BESLY®

MODERN APPLICATION TAPS

Modern Application Taps designed for Stainless Steel (MA-Ss™), Nickel (MA-Ni™) & Titanium (MA-Ti™)

MA-110C

BESLY® MODERN APPLICATION TAPS

The all new Besly Modern Application taps are the latest development of special tool geometry, tool steels and coating technology. Besly's research team has spent several years developing these taps, resulting in "state-of-the-art" taps, suited for today's machining environment.

These highly specialized taps have been engineered for problem tapping applications in Stainless, Nickel, Titanium, and other difficult to machine alloys. Modern Application taps are designed to handle the tough curly chips, work hardening and tap seizure characteristics common in most of these alloys.

THE BESLY MODERN APPLICATION ADVANTAGE:

- Shorter thread length reduces drag, tapping torque, and allows better fluid passage
- Specifically engineered geometry in the flutes and threads for each material group
- Manufactured from Special High Vanadium Premium High Speed Steel (HSSE) for extra wear resistance and toughness
- Precision specifications plus a wide variety of pitch diameters in both inch and metric sizes are available from stock
- Also available in DIN lengths with ANSI shanks. This special feature accommodates the sometimes needed extra reach without the need for special taps and set-ups
- All taps are stocked surface treated for each material group
- Bright finish taps are also available for special applications
- Precise documentation and stringent process controls assure the highest reliability and quality available

Look to Besly to continue to provide advanced product and technical expertise in problem solving . . .
a heritage of over 120 years!!!

TABLE OF CONTENTS

Application for a registered trademark has been made for the following: MAXX-TAP,™ MA-Ss,™ MA-Ni,™ MA-Ti™ and MA-42.™

BESLY®

MODERN APPLICATION TAPS

MA-Ss™ STAINLESS STEEL SPIRAL POINT TABLE 302A*

LIST 6025A MACHINE SCREW SIZE PLUG

	TPI			EDP NUMBERS-PITCH DIA. LIMITS					
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH2	GH3	GH4	GH5	GH6	GH7
2	56		2	15968	15969	15973			
3	48		2	15976					
4	40		2	15977	15978	15979	15987	15988	
4		48	2	15989		15992			
5	40		3	15997					
6	32		3	15998	15999	16004	16006	16007	16008
6		40	3	16009	16019				
8	32		3	16021	16030	16034	16035	16036	16037
8		36	3	16038					
10	24		3		16039	16040	16041	16042	16043
10		32	3	16044	16045	16046	16047	16048	16049
12	24		3		16061				
12		28	3		16062				

MA-Ss spiral point for tough to machine Stainless Steel Alloys and Precipitation Hardening (PH) Stainless Steel. Designed for use in through holes, the spiral point propels chips ahead of the tap, reducing the chances of torn or rough threads. Surface treated to reduce loading and galling. Chamfer length: 3-5 threads (plug)

MA-Ss™ STAINLESS STEEL SPIRAL POINT TABLE 302A*

LIST 6020A FRACTIONAL SIZE PLUG

	TPI			EDP NUMBERS-PITCH DIA. LIMITS					
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH2	GH3	GH4	GH5	GH6	GH7
1/4	20		3	16063	16066		16067		16068
1/4		28	3	16070	16082	16093	16143	16157	16158
5/16	18		3		16159		16161		16162
5/16		24	3		16166	16167	16168	16173	16175
3/8	16		3		16176		16177		16178
3/8		24	3		16179	16180	16181	16182	16183
7/16	14		3		16184		16185		16186
7/16		20	3		16187		16188	16189	16190
1/2	13		3		16191		16192		16193
1/2		20	3		16196		16197	16198	16199
9/16	12		3		16203				
9/16		18	3		16206				
5/8	11		3		16207		16208		16209
5/8		18	3		16211		16212	16216	16217
3/4	10		3		16218		15470		
3/4		16	3		16219		15471		
7/8	9		3			16220		15472	
7/8		14	3			16226		15473	
1	8		3			16227		15474	
1		12	3			16228		15475	

* *SEE TABLE ON PAGE #25 FOR DETAIL DIMENSIONS.*

FOR BESLY STANDARD PRODUCTION TAPS SEE CATALOG T-110C

MA-Ss™ STAINLESS STEEL SPIRAL POINT

DIN LENGTH-ASME/ANSI SHANKS*

LIST 6025DA MACHINE SCREW SIZE PLUG

	TPI			EDP NUMBERS-PITCH DIA. LIMITS	
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH2	GH3
2	56		2	16642	
3	48		2	16643	
4	40		2	16644	
4		48	2	16645	
5	40		3	16646	
6	32		3	16647	16648
6		40	3	16649	16650
8	32		3	16651	16652
8		36	3	16653	16654
10	24		3		16655
10		32	3	16656	16657
12	24		3		16658
12		28	3		16659

MA-Ss™ STAINLESS STEEL SPIRAL POINT

DIN LENGTH-ASME/ANSI SHANKS*

LIST 6020DA FRACTIONAL SIZE PLUG

	TPI			EDP NUMBERS-PITCH DIA. LIMITS			
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH3	GH4	GH5	GH6
1/4	20		3	16660		16661	
1/4		28	3	16662	16663		
5/16	18		3	16664		16665	
5/16		24	3	16666	16667		
3/8	16		3	16668		16669	
3/8		24	3	16670	16671		
7/16	14		3	16672		16673	
7/16		20	3	16674		16675	
1/2	13		3	16676		16677	
1/2		20	3	16678		16679	
9/16	12		3	16680		16681	
9/16		18	3	16682		16684	
5/8	11		3	16685		16686	
5/8		18	3	16687		16688	
3/4	10		3	16195		16689	
3/4		16	3	16690		16691	
7/8	9		3		16692		16693
7/8		14	3		16694		16695
1	8		3		16696		16697
1		12	3		16698		16699

QUICK TAP SELECTOR FOR MODERN APPLICATION (MA) TAPS

MATERIAL TO BE TAPPED*	HARDNESS (BHN)	THROUGH HOLE	SPEED (SFM)
STAINLESS STEELS			
STAINLESS STEEL ALLOYS	UP TO 275	MA-Ss SP. PT.	45
PRECIPITATION HARDENING (PH) STAINLESS STEEL	OVER 275 THRU 375	MA-Ss SP. PT.	30

* Tap recommendations, for materials not shown above, may be found in the Besly Tap Catalog T-110C under "Quick Tap Selector" or the Besly TAppAnalyst disk©.

*SEE TABLE ON PAGE #26 FOR DETAIL DIMENSIONS.

BESLY®

MODERN APPLICATION TAPS

MA-Ss STAINLESS STEEL SPIRAL FLUTE TABLE 302A*

LIST 6013A MACHINE SCREW SIZE MODIFIED-BOTTOM

	TPI			EDP NUMBERS-PITCH DIA. LIMITS					
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH2	GH3	GH4	GH5	GH6	GH7
3	48		2	16259					
4	40		2	16260	16261	16262	16273	16274	
4		48	2	16275		16276			
5	40		3	16277					
6	32		3	16278	16279	16280	16281	16282	16283
6		40	3	16284	16285				
8	32		3	16286	16287	16288	16289	16290	16291
10	24		3		16292	16293	16294	16295	16296
10		32	3	16297	16298	16299	16300	16301	16302
12	24		3		16303				
12		28	3		16304				

MA-Ss spiral flute for tough to machine Stainless Steel Alloys and Precipitation Hardening (PH) Stainless Steel.
Designed for use in blind holes, a spiral flute is used to pull the chips out of the hole, reducing the chance of torn or rough threads. Surface treated to reduce loading and galling.
Chamfer length: 2-4 threads (mod-bottom)
1-2 threads (bottom)

MA-Ss STAINLESS STEEL SPIRAL FLUTE TABLE 302A*

LIST 6013A FRACTIONAL SIZE MODIFIED-BOTTOM

	TPI			EDP NUMBERS-PITCH DIA. LIMITS					
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH2	GH3	GH4	GH5	GH6	GH7
1/4	20		3	16305	16306		16307		16308
1/4		28	3	16309	16310	16311	16312	16313	16314
5/16	18		3		16315		16316		16317
5/16		24	3		16318	16319	16320	16321	16322
3/8	16		3		16323		16324		16325
3/8		24	3		16326	16327	16328	16329	16333
7/16	14		3		16334		16336		16337
7/16		20	3		16338		16339	16340	16341
1/2	13		3		16346		16347		16348
1/2		20	3		16349		16350	16351	16352
9/16	12		3		16353				
9/16		18	3		16354				
5/8	11		3		16356		16357		16358
5/8		18	3		16359		16360	16362	16363
3/4	10		4		16364		15476		
3/4		16	4		16365		15477		
7/8	9		4			16366		15478	
7/8		14	4			16367		15479	
1	8		4			16368		15480	
1		12	4			16369		15481	

*SEE TABLE ON PAGE #25 FOR DETAIL DIMENSIONS.

FOR BESLY SPECIAL TAPS SEE CATALOG ST-1103

MA-Ss STAINLESS STEEL SPIRAL FLUTE TABLE 302A*
LIST 6013A MACHINE SCREW SIZE BOTTOM

	TPI			EDP NUMBERS-PITCH DIA. LIMITS		
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH2	GH3	GH5
4	40		2	16370	16371	16372
4		48	2	16373		
5	40		3	16374		
6	32		3	16375	16376	16377
6		40	3	16378	16379	
8	32		3	16380	16381	16382
10	24		3		16383	16384
10		32	3		16385	16386

MA-Ss STAINLESS STEEL SPIRAL FLUTE TABLE 302A*
LIST 6013A FRACTIONAL SIZE BOTTOM

	TPI			EDP NUMBERS-PITCH DIA. LIMITS			
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH3	GH4	GH5	GH7
1/4	20		3	16387		16388	
1/4		28	3	16389		16390	
5/16	18		3	16391		16392	
5/16		24	3	16393		16394	
3/8	16		3	16395		16396	16397
3/8		24	3	16398	16399	16400	
7/16	14		3	16401		16402	
7/16		20	3	16403		16404	
1/2	13		3	16405		16406	
1/2		20	3	16407		16408	
9/16	12		3	16409			
9/16		18	3	16411			
5/8	11		3	16412		16413	
5/8		18	3	16414		16415	
3/4	10		4	16416		15482	
3/4		16	4	16417		15483	

QUICK TAP SELECTOR FOR MODERN APPLICATION (MA) TAPS

MATERIAL TO BE TAPPED*	HARDNESS (BHN)	BLIND HOLE	SPEED (SFM)
STAINLESS STEELS			
STAINLESS STEEL ALLOYS	UP TO 275	MA-Ss SP FL.	30
PRECIPITATION HARDENING (PH) STAINLESS STEEL	OVER 275 THRU 375	MA-Ss SP. FL.	20

* Tap recommendations, for materials not shown above, may be found in the Besly Tap Catalog T-110C under "Quick Tap Selector" or the Besly TAppAnalyst disk©

*SEE TABLE ON PAGE #25 FOR DETAIL DIMENSIONS.

BESLY®

MODERN APPLICATION TAPS

MA-Ss STAINLESS STEEL SPIRAL FLUTE
DIN LENGTH-ASME/ANSI SHANKS*
LIST 6013DA MACHINE SCREW SIZE MOD-BOTTOM

	TPI			EDP NUMBERS-PITCH DIA. LIMITS	
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH2	GH3
3	48		2	16719	
4	40		2	16720	
4		48	2	16721	
5	40		3	16722	
6	32		3	16723	16725
6		40	3	16726	
8	32		3	16727	16728
10	24		3		16730
10		32	3	16731	16732
12	24		3		16733
12		28	3		16734

MA-Ss STAINLESS STEEL SPIRAL FLUTE
DIN LENGTH-ASME/ANSI SHANKS*
LIST 6013DA FRACTIONAL SIZE MOD-BOTTOM

	TPI			EDP NUMBERS-PITCH DIA. LIMITS			
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH3	GH4	GH5	GH6
1/4	20		3	16735		16736	
1/4		28	3	16737	16738		
5/16	18		3	16739		16740	
5/16		24	3	16741	16742		
3/8	16		3	16743		16744	
3/8		24	3	16745	16746		
7/16	14		3	16747		16748	
7/16		20	3	16749		16750	
1/2	13		3	16751		16752	
1/2		20	3	16753		16754	
9/16	12		3	16755		16756	
9/16		18	3	16757		16758	
5/8	11		3	16759		16760	
5/8		18	3	16761		16762	
3/4	10		4	15484		16763	
3/4		16	4	16764		16765	
7/8	9		4		16766		16767
7/8		14	4		16768		16769
1	8		4		16770		16771
1		12	4		16772		16773

MA-Ss spiral flute for tough to machine Stainless Steel Alloys and Precipitation Hardening (PH) Stainless Steel.
Designed for use in blind holes, a spiral flute is used to pull the chips out of the hole, reducing the chance of torn or rough threads. Surface treated to reduce loading and galling.
Chamfer length: 2-4 threads (mod-bottom)
1-2 threads (bottom)

*SEE TABLE ON PAGE #26 FOR DETAIL DIMENSIONS.

FOR BESLY STANDARD DRILLS SEE CATALOG D-110C

MA-Ss STAINLESS STEEL SPIRAL FLUTE

DIN LENGTH-ASME/ANSI SHANKS*

LIST 6013DA MACHINE SCREW SIZE BOTTOM

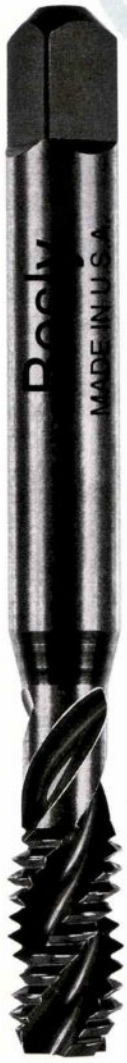
	TPI			EDP NUMBERS-PITCH DIA. LIMITS	
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH2	GH3
4	40		2	16774	
4		48	2	16775	
5	40		3	16776	
6	32		3	16777	16778
6		40	3	16779	
8	32		3	16780	16781
10	24		3		16782
10		32	3	16783	16786

MA-Ss STAINLESS STEEL SPIRAL FLUTE

DIN LENGTH-ASME/ANSI SHANKS*

LIST 6013DA FRACTIONAL SIZE BOTTOM

	TPI			EDP NUMBERS-PITCH DIA. LIMITS		
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH3	GH4	GH5
1/4	20		3	16787		16788
1/4		28	3	16789	16791	
5/16	18		3	16793		16794
5/16		24	3	16795	16796	
3/8	16		3	16797		16798
3/8		24	3	16799	16801	
7/16	14		3	16803		16804
7/16		20	3	16806		16807
1/2	13		3	16808		16809
1/2		20	3	16812		16813
9/16	12		3	16814		16815
9/16		18	3	16816		16817
5/8	11		3	16818		16819
5/8		18	3	16820		16821
3/4	10		4	15485		16822
3/4		16	4	16823		16824



QUICK TAP SELECTOR FOR MODERN APPLICATION (MA) TAPS

MATERIAL TO BE TAPPED*	HARDNESS (BHN)	BLIND HOLE	SPEED (SFM)
STAINLESS STEELS			
STAINLESS STEEL ALLOYS	UP TO 275	MA-Ss SP. FL.	30
PRECIPITATION HARDENING (PH) STAINLESS STEEL	OVER 275 THRU 375	MA-Ss SP. FL.	20

* Tap recommendations, for materials not shown above, may be found in the Besly Tap Catalog T-110C under "Quick Tap Selector" or the Besly TAppAnalyst disk©.

*SEE TABLE ON PAGE #26 FOR DETAIL DIMENSIONS.

BESLY®

MODERN APPLICATION TAPS

MA-Ss STAINLESS STEEL SPIRAL POINT TABLE 302A*

LIST 6034A METRIC SIZE PLUG *D LIMITS SUITABLE FOR ISO 6H TOLERANCE.*

TAP SIZE	PITCH MM	NO. FLUTES	PITCH LIMIT	EDP NO.
M3	0.5	3	D3	16229
M3.5	0.6	3	D4	16232
M4	0.7	3	D4	16233
M5	0.8	3	D4	16235
M6	1	3	D5	16236
M7	1	3	D5	16237
M8	1	3	D5	16238
M8	1.25	3	D5	16239
M10	1.25	3	D5	16243
M10	1.5	3	D6	16244
M12	1.25	3	D5	16246
M12	1.75	3	D6	16247
M14	1.5	3	D6	16248
M14	2	3	D7	16249
M16	1.5	3	D6	16250
M16	2	3	D7	16251
M18	1.5	3	D6	16254
M18	2	3	D7	16255
M20	1.5	3	D6	16256
M20	2.5	3	D7	16257
M22	1.5	3	D6	16258
M22	2.5	3	D7	16497
M24	2	3	D7	16498
M24	3	3	D8	16499

MA-Ss spiral point for tough to machine Stainless Steel Alloys and Precipitation Hardening (PH) Stainless Steel. Designed for use in through holes, the spiral point propels chips ahead of the tap, reducing the chance of torn or rough threads. Surface treated to reduce loading and galling. Chamfer length: 3-5 threads (plug)

MA-Ss STAINLESS STEEL SPIRAL POINT DIN LENGTH-ANSI SHANKS**

LIST 6034DA METRIC SIZE PLUG *D LIMITS SUITABLE FOR ISO 6H TOLERANCE.*

TAP SIZE	PITCH MM	NO. FLUTES	PITCH LIMIT	EDP NO.
M3	0.5	3	D3	16700
M3.5	0.6	3	D4	16701
M4	0.7	3	D4	16702
M5	0.8	3	D4	16703
M6	1	3	D5	16704
M7	1	3	D5	16705
M8	1	3	D5	16706
M8	1.25	3	D5	16707
M10	1.25	3	D5	16708
M10	1.5	3	D6	16709
M12	1.25	3	D5	16711
M12	1.75	3	D6	16712

TAP SIZE	PITCH MM	NO. FLUTES	PITCH LIMIT	EDP NO.
M14	1.5	3	D6	16713
M14	2	3	D7	16714
M16	1.5	3	D6	16715
M16	2	3	D7	16716
M18	1.5	3	D6	16717
M18	2	3	D7	16718
M20	1.5	3	D6	15901
M20	2.5	3	D7	15902
M22	1.5	3	D6	15903
M22	2.5	3	D7	15904
M24	2	3	D7	15905
M24	3	3	D8	15906

* *SEE TABLE ON PAGE #25 FOR DETAIL DIMENSIONS.*
** *SEE TABLE ON PAGE #26 FOR DETAIL DIMENSIONS.*

FOR SPECIAL TAP APPLICATIONS CALL YOUR BESLY TECHNICAL SUPPORT TEAM

MA-Ss STAINLESS STEEL SPIRAL FLUTE TABLE 302A*

LIST 6044A METRIC SIZE MODIFIED-BOTTOM/BOTTOM

D LIMITS SUITABLE FOR ISO 6H TOLERANCE.

TAP SIZE	PITCH MM	NO. FLUTES	PITCH LIMIT	EDP NO. MOD-BOTT	EDP NO. BOTTOM
M3	0.5	3	D3	16418	16419
M3.5	0.6	3	D4	16420	16421
M4	0.7	3	D4	16422	16423
M5	0.8	3	D4	16424	16425
M6	1	3	D5	16426	16427
M7	1	3	D5	16428	16429
M8	1	3	D5	16430	16431
M8	1.25	3	D5	16436	16437
M10	1.25	3	D5	16438	16439
M10	1.5	3	D6	16446	16447
M12	1.25	3	D5	16448	16449
M12	1.75	3	D6	16456	16457
M14	1.5	3	D6	16458	16459
M14	2	3	D7	16466	16467
M16	1.5	3	D6	16468	16469
M16	2	3	D7	16476	16477
M18	1.5	3	D6	16478	16479
M20	1.5	4	D6	16485	16486
M20	2.5	4	D7	16487	16488
M22	1.5	4	D6	16489	16490
M22	2.5	4	D7	16491	16492
M24	2	4	D7	16493	16494
M24	3	4	D8	16495	16496

MA-Ss spiral flute for tough to machine Stainless Steel Alloys and Precipitation Hardening (PH) Stainless Steel. Designed for use in blind holes, a spiral flute is used to pull the chips out of the hole, reducing the chance of torn or rough threads. Surface treated to reduce loading and galling. Chamfer length: 2-4 threads (mod-bottom) 1-2 threads (bottom)

MA-Ss STAINLESS STEEL SPIRAL FLUTE DIN LENGTH-ANSI SHANKS**

LIST 6044DA METRIC SIZE MOD-BOTTOM/BOTTOM *D LIMITS SUITABLE FOR ISO 6H TOLERANCE.*

TAP SIZE	PITCH MM	NO. FLUTES	PITCH LIMIT	EDP NO. MOD-BOTT	EDP NO. BOTTOM
M3	0.5	3	D3	16826	16827
M3.5	0.6	3	D4	16828	16829
M4	0.7	3	D4	16836	16837
M5	0.8	3	D4	16838	16839
M6	1	3	D5	16842	16843
M7	1	3	D5	16844	16845
M8	1	3	D5	16846	16847
M8	1.25	3	D5	16848	16849
M10	1.25	3	D5	16850	16856
M10	1.5	3	D6	16857	16858
M12	1.25	3	D5	16859	16866
M12	1.75	3	D6	16867	16868

TAP SIZE	PITCH MM	NO. FLUTES	PITCH LIMIT	EDP NO. MOD-BOTT	EDP NO. BOTTOM
M14	1.5	3	D6	16869	16876
M14	2	3	D7	16877	16878
M16	1.5	3	D6	16879	16883
M16	2	3	D7	17245	17246
M18	1.5	3	D6	17247	16888
M20	1.5	4	D6	15913	15925
M20	2.5	4	D7	15914	15930
M22	1.5	4	D6	15915	15926
M22	2.5	4	D7	15916	15927
M24	2	4	D7	15917	15928
M24	3	4	D8	15918	15929

* *SEE TABLE ON PAGE #25 FOR DETAIL DIMENSIONS.*

** *SEE TABLE ON PAGE #26 FOR DETAIL DIMENSIONS.*

BESLY®

MODERN APPLICATION TAPS

MA-Ni™ NICKEL SPIRAL POINT TABLE 302A*

LIST 6325A MACHINE SCREW SIZE PLUG

	TPI			EDP NUMBERS-PITCH DIA. LIMITS					
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH2	GH3	GH4	GH5	GH6	GH7
2	56		2	15486					
3	48		2	16889					
4	40		2	16890	16891	16892			
4		48	2	16893					
5	40		3	16894					
6	32		3	16896	16897	16898	16899		16214
6		40	3	16215					
8	32		3	16221	16222	16223	16224	16225	16230
10	24		3		16231	16900	16901		16906
10		32	3	16907	16908	16909	16913	16914	16915

MA-Ni spiral point for tough to machine Nickel Base Alloys such as Inconel, Hastelloy, Waspalloy, Incoloy, Astraloy, Rene and Monel. Designed for use in through holes, a spiral point is used to drive chips forward, reducing the chance of tap breakage. Surface treated to reduce friction. Chamfer length: 3-5 threads (plug)

MA-Ni™ NICKEL SPIRAL POINT TABLE 302A*

LIST 6320A FRACTIONAL SIZE PLUG

	TPI			EDP NUMBERS-PITCH DIA. LIMITS				
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH3	GH4	GH5	GH6	GH7
1/4	20		3	16916		16917		16918
1/4		28	3	16919	16920	16921	16922	16923
5/16	18		3	16924		16925		16926
5/16		24	3	16927	16928	16929	16930	16931
3/8	16		3	16932		16933		16934
3/8		24	3	16935	16936	16937	16938	16939
7/16	14		3	16940		16941		
7/16		20	3	16942		16943		
1/2	13		3	16944		16945		16946
1/2		20	3	16947		16948		16949
5/8	11		3	16950		17014		
5/8		18	3	16951		17017		
3/4	10		3	16952		16683		
3/4		16	3	16953		16885		

*SEE TABLE ON PAGE #25 FOR DETAIL DIMENSIONS.

FOR BESLY STANDARD PRODUCTION TAPS SEE CATALOG T-110C

MA-Ni™ NICKEL SPIRAL POINT

DIN LENGTH-ASME/ANSI SHANKS*

LIST 6325DA MACHINE SCREW SIZE PLUG

	TPI			EDP NUMBERS-PITCH DIA. LIMITS	
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH2	GH3
2	56		2	15487	
3	48		2	16972	
4	40		2	16973	
4		48	2	16974	
5	40		3	16975	
6	32		3	16976	16977
6		40	3	16978	
8	32		3	16979	16980
10	24		3		16981
10		32	3	16982	16983

MA-Ni™ NICKEL SPIRAL POINT

DIN LENGTH-ASME/ANSI SHANKS*

LIST 6320DA FRACTIONAL SIZE PLUG

	TPI			EDP NUMBERS-PITCH DIA. LIMITS		
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH3	GH4	GH5
1/4	20		3	16984		16985
1/4		28	3	16986	16987	
5/16	18		3	16988		16989
5/16		24	3	16990	16991	
3/8	16		3	16992		16993
3/8		24	3	16994	16995	
7/16	14		3	16996		16997
7/16		20	3	16998		16999
1/2	13		3	17000		17001
1/2		20	3	17002		17003
5/8	11		3	17004		17005
5/8		18	3	17006		17022
3/4	10		3	17036		17105
3/4		16	3	17106		17107

*SEE TABLE ON PAGE #26 FOR DETAIL DIMENSIONS.

QUICK TAP SELECTOR FOR MODERN APPLICATION (MA) TAPS

MATERIAL TO BE TAPPED*	HARDNESS (BHN)	THROUGH HOLE	SPEED (SFM)
NICKEL BASE 1. ALLOYS			
HASTELLOY INCONEL WASPALLOY	UP TO 275	MA-Ni SP. PT.	20
INCOLOY ASTRALOY RENE MONEL	OVER 275 THRU 375	MA-Ni SP. PT.	10

1. These materials are very difficult to tap and could require special taps. Consult with Besly Tap Technical Support Team for recommendations.

* Tap recommendations, for materials not shown above, may be found in the Besly Tap Catalog T-110C under "Quick Tap Selector" or the Besly TAppAnalyst disk©.

BESLY®

MODERN APPLICATION TAPS

MA-Ni NICKEL SPIRAL FLUTE TABLE 302A*

LIST 6313A MACHINE SCREW SIZE MODIFIED-BOTTOM

	TPI			EDP NUMBERS-PITCH DIA. LIMITS					
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH2	GH3	GH4	GH5	GH6	GH7
2	56		3	17100					
3	48		3	17135					
4	40		3	17136	17137	17138	17139		
4		48	3	17140					
5	40		3	17145					
6	32		3	17146	17147		17148		17153
6		40	3	17154					
8	32		3	17155	17156	17209	17210	17211	17212
10	24		3		17213	17214	17215		17216
10		32	3	17302	17304	17305	17306	17308	17309

MA-Ni NICKEL SPIRAL FLUTE TABLE 302A*

LIST 6313A FRACTIONAL SIZE MODIFIED-BOTTOM

	TPI			EDP NUMBERS-PITCH DIA. LIMITS				
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH3	GH4	GH5	GH6	GH7
1/4	20		3	17316		17317		17318
1/4		28	3	17322	17324	17325	17327	17329
5/16	18		3	17330		17332		17333
5/16		24	3	17340	17341	17346	17347	17348
3/8	16		3	17349		17354		17356
3/8		24	3	17358	17360	17361	17370	
7/16	14		3	17372		17373		
7/16		20	3	17378		17379		
1/2	13		3	17380		17381		17390
1/2		20	3	17392		17393		17394
5/8	11		4	17395		17296		
5/8		18	4	17396		17297		
3/4	10		4	17397		15494		
3/4		16	4	17398		15495		

*SEE TABLE ON PAGE #25 FOR DETAIL DIMENSIONS.

MA-Ni spiral flute for tough to machine Nickel Base Alloys such as Inconel, Hastelloy, Waspalloy, Incoloy, Astraloy, Rene and Monel. Designed for use in blind holes, a spiral flute is used to pull the chips out, reducing the chance of breakage.

Surface treated to reduce friction.

Chamfer length: 2-4 threads (mod-bottom)
1-2 threads (bottom)

MA-Ni NICKEL SPIRAL FLUTE TABLE 302A*
LIST 6313A MACHINE SCREW SIZE BOTTOM

	TPI			EDP NUMBERS-PITCH DIA. LIMITS		
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH2	GH3	GH5
2	56		3	15489		
3	48		3	15490		
4	40		3	17399	17400	17401
4		48	3	17402		
5	40		3	17403		
6	32		3	17404	17405	17406
6		40	3	17407		
8	32		3	17408	17409	17410
10	24		3		17411	17412
10		32	3		17413	17425

MA-Ni NICKEL SPIRAL FLUTE TABLE 302A*
LIST 6313A FRACTIONAL SIZE BOTTOM

	TPI			EDP NUMBERS-PITCH DIA. LIMITS		
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH3	GH4	GH5
1/4	20		3	17426		17427
1/4		28	3	17428	17429	17430
5/16	18		3	17431		17434
5/16		24	3	17435	17436	17437
3/8	16		3	17438		17697
3/8		24	3	17698	17699	17700
7/16	14		3	17701		17702
7/16		20	3	17703		17704
1/2	13		3	17859		17860
1/2		20	3	17861		17862
5/8	11		4	17863		17847
5/8		18	4	17864		17848
3/4	10		4	17865		17691
3/4		16	4	15491		17692

*SEE TABLE ON PAGE #25 FOR DETAIL DIMENSIONS.

QUICK TAP SELECTOR FOR MODERN APPLICATION (MA) TAPS

MATERIAL TO BE TAPPED*	HARDNESS (BHN)	BLIND HOLE	SPEED (SFM)
NICKEL BASE 1. ALLOYS			
HASTELLOY INCONEL WASPALLOY	UP TO 275	MA-Ni SP. FL.	7
INCOLOY ASTRALOY RENE MONEL	OVER 275 THRU 375	MA-Ni SP. FL.	7

1 These materials are very difficult to tap and could require special taps. Consult with Besly Technical Support Team for recommendations.

* Tap recommendations, for materials not shown above, may be found in the Besly Tap Catalog T-110C under "Quick Tap Selector" or the Besly TAppAnalyst disk©.

BESLY®

MODERN APPLICATION TAPS

MA-Ni NICKEL SPIRAL FLUTE

DIN LENGTH-ASME/ANSI SHANKS*

LIST 6313DA MACHINE SCREW SIZE MOD-BOTTOM

	TPI			EDP NUMBERS-PITCH DIA. LIMITS	
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH2	GH3
2	56		3	15492	
3	48		3	19470	
4	40		3	19471	
4		48	3	19472	
5	40		3	19473	
6	32		3	19474	19475
6		40	3	19476	
8	32		3	19477	19478
10	24		3		19479
10		32	3	19480	19481

MA-Ni NICKEL SPIRAL FLUTE

DIN LENGTH-ASME/ANSI SHANKS*

LIST 6313DA FRACTIONAL SIZE MOD-BOTTOM

	TPI			EDP NUMBERS-PITCH DIA. LIMITS		
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH3	GH4	GH5
1/4	20		3	19483		19484
1/4		28	3	19485	19486	
5/16	18		3	19487		19488
5/16		24	3	19489	19490	
3/8	16		3	19491		19492
3/8		24	3	19493	19494	
7/16	14		3	19495		19496
7/16		20	3	15907		15908
1/2	13		3	19499		19500
1/2		20	3	15909		15910
5/8	11		4	19503		19504
5/8		18	4	19505		19506
3/4	10		4	15493		19507
3/4		16	4	19508		19509

*SEE TABLE ON PAGE #26 FOR DETAIL DIMENSIONS.

MA-Ni spiral flute for tough to machine Nickel Base Alloys such as Inconel, Hastelloy, Waspalloy, Incoloy, Astraloy, Rene and Monel.
Designed for use in blind holes, a spiral flute is used to pull the chips out, reducing the chance of tap breakage.
Surface treated to reduce friction.
Chamfer length: 2-4 threads (mod-bottom)
1-2 threads (bottom)

MA-Ni NICKEL SPIRAL FLUTE
DIN LENGTH-ASME/ANSI SHANKS*
LIST 6313DA MACHINE SCREW SIZE BOTTOM

	TPI			EDP NUMBERS-PITCH DIA. LIMITS	
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH2	GH3
2	56		3	19533	
3	48		3	19750	
4	40		3	19510	
4		48	3	19511	
5	40		3	19512	
6	32		3	19513	19514
6		40	3	19515	
8	32		3	19516	19517
10	24		3		19518
10		32	3		19519

MA-Ni NICKEL SPIRAL FLUTE
DIN LENGTH-ASME/ANSI SHANKS*
LIST 6313DA FRACTIONAL SIZE BOTTOM

	TPI			EDP NUMBERS-PITCH DIA. LIMITS		
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH3	GH4	GH5
1/4	20		3	19520		19521
1/4		28	3	19522	19523	
5/16	18		3	19524		19525
5/16		24	3	19526	19527	
3/8	16		3	19556		19557
3/8		24	3	19558	19559	
7/16	14		3	19560		19561
7/16		20	3	19562		19563
1/2	13		3	19600		19601
1/2		20	3	19602		19603
5/8	11		4	19604		19605
5/8		18	4	19606		19610
3/4	10		4	19043		19611
3/4		16	4	19044		19061

SEE TABLE ON PAGE #26 FOR DETAIL DIMENSIONS.

QUICK TAP SELECTOR FOR MODERN APPLICATION (MA) TAPS

MATERIAL TO BE TAPPED*	HARDNESS (BHN)	BLIND HOLE	SPEED (SFM)
NICKEL BASE 1. ALLOYS			
HASTELLOY INCONEL WASPALLOY	UP TO 275	MA-Ni SP. FL.	7
INCOLOY ASTRALOY RENE MONEL	OVER 275 THRU 375	MA-Ni SP. FL.	7

1. These materials are very difficult to tap and could require special taps. Consult with Besly Technical Support Team for recommendations.
* Tap recommendations, for materials not shown above, may be found in the Besly Tap Catalog T-110C under "Quick Tap Selector" or the Besly TAppAnalyst disk©.

BESLY®

MODERN APPLICATION TAPS

MA-Ni NICKEL SPIRAL POINT TABLE 302A*

LIST 6334A METRIC SIZE PLUG *D LIMITS SUITABLE FOR ISO 6H TOLERANCE.*

TAP SIZE	PITCH MM	NO. FLUTES	PITCH LIMIT	EDP NO.
M3	0.5	3	D3	16954
M3.5	0.6	3	D4	16955
M4	0.7	3	D4	16956
M5	0.8	3	D4	16957
M6	1	3	D5	16958
M7	1	3	D5	16959
M8	1	3	D5	16960
M8	1.25	3	D5	16961
M10	1.25	3	D5	16962
M10	1.5	3	D6	16963
M12	1.25	3	D5	16964
M12	1.75	3	D6	16965
M14	1.5	3	D6	16966
M14	2	3	D7	16967
M16	1.5	3	D6	16968
M16	2	3	D7	16969
M18	1.5	3	D6	16970
M18	2	3	D7	16971

MA-Ni spiral point for tough to machine Nickel Base Alloys such as Inconel, Hastelloy, Waspalloy, Incoloy, Astraloy, Rene and Monel. Designed for use in through holes, a spiral point is used to drive chips forward, reducing the chance of tap breakage. Surface treated to reduce friction. Chamfer length: 3-5 threads (plug)

MA-Ni NICKEL SPIRAL POINT

DIN LENGTH-ASME/ANSI SHANKS**

LIST 6334DA METRIC SIZE PLUG *D LIMITS SUITABLE FOR ISO 6H TOLERANCE.*

TAP SIZE	PITCH MM	NO. FLUTES	PITCH LIMIT	EDP NO.
M3	0.5	3	D3	17108
M3.5	0.6	3	D4	17109
M4	0.7	3	D4	17111
M5	0.8	3	D4	17112
M6	1	3	D5	17113
M7	1	3	D5	17114
M8	1	3	D5	17115
M8	1.25	3	D5	17116
M10	1.25	3	D5	17117
M10	1.5	3	D6	17118
M12	1.25	3	D5	17119
M12	1.75	3	D6	17120
M14	1.5	3	D6	17121
M14	2	3	D7	17122
M16	1.5	3	D6	17123
M16	2	3	D7	17124
M18	1.5	3	D6	17133
M18	2	3	D7	17134

QUICK TAP SELECTOR FOR MODERN APPLICATION (MA) TAPS

MATERIAL TO BE TAPPED*	HARDNESS (BHN)	THROUGH HOLE	SPEED (SFM)
NICKEL BASE 1. ALLOYS			
HASTELLOY INCONEL WASPALLOY	UP TO 275	MA-Ni SP. PT.	20
INCOLOY ASTRALOY RENE MONEL	OVER 275 THRU 375	MA-Ni SP. PT.	10

1 These materials are very difficult to tap and could require special taps Consult with Besly Technical Support Team for recommendations

* Tap recommendations, for materials not shown above, may be found in the Besly Tap Catalog T-110C under "Quick Tap Selector" or the Besly TAppAnalyst disk©

* *SEE TABLE ON PAGE #25 FOR DETAIL DIMENSIONS.*

** *SEE TABLE ON PAGE #26 FOR DETAIL DIMENSIONS.*

FOR SPECIAL TAP APPLICATIONS CALL YOUR BESLY TECHNICAL SUPPORT TEAM

MA-Ni NICKEL SPIRAL FLUTE TABLE 302A*

LIST 6344A METRIC SIZE MODIFIED-BOTTOM/BOTTOM

D LIMITS SUITABLE FOR ISO 6H TOLERANCE.

TAP SIZE	PITCH MM	NO. FLUTES	PITCH LIMIT	EDP NO. MOD-BOTT	EDP NO. BOTTOM
M3	0.5	3	D3	17866	17867
M3.5	0.6	3	D4	17868	17869
M4	0.7	3	D4	17870	17871
M5	0.8	3	D4	17872	17873
M6	1	3	D5	17874	17875
M7	1	3	D5	17876	17877
M8	1	3	D5	17878	17879
M8	1.25	3	D5	17880	17881
M10	1.25	3	D5	17882	17883
M10	1.5	3	D6	17884	17885
M12	1.25	3	D5	17886	17887
M12	1.75	3	D6	17888	17889
M14	1.5	3	D6	17890	17849
M14	2	3	D7	17891	17892
M16	1.5	4	D6	17893	17894
M16	2	4	D7	17895	17896
M18	1.5	4	D6	19466	19467
M18	2	4	D7	19468	19469

MA-Ni spiral flute for tough to machine Nickel Base Alloys such as Inconel, Hastelloy, Waspalloy, Incoloy, Astraloy, Rene and Monel. Designed for use in blind holes, a spiral flute is used to pull the chips out, reducing the chance of tap breakage.
Surface treated to reduce friction.
Chamfer length: 2-4 threads (mod-bottom)
1-2 threads (bottom)

MA-Ni NICKEL SPIRAL FLUTE DIN LENGTH-ASME/ANSI SHANKS**

LIST 6344DA METRIC SIZE MODIFIED-BOTTOM/BOTTOM

D LIMITS SUITABLE FOR ISO 6H TOLERANCE.

TAP SIZE	PITCH MM	NO. FLUTES	PITCH LIMIT	EDP NO. MOD-BOTT	EDP NO. BOTTOM
M3	0.5	3	D3	19612	19613
M3.5	0.6	3	D4	19614	19615
M4	0.7	3	D4	19616	19617
M5	0.8	3	D4	19618	19619
M6	1	3	D5	19620	19621
M7	1	3	D5	19622	19623
M8	1	3	D5	19624	19625
M8	1.25	3	D5	19626	19627
M10	1.25	3	D5	19628	19629
M10	1.5	3	D6	19630	19631
M12	1.25	3	D5	19636	19637
M12	1.75	3	D6	19638	19639
M14	1.5	3	D6	19640	19641
M14	2	3	D7	19642	19643
M16	1.5	4	D6	19644	19645
M16	2	4	D7	19646	19647
M18	1.5	4	D6	19648	19649
M18	2	4	D7	19650	19651

QUICK TAP SELECTOR FOR MODERN APPLICATION (MA) TAPS

MATERIAL TO BE TAPPED*	HARDNESS (BHN)	BLIND HOLE	SPEED (SFM)
NICKEL BASE 1. ALLOYS			
HASTELLOY INCONEL WASPALLOY	UP TO 275	MA-Ni SP. FL.	7
INCOLOY ASTRALOY RENE MONEL	OVER 275 THRU 375	MA-Ni SP. FL.	7

1. These materials are very difficult to tap and could require special taps. Consult with Besly Technical Support Team for recommendations.

* Tap recommendations, for materials not shown above, may be found in the Besly Tap Catalog T-110C under "Quick Tap Selector" or the Besly TAppAnalyst disk©

* *SEE TABLE ON PAGE #25 FOR DETAIL DIMENSIONS.*

** *SEE TABLE ON PAGE #26 FOR DETAIL DIMENSIONS.*

BESLY®

MODERN APPLICATION TAPS

MA-Ti™ TITANIUM SPIRAL POINT TABLE 302A*
LIST 6525A MACHINE SCREW SIZE PLUG

	TPI			EDP NUMBERS-PITCH DIA. LIMITS			
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH2	GH3	GH4	GH5
4	40		2	19962		19963	
4		48	2	19965			
5	40		3	19966	19967		
6	32		3		19968		19969
6		40	3		19970		
8	32		3		19971		19972
8		36	3		19973		
10	24		3		19974		19975
10		32	3		19976		19977
12	24		3		19978		
12		28	3		19979		

MA-Ti spiral point for tapping commercially pure Titanium and annealed Titanium alloys such as 6AL-4V. Designed for use in through holes, the spiral point drives the chips forward. Special relief, point diameter, spiral point, and chamfer geometry helps reduce heat that commonly causes tap seizure and breakage on reversal. Chamfer length:3-5 threads (plug)

MA-Ti™ TITANIUM SPIRAL POINT TABLE 302A*
LIST 6520A FRACTIONAL SIZE PLUG

	TPI			EDP NUMBERS-PITCH DIA. LIMITS	
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH3	GH5
1/4	20		3	19980	19981
1/4		28	3	19982	19983
5/16	18		3	19984	19985
5/16		24	3	19986	19987
3/8	16		3	19988	19989
3/8		24	3	19990	19991
7/16	14		3	19992	19993
7/16		20	3	19994	19996
1/2	13		3	19997	19998
1/2		20	3	19999	14962

*SEE TABLE ON PAGE #25 FOR DETAIL DIMENSIONS.

FOR BESLY STANDARD PRODUCTION TAPS SEE CATALOG T-110C

MA-Ti TITANIUM SPIRAL POINT
DIN LENGTH-ASME/ANSI SHANKS*
LIST 6525DA MACHINE SCREW SIZE PLUG

	TPI			EDP NUMBERS-PITCH DIA. LIMITS			
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH2	GH3	GH4	GH5
4	40		2	14976		14977	
4		48	2	14978			
5	40		3	14979			
6	32		3		14980		14981
6		40	3		14982		
8	32		3		14983		14984
8		36	3		14985		
10	24		3		14986		14987
10		32	3		14988		14989
12	24		3		14990		
12		28	3		14991		

MA-Ti TITANIUM SPIRAL POINT
DIN LENGTH-ASME/ANSI SHANKS*
LIST 6520DA FRACTIONAL SIZE PLUG

	TPI			EDP NUMBERS-PITCH DIA. LIMITS	
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH3	GH5
1/4	20		3	14992	14993
1/4		28	3	14994	14995
5/16	18		3	14996	14997
5/16		24	3	14998	14999
3/8	16		3	15000	15001
3/8		24	3	15002	15003
7/16	14		3	15004	15005
7/16		20	3	15006	15007
1/2	13		3	15008	15009
1/2		20	3	15010	15011

*SEE TABLE ON PAGE #26 FOR DETAIL DIMENSIONS.

QUICK TAP SELECTOR FOR MODERN APPLICATION (MA) TAPS

MATERIAL TO BE TAPPED*	HARDNESS (BHN)	THROUGH HOLE	SPEED (SFM)
TITANIUM ALLOYS			
COMMERCIALLY PURE TITANIUM	UP TO 275	MA-Ti SP. PT.	20
ANNEALED TITANIUM ALLOYS Ti-6AL-4V	OVER 275 THRU 340	MA-Ti SP. PT.	10
HARDENED [1.]	OVER 354	MA-Ti SP. PT.	7

1. Special taps or modifications are suggested.
* Tap recommendations, for materials not shown above, may be found in the Besly Tap Catalog T-110C under "Quick Tap Selector" or the Besly TAppAnalyst disk©.

BESLY®

MODERN APPLICATION TAPS

MA-Ti™ TITANIUM SPIRAL FLUTE TABLE 302A*

LIST 6513A MACHINE SCREW SIZE MODIFIED-BOTTOM

	TPI			EDP NUMBERS-PITCH DIA. LIMITS			
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH2	GH3	GH4	GH5
4	40		3	19652		19653	
4		48	3	19654			
5	40		3	19655	19656		
6	32		3		19657		19658
6		40	3		19659		
8	32		3		19660		19661
8		36	3		19662		
10	24		3		19663		19664
10		32	3		19665		19666
12	24		3		19667		
12		28	3		19668		

MA-Ti spiral flute for tapping commercially pure Titanium and annealed Titanium alloys such as 6AL-4V. Designed for use in blind holes, a spiral flute is used to pull the chips out, reducing the chance of tap breakage. Special back taper, thread and chamfer relief helps to reduce heat that commonly causes tap seizure and breakage on reversal. Chamfer length:

2-4 threads (mod-bottom)
1-2 threads (bottom)

MA-Ti™ TITANIUM SPIRAL FLUTE TABLE 302A*

LIST 6513A FRACTIONAL SIZE MODIFIED-BOTTOM

	TPI			EDP NUMBERS-PITCH DIA. LIMITS	
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH3	GH5
1/4	20		3	19669	19670
1/4		28	3	19671	19672
5/16	18		3	19673	19674
5/16		24	3	19675	19676
3/8	16		3	19677	19678
3/8		24	3	19679	19680
7/16	14		3	19681	19688
7/16		20	3	19689	19690
1/2	13		3	19691	19692
1/2		20	3	19693	19694

*SEE TABLE ON PAGE #25 FOR DETAIL DIMENSIONS.

MA-Ti TITANIUM SPIRAL FLUTE TABLE 302A*
LIST 6513A MACHINE SCREW SIZE BOTTOM

	TPI			EDP NUMBERS-PITCH DIA. LIMITS			
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH2	GH3	GH4	GH5
4	40		3	19707		19708	
4		48	3	19709			
5	40		3	19710	19711		
6	32		3		19712		19713
6		40	3		19714		
8	32		3		19715		19716
8		36	3		19717		
10	24		3		19718		19719
10		32	3		19720		19721
12	24		3		19722		
12		28	3		19723		

MA-Ti TITANIUM SPIRAL FLUTE TABLE 302A*
LIST 6513A FRACTIONAL SIZE BOTTOM

	TPI			EDP NUMBERS-PITCH DIA. LIMITS	
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH3	GH5
1/4	20		3	19724	19725
1/4		28	3	19726	19727
5/16	18		3	19728	19729
5/16		24	3	19730	19731
3/8	16		3	19732	19733
3/8		24	3	19734	19735
7/16	14		3	19736	19737
7/16		20	3	19738	19739
1/2	13		3	19740	19741
1/2		20	3	19742	19743

*SEE TABLE ON PAGE #25 FOR DETAIL DIMENSIONS.

QUICK TAP SELECTOR FOR MODERN APPLICATION (MA) TAPS

MATERIAL TO BE TAPPED*	HARDNESS (BHN)	BLIND HOLE	SPEED (SFM)
TITANIUM ALLOYS			
COMMERCIALLY PURE TITANIUM	UP TO 275	MA-Ti SP. FL.	7
ANNEALED TITANIUM ALLOYS Ti-6AL-4V	OVER 275 THRU 340	MA-Ti SP. FL.	7
HARDENED [1]	OVER 354	MA-Ti SP. FL.	5

1 Special taps or modifications are suggested.
* Tap recommendations, for materials not shown above, may be found in the Besly Tap Catalog T-110C under "Quick Tap Selector" or the Besly TAppAnalyst disk©.

BESLY®

MODERN APPLICATION TAPS

MA-Ti TITANIUM SPIRAL FLUTE
DIN LENGTH-ASME/ANSI SHANKS*
LIST 6513DA MACHINE SCREW SIZE MOD-BOTTOM

	TPI			EDP NUMBERS-PITCH DIA. LIMITS			
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH2	GH3	GH4	GH5
4	40		3	19824		19825	
4		48	3	19826			
5	40		3	19827			
6	32		3		19828		19829
6		40	3		19830		
8	32		3		19831		19832
8		36	3		19833		
10	24		3		19834		19835
10		32	3		19836		19837
12	24		3		19838		
12		28	3		19839		

MA-Ti TITANIUM SPIRAL FLUTE
DIN LENGTH-ASME/ANSI SHANKS*
LIST 6513DA FRACTIONAL SIZE MOD-BOTTOM

	TPI			EDP NUMBERS-PITCH DIA. LIMITS	
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH3	GH5
1/4	20		3	19840	19841
1/4		28	3	19842	19843
5/16	18		3	19844	19845
5/16		24	3	19846	19847
3/8	16		3	19848	19849
3/8		24	3	19890	19891
7/16	14		3	19892	19893
7/16		20	3	19894	19895
1/2	13		3	19896	19897
1/2		20	3	19899	19900

*SEE TABLE ON PAGE #26 FOR DETAIL DIMENSIONS.

MA-Ti spiral flute for tapping commercially pure Titanium and annealed Titanium alloys such as 6AL-4V. Designed for use in blind holes, a spiral flute is used to pull the chips out, reducing the chance of tap breakage. Special back taper, thread and chamfer relief helps to reduce heat that commonly causes tap seizure and breakage on reversal. Chamfer length:

2-4 threads (mod-bottom)
1-2 threads (bottom)

MA-Ti TITANIUM SPIRAL FLUTE
DIN LENGTH-ASME/ANSI SHANKS*
LIST 6513DA MACHINE SCREW SIZE BOTTOM

	TPI			EDP NUMBERS-PITCH DIA. LIMITS			
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH2	GH3	GH4	GH5
4	40		3	19913		19914	
4		48	3	19915			
5	40		3	19916			
6	32		3		19917		19918
6		40	3		19919		
8	32		3		19920		19921
8		36	3		19922		
10	24		3		19923		19924
10		32	3		19925		19926
12	24		3		19927		
12		28	3		19928		

MA-Ti TITANIUM SPIRAL FLUTE
DIN LENGTH-ASME/ANSI SHANKS*
LIST 6513DA FRACTIONAL SIZE BOTTOM

	TPI			EDP NUMBERS-PITCH DIA. LIMITS	
TAP SIZE	NC UNC	NF UNF	NO. FLUTES	GH3	GH5
1/4	20		3	19929	19930
1/4		28	3	19931	19932
5/16	18		3	19933	19934
5/16		24	3	19935	19936
3/8	16		3	19937	19938
3/8		24	3	19939	19940
7/16	14		3	19941	19942
7/16		20	3	19943	19944
1/2	13		3	19945	19946
1/2		20	3	19947	19948

*SEE TABLE ON PAGE #26 FOR DETAIL DIMENSIONS.

QUICK TAP SELECTOR FOR MODERN APPLICATION (MA) TAPS

MATERIAL TO BE TAPPED*	HARDNESS (BHN)	BLIND HOLE	SPEED (SFM)
TITANIUM ALLOYS			
COMMERCIALLY PURE TITANIUM	UP TO 275	MA-Ti SP. FL.	7
ANNEALED TITANIUM ALLOYS Ti-6AL-4V	OVER 275 THRU 340	MA-Ti SP. FL.	7
HARDENED [1.]	OVER 354	MA-Ti SP. FL.	5

1. Special taps or modifications are suggested.
* Tap recommendations, for materials not shown above, may be found in the Besly Tap Catalog T-110C under "Quick Tap Selector" or the Besly TAppAnalyst disk©.

BESLY®

MODERN APPLICATION TAPS

MA-Ti TITANIUM SPIRAL FLUTE TABLE 302A*

LIST 6544A METRIC SIZE MODIFIED-BOTTOM/BOTTOM

D LIMITS SUITABLE FOR ISO 6H TOLERANCE.

TAP SIZE	PITCH MM	NO. FLUTES	PITCH LIMIT	EDP NO. MOD-BOTT	EDP NO. BOTTOM
M3	0.5	3	D3	19695	19744
M3.5	0.6	3	D4	19696	19745
M4	0.7	3	D4	19697	19746
M5	0.8	3	D4	19698	19747
M6	1	3	D5	19699	19752
M7	1	3	D5	19700	19753
M8	1	3	D5	19701	19754
M8	1.25	3	D5	19702	19798
M10	1.25	3	D5	19703	19799
M10	1.5	3	D6	19704	19821
M12	1.25	3	D5	19705	19822
M12	1.75	3	D6	19706	19823

MA-Ti spiral flute for tapping commercially pure Titanium and annealed Titanium alloys such as 6AL-4V. Designed for use in blind holes, a spiral flute is used to pull the chips out, reducing the chance of tap breakage. Special back taper, thread and chamfer relief helps to reduce heat that commonly causes tap seizure and breakage on reversal. Chamfer length:

2-4 threads (mod-bottom)
1-2 threads (bottom)

MA-Ti TITANIUM SPIRAL POINT TABLE 302A*

LIST 6534A METRIC SIZE PLUG

D LIMITS SUITABLE FOR ISO 6H TOLERANCE.

TAP SIZE	PITCH MM	NO. FLUTES	PITCH LIMIT	EDP NO.
M3	0.5	3	D3	14963
M3.5	0.6	3	D4	14964
M4	0.7	3	D4	14965
M5	0.8	3	D4	14966
M6	1	3	D5	14967
M7	1	3	D5	14968
M8	1	3	D5	14969
M8	1.25	3	D5	14970
M10	1.25	3	D5	14971
M10	1.5	3	D6	14973
M12	1.25	3	D5	14974
M12	1.75	3	D6	14975

MA-Ti spiral point for tapping commercially pure Titanium and annealed Titanium alloys such as 6AL-4V. Designed for use in through holes, the spiral point drives the chips forward. Special relief, point diameter, spiral point, and chamfer geometry helps reduce heat that commonly causes tap seizure and breakage on reversal. Chamfer length:3-5 threads (plug)

SEE TABLE ON PAGE #25 FOR DETAIL DIMENSIONS.

FOR SPECIAL TAP APPLICATIONS CALL YOUR BESLY TECHNICAL SUPPORT TEAM

MA-Ti TITANIUM SPIRAL FLUTE

DIN LENGTH-ASME/ANSI SHANKS*

LIST 6544DA METRIC SIZE MODIFIED-BOTTOM/BOTTOM

D LIMITS SUITABLE FOR ISO 6H TOLERANCE.

TAP SIZE	PITCH MM	NO. FLUTES	PITCH LIMIT	EDP NO. MOD-BOTT	EDP NO. BOTTOM
M3	0.5	3	D3	19901	19950
M3.5	0.6	3	D4	19902	19951
M4	0.7	3	D4	19903	19952
M5	0.8	3	D4	19904	19953
M6	1	3	D5	19905	19954
M7	1	3	D5	19906	19955
M8	1	3	D5	19907	19956
M8	1.25	3	D5	19908	19957
M10	1.25	3	D5	19909	19958
M10	1.5	3	D6	19910	19959
M12	1.25	3	D5	19911	19960
M12	1.75	3	D6	19912	19961

MA-Ti TITANIUM SPIRAL POINT

DIN LENGTH-ASME/ANSI SHANKS*

LIST 6534DA METRIC SIZE PLUG

D LIMITS SUITABLE FOR ISO 6H TOLERANCE.

TAP SIZE	PITCH MM	NO. FLUTES	PITCH LIMIT	EDP NO.
M3	0.5	3	D3	15012
M3.5	0.6	3	D4	15013
M4	0.7	3	D4	15014
M5	0.8	3	D4	15015
M6	1	3	D5	15016
M7	1	3	D5	15017
M8	1	3	D5	15018
M8	1.25	3	D5	15019
M10	1.25	3	D5	15020
M10	1.5	3	D6	15021
M12	1.25	3	D5	15022
M12	1.75	3	D6	15023

* *SEE TABLE ON PAGE #26 FOR DETAIL DIMENSIONS.*

QUICK TAP SELECTOR FOR MODERN APPLICATION (MA) TAPS

MATERIAL TO BE TAPPED*	HARDNESS (BHN)	THROUGH HOLE	SPEED (SFM)	BLIND HOLE	SPEED (SFM)
TITANIUM ALLOYS					
COMMERCIALLY PURE TITANIUM	UP TO 275	MA-Ti SP. PT.	20	MA-Ti SP. FL.	7
ANNEALED TITANIUM ALLOYS Ti-6AL-4V	OVER 275 THRU 340	MA-Ti SP. PT.	10	MA-Ti SP. FL.	7
HARDENED [1]	OVER 354	MA-Ti SP. PT.	7	MA-Ti SP. FL.	5

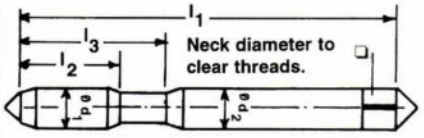
1 Special taps or modifications are suggested.

* Tap recommendations, for materials not shown above, may be found in the Besly Tap Catalog T-110C under "Quick Tap Selector" or the Besly TAppAnalyst disk©

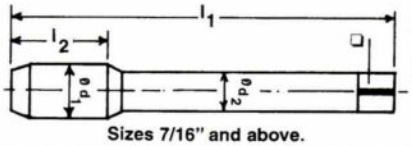
BESLY®

MODERN APPLICATION TAPS

GENERAL TAP DIMENSIONS TABLE 302A (USCTI)



Sizes #2 thru M10.



Sizes 7/16" and above.

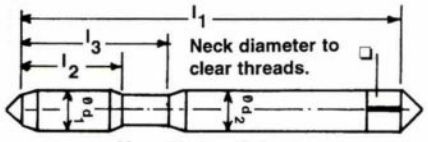
NOMINAL SIZE $\varnothing d_1$	l_1	l_2	l_3	$\varnothing d_2$	$\square$
#2	1.750	0.250	0.438	0.141	0.110
#3	1.812	0.312	0.500	0.141	0.110
#4	1.875	0.312	0.562	0.141	0.110
M3	1.938	0.312	0.625	0.141	0.110
#5	1.938	0.312	0.625	0.141	0.110
M3.5	2.000	0.375	0.688	0.141	0.110
#6	2.000	0.375	0.688	0.141	0.110
M4	2.125	0.375	0.750	0.168	0.131
#8	2.125	0.375	0.750	0.168	0.131
#10	2.375	0.500	0.875	0.194	0.152
M5	2.375	0.500	0.875	0.194	0.152
#12	2.375	0.500	0.938	0.220	0.165
M6	2.500	0.625	1.000	0.255	0.191
1/4	2.500	0.625	1.000	0.255	0.191
M7	2.719	0.688	1.125	0.318	0.238
5/16	2.719	0.688	1.125	0.318	0.238
M8	2.719	0.688	1.125	0.318	0.238
3/8	2.938	0.750	1.250	0.381	0.286
M10	2.938	0.750	1.250	0.381	0.286
7/16	3.156	0.875	-	0.323	0.242
M12	3.375	0.938	-	0.367	0.275
1/2	3.375	0.938	-	0.367	0.275
M14	3.594	1.000	-	0.429	0.322
9/16	3.594	1.000	-	0.429	0.322
5/8	3.812	1.094	-	0.480	0.360
M16	3.812	1.094	-	0.480	0.360
11/16	4.031	1.094	-	0.542	0.406
M18	4.031	1.094	-	0.542	0.406
3/4	4.250	1.219	-	0.590	0.442
M20	4.469	1.219	-	0.652	0.489
13/16	4.469	1.219	-	0.652	0.489
M22	4.688	1.344	-	0.697	0.523
7/8	4.688	1.344	-	0.697	0.523
15/16	4.906	1.344	-	0.760	0.570
M24	4.906	1.344	-	0.760	0.570
M25	5.125	1.500	-	0.800	0.600
1.000	5.125	1.500	-	0.800	0.600

l_3 based on USCTI Table 302 and shall be no less than minimum Table 302 thread length.
l_2 based on length of 12-pitches of the UNC series.

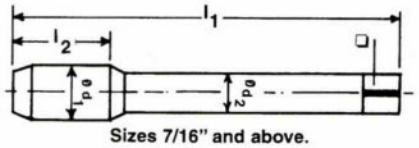
Notes: 1.) l_2 is minimum value and has no tolerance.
2.) Unless otherwise specified, all tolerances are in accordance with USCTI Table 302.
3.) For eccentricity tolerances, see USCTI Table 317.

FOR BESLY STANDARD PRODUCTION TAPS SEE CATALOG T-110C

GENERAL TAP DIMENSIONS DIN LENGTH-ASME/ANSI SHANKS



Sizes #2 thru M10.



Sizes 7/16" and above.

NOMINAL SIZE ø d_1	l_1	l_2	l_3	ø d_2	❑
#2	1.772	0.250	0.551	0.141	0.110
#3	1.969	0.312	0.551	0.141	0.110
#4	2.205	0.312	0.709	0.141	0.110
M3	2.205	0.312	0.709	0.141	0.110
#5	2.205	0.312	0.709	0.141	0.110
M3.5	2.205	0.375	0.787	0.141	0.110
#6	2.205	0.375	0.787	0.141	0.110
M4	2.480	0.375	0.827	0.168	0.131
#8	2.480	0.375	0.827	0.168	0.131
#10	2.756	0.500	0.984	0.194	0.152
M5	2.756	0.500	0.984	0.194	0.152
#12	3.150	0.500	1.142	0.220	0.165
M6	3.150	0.625	1.181	0.255	0.191
1/4	3.150	0.625	1.181	0.255	0.191
M7	3.543	0.688	1.378	0.318	0.238
5/16	3.543	0.688	1.378	0.318	0.238
M8	3.543	0.688	1.378	0.318	0.238
3/8	3.937	0.750	1.535	0.381	0.286
M10	3.937	0.750	1.535	0.381	0.286
7/16	3.937	0.875	-	0.323	0.242
M12	4.331	0.938	-	0.367	0.275
1/2	4.331	0.938	-	0.367	0.275
M14	4.331	1.000	-	0.429	0.322
9/16	4.331	1.000	-	0.429	0.322
5/8	4.331	1.094	-	0.480	0.360
M16	4.331	1.094	-	0.480	0.360
11/16	4.921	1.094	-	0.542	0.406
M18	4.921	1.219	-	0.542	0.406
3/4	4.921	1.219	-	0.590	0.442
M20	5.512	1.219	-	0.652	0.489
13/16	5.512	1.219	-	0.652	0.489
M22	5.512	1.344	-	0.697	0.523
7/8	5.512	1.344	-	0.697	0.523
15/16	6.299	1.344	-	0.760	0.570
M24	6.299	1.344	-	0.760	0.570
M25	6.299	1.500	-	0.800	0.600
1.000	6.299	1.500	-	0.800	0.600

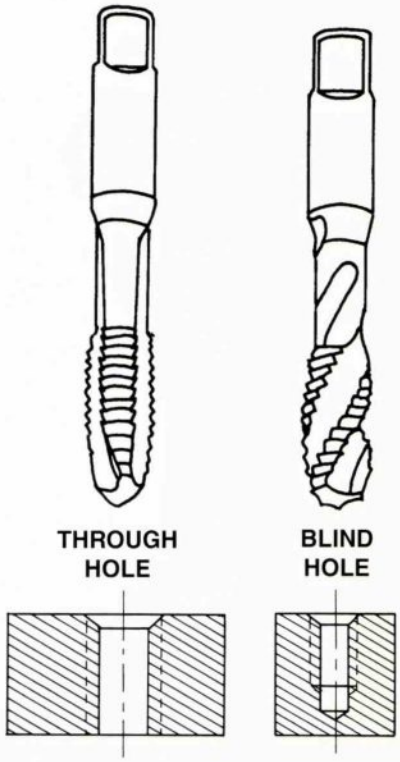
Overall length according to DIN 371, DIN 376. The shank and square according to USCTI Table 302.

BESLY®

MODERN APPLICATION TAPS

QUICK TAP SELECTOR FOR MODERN APPLICATION (MA) TAPS

MATERIAL TO BE TAPPED*	HARDNESS (BHN)	THROUGH HOLE	SPEED (SFM)	BLIND HOLE	SPEED (SFM)
STAINLESS STEELS					
STAINLESS STEEL ALLOYS	UP TO 275	MA-Ss SP. PT.	45	MA-Ss SP. FL.	30
PRECIPITATION HARDENING (PH) STAINLESS STEEL	OVER 275 THRU 375	MA-Ss SP. PT.	30	MA-Ss SP. FL.	20
NICKEL BASE ALLOYS 1.					
HASTELLOY INCONEL WASPALLOY INCOLOY ASTRALOY RENE MONEL	UP TO 275	MA-Ni SP. PT.	20	MA-Ni SP. FL.	7
	OVER 275 THRU 375	MA-Ni SP. PT.	10	MA-Ni SP. FL.	7
TITANIUM ALLOYS 1.					
COMMERCIALLY PURE TITANIUM	UP TO 275	MA-Ti SP. PT.	20	MA-Ti SP. FL.	7
ANNEALED TITANIUM ALLOYS Ti-6AL-4V	OVER 275 THRU 340	MA-Ti SP. PT.	10	MA-Ti SP. FL.	7
HARDENED 2.	OVER 354	MA-Ti SP. PT.	7	MA-Ti SP. FL.	5



* Tap recommendations, for materials not shown above, may be found in the Besly Tap Catalog T-110C under "Quick Tap Selector" or the Besly TAppAnalyst disk®.

1. These materials are very difficult to tap and could require special taps. Consult with Besly Technical Support Team for recommendations.
2. Special taps or modifications are suggested.

FOR BESLY LARGE QUANTITY SPECIALS SEE CATALOG ST-1103

TABLE OF SPEEDS

NOMINAL SIZE	DECIMAL SIZE	FEET PER MINUTE					
		5	7	10	20	30	45
		REVOLUTIONS PER MINUTE					
#2	.0860	222	311	444	888	1333	1999
#3	.0990	193	270	386	772	1158	1736
#4	.1120	171	239	341	682	1023	1535
M3	.1182	162	226	323	646	970	1454
#5	.1250	153	214	306	611	917	1375
M3.5	.1378	139	194	277	554	832	1247
#6	.1380	138	194	277	554	830	1246
M4	.1575	121	170	243	485	728	1091
#8	.1640	116	163	233	466	699	1048
#10	.1900	101	141	201	402	603	905
M5	.1969	97	136	194	388	582	873
#12	.2160	88	124	177	354	531	796
M6	.2363	81	113	162	323	485	727
1/4	.2500	76	107	153	306	458	688
M7	.2756	69	97	139	277	416	624
5/16	.3125	61	86	122	244	367	550
M8	.3150	61	85	121	243	364	546
M9	.3543	54	75	108	216	323	485
3/8	.3750	51	71	102	204	306	458
M10	.3937	49	68	97	194	291	437
M11	.4330	44	62	88	176	265	397
7/16	.4375	44	61	87	175	262	393
M12	.4725	40	57	81	162	243	364
1/2	.5000	38	53	76	153	229	344
M14	.5512	35	49	69	139	208	312
9/16	.5625	34	48	68	136	204	306
5/8	.6250	31	43	61	122	183	275
M16	.6300	30	42	61	121	182	273
11/16	.6875	28	39	56	111	167	250
M18	.7087	27	38	54	108	162	243
3/4	.7500	25	36	51	102	153	229
M20	.7874	24	34	49	97	146	218
13/16	.8125	24	33	47	94	141	212
M22	.8661	22	31	44	88	132	198
7/8	.8750	22	31	44	87	131	196
15/16	.9375	20	29	41	81	122	183
M24	.9449	20	28	40	81	121	182
M25	.9842	19	27	39	78	116	175
1	1.0000	19	27	38	76	115	172

MODERN APPLICATION TAPS

Contact your local authorized Besly Distributor with any questions relating to your individual application and tapping requirements.
The Min. hole size shown in the charts are for nickel and titanium alloys.

RECOMMENDED HOLE SIZES (1.)

UNC COARSE THREADS ASME B1.1-1989 THREAD SIZE AND T.P.I.	DRILL SIZE	MIN. HOLE SIZE
NO. 2-56	#49	0.0730
NO. 3-48	#45	0.0820
NO. 4-40	2.35mm	0.0925
NO. 5-40	#37	0.1042
NO. 6-32	#34	0.1110
NO.8-32	3.50mm	0.1378
NO.10-24	#23	0.1540
NO. 12-24	#15	0.1800
1/4-20	#5	0.2055
5/16-18	6.70mm	0.2638
3/8-16	8.10mm	0.3189
7/16-14	9.50mm	0.3740
1/2-13	11mm	0.4331
9/16-12	31/64	0.4844
5/8-11	13.80mm	0.5433
11/16-11	15.60mm	0.6142
3/4-10	16.75mm	0.6594
7/8-9	49/64	0.7656
1-8	--	0.8880 (2.)

UNF FINE THREADS ASME B1.1-1989 THREAD SIZE AND T.P.I.	DRILL SIZE	MIN. HOLE SIZE
NO. 2-64	#49	0.0730
NO. 3-56	2.15mm	0.0846
NO. 4-48	2.40mm	0.0945
NO. 5-44	#36	0.1065
NO. 6-40	3mm	0.1181
NO. 8-36	9/64	0.1406
NO. 10-32	4.10mm	0.1614
NO. 12-28	#13	0.1850
1/4-28	7/32	0.2188
5/16-24	7mm	0.2756
3/8-24	8.55mm	0.3366
7/16-20	10mm	0.3937
1/2-20	29/64	0.4531
9/16-18	13mm	0.5118
5/8-18	14.60mm	0.5748
11/16-16	-	0.6325 (2.)
3/4-16	17.60mm	0.6929
7/8-14	13/16	0.8125
1-12	23.50mm	0.9252
1-14 UNS2B	15/16	0.9375

METRIC THREADS ASME B1•13M-1995 THREAD SIZE AND PITCH MM	DRILL SIZE	MIN. HOLE SIZE (INCHES)
M3 X 0.5	#38	0.1015
M3.5 X 0.6	#32	0.1160
M4 X 0.7	3.40 mm	0.1339
M4 X 0.5	9/64	0.1406
M5 X 0.8	#18	0.1695
M5 X 0.5	#15	0.1800
M6 X 1	#7	0.2010
M6 X 0.75	#4	0.2090
M7 X 1	"B"	0.2380
M8 X 1.25	"I"	0.2720
M8 X 1	"J"	0.2770
M9 X 1.25	7.80mm	0.3071
M10 X 1.5	"R"	0.3390
M10 X 1.25	"S"	0.3480
M10 X 1	"T"	0.3580
M11 X 1.5	"V"	0.3770
M12 X1.75	13/32	0.4062
M12 X 1.5	10.60mm	0.4173
M12 X 1.25	10.80mm	0.4252
M12 X 1	7/16	0.4375
M14 X 2	12.10mm	0.4764
M14 X 1.5	12.60mm	0.4961
M15 X 1	14mm	0.5551
M16 X 2	14mm	0.5551
M16 X 1.5	14.60mm	0.5748
M17 X 1	16.10mm	0.6339
M18 X 2.5	15.70mm	0.6181
M18 X 1.5	16.50mm	0.6496
M20 X 2.5	17.70mm	0.6968
M20 X 1.5	47/64	0.7344
M20 X 1	3/4	0.7500
M22 X 2.5	19.70mm	0.7756
M22 X 2	20.10mm	0.7913
M22 X 1.5	13/16	0.8125
M24 X 3	21.20mm	0.8346
M24 X 2	22.10mm	0.8700
M25 X 1.5	23.50mm	0.9252

(1.) Principal factors which influence the minor diameter tolerance are ease of tapping, standard drill sizes, and height of engagement. When tapping difficult-to-machine materials, the height of engagement may be shallower and still develop stripping strength greater than the external thread breaking strength. In these instances, the minor diameter may be increased to the maximum tolerance to reduce the possibility of tapping difficulties.
Refer to the following publications for specific information on limiting dimensions for internal screw threads:

- ASME B1.1-1989, UNIFIED INCH SCREW THREADS.
- ASME B1.13M-1995, METRIC SCREW THREADS-M PROFILE.
- FED-STD-H28, FEDERAL STANDARD SCREW-THREAD STANDARDS FOR FEDERAL SERVICES.
- DRILLED HOLES FOR TAPPING, BY THE UNITED STATES CUTTING TOOL INSTITUTE.

(2.) Recommend using either a special drill or reaming the hole to the Min. hole size.

TAP USERS' GUIDE

(FOR MATERIALS NOT COVERED IN THIS CATALOG)

MATERIAL	CUTTING CHARACTERISTICS	BEST TAP	USABLE TAP	POSSIBLE TAP	LUBRICATION	PROBLEMS	SOLUTION
LOW CARBON STEEL	Soft, gummy material produces stringy chip which does not break up easily.	X-Press Tap	Spiral Pointed Tap in thru hole—drives chip forward. Turbo-Cut Tap in blind hole—lifts chips upward.	Straight Fluted Tap. Where chip clearance is lacking, use 3-flute tap for max. chip room in flute.	Use good grade sulphur base cutting oil.	Galling Loading Rough thread	Check tap sharpness and proper lubrication. Secondary heat treatment generally required.
HIGH CARBON STEEL	Tough material. Chips usually break up.	Straight Fluted Tap. Use greatest number of flutes possible.			Use good grade sulphur base cutting oil.	Work hardening Chipping	Check tap sharpness and proper lubrication. Secondary heat treatment generally required. Also, be sure sharp drills are used.
LEADED STEEL	Soft, gummy material.	X-Press Tap. Forms internal threads. Eliminates chip problem.	Spiral Pointed Tap for thru holes. Turbo-Cut tap for blind holes.		Use good grade sulphur base cutting oil.	Loading Rough thread Chipping	Check tap sharpness and proper lubrication. Secondary heat treatment generally required.
TOOL STEEL	Hard, tough, close-grained material.	Straight Fluted Tap. Permits better alignment in hand tapping.			Use good grade cutting oil.	Short tool life. Chipping	Check lubrication, alignment, hole size (do not exceed 60% of thread). Specify secondary heat treatment.
CAST STEEL	Produces wiry, hard chip.	Spiral Pointed Tap. For better chip control.	Straight Fluted Tap. For better size control.		Use good grade sulphur base cutting oil.	Oversize Hard spots Breakage Loading Galling	Selection of proper size tap is very important. Keep tap sharp. Check proper lubrication and alignment. Secondary heat treatment generally required.
TRUE CAST IRON	Produces fine, powdery chip.	Straight Fluted Cast Iron Tap. To reduce chipping and flank wear.			Dry	Breakage Chipping Short tool life	Use proper tap design with secondary heat treatment to counteract dullness which causes wear, breakage and chipping. Bottoming chamfer is generally recommended.
SEMI-STEEL CAST IRON	Chip varies in size in direct relation to steel content—the larger the chip, the higher percentage of steel.	Straight Fluted Tap is generally recommended where steel content is relatively low.	Spiral Pointed Tap or Turbo-Cut is generally recommended where steel content is relatively high.		Sulphur oil or dry.	Breakage Chipping Short tool life	Use proper tap design. Semi-steel produces chip similar to steel. Use Spiral Point to shear metal and drive chips forward. Semi-steel Cast Iron is similar to true cast iron but contains some steel so chips break up easiiy. Use straight flute.
DIE CAST ALUMINUM	A soft flaky chip.	X-Press Tap. No chip problem and assures greater tool life.	Spiral Pointed Tap for thru holes. Turbo-Cut tap for blind holes.		Mineral oil or Lard oil.	Short tool life Loading Breakage due to chipping	X-Press Tap. Use secondary heat treatment where silica content is high and short tool life is encountered. Check for correct hole size.
SILICON ALUMINUM	A hard stringy chip.	Straight Fluted Cast Iron Tap.			Mineral oil or Lard oil.	Short tool life Loading Breakage due to chipping	Proper design tap with secondary heat treatment.
ZINC DIE CASTING	Soft gummy chip.	X-Press Tap. Material extrudes well and is somewhat self-lubricating.	Spiral Pointed Tap for thru holes. Turbo-Cut tap for blind holes.		Mineral oil or Lard oil.	Short tool life Loading Breakage due to chipping	X-Press Tap. Check cored hole size.
COPPER	A hard stringy chip, very hard to break.	X-Press Tap. No chip problem, assures more accurate size.	Spiral Pointed Tap for thru holes. Turbo-Cut tap for blind holes.		Good non-sulphur cutting oil.	Undersize Breakage Chipping	X-Press Tap.
BRASS	Small flaky chip.	X-Press Tap.	Straight Fluted Cast Iron Tap.		Mineral oil or dry.	Undersize Loading Short tool life	X-Press Tap.
CAST BRASS	Small flaky chip.	Straight Fluted Tap. Use greatest number of flutes available.			Mineral oil or dry.	Short tool life	Proper design tap with secondary heat treatment.

BESLY SPECIAL TAPS

Besly encourages its customers to consult with our Authorized Distributors and our Engineering Department when a special tapping problem arises. Often they can recommend a standard tap as a solution. After all, Besly has a complete line of taps, and styles which are exclusively our own.

However, when the occasion arises where only a special tap will do, we stand ready to design and produce special taps to customer specifications. Our Engineering and Production staff has a wealth of tap experience and technology. They, for example, developed the X-Press Tap.

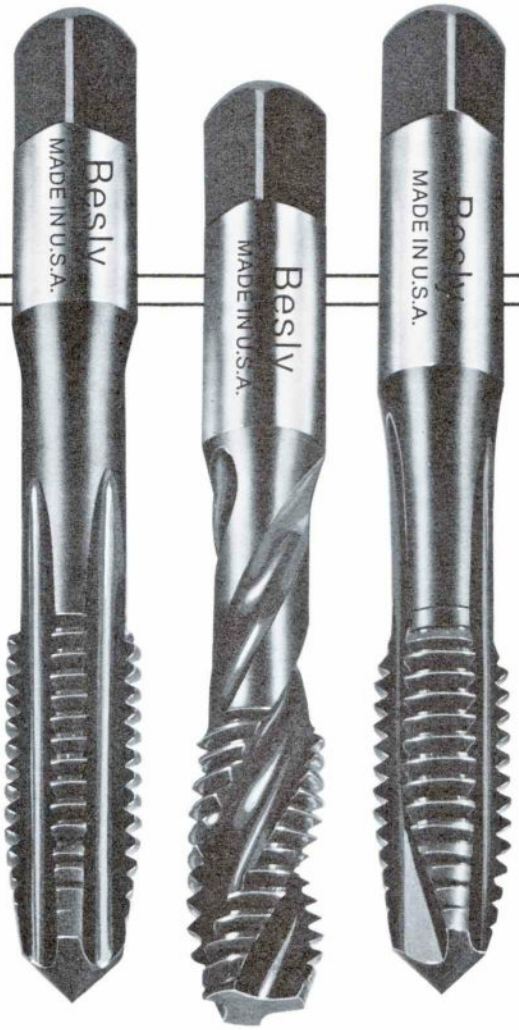
Practically any special purpose tap can be produced promptly, including those with special shanks, squares and fittings. Types from Acme, Stub Acme, Buttress, Modified Whitworth, British Association Standard to French and ISO metric sizes.

Single Pass Taps or Series Taps, for the progressive generation of Acme threads can be produced quickly and efficiently. Whatever the need, call on Besly first.

Besly Tap Blitz is the quick tap service tailored to fit **your** needs. There is no 12 piece limit on taps ordered for quick service. Just call our toll free number and tell us how many taps you need and in what time. We'll discuss it . . . and agree together, on a solution for your special tap problem.

See Special Taps Catalog no. ST-1103 for details

ALSO AVAILABLE...



MAXX-TAP™

BESLY®

COBALT M42 TAPS

The MA-42T.M. Cobalt Taps are designed for High Speed Machining in tough to machine and abrasive materials such as Cast Iron, Ductile, Nodular Iron, Medium Carbon and Alloy Steels.

See Besly Catalog #ST-1103 for more information on MA-42T.M. Cobalt Taps.

Distributed by:

Your Besly Industrial Supply Distributor is ready, willing and able to give you the finest service and the finest cutting tools available. Besly Distributors are cutting tool experts and back their expertise with stocks to meet your requirements. They are supported by our own Factory Trained Field Sales Engineers, our Product Engineering Group, our Research and Development Lab and our inventories.

In this catalog you'll find taps designed specifically for tapping some of the most difficult materials in use today. Tougher applications may require a modification of some features of these taps. Your Besly Technical Support Team can assist you in achieving the best tap design for your situation.

Informative literature is available on the complete line of Besly fine quality cutting tools. Ask your Besly distributor listed or contact Besly Cutting Tools, Inc. directly. For your convenience, toll free telephone lines are available.

Nationwide – 1-800-435-2965
In Illinois – 1-800-892-3051

Taps	Drills	Dies
X-Press® Taps	Turboflute Drills	Counterbores
Turbo Cut® Taps	Reamers	Accessories
Metric Taps		
Special Taps		
MA-Taps		

INDUSTRIAL DISTRIBUTORS

BESLY®

Besly Cutting Tools, Inc.
16200 Woodmint Lane
So. Beloit, Illinois 61080, U.S.A.
815-389-2231 • FAX: 815-389-1339
sales@besly.com • www.besly.com

Printed in U.S.A.