4				
7/16-20UNF			0.472						2								
7/16-28UNEF		0.354	2														
7/16-32UNS	0.276	4															
7/16-14UNC	0.866			2													
7/16-16UNS					2												
7/16-20UNF						2											
7/16-28UNEF							2										
7/16-32UNS								2									
1/2-13UNC										0.984	0.367	0.275	0.44				
1/2-16UNS									4								
1/2-20UNF			4														
1/2-28UNEF		4															
1/2-32UNS	4																
1/2-13UNC				0.984	0.367									0.275	0.44	2	
1/2-16UNS						4											
1/2-20UNF							4										
1/2-28UNEF								4									
1/2-32UNS																4	



●Above dimension is recommended if there is no request of specification.



Yamawa Universal Taps' Blank based on USCTI

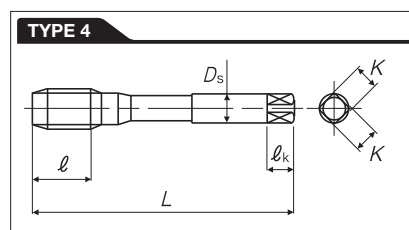
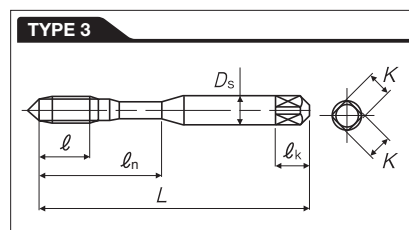
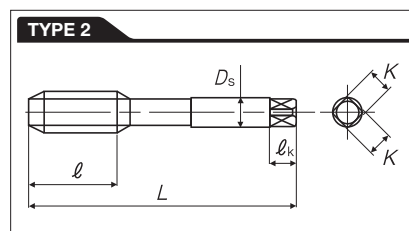
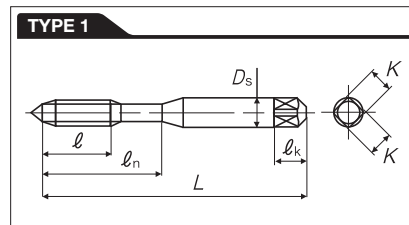
Material of taps HSSE : ○ HSSP : ◎

Overall length and scope of application for each size							
Nominal size	Applicable pitch size	Applicable threads' direction	Applicable type of taps	OAL(L)	Material of Taps	Maximum Thread length	Maximum P.D. limit
M3	For any pitch size	Either right-hand or left-hand threads	Spiral flute	1.94	○	0.197	Cutting taps: up to D3
			Spiral flute, Spiral point or Straight flute			0.374	
M4	For any pitch size	Either right-hand or left-hand threads	Spiral flute	2.13	○	0.276	Cutting taps: up to D4
			Spiral flute, Spiral point or Straight flute			0.453	
M5	For any pitch size	Either right-hand or left-hand threads	Spiral flute	2.38	○	0.354	Cutting taps: up to D4
			Spiral flute, Spiral point or Straight flute			0.531	
M6	For any pitch size	Either right-hand or left-hand threads	Spiral flute	2.5	○	0.433	Cutting taps: up to D5
			Spiral flute, Spiral point or Straight flute		◎	0.591	
M8	For any pitch size	Either right-hand or left-hand threads	Spiral flute	2.72	○	0.472	Cutting taps: up to D5
M10	For any pitch size	Either right-hand or left-hand threads	Spiral flute	2.94	○	0.512	Cutting taps: up to D6
			Spiral flute, Spiral point or Straight flute			0.748	
M12	For any pitch size	Either right-hand or left-hand threads	Spiral flute	3.38	○	0.551	Cutting taps: up to D5

●YAMAWA can produce intermediate size and special size which are not listed above size table. please contact YAMAWA staff for details.

Unit : inch

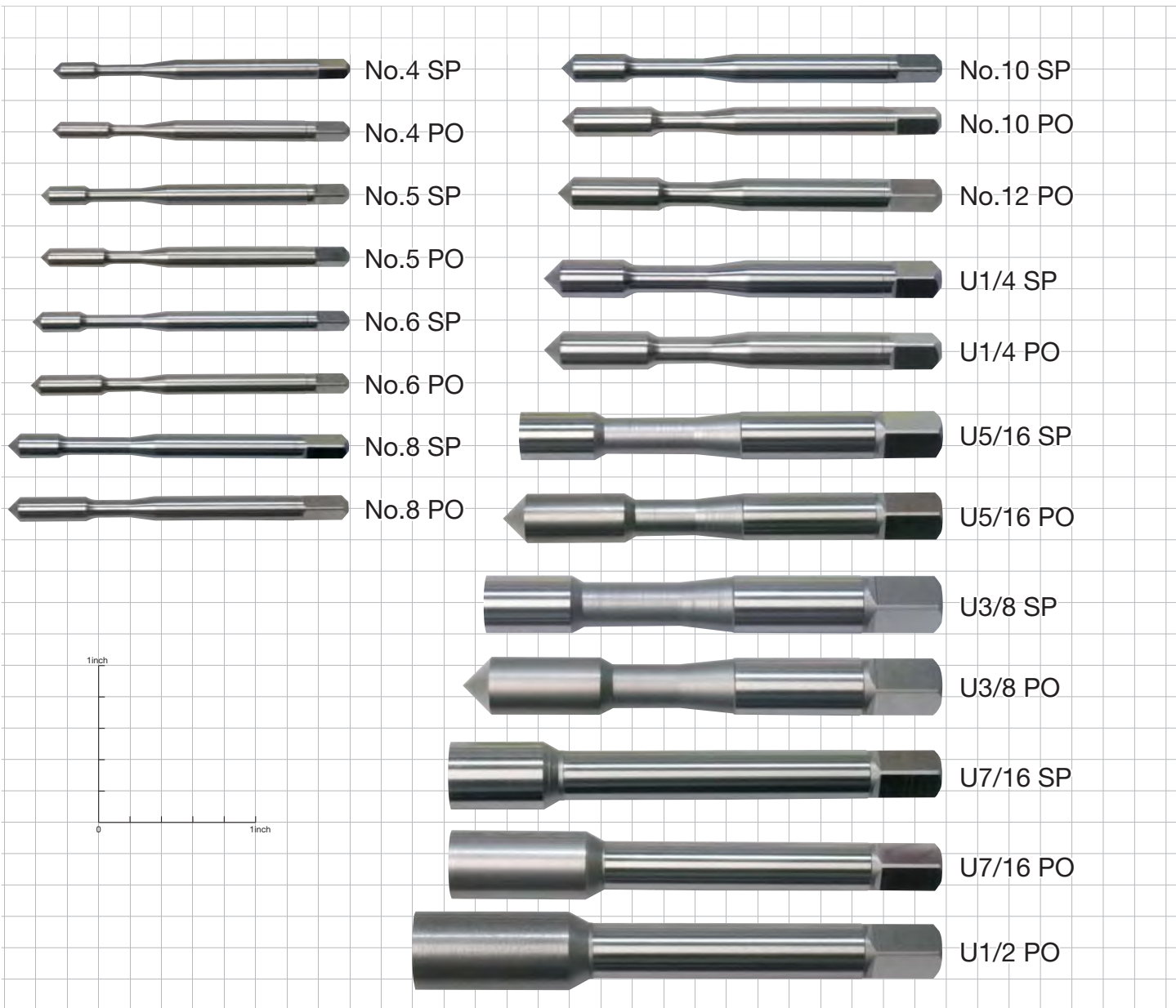
Common thread sizes and recommendable dimensions																						
Size and TPI	l	l_n	D_s	K	l_k	Type of shape																
M3X0.5	0.197	0.625	0.141	0.11	0.19	1																
M3X0.35																						
M3X0.6																						
M3X0.5																						
M3X0.35																						
M3X0.6	0.374																					
M3X0.5	0.256	0.75	0.168	0.131	0.25	3																
M3X0.6	0.374					1																
M4X0.7	0.276					0.875	0.194	0.152	0.25	1												
M4X0.75																						
M4X0.5																						
M4X0.7																						
M4X0.75																						
M4X0.5	0.453	3																				
M4X0.5	0.374	1	0.255	0.191	0.31	1																
M5X0.8	0.354						1.125	0.318	0.238	0.38	2											
M5X0.75																						
M5X0.5																						
M5X0.9																						
M5X0.8																						
M5X0.75	0.531	1.25	0.381	0.286	0.44	4																
M5X0.5	0.374						0.512	0.374	0.275	0.44	2											
M5X0.9	0.531											0.551	0.367	0.275	0.44	4						
M6X1	0.433																0.512	0.374	0.275	0.44	2	
M6X0.75	0.354																					0.512
M6X0.5		0.354	0.512	0.374	0.275	0.44																
M6X1		0.591					0.512	0.374	0.275	0.44	2											
M6X0.75		0.531										0.512	0.374	0.275	0.44	2						
M6X0.5		0.374															0.512	0.374	0.275	0.44	2	
M8X1.25	0.472	0.512																				0.374
M8X1			0.512	0.374	0.275	0.44																
M8X0.75							0.512	0.374	0.275	0.44	2											
M8X0.5												0.512	0.374	0.275	0.44	2						
M10X1.5																	0.512	0.374	0.275	0.44	2	
M10X1.25	0.512	0.374																				0.275
M10X1			0.512	0.374	0.275	0.44																
M10X0.75							0.512	0.374	0.275	0.44	2											
M10X0.5												0.512	0.374	0.275	0.44	2						
M10X1.5																	0.512	0.374	0.275	0.44	2	
M10X1.25	0.512	0.374																				0.275
M10X1			0.512	0.374	0.275	0.44																
M10X0.75							0.512	0.374	0.275	0.44	2											
M10X0.5												0.512	0.374	0.275	0.44	2						
M12X1.75																	0.551	0.374	0.275	0.44	2	
M12X1.5	0.551	0.374																				0.275
M12X1.25			0.551	0.374	0.275	0.44																
M12X1							0.551	0.374	0.275	0.44	2											
M12X0.75												0.551	0.374	0.275	0.44	2						
M12X0.5																	0.551	0.374	0.275	0.44	2	



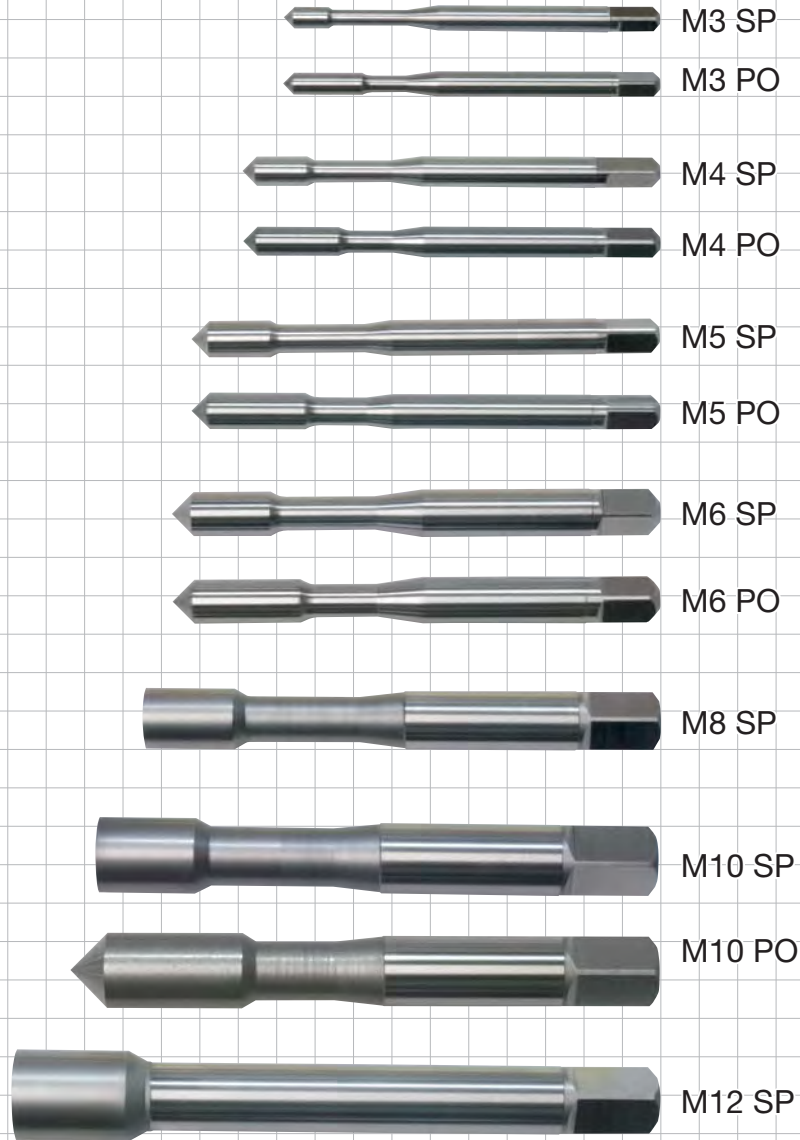
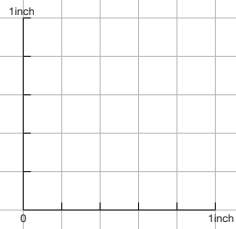
● Above dimension is recommended if there is no request of specification.



YAMAWA Standard blank Line UP



Think t
YAWA



threads with
YAMAWA



PRAD system Inquiry paper

Please fill in the blanks and send it to us by e-mail or FAX

e-mail: e-support@yamawa.com

FAX: +81-3-3564-6838

●Company name			
●Department		●Name	
●TEL		●FAX	
●e-mail address			

Customer's request

●Thread type	·Metric ·Unified ·Whitworth ·Special()		
●Size and pitch	() X ()	●Rotative direction	·Right hand ·Left hand
●Tap type	·SP ·PO ·HT ·ROLL ·Other item()		
●Overall length	·YMW standard ·L-70 ·L-100 ·L-120 ·L-150 ·L-() other length		
●Tap material	·HSS-E (HSS) ·HSS-E (Co HSS) ·HSS-P		
●Tolerance	·P () class ·GH () class ·JIS II class ·Request class ()		
●Thread length	·YMW standard ·Request length ()	●Shank dia.	·YMW standard ·Request dia. ()
●Chamfer length	·YMW standard ·Taper ·Plug ·Bottoming ·4P(P) ·2P(B) ·Request chamfer ()		
●Surface treatment	·Oxide ·Nitride ·Nitride-Oxide ·TiN ·TiCN ·CrN ·Bright finished		

Condition of Work-piece material

●Tapping part	() ·Unclear	●Hardness	() HRB () HRC ·Unclear
●Work material	·FC() ·SS() ·SPC() ·SUS() ·ADC() ·AC () ·BSBM () ·BC() ·S () C ·SCM() ·Synthetic resin () ·Else () ·Unclear ()		
●Parts shape			●Direction ·Vertical ·Horizontal
●How to make hole	·Drill ·Press ·Reamer ·Molding ·Other () ·Unclear		
●Gauge	·GP () ·NP (WP) () ·No check ·Unclear		

Machine, cutting condition

●Tapping machine	·Drill press ·Automatic lathe ·Special machine ·Tapping machine ·Machining Center ·Else		
●Holder	·Drilled chuck type ·Tapping folder (with spring) type ·Complete fixed holder type ·Else		
●Feed	·Manual feed ·Gear feed system ·Master lead screw feed system ·Asynchronous feed system by approximation ·Fully synchronous feed system ·Else		
●Cutting speed	() SFM or Revolution () rpm ·Unclear		
●Cutting oil	·Oil ·Water soluble oil ·Paste ·Else() ·Unclear		

<Comment>

ZELX Tap Selector for Exotic Materials

Using the right tap makes the difference.

Material Family Name	Hardness (BHN)	Through Hole	Speed (FPM)	Blind Hole	Speed (FPM)
Common Iron Base Alloys					
A286	Up to 275	ZELX-SS Spiral Point	20	ZELX-SS Spiral Flute	10
Incoloy 800	Over 275 thru 375	ZELX-NI Spiral Point	10	ZELX-NI Spiral Flute	10
Common Stainless Steels					
Stainless Steel Alloys	Up to 275	ZELX-SS Spiral Point	45	ZELX-SS Spiral Flute	30
Precipitation Hardening (PH) Stainless Steel	Over 275 thru 375	ZELX-NI Spiral Point	30	ZELX-NI Spiral Flute	15
Common Nickel Base Alloys					
Hastelloy	Up to 275	ZELX-NI Spiral Point	20	ZELX-NI Spiral Flute	10
Inconel					
Waspalloy	Over 275 thru 375	ZELX-NI Spiral Point	15	ZELX-NI Spiral Flute	10
Incoloy					
Astraloy					
Rene					
Monel					
Common Titanium Alloys					
Commercially Pure Titanium	Up to 275	ZELX-TI L.H. Slow Spiral	25	ZELX-TI R.H. Slow Spiral	10
Annealed Titanium Alloys Ti-6Al-4V	Over 275 thru 340	ZELX-TI L.H. Slow Spiral	15	ZELX-TI R.H. Slow Spiral	10
Hardened	Over 345	ZELX-TI Spiral (Special) taps may be required	7	ZELX-TI Spiral (Special) taps may be required	5

Coating Recommendation Chart















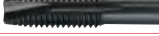





Material	P=Preferred		A= Accepted			N=Not Recommended		
	Bright	Oxide	Nitride	TiN	TiCN	TiAlN	CrN	
Aluminum	N	N	P	N	N	N	A	
Cast Aluminum	N	N	P	A	N	N	N	
Composites	N	N	A	P	P	N	A	
Brass	P	N	P	N	N	N	P	
Copper Alloys	N	N	P	N	N	N	P	
Steels								
soft	N	P	N	A	P	N	N	
hard	N	P	N	A	P	A	N	
Cast Iron								
Gray	N	A	A	P	P	N	N	
Ductile	N	A	A	P	P	N	N	
Stainless	N	P	N	A	P	A	N	
High Temp Alloys								
Iron Based	N	P	A	A	P	A	N	
Cobalt Based	N	P	A	A	P	A	N	
Nickel Based	N	P	A	A	P	A	A	
Titanium	N	N	P	A	A	A	A	
Plastics	N	N	A	P	A	N	A	
Speed (SFM) Increase	0%	0%	0%	50%	50%	100%	0%	





















Suggested Speeds for Taps Conversion Chart – fpm to rpm

Suggested Speeds for Taps Conversion Chart — fpm to rpm

Tap Sizes	Taper Pipe Taps	Surface Feet per Minute																	
		5'	10'	15'	20'	25'	30'	40'	50'	60'	70'	80'	90'	100'	110'	120'	130'	140'	150'
		Revolutions per Minute																	
0		318	637	955	1273	1592	1910	2546	3183	3820	4456	5093	5729	6366	7003	7639	8276	8913	9549
1		273	546	819	1046	1308	1570	2093	2617	3140	3663	4186	4710	5233	5756	6279	6805	7326	7849
2		212	424	637	888	1110	1333	1777	2221	2665	3109	3554	3999	4442	4886	5330	5774	6218	6662
3		191	382	573	772	964	1157	1543	1929	2315	2701	3086	3472	3858	4244	4629	5015	5401	5787
4		174	347	521	682	853	1023	1364	1705	2046	2387	2728	3069	3411	3751	4092	4434	4775	5116
5		147	294	441	611	764	917	1222	1528	1833	2139	2445	2750	3056	3361	3667	3973	4278	4584
6		136	273	409	553	691	829	1106	1382	1659	1935	2212	2488	2766	3042	3318	3595	3871	4148
8		119	239	358	466	583	699	932	1165	1398	1631	1864	2097	2330	2563	2796	3029	3262	3495
10		101	201	302	402	502	603	804	1005	1205	1406	1607	1808	2009	2210	2411	2612	2813	3014
12		87	174	260	354	442	531	707	884	1061	1238	1415	1592	1769	1945	2122	2300	2476	2653
1/4		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	-	32	64	96	122	153	183	244	306	367	428	489	550	611	672	733	794	856	917
11/16	3/8	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	-	19	38	57	76	96	115	153	191	230	268	305	344	382	420	458	497	535	573
1-1/8	3/4	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	1	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		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
M1		490	979	1469	1959	2449	2938	3918	4897	5877	6856	7836	8815	9795	10774	11754	12733	13713	14692
M2		242	484	725	967	1209	1451	1934	2418	2901	3385	3868	4352	4835	5319	5803	6286	6770	7253
M3		162	324	486	647	829	971	1295	1619	1942	2266	2590	2914	3237	3561	3885	4208	4532	4856
M3.5		138	277	415	557	692	830	1107	1384	1661	1938	2214	2491	2768	3045	3322	3599	3875	4152
M4		122	243	365	487	608	730	973	1217	1460	1698	1946	2190	2433	2676	2920	3163	3406	3650
M5		97	194	291	388	485	582	776	970	1163	1357	1551	1745	1939	2133	2327	2521	2715	2909
M6		81	162	243	324	405	486	647	809	971	1133	1295	1457	1619	1781	1942	2104	2266	2428
M7		69	138	208	277	346	415	554	692	830	969	1107	1246	1384	1522	1661	1799	1938	2076
M8		61	121	182	243	303	364	485	606	728	849	970	1091	1213	1334	1455	1577	1698	1819
M10		48	97	145	194	242	291	388	485	582	679	776	873	970	1067	1163	1260	1357	1454
M12		40	81	121	162	202	243	324	405	486	567	647	728	809	890	971	1052	1133	1214
M14		35	69	104	139	173	208	277	347	416	485	555	624	693	763	832	901	971	1040
M16		30	61	91	121	152	182	243	303	364	424	485	546	606	667	728	788	849	910
M18		27	54	81	108	135	162	216	269	323	377	431	485	539	593	647	700	754	808
M20		24	49	73	97	121	146	194	243	291	340	388	437	485	534	582	631	680	728
M22		22	44	66	88	110	132	176	221	265	309	353	397	441	485	529	573	618	662
M24		20	40	61	81	101	121	162	202	243	283	323	364	404	445	485	526	566	606
M27		18	36	54	72	90	108	144	180	216	252	287	323	359	395	431	467	503	539
M30		16	32	49	65	81	97	129	162	194	226	259	291	323	356	388	420	453	485

Suggested Speeds for Taps Conversion Chart – fpm to rpm

WT-SPFL	 "NEW"	P18
	"NEW" Spiral Fluted Working-Taps	
WT-SPFL	 "NEW"	P18
	"NEW" Spiral Fluted Working-Taps	
ZELX SS		P19
	Spiral Fluted Taps for Stainless Steels	
ZELX SS 6"		P22
	Extended Spiral Fluted Taps for Stainless Steels	
ZELX NI		P22
	Spiral Fluted Taps for Nickel Base Alloys	
ZELX NI STI		P24
	STI Spiral Fluted Taps for Nickel Base Alloys	
ZELX TI		P25
	Spiral Fluted Taps for Titanium Alloys	
ZELX FR		P26
	Spiral Fluted Taps for High Speed Tapping	
ZELX AL		P26
	Spiral Fluted Taps for Non-Ferrous Materials	
ZELX ALS		P27
	Spiral Fluted Taps for Non-Ferrous Materials	
HI SP		P28
	Industrial Quality Spiral Fluted Taps	
STI SP		P30
	Industrial Quality STI Spiral Fluted Taps	
ZELX TI LHSP		P30
	Left Hand Spiral Fluted Taps for Titanium Alloys	
ZELX FR LHSP		P31
	Left Hand Spiral Fluted Taps for High Speed Tapping	
WT-SPPT	 "NEW"	P32
	"NEW" Spiral Pointed Working-Taps	
WT-SPPT	 "NEW"	P32
	"NEW" Spiral Pointed Working-Taps	
ZELX SS		P33
	Spiral Pointed Taps for Stainless Steels	
ZELX SS 6"		P35
	Extended Spiral Pointed Taps for Stainless Steels	
ZELX NI		P36
	Spiral Pointed Taps for Nickel Base Alloys	
ZELX NI STI		P37
	STI Spiral Pointed Taps for Nickel Base Alloys	
ZELX AL		P38
	Spiral Pointed Taps for Non-Ferrous Materials	
PO		P39
	Industrial Quality Spiral Pointed Taps	
STI PO		P42
	Industrial Quality STI Spiral Pointed Taps	

WT-HAND	 "NEW"	P43
	"NEW" HAND Working-Taps	
WT-HAND	 "NEW"	P44
	"NEW" HAND Working-Taps	
ZELX MOLD		P45
	Hand Taps for Hard-to-Machine Materials	
HT-CI		P45
	Industrial Quality Hand Taps for Cast Irons	
HT		P46
	Industrial Quality Hand Taps	
STI HT		P54
	Industrial Quality STI Hand Taps	
ZELX CARB CI		P54
	Carbide Taps for Cast Irons	
ZELX CARB AL		P55
	Carbide Taps for Non-Ferrous Materials	
ROLL		P56
	Industrial Quality Roll Taps	
N-RZ		P60
	Thread Forming Taps for Ferrous Materials	
N-RS		P61
	Thread Forming Taps for Non-Ferrous Materials	
ZELX OL-RZ		P63
	High Performance Thread Forming Taps for Dry Tapping	
ZELX HP-RZ		P63
	High Performance Thread Forming Taps	
ZELX SS PIPE		P65
	Slow Spiral Fluted Pipe Taps for Stainless Steels, for NPT and NPTF Threads	
ZELX MOLD PIPE		P65
	Pipe Taps for Mold Steels, for NPT Threads	
NPT		P66
	Pipe Taps for NPT Threads	
NPTF		P67
	Pipe Taps for NPTF Dryseal Threads	
NPS		P67
	Pipe Taps for NPS Threads	
NPSF		P68
	Pipe Taps for NPSF Dryseal Threads	
AR-D HSS		P68
	Industrial Quality HSS Adjustable Round Dies	

“NEW” Spiral Fluted Working-Taps

For Unified threads

WT-SPFL



Vanadium High Speed Steel Taps

YMW New WT-SPFL taps are ideal for blind hole tapping ferrous materials that produce stringy chips. They are also ideal for brass, plastics in blind hole applications.

Necked design enhances flow of cutting fluid to cutting teeth and reduces surface contact between the tool and workpiece for more efficient threading.

*1 See blank type on page 97.

“NEW” Spiral Fluted Working-Taps

For Unified threads

WT-SPFL



Vanadium High Speed Steel Taps

YMW New WT-SPFL taps are ideal for blind hole tapping ferrous materials that produce stringy chips. They are also ideal for brass, plastics in blind hole applications.

Necked design enhances flow of cutting fluid to cutting teeth and reduces surface contact between the tool and workpiece for more efficient threading.

*1 See blank type on page 97.

*5 "X" of code No. stands for Oxide surface treatment.

Unit : inch

Size	Class of fit	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.2 - 56UNC	2B	3P	WTS2UN2E	1.75	0.157	0.141	2	
No.4 - 40UNC	2B	3P	WTS2UN4H	1.88	0.236	0.141	2	
No.6 - 32UNC	2B	3P	WTS2UN6J	2	0.276	0.141	3	
No.8 - 32UNC	2B	3P	WTS2UN8J	2.13	0.276	0.168	3	
No.10 - 24UNC	2B	3P	WTS2UNAM	2.38	0.354	0.194	3	
No.10 - 32UNF	2B	3P	WTS2UNAJ	2.38	0.276	0.194	3	
1/4 - 20UNC	2B	3P	WTS2U04N	2.5	0.433	0.255	3	
1/4 - 28UNF	2B	3P	WTS2U04K	2.5	0.354	0.255	3	
5/16 - 18UNC	2B	3P	WTS2U05O	2.72	0.472	0.318	3	
5/16 - 24UNF	2B	3P	WTS2U05M	2.72	0.394	0.318	3	
3/8 - 16UNC	2B	3P	WTS2U06P	2.94	0.551	0.381	3	
3/8 - 24UNF	2B	3P	WTS2U06M	2.94	0.394	0.381	3	
7/16 - 14UNC	2B	3P	WTS2U07Q	3.16	0.591	0.323	3	
7/16 - 20UNF	2B	3P	WTS2U07N	3.16	0.472	0.323	3	
1/2 - 13UNC	2B	3P	WTS2U08R	3.38	0.63	0.367	3	
1/2 - 20UNF	2B	3P	WTS2U08N	3.38	0.472	0.367	3	
9/16 - 12UNC	2B	3P	WTS2U09S	3.59	0.709	0.429	3	
9/16 - 18UNF	2B	3P	WTS2U09O	3.59	0.512	0.429	3	
5/8 - 11UNC	2B	3P	WTS2U10U	3.81	0.748	0.48	3	
5/8 - 18UNF	2B	3P	WTS2U10O	3.81	0.512	0.48	3	
3/4 - 10UNC	2B	3P	WTS2U12V	4.25	0.827	0.59	4	
3/4 - 16UNF	2B	3P	WTS2U12P	4.25	0.591	0.59	4	

Uc

Unit : inch

Size	Class of fit	Chamfer	*5 Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.2 - 56UNC	2B	3P	WTS2UN2EX	1.75	0.157	0.141	2	
No.4 - 40UNC	2B	3P	WTS2UN4HX	1.88	0.236	0.141	2	
No.6 - 32UNC	2B	3P	WTS2UN6JX	2	0.276	0.141	3	
No.8 - 32UNC	2B	3P	WTS2UN8JX	2.13	0.276	0.168	3	
No.10 - 24UNC	2B	3P	WTS2UNAMX	2.38	0.354	0.194	3	
No.10 - 32UNF	2B	3P	WTS2UNAJX	2.38	0.276	0.194	3	
1/4 - 20UNC	2B	3P	WTS2U04NX	2.5	0.433	0.255	3	
1/4 - 28UNF	2B	3P	WTS2U04KX	2.5	0.354	0.255	3	
5/16 - 18UNC	2B	3P	WTS2U05OX	2.72	0.472	0.318	3	
5/16 - 24UNF	2B	3P	WTS2U05MX	2.72	0.394	0.318	3	
3/8 - 16UNC	2B	3P	WTS2U06PX	2.94	0.551	0.381	3	
3/8 - 24UNF	2B	3P	WTS2U06MX	2.94	0.394	0.381	3	
7/16 - 14UNC	2B	3P	WTS2U07QX	3.16	0.591	0.323	3	
7/16 - 20UNF	2B	3P	WTS2U07NX	3.16	0.472	0.323	3	
1/2 - 13UNC	2B	3P	WTS2U08RX	3.38	0.63	0.367	3	
1/2 - 20UNF	2B	3P	WTS2U08NX	3.38	0.472	0.367	3	
9/16 - 12UNC	2B	3P	WTS2U09SX	3.59	0.709	0.429	3	
9/16 - 18UNF	2B	3P	WTS2U09OX	3.59	0.512	0.429	3	
5/8 - 11UNC	2B	3P	WTS2U10UX	3.81	0.748	0.48	3	
5/8 - 18UNF	2B	3P	WTS2U10OX	3.81	0.512	0.48	3	
3/4 - 10UNC	2B	3P	WTS2U12VX	4.25	0.827	0.59	4	
3/4 - 16UNF	2B	3P	WTS2U12PX	4.25	0.591	0.59	4	

Uc

Spiral Fluted Taps for Stainless Steels

For Unified and Metric threads

ZELX SS



Custom Blended Vanadium High Speed Steel Taps For Stainless Steels, Alloy Steels and Ductile Irons. ZELX SS taps are suitable for UNJ Aerospace internal threading applications.

*1 See blank type on page 97.
 *2 "BR" of code No. stands for Bright finish taps
 *3 "TIN" of code No. stands for Titanium Nitride coating taps

Unit : inch

Size	Class	Chamfer	*2 *3 Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.2 - 56UNC	H2	2.5P	Y84623	1.75	0.157	0.141	2	Uc
			Y84623BR					
No.3 - 48UNC	H2	2.5P	Y84600	1.81	0.197	0.141	2	Uc
			Y84600BR					
No.4 - 40UNC	H2	1.5P	Y84001	1.88	0.236	0.141	2	Uc
			Y84601					
		2.5P	Y84601BR					
			Y84901TIN					
	H3	1.5P	Y84002					
			Y84602					
		2.5P	Y84602BR					
	H4		2.5P					
		Y84629BR						
	H5	2.5P	Y84634					
Y84634								
No.4 - 48UNF	H2	2.5P	Y84683	1.88	0.236	0.141	2	Uc
No.5 - 40UNC	H2	2.5P	Y84603	1.94	0.236	0.141	3	Uc
			Y84603BR					
			Y84903TIN					
No.6 - 32UNC	H2	1.5P	Y84004	2	0.276	0.141	3	Uc
			2.5P					
	H3	1.5P	Y84005					
			Y84605					
			Y84605BR					
		2.5P	Y84905TIN					
			Y84636					
	H4	2.5P	Y84636BR					
			Y84635					
	H5	2.5P	Y84635BR					
			Y84659					
	H6	2.5P	Y84659BR					
			Y84665					
	H7	2.5P	Y84665BR					
			Y84665BR					

Overall length	Length of thread part	Length of chamfer part	Shank diameter
L	ℓ	ℓ _c	D _s

Unit : inch

Size	Class	Chamfer	*2 *3 Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.6-40UNF	H2	1.5P	Y84084	2	0.276	0.141	3	Uc
			Y84684					
	H3	2.5P	Y84685					
No.8 - 32UNC	H2	2.5P	Y84606	2.13	0.276	0.168	3	Uc
			1.5P					
	H3	2.5P	Y84607					
			Y84607BR					
			Y84907TIN					
			Y84638					
	H4	2.5P	Y84637					
			Y84660					
	H7	2.5P	Y84667					
			Y84667					
No.8 - 36UNF	H3	2.5P	Y84687	2.13	0.276	0.168	3	Uc
No.10 - 24UNC	H2	2.5P	Y84624	2.38	0.354	0.194	3	Uc
			1.5P					
	H3	2.5P	Y84609					
			Y84909TIN					
			Y84639					
	H5	2.5P	Y84639BR					
			Y84690					
H7	2.5P	Y84669						
		Y84669						
No.10 - 32UNF	H2	2.5P	Y84611	2.38	0.276	0.194	3	Uc
			1.5P					
	H3	2.5P	Y84610					
			Y84610BR					
			Y84910TIN					
	H4	2.5P	Y84630					
			Y84630					
	H5	2.5P	Y84040					
			Y84640					
	H6	2.5P	Y84640BR					
Y84662								
H7	2.5P	Y84670						
		Y84670						
No.12 - 24UNC	H3	2.5P	Y84688	2.38	0.354	0.22	3	Uc
No.12 - 28UNF	H3	2.5P	Y84689	2.38	0.276	0.22	3	Uc
1/4 - 20UNC	H3	2.5P	1.5P	Y84013	2.5	0.433	0.255	3
			Y84613					
			Y84613BR					
	H5	2.5P	Y84913TIN					
			Y84043					
	H7	2.5P	Y84643					
			Y84643BR					
Y84673								
1/4 - 28UNF	H3	2.5P	1.5P	Y84014	2.5	0.354	0.255	3
			Y84614					
			Y84614BR					
	H4	2.5P	Y84914TIN					
			Y84631					
	Y84631BR							
Y84631BR								

U.S.A. Taps & Dies Line up

Spiral Fluted Taps for blind hole

ZELX SS Spiral Fluted Taps for Stainless Steels
For Unified and Metric threads

Overall length	Length of thread part	Length of chamfer part	Shank diameter
<i>L</i>	<i>ℓ</i>	<i>ℓ_C</i>	<i>D_s</i>

Unit : inch

Unit : inch

Size	Class	Chamfer	*2 *3 Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type						
1/4 - 28UNF	H5	2.5P	Y84644	2.5	0.354	0.255	3	Uc						
			Y84644BR											
	H6		Y84664											
			Y84664BR											
	H7		Y84674											
			Y84674BR											
5/16 - 18UNC	H3	1.5P	Y84015	2.72	0.472	0.318	3	Uc						
		2.5P	Y84615											
			Y84615BR											
			Y84915TiN											
	H5	1.5P	Y84045											
		2.5P	Y84645											
	Y84645BR													
	H7		Y84675											
	5/16 - 24UNF	H3	1.5P						Y84016	2.72	0.394	0.318	3	Uc
			2.5P						Y84616					
Y84916TiN														
H4		2.5P	Y84632											
		H5	Y84646											
H7			Y84676											
3/8 - 16UNC		H3	1.5P	Y84017	2.94	0.551	0.381	3	Uc					
	2.5P		Y84617											
			Y84617BR											
			Y84917TiN											
	H5	1.5P	Y84047											
		2.5P	Y84647											
	Y84647BR													
	H7	1.5P	Y84077											
		2.5P	Y84677											
	3/8 - 24UNF	H3	1.5P	Y84018						2.94	0.394	0.381	3	Uc
2.5P			Y84618											
			Y84918TiN											
H4		1.5P	Y84033											
		2.5P	Y84633											
H5		1.5P	Y84048											
		2.5P	Y84648											
H7			Y84678											
7/16 - 14UNC	H3	1.5P	Y84019	3.16	0.591	0.323	3	Uc						
		2.5P	Y84619											
			Y84919TiN											
	H5	1.5P	Y84049											
		2.5P	Y84649											
	H7	2.5P	Y84679											
7/16 - 20UNF		H3	1.5P	Y84020	3.16	0.472	0.323	3	Uc					
	2.5P		Y84620											
	H5	1.5P	Y84050											
		2.5P	Y84650											

Size	Class	Chamfer	*2 *3 Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type	
7/16 - 20UNF	H6	2.5P	Y84691	3.16	0.472	0.323	3	Uc	
	H7		Y84680						
1/2 - 13UNC	H3	1.5P	Y84021	3.38	0.63	0.367	3	Uc	
		2.5P	Y84621						
			Y84621BR						
	H5	1.5P	Y84051						
		2.5P	Y84651						
			Y84651BR						
H7	2.5P	Y84681							
	H3	1.5P	Y84022	3.38	0.472	0.367	3	Uc	
		2.5P	Y84622						
Y84922TiN									
H5	1.5P	Y84052							
	2.5P	Y84652							
		Y84692							
H7	2.5P	Y84682							
	H3	2.5P	Y84653	3.59	0.709	0.429	3	Uc	
		2.5P	Y84953TiN						
9/16 - 18UNF	H3	1.5P	Y84054	3.59	0.512	0.429	3	Uc	
H3	2.5P	Y84654							
		Y84654BR							
		Y84954TiN							
H5	2.5P	Y84698							
		Y84625							
H3	1.5P	Y84025							
		Y84625							
	2.5P	Y84925TiN							
H5	1.5P	Y84055							
		2.5P	Y84655						
	2.5P	Y84655BR							
5/8 - 11UNC	H3	1.5P	Y84026	3.81	0.748	0.48	3	Uc	
		2.5P	Y84626						
	H5	1.5P	Y84056						
		2.5P	Y84656						
	H7	2.5P	Y84672						
		2.5P	Y84672						
5/8 - 18UNF	H3	2.5P	Y84026	3.81	0.512	0.48	3	Uc	
		1.5P	Y84056						
			2.5P						Y84656
	H5	1.5P	Y84056						
		2.5P	Y84656						
			Y84672						
3/4 - 10UNC	H3	1.5P	Y84027	4.25	0.827	0.59	4	Uc	
		2.5P	Y84627						
	H5	2.5P	Y84927TiN						
		2.5P	Y84657						
3/4 - 16UNF	H3	1.5P	Y84028	4.25	0.591	0.59	4	Uc	
		2.5P	Y84628						
			Y84628BR						
	H5	2.5P	Y84928TiN						
		H7	2.5P						Y84658
			2.5P						Y84686

U.S.A. Taps & Dies Line up

Spiral Fluted Taps for blind hole

ZELX SS Spiral Fluted Taps for Stainless Steels
For Unified and Metric threads

Unit : inch

Unit : inch

Size	Class	Chamfer	*2 *3 Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
7/8 - 14UNF	H4	2.5P	Y84696	4.69	0.709	0.697	4	Uc
			Y84696BR					
			Y84996TIN					
	H6		Y84694					
7/8 - 9UNC	H4	2.5P	Y84695	4.69	0.827	0.697	4	Uc
			Y84695BR					
			Y84995TIN					
1 - 12UNF	H4	2.5P	Y84668	5.13	0.709	0.8	4	
1 - 8UNC	H4	2.5P	Y84697	5.13	0.984	0.8	4	Uc
			Y84697BR					
			Y84997TIN					
1"1/8 - 12UNF	H5	2.5P	Y84702	5.44	0.787	0.896	4	
1"1/8 - 7UNC	H6	2.5P	Y84701	5.44	1.181	0.896	4	
1"1/4 - 12UNF	H5	2.5P	Y84705	5.75	0.787	1.021	4	
1"1/4 - 7UNC	H6	2.5P	Y84703	5.75	1.181	1.021	4	
1"3/8 - 12UNF	H5	2.5P	Y84707	6.06	0.787	1.108	4	
1"3/8 - 6UNC	H6	2.5P	Y84706	6.06	1.575	1.108	4	
1"1/2 - 12UNF	H5	2.5P	Y84711	6.38	0.787	1.233	4	
1"1/2 - 6UNC	H6	2.5P	Y84709	6.38	1.575	1.233	4	
1"3/4 - 5UNC	H7	2.5P	Y84714	7	1.772	1.43	4	
2 - 4.5UNC	H7	2.5P	Y84715	7.63	1.969	1.644	4	

Size	Class	Chamfer	*3 Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
M12 X 1.25	D5	1.5P	Y74026	3.38	0.551	0.367	3	Uc
		2.5P	Y74626					
			Y74926TIN					
M12 X 1.75	D6	1.5P	Y74027	3.38	0.591	0.367	3	Uc
		2.5P	Y74627					
			Y74927TIN					
M14 X 1.5	D6	1.5P	Y74028	3.59	0.551	0.429	3	Uc
		2.5P	Y74628					
M14 X 2	D7	1.5P	Y74029	3.59	0.709	0.429	3	Uc
		2.5P	Y74629					
M16 X 1.5	D6	2.5P	Y74630	3.81	0.551	0.48	3	
M16 X 2	D7	1.5P	Y74031	3.81	0.709	0.48	3	Uc
		2.5P	Y74631					
M18 X 1.5	D6	2.5P	Y74632	4.03	0.551	0.542	4	
M18 X 2.5	D7	2.5P	Y74633	4.03	0.787	0.542	4	
M20 X 2.5	D7	2.5P	Y74635	4.47	0.787	0.652	4	
M24 X 3	D8	2.5P	Y74639	4.91	0.551	0.76	4	

For Metric threads

Size	Class	Chamfer	*3 Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
M3 X 0.5	D3	1.5P	Y74015	1.94	0.197	0.141	3	Uc
		2.5P	Y74615					
			Y74915TIN					
M3.5 X 0.6	D4	2.5P	Y74616	2	0.276	0.141	3	
M4 X 0.7	D4	1.5P	Y74017	2.13	0.276	0.168	3	Uc
		2.5P	Y74617					
			Y74917TIN					
M5 X 0.8	D4	1.5P	Y74019	2.38	0.354	0.194	3	Uc
		2.5P	Y74619					
			Y74919TIN					
M6 X 1	D5	1.5P	Y74020	2.5	0.433	0.255	3	Uc
		2.5P	Y74620					
			Y74920TIN					
M7 X 1	D5	1.5P	Y74022	2.72	0.433	0.318	3	Uc
		2.5P	Y74621					
M8 X 1	D5	1.5P	Y74023	2.72	0.472	0.318	3	Uc
		2.5P	Y74622					
M8 X 1.25	D5	1.5P	Y74023	2.72	0.472	0.318	3	Uc
		2.5P	Y74623					
			Y74923TIN					
M10 X 1.25	D5	2.5P	Y74624	2.94	0.472	0.381	3	
M10 X 1.5	D6	1.5P	Y74025	2.94	0.512	0.381	3	Uc
		2.5P	Y74625					
			Y74925TIN					

U.S.A. Taps & Dies Line up

Spiral Fluted Taps for blind hole

Extended Spiral Fluted Taps for Stainless Steels

For Unified and Metric threads

ZELX SS 6"



Custom Blended Vanadium High Speed Steel Taps For Stainless Steels, Alloy Steels and Ductile Irons. ZELX SS taps are suitable for UNJ Aerospace internal threading applications.

*1 See blank type on page 97.

Spiral Fluted Taps for Nickel Base Alloys

For Unified and Metric threads

ZELX NI



Cobalt, Vanadium Premium Steel Taps For Nickel Base Alloys, Other Exotic Alloys, Mold and Stainless Steels > 30 HRC. ZELX NI taps are suitable for UNJ Aerospace internal threading applications.

*1 See blank type on page 97.

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.2 - 56UNC	H2	2.5P	Y84523	6	0.157	0.141	2	Uc
No.3 - 48UNC	H2	2.5P	Y84500	6	0.197	0.141	2	
No.4 - 40UNC	H2	2.5P	Y84501	6	0.236	0.141	2	
No.6 - 32UNC	H3	2.5P	Y84505	6	0.276	0.141	3	
No.8 - 32UNC	H3	2.5P	Y84507	6	0.276	0.168	3	
No.10 - 24UNC	H3	2.5P	Y84509	6	0.354	0.194	3	
No.10 - 32UNF	H3	2.5P	Y84510	6	0.276	0.194	3	
1/4 - 20UNC	H3	2.5P	Y84513	6	0.433	0.255	3	
1/4 - 28UNF	H3	2.5P	Y84514	6	0.354	0.255	3	
5/16 - 18UNC	H3	2.5P	Y84515	6	0.472	0.318	3	
5/16 - 24UNF	H3	2.5P	Y84516	6	0.394	0.318	3	
3/8 - 16UNC	H3	2.5P	Y84517	6	0.551	0.381	3	
3/8 - 24UNF	H3	2.5P	Y84518	6	0.394	0.381	3	
7/16 - 14UNC	H3	2.5P	Y84519	6	0.591	0.323	3	
7/16 - 20UNF	H3	2.5P	Y84520	6	0.472	0.323	3	
1/2 - 13UNC	H3	2.5P	Y84521	6	0.63	0.367	3	
1/2 - 20UNF	H3	2.5P	Y84522	6	0.472	0.367	3	

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type	
No.2 - 56UNC	H2	3P	Y87523	1.75	0.157	0.141	3	Uc	
No.4 - 40UNC	H2	3P	Y87501	1.88	0.236	0.141	3		
	H3	1.5P	Y87002						
			Y87583						
			Y87502						
	H4	3P	Y87512						
H5		Y87534							
No.5 - 40UNC	H2	3P	Y87503	1.94	0.236	0.141	3		
No.6 - 32UNC	H2	3P	Y87504	2	0.276	0.141	3		
	H3	1.5P	Y87005						
			Y87505						
	H4	3P	Y87508						
	H5	1.5P	Y87035						
			Y87535						
			Y87559						
H7		Y87565							
No.8 - 32UNC	H2	3P	Y87506	2.13	0.276	0.168	3		
	H3	1.5P	Y87580						
			Y87507						
	H4	3P	Y87529						
	H5	1.5P	Y87037						
			Y87537						
	H6	3P	Y87560						
H7		Y87567							
No.10 - 24UNC	H3	1.5P	Y87009	2.38	0.354	0.194	3		
			Y87509						
	H5	3P	Y87539						
No.10 - 32UNF	H2	3P	Y87511	2.38	0.276	0.194	3		
			1.5P						Y81556
	H3		Y87510						
			3P						Y87530
	H5	1.5P	Y87040						
		3P	Y87540						

Overall length	Length of thread part	Length of chamfer part	Shank diameter
<i>L</i>	<i>ℓ</i>	<i>ℓ_c</i>	<i>D_s</i>

ZELX NI Spiral Fluted Taps for Nickel Base Alloys

For Unified and Metric threads

Unit : inch

Unit : inch

Size	Class	Chamfer	Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type
No.10 - 32UNF	H6	3P	Y87561	2.38	0.276	0.194	3	Uc
	H7		Y87570					
1/4 - 20UNC	H3	1.5P	Y87013	2.5	0.433	0.255	3	Uc
		3P	Y87513					
	H5	1.5P	Y87043					
		3P	Y87543					
1/4 - 28UNF	H3	1.5P	Y87579	2.5	0.354	0.255	3	Uc
		3P	Y87514					
	H4	1.5P	Y87031					
		3P	Y87531					
	H5	1.5P	Y87443					
		3P	Y87544					
			Y87562					
H7	3P	Y87574						
	H3	3P	Y87515	2.72	0.472	0.318	3	Uc
		H5	1.5P					
3P	Y87545							
5/16 - 24UNF	H3	1.5P	Y87577	2.72	0.394	0.318	3	Uc
			Y87516					
	H4	3P	Y87532					
	H5	3P	Y87546					
	H6	3P	Y87563					
3/8 - 16UNC	H3	1.5P	Y87017	2.94	0.551	0.381	3	Uc
		3P	Y87517					
	H5	1.5P	Y87047					
		3P	Y87547					
3/8 - 24UNF	H3	1.5P	Y87575	2.94	0.394	0.381	3	Uc
		3P	Y87518					
	H4	1.5P	Y87033					
		3P	Y87533					
	Y87548							
	H6		3P					
	H7	3P	Y87578					
7/16 - 14UNC	H3	3P	Y87519	3.16	0.591	0.323	3	Uc
	H5		Y87549					
7/16 - 20UNF	H3	1.5P	Y87573	3.16	0.472	0.323	3	Uc
		3P	Y87520					
	H5	1.5P	Y87050					
		3P	Y87550					
1/2 - 13UNC	H3	1.5P	Y87500	3.38	0.63	0.367	3	Uc
		3P	Y87521					
	H5	1.5P	Y87051					
		3P	Y87551					
	H7		3P					

Size	Class	Chamfer	Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type	
1/2 - 20UNF	H3	1.5P	Y87022	3.38	0.472	0.367	3	Uc	
			Y87522						
	H5	3P	Y87552						
5/8 - 11UNC	H3	3P	Y87582	3.81	0.748	0.48	4	Uc	
			Y87525						
	H5	3P	Y87555						
5/8 - 18UNF	H3	3P	Y87526	3.81	0.512	0.48	4	Uc	
			Y87536						
	H4		3P						Y87556
	H5		3P						Y87586
3/4 - 10UNC	H3	1.5P	Y87027	4.25	0.827	0.59	4	Uc	
		3P	Y87527						
3/4 - 16UNF	H3	3P	Y87557	4.25	0.591	0.59	4	Uc	
			Y87528						
	H5	3P	Y87558						

For Metric threads								
Size	Class	Chamfer	Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type
M2.5 X 0.45	D3	3P	Y88320	1.81	0.295	0.141	3	Uc
M3 X 0.5	D3	3P	Y88321	1.94	0.197	0.141	3	
M3.5 X 0.6	D4	3P	Y88322	2	0.276	0.141	3	
M4 X 0.7	D4	3P	Y88323	2.13	0.276	0.168	3	
M5 X 0.8	D4	3P	Y88324	2.38	0.354	0.194	3	
M6 X 1	D5	3P	Y88325	2.5	0.433	0.255	3	
M7 X 1	D5	3P	Y88326	2.72	0.433	0.318	3	
M8 X 1	D5	3P	Y88327	2.72	0.472	0.318	3	
M8 X 1.25	D5	3P	Y88328	2.72	0.472	0.318	3	
M10 X 1.25	D5	3P	Y88329	2.94	0.472	0.381	3	
M10 X 1.5	D6	3P	Y88330	2.94	0.512	0.381	3	
M12 X 1.25	D5	3P	Y88331	3.38	0.551	0.367	3	
M12 X 1.75	D6	3P	Y88332	3.38	0.591	0.367	3	

U.S.A. Taps & Dies Line up

Spiral Fluted Taps for blind hole

STI Spiral Fluted Taps for Nickel Base Alloys

For Unified and Metric threads

ZELX NI STI



Cobalt, Vanadium Premium Steel Taps
 For Nickel Base Alloys, Other Exotic Alloys, Mold and
 Stainless Steels > 30 HRC.
 STI taps are special taps used to prepare holes for the
 installation of helical coil wire thread inserts.

*1 See blank type on page 97.

Overall length	Length of thread part	Length of chamfer part	Shank diameter
<i>L</i>	<i>ℓ</i>	<i>ℓ_C</i>	<i>D_S</i>

Unit : inch

Size	Class	Chamfer	Code No.	<i>L</i>	<i>ℓ</i>	<i>D_S</i>	Number of flutes	*1 Blank type
3/8 - 24UNF	H2	1.5P	Y87063	3.16	0.472	0.323	3	Uc
		3P	Y87453					
	H3	Y87463						
H5		1.5P	Y87085					
7/16 - 14UNC	H3	3P	Y87464	3.59	0.709	0.429	3	
7/16 - 20UNF	H3	1.5P	Y87065	3.38	0.472	0.367	3	
		3P	Y87465					
	H4	Y87475						
1/2 - 13UNC	H3	3P	Y87466	3.81	0.748	0.48	3	
	H5	1.5P	Y87088					
1/2 - 20UNF	H3	1.5P	Y87067	3.59	0.512	0.429	3	
		3P	Y87467					

Unit : inch

Size	Class	Chamfer	Code No.	<i>L</i>	<i>ℓ</i>	<i>D_S</i>	Number of flutes	*1 Blank type
No.2 - 56UNC	H2	3P	Y87400	1.88	0.236	0.141	3	Uc
No.4 - 40UNC	H1	3P	Y87403	2	0.276	0.141	3	
		1.5P	Y87004					
	H2	3P	Y87404					
		1.5P	Y87419					
No.6 - 32UNC	H3	3P	Y87420					
		1.5P	Y87008					
	H2	3P	Y87408					
		Y87424						
No.6 - 40UNF	H2	3P	Y87409	2.13	0.276	0.194	3	
No.8 - 32UNC	H1	3P	Y81409	2.38	0.354	0.22	3	
			Y87410					
	H3	Y87426						
No.10 - 24UNC	H2	3P	Y87412	2.5	0.433	0.255	3	
			1.5P					
	H3	3P	Y87428					
No.10 - 32UNF	H2	3P	Y87413	2.5	0.354	0.255	3	
			1.5P					
	H3	3P	Y87429					
		H5	1.5P					
1/4 - 20UNC	H2	3P	Y87448	2.72	0.472	0.318	3	
			1.5P					Y87058
	H3	3P	Y87458					
		H5	1.5P					Y87090
1/4 - 28UNF	H2	3P	Y87449	2.72	0.394	0.318	3	
			Y87459					
5/16 - 18UNC	H3	3P	Y87460	2.94	0.551	0.381	3	
			Y87470					
5/16 - 24UNF	H2	3P	Y87451	2.94	0.394	0.381	3	
			1.5P					Y87061
	H3	3P	Y87461					
3/8 - 16UNC	H3	3P	Y87462	3.38	0.63	0.367	3	
			Y87472					

Spiral Fluted Taps for Titanium Alloys

For Unified and Metric threads

ZELX TI



Cobalt, Vanadium Premium Steel Taps
For Titanium, Titanium Alloys, Magnesium and Beryllium Copper.
ZELX TI taps are suitable for UNJ Aerospace internal threading applications.

*1 See blank type on page 97.

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type							
No.2 - 56UNC	H2	3P	Y87623	1.75	0.157	0.141	3	Uc							
No.4 - 40UNC	H2	3P	Y87601	1.88	0.236	0.141	3								
	H4	1.5P	Y87001												
No.6 - 32UNC	H3	1.5P	Y87606	2	0.276	0.141	3								
			Y87605												
	H4	3P	Y87608												
	H5	Y87635													
No.8 - 32UNC	H3	1.5P	Y87007	2.13	0.276	0.168	3								
			Y87607												
	H4	3P	Y87629												
	H5		Y87637												
H6	Y87660														
No.10 - 24UNC	H3	3P	Y87609	2.38	0.354	0.194	3								
			No.10 - 32UNF						H3	1.5P	Y87010	2.38	0.276	0.194	3
											Y87610				
											H4				
H5	Y87640														
H6	Y87661														
H7	Y87670														
1/4 - 20UNC	H3	1.5P	Y87628	2.5	0.433	0.255	3								
			3P					Y87613							
1/4 - 28UNF	H3	1.5P	Y87014	2.5	0.354	0.255	3								
			Y87614												
			H4					3P	Y87631						
			H5						Y87644						
			H6						Y87662						
H7	Y87674														
5/16 - 18UNC	H3	1.5P	Y87695	2.72	0.472	0.318	3								
			3P					Y87615							

Overall length	Length of thread part	Length of chamfer part	Shank diameter
L	ℓ	ℓ _c	D _s

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
5/16 - 24UNF	H3	1.5P	Y87016	2.72	0.394	0.318	3	
			Y87616					
	H4	3P	Y87632					
	H5		Y87646					
	H6		Y87663					
3/8 - 16UNC	H3	1.5P	Y87611	2.94	0.551	0.381	3	
			3P					Y87617
3/8 - 24UNF	H3	1.5P	Y87018	2.94	0.394	0.381	3	
			Y87618					
	H4	3P	Y87633					
	H5		Y87648					
	H6		Y87664					
7/16 - 14UNC	H3	1.5P	Y81629	3.16	0.591	0.323	3	
			3P					Y87619
7/16 - 20UNF	H3	1.5P	Y87020	3.16	0.472	0.323	3	
			3P					Y87620
	H5	3P	Y87650					
1/2 - 13UNC	H3	3P	Y87621	3.38	0.63	0.367	3	
			Y87626					
1/2 - 20UNF	H3	1.5P	Y87023	3.38	0.472	0.367	3	
			3P					Y87622
	H5	3P	Y87652					

For Metric threads

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
M2.5 X 0.45	D3	3P	Y87700	1.81	0.295	0.141	3	Uc
M3 X 0.5	D3	3P	Y87701	1.94	0.197	0.141	3	
M3.5 X 0.6	D4	3P	Y87702	2	0.276	0.141	3	
M4 X 0.7	D4	3P	Y87703	2.13	0.276	0.168	3	
M5 X 0.8	D4	3P	Y87704	2.38	0.354	0.194	3	
M6 X 1	D5	3P	Y87705	2.5	0.433	0.255	3	
M7 X 1	D5	3P	Y87706	2.72	0.433	0.318	3	
M8 X 1	D5	3P	Y87707	2.72	0.472	0.318	3	
M8 X 1.25	D5	3P	Y87708	2.72	0.472	0.318	3	
M10 X 1.25	D5	3P	Y87709	2.94	0.472	0.381	3	
M10 X 1.5	D6	3P	Y87710	2.94	0.512	0.381	3	
M12 X 1.25	D5	3P	Y87711	3.38	0.551	0.367	3	

Spiral Fluted Taps for High Speed Tapping

For Unified and Metric threads

ZELX FR



Custom Blended Vanadium High Speed Steel Taps
For Fast Tapping and Rigid, Computer Controlled Setups
For Low and Medium Carbon Steels, Die Cast Aluminums and Zinc Alloys
For synchronized tapping at 2 to 3 times faster than conventional taps

*1 See blank type on page 97.

Spiral Fluted Taps for Non-Ferrous Materials

For Unified and Metric threads

ZELX AL



Custom Blended Vanadium High Speed Steel Taps
For Silicon Die Cast, Zinc Die Cast Aluminum and Wrought Aluminum Alloys
DIN tap lengths, USCTI shank dimensions

*1 See blank type on page 97.

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.4 - 40UNC	H2	2.5P	Y84401	1.88	0.236	0.141	3	Uc
No.5 - 40UNC	H2	2.5P	Y84403	1.94	0.236	0.141	3	
No.6 - 32UNC	H3	2.5P	Y84405	2	0.276	0.141	3	
No.8 - 32UNC	H3	2.5P	Y84407	2.13	0.276	0.168	3	
No.10 - 24UNC	H3	2.5P	Y84409	2.38	0.354	0.194	3	
No.10 - 32UNF	H3	2.5P	Y84410	2.38	0.276	0.194	3	
1/4 - 20UNC	H3	2.5P	Y84413	2.5	0.433	0.255	3	
1/4 - 28UNF	H3	2.5P	Y84414	2.5	0.354	0.255	3	
5/16 - 18UNC	H3	2.5P	Y84415	2.72	0.472	0.318	3	
5/16 - 24UNF	H3	2.5P	Y84416	2.72	0.394	0.318	3	
3/8 - 16UNC	H3	2.5P	Y84417	2.94	0.551	0.381	3	
3/8 - 24UNF	H3	2.5P	Y84418	2.94	0.394	0.381	3	
7/16 - 14UNC	H3	2.5P	Y84419	3.16	0.591	0.323	3	
7/16 - 20UNF	H3	2.5P	Y84420	3.16	0.472	0.323	3	
1/2 - 13UNC	H3	2.5P	Y84421	3.38	0.63	0.367	3	
1/2 - 20UNF	H3	2.5P	Y84422	3.38	0.472	0.367	3	
5/8 - 11UNC	H3	2.5P	Y84425	3.81	0.748	0.48	3	
5/8 - 18UNF	H3	2.5P	Y84426	3.81	0.572	0.48	3	
3/4 - 10UNC	H3	2.5P	Y84427	4.25	0.827	0.59	4	
3/4 - 16UNF	H3	2.5P	Y84428	4.25	0.591	0.59	4	

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.2 - 56UNC	H2	2.5P	Y86500	1.77	0.276	0.141	2	Uc
No.4 - 40UNC	H2	2.5P	Y86501	2.2	0.433	0.141	2	
No.5 - 40UNC	H2	2.5P	Y86502	2.2	0.433	0.141	3	
No.6 - 32UNC	H3	2.5P	Y86503	2.2	0.512	0.141	3	
No.8 - 32UNC	H3	2.5P	Y86504	2.48	0.512	0.168	3	
No.10 - 24UNC	H3	2.5P	Y86505	2.76	0.63	0.194	3	
No.10 - 32UNF	H3	2.5P	Y86506	2.76	0.63	0.194	3	
1/4 - 20UNC	H3	2.5P	Y86507	3.15	0.748	0.255	3	
	H5		Y86508					
1/4 - 28UNF	H3	2.5P	Y86509	3.15	0.748	0.255	3	
	H4		Y86511					
5/16 - 18UNC	H3	2.5P	Y86512	3.54	0.866	0.318	3	
	H5		Y86513					
5/16 - 24UNF	H3	2.5P	Y86514	3.54	0.866	0.318	3	
	H4		Y86515					
3/8 - 16UNC	H3	2.5P	Y86516	3.94	0.945	0.381	3	
	H5		Y86517					
3/8 - 24UNF	H3	2.5P	Y86518	3.54	0.787	0.381	3	
	H4		Y86519					
7/16 - 14UNC	H3	2.5P	Y86520	3.94	0.945	0.323	3	
	H5		Y86521					
7/16 - 20UNF	H3	2.5P	Y86522	3.94	0.945	0.323	3	
	H5		Y86523					
1/2 - 13UNC	H3	2.5P	Y86524	4.33	1.142	0.367	3	
	H5		Y86525					
1/2 - 20UNF	H3	2.5P	Y86526	3.94	0.866	0.367	3	
	H5		Y86527					

ZELX AL Spiral Fluted Taps for Non-Ferrous Materials
For Unified and Metric threads

Unit : inch

For Metric threads							
Size	Class	Chamfer	Code No.	L	ℓ	D _s	*1 Blank type
M3 X 0.5	D3	2.5P	Y86528	2.2	0.433	0.141	3
M3.5 X 0.6	D4	2.5P	Y86529	2.2	0.512	0.141	3
M4 X 0.7	D4	2.5P	Y86530	2.48	0.512	0.168	3
M5 X 0.8	D4	2.5P	Y86531	2.76	0.63	0.194	3
M6 X 1	D5	2.5P	Y86532	3.15	0.748	0.255	3
M7 X 1	D5	2.5P	Y86533	3.15	0.748	0.318	3
M8 X 1	D5	2.5P	Y86534	3.54	0.866	0.318	3
M8 X 1.25	D5	2.5P	Y86535	3.54	0.866	0.318	3
M10 X 1.25	D5	2.5P	Y86536	3.94	0.945	0.381	3
M10 X 1.5	D6	2.5P	Y86537	3.94	0.945	0.381	3
M12 X 1.25	D5	2.5P	Y86538	3.94	0.866	0.367	3
M12 X 1.5	D5	2.5P	Y86539	3.94	0.866	0.367	3
M12 X 1.75	D6	2.5P	Y86540	4.33	1.142	0.367	3

Uc

Overall length	Length of thread part	Length of chamfer part	Shank diameter
L	ℓ	ℓ _c	D _s

Spiral Fluted Taps for Non-Ferrous Materials
For Unified and Metric threads

ZELX ALS



Custom Blended Vanadium High Speed Steel Taps
For Silicon Die Cast, Zinc Die Cast Aluminum and
Wrought Aluminum Alloys
DIN tap lengths, USCTI shank dimensions

*1 See blank type on page 97.

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.2 - 56UNC	H2	2.5P	Y86400	1.77	0.276	0.141	3	Uc
No.4 - 40UNC	H2	2.5P	Y86401	2.2	0.433	0.141	3	
No.5 - 40UNC	H2	2.5P	Y86402	2.2	0.433	0.141	3	
No.6 - 32UNC	H3	2.5P	Y86403	2.2	0.512	0.141	3	
No.8 - 32UNC	H3	2.5P	Y86404	2.48	0.512	0.168	3	
No.10 - 24UNC	H3	2.5P	Y86405	2.76	0.63	0.194	3	
No.10 - 32UNF	H3	2.5P	Y86406	2.76	0.63	0.194	3	
1/4 - 20UNC	H3	2.5P	Y86407	3.15	0.748	0.255	3	
	H5		Y86408					
1/4 - 28UNF	H3	2.5P	Y86409	3.15	0.748	0.255	3	
	H4		Y86411					
5/16 - 18UNC	H3	2.5P	Y86412	3.54	0.866	0.318	3	
	H5		Y86413					
5/16 - 24UNF	H3	2.5P	Y86414	3.54	0.866	0.318	3	
	H4		Y86415					
3/8 - 16UNC	H3	2.5P	Y86416	3.94	0.945	0.381	3	
	H5		Y86417					
3/8 - 24UNF	H3	2.5P	Y86418	3.54	0.787	0.381	3	
	H4		Y86419					
7/16 - 14UNC	H3	2.5P	Y86420	3.94	0.945	0.323	3	
	H5		Y86421					
7/16 - 20UNF	H3	2.5P	Y86422	3.94	0.945	0.323	3	
	H5		Y86423					
1/2 - 13UNC	H3	2.5P	Y86424	4.33	1.142	0.367	3	
	H5		Y86425					
1/2 - 20UNF	H3	2.5P	Y86426	3.94	0.866	0.367	3	
	H5		Y86427					

For Metric threads							
Size	Class	Chamfer	Code No.	L	ℓ	D _s	*1 Blank type
M3 X 0.5	D3	2.5P	Y86428	2.2	0.433	0.141	3
M3.5 X 0.6	D4	2.5P	Y86429	2.2	0.512	0.141	3
M4 X 0.7	D4	2.5P	Y86430	2.48	0.512	0.168	3

U.S.A. Taps & Dies Line up

Spiral Fluted Taps for blind hole

ZELX ALS Spiral Fluted Taps for Non-Ferrous Materials
For Unified and Metric threads

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
M5 X 0.8	D4	2.5P	Y86431	2.76	0.63	0.194	3	Uc
M6 X 1	D5	2.5P	Y86432	3.15	0.748	0.255	3	
M7 X 1	D5	2.5P	Y86433	3.15	0.748	0.318	3	
M8 X 1	D5	2.5P	Y86434	3.54	0.866	0.318	3	
M8 X 1.25	D5	2.5P	Y86435	3.54	0.866	0.318	3	
M10 X 1.25	D5	2.5P	Y86436	3.94	0.945	0.381	3	
M10 X 1.5	D6	2.5P	Y86437	3.94	0.945	0.381	3	
M12 X 1.25	D5	2.5P	Y86438	3.94	0.866	0.367	3	
M12 X 1.5	D5	2.5P	Y86439	3.94	0.866	0.367	3	
M12 X 1.75	D6	2.5P	Y86440	4.33	1.142	0.367	3	

Industrial Quality Spiral Fluted Taps
For Unified and Metric threads

HI SP



"available while supplies last"
Vanadium High Speed Steel Taps
Ideal for blind hole tapping ferrous materials that produce stringy chips.

*1 See blank type on page 97.

*2 "BR" of code No. stands for Bright finish taps

Unit : inch

Size	Class	Chamfer	*2 Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.3 - 48UNC	H2	1.5P	Y84061	1.81	0.5	0.141	2	Ub
			Y84061BR					
		3P	Y84060					
			Y84060BR					
No.4 - 40UNC	H2	1.5P	Y84065	1.88	0.56	0.141	2	
			Y84064					
		3P	Y84064BR					
No.5 - 40UNC	H2	1.5P	Y84071	1.94	0.63	0.141	2	
			Y84071BR					
		3P	Y84070					
			Y84070BR					
No.6 - 32UNC	H3	1.5P	Y84125	2	0.69	0.141	3	
			Y84125BR					
		3P	Y84124					
			Y84124BR					
No.8 - 32UNC	H3	1.5P	Y84129	2.13	0.75	0.168	3	
			Y84129BR					
		3P	Y84128					
			Y84128BR					
No.10 - 24UNC	H3	1.5P	Y84133	2.38	0.88	0.194	3	
		3P	Y84132					
			Y84132BR					
No.10 - 32UNF	H3	1.5P	Y84135	2.38	0.88	0.194	3	
			Y84135BR					
		3P	Y84134					
			Y84134BR					
No.12 - 24UNC	H3	1.5P	Y84137	2.38	0.94	0.22	3	
			Y84137BR					
		3P	Y84136					
			Y84136BR					

Overall length	Length of thread part	Length of chamfer part	Shank diameter
<i>L</i>	<i>ℓ</i>	<i>ℓ_c</i>	<i>D_s</i>

HI SP Industrial Quality Spiral Fluted Taps

For Unified and Metric threads

Unit : inch

Unit : inch

Size	Class	Chamfer	*2 Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type
1/4 - 20UNC	H3	1.5P	Y84301	2.5	1	0.255	3	Ub
			Y84301BR					
		3P	Y84300					
			Y84300BR					
1/4 - 28UNF	H3	1.5P	Y84303	2.5	1	0.255	3	Ub
			Y84303BR					
		3P	Y84302					
			Y84302BR					
5/16 - 18UNC	H3	1.5P	Y84305	2.72	1.13	0.318	3	Ub
			Y84305BR					
		3P	Y84304					
			Y84304BR					
5/16 - 24UNF	H3	1.5P	Y84307	2.72	1.13	0.318	3	Ub
			Y84307BR					
		3P	Y84306					
			Y84306BR					
3/8 - 16UNC	H3	1.5P	Y84309	2.94	1.25	0.381	3	Ub
			Y84309BR					
		3P	Y84308					
			Y84308BR					
3/8 - 24UNF	H3	1.5P	Y84311	2.94	1.25	0.381	3	Ub
			Y84311BR					
		3P	Y84310					
			Y84310BR					
7/16 - 14UNC	H3	1.5P	Y84313	3.16	1.44	0.323	3	Ub
			Y84313BR					
		3P	Y84312					
			Y84312BR					
7/16 - 20UNF	H3	1.5P	Y84317	3.16	1.44	0.323	3	Ub
			Y84316					
		3P	Y84316BR					
			Y84316BR					
1/2 - 13UNC	H3	1.5P	Y84321	3.38	1.66	0.367	3	Ub
			Y84321BR					
		3P	Y84320					
			Y84320BR					
1/2 - 20UNF	H3	1.5P	Y84325	3.38	1.66	0.367	3	Ub
			Y84325BR					
		3P	Y84324					
			Y84324BR					
5/8 - 11UNC	H3	1.5P	Y84329	3.81	1.81	0.48	3	Ub
			Y84329BR					
		3P	Y84328					
			Y84328BR					
5/8 - 18UNF	H3	1.5P	Y84333	3.81	1.81	0.48	3	Ub
			Y84333BR					
		3P	Y84332					
			Y84332BR					

Size	Class	Chamfer	*2 Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type
3/4 - 10UNC	H3	1.5P	Y84337	4.25	2	0.59	4	Ub
			Y84337BR					
		3P	Y84336					
			Y84336BR					
3/4 - 16UNF	H3	1.5P	Y84341	4.25	2	0.59	4	Ub
			Y84341BR					
		3P	Y84340					
			Y84340BR					

For Metric threads								
Size	Class	Chamfer	Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type
M3 X 0.5	D3	2.5P	Y78215	1.94	0.63	0.141	3	Ub
M3.5 X 0.6	D4	2.5P	Y78216	2	0.69	0.141	3	
M4 X 0.7	D4	2.5P	Y78217	2.13	0.75	0.168	3	
M4.5 X 0.75	D4	2.5P	Y78218	2.38	0.88	0.194	3	
M5 X 0.8	D4	2.5P	Y78219	2.38	0.88	0.194	3	
M6 X 1	D5	2.5P	Y78220	2.5	1	0.255	3	
M7 X 1	D5	2.5P	Y78221	2.72	1.13	0.318	3	
M8 X 1	D5	2.5P	Y78222	2.72	1.13	0.318	3	
M8 X 1.25	D5	2.5P	Y78223	2.72	1.13	0.318	3	
M10 X 1.25	D5	2.5P	Y78224	2.94	1.25	0.381	3	
M10 X 1.5	D6	2.5P	Y78225	2.94	1.25	0.381	3	
M12 X 1.25	D5	2.5P	Y78226	3.38	1.66	0.367	3	
M12 X 1.75	D6	2.5P	Y78227	3.38	1.66	0.367	3	
M14 X 1.5	D6	2.5P	Y78228	3.59	1.66	0.429	3	
M14 X 2	D7	2.5P	Y78229	3.59	1.66	0.429	3	
M16 X 1.5	D6	2.5P	Y78230	3.81	1.81	0.48	3	
M16 X 2	D7	2.5P	Y78231	3.81	1.81	0.48	3	
M18 X 1.5	D6	2.5P	Y78232	4.03	1.81	0.542	4	
M18 X 2.5	D7	2.5P	Y78233	4.03	1.81	0.542	4	

U.S.A. Taps & Dies Line up

Spiral Fluted Taps for blind hole

Industrial Quality STI Spiral Fluted Taps

For Unified and Metric threads

STI SP



"available while supplies last"
 Vanadium High Speed Steel Taps
 Ideal for blind hole tapping ferrous materials that produce stringy chips.
 STI taps are special taps used to prepare holes for the installation of helical coil wire thread inserts.

*1 See blank type on page 97.

Left Hand Spiral Fluted Taps for Titanium Alloys

For Unified and Metric threads

ZELX TI LHSP



Cobalt, Vanadium Premium Steel Taps
 For Titanium, Titanium Alloys, Magnesium and Beryllium Copper.
 ZELX TI taps are suitable for UNJ Aerospace internal threading applications.

*1 See blank type on page 97.

U.S.A. Taps & Dies Line up

Spiral Fluted Taps for through hole

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.2 - 56UNC	H2	1.5P	Y84700	1.88	0.563	0.141	2	U _b
No.4 - 40UNC	H2	1.5P	Y84704	2	0.688	0.141	2	
	H3		Y84720					
No.6 - 32UNC	H4	Y84736	2.38	0.875	0.194	3		
	H2	Y84708						
No.8 - 32UNC	H3	1.5P	Y84724	2.38	0.938	0.22	3	
	H4	Y84740						
No.10 - 24UNC	H2	1.5P	Y84710	2.5	1	0.255	3	
	H3		Y84726					
No.10 - 32UNF	H4	Y84742	2.5	1	0.255	3		
	H2	Y84713						
1/4 - 20UNC	H3	1.5P	Y84729	2.72	1.125	0.318	3	
	H4	Y84745						
1/4 - 28UNF	H2	1.5P	Y84748	2.72	1.125	0.318	3	
	H3		Y84758					
5/16 - 18UNC	H4	Y84769	2.94	1.25	0.381	3		
	H3	1.5P					Y84760	
5/16 - 24UNF	H4	Y84771	3.38	1.656	0.367	3		
	H3	1.5P					Y84762	
3/8 - 16UNC	H4	Y84772	3.59	1.656	0.429	3		
	H2	1.5P					Y84753	3.38
3/8 - 24UNF	H3	Y84763	3.59	1.656	0.429	3		
	H3	1.5P					Y84764	3.81
7/16 - 14UNC	H3	1.5P	Y84765	3.59	1.656	0.429	3	
7/16 - 20UNF	H4	Y84775	3.81					1.81
	1/2 - 13UNC	H3		1.5P	Y84766	3.59	1.656	
1/2 - 20UNF	H3	1.5P	Y84767					

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.2 - 56UNC	H2	5P	Y85623	1.75	0.256	0.141	3	U _c
No.4 - 40UNC	H2	5P	Y85601	1.88	0.335	0.141	3	
No.5 - 40UNC	H2	5P	Y85603	1.94	0.374	0.141	3	
No.6 - 32UNC	H3	5P	Y85605	2	0.413	0.141	3	
	H5		Y85635					
No.8 - 32UNC	H3	5P	Y85607	2.13	0.453	0.168	3	
	H4		Y85629					
	H5		Y85637					
	H6		Y85660					
No.10 - 24UNC	H7	Y85667	2.38	0.531	0.194	3		
	H3	Y85609						
No.10 - 32UNF	H5	Y85639	2.38	0.531	0.194	3		
	H3	Y85610						
	H4	Y85630						
	H5	Y85640						
1/4 - 20UNC	H6	Y85661	2.5	0.591	0.255	3		
	H7	Y85670						
1/4 - 28UNF	H3	5P	Y85613	2.5	0.591	0.255	3	
	H5	Y85643						
5/16 - 18UNC	H3	5P	Y85614	2.72	0.669	0.318	3	
	H4		Y85631					
	H5		Y85644					
	H6		Y85662					
5/16 - 24UNF	H7	Y85674	2.72	0.669	0.318	3		
	H3	5P					Y85615	2.72
3/8 - 16UNC	H5	Y85645	2.94	0.748	0.381	3		
	H3	Y85616						
	H4	Y85632						
	H5	Y85646						
3/8 - 24UNF	H6	Y85663	3.59	1.81	0.48	3		
	H7	Y85676						
7/16 - 14UNC	H3	5P	Y85617	3.59	1.656	0.429	3	
	H5	Y85647						

ZELX TI LHSP Left Hand Spiral Fluted Taps for Titanium Alloys
For Unified and Metric threads

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
3/8 - 24UNF	H3	5P	Y85618	2.94	0.748	0.381	3	Uc
	H4		Y85633					
	H5		Y85648					
	H6		Y85664					
	H7		Y85678					
7/16 - 14UNC	H3	5P	Y85619	3.16	0.591	0.323	3	Uc
	H5		Y85649					
7/16 - 20UNF	H3	5P	Y85620	3.16	0.866	0.323	3	Uc
	H5		Y85650					
1/2 - 13UNC	H3	5P	Y85621	3.38	0.984	0.367	3	Uc
	H5		Y85651					
1/2 - 20UNF	H3	5P	Y85622	3.38	0.984	0.367	3	Uc
	H5		Y85652					
5/8 - 11UNC	H3	5P	Y85625	3.81	0.748	0.48	3	Uc
5/8 - 18UNF	H3	5P	Y85626	3.81	0.512	0.48	3	Uc
3/4 - 10UNC	H3	5P	Y85627	4.25	0.827	0.59	3	Uc
3/4 - 16UNF	H3	5P	Y85628	4.25	0.591	0.59	3	Uc

For Metric threads								
Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
M2.5 X 0.45	D3	5P	Y85700	1.81	0.3	0.14	3	Uc
M3 X 0.5	D3	5P	Y85701	1.94	0.37	0.14	3	Uc
M3.5 X 0.6	D4	5P	Y85702	2	0.41	0.14	3	Uc
M4 X 0.7	D4	5P	Y85703	2.13	0.45	0.17	3	Uc
M5 X 0.8	D4	5P	Y85704	2.38	0.53	0.19	3	Uc
M6 X 1	D5	5P	Y85705	2.5	0.59	0.26	3	Uc
M7 X 1	D5	5P	Y85706	2.72	0.67	0.32	3	Uc
M8 X 1	D5	5P	Y85707	2.72	0.67	0.32	3	Uc
M8 X 1.25	D5	5P	Y85708	2.72	0.67	0.32	3	Uc
M10 X 1.25	D5	5P	Y85709	2.94	0.75	0.38	3	Uc
M10 X 1.5	D6	5P	Y85710	2.94	0.75	0.38	3	Uc
M12 X 1.25	D5	5P	Y85711	3.38	0.98	0.37	3	Uc
M12 X 1.75	D6	5P	Y85712	3.38	0.98	0.37	3	Uc

Overall length	Length of thread part	Length of chamfer part	Shank diameter
L	ℓ	ℓ _c	D _s

Left Hand Spiral Fluted Taps for High Speed Tapping
For Unified and Metric threads

ZELX FR LHSP



Custom Blended Vanadium High Speed Steel Taps
For Fast Tapping and Rigid, Computer Controlled Setups
For Low and Medium Carbon Steels, Die Cast Aluminums and Zinc Alloys
For synchroized tapping at 2 to 3 times faster than conventional taps

*1 See blank type on page 97.

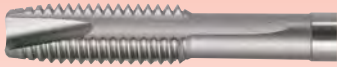
Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.4 - 40UNC	H2	5P	Y84201	1.88	0.335	0.141	3	Uc
No.5 - 40UNC	H2	5P	Y84203	1.94	0.374	0.141	2	Uc
No.6 - 32UNC	H3	5P	Y84205	2	0.413	0.141	3	Uc
No.8 - 32UNC	H3	5P	Y84207	2.13	0.453	0.168	3	Uc
No.10 - 24UNC	H3	5P	Y84209	2.38	0.531	0.194	3	Uc
No.10 - 32UNF	H3	5P	Y84210	2.38	0.531	0.194	3	Uc
1/4 - 20UNC	H3	5P	Y84213	2.5	0.591	0.255	3	Uc
1/4 - 28UNF	H3	5P	Y84214	2.5	0.591	0.255	3	Uc
5/16 - 18UNC	H3	5P	Y84215	2.72	0.669	0.318	3	Uc
5/16 - 24UNF	H3	5P	Y84216	2.72	0.669	0.318	3	Uc
3/8 - 16UNC	H3	5P	Y84217	2.94	0.748	0.381	3	Uc
3/8 - 24UNF	H3	5P	Y84218	2.94	0.748	0.381	3	Uc
7/16 - 14UNC	H3	5P	Y84219	3.16	0.984	0.323	3	Uc
7/16 - 20UNF	H3	5P	Y84220	3.16	0.984	0.323	3	Uc
1/2 - 13UNC	H3	5P	Y84221	3.38	0.984	0.367	3	Uc
1/2 - 20UNF	H3	5P	Y84222	3.38	0.984	0.367	3	Uc
5/8 - 11UNC	H3	5P	Y84225	3.81	1.26	0.48	3	Uc
5/8 - 18UNF	H3	5P	Y84226	3.81	0.984	0.48	3	Uc
3/4 - 10UNC	H3	5P	Y84227	4.25	1.201	0.59	4	Uc
3/4 - 16UNF	H3	5P	Y84228	4.25	1.201	0.59	4	Uc

“NEW” Spiral Pointed Working-Taps

For Unified threads

WT-SPPT



Vanadium High Speed Steel Taps
 YMW New WT-SPPT taps are designed to tap steels and ferrous materials that produce stringy chips. They are also ideal for brass, plastics in through hole applications.
 Necked design enhances flow of cutting fluid to cutting teeth and reduces surface contact between the tool and workpiece for more efficient threading.

*1 See blank type on page 97.

“NEW” Spiral Pointed Working-Taps

For Unified threads

WT-SPPT



Vanadium High Speed Steel Taps
 YMW New WT-SPPT taps are designed to tap steels and ferrous materials that produce stringy chips. They are also ideal for brass, plastics in through hole applications.
 Necked design enhances flow of cutting fluid to cutting teeth and reduces surface contact between the tool and workpiece for more efficient threading.

*1 See blank type on page 97.

*5 "X" of code No. stands for Oxide surface treatment.

Unit : inch

Size	Class of fit	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.2 - 56UNC	2B	5P	WTP2UN2E	1.75	0.256	0.141	2	
No.4 - 40UNC	2B	5P	WTP2UN4H	1.88	0.335	0.141	2	
No.6 - 32UNC	2B	5P	WTP2UN6J	2	0.413	0.141	2	
No.8 - 32UNC	2B	5P	WTP2UN8J	2.13	0.453	0.168	2	
No.10 - 24UNC	2B	5P	WTP2UNAM	2.38	0.531	0.194	2	
No.10 - 32UNF	2B	5P	WTP2UNAJ	2.38	0.531	0.194	2	
1/4 - 20UNC	2B	5P	WTP2U04N	2.5	0.591	0.255	3	
1/4 - 28UNF	2B	5P	WTP2U04K	2.5	0.591	0.255	3	
5/16 - 18UNC	2B	5P	WTP2U05O	2.72	0.669	0.318	3	
5/16 - 24UNF	2B	5P	WTP2U05M	2.72	0.669	0.318	3	
3/8 - 16UNC	2B	5P	WTP2U06P	2.94	0.748	0.381	3	
3/8 - 24UNF	2B	5P	WTP2U06M	2.94	0.748	0.381	3	
7/16 - 14UNC	2B	5P	WTP2U07Q	3.16	0.866	0.323	3	
7/16 - 20UNF	2B	5P	WTP2U07N	3.16	0.866	0.323	3	
1/2 - 13UNC	2B	5P	WTP2U08R	3.38	0.984	0.367	3	
1/2 - 20UNF	2B	5P	WTP2U08N	3.38	0.984	0.367	3	
9/16 - 12UNC	2B	5P	WTP2U09S	3.59	0.984	0.429	3	
9/16 - 18UNF	2B	5P	WTP2U09O	3.59	0.984	0.429	3	
5/8 - 11UNC	2B	5P	WTP2U10U	3.81	1.083	0.48	3	
5/8 - 18UNF	2B	5P	WTP2U10O	3.81	1.083	0.48	3	
3/4 - 10UNC	2B	5P	WTP2U12V	4.25	1.201	0.59	3	
3/4 - 16UNF	2B	5P	WTP2U12P	4.25	1.201	0.59	3	

Uc

Unit : inch

Size	Class of fit	Chamfer	*5 Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.2 - 56UNC	2B	5P	WTP2UN2EX	1.75	0.256	0.141	2	
No.4 - 40UNC	2B	5P	WTP2UN4HX	1.88	0.335	0.141	2	
No.6 - 32UNC	2B	5P	WTP2UN6JX	2	0.413	0.141	2	
No.8 - 32UNC	2B	5P	WTP2UN8JX	2.13	0.453	0.168	2	
No.10 - 24UNC	2B	5P	WTP2UNAMX	2.38	0.531	0.194	2	
No.10 - 32UNF	2B	5P	WTP2UNAJX	2.38	0.531	0.194	2	
1/4 - 20UNC	2B	5P	WTP2U04NX	2.5	0.591	0.255	3	
1/4 - 28UNF	2B	5P	WTP2U04KX	2.5	0.591	0.255	3	
5/16 - 18UNC	2B	5P	WTP2U05OX	2.72	0.669	0.318	3	
5/16 - 24UNF	2B	5P	WTP2U05MX	2.72	0.669	0.318	3	
3/8 - 16UNC	2B	5P	WTP2U06PX	2.94	0.748	0.381	3	
3/8 - 24UNF	2B	5P	WTP2U06MX	2.94	0.748	0.381	3	
7/16 - 14UNC	2B	5P	WTP2U07QX	3.16	0.866	0.323	3	
7/16 - 20UNF	2B	5P	WTP2U07NX	3.16	0.866	0.323	3	
1/2 - 13UNC	2B	5P	WTP2U08RX	3.38	0.984	0.367	3	
1/2 - 20UNF	2B	5P	WTP2U08NX	3.38	0.984	0.367	3	
9/16 - 12UNC	2B	5P	WTP2U09SX	3.59	0.984	0.429	3	
9/16 - 18UNF	2B	5P	WTP2U09OX	3.59	0.984	0.429	3	
5/8 - 11UNC	2B	5P	WTP2U10UX	3.81	1.083	0.48	3	
5/8 - 18UNF	2B	5P	WTP2U10OX	3.81	1.083	0.48	3	
3/4 - 10UNC	2B	5P	WTP2U12VX	4.25	1.201	0.59	3	
3/4 - 16UNF	2B	5P	WTP2U12PX	4.25	1.201	0.59	3	

Uc

Spiral Pointed Taps for Stainless Steels

For Unified and Metric threads

ZELX SS



Custom Blended Vanadium High Speed Steel Taps For Stainless Steels, Alloy Steels and Ductile Irons. ZELX SS taps are suitable for UNJ Aerospace internal threading applications.

*1 See blank type on page 97.
 *2 "BR" of code No. stands for Bright finish taps
 *3 "TIN" of code No. stands for Titanium Nitride coating taps

Unit : inch

Size	Class	Chamfer	*2 *3 Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.2 - 56UNC	H2	5P	Y82623	1.75	0.256	0.141	2	Uc
			Y82923TIN					
No.3 - 48UNC	H2	5P	Y82600	1.81	0.295	0.141	2	
No.4 - 40UNC	H2	5P	Y82601	1.88	0.335	0.141	2	Uc
			Y82601BR					
			Y82901TIN					
	H3	5P	Y82602					
	H4	5P	Y82612					
			Y82612BR					
H5	5P	Y82634						
		Y82634BR						
No.4 - 48UNF	H2	5P	Y82683	1.88	0.335	0.141	2	
No.5 - 40UNC	H2	5P	Y82603	1.94	0.374	0.141	3	
			Y82903TIN					
No.6 - 32UNC	H2	5P	Y82604	2	0.413	0.141	3	Uc
			H3					
	H4	5P	Y82905TIN					
			Y82608					
			Y82608BR					
	H5	5P	Y82635					
			Y82635BR					
H6	5P	Y82659						
		Y82665						
No.6 - 40UNF	H2	5P	Y82684	2	0.413	0.141	3	
	H3	5P	Y82642					
No.8 - 32UNC	H2	5P	Y82606	2.13	0.453	0.168	3	Uc
			Y82607					
			Y82607BR					
	H3	5P	Y82907TIN					
			Y82629					
	H4	5P	Y82629BR					
			Y82637					
H5	5P	Y82637BR						

Overall length	Length of thread part	Length of chamfer part	Shank diameter
L	ℓ	ℓ _c	D _s

Unit : inch

Size	Class	Chamfer	*2 *3 Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.8 - 32UNC	H6	5P	Y82660	2.13	0.453	0.168	3	Uc
	H7	5P	Y82667					
No.8 - 36UNF	H2	5P	Y82686	2.13	0.453	0.168	3	
No.10 - 24UNC	H3	5P	Y82609	2.38	0.531	0.194	3	Uc
			Y82609BR					
			Y82909TIN					
	H5	5P	Y82639					
	H6	5P	Y82690					
H7	5P	Y82669						
No.10 - 32UNF	H2	5P	Y82611	2.38	0.531	0.194	3	Uc
			Y82610					
			Y82610BR					
	H3	5P	Y82910TIN					
			Y82630					
	H4	5P	Y82630BR					
			H5					
H6	5P	Y82661						
		Y82661BR						
H7	5P	Y82670						
		Y82670BR						
No.12 - 24UNC	H3	5P	Y82688	2.38	0.571	0.22	3	
No.12 - 28UNF	H3	5P	Y82689	2.38	0.571	0.22	3	
1/4 - 20UNC	H3	5P	Y82613	2.5	0.591	0.255	3	Uc
			Y82613BR					
			Y82913TIN					
	H5	5P	Y82643					
			Y82643BR					
H6	5P	Y82590						
		Y82673						
1/4 - 28UNF	H3	5P	Y82614	2.5	0.591	0.255	3	Uc
			Y82614BR					
			Y82914TIN					
	H4	5P	Y82631					
			Y82631BR					
	H5	5P	Y82644					
			Y82644BR					
H6	5P	Y82662						
		Y82662BR						
H7	5P	Y82674						
		Y82674BR						
5/16 - 18UNC	H3	5P	Y82615	2.72	0.669	0.318	3	Uc
			Y82615BR					
			Y82915TIN					
	H5	5P	Y82645					
H7	5P	Y82675						

U.S.A. Taps & Dies Line up

Spiral Pointed Taps

ZELX SS Spiral Pointed Taps for Stainless Steels
For Unified and Metric threads

Overall length	Length of thread part	Length of chamfer part	Shank diameter
<i>L</i>	<i>ℓ</i>	<i>ℓ_C</i>	<i>D_S</i>

Unit : inch

Unit : inch

Size	Class	Chamfer	*2 *3 Code No.	<i>L</i>	<i>ℓ</i>	<i>D_S</i>	Number of flutes	*1 Blank type
5/16 - 24UNF	H3	5P	Y82616	2.72	0.669	0.318	3	Uc
			Y82616BR					
			Y82916TiN					
	H4	5P	Y82632					
			Y82646					
	H5	5P	Y82646BR					
			Y82663					
	H6	5P	Y82663BR					
			Y82676					
	H7	5P	Y82676BR					
			Y82617					
	3/8 - 16UNC	H3	5P					
Y82617BR								
Y82917TiN								
H5		5P	Y82647					
			Y82647BR					
H7		5P	Y82668					
	Y82618							
3/8 - 24UNF	H3	5P	Y82618	2.94	0.748	0.381	3	Uc
			Y82618BR					
			Y82918TiN					
	H4	5P	Y82633					
			Y82633BR					
	H5	5P	Y82648					
			Y82664					
	H6	5P	Y82664BR					
			Y82678					
H7	5P	Y82678BR						
		Y82619						
7/16 - 14UNC	H3	5P	Y82619	3.16	0.866	0.323	3	Uc
			Y82919TiN					
	H5	5P	Y82649					
7/16 - 20UNF	H3	5P	Y82620	3.16	0.866	0.323	3	Uc
			Y82920TiN					
	H5	5P	Y82650					
			Y82650BR					
	H6	5P	Y82691					
			Y82691BR					
H7	5P	Y82680						
1/2 - 13UNC	H3	5P	Y82621	3.38	0.984	0.367	3	Uc
			Y82921TiN					
	H5	5P	Y82651					
			Y82651BR					
H7	5P	Y82681						
		Y82681BR						
1/2 - 20UNF	H3	5P	Y82622	3.38	0.984	0.367	3	Uc
			Y82622BR					
			Y82922TiN					
	H5	5P	Y82652					
			Y82652BR					
1/2 - 20UNF	H6	5P	Y82692	3.38	0.984	0.367	3	Uc
1/2 - 20UNF	H7	5P	Y82692BR	3.38	0.984	0.367	3	Uc
			Y82682					
			Y82682BR					
9/16 - 12UNC	H3	5P	Y82653	3.59	0.984	0.429	3	Uc
			Y82953TiN					
			Y82654					
9/16 - 18UNF	H3	5P	Y82954TiN	3.59	0.984	0.429	3	Uc
			Y82666					
5/8 - 11UNC	H3	5P	Y82625	3.81	1.083	0.48	3	Uc
			Y82625BR					
			Y82925TiN					
5/8 - 18UNF	H5	5P	Y82655	3.81	1.083	0.48	3	Uc
			Y82626					
5/8 - 18UNF	H3	5P	Y82626	3.81	1.083	0.48	3	Uc
			Y82626BR					
			Y82926TiN					
	H4	5P	Y82636					
			Y82656					
	H5	5P	Y82656BR					
Y82694								
H6	5P	Y82694BR						
		Y82591						
H7	5P	Y82591BR						
		Y82627						
3/4 - 10UNC	H3	5P	Y82627	4.25	1.201	0.59	3	Uc
			Y82627BR					
			Y82927TiN					
3/4 - 10UNC	H5	5P	Y82657	4.25	1.201	0.59	3	Uc
			Y82628					
3/4 - 16UNF	H3	5P	Y82628	4.25	1.201	0.59	3	Uc
			Y82628BR					
			Y82928TiN					
3/4 - 16UNF	H5	5P	Y82658	4.25	1.201	0.59	3	Uc
			Y82592					
7/8 - 14UNF	H4	5P	Y82592BR	4.69	1.339	0.697	3	Uc
			Y82696					
			Y82696BR					
7/8 - 14UNF	H6	5P	Y82996TiN	4.69	1.339	0.697	3	Uc
			Y82699					
7/8 - 9UNC	H4	5P	Y82695	4.69	1.339	0.697	3	Uc
7/8 - 9UNC	H4	5P	Y82995TiN	4.69	1.339	0.697	3	Uc
			Y82679					
1 - 12UNF	H4	5P	Y82679	5.13	1.496	0.8	3	Uc
1 - 8UNC	H4	5P	Y82697	5.13	1.496	0.8	3	Uc
			Y82997TiN					
1"1/8 - 12UNF	H5	5P	Y82701	5.44	1.535	0.896	4	Uc
1"1/8 - 7UNC	H6	5P	Y82700	5.44	1.535	0.896	4	Uc
1"1/4 - 12UNF	H5	5P	Y82703	5.75	1.535	1.021	4	Uc
1"1/4 - 7UNC	H6	5P	Y82702	5.75	1.535	1.021	4	Uc
1"3/8 - 12UNF	H5	5P	Y82706	6.06	1.811	1.108	4	Uc

U.S.A. Taps & Dies Line up

Spiral Pointed Taps

ZELX SS Spiral Pointed Taps for Stainless Steels
For Unified and Metric threads

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
1"3/8 - 6UNC	H6	5P	Y82705	6.06	1.811	1.108	4	Uc
1"1/2 - 12UNF	H5	5P	Y82708	6.38	1.811	1.233	4	
1"1/2 - 6UNC	H6	5P	Y82707	6.38	1.811	1.233	4	
1"3/4 - 5UNC	H7	5P	Y82709	7	1.929	1.43	4	
2 - 4.5UNC	H7	5P	Y82710	7.63	1.929	1.644	4	

For Metric threads

Size	Class	Chamfer	*3 Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
M3 X 0.5	D3	5P	Y72615	1.94	0.374	0.141	3	Uc
			Y72915TiN					
M3.5 X 0.6	D4	5P	Y72616	2	0.413	0.141	3	Uc
M4 X 0.7	D4	5P	Y72617	2.13	0.453	0.168	3	
			Y72917TiN				3	
M5 X 0.8	D4	5P	Y72619	2.38	0.531	0.194	3	
			Y72919TiN					
M6 X 1	D5	5P	Y72620	2.5	0.591	0.255	3	
			Y72920TiN					
M7 X 1	D5	5P	Y72621	2.72	0.669	0.318	3	
M8 X 1	D5	5P	Y72622	2.72	0.669	0.318	3	
M8 X 1.25	D5	5P	Y72623	2.72	0.669	0.318	3	
			Y72923TiN					
M10 X 1.25	D5	5P	Y72624	2.94	0.748	0.381	3	
M10 X 1.5	D6	5P	Y72625	2.94	0.748	0.381	3	
			Y72925TiN					
M12 X 1.25	D5	5P	Y72626	3.38	0.984	0.367	3	
M12 X 1.75	D6	5P	Y72627	3.38	0.984	0.367	3	
			Y72927TiN					
M14 X 1.5	D6	5P	Y72628	3.59	0.984	0.429	3	
M14 X 2	D7	5P	Y72629	3.59	0.984	0.429	3	
M16 X 1.5	D6	5P	Y72630	3.81	1.083	0.48	3	
M16 X 2	D7	5P	Y72631	3.81	1.083	0.48	3	
M18 X 1.5	D6	5P	Y72632	4.03	1.083	0.542	3	
M18 X 2.5	D7	5P	Y72633	4.03	1.083	0.542	3	

Extended Spiral Pointed Taps for Stainless Steels
For Unified and Metric threads

ZELX SS 6"



Custom Blended Vanadium High Speed Steel Taps For Stainless Steels, Alloy Steels and Ductile Irons. ZELX SS taps are suitable for UNJ Aerospace internal threading applications.

*1 See blank type on page 97.

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.2 - 56UNC	H2	5P	Y82523	6	0.256	0.141	2	Uc
No.3 - 48UNC	H2	5P	Y82500	6	0.295	0.141	2	
No.4 - 40UNC	H2	5P	Y82501	6	0.335	0.141	2	
No.6 - 32UNC	H3	5P	Y82505	6	0.413	0.141	3	
No.8 - 32UNC	H3	5P	Y82507	6	0.453	0.168	3	
No.10 - 24UNC	H3	5P	Y82509	6	0.531	0.194	3	
No.10 - 32UNF	H3	5P	Y82510	6	0.531	0.194	3	
1/4 - 20UNC	H3	5P	Y82513	6	0.591	0.255	3	
1/4 - 28UNF	H3	5P	Y82514	6	0.591	0.255	3	
5/16 - 18UNC	H3	5P	Y82515	6	0.669	0.318	3	
5/16 - 24UNF	H3	5P	Y82516	6	0.669	0.318	3	
3/8 - 16UNC	H3	5P	Y82517	6	0.748	0.381	3	
3/8 - 24UNF	H3	5P	Y82518	6	0.748	0.381	3	
7/16 - 14UNC	H3	5P	Y82519	6	0.866	0.323	3	
7/16 - 20UNF	H3	5P	Y82520	6	0.866	0.323	3	
1/2 - 13UNC	H3	5P	Y82521	6	0.984	0.367	3	
1/2 - 20UNF	H3	5P	Y82522	6	0.984	0.367	3	

Spiral Pointed Taps for Nickel Base Alloys

For Unified and Metric threads

ZELX NI



Cobalt, Vanadium Premium Steel Taps
For Nickel Base Alloys, Other Exotic Alloys, Mold and Stainless Steels > 30 Rc.
ZELX NI taps are suitable for UNJ Aerospace internal threading applications.

- *1 See blank type on page 97.
- *2 "BR" of code No. stands for Bright finish taps
- *4 "NI" of code No. stands for Nitride finish taps

Overall length	Length of thread part	Length of chamfer part	Shank diameter
<i>L</i>	<i>ℓ</i>	<i>ℓ_C</i>	<i>D_S</i>

Unit : inch

Size	Class	Chamfer	*2 *4 Code No.	<i>L</i>	<i>ℓ</i>	<i>D_S</i>	Number of flutes	*1 Blank type
No.10 - 32UNF	H5	5P	Y85540	2.38	0.531	0.194	3	
			Y85540BR					
			Y85540NI					
	H6	5P	Y85561					
			Y85561BR					
			Y85561NI					
	H7	5P	Y85570					
			Y85570BR					
			Y85570NI					
1/4 - 20UNC	H3	5P	Y85513	2.5	0.591	0.255	3	
			Y85513NI					
	H5	5P	Y85543					
			Y85543NI					
1/4 - 28UNF	H3	5P	Y85514	2.5	0.591	0.255	3	
			Y85531					
			Y85531BR					
	H4	5P	Y85531NI					
			Y85544					
			Y85544BR					
	H5	5P	Y85544NI					
			Y85562					
			Y85562BR					
	H6	5P	Y85562NI					
			Y85574					
			Y85574BR					
H7	5P	Y85574NI						
5/16 - 18UNC	H3	5P	Y85515	2.72	0.669	0.318	3	
			Y85545					
			Y85553					
5/16 - 24UNF	H3	5P	Y85516	2.72	0.669	0.318	3	
			Y85532					
			Y85532BR					
	H4	5P	Y85546					
			Y85546BR					
			Y85563					
	H5	5P	Y85563BR					
			Y85576					
			Y85576BR					
H6	5P	Y85576NI						
3/8 - 16UNC	H3	5P	Y85517	2.94	0.748	0.381	3	
			Y85547					
3/8 - 24UNF	H3	5P	Y85518	2.94	0.748	0.381	3	
			Y85533					
			Y85533BR					
	H4	5P	Y85548					
			Y85548BR					
			Y85564					
H5	5P	Y85564BR						

Unit : inch

Size	Class	Chamfer	*2 *4 Code No.	<i>L</i>	<i>ℓ</i>	<i>D_S</i>	Number of flutes	*1 Blank type						
No.2 - 56UNC	H2	5P	Y85523	1.75	0.256	0.141	2							
No.4 - 40UNC	H2	5P	Y85501	1.88	0.335	0.141	2							
	H3	5P	Y85502											
	H4	5P	Y85504											
			Y85504BR											
No.5 - 40UNC	H2	5P	Y85503	1.94	0.374	0.141	3							
No.6 - 32UNC	H3	5P	Y85505	2	0.413	0.141	3							
			Y85524											
	H4	5P	Y85535											
			Y85535BR											
No.6 - 40UNF	H2	5P	Y85512	2	0.413	0.141	3							
No.8 - 32UNC	H3	5P	Y85507	2.13	0.453	0.168	3							
			Y85507NI											
			Y85529											
	H4	5P	Y85529BR											
			Y85537											
			Y85537BR											
	H5	5P	Y85537NI											
			Y85560											
			Y85560BR											
	H6	5P	Y85560NI											
			Y85567											
			Y85567BR											
	H7	5P	Y85567NI											
No.10 - 24UNC	H3	5P	Y85509	2.38	0.531	0.194	3							
			Y85539											
No.10 - 32UNF	H3	5P	Y85510	2.38	0.531	0.194	3							
			Y85510NI											
	H4	5P	Y85530											
			Y85530BR											
			Y85530NI											

Uc

Uc

ZELX NI Spiral Pointed Taps for Nickel Base Alloys
For Unified and Metric threads

Unit : inch

Size	Class	Chamfer	*2 *4 Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
3/8 - 24UNF	H7	5P	Y85578	2.94	0.748	0.381	3	Uc
			Y85578BR					
7/16 - 14UNC	H3	5P	Y85519	3.16	0.866	0.323	3	Uc
	H5		Y85549					
7/16 - 20UNF	H3	5P	Y85520	3.16	0.866	0.323	3	Uc
	H5		Y85550 Y85550BR					
1/2 - 13UNC	H3	5P	Y85521	3.38	0.984	0.367	3	Uc
	H5		Y85551					
1/2 - 20UNF	H3	5P	Y85522	3.38	0.984	0.367	3	Uc
	H5		Y85552 Y85552BR					
	H7	Y85582 Y85582BR Y85582NI						
5/8 - 11UNC	H3	5P	Y85525	3.81	1.083	0.48	3	Uc
	H5		Y85555					
	H7		Y85585					
5/8 - 18UNF	H3	5P	Y85526	3.81	1.083	0.48	3	Uc
	H5		Y85556					
	H7		Y85586					
3/4 - 10UNC	H3	5P	Y85527	4.25	1.201	0.59	3	Uc
	H5		Y85557					
3/4 - 16UNF	H3	5P	Y85528	4.25	1.201	0.59	3	Uc
	H5		Y85558					

For Metric threads

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
M2.5 X 0.45	D3	5P	Y87320	1.81	0.295	0.141	2	Uc
M3 X 0.5	D3	5P	Y87321	1.94	0.374	0.141	3	Uc
M3.5 X 0.6	D4	5P	Y87322	2	0.413	0.141	3	Uc
M4 X 0.7	D4	5P	Y87323	2.13	0.453	0.168	3	Uc
M5 X 0.8	D4	5P	Y87324	2.38	0.531	0.194	3	Uc
M6 X 1	D5	5P	Y87325	2.5	0.591	0.255	3	Uc
M7 X 1	D5	5P	Y87326	2.72	0.669	0.318	3	Uc
M8 X 1.25	D5	5P	Y87328	2.72	0.669	0.318	3	Uc
M10 X 1.25	D5	5P	Y87329	2.94	0.748	0.381	3	Uc
M10 X 1.5	D6	5P	Y87330	2.94	0.748	0.381	3	Uc
M12 X 1.75	D6	5P	Y87332	3.38	0.984	0.367	3	Uc

STI Spiral Pointed Taps for Nickel Base Alloys
For Unified and Metric threads

ZELX NI STI



Cobalt, Vanadium Premium Steel Taps
For Nickel Base Alloys, Other Exotic Alloys, Mold and
Stainless Steels > 30 Rc
STI taps are special taps used to prepare holes for the
installation of helical coil wire thread inserts.

*1 See blank type on page 97.

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.2 - 56UNC	H2	5P	Y87200	1.88	0.335	0.141	2	Uc
No.4 - 40UNC	H1	5P	Y87203	2	0.413	0.141	3	Uc
	H2		Y87204					
No.6 - 32UNC	H2	5P	Y87208	2.38	0.531	0.194	3	Uc
	H3		Y87224					
No.6 - 40UNF	H2	5P	Y87209	2.13	0.453	0.194	3	Uc
No.8 - 32UNC	H2	5P	Y87210	2.38	0.571	0.22	3	Uc
	H3		Y87226					
No.10 - 24UNC	H2	5P	Y87212	2.5	0.591	0.255	3	Uc
	H3		Y87228					
No.10 - 32UNF	H2	5P	Y87213	2.5	0.591	0.255	3	Uc
	H3		Y87229					
1/4 - 20UNC	H2	5P	Y87248	2.72	0.669	0.318	3	Uc
	H3		Y87258					
1/4 - 28UNF	H2	5P	Y87249	2.72	0.669	0.318	3	Uc
	H3		Y87259					
5/16 - 18UNC	H3	5P	Y87260	2.94	0.748	0.381	3	Uc
	H4		Y87272					
5/16 - 24UNF	H2	5P	Y87251	2.94	0.748	0.381	3	Uc
	H3		Y87261					
3/8 - 16UNC	H3	5P	Y87262	3.38	0.984	0.367	3	Uc
	H4		Y87270					
3/8 - 24UNF	H2	5P	Y87253	3.16	0.866	0.323	3	Uc
	H3		Y87263					
7/16 - 14UNC	H3	5P	Y87264	3.59	0.984	0.429	3	Uc
7/16 - 20UNF	H3	5P	Y87265	3.38	0.984	0.367	3	Uc
	H4		Y87275					
1/2 - 13UNC	H3	5P	Y87266	3.81	1.083	0.48	3	Uc
1/2 - 20UNF	H3	5P	Y87267	3.59	0.984	0.429	3	Uc

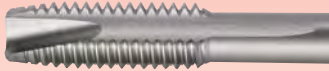
U.S.A. Taps & Dies Line up

Spiral Pointed Taps

Spiral Pointed Taps for Non-Ferrous Materials

For Unified and Metric threads

ZELX AL



Custom Blended Vanadium High Speed Steel Taps
For Silicon Die Cast, Zinc Die Cast Aluminum and
Wrought Aluminum Alloys
DIN tap lengths, USCTI shank dimensions

*1 See blank type on page 97.

Overall length	Length of thread part	Length of chamfer part	Shank diameter
L	ℓ	ℓ_c	D_s

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D_s	Number of flutes	*1 Blank type
M5X0.8	D4	5P	Y86231	2.76	0.63	0.194	3	Uc
M6X1	D5	5P	Y86232	3.15	0.748	0.255	3	
M7X1	D5	5P	Y86233	3.15	0.748	0.318	3	
M8X1	D5	5P	Y86234	3.54	0.866	0.318	3	
M8X1.25	D5	5P	Y86235	3.54	0.866	0.318	3	
M10X1.25	D5	5P	Y86236	3.94	0.945	0.381	3	
M10X1.5	D6	5P	Y86237	3.94	0.945	0.381	3	
M12X1.25	D5	5P	Y86238	3.94	0.866	0.367	3	
M12X1.5	D5	5P	Y86239	3.94	0.866	0.367	3	
M12X1.75	D6	5P	Y86240	4.33	1.142	0.367	3	

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D_s	Number of flutes	*1 Blank type
No.2 - 56UNC	H2	5P	Y86200	1.77	0.276	0.141	2	Uc
No.4 - 40UNC	H2	5P	Y86201	2.2	0.433	0.141	2	
No.5 - 40UNC	H2	5P	Y86202	2.2	0.433	0.141	3	
No.6 - 32UNC	H3	5P	Y86203	2.2	0.512	0.141	3	
No.8 - 32UNC	H3	5P	Y86204	2.48	0.512	0.168	3	
No.10 - 24UNC	H3	5P	Y86205	2.76	0.63	0.194	3	
No.10 - 32UNF	H3	5P	Y86206	2.76	0.63	0.194	3	
1/4 - 20UNC	H3	5P	Y86207	3.15	0.748	0.255	3	
	H5		Y86208					
1/4 - 28UNF	H3	5P	Y86209	3.15	0.748	0.255	3	
	H4		Y86211					
5/16 - 18UNC	H3	5P	Y86212	3.54	0.866	0.318	3	
	H5		Y86213					
5/16 - 24UNF	H3	5P	Y86214	3.54	0.866	0.318	3	
	H4		Y86215					
3/8 - 16UNC	H3	5P	Y86216	3.94	0.945	0.381	3	
	H5		Y86217					
3/8 - 24UNF	H3	5P	Y86218	3.54	0.787	0.381	3	
	H4		Y86219					
7/16 - 14UNC	H3	5P	Y86220	3.94	0.945	0.323	3	
	H5		Y86221					
7/16 - 20UNF	H3	5P	Y86222	3.94	0.945	0.323	3	
	H5		Y86223					
1/2 - 13UNC	H3	5P	Y86224	4.33	1.142	0.367	3	
	H5		Y86225					
1/2 - 20UNF	H3	5P	Y86226	3.94	0.866	0.367	3	
	H5		Y86227					

For Metric threads

Size	Class	Chamfer	Code No.	L	ℓ	D_s	Number of flutes	*1 Blank type
M3 X 0.5	D3	5P	Y86228	2.2	0.433	0.141	3	Uc
M3.5 X 0.6	D4	5P	Y86229	2.2	0.512	0.141	3	
M4 X 0.7	D4	5P	Y86230	2.48	0.512	0.168	3	

Industrial Quality Spiral Pointed Taps

For Unified and Metric threads

PO



"available while supplies last"
Vanadium High Speed Steel Taps
 Ideal for steels, irons, brass and plastics in through hole applications.

*1 See blank type on page 97.

*2 "BR" of code No. stands for Bright finish taps

Overall length	Length of thread part	Length of chamfer part	Shank diameter
<i>L</i>	<i>ℓ</i>	<i>ℓ_c</i>	<i>D_s</i>

Unit : inch

Size	Class	Chamfer	*2 Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type
Code No.	H4	5P	Y82147	1.75	0.44	0.141	2	Ub
	H5	5P	Y82156 Y82156BR					
No.2 - 64UNF	H1	5P	Y82008	1.75	0.44	0.141	2	Ub
	H2	5P	Y82058 Y82058BR					
No.3 - 48UNC	H1	5P	Y82010	1.81	0.5	0.141	2	Ub
		1.5P	Y82061 Y82061BR					
	H2	5P	Y82060 Y82060BR					
		5P	Y82110 Y82110BR					
	H3	5P	Y82110 Y82110BR					
No.3 - 56UNF	H1	5P	Y82012	1.81	0.5	0.141	2	Ub
		1.5P	Y82063 Y82063BR					
	H2	5P	Y82062 Y82062BR					
		5P	Y82062					
No.4 - 36UNS	H2	5P	Y82068	1.88	0.56	0.141	2	Ub
No.4 - 40UNC	H1	5P	Y82014	1.88	0.56	0.141	2	Ub
		1.5P	Y82065					
	H2	5P	Y82064 Y82064BR Y86054					
		5P	Y82114 Y82114BR					
	H3	5P	Y82148					
	H4	5P	Y82164					
	H7	1.5P	Y82191					
5P		Y82190						
No.4 - 48UNF	H1	5P	Y82016	1.88	0.56	0.141	2	Ub
		1.5P	Y82067 Y82067BR					
	H2	5P	Y82066 Y82066BR					
		5P	Y82066					
No.5 - 40UNC	H1	5P	Y82020	1.94	0.63	0.141	2	Ub
		1.5P	Y82071 Y82071BR					
	H2	5P	Y82070 Y82070BR					
		5P	Y86060					
	No.5 - 44UNF	H2	1.5P					
5P			Y82073BR					
5P			Y82072					

Unit : inch

Size	Class	Chamfer	*2 Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type
No.0 - 80UNF	H1	1.5P	Y82001	1.63	0.31	0.141	2	Ub
			Y82001BR					
	5P	Y82000						
		Y82000BR						
	H2	5P	Y82050					
			Y82050BR					
	H3	5P	Y82100					
			Y82100BR					
	H4	5P	Y82146					
			Y82146BR					
H5	5P	Y82150						
		Y82150BR						
No.1 - 64UNC	H1	5P	Y82002	1.69	0.38	0.141	2	Ub
			Y82002BR					
	H2	1.5P	Y82053					
		5P	Y82052					
No.1 - 72UNF	H1	1.5P	Y82005	1.69	0.38	0.141	2	Ub
			Y82005BR					
	5P	Y82004						
		Y82004BR						
	H2	1.5P	Y82055					
5P		Y82054						
5P		Y82055BR						
No.2 - 56UNC	H1	1.5P	Y82007	1.75	0.44	0.141	2	Ub
			Y82007BR					
	5P	Y82006						
		Y82006BR						
	H2	1.5P	Y82057					
			Y82057BR					
	5P	Y82056						
		Y82056BR						
	H3	5P	Y82106					

PO Industrial Quality Spiral Pointed Taps
For Unified and Metric threads

Overall length	Length of thread part	Length of chamfer part	Shank diameter
<i>L</i>	<i>ℓ</i>	<i>ℓ_C</i>	<i>D_s</i>

Unit : inch

Unit : inch

Size	Class	Chamfer	*2 Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type	Size	Class	Chamfer	*2 Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type							
No.6 - 32UNC	H1	5P	Y82024	2	0.69	0.141	2	Ub	No.10 - 24UNC	H3	5P	Y82034	2.38	0.88	0.194	2	Ub							
		1.5P	Y82075								H2	5P						Y82084						
	5P	Y82075BR	1.5P									Y82084BR												
	H2	5P	Y82074								H3	5P						Y82135						
		5P	Y86064									5P						Y82135BR						
	H3	1.5P	Y82125								H7	5P						Y82134						
		1.5P	Y82125BR							5P		Y82134BR												
	H4	5P	Y82124							H11	5P	Y86122												
		5P	Y82124BR								5P	Y82196												
	H5	5P	Y86114							H1	5P	Y82196BR												
		5P	Y82149								1.5P	Y85216												
	No.6 - 40UNF	H1	5P							Y82174	2	0.69	0.141	2	Ub	No.10 - 32UNF		H3	5P	Y82038	2.38	0.88	0.194	2
1.5P			Y82174BR	H2	1.5P	Y82089																		
5P		Y82193	5P		Y82089BR																			
H2		1.5P	Y82193BR	H3	5P	Y82088																		
		5P	Y82192		5P	Y82088BR																		
H3		5P	Y82192BR	H4	5P	Y86078																		
		5P	Y85212		5P	Y82139																		
No.8 - 32UNC		H1	5P	Y82026	2.13	0.75	0.168	2	Ub	No.12 - 24UNC							H3	1.5P	Y82139BR	2.38	0.94	0.22	2	
			1.5P	Y82077														H2	5P					Y82138
		5P	Y82077BR	5P															Y82138BR					
		H2	5P	Y82076														H3	5P					Y86124
			5P	Y82076BR															5P					Y82152
	H3	1.5P	Y82129	H5							5P	Y82188												
		1.5P	Y82129BR								5P	Y82188BR												
	H4	5P	Y82128	H7							5P	Y82198												
		5P	Y82128BR								5P	Y85217												
	H5	5P	Y86118	H11							5P	Y82042												
		5P	Y82151								H1	1.5P	Y82143											
	H7	1.5P	Y82178	H3								1.5P	Y82143BR											
1.5P		Y82178BR	5P		Y82142																			
No.8 - 36UNF	H1	5P	Y82195	2.13	0.75	0.168	2	Ub	No.12 - 28UNF	H3	5P	Y82145	2.38	0.94	0.22	2								
		5P	Y82195BR								H2	5P					Y82145BR							
	H2	5P	Y82194									H3					5P	Y82144						
		5P	Y82194BR								5P						Y82144BR							
	H3	5P	Y85214								H1	5P					Y82200							
		5P	Y82032									5P					Y82200BR							
	H4	5P	Y82083							H2	5P	Y82250												
		5P	Y82083BR								5P	Y82250BR												
	H5	5P	Y82082							H3	1.5P	Y82301												
		5P	Y82082BR								1.5P	Y82301BR												
	H7	5P	Y82082BR							H1	5P	Y82300												
		5P	Y82082BR								5P	Y82300BR												
H11	5P	Y82082BR	H3	5P	Y82302																			
	5P	Y82082BR		5P	Y82302BR																			
H1	5P	Y82082BR	H3	5P	Y86300																			
	5P	Y82082BR		5P	Y86300																			

U.S.A. Taps & Dies Line up

Spiral Pointed Taps

PO Industrial Quality Spiral Pointed Taps
For Unified and Metric threads

Unit : inch

Unit : inch

Size	Class	Chamfer	*2 Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type	Size	Class	Chamfer	*2 Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type						
1/4 - 20UNC	H4	5P	Y82352	2.5	1	0.255	2	Ub	5/16 - 24UNF	H2	5P	Y82262	2.72	1.13	0.318	2	Ub						
	H5	5P	Y82400									Y82262BR						3					
			Y82400BR									Y82264											
			Y82402									Y82264BR											
			Y82402BR							Y82313													
H11	5P	Y85231	Y82313BR	2																			
		Y82312																					
1/4 - 28UNF	H1	5P	Y82204	2.5	1	0.255	2	Ub		H3	5P	Y82312	2.72	1.13	0.318	3	Ub						
			H2									5P						Y82255	Y82312BR				
	Y82256	Y82314																					
	Y82256BR	Y82314BR																					
	Y82257	H4								1.5P	Y82365												
	Y82257BR										Y82365BR												
	H3	5P								Y82305	Y82362		2										
			Y82305BR							Y82362BR													
			Y82304						Y82364														
			Y82304BR						Y82364BR														
	H4	5P	Y82356						Y82366	3													
			Y82356BR						Y82366BR														
			Y82357						H11		5P	Y85234											
	Y82357BR	Y82216																					
	5/16 - 18UNC	H1	5P						Y82208	2.72	1.13	0.318	2	Ub	H2	5P	Y82216BR	2.94	1.25	0.381	3	Ub	
Y82208BR				Y82266																			
H2		5P	Y82258	Y82266BR																			
			Y82258BR	Y82317																			
H3		5P	Y82260	Y82317BR	2																		
			Y82309	Y82316																			
			Y82309BR	Y82316BR																			
			Y82308	Y86308																			
	Y82308BR		Y82416																				
	Y82310		Y82416BR																				
H5	5P	Y82408	Y85235	3																			
		Y82408BR	H11		5P	Y82218																	
		Y82410				Y82218BR																	
		Y82410BR	Y82268																				
H11	5P	Y85233	Y82268BR	2																			
		Y82212	H3		5P	Y82318																	
Y82212BR	Y82318BR	3																					
5/16 - 24UNF	H1		5P	Y82212	2.72	1.13	0.318	2	Ub	H4	5P	Y82368	3.16	1.44	0.323	3	Ub						
		Y82212BR		Y82368BR																			
		H3		1.5P						Y82321	2.94	1.25						0.381	3	Ub			
										Y82321BR											H5	5P	Y82420
										Y82320													Y82420BR
H5	5P	Y82420	Y82320BR	2																			
		Y82420BR	Y85237																				

U.S.A. Taps & Dies Line up

Spiral Pointed Taps

PO Industrial Quality Spiral Pointed Taps
For Unified and Metric threads

Overall length	Length of thread part	Length of chamfer part	Shank diameter
<i>L</i>	<i>ℓ</i>	<i>ℓ_C</i>	<i>D_s</i>

Unit : inch

Unit : inch

Size	Class	Chamfer	*2 Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type						
7/16 - 20UNF	H2	5P	Y82272	3.16	1.44	0.323	3	Ub						
			Y82272BR											
	H3	5P	Y82322											
			Y82322BR											
	H5	5P	Y82422											
			Y82422BR											
	H11	5P	Y85238											
	1/2 - 13UNC	H1	5P						Y82224	3.38	1.66	0.367	3	Ub
Y82224BR														
H2		5P	Y82274											
			Y82274BR											
H3		5P	Y82324											
			Y82324BR											
			Y86316											
H5		5P	Y82424											
			Y82424BR											
H11		5P	Y85239											
1/2 - 20UNF		H2	5P	Y82226	3.38	1.66	0.367	3	Ub					
				Y82226BR										
	Y82276													
	Y82276BR													
	H3	5P	Y82326											
			Y82326BR											
	H5	5P	Y82426											
			Y82426BR											
H11	5P	Y85240												
5/8 - 11UNC	H3	5P	Y82332	3.81	1.81	0.48	3	Ub						
			Y82432											
	Y82432BR													
H11	5P	Y85243												
5/8 - 18UNF	H3	5P	Y82334	3.81	1.81	0.48	3	Ub						
			Y82334BR											
3/4 - 10UNC	H3	5P	Y82336	4.25	2	0.59	3	Ub						
			Y82336BR											
	H5	5P	Y82436											
			Y82436BR											
H11	5P	Y85245												
3/4 - 16UNF	H3	5P	Y82338	4.25	2	0.59	3	Ub						
			Y82338BR											

For Metric threads

Size	Class	Chamfer	Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type
M3 X 0.5	D3	5P	Y78115	1.94	0.63	0.141	3	Ub
M3.5 X 0.6	D4	5P	Y78116	2	0.69	0.141	3	
M4 X 0.7	D4	5P	Y78117	2.13	0.75	0.168	3	
M4.5 X 0.75	D4	5P	Y78118	2.38	0.88	0.194	3	
M5 X 0.8	D4	5P	Y78119	2.38	0.88	0.194	3	
M6 X 1	D5	5P	Y78120	2.5	1	0.255	3	

Size	Class	Chamfer	Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type
M7 X 1	D5	5P	Y78121	2.72	1.13	0.318	3	Ub
M8 X 1	D5	5P	Y78122	2.72	1.13	0.318	3	
M8 X 1.25	D5	5P	Y78123	2.72	1.13	0.318	3	
M10 X 1.25	D5	5P	Y78124	2.94	1.25	0.381	3	
M10 X 1.5	D6	5P	Y78125	2.94	1.25	0.381	3	
M12 X 1.25	D5	5P	Y78126	3.38	1.66	0.367	3	
M12 X 1.75	D6	5P	Y78127	3.38	1.66	0.367	3	
M14 X 1.5	D6	5P	Y78128	3.59	1.66	0.429	3	
M14 X 2	D7	5P	Y78129	3.59	1.66	0.429	3	
M16 X 1.5	D6	5P	Y78130	3.81	1.81	0.48	3	
M16 X 2	D7	5P	Y78131	3.81	1.81	0.48	3	
M18 X 1.5	D6	5P	Y78132	4.03	1.81	0.542	3	
M18 X 2.5	D7	5P	Y78133	4.03	1.81	0.542	3	

Industrial Quality STI Spiral Pointed Taps

For Unified and Metric threads

STI PO



"available while supplies last"
Vanadium High Speed Steel Taps
Ideal for steels, irons, brass and plastics in through hole applications.
STI taps are special taps used to prepare holes for the installation of helical coil wire thread inserts.

*1 See blank type on page 97.

Unit : inch

Size	Class	Chamfer	Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type
No.2 - 56UNC	H2	5P	Y82716	1.88	0.563	0.141	2	Ub
No.4 - 40UNC	H1	5P	Y82704	2	0.688	0.141	2	
	H2		Y82720					
No.6 - 32UNC	H2	5P	Y82724	2.38	0.875	0.194	2	
	H3		Y82740					
No.8 - 32UNC	H2	5P	Y82726	2.38	0.938	0.22	2	
	H3		Y82742					
No.10 - 24UNC	H2	5P	Y82728	2.5	1	0.255	2	
No.10 - 32UNF	H2	5P	Y82729	2.5	1	0.255	2	
1/4 - 20UNC	H2	5P	Y82758	2.72	1.125	0.318	2	
			Y82768					
1/4 - 28UNF	H2	5P	Y82759	2.72	1.125	0.318	2	
			Y82769					
5/16 - 24UNF	H2	5P	Y82761	2.94	1.25	0.381	2	

U.S.A. Taps & Dies Line up

Spiral Pointed Taps

"NEW" HAND Working-Taps

For Unified threads

WT-HAND



Vanadium High Speed Steel Taps
 YMW New WT-HAND taps are designed to thread a wide variety of materials—steels, irons, brass and plastics—in through or blind hole conditions.

Necked design enhances flow of cutting fluid to cutting teeth and reduces surface contact between the tool and workpiece for more efficient threading.

*1 See blank type on page 97.

Overall length	Length of thread part	Length of chamfer part	Shank diameter
L	l	l_c	D_s

Unit : inch

Size	Class of fit	Chamfer	Code No.	L	l	D_s	Number of flutes	*1 Blank type
9/16 - 12UNC	2B	1.5P	WTT2U09S1	3.59	0.984	0.429	4	Ua
		5P	WTT2U09S5					
9/16 - 18UNF	2B	1.5P	WTT2U09O1	3.59	0.984	0.429	4	
		5P	WTT2U09O5					
5/8 - 11UNC	2B	1.5P	WTT2U10U1	3.81	1.083	0.48	4	
		5P	WTT2U10U5					
5/8 - 18UNF	2B	1.5P	WTT2U10O1	3.81	1.083	0.48	4	
		5P	WTT2U10O5					
3/4 - 10UNC	2B	1.5P	WTT2U12V1	4.25	1.201	0.59	4	
		5P	WTT2U12V5					
3/4 - 16UNF	2B	1.5P	WTT2U12P1	4.25	1.201	0.59	4	
		5P	WTT2U12P5					

Unit : inch

Size	Class of fit	Chamfer	Code No.	L	l	D_s	Number of flutes	*1 Blank type
No.2 - 56UNC	2B	1.5P	WTT2UN2E1	1.75	0.256	0.141	3	Uc
		5P	WTT2UN2E5					
No.4 - 40UNC	2B	1.5P	WTT2UN4H1	1.88	0.335	0.141	3	
		5P	WTT2UN4H5					
No.6 - 32UNC	2B	1.5P	WTT2UN6J1	2	0.413	0.141	3	
		5P	WTT2UN6J5					
No.8 - 32UNC	2B	1.5P	WTT2UN8J1	2.13	0.453	0.168	4	
		5P	WTT2UN8J5					
No.10 - 24UNC	2B	1.5P	WTT2UNAM1	2.38	0.531	0.194	4	
		5P	WTT2UNAM5					
No.10 - 32UNF	2B	1.5P	WTT2UNAJ1	2.38	0.531	0.194	4	
		5P	WTT2UNAJ5					
1/4 - 20UNC	2B	1.5P	WTT2U04N1	2.5	0.591	0.255	4	
		5P	WTT2U04N5					
1/4 - 28UNF	2B	1.5P	WTT2U04K1	2.5	0.591	0.255	4	
		5P	WTT2U04K5					
5/16 - 18UNC	2B	1.5P	WTT2U05O1	2.72	0.669	0.318	4	
		5P	WTT2U05O5					
5/16 - 24UNF	2B	1.5P	WTT2U05M1	2.72	0.669	0.318	4	
		5P	WTT2U05M5					
3/8 - 16UNC	2B	1.5P	WTT2U06P1	2.94	0.748	0.381	4	
		5P	WTT2U06P5					
3/8 - 24UNF	2B	1.5P	WTT2U06M1	2.94	0.748	0.381	4	
		5P	WTT2U06M5					
7/16 - 14UNC	2B	1.5P	WTT2U07Q1	3.16	0.866	0.323	4	
		5P	WTT2U07Q5					
7/16 - 20UNF	2B	1.5P	WTT2U07N1	3.16	0.866	0.323	4	
		5P	WTT2U07N5					
1/2 - 13UNC	2B	1.5P	WTT2U08R1	3.38	0.984	0.367	4	Ua
		5P	WTT2U08R5					
1/2 - 20UNF	2B	1.5P	WTT2U08N1	3.38	0.984	0.367	4	
		5P	WTT2U08N5					

“NEW” HAND Working-Taps

For Unified threads

WT-HAND



Vanadium High Speed Steel Taps
 YMW New WT-HAND taps are designed to thread a wide variety of materials—steels, irons, brass and plastics—in through or blind hole conditions.

Necked design enhances flow of cutting fluid to cutting teeth and reduces surface contact between the tool and workpiece for more efficient threading.

*1 See blank type on page 97.

*5 "X" of code No. stands for Oxide surface treatment.

Overall length	Length of thread part	Length of chamfer part	Shank diameter
<i>L</i>	<i>ℓ</i>	<i>ℓ_C</i>	<i>D_S</i>

Unit : inch

Size	Class of fit	Chamfer	*5 Code No.	<i>L</i>	<i>ℓ</i>	<i>D_S</i>	Number of flutes	*1 Blank type
9/16 - 12UNC	2B	1.5P	WTT2U09S1X	3.59	0.984	0.429	4	Ua
		5P	WTT2U09S5X					
9/16 - 18UNF	2B	1.5P	WTT2U09O1X	3.59	0.984	0.429	4	
		5P	WTT2U09O5X					
5/8 - 11UNC	2B	1.5P	WTT2U10U1X	3.81	1.083	0.48	4	
		5P	WTT2U10U5X					
5/8 - 18UNF	2B	1.5P	WTT2U10O1X	3.81	1.083	0.48	4	
		5P	WTT2U10O5X					
3/4 - 10UNC	2B	1.5P	WTT2U12V1X	4.25	1.201	0.59	4	
		5P	WTT2U12V5X					
3/4 - 16UNF	2B	1.5P	WTT2U12P1X	4.25	1.201	0.59	4	
		5P	WTT2U12P5X					

Unit : inch

Size	Class of fit	Chamfer	*5 Code No.	<i>L</i>	<i>ℓ</i>	<i>D_S</i>	Number of flutes	*1 Blank type
No.2 - 56UNC	2B	1.5P	WTT2UN2E1X	1.75	0.256	0.141	3	Uc
		5P	WTT2UN2E5X					
No.4 - 40UNC	2B	1.5P	WTT2UN4H1X	1.88	0.335	0.141	3	
		5P	WTT2UN4H5X					
No.6 - 32UNC	2B	1.5P	WTT2UN6J1X	2	0.413	0.141	3	
		5P	WTT2UN6J5X					
No.8 - 32UNC	2B	1.5P	WTT2UN8J1X	2.13	0.453	0.168	4	
		5P	WTT2UN8J5X					
No.10 - 24UNC	2B	1.5P	WTT2UNAM1X	2.38	0.531	0.194	4	
		5P	WTT2UNAM5X					
No.10 - 32UNF	2B	1.5P	WTT2UNA1J1X	2.38	0.531	0.194	4	
		5P	WTT2UNA1J5X					
1/4 - 20UNC	2B	1.5P	WTT2U04N1X	2.5	0.591	0.255	4	
		5P	WTT2U04N5X					
1/4 - 28UNF	2B	1.5P	WTT2U04K1X	2.5	0.591	0.255	4	
		5P	WTT2U04K5X					
5/16 - 18UNC	2B	1.5P	WTT2U05O1X	2.72	0.669	0.318	4	
		5P	WTT2U05O5X					
5/16 - 24UNF	2B	1.5P	WTT2U05M1X	2.72	0.669	0.318	4	
		5P	WTT2U05M5X					
3/8 - 16UNC	2B	1.5P	WTT2U06P1X	2.94	0.748	0.381	4	
		5P	WTT2U06P5X					
3/8 - 24UNF	2B	1.5P	WTT2U06M1X	2.94	0.748	0.381	4	
		5P	WTT2U06M5X					
7/16 - 14UNC	2B	1.5P	WTT2U07Q1X	3.16	0.866	0.323	4	
		5P	WTT2U07Q5X					
7/16 - 20UNF	2B	1.5P	WTT2U07N1X	3.16	0.866	0.323	4	
		5P	WTT2U07N5X					
1/2 - 13UNC	2B	1.5P	WTT2U08R1X	3.38	0.984	0.367	4	
		5P	WTT2U08R5X					
1/2 - 20UNF	2B	1.5P	WTT2U08N1X	3.38	0.984	0.367	4	
		5P	WTT2U08N5X					

Hand Taps for Hard-to-Machine Materials

For Unified and Metric threads

ZELX MOLD



First Choice For Tapping Mold Steels
 Ideal for tapping mold steels, tool steels and gray cast irons. (35 to 45 HRC)
 YMW offers this series of ZELX Mold Taps made of Cobalt High Speed Steel.

*1 See blank type on page 97.

Industrial Quality Hand Taps for Cast Irons

For Unified and Metric threads

HT-CI



"available while supplies last"
 Vanadium High Speed Steel Taps
 For Cast Irons

*1 See blank type on page 97.

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.4 - 40UNC	H2	5P	Y89599	1.88	0.335	0.141	3	Ub
No.5 - 40UNC	H2	5P	Y89601	1.94	0.374	0.141	3	
No.6 - 32UNC	H3	5P	Y89602	2	0.413	0.141	3	
No.8 - 32UNC	H3	5P	Y89604	2.13	0.453	0.168	3	
No.10 - 24UNC	H3	5P	Y89606	2.38	0.531	0.194	3	
No.10 - 32UNF	H3	5P	Y89607	2.38	0.531	0.194	3	
1/4 - 20UNC	H3	5P	Y89613	2.5	0.591	0.255	3	
1/4 - 28UNF	H3	5P	Y89614	2.5	0.591	0.255	3	
5/16 - 18UNC	H3	5P	Y89615	2.72	0.669	0.318	4	
5/16 - 24UNF	H3	5P	Y89616	2.72	0.669	0.318	4	
3/8 - 16UNC	H3	5P	Y89617	2.94	0.748	0.381	4	
3/8 - 24UNF	H3	5P	Y89618	2.94	0.748	0.381	4	
7/16 - 14UNC	H3	5P	Y89619	3.16	0.866	0.323	4	
7/16 - 20UNF	H3	5P	Y89620	3.16	0.866	0.323	4	
1/2 - 13UNC	H3	5P	Y89621	3.38	0.984	0.367	4	
1/2 - 20UNF	H3	5P	Y89622	3.38	0.984	0.367	4	
5/8 - 11UNC	H3	5P	Y89625	3.81	1.083	0.48	4	
5/8 - 18UNF	H3	5P	Y89626	3.81	1.083	0.48	4	
3/4 - 10UNC	H3	5P	Y89627	4.25	2	0.59	4	
3/4 - 16UNF	H3	5P	Y89628	4.25	2	0.59	4	

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
1/4 - 20UNC	H3	1.5P	Y86002	2.5	1	0.255	4	Ub
		5P	Y86001					
	H5	1.5P	Y86004					
		5P	Y86003					
1/4 - 28UNF	H3	1.5P	Y86006	2.5	1	0.255	4	
		5P	Y86005					
5/16 - 18UNC	H3	1.5P	Y86008	2.72	1.13	0.318	4	
		5P	Y86007					
	H5	1.5P	Y86010					
		5P	Y86009					
5/16 - 24UNF	H3	1.5P	Y86012	2.72	1.13	0.318	4	
		5P	Y86011					
3/8 - 16UNC	H3	1.5P	Y86014	2.94	1.25	0.381	4	
		5P	Y86013					
	H5	1.5P	Y86016					
		5P	Y86015					
3/8 - 24UNF	H3	1.5P	Y86018	2.94	1.25	0.381	4	
		5P	Y86017					
7/16 - 14UNC	H3	1.5P	Y86020	3.16	1.44	0.323	4	
		5P	Y86019					
	H5	1.5P	Y86022					
		5P	Y86021					
7/16 - 20UNF	H3	1.5P	Y86024	3.16	1.44	0.323	4	
		5P	Y86023					
	H5	1.5P	Y86026					
		5P	Y86025					
1/2 - 13UNC	H3	1.5P	Y86028	3.38	1.66	0.367	4	
		5P	Y86027					
	H5	1.5P	Y86030					
		5P	Y86029					
1/2 - 20UNF	H3	1.5P	Y86032	3.38	1.66	0.367	4	
		5P	Y86031					

U.S.A. Taps & Dies Line up

Hand Taps

HT-CI Industrial Quality Hand Taps for Cast Irons
For Unified and Metric threads

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
1/2 - 20UNF	H5	1.5P	Y86034	3.38	1.66	0.367	4	Ub
		5P	Y86033					
9/16 - 12UNC	H3	1.5P	Y86036	3.59	1.66	0.429	4	
		5P	Y86035					
9/16 - 18UNF	H3	1.5P	Y86038	3.59	1.66	0.429	4	
		5P	Y86037					
5/8 - 11UNC	H3	1.5P	Y86040	3.81	1.81	0.48	4	
		5P	Y86039					
5/8 - 18UNF	H3	1.5P	Y86042	3.81	1.81	0.48	4	
		5P	Y86041					
3/4 - 10UNC	H3	1.5P	Y86044	4.25	2	0.59	4	
		5P	Y86043					
3/4 - 16UNF	H3	1.5P	Y86046	4.25	2	0.59	4	
		5P	Y86045					

Industrial Quality Hand Taps

For Unified and Metric threads

HT



"available while supplies last"
Vanadium High Speed Steel Taps
For Tapping Steels, Irons, Brass and Plastics

*1 See blank type on page 97.

*2 "BR" of code No. stands for Bright finish taps

Unit : inch

Size	Class	Chamfer	*2 Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.0 - 80UNF	H1	1.5P	Y80002	1.63	0.31	0.141	2	Ub
			Y80002BR					
		5P	Y80001					
	Y80001BR							
	9P	Y80000						
	Y80000BR							
H2	1.5P	Y80102						
	5P	Y80101						
No.1 - 64UNC	H1	1.5P	Y80005	1.69	0.38	0.141	2	
			Y80005BR					
		5P	Y80004					
	Y80004BR							
	9P	Y80003						
	Y80003BR							
H2	5P	Y80104						
No.1 - 72UNF	H1	1.5P	Y80008	1.69	0.38	0.141	2	
			Y80008BR					
		5P	Y80007					
	Y80007BR							
	9P	Y80006						
	Y80006BR							
H2	1.5P	Y80108						
	5P	Y80107						
No.2 - 56UNC	H1	1.5P	Y80011	1.75	0.44	0.141	3	
			Y80602					2
		5P	Y80010				3	
		Y80601	2					
	9P	Y80009					3	
	H2	1.5P	Y80111					
			Y80111BR					
		Y80652	2					
Y80652BR								

Overall length	Length of thread part	Length of chamfer part	Shank diameter
<i>L</i>	<i>ℓ</i>	<i>ℓ_c</i>	<i>D_s</i>

HT Industrial Quality Hand Taps

For Unified and Metric threads

Unit : inch

Unit : inch

Size	Class	Chamfer	*2 Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type							
No.2 - 56UNC	H2	5P	Y80110	1.75	0.44	0.141	3	Ub							
			Y80110BR												
			Y80651												
			Y80651BR												
		9P	Y80109												
			Y80109BR												
No.2 - 64UNF	H1	1.5P	Y80014	1.75	0.44	0.141	3	Ub							
		5P	Y80013												
	H2	1.5P	Y80114												
			Y80114BR												
			5P						Y80113						
			Y80113BR												
		9P	Y80112												
			Y80112BR												
			No.3 - 48UNC						H1	5P	Y80016	1.81	0.5	0.141	Ub
										1.5P	Y80117				
Y80117BR															
Y80658															
Y80658BR															
H2	5P	Y80116													
		Y80116BR													
		Y80657													
		Y80657BR													
	9P	Y80115													
		Y80115BR													
		No.3 - 56UNF	H1	5P	Y80019	1.81	0.5	0.141	3						
				1.5P	Y80120										
Y80120BR															
5P	Y80119														
	Y80119BR														
9P	Y80118														
	Y80118BR														
No.4 - 36UNS	H2	1.5P	Y80129	1.88	0.56	0.141	3								
			Y80129BR												
		5P	Y80128												
			Y80128BR												
		9P	Y80127												
			Y80127BR												
No.4 - 40UNC	H1	1.5P	Y80023	1.88	0.56	0.141	3								
			Y80022												
		5P	Y80613												
			Y80021												
		9P	Y80123												
			Y80123BR												
	Y80664														
	Y80664BR														

Size	Class	Chamfer	*2 Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type							
No.4 - 40UNC	H2	5P	Y80122	1.88	0.56	0.141	3	Ub							
			Y80122BR												
			Y80663												
			Y80663BR												
		9P	Y80121												
			Y80121BR												
No.4 - 48UNF	H1	5P	Y80025	1.88	0.56	0.141	3	Ub							
		1.5P	Y80126												
	Y80126BR														
	H2	5P	Y80125												
			Y80125BR												
			9P						Y80124						
									Y80124BR						
		No.5 - 40UNC							H1	1.5P	Y80032	1.94	0.63	0.141	Ub
										5P	Y80031				
			1.5P						Y80132						
Y80132BR															
Y80673															
Y80673BR															
H2	5P	Y80131													
		Y80131BR													
		Y80672													
		Y80672BR													
	9P	Y80130													
		Y80130BR													
No.5 - 44UNF	H1	5P	Y80034	1.94	0.63	0.141	3	Ub							
		1.5P	Y80135												
	Y80135BR														
	H2	5P	Y80134												
			Y80134BR												
			Y80675												
			Y80675BR												
		9P	Y80133												
			Y80133BR												
			No.5 - 32UNC						H1	1.5P	Y80038	2	0.69	0.141	3
5P				Y80037											
Y80628															
9P	Y80036														
H2	1.5P	Y80138													
		Y80138BR													
	5P	Y80679													
		Y80137													
9P	Y80137BR														
	Y80678														
Y80136															
Y80136BR															

U.S.A. Taps & Dies Line up

Hand Taps

HT Industrial Quality Hand Taps
For Unified and Metric threads

Overall length	Length of thread part	Length of chamfer part	Shank diameter
<i>L</i>	<i>ℓ</i>	<i>ℓ_C</i>	<i>D_s</i>

Unit : inch

Unit : inch

Size	Class	Chamfer	*2 Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type					
No.6 - 32UNC	H3	1.5P	Y80238	2	0.69	0.141	3	Ub					
			Y80238BR										
			Y80729										
			Y80729BR										
		5P	Y80237										
			Y80237BR										
			Y80728										
			Y80728BR										
		9P	Y80236										
			Y80236BR										
			H11						5P	Y85035	4		
									No.6 - 40UNF	H2	5P	Y80040	2
Y80141													
1.5P	Y80141BR												
	Y80140												
5P	Y80140BR												
	Y80681												
	9P	Y80139											
		Y80139BR											
No.8 - 32UNC	H1	1.5P	Y80044	2.13	0.75	0.168	4						
			Y80402										
		5P	Y80043										
			Y80401										
		9P	Y80042										
			H2					1.5P	Y80144				
									Y80452				
								Y80452BR					
	Y80685												
	5P	Y80143											
		Y80451											
	Y80684												
No.8 - 32UNC	H3	1.5P	Y80244	2.13	0.75	0.168	4						
			Y80244BR										
			Y80502										
			Y80502BR										
			Y80735										
			Y80735BR										
		5P	Y80243										
			Y80243BR										
			Y80501										
			Y80501BR										
			Y80734										
			Y80734BR										
9P	Y80242												
	Y80242BR												
	H11	5P	Y85041	4									
		No.8 - 36UNF	H2	1.5P	Y80046	2.13	0.75	0.168	4				
Y80147													
5P				Y80146									
	Y80146BR												
9P	Y80145												
	Y80145BR												
	H1			1.5P	Y80050								
					Y80049								
5P				Y80407									
				9P	Y80048								
H2				1.5P	Y80150								
					Y80149								
	5P	Y80457											
		Y80690											
	9P	Y80148											
		No.10 - 24UNC	H3	1.5P	Y80250	2.38	0.88	0.194	4				
Y80250BR													
Y80508													
Y80508BR													
5P	Y80691												
	Y80741												
	Y80741BR												
	Y80249												
9P	Y80249BR												
	Y80507												
	Y80507BR												
	Y80740												
H11	5P	Y80248											
		Y80248BR											
	H1	1.5P	Y80053										
			5P	Y80052									
No.10 - 32UNF	H2	1.5P	Y80153	2.38	0.88	0.194	4						
			Y80461										
		5P	Y80694										
			Y80152										
		9P	Y80460										
			Y80693										
			Y80151										
			H3					1.5P	Y80253				
		Y80511											
		5P						Y80511BR					
								Y80744					
		9P						Y80744BR					

U.S.A. Taps & Dies Line up

Hand Taps

HT Industrial Quality Hand Taps

For Unified and Metric threads

Unit : inch

Unit : inch

Size	Class	Chamfer	*2 Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type	
No.10 - 32UNF	H3	5P	Y80252	2.38	0.88	0.194	4	Ub	
			Y80252BR						
			Y80510						
		Y80510BR							
		Y80743	3						
		Y80743BR							
	9P	Y80251	2						
		Y80251BR							
	H11	5P	Y85050				4		
	H1	5P	Y80055						
No.12 - 24UNC	H1	5P	Y80256	2.38	0.94	0.22	4	Ub	
			Y80256BR						
	H3	1.5P	Y80255						
			Y80255BR						
	5P	Y80254	4						
		Y80254BR							
9P	Y80257	4							
	Y80257BR								
No.12 - 28UNF	H1	5P	Y80058	2.38	0.94	0.22	4	Ub	
			Y80259						
	H3	1.5P	Y80259BR						
			Y80258						
	5P	Y80258BR	4						
		Y80257							
	9P	Y80257BR	4						
		Y80257BR							
1/4 - 20UNC	H1	5P	Y81002	2.5	1	0.255	4	Ub	
			Y81001						
			Y81601						
	H2	1.5P	Y81102				4		
			Y81101						
			Y81651						
	9P	Y81100	3						
		Y81202					4		
		Y81202BR							
	H3	1.5P	Y81702						4
			Y81952						
			Y81952BR						
		5P	Y81201				3		
			Y81201BR						
			Y81701						
	9P	Y81701BR	4						
		Y81951							
		Y81951BR							
	H5	1.5P	Y81200				2		
			Y81200BR						
Y81402			4						
Y81802									
Y81802BR	3								
Y81802BR		4							

Size	Class	Chamfer	*2 Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
1/4 - 20UNC	H5	5P	Y81401	2.5	1	0.255	4	Ub
			Y81801					
	H11	5P	Y85062				4	
H1	1.5P	Y81005	4					
		5P		Y81004				
1/4 - 28UNF	H2	1.5P	Y81105	2.5	1	0.255	4	Ub
			5P					
	H3	1.5P	Y81205				4	
			Y81205BR					
			Y81705					
			Y81955					
	5P	Y81955BR	3					
		Y81204						
		Y81204BR						
		Y81704						
	9P	Y81704BR	2					
		Y81954						
	H4	1.5P	Y81954BR				4	
			Y81203					
H11	5P	Y81203BR	4					
		Y81305						
H1	1.5P	Y81304	4					
		5P		Y81304				
5/16 - 18UNC	H1	5P	Y85065	2.72	1.13	0.318	4	Ub
			Y81008					
	H2	1.5P	Y81007				4	
			Y81607					
	H3	1.5P	Y81108				4	
			Y81107					
	5P	Y81208	3					
		Y81208BR						
		Y81708						
		Y81708BR						
	9P	Y81958	2					
		Y81958BR						
	H5	1.5P	Y81207				4	
			Y81207BR					
Y81707								
H11	5P	Y81707BR	3					
		Y81957						
H1	1.5P	Y81957BR	2					
		Y81206						
H3	5P	Y81206BR	4					
		Y81408						
H5	1.5P	Y81808	3					
		Y81407						
H11	5P	Y81807	4					
		Y85068						

U.S.A. Taps & Dies Line up

Hand Taps

HT Industrial Quality Hand Taps
For Unified and Metric threads

Overall length	Length of thread part	Length of chamfer part	Shank diameter
<i>L</i>	<i>ℓ</i>	<i>ℓ_C</i>	<i>D_s</i>

Unit : inch

Unit : inch

Size	Class	Chamfer	*2 Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type
5/16 - 24UNF	H1	1.5P	Y81011	2.72	1.13	0.318	4	Ub
		5P	Y81010					
	H2	1.5P	Y81111					
		5P	Y81110					
	H3	1.5P	Y81211					
			Y81211BR					
			Y81711					
		5P	Y81210					
			Y81210BR					
			Y81710					
			Y81710BR					
			9P					
	Y81209BR							
	H4	1.5P	Y81311					
5P		Y81310						
H11	5P	Y85071						
3/8 - 16UNC	H1	1.5P	Y81014	2.94	1.25	0.381	4	Ub
		5P	Y81013					
		Y81613						
	H2	1.5P	Y81114					
		5P	Y81113					
	H3	1.5P	Y81214					
			Y81214BR					
			Y81714					
		Y81714BR						
		5P	Y81213					
			Y81213BR					
	Y81713							
	Y81713BR							
	9P	Y81212						
		Y81212BR						
	H5	1.5P	Y81414					
			Y81814					
		5P	Y81413					
Y81813								
H11	5P	Y85074						
3/8 - 24UNF	H1	1.5P	Y81017	2.94	1.25	0.381	4	Ub
		5P	Y81016					
	H2	1.5P	Y81117					
		5P	Y81116					
	H3	1.5P	Y81217					
			Y81217BR					
			Y81717					
		Y81717BR						
		5P	Y81216					
			Y81216BR					
	Y81716							
	Y81716BR							
3/8 - 16UNC	H2	5P	Y81613	2.94	1.25	0.381	4	Ub
		5P	Y81613					
	H2	1.5P	Y81114					
		5P	Y81113					
	H3	1.5P	Y81214					
			Y81214BR					
			Y81714					
		Y81714BR						
		5P	Y81213					
			Y81213BR					
	Y81713							
	Y81713BR							
9P	Y81212							
	Y81212BR							
H5	1.5P	Y81414						
		Y81814						
	5P	Y81413						
Y81813								
H11	5P	Y85074						
3/8 - 24UNF	H1	1.5P	Y81017	2.94	1.25	0.381	4	Ub
		5P	Y81016					
	H2	1.5P	Y81117					
		5P	Y81116					
	H3	1.5P	Y81217					
			Y81217BR					
			Y81717					
		Y81717BR						
		5P	Y81216					
			Y81216BR					
	Y81716							
	Y81716BR							
7/16 - 20UNF	H2	5P	Y81613	3.16	1.44	0.323	4	Ub
		5P	Y81613					
	H2	1.5P	Y81114					
		5P	Y81113					
	H3	1.5P	Y81214					
			Y81214BR					
			Y81714					
		Y81714BR						
		5P	Y81213					
			Y81213BR					
	Y81713							
	Y81713BR							
9P	Y81212							
	Y81212BR							
H5	1.5P	Y81414						
		Y81814						
	5P	Y81413						
Y81813								
H11	5P	Y85074						
7/16 - 14UNC	H3	9P	Y81215BR	3.16	1.44	0.323	4	Ub
		9P	Y81215BR					
	H4	1.5P	Y81317					
		5P	Y81316					
	H11	5P	Y85077					
	H3	1.5P	Y81220					
			Y81220BR					
			Y81720					
		Y81720BR						
		5P	Y81219					
			Y81219BR					
	Y81719							
Y81719BR								
9P	Y81218							
	Y81218BR							
H5	1.5P	Y81420						
	5P	Y81419						
H11	5P	Y85080						
7/16 - 20UNF	H2	5P	Y81122	3.16	1.44	0.323	4	Ub
		5P	Y81122					
	H3	1.5P	Y81223					
			Y81223BR					
			Y81222					
		Y81222BR						
		5P	Y81722					
			Y81722BR					
	Y81221							
	Y81221BR							
	H5	1.5P	Y81423					
		5P	Y81422					
Y81422BR								
H11	5P	Y85083						
1/2 - 13UNC	H1	1.5P	Y81026	3.38	1.66	0.367	4	Ub
		5P	Y81025					
	H2	1.5P	Y81126					
		5P	Y81125					
	H3	1.5P	Y81226					
			Y81226BR					
			Y81726					
		Y81726BR						
		5P	Y81225					
			Y81225BR					
	Y81725							
	Y81725BR							
9P	Y81224							
	Y81224BR							
H5	1.5P	Y81426						
	5P	Y81425						
H11	5P	Y85086						

U.S.A. Taps & Dies Line up

Hand Taps

HT Industrial Quality Hand Taps

For Unified and Metric threads

Unit : inch

Unit : inch

Size	Class	Chamfer	*2 Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type	
1/2 - 20UNF	H1	1.5P	Y81029	3.38	1.66	0.367	4	4	
		5P	Y81028						
	H3	1.5P	Y81229						
			Y81229BR						
			Y81228						
		5P	Y81228BR						
			Y81728						
			Y81227						
	9P	Y81227BR							
		H5	1.5P						Y81429
			5P						Y81428
	H11	5P	Y85089						
9/16 - 12UNC	H3	1.5P	Y81232	3.59	1.66	0.429	4	4	
			Y81232BR						
		5P	Y81231						
			Y81231BR						
		9P	Y81230						
			Y81230BR						
H5	5P	Y81431							
9/16 - 18UNF	H2	5P	Y81134	3.59	1.66	0.429	4	Ub	
	H3	1.5P	Y81235						
			Y81235BR						
		5P	Y81234						
			Y81234BR						
	9P	Y81233							
		Y81233BR							
	H5	1.5P	Y81435						
		5P	Y81434						
	5/8 - 11UNC	H1	1.5P						Y81038
Y81038BR									
5P		Y81037							
H2		5P	Y81137						
H3		1.5P	Y81238						
			Y81238BR						
		5P	Y81237						
			Y81237BR						
9P		Y81236							
		Y81236BR							
H5	1.5P	Y81438							
	5P	Y81437							
H11	5P	Y85098							
5/8 - 18UNF	H1	5P	Y81040	3.81	1.81	0.48	4	4	
	H2	5P	Y81140						
	H3	1.5P	Y81241						
			Y81241BR						
		5P	Y81240						
			Y81240BR						

Size	Class	Chamfer	*2 Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
5/8 - 18UNF	H3	9P	Y81239	3.81	1.81	0.48	4	4
		Y81239BR						
	H5	1.5P	Y81441					
		5P	Y81440					
11/16 - 11UNS	H3	1.5P	Y81244	4.03	1.81	0.542	4	3
			Y81244BR					
		5P	Y81243					
			Y81243BR					
		9P	Y81242					
			Y81242BR					
11/16 - 16UNS	H3	1.5P	Y81247	4.03	1.81	0.542	4	3
			Y81247BR					
		5P	Y81246					
			Y81246BR					
		9P	Y81245					
			Y81245BR					
3/4 - 10UNC	H2	5P	Y81149	4.25	2	0.59	4	Ub
		1.5P	Y81250					
	H3	5P	Y81249					
			Y81249BR					
		9P	Y81248					
			Y81248BR					
	H5	1.5P	Y81450					
		5P	Y81449					
	H11	5P	Y85104					
		H1	5P					
Y81152								
1.5P	Y81253							
	Y81253BR							
H3	5P	Y81252						
		Y81252BR						
9P	Y81251							
	Y81251BR							
H5	1.5P	Y81453						
	5P	Y81452						
7/8 - 14UNF	H2	5P	Y81158	4.69	2.22	0.697	4	4
		1.5P	Y81359					
	H4	5P	Y81358					
			Y81358BR					
		9P	Y81357					
			Y81357BR					
H6	5P	Y81458						
	H4	1.5P	Y81356	4.69	2.22	0.697	4	4
Y81356BR								
5P		Y81355						
		Y81355BR						

U.S.A. Taps & Dies Line up

Hand Taps

HT Industrial Quality Hand Taps
For Unified and Metric threads

Overall length	Length of thread part	Length of chamfer part	Shank diameter
<i>L</i>	<i>ℓ</i>	<i>ℓ_C</i>	<i>D_s</i>

Unit : inch

Unit : inch

Size	Class	Chamfer	*2 Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type
7/8 - 9UNC	H4	9P	Y81354	4.69	2.22	0.697	4	Ub
			Y81354BR					
1 - 12UNF	H4	5P	Y81455	5.13	2.5	0.8	4	Ub
			Y81365					
		Y81365BR						
		Y81364						
		Y81364BR						
		Y81363						
1 - 14UNS	H2	5P	Y81167	5.13	2.5	0.8	4	Ub
			Y81167BR					
	1.5P	Y81368						
		Y81368BR						
	H4	5P	Y81367					
			Y81367BR					
9P	Y81366							
	Y81366BR							
1 - 8UNC	H2	5P	Y81161	5.13	2.5	0.8	4	Ub
			Y81362					
	Y81362BR							
	H4	5P	Y81361					
			Y81361BR					
	9P	Y81360						
Y81360BR								
1"1/8 - 12UNF	H4	1.5P	Y81374	5.44	2.56	0.896	4	Ub
			Y81374BR					
		5P	Y81373					
			Y81373BR					
9P	Y81372							
	Y81372BR							
1"1/8 - 7UNC	H4	1.5P	Y81371	5.44	2.56	0.896	4	Ub
			Y81371BR					
		5P	Y81370					
			Y81370BR					
9P	Y81369							
	Y81369BR							
1"1/4 - 12UNF	H4	1.5P	Y81380	5.75	2.56	1.021	6	Ub
			Y81380BR					
		5P	Y81379					
			Y81379BR					
9P	Y81378							
	Y81378BR							
1"1/4 - 7UNC	H4	1.5P	Y81377	5.75	2.56	1.021	4	Ub
			Y81377BR					
		5P	Y81376					
			Y81376BR					

Size	Class	Chamfer	*2 Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type
1"1/4 - 7UNC	H4	9P	Y81375	5.75	2.56	1.021	4	Ub
			Y81375BR					
1"3/8 - 12UNF	H4	1.5P	Y81386	6.06	3	1.108	4	Ub
			Y81386BR					
		5P	Y81385					
			Y81385BR					
		9P	Y81384					
			Y81384BR					
1"3/8 - 6UNC	H4	1.5P	Y81383	6.06	3	1.108	4	Ub
			Y81383BR					
		5P	Y81382					
			Y81382BR					
9P	Y81381							
	Y81381BR							
1"1/2 - 12UNF	H4	1.5P	Y81392	6.38	3	1.233	6	Ub
			Y81392BR					
		5P	Y81391					
			Y81391BR					
9P	Y81390							
	Y81390BR							
1"1/2 - 6UNC	H4	1.5P	Y81389	6.38	3	1.233	4	Ub
			Y81389BR					
		5P	Y81388					
			Y81388BR					
9P	Y81387							
	Y81387BR							

For Metric threads

Size	Class	Chamfer	Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type
M1.6 X 0.35	D3	1.5P	Y77996	1.63	0.31	0.141	3	Ub
		5P	Y77995				2	
M1.8 X 0.35	D3	1.5P	Y77999	1.69	0.375	0.141	3	Ub
		5P	Y77998				2	
M2 X 0.4	D3	1.5P	Y78002	1.75	0.44	0.141	3	Ub
		5P	Y78001					
M2.2 X 0.45	D3	1.5P	Y78005	1.75	0.44	0.141	3	Ub
		5P	Y78004					
M2.5 X 0.45	D3	1.5P	Y78008	1.81	0.5	0.141	3	Ub
		5P	Y78007					
M3 X 0.5	D3	1.5P	Y78011	1.94	0.63	0.141	3	Ub
		5P	Y78010					
M3.5 X 0.6	D4	1.5P	Y78014	2	0.69	0.141	3	Ub
		5P	Y78013					
M4 X 0.7	D4	1.5P	Y78017	2.13	0.75	0.168	4	Ub
		5P	Y78016					
M4.5 X 0.75	D4	1.5P	Y78020	2.38	0.88	0.194	4	Ub
		5P	Y78019					

U.S.A. Taps & Dies Line up

Hand Taps

HT Industrial Quality Hand Taps

For Unified and Metric threads

Unit : inch

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
M5 X 0.8	D4	1.5P	Y78023	2.38	0.88	0.194	4	Ub
		5P	Y78022					
M6 X 1	D5	1.5P	Y78026	2.5	1	0.255	4	Ub
		5P	Y78025					
M7 X 1	D5	1.5P	Y78029	2.72	1.13	0.318	4	Ub
		5P	Y78028					
M8 X 1	D5	1.5P	Y78032	2.72	1.13	0.318	4	Ub
		5P	Y78031					
M8 X 1.25	D5	1.5P	Y78035	2.72	1.13	0.318	4	Ub
		5P	Y78034					
M10 X 1.25	D5	1.5P	Y78038	2.94	1.25	0.381	4	Ub
		5P	Y78037					
M10 X 1.5	D6	1.5P	Y78041	2.94	1.25	0.381	4	Ub
		5P	Y78040					
M12 X 1.25	D5	1.5P	Y78044	3.38	1.66	0.367	4	Ub
		5P	Y78043					
M12 X 1.75	D6	1.5P	Y78047	3.38	1.66	0.367	4	Ub
		5P	Y78046					
M14 X 1.5	D6	1.5P	Y78050	3.59	1.66	0.429	4	Ub
		5P	Y78049					
M14 X 2	D7	1.5P	Y78053	3.59	1.66	0.429	4	Ub
		5P	Y78052					
M16 X 1.5	D6	1.5P	Y78056	3.81	1.81	0.48	4	Ub
		5P	Y78055					
M16 X 2	D7	1.5P	Y78059	3.81	1.81	0.48	4	Ub
		5P	Y78058					
M18 X 1.5	D6	1.5P	Y78062	4.03	1.81	0.542	4	Ub
		5P	Y78061					
M18 X 2.5	D7	1.5P	Y78065	4.03	1.81	0.542	4	Ub
		5P	Y78064					
M20 X 1.5	D6	1.5P	Y78068	4.47	2	0.652	4	Ub
		5P	Y78067					
M20 X 2.5	D7	1.5P	Y78071	4.47	2	0.652	4	Ub
		5P	Y78070					
M22 X 1.5	D6	1.5P	Y78074	4.69	2.22	0.697	4	Ub
		5P	Y78073					
M22 X 2.5	D7	1.5P	Y78077	4.69	2.22	0.697	4	Ub
		5P	Y78076					
M24 X 2	D7	1.5P	Y78080	4.91	2.22	0.76	4	Ub
		5P	Y78079					
M24 X 3	D8	1.5P	Y78083	4.91	2.22	0.76	4	Ub
		5P	Y78082					
M27 X 2	D7	1.5P	Y78086	5.13	2.5	0.896	4	Ub
		5P	Y78085					
M27 X 3	D8	1.5P	Y78089	5.13	2.5	0.896	4	Ub
		5P	Y78088					
M30 X 2	D7	1.5P	Y78092	5.44	2.56	1.021	4	Ub
		5P	Y78091					

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
M30 X 3.5	D9	1.5P	Y78095	5.44	2.56	1.021	4	Ub
		5P	Y78094					
M33 X 2	D7	1.5P	Y78098	5.75	2.56	1.108	4	Ub
		5P	Y78097					
M33 X 3.5	D9	1.5P	Y78101	5.75	2.56	1.108	4	Ub
		5P	Y78100					
M36 X 3	D8	1.5P	Y78104	6.06	3	1.233	4	Ub
		5P	Y78103					
M36 X 4	D9	1.5P	Y78107	6.06	3	1.233	4	Ub
		5P	Y78106					
M39 X 3	D8	1.5P	Y78110	6.69	3.19	1.305	4	Ub
		5P	Y78109					
M39 X 4	D10	1.5P	Y78113	6.69	3.19	1.305	4	Ub
		5P	Y78112					

U.S.A. Taps & Dies Line up

Hand Taps

Industrial Quality STI Hand Taps

For Unified and Metric threads

STI HT



"available while supplies last"
Vanadium High Speed Steel Taps
For Tapping Steels, Irons, Brass and Plastics
STI taps are special taps used to prepare holes for the installation of helical coil wire thread inserts.

*1 See blank type on page 97.

Carbide Taps for Cast Irons

For Unified and Metric threads

ZELX CARB CI



ZELX® Performance Quality Carbide Hand Taps
Micro Grain Carbide
For Cast Irons, Hard Plastics, Fiberglass, Cast Brass, Cobalt, Chrome Alloys Steels

*1 See blank type on page 97.

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.2 - 56UNC	H2	1.5P	Y80781	1.88	0.563	0.141	3	Ub
		5P	Y80780					
No.4 - 40UNC	H2	1.5P	Y80785	2	0.688	0.141	3	Ub
		5P	Y80784					
No.6 - 32UNC	H3	1.5P	Y80817	2.38	0.875	0.194	3	Ub
		5P	Y80816					
No.8 - 32UNC	H3	1.5P	Y80821	2.38	0.938	0.22	3	Ub
		5P	Y80820					
No.10 - 24UNC	H2	1.5P	Y80801	2.5	1	0.255	4	Ub
		5P	Y80800					
No.10 - 32UNF	H2	1.5P	Y80803	2.5	1	0.255	3	Ub
		5P	Y80802					
	H3	1.5P	Y80827					
		5P	Y80826					
1/4 - 20UNC	H3	1.5P	Y81881	2.72	1.125	0.318	3	Ub
		5P	Y81880					
1/4 - 28UNF	H2	1.5P	Y81863	2.72	1.125	0.318	3	Ub
		5P	Y81862					
5/16 - 18UNC	H3	1.5P	Y81885	2.94	1.25	0.381	4	Ub
		5P	Y81884					
5/16 - 24UNF	H2	1.5P	Y81867	2.94	1.25	0.381	4	Ub
		5P	Y81866					
3/8 - 16UNC	H3	1.5P	Y81889	3.38	1.656	0.367	4	Ub
		5P	Y81888					
7/16 - 14UNC	H3	5P	Y81892	3.59	1.656	0.429	4	Ub
7/16 - 20UNF	H3	5P	Y81894	3.38	1.656	0.367	4	Ub
	H4	1.5P	Y81901					
1/2 - 13UNC	H3	5P	Y81896	3.81	1.81	0.48	4	Ub
1/2 - 20UNF	H3	5P	Y81898	3.59	1.656	0.429	4	Ub

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.10 - 24UNC	H3	1.5P	Y83807	2.38	0.88	0.194	4	Ub
		5P	Y83806					
No.10 - 32UNF	H3	1.5P	Y83809	2.38	0.88	0.194	4	Ub
		5P	Y83808					
1/4 - 20UNC	H3	1.5P	Y83811	2.5	1	0.255	4	Ub
		5P	Y83810					
	H5	1.5P	Y83861					
		5P	Y83860					
1/4 - 28UNF	H3	1.5P	Y83813	2.5	1	0.255	4	Ub
		5P	Y83812					
	H5	1.5P	Y83863					
		5P	Y83862					
5/16 - 18UNC	H3	1.5P	Y83815	2.72	1.13	0.318	4	Ub
		5P	Y83814					
	H5	1.5P	Y83865					
		5P	Y83864					
5/16 - 24UNF	H3	1.5P	Y83817	2.72	1.13	0.318	4	Ub
		5P	Y83816					
	H5	1.5P	Y83867					
		5P	Y83866					
3/8 - 16UNC	H3	1.5P	Y83819	2.94	1.25	0.381	4	Ub
		5P	Y83818					
	H5	1.5P	Y83869					
		5P	Y83868					
3/8 - 24UNF	H3	1.5P	Y83821	2.94	1.25	0.381	4	Ub
		5P	Y83820					
	H5	1.5P	Y83871					
		5P	Y83870					
7/16 - 14UNC	H3	1.5P	Y83823	3.16	1.44	0.323	4	Ub
		5P	Y83822					
	H5	1.5P	Y83873					
		5P	Y83872					
7/16 - 20UNF	H3	1.5P	Y83825	3.16	1.44	0.323	4	Ub
		5P	Y83824					

ZELX CARB CI Carbide Taps for Cast Irons
For Unified and Metric threads

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
7/16 - 20UNF	H5	1.5P	Y83875	3.16	1.44	323	4	Ub
		5P	Y83874					
1/2 - 13UNC	H3	1.5P	Y83827	3.38	1.66	0.367	4	Ub
		5P	Y83826					
	H5	1.5P	Y83877					
		5P	Y83876					
1/2 - 20UNF	H3	1.5P	Y83829	3.38	1.66	0.367	4	Ub
		5P	Y83828					
	H5	1.5P	Y83879					
		5P	Y83878					
5/8 - 11UNC	H3	1.5P	Y83835	3.81	1.81	0.48	4	Ub
		5P	Y83834					
	H5	1.5P	Y83885					
		5P	Y83884					
5/8 - 18UNF	H3	1.5P	Y83837	3.81	1.81	0.48	4	Ub
		5P	Y83836					
	H5	1.5P	Y83887					
		5P	Y83886					

For Metric threads

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
M3 X 0.5	D3	1.5P	Y70001	1.94	0.63	0.141	3	Ub
		5P	Y70000					
M4 X 0.7	D4	1.5P	Y70003	2.13	0.75	0.168	4	Ub
		5P	Y70002					
M5 X 0.8	D4	1.5P	Y70005	2.38	0.88	0.194	4	Ub
		5P	Y70004					
M6 X 1	D5	1.5P	Y70007	2.5	1	0.255	4	Ub
		5P	Y70006					
M8 X 1	D5	1.5P	Y70009	2.72	1.13	0.318	4	Ub
		5P	Y70008					
M8 X 1.25	D5	1.5P	Y70011	2.72	1.13	0.318	4	Ub
		5P	Y70010					
M10 X 1.25	D5	1.5P	Y70013	2.94	1.25	0.381	3	Ub
		5P	Y70012					
M10 X 1.5	D6	1.5P	Y70015	2.94	1.25	0.381	4	Ub
		5P	Y70014					
M12 X 1.25	D5	1.5P	Y70017	3.38	1.66	0.367	4	Ub
		5P	Y70016					
M12 X 1.5	D6	5P	Y70018	3.38	1.66	0.367	4	Ub
		5P	Y70020					
M12 X 1.75	D6	1.5P	Y70021	3.38	1.66	0.367	3	Ub
		5P	Y70022					
M14 X 1.5	D6	5P	Y70022	3.59	1.66	0.429	4	Ub
		5P	Y70024					
M14 X 2	D7	1.5P	Y70025	3.59	1.66	0.429	4	Ub
		5P	Y70024					
M16 X 1.5	D6	1.5P	Y70027	3.81	1.81	0.48	4	Ub
		5P	Y70026					
M16 X 2	D7	1.5P	Y70029	3.81	1.81	0.48	4	Ub
		5P	Y70028					

Carbide Taps for Non-Ferrous Materials
For Unified and Metric threads

ZELX CARB AL



ZELX® Performance Quality Carbide Hand Taps
Micro Grain Carbide
For Aluminum Alloys, Zinc Die Castings, Copper Alloys
and Soft Plastics

*1 See blank type on page 97.

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.5 - 40UNC	H3	1.5P	Y84801	1.94	0.63	0.141	3	Ub
		5P	Y84800					
No.6 - 32UNC	H3	1.5P	Y84803	2	0.69	0.141	3	Ub
		5P	Y84802					
No.8 - 32UNC	H3	1.5P	Y84805	2.13	0.75	0.168	3	Ub
		5P	Y84804					
No.10 - 24UNC	H3	1.5P	Y84807	2.38	0.88	0.194	3	Ub
		5P	Y84806					
No.10 - 32UNF	H3	1.5P	Y84809	2.38	0.88	0.194	3	Ub
		5P	Y84808					
1/4 - 20UNC	H3	1.5P	Y84811	2.5	1	0.255	3	Ub
		5P	Y84810					
	H5	1.5P	Y84861					
		5P	Y84860					
1/4 - 28UNF	H3	1.5P	Y84813	2.5	1	0.255	3	Ub
		5P	Y84812					
	H5	1.5P	Y84863					
		5P	Y84862					
5/16 - 18UNC	H3	1.5P	Y84815	2.72	1.13	0.318	3	Ub
		5P	Y84814					
	H5	1.5P	Y84865					
		5P	Y84864					
5/16 - 24UNF	H3	1.5P	Y84817	2.72	1.13	0.318	3	Ub
		5P	Y84816					
	H5	1.5P	Y84867					
		5P	Y84866					
3/8 - 16UNC	H3	1.5P	Y84819	2.94	1.25	0.381	3	Ub
		5P	Y84818					
	H5	1.5P	Y84869					
		5P	Y84868					

Overall length	Length of thread part	Length of chamfer part	Shank diameter
L	ℓ	ℓ _c	D _s

ZELX CARB AL Carbide Taps for Non-Ferrous Materials
For Unified and Metric threads

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
3/8 - 24UNF	H3	1.5P	Y84821	2.94	1.25	0.381	3	Ub
		5P	Y84820					
	H5	1.5P	Y84871					
		5P	Y84870					
7/16 - 14UNC	H3	1.5P	Y84823	3.16	1.44	0.323	3	
		5P	Y84822					
	H5	1.5P	Y84873					
		5P	Y84872					
7/16 - 20UNF	H3	1.5P	Y84825	3.16	1.44	0.323	3	
		5P	Y84824					
	H5	1.5P	Y84875					
		5P	Y84874					
1/2 - 13UNC	H3	1.5P	Y84827	3.38	1.66	0.367	3	
		5P	Y84826					
	H5	1.5P	Y84877					
		5P	Y84876					
1/2 - 20UNF	H3	1.5P	Y84829	3.38	1.66	0.367	3	
		5P	Y84828					
	H5	1.5P	Y84879					
		5P	Y84878					

For Metric threads

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
M3 X 0.5	D3	5P	Y71000	1.94	0.63	0.141	3	Ub
M4 X 0.7	D4	1.5P	Y71003	2.13	0.75	0.168	3	
		5P	Y71002					
M5 X 0.8	D4	1.5P	Y71005	2.38	0.88	0.194	3	
		5P	Y71004					
M6 X 1	D5	1.5P	Y71007	2.5	1	0.255	3	
		5P	Y71006					
M8 X 1	D5	1.5P	Y71009	2.72	1.13	0.318	3	
		5P	Y71008					
M8 X 1.25	D5	1.5P	Y71011	2.72	1.13	0.318	3	
		5P	Y71010					
M10 X 1.25	D5	1.5P	Y71013	2.94	1.25	0.381	3	
		5P	Y71012					
M10 X 1.5	D6	1.5P	Y71015	2.94	1.25	0.381	3	
		5P	Y71014					
M12 X 1.25	D5	1.5P	Y71017	3.38	1.66	0.367	3	
		5P	Y71016					
M12 X 1.5	D6	1.5P	Y71019	3.38	1.66	0.367	3	
		5P	Y71018					
M12 X 1.75	D6	1.5P	Y71021	3.38	1.66	0.367	3	
		5P	Y71020					

Industrial Quality Roll Taps

For Unified and Metric threads

ROLL



"available while supplies last"
Vanadium High Speed Steel Taps

*1 See blank type on page 97.

*2 "BR" of code No. stands for Bright finish taps

Unit : inch

Size	Class	Chamfer	*2 Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.0 - 80UNF	H2	1.5P	Y87732	1.63	0.31	0.141	3	Ub
			Y87732BR					
No.1 - 64UNC	H2	1.5P	Y87734	1.69	0.38	0.141	3	
			Y87734BR					
No.1 - 72UNF	H2	1.5P	Y87736	1.69	0.38	0.141	3	
			Y87736BR					
No.2 - 56UNC	H2	1.5P	Y87738	1.75	0.44	0.141	4	
			Y87738BR					
	H3	1.5P	Y87776	1.75	0.44	0.141	4	
			Y87776BR					
No.2 - 64UNF	H2	1.5P	Y87740	1.75	0.44	0.141	4	
			Y87740BR					
	H3	1.5P	Y87778BR	1.75	0.44	0.141	4	
			4P Y87778					
No.3 - 48UNC	H2	1.5P	Y87742	1.81	0.5	0.141	4	
			Y87742BR					
	H3	1.5P	Y87780	1.81	0.5	0.141	4	
			Y87780BR					
No.3 - 56UNF	H2	1.5P	Y87744	1.81	0.5	0.141	4	
			Y87744BR					
	H3	1.5P	Y87782	1.81	0.5	0.141	4	
			Y87782BR					
No.4 - 40UNC	H3	1.5P	Y87784	1.88	0.56	0.141	4	
			Y87784BR					
			4P Y87783					
	H5	1.5P	Y87857					
			Y87857BR					
			4P Y87856					
4P Y87856BR								

Overall length	Length of thread part	Length of chamfer part	Shank diameter
<i>L</i>	<i>ℓ</i>	<i>ℓ_c</i>	<i>D_s</i>

ROLL Industrial Quality Roll Taps
For Unified and Metric threads

Unit : inch

Unit : inch

Size	Class	Chamfer	*2 Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type
No.4 - 48UNF	H3	1.5P	Y87786	1.88	0.56	0.141	4	Ub
			Y87786BR					
		4P	Y87785					
	Y87785BR							
	H5	1.5P	Y87859					
			Y87859BR					
4P		Y87858						
	Y87858BR							
No.5 - 40UNC	H3	1.5P	Y87788	1.94	0.63	0.141	4	Ub
			Y87788BR					
		4P	Y87787					
	Y87787BR							
	H5	1.5P	Y87861					
			Y87861BR					
4P		Y87860						
	Y87860BR							
No.5 - 44UNF	H3	1.5P	Y87790	1.94	0.63	0.141	4	Ub
			Y87790BR					
		4P	Y87789					
	Y87789BR							
	H5	1.5P	Y87863					
			Y87863BR					
4P		Y87862						
	Y87862BR							
No.6 - 32UNC	H3	1.5P	Y87792	2	0.69	0.141	4	Ub
			Y87792BR					
		4P	Y87791					
	Y87791BR							
	H5	1.5P	Y87865					
			Y87865BR					
		4P	Y87864					
	Y87864BR							
	H10	1.5P	Y87971					
Y87971BR								
4P		Y87970						
	Y87970BR							
No.6 - 40UNF	H3	1.5P	Y87794	2	0.69	0.141	4	Ub
			Y87794BR					
		4P	Y87793					
	Y87793BR							
	H5	1.5P	Y87867					
			Y87867BR					
		4P	Y87866					
	Y87866BR							

Size	Class	Chamfer	*2 Code No.	<i>L</i>	<i>ℓ</i>	<i>D_s</i>	Number of flutes	*1 Blank type
No.8 - 32UNC	H3	1.5P	Y87796	2.13	0.75	0.168	4	Ub
			Y87796BR					
		4P	Y87795					
	Y87795BR							
	H5	1.5P	Y87869					
			Y87869BR					
4P		Y87868						
	Y87868BR							
H10	1.5P	Y87973						
		Y87973BR						
	4P	Y87972						
		Y87972BR						
No.8 - 36UNF	H3	1.5P	Y87798	2.13	0.75	0.168	4	Ub
			Y87798BR					
		4P	Y87797					
	Y87797BR							
	H5	1.5P	Y87871					
			Y87871BR					
4P		Y87870						
	Y87870BR							
No.10 - 24UNC	H4	1.5P	Y87830	2.38	0.88	0.194	4	Ub
			Y87830BR					
		4P	Y87829					
	Y87829BR							
	H6	1.5P	Y87904					
			Y87904BR					
4P		Y87903						
	Y87903BR							
H10	1.5P	Y87975						
		Y87975BR						
	4P	Y87974						
Y87974BR								
No.10 - 32UNF	H4	1.5P	Y87832	2.38	0.88	0.194	4	Ub
			Y87832BR					
		4P	Y87831					
	Y87831BR							
	H6	1.5P	Y87906					
			Y87906BR					
4P		Y87905						
	Y87905BR							
H10	1.5P	Y87977						
		Y87977BR						
	4P	Y87976						
Y87976BR								

U.S.A. Taps & Dies Line up

Thread Forming Taps

ROLL Industrial Quality Roll Taps
For Unified and Metric threads

Overall length	Length of thread part	Length of chamfer part	Shank diameter
<i>L</i>	<i>ℓ</i>	<i>ℓ_C</i>	<i>D_S</i>

Unit : inch

Unit : inch

Size	Class	Chamfer	*2 Code No.	<i>L</i>	<i>ℓ</i>	<i>D_S</i>	Number of flutes	*1 Blank type								
No.12 - 24UNC	H4	1.5P	Y87834	2.38	0.94	0.22	4	Ub								
			Y87834BR													
		4P	Y87833													
			Y87833BR													
	H6	1.5P	Y87908													
			Y87908BR													
		4P	Y87907													
			Y87907BR													
No.12 - 28UNF	H4	1.5P	Y87836	2.38	0.94	0.22	4	Ub								
			Y87836BR													
		4P	Y87835													
			Y87835BR													
	H6	1.5P	Y87910													
			Y87910BR													
		4P	Y87909													
			Y87909BR													
			1/4 - 20UNC						H4	1.5P	Y87838	2.5	1	0.255	4	Ub
											Y87838BR					
4P	Y87837															
	Y87837BR															
H6	1.5P	Y87912														
		Y87912BR														
	4P	Y87911														
		Y87911BR														
H10	1.5P	Y87979														
		Y87979BR														
	4P	Y87978														
		1/4 - 28UNF	H4	1.5P	Y87840	2.5	1	0.255	4	Ub						
Y87840BR																
4P	Y87839															
	Y87839BR															
H6	1.5P		Y87914													
			Y87914BR													
	4P		Y87913													
			Y87913BR													
H10	1.5P		Y87981													
			Y87980													
	4P	Y87980														
		5/16 - 18UNC	H5	1.5P	Y87873	2.72	1.13	0.318	4	Ub						
Y87873BR																
4P	Y87872															
	Y87872BR															
H7	1.5P		Y87931													
			Y87931BR													
	4P		Y87930													
			Y87930BR													

Size	Class	Chamfer	*2 Code No.	<i>L</i>	<i>ℓ</i>	<i>D_S</i>	Number of flutes	*1 Blank type								
5/16 - 24UNF	H5	1.5P	Y87875	2.72	1.13	0.318	4	Ub								
			Y87875BR													
		4P	Y87874													
			Y87874BR													
	H7	1.5P	Y87933													
			Y87933BR													
		4P	Y87932													
			Y87932BR													
3/8 - 16UNC	H5	1.5P	Y87877	2.94	1.25	0.381	4	Ub								
			Y87877BR													
		4P	Y87876													
			Y87876BR													
	H7	1.5P	Y87935													
			Y87935BR													
		4P	Y87934													
			Y87934BR													
			3/8 - 24UNF						H5	1.5P	Y87879	2.94	1.25	0.381	6	Ub
											Y87879BR					
4P	Y87878															
	Y87878BR															
H7	1.5P	Y87937														
		Y87937BR														
	4P	Y87936														
		Y87936BR														
7/16 - 14UNC	H5	1.5P	Y87881	3.16	1.44	0.323	8	Ub								
			Y87881BR													
		4P	Y87880													
			Y87880BR													
	H8	1.5P	Y87961													
			Y87961BR													
		4P	Y87960													
			Y87960BR													
7/16 - 20UNF	H5	1.5P	Y87883	3.16	1.44	0.323	8	Ub								
			Y87883BR													
		4P	Y87882													
			Y87882BR													
	H8	1.5P	Y87963													
			Y87963BR													
		4P	Y87962													
			Y87962BR													
1/2 - 13UNC	H5	1.5P	Y87885	3.38	1.66	0.367	8	Ub								
			Y87885BR													
		4P	Y87884													
			Y87884BR													
	H8	1.5P	Y87965													
			Y87965BR													
		4P	Y87964													
			Y87964BR													

U.S.A. Taps & Dies Line up

Thread Forming Taps

ROLL Industrial Quality Roll Taps
For Unified and Metric threads

Unit : inch

Unit : inch

Size	Class	Chamfer	*2 Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type					
1/2 - 20UNF	H5	1.5P	Y87887	3.38	1.66	0.367	8	Ub					
			Y87887BR										
		4P	Y87886										
			Y87886BR										
	H8	1.5P	Y87967										
			Y87967BR										
		4P	Y87966										
			Y87966BR										
	9/16 - 12UNC	H7	1.5P						Y87947	3.59	1.66	0.429	8
									Y87947BR				
			4P						Y87946				
									Y87946BR				
H10		1.5P	Y87991										
			Y87991BR										
		4P	Y87990										
			Y87990BR										
9/16 - 18UNF		H7	1.5P	Y87949	3.59	1.66	0.429	8					
				Y87949BR									
			4P	Y87948									
				Y87948BR									
	H10	1.5P	Y87993										
			Y87993BR										
		4P	Y87992										
			Y87992BR										
	5/8 - 11UNC	H7	1.5P	Y87951					3.81	1.81	0.48	8	
				Y87951BR									
			4P	Y87950									
				Y87950BR									
H10		1.5P	Y87995										
			Y87995BR										
		4P	Y87994										
			Y87994BR										
5/8 - 18UNF		H7	1.5P	Y87953	3.81	1.81	0.48	8					
				Y87953BR									
			4P	Y87952									
				Y87952BR									
	H10	1.5P	Y87997										
			Y87997BR										
		4P	Y87996										
			Y87996BR										
	3/4 - 10UNC	H7	1.5P	Y87955					4.25	2	0.59	8	
				Y87955BR									
			4P	Y87954									
				Y87954BR									
H10		1.5P	Y87999										
			Y87999BR										
		4P	Y87998										
			Y87998BR										

Size	Class	Chamfer	*2 Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
3/4 - 16UNF	H7	1.5P	Y87957	4.25	2	0.59	8	Ub
			Y87957BR					
		4P	Y87956					
			Y87956BR					
	H10	1.5P	Y88001					
			Y88001BR					
		4P	Y88000					
			Y88000BR					
			Y88000BR					
			Y88000BR					

U.S.A. Taps & Dies Line up

Thread Forming Taps

Thread Forming Taps for Ferrous Materials

For Unified and Metric threads

N-RZ



Custom Blended Vanadium High Speed Steel Taps For Stainless Steels & Alloy Steels (for Ferrous Materials)
DIN tap lengths, USCTI shank dimensions

*1 See blank type on page 97.

Overall length	Length of thread part	Length of chamfer part	Shank diameter
<i>L</i>	<i>ℓ</i>	<i>ℓ_C</i>	<i>D_S</i>

Unit : inch

Size	Class	Chamfer	Code No.	<i>L</i>	<i>ℓ</i>	<i>D_S</i>	Number of flutes	*1 Blank type
No.0 - 80UNF	H2	2P	Y89410	1.57	0.315	0.141	3	
No.1 - 64UNC	H2	2P	Y89411	1.57	0.315	0.141	3	
No.1 - 72UNF	H2	2P	Y89412	1.57	0.315	0.141	3	
No.2 - 56UNC	H2	2P	Y89413	1.77	0.354	0.141	4	
	H3		Y89414					
No.2 - 64UNF	H2	2P	Y89415	1.77	0.354	0.141	4	
	H3		Y89416					
No.3 - 48UNC	H2	2P	Y89417	1.97	0.276	0.141	4	
	H3		Y89418					
No.3 - 56UNF	H2	2P	Y89419	1.97	0.276	0.141	4	
	H3		Y89420					
No.4 - 40UNC	H3	2P	Y89421	2.2	0.433	0.141	4	
		4P	Y89423					
	H5	2P	Y89422					
		4P	Y89424					
No.4 - 48UNF	H3	2P	Y89425	2.2	0.433	0.141	4	Uc
		4P	Y89427					
	H5	2P	Y89426					
		4P	Y89428					
No.5 - 40UNC	H3	2P	Y89429	2.2	0.433	0.141	4	
		4P	Y89431					
	H5	2P	Y89430					
		4P	Y89432					
No.5 - 44UNF	H3	2P	Y89433	2.2	0.433	0.141	4	
		4P	Y89435					
	H5	2P	Y89434					
		4P	Y89436					
No.6 - 32UNC	H3	2P	Y89437	2.2	0.512	0.141	4	
		4P	Y89440					
	H5	2P	Y89438					
		4P	Y89441					

Unit : inch

Size	Class	Chamfer	Code No.	<i>L</i>	<i>ℓ</i>	<i>D_S</i>	Number of flutes	*1 Blank type
No.6 - 40UNF	H3	2P	Y89442	2.2	0.512	0.141	4	
		4P	Y89444					
	H5	2P	Y89443					
		4P	Y89445					
No.8 - 32UNC	H3	2P	Y89446	2.48	0.512	0.168	4	
		4P	Y89448					
	H5	2P	Y89447					
		4P	Y89449					
No.8 - 36UNF	H3	2P	Y89450	2.48	0.512	0.168	4	
		4P	Y89452					
	H5	2P	Y89451					
		4P	Y89453					
No.10 - 24UNC	H4	2P	Y89454	2.76	0.63	0.194	4	
		4P	Y89456					
	H6	2P	Y89455					
		4P	Y89457					
No.10 - 32UNF	H4	2P	Y89458	2.76	0.63	0.194	4	
		4P	Y89460					
	H6	2P	Y89459					
		4P	Y89461					
No.12 - 24UNC	H4	2P	Y89462	3.15	0.63	0.22	4	
		4P	Y89464					
	H6	2P	Y89463					
		4P	Y89465					
No.12 - 28UNF	H4	2P	Y89466	3.15	0.63	0.22	4	Uc
		4P	Y89468					
	H6	2P	Y89467					
		4P	Y89469					
1/4 - 20UNC	H4	2P	Y89470	3.15	0.748	0.255	4	
		4P	Y89472					
	H6	2P	Y89471					
		4P	Y89473					
1/4 - 28UNF	H4	2P	Y89474	3.15	0.748	0.255	4	
		4P	Y89476					
	H6	2P	Y89475					
		4P	Y89477					
5/16 - 18UNC	H5	2P	Y89478	3.54	0.866	0.318	6	
		4P	Y89480					
	H7	2P	Y89479					
		4P	Y89481					
5/16 - 24UNF	H5	2P	Y89482	3.54	0.866	0.318	6	
		4P	Y89484					
	H7	2P	Y89483					
		4P	Y89485					
3/8 - 16UNC	H5	2P	Y89486	3.94	0.945	0.381	6	
		4P	Y89488					
	H7	2P	Y89487					
		4P	Y89489					

N-RZ Thread Forming Taps for Ferrous Materials

For Unified and Metric threads

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	+1 Blank type
3/8 - 24UNF	H5	2P	Y89490	3.54	0.787	0.381	6	Uc
		4P	Y89492					
	H7	2P	Y89491					
		4P	Y89493					
7/16 - 14UNC	H5	2P	Y89494	3.94	0.945	0.323	4	
		4P	Y89496					
	H7	2P	Y89495					
		4P	Y89497					
7/16 - 20UNF	H5	2P	Y89498	3.94	0.945	0.323	4	
		4P	Y89502					
	H7	2P	Y89499					
		4P	Y89503					
1/2 - 13UNC	H5	2P	Y89504	4.33	1.142	0.367	4	
		4P	Y89506					
	H7	2P	Y89505					
		4P	Y89507					
1/2 - 20UNF	H5	2P	Y89508	3.94	0.866	0.367	4	
		4P	Y89510					
	H7	2P	Y89509					
		4P	Y89511					

For Metric threads

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	+1 Blank type
M3 X 0.5	D5	2P	Y89512	2.2	0.433	0.141	4	Uc
		4P	Y89513					
M3.5 X 0.6	D6	2P	Y89514	2.2	0.512	0.141	4	
		4P	Y89515					
M4 X 0.7	D6	2P	Y89516	2.48	0.512	0.168	4	
		4P	Y89517					
M5 X 0.8	D7	2P	Y89518	2.76	0.63	0.194	4	
		4P	Y89519					
M6 X 1	D8	2P	Y89520	3.15	0.748	0.255	4	
		4P	Y89521					
M7 X 1	D9	2P	Y89522	3.15	0.748	0.318	4	
		4P	Y89523					
M8 X 1	D9	2P	Y89524	3.54	0.866	0.318	6	
		4P	Y89525					
M8 X 1.25	D9	2P	Y89526	3.54	0.866	0.318	6	
		4P	Y89527					
M10 X 1.25	D9	2P	Y89528	3.94	0.945	0.381	4	
		4P	Y89529					
M10 X 1.5	D10	2P	Y89530	3.94	0.945	0.381	4	
		4P	Y89531					
M12 X 1.25	D9	2P	Y89532	3.94	0.866	0.367	4	
		4P	Y89533					
M12 X 1.75	D11	2P	Y89534	4.33	1.142	0.367	4	
		4P	Y89535					

Thread Forming Taps for Non-Ferrous Materials

For Unified and Metric threads

N-RS



Custom Blended Vanadium High Speed Steel Taps
For Aluminums, Brass, Copper Alloys (Non-Ferrous Materials)
DIN tap lengths, USCTI shank dimensions

*1 See blank type on page 97.

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	+1 Blank type
No.0 - 80UNF	H2	2P	Y88410	1.57	0.315	0.141	3	Uc
No.1 - 64UNC	H2	2P	Y88411	1.57	0.315	0.141	3	
No.1 - 72UNF	H2	2P	Y88412	1.57	0.315	0.141	3	
No.2 - 56UNC	H2	2P	Y88413	1.77	0.354	0.141	4	
			Y88414					
No.2 - 64UNF	H2	2P	Y88415	1.77	0.354	0.141	4	
			Y88416					
No.3 - 48UNC	H2	2P	Y88417	1.97	0.276	0.141	4	
			Y88418					
No.3 - 56UNF	H2	2P	Y88419	1.97	0.276	0.141	4	
			Y88420					
No.4 - 40UNC	H3	2P	Y88421	2.2	0.433	0.141	4	
		4P	Y88423					
	H5	2P	Y88422					
		4P	Y88424					
No.4 - 48UNF	H3	2P	Y88425	2.2	0.433	0.141	4	
		4P	Y88427					
	H5	2P	Y88426					
		4P	Y88428					
No.5 - 40UNC	H3	2P	Y88429	2.2	0.433	0.141	4	
		4P	Y88431					
	H5	2P	Y88430					
		4P	Y88432					
No.5 - 44UNF	H3	2P	Y88433	2.2	0.433	0.141	4	
		4P	Y88435					
	H5	2P	Y88434					
		4P	Y88436					
No.6 - 32UNC	H3	2P	Y88437	2.2	0.512	0.141	4	
		4P	Y88440					
	H5	2P	Y88438					
		4P	Y88441					

N-RS Thread Forming Taps for Non-Ferrous Materials
For Unified and Metric threads

Overall length	Length of thread part	Length of chamfer part	Shank diameter
<i>L</i>	<i>ℓ</i>	<i>ℓ_C</i>	<i>D_S</i>

Unit : inch

Unit : inch

Size	Class	Chamfer	Code No.	<i>L</i>	<i>ℓ</i>	<i>D_S</i>	Number of flutes	*1 Blank type
No.6 - 40UNF	H3	2P	Y88442	2.2	0.512	0.141	4	Uc
		4P	Y88444					
	H5	2P	Y88443					
		4P	Y88445					
No.8 - 32UNC	H3	2P	Y88446	2.48	0.512	0.168	4	Uc
		4P	Y88448					
	H5	2P	Y88447					
		4P	Y88449					
No.8 - 36UNF	H3	2P	Y88450	2.48	0.512	0.168	4	Uc
		4P	Y88452					
	H5	2P	Y88451					
		4P	Y88453					
No.10 - 24UNC	H4	2P	Y88454	2.76	0.63	0.194	4	Uc
		4P	Y88456					
	H6	2P	Y88455					
		4P	Y88457					
No.10 - 32UNF	H4	2P	Y88458	2.76	0.63	0.194	4	Uc
		4P	Y88460					
	H6	2P	Y88459					
		4P	Y88461					
No.12 - 24UNC	H4	2P	Y88462	3.15	0.63	0.22	4	Uc
		4P	Y88464					
	H6	2P	Y88463					
		4P	Y88465					
No.12 - 28UNF	H4	2P	Y88466	3.15	0.63	0.22	4	Uc
		4P	Y88468					
	H6	2P	Y88467					
		4P	Y88469					
1/4 - 20UNC	H4	2P	Y88470	3.15	0.748	0.255	4	Uc
		4P	Y88472					
	H6	2P	Y88471					
		4P	Y88473					
1/4 - 28UNF	H4	2P	Y88474	3.15	0.748	0.255	4	Uc
		4P	Y88476					
	H6	2P	Y88475					
		4P	Y88477					
5/16 - 18UNC	H5	2P	Y88478	3.54	0.866	0.318	6	Uc
		4P	Y88480					
	H7	2P	Y88479					
		4P	Y88481					
5/16 - 24UNF	H5	2P	Y88482	3.54	0.866	0.318	6	Uc
		4P	Y88484					
	H7	2P	Y88483					
		4P	Y88485					
3/8 - 16UNC	H5	2P	Y88486	3.94	0.945	0.381	6	Uc
		4P	Y88488					
	H7	2P	Y88487					
		4P	Y88489					

Size	Class	Chamfer	Code No.	<i>L</i>	<i>ℓ</i>	<i>D_S</i>	Number of flutes	*1 Blank type
3/8 - 24UNF	H5	2P	Y88490	3.54	0.787	0.381	6	Uc
		4P	Y88492					
	H7	2P	Y88491					
		4P	Y88493					
7/16 - 14UNC	H5	2P	Y88494	3.94	0.945	0.323	6	Uc
		4P	Y88496					
	H7	2P	Y88495					
		4P	Y88497					
7/16 - 20UNF	H5	2P	Y88498	3.94	0.945	0.323	6	Uc
		4P	Y88502					
	H7	2P	Y88499					
		4P	Y88503					
1/2 - 13UNC	H5	2P	Y88504	4.33	1.142	0.367	6	Uc
		4P	Y88506					
	H7	2P	Y88505					
		4P	Y88507					
1/2 - 20UNF	H5	2P	Y88508	3.94	0.866	0.367	6	Uc
		4P	Y88510					
	H7	2P	Y88509					
		4P	Y88511					

For Metric threads								
Size	Class	Chamfer	Code No.	<i>L</i>	<i>ℓ</i>	<i>D_S</i>	Number of flutes	*1 Blank type
M3 X 0.5	D5	2P	Y88512	2.2	0.433	0.141	4	Uc
		4P	Y88513					
M3.5 X 0.6	D6	2P	Y88514	2.2	0.512	0.141	4	Uc
		4P	Y88515					
M4 X 0.7	D6	2P	Y88516	2.48	0.512	0.168	4	Uc
		4P	Y88517					
M5 X 0.8	D7	2P	Y88518	2.76	0.63	0.194	4	Uc
		4P	Y88519					
M6 X 1	D8	2P	Y88520	3.15	0.748	0.255	4	Uc
		4P	Y88521					
M7 X 1	D9	2P	Y88522	3.15	0.748	0.318	4	Uc
		4P	Y88523					
M8 X 1	D9	2P	Y88524	3.54	0.866	0.318	6	Uc
		4P	Y88525					
M8 X 1.25	D9	2P	Y88526	3.54	0.866	0.318	6	Uc
		4P	Y88527					
M10 X 1.25	D9	2P	Y88528	3.94	0.945	0.381	6	Uc
		4P	Y88529					
M10 X 1.5	D10	2P	Y88530	3.94	0.945	0.381	6	Uc
		4P	Y88531					
M12 X 1.25	D9	2P	Y88532	3.94	0.866	0.367	6	Uc
		4P	Y88533					
M12 X 1.75	D11	2P	Y88534	4.33	1.142	0.367	6	Uc
		4P	Y88535					

U.S.A. Taps & Dies Line up

Thread Forming Taps

High Performance Thread Forming Taps for Dry Tapping

For Unified and Metric threads

ZELX OL-RZ



Cobalt, Vanadium Premium Steel Taps
For Stainless Steels and Other Soft, Low and Medium Carbon Steels
DIN tap lengths, USCTI shank dimensions

*1 See blank type on page 97.

High Performance Thread Forming Taps

For Unified and Metric threads

ZELX HP-RZ



Cobalt, Vanadium Premium Steel Taps
For Stainless Steels, Low, Medium, High Carbon Steels < 35 HRC
HP-RZ Roll taps can be run 2 times faster than the tapping speeds recommended for thread cutting taps.
DIN tap lengths, USCTI shank dimensions

*1 See blank type on page 97.

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.2 - 56UNC	H3	4P	Y86600	1.77	0.354	0.141	4	Uc
No.4 - 40UNC	H5	4P	Y86601	2.2	0.433	0.141	4	
No.4 - 48UNF	H5	4P	Y86602	2.2	0.433	0.141	4	
No.5 - 40UNC	H5	4P	Y86603	2.2	0.433	0.141	4	
No.6 - 32UNC	H5	4P	Y86604	2.2	0.512	0.141	4	
No.8 - 32UNC	H5	4P	Y86605	2.48	0.512	0.168	4	
No.10 - 24UNC	H6	4P	Y86606	2.76	0.63	0.194	4	
No.10 - 32UNF	H6	4P	Y86607	2.76	0.63	0.194	4	
1/4 - 20UNC	H6	4P	Y86608	3.15	0.748	0.255	4	
1/4 - 28UNF	H6	4P	Y86609	3.15	0.748	0.255	4	

For Metric threads

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
M3 X 0.5	D5	4P	Y86610	2.2	0.433	0.141	4	Uc
M3.5 X 0.6	D6	4P	Y86611	2.2	0.512	0.141	4	
M4 X 0.7	D6	4P	Y86612	2.48	0.512	0.168	4	
M5 X 0.8	D7	4P	Y86614	2.76	0.63	0.194	4	
M6 X 1	D8	4P	Y86615	3.15	0.748	0.255	4	

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D _s	Number of flutes	*1 Blank type
No.0 - 80UNF	H2	2P	Y86800	1.57	0.315	0.141	3	Uc
No.2 - 56UNC	H3	2P	Y86801	1.77	0.354	0.141	4	
No.3 - 48UNC	H3	2P	Y86802	1.97	0.276	0.141	4	
No.3 - 56UNF	H3	2P	Y86803	1.97	0.276	0.141	4	
No.4 - 40UNC	H3	2P	Y86804	2.2	0.433	0.141	4	
	H5		Y86805					
No.4 - 48UNF	H3	2P	Y86806	2.2	0.433	0.141	4	
	H5		Y86807					
No.5 - 40UNC	H5	2P	Y86799	2.2	0.433	0.141	4	
No.6 - 32UNC	H3	2P	Y86808	2.2	0.512	0.141	4	
		4P	Y86810					
	H5	2P	Y86809					
		4P	Y86811					
No.8 - 32UNC	H3	2P	Y86812	2.48	0.512	0.168	4	
		4P	Y86814					
	H5	2P	Y86813					
		4P	Y86815					
No.10 - 24UNC	H4	2P	Y86816	2.76	0.63	0.194	4	
		4P	Y86818					
	H6	2P	Y86817					
		4P	Y86819					
No.10 - 32UNF	H4	2P	Y86820	2.76	0.63	0.194	4	
		4P	Y86822					
	H6	2P	Y86821					
		4P	Y86823					
1/4 - 20UNC	H4	2P	Y86824	3.15	0.748	0.255	4	
		4P	Y86826					
	H6	2P	Y86825					
		4P	Y86827					
1/4 - 28UNF	H4	2P	Y86828	3.15	0.748	0.255	4	
		4P	Y86830					
	H6	2P	Y86829					
		4P	Y86831					

ZELX HP-RZ High Performance Thread Forming Taps

For Unified and Metric threads

Overall length	Length of thread part	Length of chamfer part	Shank diameter
L	ℓ	ℓ_C	D_s

Unit : inch

Unit : inch

Size	Class	Chamfer	Code No.	L	ℓ	D_s	Number of flutes	*1 Blank type
5/16 - 18UNC	H5	2P	Y86832	3.54	0.866	0.318	6	Uc
		4P	Y86834					
	H7	2P	Y86833					
		4P	Y86835					
5/16 - 24UNF	H5	2P	Y86836	3.54	0.866	0.318	6	
		4P	Y86838					
	H7	2P	Y86837					
		4P	Y86839					
3/8 - 16UNC	H5	2P	Y86840	3.94	0.945	0.381	6	
		4P	Y86842					
	H7	2P	Y86841					
		4P	Y86843					
3/8 - 24UNF	H5	2P	Y86844	3.54	0.787	0.381	6	
		4P	Y86846					
	H7	2P	Y86845					
		4P	Y86847					
7/16 - 14UNC	H5	2P	Y86848	3.94	0.945	0.323	4	
		4P	Y86850					
	H7	2P	Y86849					
		4P	Y86851					
7/16 - 20UNF	H5	2P	Y86852	3.94	0.945	0.323	4	
		4P	Y86854					
	H7	2P	Y86853					
		4P	Y86855					
1/2 - 13UNC	H5	2P	Y86856	4.33	1.142	0.367	4	
		4P	Y86858					
	H7	2P	Y86857					
		4P	Y86859					
1/2 - 20UNF	H5	2P	Y86860	3.94	0.866	0.367	4	
		4P	Y86862					
	H7	2P	Y86861					
		4P	Y86863					

Size	Class	Chamfer	Code No.	L	ℓ	D_s	Number of flutes	*1 Blank type
M8 X 1	D9	2P	Y86871	3.54	0.866	0.318	6	Uc
		4P	Y86872					
M8 X 1.25	D9	2P	Y86873	3.54	0.866	0.318	6	
		4P	Y86874					
M10 X 1.25	D9	2P	Y86875	3.94	0.945	0.381	4	
		4P	Y86876					
M10 X 1.5	D10	2P	Y86877	3.94	0.945	0.381	4	
		4P	Y86878					
M12 X 1.25	D9	2P	Y86879	3.94	0.866	0.367	4	
		4P	Y86880					
M12 X 1.5	D9	2P	Y86881	3.94	0.866	0.367	4	
		4P	Y86882					
M12 X 1.75	D11	2P	Y86883	4.33	1.142	0.367	4	
		4P	Y86884					

For Metric threads

Size	Class	Chamfer	Code No.	L	ℓ	D_s	Number of flutes	*1 Blank type
M3 X 0.5	D5	2P	Y86864	2.2	0.433	0.141	4	Uc
		4P	Y86885					
M3.5 X 0.6	D6	2P	Y86865	2.2	0.512	0.141	4	
		4P	Y86886					
M4 X 0.7	D6	2P	Y86866	2.48	0.512	0.168	4	
		4P	Y86887					
M5 X 0.8	D7	2P	Y86867	2.76	0.63	0.194	4	
		4P	Y86888					
M6 X 1	D8	2P	Y86868	3.15	0.748	0.255	4	
		4P	Y86889					
M7 X 1	D9	2P	Y86869	3.15	0.748	0.318	4	
		4P	Y86870					

Slow Spiral Fluted Pipe Taps for Stainless Steels, for NPT and NPTF Threads
For American Taper Pipe Threads

ZELX SS PIPE



Custom Blended Vanadium High Speed Steel Taps
For Stainless Steels, Alloy Steels and Ductile Irons

Pipe Taps for Mold Steels, for NPT Threads
For American Taper Pipe Threads

ZELX MOLD PIPE



First Choice For Tapping Mold Steels
Ideal for tapping mold steels, tool steels and gray cast irons. (35 to 45 HRC)
YMW offers this series of ZELX Mold Taps made of Cobalt High Speed Steel.

*1 See blank type on page 97.

*6 ℓ_g : The distance, parallel to the axis, from the small end of thread portion of tap to the gauge plane.

*1 See blank type on page 97.

*6 ℓ_g : The distance, parallel to the axis, from the small end of thread portion of tap to the gauge plane.

Unit : inch

	Size	Class	Chamfer	Code No.	Basic major diameter	^{*6} ℓ_g	L	ℓ	D_s	Number of flutes	*1 Blank type
NPT	1/16 - 27	ANSI G	2.5P	Y83640	0.306	0.472	2.13	0.688	0.3125	4	Ua
	1/8 - 27	ANSI G	2.5P	Y83641	0.398	0.474	2.13	0.75	0.4375	4	
				Y83642							
	1/4 - 18	ANSI G	2.5P	Y83643	0.529	0.687	2.44	1.063	0.5625	4	
	3/8 - 18	ANSI G	2.5P	Y83644	0.664	0.695	2.56	1.063	0.7	4	
	1/2 - 14	ANSI G	2.5P	Y83645	0.826	0.9	3.13	1.375	0.6875	4	
	3/4 - 14	ANSI G	2.5P	Y83646	1.036	0.904	3.25	1.375	0.9063	4	
	1 - 11.5	ANSI G	2.5P	Y83647	1.297	1.079	3.75	1.75	1.125	4	
NPTF	1/16 - 27	ANSI G	2.5P	Y83660	0.306	0.472	2.13	0.688	0.3125	4	
	1/8 - 27	ANSI G	2.5P	Y83661	0.398	0.474	2.13	0.75	0.4375	4	
				Y83662							
	1/4 - 18	ANSI G	2.5P	Y83663	0.529	0.687	2.44	1.063	0.5625	4	
	3/8 - 18	ANSI G	2.5P	Y83664	0.664	0.695	2.56	1.063	0.7	4	
	1/2 - 14	ANSI G	2.5P	Y83665	0.826	0.9	3.13	1.375	0.6875	4	
	3/4 - 14	ANSI G	2.5P	Y83666	1.036	0.904	3.25	1.375	0.9063	4	
	1 - 11.5	ANSI G	2.5P	Y83667	1.297	1.079	3.75	1.75	1.125	4	

Unit : inch

	Size	Class	Chamfer	Code No.	Basic major diameter	^{*6} ℓ_g	L	ℓ	D_s	Number of flutes	*1 Blank type
	1/8 - 27	ANSI G	2.5P	Y89641	0.398	0.474	2.13	0.75	0.4375	4	Ua
	1/4 - 18	ANSI G	2.5P	Y89643	0.529	0.687	2.44	1.063	0.5625	4	
	3/8 - 18	ANSI G	2.5P	Y89644	0.664	0.695	2.56	1.063	0.7	4	
	1/2 - 14	ANSI G	2.5P	Y89645	0.826	0.9	3.13	1.375	0.6875	4	
	3/4 - 14	ANSI G	2.5P	Y89646	1.036	0.904	3.25	1.375	0.9063	5	

Pipe Taps for NPT Threads

For American Taper Pipe Threads

NPT



Overall length	Length of thread part	Length of chamfer part	Shank diameter
L	ℓ	ℓ_c	D_s

Unit : inch

Size	Class	Chamfer	*2 Code No.	Basic major diameter	*6 ℓ_g	L	ℓ	D_s	Number of flutes	*1 Blank type
1 - 11.5	ANSI G	2.5P	Y83107	1.297	1.079	3.75	1.75	1.125	5	Ua
			Y83107BR							
			Y83157							
			Y83207							
1 1/4 - 11.5	ANSI G	2.5P	Y83108	1.641	1.106	4	1.75	1.305	5	Ua
			Y83108BR							
			Y83158							
			Y83208							
1 1/2 - 11.5	ANSI G	2.5P	Y83109	1.88	1.118	4.25	1.75	1.5	7	Ua
			Y83109BR							
			Y83159							
			Y83209							
2 - 11.5	ANSI G	2.5P	Y83110	2.354	1.102	4.5	1.75	1.875	7	Ua
			Y83110BR							
			Y83160							
			Y83210							

*1 See blank type on page 97.

*2 "BR" of code No. stands for Bright finish taps

*6 ℓ_g : The distance, parallel to the axis, from the small end of thread portion of tap to the gauge plane.

Unit : inch

Size	Class	Chamfer	*2 Code No.	Basic major diameter	*6 ℓ_g	L	ℓ	D_s	Number of flutes	*1 Blank type
1/16 - 27	ANSI G	2.5P	Y83100	0.306	0.472	2.13	0.688	0.3125	4	Ua
			Y83100BR							
1/8 - 27	ANSI G	2.5P	Y83101	0.398	0.474	2.13	0.75	0.4375	4	Ua
			Y83101BR							
			Y83102							
			Y83102BR							
			Y83151							
			Y83151BR							
			Y83152							
			Y83201							
Y83202										
1/4 - 18	ANSI G	2.5P	Y83103	0.529	0.687	2.44	1.063	0.5625	4	Ua
			Y83103BR							
			Y83153							
			Y83153BR							
			Y83203							
3/8 - 18	ANSI G	2.5P	Y83104	0.664	0.695	2.56	1.063	0.7	5	Ua
			Y83104BR							
			Y83154							
			Y83204							
1/2 - 14	ANSI G	2.5P	Y83105	0.826	0.9	3.13	1.375	0.6875	4	Ua
			Y83105BR							
			Y83155							
			Y83205							
3/4 - 14	ANSI G	2.5P	Y83106	1.036	0.904	3.25	1.375	0.9063	5	Ua
			Y83106BR							
			Y83156							
			Y83206							

Pipe Taps for NPTF Dryseal Threads

For American Taper Pipe Threads

NPTF



Pipe Taps for NPS Threads

For American Straight Pipe Threads

NPS



*1 See blank type on page 97.

*2 "BR" of code No. stands for Bright finish taps

*6 l_g : The distance, parallel to the axis, from the small end of thread portion of tap to the gauge plane.

Unit : inch

Size	Class	Chamfer	*2 Code No.	Basic major diameter	*6 l_g	L	l	D_s	Number of flutes	*1 Blank type
1/16 - 27	ANSI G	2.5P	Y83125	0.306	0.472	2.13	0.688	0.3125	4	Ua
			Y83125BR							
1/8 - 27	ANSI G	2.5P	Y83126	0.398	0.474	2.13	0.75	0.4375	4	Ua
			Y83126BR							
			Y83127							
			Y83127BR							
			Y83226							
1/4 - 18	ANSI G	2.5P	Y83128	0.529	0.687	2.44	1.063	0.5625	4	Ua
			Y83128BR							
			Y83228							
3/8 - 18	ANSI G	2.5P	Y83129	0.664	0.695	2.56	1.063	0.7	4	Ua
			Y83129BR							
			Y83229							
1/2 - 14	ANSI G	2.5P	Y83130	0.826	0.9	3.13	1.375	0.6875	4	Ua
			Y83130BR							
			Y83230							
3/4 - 14	ANSI G	2.5P	Y83131	1.036	0.904	3.25	1.375	0.9063	5	Ua
			Y83131BR						4	
			Y83231							
1 - 11.5	ANSI G	2.5P	Y83132	1.297	1.079	3.75	1.75	1.125	5	Ua
			Y83132BR							
			Y83232							
1*1/4 - 11.5	ANSI G	2.5P	Y83133	1.641	1.106	4	1.75	1.305	5	Ua
			Y83133BR							
			Y83233							
1*1/2 - 11.5	ANSI G	2.5P	Y83134	1.88	1.118	4.25	1.75	1.5	6	Ua
			Y83134BR							
			Y83234							
2 - 11.5	ANSI G	2.5P	Y83135	2.354	1.102	4.5	1.75	1.875	7	Ua
			Y83135BR						6	
			Y83235							

*1 See blank type on page 97.

*2 "BR" of code No. stands for Bright finish taps

Unit : inch

Size	Class	Chamfer	*2 Code No.	Basic major diameter	l_g	L	l	D_s	Number of flutes	*1 Blank type
1/8 - 27	ANSI G	5P	Y83301	-	-	2.13	0.75	0.4375	4	Ub
			Y83301BR							
			Y83302							
			Y83302BR							
1/4 - 18	ANSI G	5P	Y83303	-	-	2.44	1.063	0.5625	4	Ub
			Y83303BR							
3/8 - 18	ANSI G	5P	Y83304	-	-	2.56	1.063	0.7	4	Ub
			Y83304BR							
1/2 - 14	ANSI G	5P	Y83305	-	-	3.13	1.375	0.6875	4	Ub
			Y83305BR							
3/4 - 14	ANSI G	5P	Y83306	-	-	3.25	1.375	0.9063	5	Ub
			Y83306BR						4	
1 - 11.5	ANSI G	5P	Y83307	-	-	3.75	1.75	1.125	5	Ub
			Y83307BR							

Pipe Taps for NPSF Dryseal Threads

For American Straight Pipe Threads

NPSF



*1 See blank type on page 97.
*2 "BR" of code No. stands for Bright finish taps

Unit : inch

Size	Class	Chamfer	*2 Code No.	Basic major diameter	l_g	L	l	D_s	Number of flutes	*1 Blank type
1/8 - 27	ANSI G	5P	Y83326	-	-	2.13	0.75	0.4375	4	Ub
			Y83326BR							
			Y83327							
			Y83327BR							
1/4 - 18	ANSI G	5P	Y83328	-	-	2.44	1.063	0.5625	4	Ub
			Y83328BR							
3/8 - 18	ANSI G	5P	Y83329	-	-	2.56	1.063	0.7	4	Ub
1/2 - 14	ANSI G	5P	Y83330	-	-	3.13	1.375	0.6875	4	Ub
			Y83330BR							
3/4 - 14	ANSI G	5P	Y83331	-	-	3.25	1.375	0.9063	5	Ub
			Y83331BR							
1 - 11.5	ANSI G	5P	Y83332	-	-	3.75	1.75	1.125	5	Ub
			Y83332BR							

Overall length	Length of thread part	Length of chamfer part	Shank diameter
L	l	l_c	D_s

AR-D HSS Industrial Quality HSS Adjustable Round Dies

For Unified threads



Vanadium High Speed Steel Dies

YMW round adjustable dies are manufactured on state of the art machining centers for the highest quality dies possible.

※ See blank type on page 69.

Unit : inch

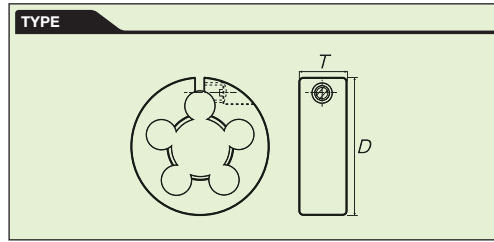
Size	Class	Code No.	D	T	Number of chip holes
No.5 - 40UNC	2A	Y60365	13/16"	1/4"	3
No.5 - 44UNF	2A	Y60366	13/16"	1/4"	3
No.6 - 32UNC	2A	Y60367	13/16"	1/4"	3
		Y60368	1"	3/8"	
No.6 - 40UNF	2A	Y60370	13/16"	1/4"	3
No.8 - 32UNC	2A	Y60372	13/16"	1/4"	3
		Y60373	1"	3/8"	
No.8 - 36UNF	2A	Y60374	13/16"	1/4"	3
No.10 - 24UNC	2A	Y60376	13/16"	1/4"	4
		Y60377	1"	3/8"	
No.10 - 32UNF	2A	Y60379	13/16"	1/4"	4
		Y60380	1"	3/8"	
No.12 - 28UNF	2A	Y60383	13/16"	1/4"	4
No.12 - 24UNC	2A	Y60381	13/16"	1/4"	4
		Y60382	1"	3/8"	
1/4 - 20UNC	2A	Y60333	13/16"	1/4"	4
		Y60334	1"	3/8"	
		Y60335	1-1/2"	1/2"	
1/4 - 28UNF	2A	Y60336	13/16"	1/4"	4
		Y60337	1"	3/8"	
		Y60338	1-1/2"	1/2"	
5/16 - 18UNC	2A	Y60339	13/16"	1/4"	5
		Y60340	1"	3/8"	
		Y60341	1-1/2"	1/2"	
5/16 - 24UNF	2A	Y60342	13/16"	1/4"	5
		Y60343	1"	3/8"	
		Y60344	1-1/2"	1/2"	
3/8 - 16UNC	2A	Y60346	1-1/2"	1/2"	4
3/8 - 16UNC	2A	Y60345	1"	3/8"	5
3/8 - 24UNF	2A	Y60347	1"	3/8"	5
		Y60348	1-1/2"	1/2"	
7/16 - 14UNC	2A	Y60349	1"	3/8"	5
		Y60350	1-1/2"	1/2"	
7/16 - 20UNF	2A	Y60351	1"	3/8"	5
		Y60352	1-1/2"	1/2"	
1/2 - 13UNC	2A	Y60353	1-1/2"	1/2"	4
1/2 - 20UNF	2A	Y60354	1-1/2"	1/2"	4

AR-D HSS Industrial Quality HSS Adjustable Round Dies

For Unified threads

Unit : inch

Size	Class	Code No.	D	T	Number of chip holes
9/16 - 12UNC	2A	Y60355	1-1/2"	1/2"	5
9/16 - 18UNF	2A	Y60356	1-1/2"	1/2"	5
5/8 - 11UNC	2A	Y60357	1-1/2"	1/2"	5
		Y60358	2"	5/8"	4
5/8 - 18UNF	2A	Y60359	1-1/2"	1/2"	5
		Y60360	2"	5/8"	4
3/4 - 10UNC	2A	Y60361	2"	5/8"	5
3/4 - 16UNF	2A	Y60362	2"	5/8"	5
7/8 - 9UNC	2A	Y60363	2"	5/8"	6
7/8 - 14UNF	2A	Y60364	2"	5/8"	6



Explanation of icons

High Speed Steel	Oxide and nitride surface toughening treatment	For left-hand screw threads
Cobalt High Speed Steels	Titanium Nitride coating	For synchronized tapping
Powder High Speed Steels	Titanium Carbon Nitride coating	Number of pitches for chamfer part
Ultra micro grain tungsten carbide	Titanium Nitride Aluminum coating	For through hole
Cemented carbide	With oil hole for blind hole tapping	For horizontal blind hole
Alloy tool steels	With oil hole for through hole tapping	For vertical blind hole
Oxide surface treatment	Helix angle of spiral flute	For blind hole
Nitride surface toughening treatment	Helix angle of left-hand spiral flute	

Explanation of dimension series numbers

Overall length	Length of thread part	Length of chamfer part	Length of neck part	Basic major diameter	Shank diameter	Length of square part	Width of square part	Neck diameter
<i>L</i>	<i>l</i>	<i>l_c</i>	<i>l_n</i>	<i>D</i>	<i>D_s</i>	<i>l_k</i>	<i>K</i>	<i>D_n</i>

Ground Thread Tap Limits

In addition to the nominal size and pitch of a tap, there is another important dimensional factor to be considered when selecting a ground thread tap for a given job. This factor is the pitch diameter tap limit, "H" and "L." "H" represents (high) above basic pitch diameter; "L" (low) is below basic pitch diameter. Tap limits have been established to provide a choice in the selection of the tap size best suited to produce the class of thread desired.

Figure 1 illustrates the numbering system and the .0005" diameter increment separation between successive limits. Because the starting point is basic pitch diameter, dividing the limit number by two establishes, in thousandths of an inch, the amount the maximum tap pitch diameter is above basic in the "H" series and the amount the minimum tap pitch diameter is under basic in the "L" series.

Figure 2 illustrates the positioning of the tap limits in relation to the various classes of threads for a 1/4-20 size.

Figure 1

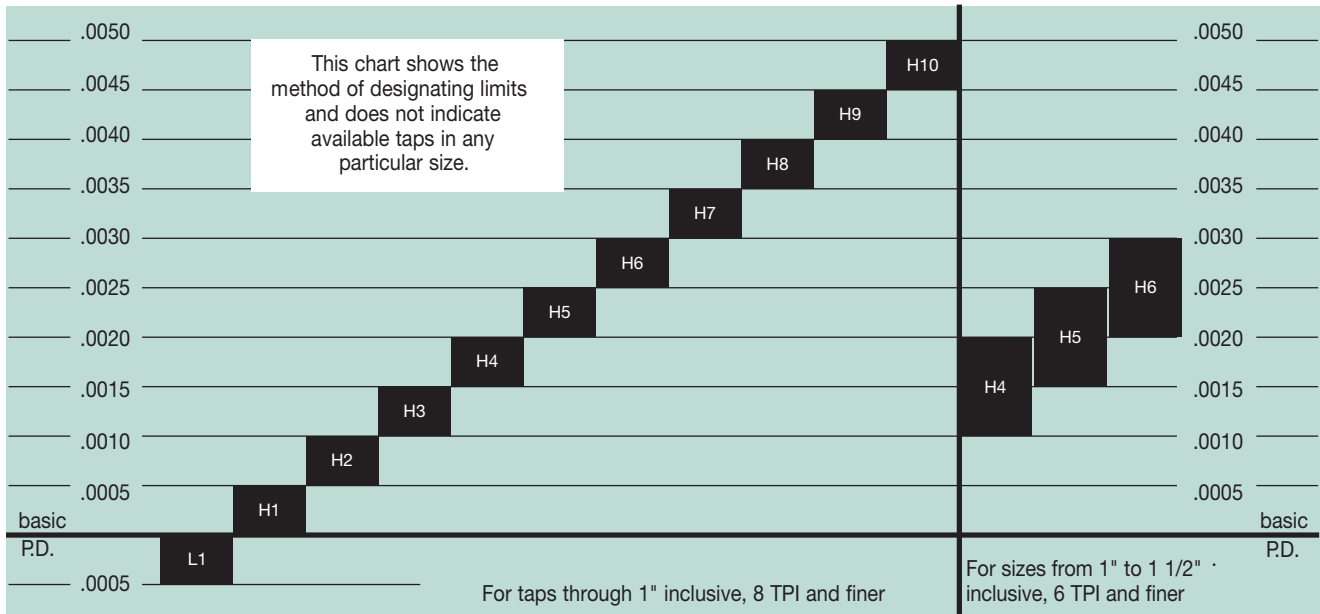
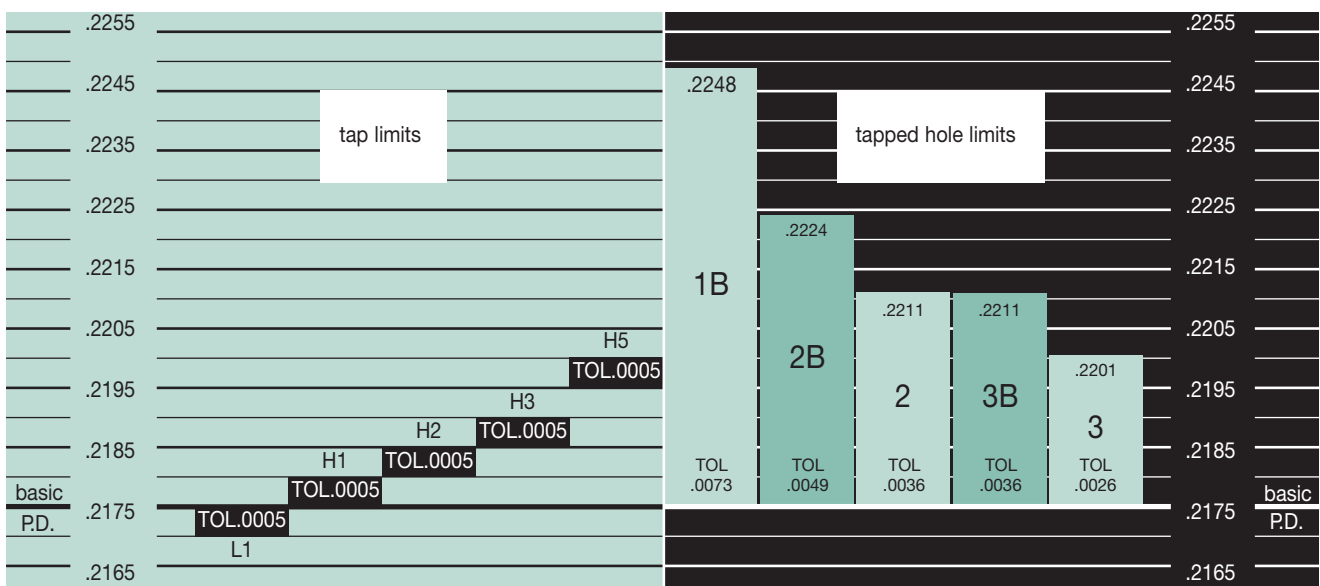


Figure 2

Class of Thread – 1/4 -20 UNC and NC



Tap Drill Recommendations

Tap Size & Pitch		Cutting Taps		Forming Taps		Tap Size & Pitch		Cutting Taps		Forming Taps	
Inch	Metric	Drill Size	Dec. Equiv.	Drill Size	Dec. Equiv.	Inch	Metric	Drill Size	Dec. Equiv.	Drill Size	Dec. Equiv.
0-80		3/64	.0469	54	.0550	5/8-11		17/32	.5312	14.75	.5807
	M1.6 x 0.35	1.25	.0492	1.45	.0571	5/8-18		37/64	.5781	15.25	.6004
	M1.8 x 0.35	1.45	.0571	1.65	.0650		M16 x 2	14.0	.5512	19/32	.5938
1-64		53	.0595	51	.0670		M16 x 1.5	14.5	.5709	15.25	.6004
1-72		53	.0595	51	.0670		M18 x 2.5	15.5	.6102	39/64	.6094
	M2 x 0.4	1.6	.0630	1.8	.0709		M18 x 1.5	16.5	.6496	17.25	.6791
2-56		50	.0700	5/64	.0781	3/4-10		21/32	.6562	45/64	.7031
2-64		50	.0700	47	.0785	3/4-16		11/16	.6875	23/32	.7188
	M2.2 x 0.45	1.75	.0689	2.0	.0787		M20 x 2.5	17.5	.6890	*	*
	M2.5 x 0.45	2.05	.0807	2.3	.0906		M20 x 1.5	18.5	.7283	*	*
3-48		47	.0785	43	.0890		M22 x 2.5	19.5	.7677	*	*
3-56		46	.0810	2.3	.0905		M22 x 1.5	20.5	.8071	*	*
4-40		43	.0890	38	.1015	7/8-9		49/64	.7656	*	*
4-48		42	.0935	2.6	.1024	7/8-14		13/16	.8125	*	*
	M3 x 0.5	2.5	.0984	7/64	.1094		M24 x 3	21.0	.8268	*	*
5-40		38	.1015	33	.1130		M24 x 2	22.0	.8661	*	*
5-44		37	.1040	2.9	.1142	1-8		7/8	.8750	*	*
	M3.5 x 0.6	2.9	.1142	3.2	.1260	1-12		59/64	.9219	*	*
6-32		36	.1065	1/8	.1250		M27 x 3	24.0	.9449	*	*
6-40		33	.1130	3.25	.1280		M27 x 2	25.0	.9843	*	*
	M4 x 0.7	3.3	.1299	3.7	.1476	1 1/8-7		63/64	.9844	*	*
8-32		29	.1360	25	.1495	1 1/8-12		1 3/64	1.0469	*	*
8-36		29	.1360	24	.1520		M30 x 3	26.5	1.0433	*	*
	M4.5 x 0.75	3.7	.1476	4.1	.1614		M30 x 2	28.0	1.1024	*	*
10-24		26	.1470	11/64	.1719	1 1/4-7		1 7/64	1.1094	*	*
10-32		21	.1590	16	.1770	1 1/4-12		1 11/64	1.1719	*	*
	M5 x 0.8	4.2	.1654	14	.1820		M33 x 3	29.5	1.1614	*	*
12-24		16	.1770	8	.1990		M33 x 2	31.0	1.2205	*	*
12-28		15	.1800	7	.2010	1 3/8-6		1 7/32	1.2188	*	*
	M6 x 1	5.0	.1969	7/32	.2188	1 3/8-12		1 19/64	1.2969	*	*
1/4-20		7	.2010	1	.2280		M36 x 4	32.0	1.2598	*	*
1/4-28		3	.2130	15/64	.2340		M36 x 3	33.0	1.2992	*	*
	M7 x 1	6.0	.2362	F	.2570	1 1/2-6		1 11/32	1.3438	*	*
5/16-18		F	.2570	L	.2900	1 1/2-12		1 27/64	1.4219	*	*
5/16-24		I	.2720	M	.2950		M39 x 4	35.0	1.3780	*	*
	M8 x 1.25	6.7	.2638	7.4	.2913		M39 x 3	36.0	1.4173	*	*
	M8 x 1	7.0	.2756	19/64	.2969						
3/8-16		5/16	.3125	S	.3480						
3/8-24		Q	.3320	T	.3580						
	M10 x 1.5	8.5	.3346	U	.3680						
	M10 x 1.25	8.7	.3425	9.4	.3701						
7/16-14		U	.3680	Y	.4040						
7/16-20		25/64	.3906	Z	.4130						
	M12 x 1.75	10.2	.4016	11.2	.4409						
	M12 x 1.25	10.8	.4252	11.5	.4528						
1/2-13		27/64	.4219	15/32	.4682						
1/2-20		29/64	.4531	12.25	.4823						
	M14 x 2	12.0	.4724	33/64	.5156						
9/16-12		31/64	.4844	17/32	.5312						
9/16-18		33/64	.5156	13.5	.5315						

■ metric
 ■ fractional
 ■ wire gage
 ■ letter size

* Contact Technical Service for recommendations.
Hole sizes shown may not suit UNJ and MJ hole requirements.

Pipe Taps – NPT, NPTF, NPSM, NPSC, NPSF

Nominal Pipe Tap Size	NPT & NPTF		NPSM	NPSC	NPSF
	Without Reamer	With Reamer			
1/16-27	C (.242)	A (.234)	—	.250	D (.246)
1/8-27	Q (.332)	21/64	T (.358)	Q (.332)	R (.339)
1/4-18	7/16	27/64	15/32	7/16	7/16
3/8-18	9/16	9/16	.603**	37/64	37/64
1/2-14	45/64	11/16	19.0 mm	18.0 mm	18.0 mm
3/4-14	29/32	57/64	61/64	59/64	59/64
1-11 1/2	1 9/64	1 1/8	1 13/64	1 5/32	1 5/32
1 1/4-11 1/2	1 31/64	1 15/32	1 35/64	1 1/2	—
1 1/2-11 1/2	1 23/32	1 45/64	1 25/32	1 47/64	—
2-11 1/2	2 3/16	2 11/64	2 1/4	2 13/64	—

**special

Tap Drill Recommendations

Recommended Minor Diameters and Tap Drills for STI

Nominal Size STI	Threads per Inch		Aluminum Recommended Drill		Plastic - Steel - Magnesium Recommended Drill	
	NC UNC	NF UNF	Nominal Size	Dec. Equivalent	Nominal Size	Dec. Equivalent
2	56	—	3/32	.0938	41	.0960
4	40	—	31	.1200	31	.1200
6	32	—	26	.1470	25	.1495
8	32	—	17	.1730	16	.1770
10	24	—	13/64	.2031	5	.2055
10	—	32	7	.2010	13/64	.2031
1/4	20	—	H	.2660	H	.2660
1/4	—	28	G	.2610	6.7MM	.2638
5/16	18	—	Q	.3320	Q	.3320
5/16	—	24	21/64	.3281	21/64	.3281
3/8	16	—	X	.3970	X	.3970
3/8	—	24	25/64	.3906	25/64	.3906
7/16	14	—	29/64	.4531	29/64	.4531
7/16	—	20	29/64	.4531	29/64	.4531
1/2	13	—	33/64	.5156	17/32	.5312
1/2	—	20	33/64	.5156	17/32	.5312

Surface Treatment

The best surface treatment is applied to each tap depending on the tapping purpose. Characteristics and effectiveness of surface treatment are introduced at next section.

Oxidizing

This treatment was proceed by using HOMO furnace of LEED AND NORTHUP company USA in 1938, and it is called HOMO treatment. This treatment is also called vapor treatment and steam treatment. Through this treatment, Fe3O4 layer of blue black color is produced over the tool surface.

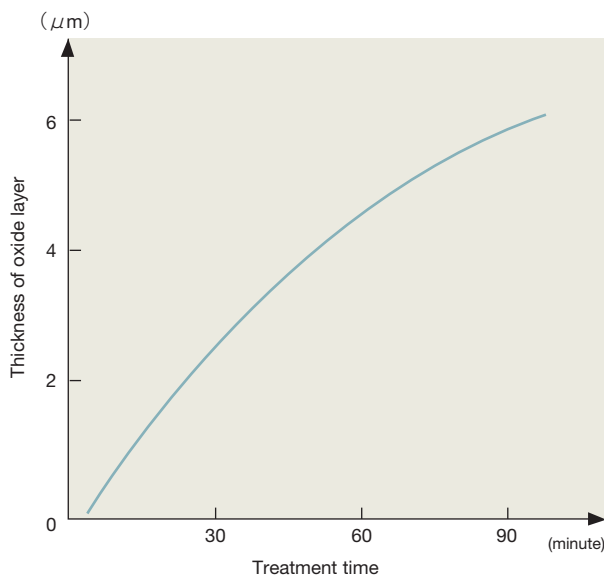
Oxidization treatment produces porous layer an tool's surface. This porous layer working as oil pocket keeps to reduce friction, to avoid welding and to improve the surface roughness of internal screw. Moreover, longer tool life is expected because the treatment reduces the remaining stress of HSS tools.

This treatment does not increase the hardness on tool surface. Using the furnace of YAMAWA original design and choosing the proper treatment time, we have been marked good result of oxidizing for YAMAWA HSS tools.

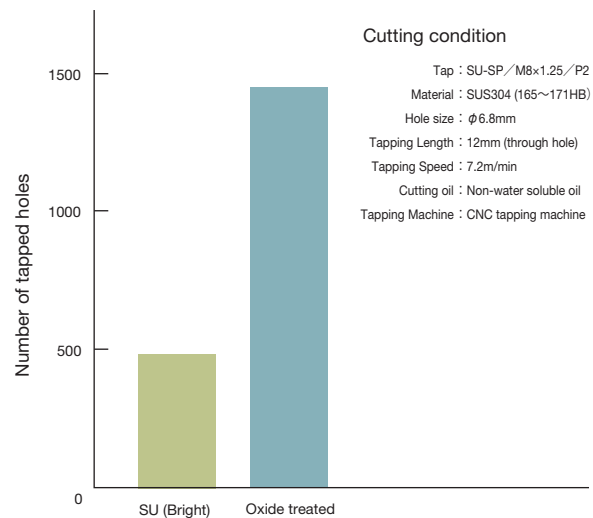
Stainless steel and low carbon steel are the material that as easy to get welding. We are applying this treatment to the special purpose taps for these materials to get good result. Further due to the reduction of friction resistance, this treatment has good result for wide range of steel type material.

We combine oxidizing with nitriding for the taps designed for such steel and alloy tool steel. This double treatment how work good reputation of the market.

Thickness of oxide layer and the time of treatment



Efficiency of oxide treatment



Surface Treatment

The best surface treatment is applied for each tap depending on the tapping purpose. Now, characteristics and effectiveness of surface treatment are introduced at next section.

Nitriding

In this treatment, we have Nitrogen and Carbon soak into the surface of HSS tools, and react with chemical of HSS material to react hard nitride. There are 3 method in the treatment, as composition gas method, salt bath nitride method and ion nitride method.

Salt bath nitride treatment is shifted into gas nitride treatment method because of cyanic environmental pollution.

The temperature of treatment is 500 to 550 degree. Hardness and depth of the treatment can be controlled by active nitrogen concentration and reaction time.

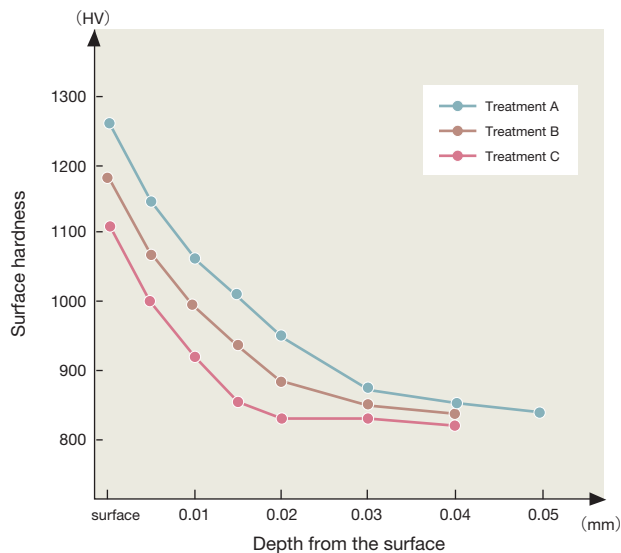
The high hardness of tool surface minimize chemical attraction result is less welding and the resulting of friction resistance Great improvement is expected in tool's performance.

We have found out the best combinations of hardness and toughness through our treatment technology

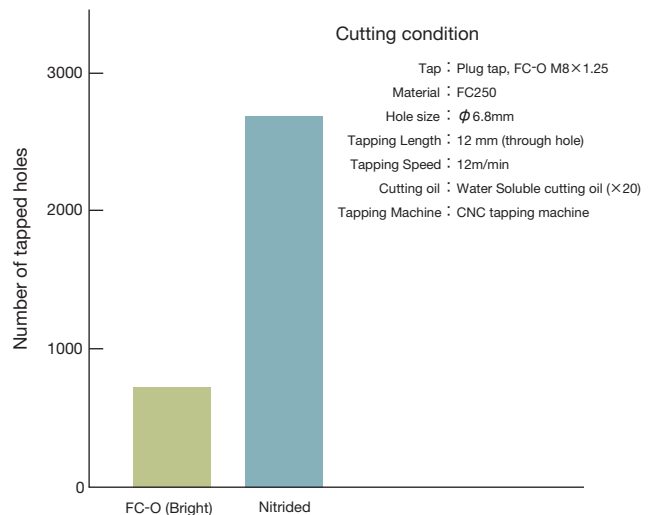
The nitriding treatment will be widely applicable to workpiece materials such as gray cast irons, special cast irons, aluminum diecastings with higher silicone content, copper alloys, and resinoids (plastics), these materials produce small segmental chips and are very abrasive.

We combine nitrogen and oxidizing for comparatively sticky material such as high carbon steel and refined alloy steel. This double treatment improve the chipping resistance and have won good reputation.

Depth and hardness of Nitride Surface Treatment



Efficiency of Nitride Treatment



Surface Treatment

The best surface treatment is applied for each tap depending on the tapping purpose. Now, characteristics and effectiveness of surface treatment are introduced at next section.

High speed cutting and hard-to-machine cutting are the recent technology. To meet this tendency, the hard layer coating by vapor deposition over tool's surface has become popular. There are two coating methods, CVD and PVD.

PVD is mainly used for tap.

Physical Vapor Deposition

Inside of the container of high vacuum, are heat vapor deposition material and vapor it. And we vapor deposit particles ionized by electric discharge on tool's surface.

Due to its low reaction temperature (lower than 500°C), PVD makes little change of shape and hardness to HSS tools.

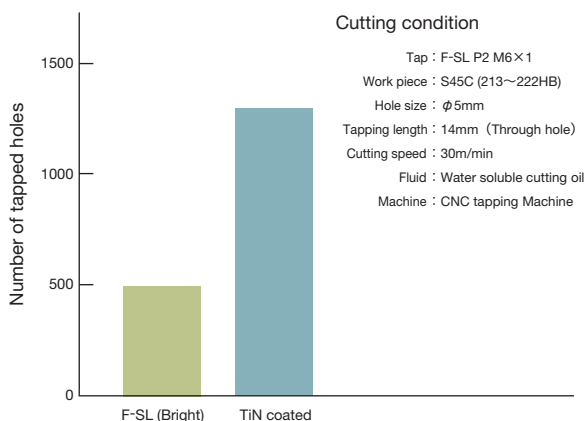
We have adopted iron plating method, and are coating thin layer (1-4um) over our HSS and carbide tools. This layer processed by this method is very high in its adherence and its wear resistance.

The features and classification of coating

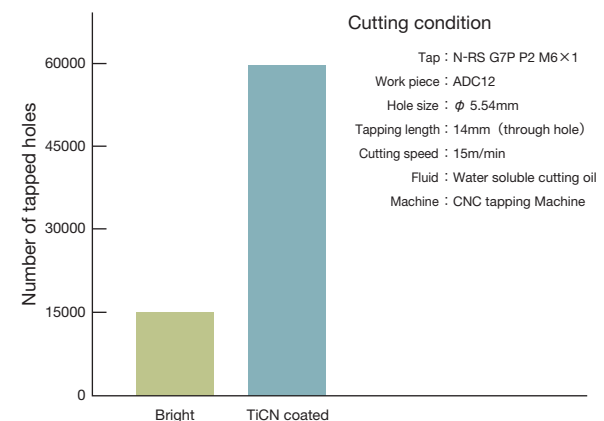
Classification	Titanium nitride (TiN)	Titanium carbonitride (TiCN)	Titanium nitride aluminum (TiAlN)	Hard chromium plating (CrN)
Features				
Vickers Hardness	2000~2400	3000~3500	2300~2700	1800~2200
Wear resistance	Good	Excellent	Excellent	Normal
Welding resistance	Good	Good	Good	Excellent
Heat resistance	Good	Normal	Excellent	Excellent
Acid resistance	Good	Normal	Excellent	Good
Slippery	Good	Excellent	Good	Excellent
Color	Gold	Blue Dray Violet	Violet	Silver
Workpiece materials	Carbon Steels Aluminum forging	Carbon Steels Hard Steels Stainless Steels Aluminum forging Cast Irons Brass · Bronze	Stainless Steels Cast Irons	Copper

Note: Evaluation (tri-level) of characteristic features is just comparative of these four coatings, TiN, TiCN, TiAlN, and CrN, in the table. These coatings have great advantages of wear resistance, welding resistance, and reduced friction resistance. The values of vickers hardness are also higher than the heat treatment or nitriding of HSS cutting tools from the table.

The efficiency of TiN coating



The efficiency of TiCN coating



About combination use of machines, holders, and taps

The function and aspect of machine feed system

Fully synchronous feed (Rigid) system

Since spindle revolution and feed are synchronizing, perfect feed is expected.

Master lead screw feed system

Better-feed condition is expected because the tap is fed by master lead screw shaft that same pitch as this tap.

Gear feed system

The tap is fed as same pitch itself by the combinations of gears. This is also better-feed condition that is expected.

Asynchronous feed system by approximation

It is possible to set the values of spindle rotation and feed independently, but no inspection and control checking system are equipped that is unable to build complete feed system.

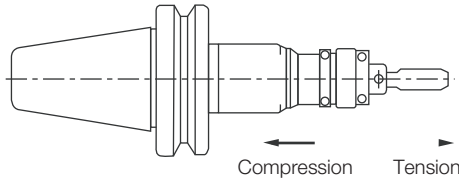
Hydraulic or Pneumatic pressure feed system

Feed is controlled by pressure regulation system, however, it is very hard to get optimum condition that usually makes results miss feeding.

Manual feed

Feed is controlled by worker that is very hard to keep stable amount of feed.

HOLDERS aspects



Spring direction

Complete fixed holder type

The tap is completely mounted with no clearance gap at collet and holder.

Adjustable spring floating holder (Tension & Compression)

Machine feed and tap's pitch errors are corrected by two types of spring system, Vertical tap's tensional direction and Vertical tap's compressional direction.)

Types for characteristics of self-guidance behavior tapping

Eccentric thread relief (no width of margin)

Cutting and machining performance are very high for this type; however, fully synchronous machining system with fixing holder is needed.
Example: "High speed tapping" and "fully synchronous tapping."

Con-eccentric thread relief (margin and thread relief)

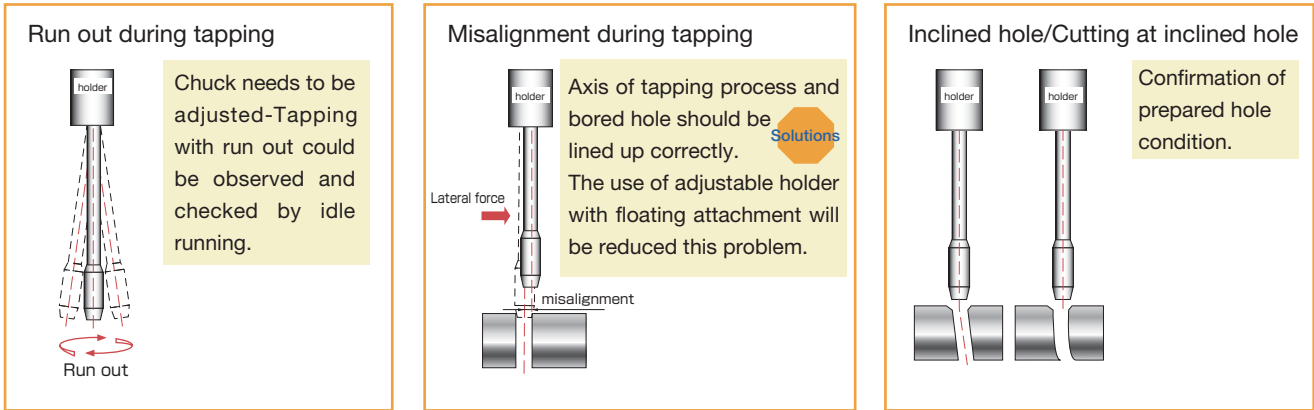
The combination of nice portion of margin and chamfer relief helps to make appropriate tap guidance.

Concentric (No relief)

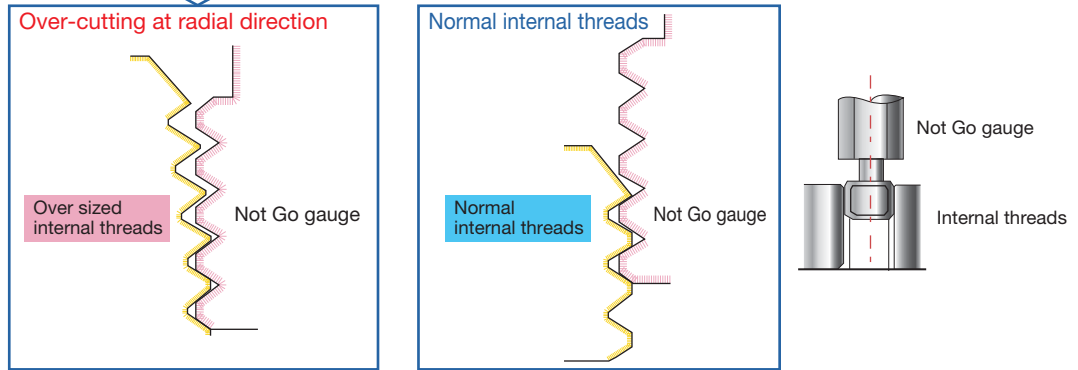
There is no relief at cutting edge that makes easy self-guidance tapping under less synchronous feed condition

The reasons for over-cutting of internal thread and its mechanism

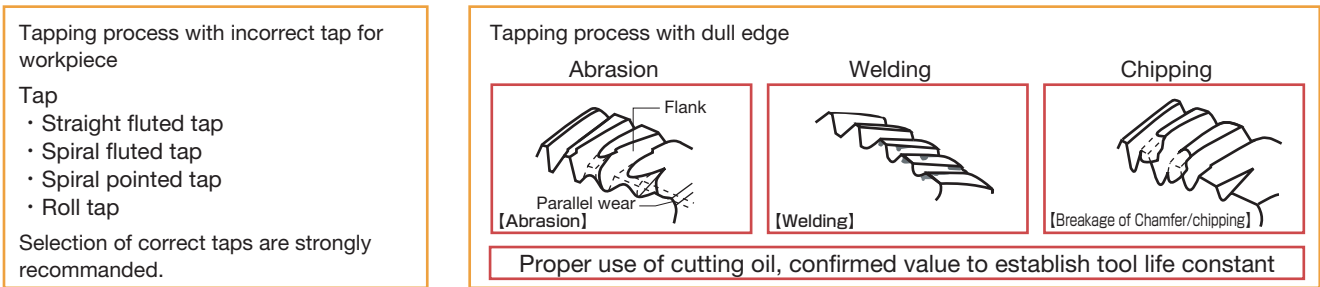
1. Run out, misalignment, inclined hole/cutting at inclined hole → Over-cutting at radial direction



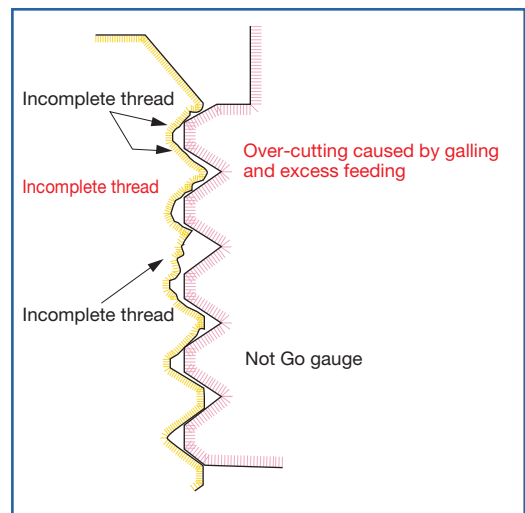
Over-cutting is caused by extra cutting of workpiece at rotational direction. This process is followed along bored hole, which small amount of over-cutting would be observed at bored hole bottom, and over-cutting would be observed at bored hole entrance.



2. Using not suitable selected tap or dull cutting edge might cause galling and over-cutting. → Over-cutting caused by galling and excess cutting



Torn thread is observed at the surface of internal thread. When this situation is progressed, over-cutting of internal thread, deformed threads extraordinary, interrupted threads, and finally led into over-cutting of internal thread will be observed.



The reasons for over-cutting of internal thread and its mechanism

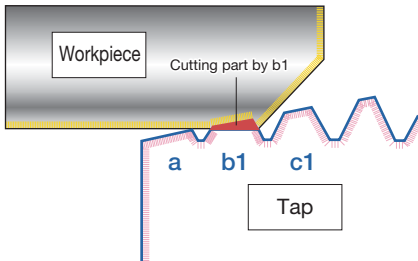
Technical Information

The reasons for over-cutting of internal thread and its mechanism

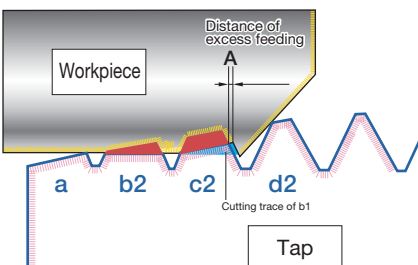
3. Tapping with miss feed condition → over-cutting at axial direction

The mechanism that have done incomplete thread by

① At cutting edge b1, cutting chamfer

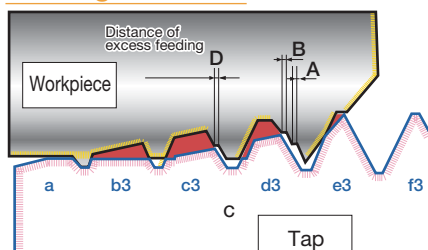


② Position after tapping 1 rotation
Cutting trace(b1) and thread phase of cutting face(c2) are misaligned until the distance of excess feeding A.



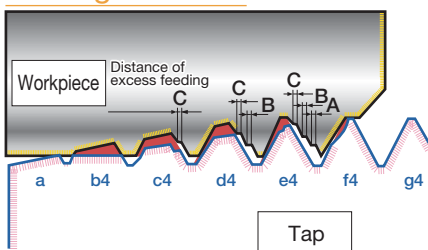
③ Position after tapping 2 rotations.
Cutting chamfer(c3) is misaligned until the distance of excess feeding B and cutting chamfer (d3) is misaligned until the distance of over feeding A+B.

Cutting situation



④ Position after tapping 3 rotations.
Further, misaligned until the distance of excess feeding C

Cutting situation

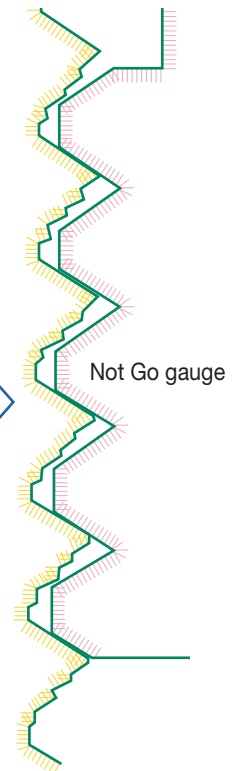


- Feed adjustment is strongly recommended.**
 * (Use of fully synchronous feed system and fixing holder)
 Cutting machine that doesn't have those listed functions such as drilling machine.
 * The balance of main spindle adjustment is strongly recommended
 * Use of floating holder and its adjustment

Solutions

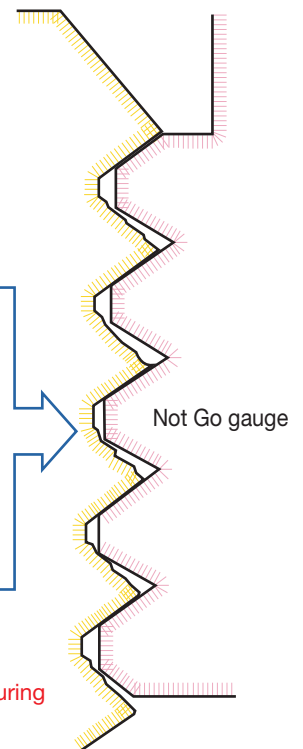
over-cutting thread by excess feeding

Clearance gap is observed at back frank, and extra portion is cut at front frank that makes result incomplete threads



over-cutting thread by slow feeding

This mechanism makes result completely opposite to excess feeding over-cutting internal thread. Clearance gap is observed at front frank and extra portion is cut at back frank.



The reason for over-cutting during tapping process (overview)

- ① tap mounted condition at holder
- ② condition of bored hole
- ③ cutting oil selection
- ④ adjustment of feed balance
- ⑤ proper use of tapping selection

Trouble Shooting

Troubles		Breakage			Excessive wear	
Check point		Prevent excessive cutting torque	Prevent clogging of chips	Tap	Workpiece	Tap
Segments						
Workpiece	Hardness	● Use workpiece which has even structure and hardness.			○ Use workpiece which has even structure and hardness.	
	Shape	● Pay attention for tapping position and material thickness.			● Pay attention for tapping position and material thickness.	
	Bored hole	◎ Provide bigger bored holes. ● Prevent work hardening.			○ Provide bigger bored holes. ● Provide countersinking on hole entrance. ○ Prevent work hardening.	
		◎ Provide deeper tapping hole. ● Prevent slanting of hole.				
Machine		● Avoid inconsistent feed. ● Adjust feed stroke.				
Jigs, Holders		● Use tap holder of floating type. ◎ Use tap holder with torque limiter.				
Cutting condition		○ Reduce cutting speed.			○ Reduce cutting speed.	
Lubricant		● Use the other cutting oil which prevents cold welding. ● Use non soluble type cutting oil.			● Provide proper timing for changing or filling-up of cutting oil. ● Prevent mixing of other oil into cutting oil. ● Use other cutting oil which prevents cold welding. ● Use cutting oil of non soluble type. ● Adjust flow of cutting oil and method of lubrication.	
On process			● Remove unnecessary chips during tapping. ● Provide bigger space for chips disposal.			
Tap	Selection			● Use PO tap(through hole). ● Use SP tap(blind hole). ● Use Roll tap.		
	Design		● Provide bigger chiproom.	● Change material of taps. ● Provide proper hardness on taps.		● Use set tap. ● Change material of taps. ● Provide proper hardness on taps.
		● Reconsider length of cutting chamfer. ● Use set tap.				● Reconsider length of cutting chamfer. ● Provide nitride on taps.
Re-grind	● Be careful about burning during re-sharpening. ● Provide proper land.				● Be careful about burning during re-sharpening. ● Increase re-sharpening frequency.	

Undersize cutting of internal thread			Bad surface, surface damaged		
Improve cutting performance	Selection and design of tap	Work material	Improve cutting performance	Prevent welding	Check cutting condition
		● Check workmaterial.			● Provide proper hardness on workpiece material.
		● Pay attention for tapping position and material thickness.			● Pay attention for tapping position and material thickness.
● Adopt bigger tapping hole. ● Prevent work hardening of material.					
			● Prevent work hardening of material.	● Adopt bigger tapping hole.	○ Prevent slanting of hole.
					○ Feed according to pitch.
					● Use the tap holder of floating type. ● Prevent vibrating of axis of tap ● Prevent centering -off with work piece.
			● Reduce cutting speed.		
			● Provide proper timing for changing or filling-up of cutting oil. ● Prevent mixing of other oil into cutting oil. ● Use other cutting oil which prevents cold welding. ● Use cutting oil with non soluble type. ● Adjust flow of cutting oil and method of lubrication.		
				● Remove unnecessary chips around tapping.	
● Provide Nitride on taps.	○ Use oversize taps.		● Use spiral pointed taps (for through hole).	○ Provide oxide coating on taps.	○ Use oil hole taps.
○ Provide larger cutting angle.	● Adjust relief angle on cutting chamfer. ○ Provide thread relief.		○ Provide larger cutting angle. ● Adjust relief angle on cutting chamfer. ○ Provide more narrow margin.	● Change of no. of flutes on taps.	● Reconsider length of cutting chamfer.
● Increase re-sharpening frequency.			● Increase re-sharpening frequency.	● Provide better surface finishing on flutes.	
			● Provide precise re-sharpening. ● Be careful about burning during re-sharpening.		

Trouble Shooting

Troubles		Over-cutting of internal thread				
Check point		Prevent uneven in feed of tap	Prevent over cutting on thread	Prevent welding	Check cutting condition	Prevent unbalance on entering
Segments						
Workpiece	Hardness	●Use workpiece which has even structure and hardness.				
	Shape					
	Bored hole			●Provide bigger hole.	●Prevent slanting of hole.	●Provide countersinking on the hole entrance.
Machine		●Adjust a feed. ◎Feed according to pitch.				
Jigs, Holders					○Use tap holder of floating type.	◎Prevent vibrating of axis of tap. ○Prevent centering-off with work piece. ●Use tap holder of floating type.
Cutting condition				●Reduce cutting speed.		
Lubricant				●Use other cutting lubricant which prevents cold welding. ●Check the viscosity.		
On process						
Tap	Selection			◎Provide oxide surface treatment. ○Use tap with oil hole.		
	Design		○Provide small cutting angle. ●Adjust chamfer relief angle. ◎Check the width of thread margin.	●Provide short thread length.	●Reconsider number of flutes of tap.	●Reconsider number of flutes of tap.
	Re-grind		●Remove burrs on teeth after re-grinding. ●Provide proper land.		●Provide precise re-sharpening.	◎Care for vibration.

◎ : Most suitable solution

○ : Second most suitable solution

Chipping				Tapping operation	
Prevent clogging of chips	Prevent excessive cutting torque	Improve tapping method	Tap	Prevent clogging of chips	Tap
	● Use workpiece material which has even structure and hardness.				
		○ Pay attention for tapping position and material thickness.		● If possible, use finer pitch tap or shorter tapping length.	
Provide deeper tapping hole(Blind hole).	○ Provide bigger tapping hole. ● Prevent work hardening.	● Prevent slanting of holes.		○ Reduce cutting speed. ○ Provide deeper tapping hole(Blind hole).	
● Provide countersinking on hole the entrance.					
	● Avoid inconsistent feed.				
	○ Use tapping holder with torque limiter.	● Prevent centering-off with workpiece. ● Prevent vibration of axis of tap. ● Use the tap holder of floating type.			● Use the tap holder of floating type. ● Prevent vibrating of axis of tap. ● Prevent centering -off with workpiece.
● Reduce cutting speed.				● Reduce cutting speed.	
	● Use the other cutting oil which prevent cold welding.			● Check the viscosity.	
● Remove unnecessary chips during tapping. ● Provide bigger space for chip disposal.				● Remove unnecessary chips during tapping. ● Provide bigger space for chip disposal.	
			● Use PO taps (Through hole). ● Use SP taps (Blind hole). ● Use Roll tap.		● Use PO taps (Through hole). ● Use SP taps (Blind hole). ● Use Roll tap.
● Provide bigger chip room.			● Change material of tap. ● Provide smaller cutting angle. ● Provide proper hardness.	● Provide bigger chip room. ● Reconsider length of cutting chamfer.	
● Reduce cutting speed. ● Reduce cutting speed. ● Adjust relief angle on cutting chamfer.				○ Use oil hole tap. ● Provide shorter thread length to tap.	
● Be careful about burning during re-sharpening.					

Thread Series

Unified Threads

Unit : mm

Size		Nominal Dia.		Threads per inch														
Column 1	Column 2	inch	mm	Coarse	Fine	Extra Fine	Constant pitch series											
				UNC	UNF	UNEF	4UN	6UN	8UN	12UN	16UN	20UN	28UN	32UN				
No. 0		0.0600	1.524		80													
No. 2	No. 1	0.0730	1.854	64	72													
		0.0860	2.184	56	64													
No. 4	No. 3	0.0990	2.515	48	56													
No. 5		0.1120	2.845	40	48													
		0.1250	3.175	40	44													
No. 6		0.1380	3.505	32	40													UNC
No. 8		0.1640	4.166	32	36													UNC
No.10		0.1900	4.826	24	32													UNF
	No.12	0.2160	5.486	24	28	32												UNEF
1/4		0.2500	6.350	20	28	32									UNC	UNF	UNEF	
5/16		0.3125	7.938	18	24	32								UNC	20	28	UNEF	
3/8		0.3750	9.525	16	24	32								UNC	20	28	UNEF	
7/16		0.4375	11.112	14	20	28								UNC	16	20	28	UNEF
1/2		0.5000	12.700	13	20	28								UNC	16	UNF	UNEF	32
9/16		0.5625	14.288	12	18	24								UNC	16	20	28	32
		0.6250	15.875	11	18	24								UNC	12	16	20	28
3/4	11/16	0.6875	17.462			24								UNC	12	16	20	28
		0.7500	19.050	10	16	20								UNC	12	UNF	UNEF	28
		0.8125	20.638			20								UNC	12	16	UNEF	28
7/8		0.8750	22.225	9	14	20								UNC	12	16	UNEF	28
		0.9375	23.812			20								UNC	12	16	UNEF	28
	13/16	0.8125	20.638			20								UNC	12	16	UNEF	28
1		1.0000	25.400	8	12	20								UNC	UNF	16	UNEF	28
	1 1/16	1.0625	26.988			18								UNC	8	12	16	20
1 1/8		1.1250	28.575	7	12	18								UNC	8	UNF	16	20
	3/16	1.1875	30.162			18								UNC	8	12	16	20
1 1/4		1.2500	31.750	7	12	18								UNC	8	UNF	16	20
	5/16	1.3125	33.338			18								UNC	8	12	16	20
1 3/8		1.3750	34.925	6	12	18								UNC	8	UNF	16	20
	7/16	1.4375	36.512			18								UNC	6	8	12	16
1 1/2		1.5000	38.100	6	12	18								UNC	6	UNF	16	20
	9/16	1.5625	39.688			18								UNC	6	8	12	16
1 5/8		1.6250	41.275			18								UNC	6	8	12	16
	11/16	1.6875	42.862			18								UNC	6	8	12	16
1 3/4		1.7500	44.450	5										UNC	6	8	12	16
	13/16	1.8125	46.038											UNC	6	8	12	16
1 7/8		1.8750	47.625											UNC	6	8	12	16
	15/16	1.9375	49.212											UNC	6	8	12	16
2		2.0000	50.800	4 1/2										UNC	6	8	12	16
	2 1/8	2.1250	53.975											UNC	6	8	12	16
2 1/4		2.2500	57.150	4 1/2										UNC	6	8	12	16
	3/8	2.3750	60.325											UNC	6	8	12	16
2 1/2		2.5000	63.500	4										UNC	6	8	12	16
	5/8	2.6250	66.675											UNC	6	8	12	16
2 3/4		2.7500	69.850	4										UNC	6	8	12	16
	7/8	2.8750	73.025											UNC	6	8	12	16
3		3.0000	76.200	4										UNC	6	8	12	16
	1 1/8	3.1250	79.375											UNC	4	6	8	12
3 1/4		3.2500	82.550	4										UNC	4	6	8	12
	3/8	3.3750	85.725											UNC	4	6	8	12
3 1/2		3.5000	88.900	4										UNC	4	6	8	12
	5/8	3.6250	92.075											UNC	4	6	8	12
3 3/4		3.7500	95.250	4										UNC	4	6	8	12
	7/8	3.8750	98.425											UNC	4	6	8	12
4		4.0000	101.600	4										UNC	4	6	8	12
	1 1/8	4.1250	104.775											UNC	4	6	8	12
4 1/4		4.2500	107.950											UNC	4	6	8	12
	3/8	4.3750	111.125											UNC	4	6	8	12
4 1/2		4.5000	114.300											UNC	4	6	8	12
	5/8	4.6250	117.475											UNC	4	6	8	12
4 3/4		4.7500	120.650											UNC	4	6	8	12
	7/8	4.8750	123.825											UNC	4	6	8	12
5		5.0000	127.000											UNC	4	6	8	12
	1 1/8	5.1250	130.175											UNC	4	6	8	12
5 1/4		5.2500	133.350											UNC	4	6	8	12
	3/8	5.3750	136.525											UNC	4	6	8	12
5 1/2		5.5000	139.700											UNC	4	6	8	12
	5/8	5.6250	142.875											UNC	4	6	8	12
5 3/4		5.7500	146.050											UNC	4	6	8	12
	7/8	5.8750	149.225											UNC	4	6	8	12
6		6.0000	152.400											UNC	4	6	8	12

※ : Please select the first column by priority. And select second column and third column if necessary.

Conversion Table

Threads per inch	Pitch
100	0.2540
80	0.3175
72	0.3528
64	0.3969
60	0.4233
56	0.4536
48	0.5292
44	0.5773
40	0.6350
36	0.7056
32	0.7938
28	0.9071
27	0.9407
24	1.0583
20	1.2700
19	1.3368
18	1.4111
16	1.5875
14	1.8143
13	1.9538
12	2.1167
11 1/2	2.2087
11	2.3091
10	2.5400
9	2.8222
8	3.1750
7	3.6286
6	4.2333
5	5.0800
4 1/2	5.6444
4	6.3500

Dimension table for Metric threads

Dimension table for Metric threads

Unit:mm

nominal size	pitch	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.6	0.7	0.75	0.8	1	1.25	1.5	1.75	2	2.5	3	3.5	4	4.5	5	
1		0.2	0.25																					
1.1		0.2	0.25																					
1.2		0.2	0.25																					
1.4		0.2		0.3																				
1.6		0.2			0.35																			
1.7		0.2			0.35																			
1.8		0.2			0.35																			
2			0.25			0.4																		
2.2			0.25				0.45																	
2.3			0.25			0.4																		
2.5					0.35		0.45																	
2.6					0.35		0.45																	
3					0.35			0.5	0.6															
3.5					0.35				0.6															
4								0.5		0.7	0.75													
4.5								0.5			0.75													
5								0.5			0.75	0.8												
5.5								0.5			0.75		1											
6								0.5			0.75		1											
7								0.5			0.75		1											
8								0.5			0.75		1	1.25										
9								0.5			0.75		1	1.25	1.5									
10								0.5			0.75		1	1.25	1.5									
11								0.5			0.75		1	1.25	1.5									
12								0.5			0.75		1	1.25	1.5	1.75								
13								0.5			0.75		1	1.25	1.5	1.75								
14								0.5			0.75		1	1.25	1.5	1.75	2							
15								0.5			0.75		1	1.25	1.5		2							
16								0.5			0.75		1	1.25	1.5		2							
17								0.5			0.75		1	1.25	1.5		2							
18								0.5			0.75		1	1.25	1.5		2	2.5						
19								0.5			0.75		1	1.25	1.5		2	2.5						
20								0.5			0.75		1	1.25	1.5		2	2.5						
22								0.5			0.75		1	1.25	1.5		2	2.5						
24								0.5			0.75		1	1.25	1.5		2		3					
25													1		1.5		2		3					
26													1		1.5		2		3					
27													1		1.5		2		3					
28													1		1.5		2		3					
30													1		1.5		2		3	3.5				
32													1		1.5		2		3	3.5				
33													1		1.5		2		3	3.5				
34													1		1.5		2		3					
35													1		1.5		2		3					
36													1		1.5		2		3		4			
37															1.5									
38													1		1.5		2		3					
39															1.5		2		3		4			
40															1.5		2		3		4			
42															1.5		2		3		4	4.5		
44															1.5		2		3		4			
45															1.5		2		3		4	4.5		
46															1.5		2		3		4			
48															1.5		2		3		4			5

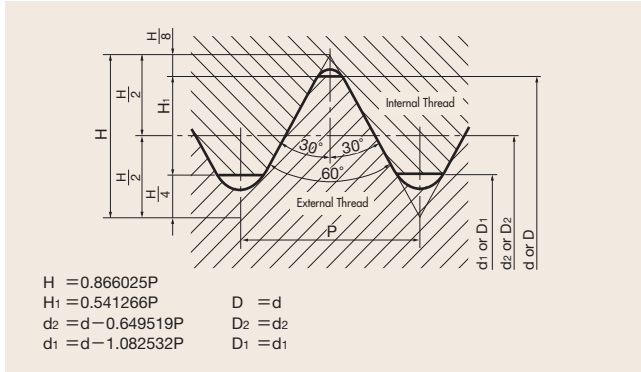
※Letters in red mean Coarse screw threads.

※Please refer to PRAD system page 2 when you'd like to use PRAD system.

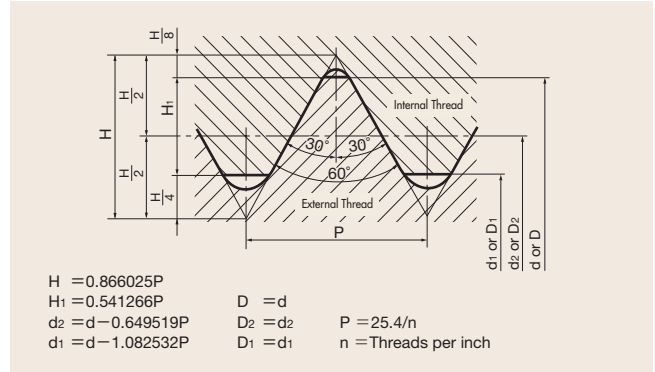
※Please contact our sales staff if you require the thread shown in above table, but its thread is not listed in this catalog.

Basic profile of threads

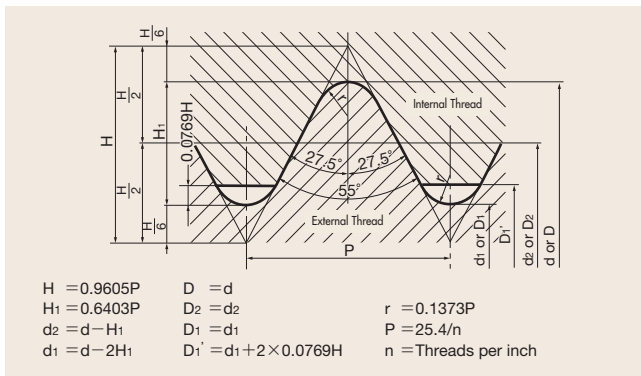
Metric Screw Threads (M)



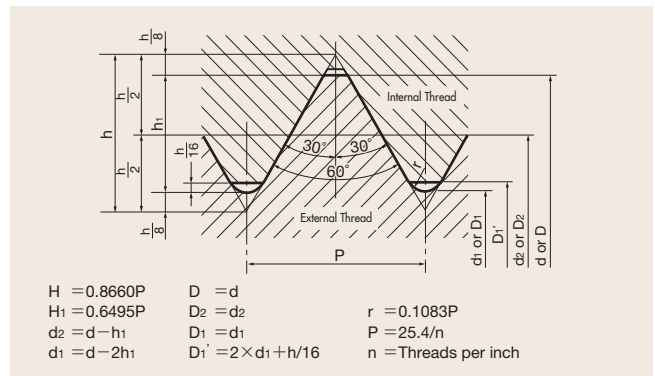
Unified Screw Threads (UNC, UNF, etc.)



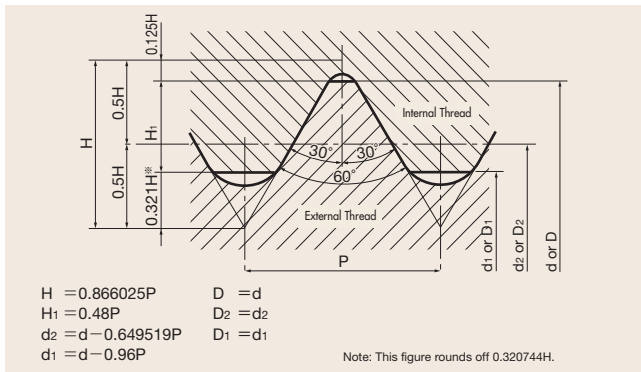
Whitworth Screw Threads (W)



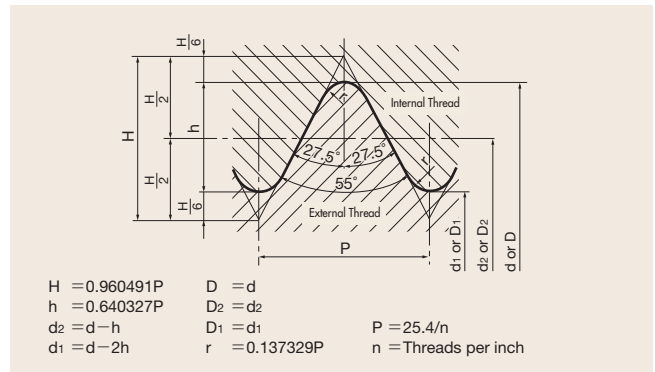
Screw Threads for Sewing Machine (SM)



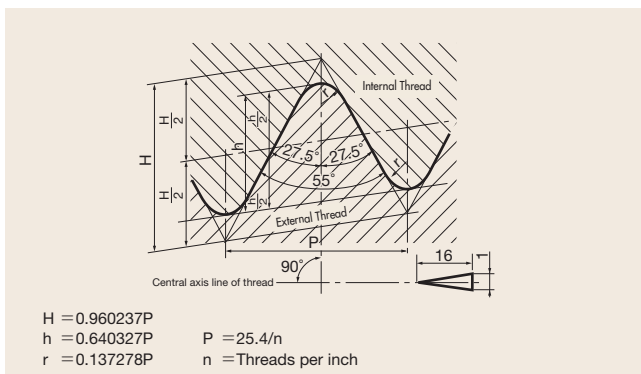
Miniature Screw Threads (S)



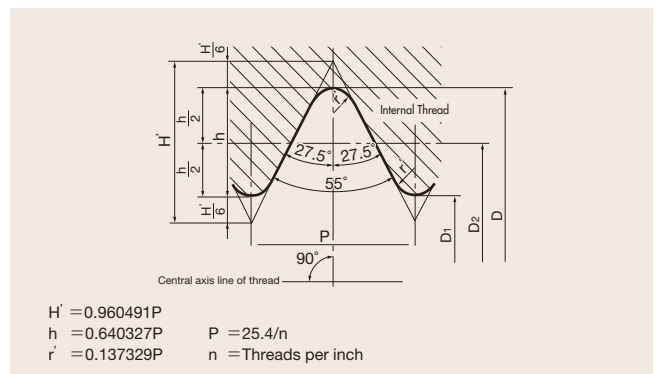
Parallel Pipe Threads (G, PF)



Taper Pipe Threads (R, Rc, PT)

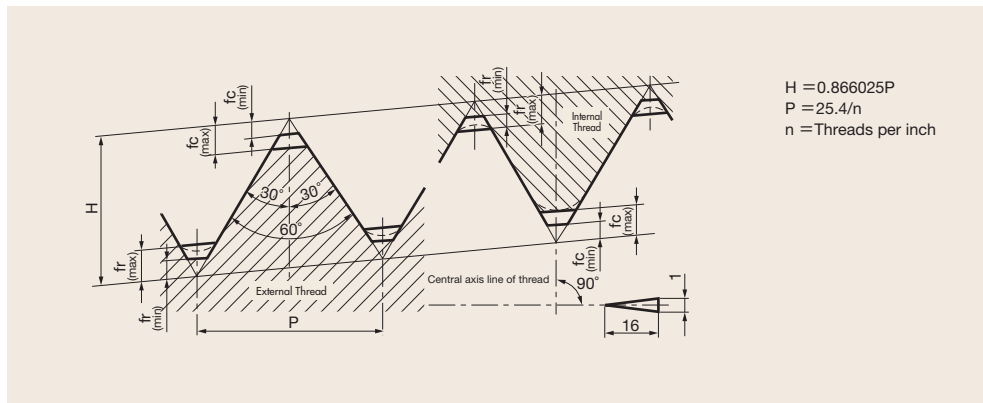


Taper Pipe Threads (Parallel) (Rp, PS)



Basic profile of threads

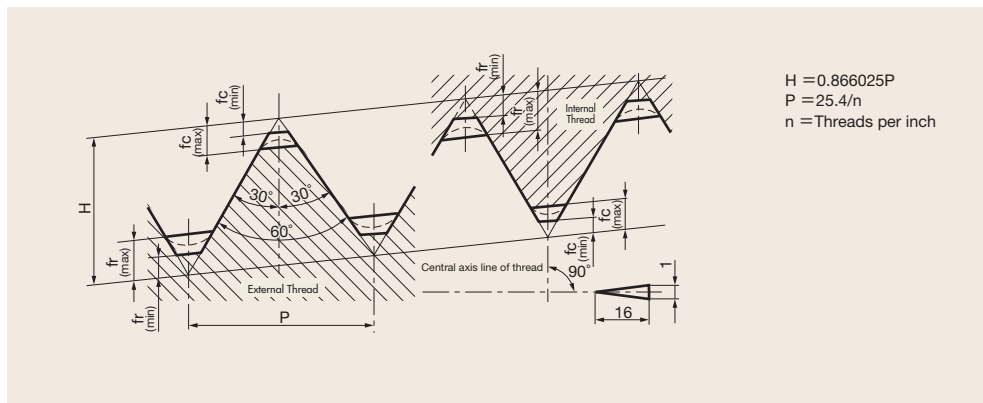
American Standard Taper Pipe Threads (NPT)



Truncation Unit : mm

Threads per inch	Section	fc = fr
27	Max.	0.096P
	Min.	0.033P
18	Max.	0.088P
	Min.	0.033P
14	Max.	0.078P
	Min.	0.033P
11.5	Max.	0.073P
	Min.	0.033P
8	Max.	0.062P
	Min.	0.033P

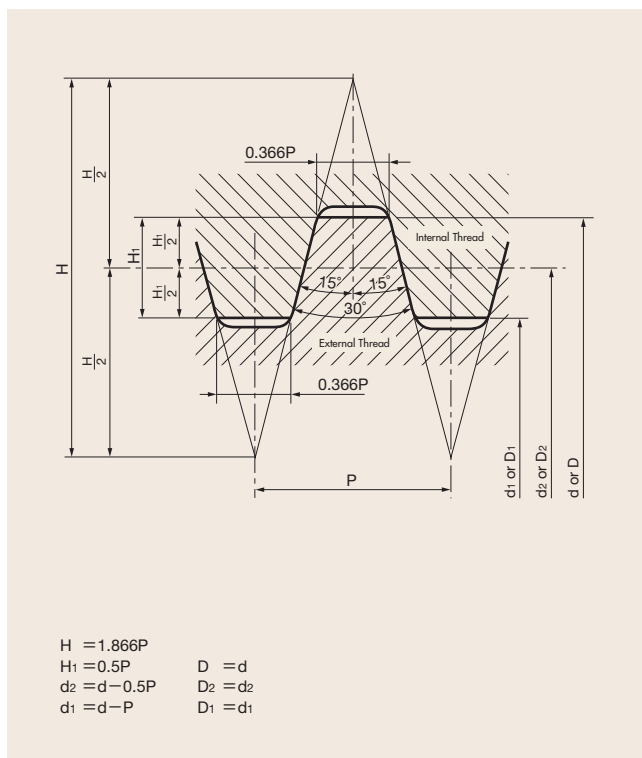
Dryseal American Standard Taper Pipe Threads (NPTF)



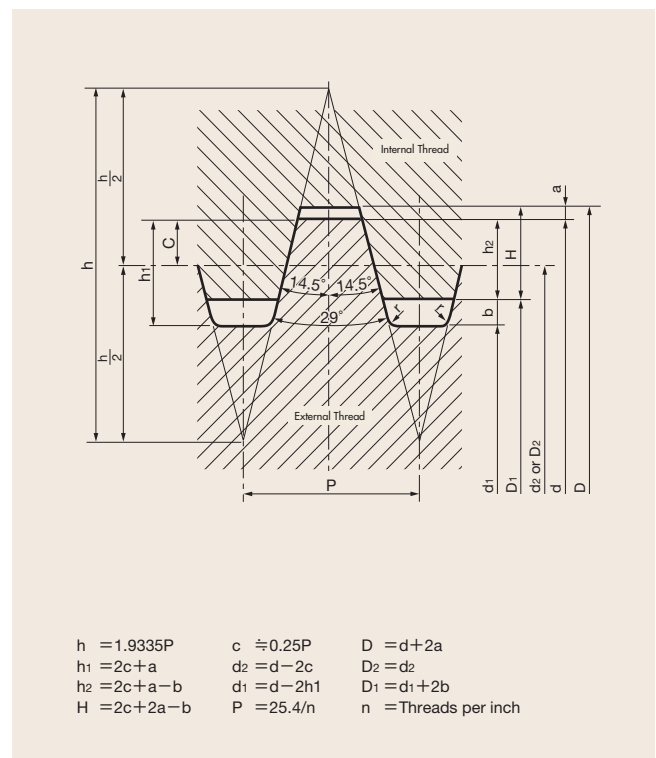
Truncation Unit : mm

Threads per inch	Section	fc	fr
27	Max.	0.094P	0.140P
	Min.	0.047P	0.094P
18	Max.	0.078P	0.109P
	Min.	0.047P	0.078P
14	Max.	0.060P	0.085P
	Min.	0.036P	0.060P
11.5	Max.	0.060P	0.090P
	Min.	0.040P	0.060P
8	Max.	0.055P	0.076P
	Min.	0.042P	0.055P

Metric Trapezoidal Screw Threads (Tr)



29° Trapezoidal Screw Threads (Tw)



Basic profile of threads

Technical Information

Symbols for Standard Threads

USA

Thread symbols	Kinds of threads	Related Standards
UN	Unified inch screw threads	ANSI B 1.1
UNC/UNRC	Unified coarse thread series	ANSI B 1.1
UNF/UNRF	Unified fine thread series	ANSI B 1.1
UNEF/UNREF	Unified extra-fine thread series	ANSI B 1.1
4UN/4UNR	Unified constant-pitch series with 4-threads	ANSI B 1.1
6UN/6UNR	Unified constant-pitch series with 6-threads	ANSI B 1.1
8UN/8UNR	Unified constant-pitch series with 8-threads	ANSI B 1.1
12UN/12UNR	Unified constant-pitch series with 12-threads	ANSI B 1.1
16UN/16UNR	Unified constant-pitch series with 16-threads	ANSI B 1.1
20UN/20UNR	Unified constant-pitch series with 20-threads	ANSI B 1.1
28UN/28UNR	Unified constant-pitch series with 28-threads	ANSI B 1.1
32UN/32UNR	Unified constant-pitch series with 32-threads	ANSI B 1.1
UN/UNRS	Unified threads of special diameters, pitches and lengths of engagement	ANSI B 1.1
NR	American National thread with a0.108p to 0.144p controlled root radius	MIL-B-7838
Acme	Acme screw threads	ANSI B 1.5
Stub-Acme	Stub Acme screw threads	ANSI B 1.8
Butt	Buttress inch screw threads	ANSI B 1.9
UNM	Unified miniature thread series	ANSI B 1.10
NC5	Class 5 interference-fit thread	ANSI B 1.12
NPT	American Standard taper pipe threads for general use	ANSI/ASME B 1.20.1
NPTR	American Standard taper pipe threads for railing joints	ANSI/ASME B 1.20.1
NPSC	American Standard straight pipe thread in pipe couplings	ANSI/ASME B 1.20.1
NPSL	American standard straight pipe threads for loose-fitting mechanical joints with locknuts	ANSI/ASME B 1.20.1
NPSM	American Standard straight pipe threads for free-fitting mechanical joints for fixture	ANSI/ASME B 1.20.1
NPSH	American Standard straight pipe threads for loose-fitting mechanical joints for hose couplings	ANSI/ASME B 1.20.1
NPTF	Dryseal American Standard taper pipe threads	ANSI B 1.20.3, 1.20.4
F-PTF	Dryseal fine taper pipe thread series	ANSI B 1.20.3, 1.20.4
PTF-SAE SHORT	Dryseal SAE short taper pipe threads	ANSI B 1.20.3, 1.20.4
PTF-SPL SHORT	Dryseal special short taper pipe threads	ANSI B 1.20.3, 1.20.4
PTF-SPL EXTRA SHORT	Dryseal special extra short taper pipe threads	ANSI B 1.20.3, 1.20.4
SPL-PTF	Dryseal special taper pipe threads	ANSI B 1.20.3, 1.20.4
NPSI	Dryseal American Standard intermediate internal straight pipe threads	ANSI B 1.20.3, 1.20.4
NPSF	Dryseal American Standard fuel internal straight pipe threads	ANSI B 1.20.3, 1.20.4
ANPT	Aeronautical National Form taper pipe threads	MIL-P-7150
NGO	National gas outlet threads	ANSI B 57.1
NGS	National gas straight threads	ANSI B 57.1
NGT	National gas taper threads	ANSI B 57.1
SGT	Special gas taper threads	ANSI B 57.1
NH	Hose coupling and firehose coupling threads	USAS B 2.4
NHR	Hose coupling and firehose coupling threads	USAS B 2.4
NPSH	Hose coupling and firehose coupling threads	USAS B 2.4
AMO	American standard microscope objective threads	ANSI B 1.11

Symbols for Standard Threads

Japan

Thread symbols	Kinds of threads	Related Standards
M	Metric screw threads, Coarse series	JIS B 0205-1~0205-4
M	Metric screw threads, Fine series	JIS B 0205-1~0205-4
S	Miniature screw threads	JIS B 0201
UNC	Unified threads, Coarse series	JIS B 0206
UNF	Unified threads, Fine series	JIS B 0208
Tr	Metric Trapezoidal screw threads	JIS B 0216
R	Taper external pipe threads	JIS B 0203(JIS main book)
Rc	Taper internal pipe threads	JIS B 0203(JIS main book)
Rp	Parallel internal pipe threads	JIS B 0203(JIS main book)
G	Parallel pipe threads	JIS B 0202(JIS main book)
PF	Parallel pipe threads	JIS B 0202(JIS Appendix)
PT	Taper pipe threads	JIS B 0203(JIS Appendix)
PS	Taper pipe threads (Parallel)	JIS B 0203(JIS Appendix)
CTC	Screw threads for rigid metal thin-walled conduit and fitting	JIS C 8305
CTG	Screw threads for rigid metal thick-walled conduit and fitting	JIS C 8305
BC	Cycle threads	JIS B 0225
SM	Screw threads for sewing machine	JIS B 0226(2001.2.20repeal)
E	Electric socket and lamp-base threads	JIS C 7709
V	Tyre valve threads of automobile	JIS D 4207
CTV	Tyre valve threads of cycle	JIS D 9422

ISO

Thread symbols	Kinds of threads	Related Standards
M	ISO Metric threads	ISO 261
S	ISO Miniature screw threads	ISO R 1501
Tr	ISO Metric trapezoidal screw threads	ISO 2902
UNC	ISO Unified threads, coarse series	ISO 263
UNF	ISO Unified threads, fine series	ISO 263
UNEF	ISO Unified threads, extra fine series	ISO 263
UN	ISO Unified threads, constant pitch series	ISO 263
UNJC	Unified threads (MIL Standard) coarse	ISO 3161
UNJF	Unified threads (MIL Standard) fine	ISO 3161
UNJEF	Unified threads (MIL Standard) extra fine	ISO 3161
UNJ	Unified threads (MIL Standard) constant pitch series	ISO 3161
MJ	Metric threads, MIL Standard	ISO 5855
R	Taper external pipe threads	ISO 7/1
Rc	Taper internal pipe threads	ISO 7/1
Rp	Parallel internal pipe threads	ISO 7/1
G	Parallel pipe threads	ISO 228/1
GL	Glass container threads	ISO R 1115
V	Tyre valve threads	ISO 4570/1~3

British[※]

Thread symbols	Kinds of threads	Related Standards
UNS	Unified special series	BS 1580
B.S.W.	British Standard Whitworth coarse threads	BS 84
B.S.F.	British Standard fine threads	BS 84
BSP	British Standard pipe thread (corresponding to R, Rc, Rp and G of ISO standard)	BS 21,2779
B.A.	B.A.-Screw threads	BS 93
Acme	General purpose, Acme screw threads	BS 1104
Buttress	Buttress threads	BS 1657
BSC	Cycle threads	BS 811
BSMO	Microscope objective threads	BS 3569
E	Edison screw threads	BS 5042
R.S.M	Rolled sheet metal screw threads and threads for molded plastics and die-cast materials	BS 2038

※ : We left out the symbols after ISO standard was adopted.

German[※]

Thread symbols	Kinds of threads	Related Standards
GL	Glass containers thread.	DIN 168
S	Buttress thread.	DIN 513,2781,20401
Rd	Knuckle thread.	DIN 405,262,264,3182,7273,15403,20400
W	Whitworth-gewinde.	DIN 168,477,6630,4668,49301
KS,KT	Screw siles for packages made of Plastics.	DIN 6063
E	Edison screw thread.	DIN 40400
Pg	Steel conduit thread.	DIN 40430
Glasg	Thread for cover glasses, porcelain and cast iron caps.	DIN 40450
Vg	Automobile tyre valve thread.	DIN 7756
Gf	Thread for freezing pipes.	DIN 4930
Gg	Threads for drill pipe.	DIN 4941,20314
HA	Thread for bone screws and nuts.	DIN 58810
RMS	Thread connexion for microscope objectives.	DIN 58888
FG	Bicycle threads.	DIN 79012

※ : We left out the symbols after ISO standard was adopted.

Cross chart of thread cutting tool standard

Tap and Dies names	JIS	TAS	ISO	ANSI	BS	DIN
General specification		4051				
Measuring method		4053				
Technical requirement			8830			2197
Thread limit (Metric)		4052	2857			
Thread limit (Pipe)			5969			
Hand taps (Metric coarse)	B4430	4105	529	B94.9	949	352
Hand taps (Metric fine)	B4430	4106	529	B94.9	949	2181
Hand taps (Unified coarse)	B4432	4107	529	B94.9	949	
Hand taps (Unified fine)	B4438		529	B94.9	949	
Hand taps (Parallel pipe thread)	B4445		2284	B94.9	949	
Hand taps (Taper pipe thread)	B4446		2284	B94.9	949	
Hand taps (American parallel pipe thread)		4113		B94.9		
Hand taps (American taper pipe thread)		4114		B94.9		
Hand taps (American dryseal parallel pipe thread)		4115		B94.9		
Hand taps (American dryseal taper pipe thread)		4116		B94.9		
Nut taps (Metric coarse)	B4433	4109			357	
Nut taps (Metric fine)		4110				
Nut taps (Unified coarse)		4111		B94.9		
Nut taps (Unified fine)		4112				
Machine taps (Metric coarse)						371,376
Machine taps (Metric fine)						374
Bent shank taps (Metric coarse)		4101				
Bent shank taps (Metric fine)		4102				
Bent shank taps (Unified coarse)		4103				
Bent shank taps (Unified fine)		4104				
Long shank machine taps (Metric thread)		4153	2283			
Long shank machine taps (Inch thread)		4153	2283			
Spiral pointed taps		4155		B94.9		
Spiral fluted taps		4154		B94.9		
Shell taps (Metric thread)		4117				
Pulley taps				B94.9		
Thread Forming taps				B94.9		
Blanks for carbide taps				B94.1		
Thread cutting round dies (Metric coarse, Adjustable)	B4451					223
Thread cutting round dies (Metric fine, Adjustable)	B4451					223
Thread cutting round dies (Metric, Solid)	B4451		2568		1127	223
Thread cutting round dies (Unified coarse adjustable)	B4451					
Thread cutting round dies (Unified fine adjustable)	B4451					
Thread cutting round dies (Unified thread)	B4451		2568		1127	
Thread cutting round dies (Parallel pipe thread)	B4455		4231		1127	5158
Thread cutting round dies (Taper pipe thread)	B4456		4230			5159
Hexagon dies			7226		1127	382

※ : We left out the symbols after ISO standard was adopted.

Symbols: Organization names

- ISO: International Organization for Standardization
- JIS: Japanese Industrial Standards Committee
- TAS: The Japan Small Tool Makers' Association
- ANSI: American National Standards Institute
- BS: British Standards Institution, UK
- DIN: Deutsches Institut für Normung

Hardness conversion table

■ Conversion table from Rockwell C hardness of steel.*1 (Approximate)

Rockwell C Scale Hardness	Vickers Hardness	Brinell Hardness		Rockwell Hardness*3			Rockwell Superficial Hardness			Shore Hardness	MPa*2 Tensile Strength	Rockwell C Scale Hardness*3
		Standard ball	Tungsten Carbide ball	A scale	B scale	D scale	15-N scale	30-N scale	45-N scale			
68	940	—	—	85.6	—	76.9	93.2	84.4	75.4	97	—	68
67	900	—	—	85.0	—	76.1	92.9	83.6	74.2	95	—	67
66	865	—	—	84.5	—	75.4	92.5	82.8	73.3	92	—	66
65	832	—	(739)	83.9	—	74.5	92.2	81.9	72.0	91	—	65
64	800	—	(722)	83.4	—	73.8	91.8	81.1	71.0	88	—	64
63	772	—	(705)	82.8	—	73.0	91.4	80.1	69.9	87	—	63
62	746	—	(688)	82.3	—	72.2	91.1	79.3	68.8	85	—	62
61	720	—	(670)	81.8	—	71.5	90.7	78.4	67.7	83	—	61
60	697	—	(654)	81.2	—	70.7	90.2	77.5	66.7	81	—	60
59	674	—	(634)	80.7	—	69.9	89.8	76.6	65.5	80	—	59
58	653	—	615	80.1	—	69.2	89.3	75.7	64.3	78	—	58
57	633	—	595	79.6	—	68.5	88.9	74.8	63.2	76	—	57
56	613	—	577	79.0	—	67.7	88.3	73.9	62.0	75	—	56
55	595	—	560	78.5	—	66.9	87.9	73.0	60.9	74	2075	55
54	577	—	543	78.0	—	66.1	87.4	72.0	59.8	72	2015	54
53	560	—	525	77.4	—	65.4	86.9	71.2	58.6	71	1950	53
52	544	(500)	512	76.8	—	64.6	86.4	70.2	57.4	69	1880	52
51	528	(487)	496	76.3	—	63.8	85.9	69.4	56.1	68	1820	51
50	513	(475)	481	75.9	—	63.1	85.5	68.5	55.0	67	1760	50
49	498	(464)	469	75.2	—	62.1	85.0	67.6	53.8	66	1695	49
48	484	451	455	74.7	—	61.4	84.5	66.7	52.5	64	1635	48
47	471	442	443	74.1	—	60.8	83.9	65.8	51.4	63	1580	47
46	458	432	432	73.6	—	60.0	83.5	64.8	50.3	62	1530	46
45	446	421	421	73.1	—	59.2	83.0	64.0	49.0	60	1480	45
44	434	409	409	72.5	—	58.5	82.5	63.1	47.8	58	1435	44
43	423	400	400	72.0	—	57.7	82.0	62.2	46.7	57	1385	43
42	412	390	390	71.5	—	56.9	81.5	61.3	45.5	56	1340	42
41	402	381	381	70.9	—	56.2	80.9	60.4	44.3	55	1295	41
40	392	371	371	70.4	—	55.4	80.4	59.5	43.1	54	1250	40
39	382	362	362	69.9	—	54.6	79.9	58.6	41.9	52	1215	39
38	372	353	353	69.4	—	53.8	79.4	57.7	40.8	51	1180	38
37	363	344	344	68.9	—	53.1	78.8	56.8	39.6	50	1160	37
36	354	336	336	68.4	(109.0)	52.3	78.3	55.9	38.4	49	1115	36
35	345	327	327	67.9	(108.5)	51.5	77.7	55.0	37.2	48	1080	35
34	336	319	319	67.4	(108.0)	50.8	77.2	54.2	36.1	47	1055	34
33	327	311	311	66.8	(107.5)	50.0	76.6	53.3	34.9	46	1025	33
32	318	301	301	66.3	(107.0)	49.2	76.1	52.1	33.7	44	1000	32
31	310	294	294	65.8	(106.0)	48.4	75.6	51.3	32.5	43	980	31
30	302	286	286	65.3	(105.5)	47.7	75.0	50.4	31.3	42	950	30
29	294	279	279	64.7	(104.5)	47.0	74.5	49.5	30.1	41	930	29
28	286	271	271	64.3	(104.0)	46.1	73.9	48.6	28.9	41	910	28
27	279	264	264	63.8	(103.0)	45.2	73.3	47.7	27.8	40	880	27
26	272	258	258	63.3	(102.5)	44.6	72.8	46.8	26.7	38	860	26
25	266	253	253	62.8	(101.5)	43.8	72.2	45.9	25.5	38	840	25
24	260	247	247	62.4	(101.0)	43.1	71.6	45.0	24.3	37	825	24
23	254	243	243	62.0	100.0	42.1	71.0	44.0	23.1	36	805	23
22	248	237	237	61.5	99.0	41.6	70.5	43.2	22.0	35	785	22
21	243	231	231	61.0	98.5	40.9	69.9	42.3	20.7	35	770	21
20	238	226	226	60.5	97.8	40.1	69.4	41.5	19.6	34	760	20
(18)	230	219	219	—	96.7	—	—	—	—	33	730	(18)
(16)	222	212	212	—	95.5	—	—	—	—	32	705	(16)
(14)	213	203	203	—	93.9	—	—	—	—	31	675	(14)
(12)	204	194	194	—	92.3	—	—	—	—	29	650	(12)
(10)	196	187	187	—	90.7	—	—	—	—	28	620	(10)
(8)	188	179	179	—	89.5	—	—	—	—	27	600	(8)
(6)	180	171	171	—	87.1	—	—	—	—	26	580	(6)
(4)	173	165	165	—	85.5	—	—	—	—	25	550	(4)
(2)	166	158	158	—	83.5	—	—	—	—	24	530	(2)
(0)	160	152	152	—	81.7	—	—	—	—	24	515	(0)

*1 : Bold-faced numbers are based on the table of ASTM E 140

*2 : 1 Mpa=1N/mm²

*3 : In above table, numbers in parenthesis are only for reference.

This table is abstracted from SAE J 417.

Screw Thread Terms and Definitions

Major Diameter — The largest diameter of a straight thread.

Minor Diameter — The smallest diameter of a straight thread

Angle of Thread — The angle included between the flanks of the thread measured in an axial plane.

Half Angle of Thread — The angle included between a flank of thread and the normal (90°) to the axis, measured in an axial plane.

Pitch — The distance from a point on a screw to a corresponding point on the next thread measured parallel to the axis.

Metric — The pitch in inches = $\frac{\text{Pitch in Millimeters}}{25.4}$

Inches — The pitch in inches = $\frac{1}{\text{Number of threads per inch}}$

Lead of Thread — The distance a screw thread advances axially in one turn. On a single-thread screw the lead and pitch are identical. On a double-thread, the lead is 2 x the pitch. On a triple-thread the lead is 3 x pitch, etc.

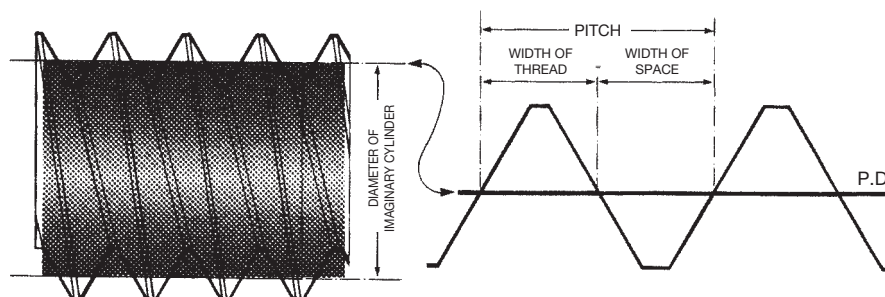
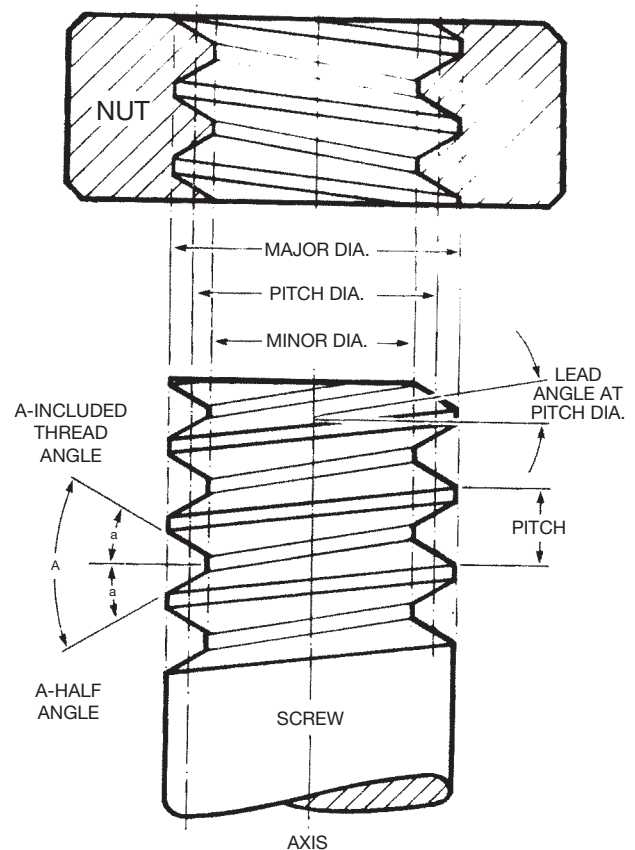
Lead Angle — The angle made by the helix of a thread at the pitch diameter with a line perpendicular to the axis.

Tolerance — The total amount of variation permitted from a specified dimension. Tolerance may be expressed plus, minus or both.

Allowance — The intentional minimum clearance between mating threads.

Length of Engagement — The length that is engaged measured parallel to the axis, when mating parts are fully assembled.

Pitch Diameter — On a straight screw thread, the diameter of an imaginary cylinder, the surface of which would pass through the threads at such points as to make equal the width of the threads and the width of the spaces cut by the surface of the cylinder.



YAMAWA was founded with the lofty ideal of contributing to the progress and growth of the world's machine industry by producing taps, dies, center drills and other cutting tools of the highest quality.

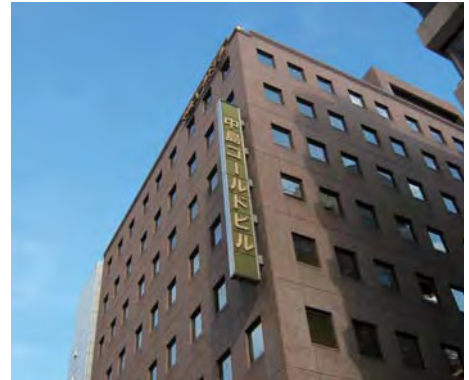
For more than 80 years we have continued our pursuit of that ideal. We exceed world standards in both production technology and quality control. YAMAWA is recognized for its superior quality control and is the first tap manufacturer in Japan to achieve ISO 9001 certification.

The products we export are highly acclaimed by manufacturers in all of the industrial fields in which they are used, which include aerospace, automotive and light / heavy electrical industries as well as by consumer product manufacturers around the world.

We remain committed to continuous improvement through advances in technology and product quality. We thank you for your continued support.

Our United States distribution center has a large inventory of YMW products to support selected industrial distributors. YMW also has U.S. based tool modification as well as tool coating capabilities, including TiN and TiCN coating systems.

Quality. Consistency. Performance. Our commitment to these principles is reflected in each tool we make. It's a commitment you can count on.



*Head office and export department
Nakajima Gold Building, 13-10 Kyobashi 3
chome, Chuo-ku Tokyo 104-0031, Japan*

Yonezawa Plant (ISO 9001: 2000)



Equipped with both production lines and out Quality Control Center, this plant obtained ISO 9001 certification in 1996. Of the three Yamawa plants, Yonezawa Plant has the longest history of manufacturing and the highest production capacity. Products include roll taps, spiral point, pipe and hand style taps.

Fukushima Plant (ISO 9001: 2000)



Provides both production lines and facilities for "in house" production of specialized production machine tools. This plant develops and manufactures special tap and die production equipment, and supplies this equipment to our other manufacturing sites. Products include spiral flute taps, dies and combined drills/countersinks.

Aizu Plant (ISO 9001: 2000)



Equipped with the most sophisticated machine tools available, this plant features the most advanced system of automated, labor-saving mass production. Products include spiral fluted taps and carbide taps.

Creating high quality, high performance taps and cutting tools to support technical innovation in metal machining

As rapid technical innovation unfolds in every field of industry, metal cutting and threading are faced with demands for higher quality and more efficient machining.

By developing and supplying more precise, high performance taps and center drills to meet these evolving needs, YAMAWA is contributing to the advancement of global machining.

Product Line

Precision Cutting Tools

- Taps
- Center Drills
- Dies

Regrind Fixtures

- Tap and Drill Sharpeners

Precision Pitch Diameter Measuring Machines

- Three-wire measuring machine for highly accurate pitch diameter measurement

YAMAWA products respond to a wide variety of technical demands, addressing a wide range of metal processing needs, including:

Tapping hard to machine materials

Technological advances in the aerospace industry and other fields have prompted the use of various new light weight, heat resistant materials such as titanium and nickel based alloys. The extreme hardness and toughness of these materials accelerate wear on cutting tools, making conventional taps inadequate. YAMAWA continues to develop specific high performance tap designs for such hard to machine materials. We supply a broad range of new products in response to evolving customer needs, supporting the cutting edge of the next generation of metal processing.

New tap innovation

New taps have been introduced for high-performance threading of high-silicon aluminum and wrought aluminums.

YAMAWA is continuously updating tap designs based on meeting and exceeding our customers' tapping needs for increased quality at higher production rates.

Industry demand for high production and higher quality screw threads

High-speed, high-precision, multi-function CNC machine tools in the field of metal machining, have provided the platforms for threading improvements. YAMAWA has been quick to respond to this emerging trend, leading the industry in the development and introduction of taps for CNC and high-speed and ultra high-speed machining. We continue to produce a steady stream of high-performance taps in response to today's increasingly high demand for quality threads at reduced tapping costs.

Environmental protection and increased efficiency

YAMAWA is actively engaged in finding solutions for the increasing important problems of coolant management. Our proprietary oil-less thread forming taps have eliminated the need for cutting oil during tapping for popular thread sizes. This not only enables cleaner threading but also makes the entire process more efficient by eliminating chips during threading and reducing the cleanup step.

Our technical expertise continues to create high quality, high performance products

For more than 80 years, YAMAWA has continued to develop superior technical expertise as a pioneer in the tap and die industry.

Our vast storehouse of technological know-how has helped to produce many of the diverse products that have supported our growth over the years. We have established a flexible production system and a research and development system geared to the needs of our customers.

We remain committed to the development of high-quality, high-performance products, while continuing to refine and advance our technical capabilities.

YAMAWA's Unique Capabilities

Tap production involves the grinding of many features on a tap blank to produce a finished precision tool. For many years, YAMAWA has recognized the need to build these precision tap grinding machines "in house" as a means of achieving greater tool precision and higher quality tools. Today, YAMAWA makes more than 90% of its own production machines, thereby controlling tap quality from cutoff to final laser marking and measurement. Machines manufactured include machine tools to thread, flute grind, chamfer, tap square and OD grind, and machines to measure all of the taps' critical elements such as thread pitch diameter. The self-reliance at YAMAWA allows us to control product quality and production capabilities by custom engineering machines not readily available in the open market. At YAMAWA, we understand how to make taps, tap manufacturing machines and tap measuring equipment.

Research and Development

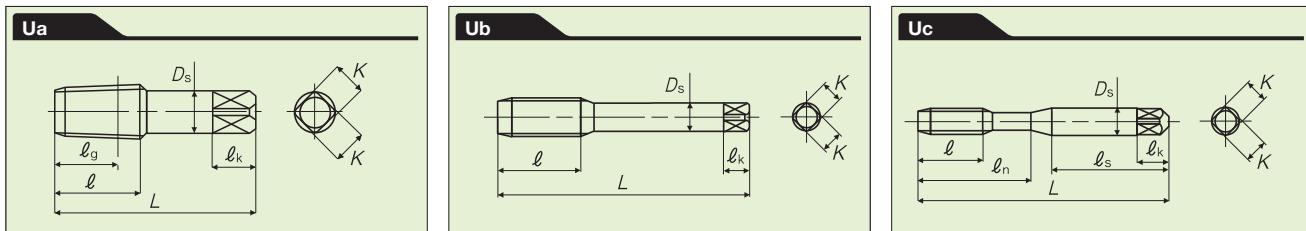
To achieve maximum tapping efficiency, we analyze materials to be tapped in detail. After carefully selecting a tap base material we thoroughly control heat treatment and design. This allows us to develop and supply taps that are ideally suited to their application.

In addition to the basic tap research taking place at our technical research center, we also have a test center where we conduct performance and durability tests on the taps that we produce to evaluate tool performance with the goal of continuous improvement.

Quality Control

Equipped with many measuring machines manufactured in-house, YAMAWA maintains a rigorous quality system that includes inspection both at the machine stage and for finished goods. This quality control system has received widespread acclaim, along with numerous awards. In 1996, the Yonezawa Plant stepped ahead of our competitors by receiving ISO 9001. The Fukushima Plant and Aizu Plant were ISO 9001 certified in 2000.

YMW U.S.A. Blank Type



Metalcutting Safety (read this before using YMW products)

Modern metalcutting operations involve high energy, high spindle or cutter speeds, and high temperatures and cutting forces. Hot, flying chips may be projected from the workpiece during metalcutting. Although advanced cutting tool materials are designed and manufactured to withstand the high cutting forces and temperatures that normally occur in these operations, they are susceptible to fragmenting in service, particularly if they are subjected to overstress, severe impact or otherwise abused. Therefore, precautions should be taken to adequately protect workers, observers and equipment against hot, flying chips, fragmented cutting tools, broken workpieces or other similar projectiles. Machines should be fully guarded and personal protective equipment should be used at all times.

When grinding advanced cutting tool materials, a suitable means for collection and disposal of dust, mist or sludge should be provided. Overexposure to dust or mist containing metallic particles can be hazardous to health particularly if exposure continues over an extended period of time and may cause eye, skin and mucous membrane irritation and temporary or permanent respiratory disease. Certain existing pulmonary and skin conditions may be aggravated by exposure to dust or mist. Adequate ventilation, respiratory protection and eye protection should be provided when grinding and workers should avoid breathing of and prolonged skin contact

with dust or mist. General Industry Safety and Health Regulations, Part 1910. U.S. Department of Labor, published in Title 29 of the Code of Federal Regulations should be consulted. Obtain from YMW and read the applicable Material Safety Data Sheet before grinding.

Cutting tools are only one part of the worker-machine- tool system. Many variables exist in machining operations, including the metal removal rate; the workpiece size, shape, strength and rigidity; the chucking and fixturing; the load carrying capability of centers; the cutter and spindle speed and torque limitations; the holder and boring bar overhang; the available power; and the condition of the tooling and the machine. A safe metalcutting operation must take all of these variables, and others, into consideration.

YMW has no control over the end use of its products or the environment into which those products are placed. YMW urges that its customers adhere to the recommended standards of use of their metalcutting machines and tools, and that they follow procedures that ensure safe metalcutting operations. The information included throughout this catalog under the heading "Technical Data" and other recommendations on machining practices referred to herein are only advisory in nature and do not constitute representations or warranties and are not necessarily appropriate for any particular work environment or application.



 Think threads with
YAMAWA