

YAMAWA U.S.A. TODAY

YAMAWA INTRODUCES THE Z-PRO TAP, A HIGH PERFORMANCE GP TAP

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NEWSLETTER FROM YAMAWA MFG. CO., LTD.

Vol. #8 MAR. 2016

CONTACT THE FOLLOWING YMW TAPS USA WHOLESALERS TO PLACE YOUR ORDERS.

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TRY THE NEW YAMAWA Z-PRO TAP TODAY.

YAMAWA'S Z-PRO TAPS ARE AN ECONOMICAL HIGH PERFORMANCE TAP.



INTRODUCING THE NEW YAMAWA Z-PRO TAP SERIES

Z-PRO SPIRAL FLUTE (SP) TAPS Z-PRO SPIRAL POINT (PO) TAPS Z-PRO HAND TAPS (HT)

- THE YAMAWA Z-PRO TAP SERIES IS DESIGNED FOR CARBON STEELS, ALLOYED STEELS, STAINLESS STEELS, FREE MACHINING MATERIALS, ALUMINUM, IRONS, BRASS, AND PLASTIC.
- Z-PRO, ONE TAP FOR ALL THESE MATERIALS.
- THE YAMAWA Z-PRO SERIES TAPS ARE IDEAL FOR TAPPING MATERIALS THAT PRODUCE STRINGY CHIPS.
- Z-PRO TAPS ARE AVAILABLE IN INCH SIZES FROM #0 TO 1-1/2", STI INCH SIZES FROM #2 TO 1/2" AND METRIC SIZES FROM M2 TO M48.
- TRY THE Z-PRO TAP SERIES AT NO CHARGE WITH A TRIAL ORDER. WE GUARANTEE THE PERFORMANCE OF THESE AMAZING TAPS.



GET FREE SAMPLES!

Call 855-YMW-USA1

Think threads with
YAMAWA

Z-PRO TAPS ARE DIN LENGTHS WITH ANSI SHANK DIMENSIONS.

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FEATURES:

1. YAMAWA Z-PRO TAPS ARE MADE FROM A CUSTOM BLENDED HIGH VANADIUM HSS.
2. YAMAWA Z-PRO WILL CUT A VARIETY OF MATERIALS.
3. YAMAWA Z-PRO TAPS ARE AVAILABLE IN INCH, INCH STI AND METRIC THREAD SIZES.
4. Z-PRO TAPS ARE OFFERED IN SPIRAL FLUTE, SPIRAL POINT AND HAND TAPS.
5. YAMAWA Z-PRO TAPS PRODUCE LESS TOOL PRESSURE THAN COMPETITORS HP AND GP TAPS.
6. YAMAWA Z-PRO PRODUCES LOWER TORQUE AND LONGER TOOL LIFE THAN CONVENTIONAL HP OR GP TAPS.

ANALYSIS OF TORQUE:

YAMAWA HAS IMPROVED THE SPIRAL FLUTED TAP DESIGN BY REENGINEERING THE ENTIRE CUTTING GEOMETRY OF THE Z-PRO TAP FOR BETTER CHIP EJECTION, SEE PICTURES BELOW.

Tapping condition

Size: 1/4-20UNC
 Hole size: .201"
 Thread length: .375"
 Machine: Microtap G16
 Speed: 398RPM (26SFM)
 Work materials: 1050 SAE
 Lubricant: Neat Oil

THIS Z-PRO TAP REENGINEERING HAS LEAD TO STABLE TAPPING TORQUE, LONGER TOOL LIFE, AND MOREOVER "RELIABLE SCREW THREADS".

USING A MICROTAP TTT SYSTEM TO ANALYZE THE DEVIATION OF THE TAPPING TORQUE PROVED THE Z-PRO SP OX TAPS HAD MUCH LOWER TORQUE THAN THAT OF OUR CONVENTIONAL SP OX TAPS, SEE CHARTS BELOW.

THIS ANALYSIS SHOWS THERE IS ONLY A SLIGHT DEVIATION BETWEEN THE FIVE PIECES OF THE NEW Z-PRO SP OX TAPS COMPARED WITH CONVENTIONAL SP OX TAPS.

THE NEW YAMAWA Z-PRO SP OX TAPS OFFER CONSISTENT PERFORMANCE WITH LOWER TORQUE FOR INCREASED PRODUCTIVITY. TRY THE NEW Z-PRO TAPS TODAY!

THE NEW Z-PRO SP OX

Excellent chip shape

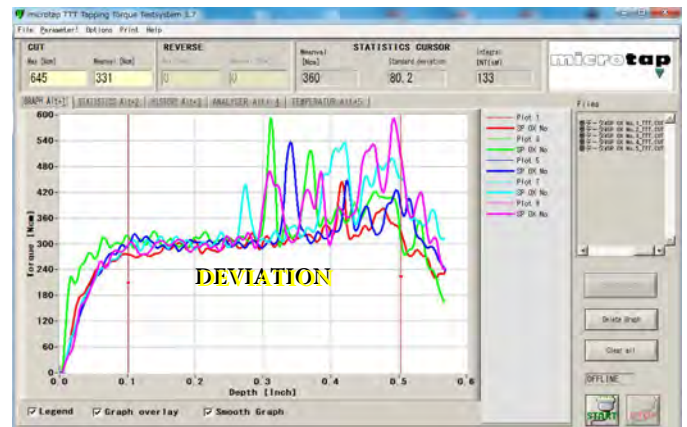


CONVENTIONAL SP OX

Rough chip shape



AFTER TESTING FIVE Z-PRO SP OX TAPS THE STANDARD TORQUE DEVIATION RANGE WAS 39.2 SHOWING CONSISTENCY IN PERFORMANCE.

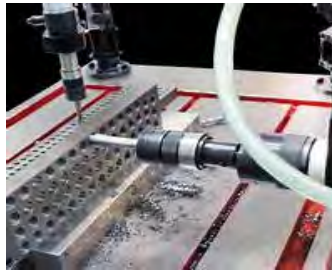


AFTER TESTING FIVE CONVENTIONAL SP OX TAPS THE STANDARD TORQUE DEVIATION RANGE WAS 80.2 SHOWING AN INCONSISTENCY IN PERFORMANCE.

THE AMAZING Z-PRO TAPS ARE SUITABLE FOR EVERY TAPPING CONDITION



Z-PRO HAND TAP IN MILD STEEL



Z-PRO SPIRAL FLUTE TAP FOR BLIND HOLE IN STEEL



Z-PRO SPIRAL POINT TAP FOR THROUGH HOLE IN A286



Z-PRO SPIRAL FLUTE TAP FOR BLIND HOLE IN ALUMINUM

Think threads with **YAMAWA**



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YMW TAPS U.S.A. TAPPING GUIDE 855-YMW-USA1
 BASED ON 65-75% THREAD HEIGHT, LENGTH OF THREAD 2 X DIAMETER, THROUGH HOLE.

Material	Condition	Hardness		Speed SFCM	Z-PRO TAP SERIES												
		BHN	HRC		SP OX	PO OX	HT OX	SP TiN	PO TiN	HT TiN	SP TiCN	PO TiCN	HT TiCN	SP BR	PO BR	HT BR	
Low Carbon Steel, Wrought																	
1005-1029, 1513-1522	Normalized or	< 175	< 9	40-65	●	●	●	●	●								
	Cold Drawn	< 276	< 30	30-50	●	●	●	●	●								
Medium Carbon Steel, Wrought																	
1030-1055, 1525-1522	Normalized	< 250	< 25	20-40	●	●	●	●	●								
High Carbon Steel, Wrought																	
1060-1069, 1070-1078, 1089-1086, 1095	Annealed	< 275	<30	20-40	●	●	●	●	●								
Low Carbon Alloy Steel, Wrought																	
4023, 4320, 5120, 8115, 8622	Normalized	< 250	< 25	20-35	●	●	●	●	●								
Medium Carbon Alloy Steel, Wrought																	
4032, 4130, 5135, 8630	Normalized	< 250	< 25	15-25	●	●	●	●	●								
Tool Steels, Wrought																	
H10, H11, H12, H13, H14, H19, H21, H26	Annealed	<250	<25	15-25	●	●	●	●	●								
D2, D3, D4, D5, D7, A7	Annealed	<150		20-35	●	●	●	●	●								
P2, P4, P5, P6	Annealed	<250	<25	10-15	●	●	●	●	●								
P20, P21	Annealed	<200	<16	15-25	●	●	●	●	●								
Ferritic Stainless Steel, Wrought																	
405, 409, 430, 434, 436, 442, 446, 502	Annealed	< 185	<12	15-30	●	●	●					●	●				
Austenitic Stainless Steel, Wrought																	
201, 202, 301, 302, 303, 304,	Annealed	< 185	<12	18-25	●	●	●					●	●				
305, 308, 309, 310, 314, 316,	Cold Drawn	< 275	< 30	12-20	●	●	●					●	●				
317, 321, 330, 347, 384, 385					●	●	●					●	●				
Martensitic Stainless Steel Wrought																	
403, 410, 420, 422	Annealed	< 175	< 9	15-30	●	●	●					●	●				
501, 502	Annealed	< 225	< 21	15-25	●	●	●					●	●				
414, 431	Annealed	< 275	< 30	15-25	●	●	●					●	●				
440A, 440B, 440C	Annealed	< 275	< 30	10-20	●	●	●					●	●				
Precipitation Hardening Stainless Steel Wrought																	
15-5PH, 16-6PH, 17-4PH	Annealed	< 200	< 16	12-25	●	●	●					●	●				
Aluminum Alloys, Wrought																	
2011-2025, 5050	Cold Drawn	< 80	-	95-125											○	○	○
6061, 7075	Treated	< 150	-	75-100											○	○	○
Aluminum Die Cast	As Cast	< 100	-	100-150					●	●					○	○	○
Brass, Cast		-	-	40-60	●	●	●	●	●								
Bronze, Cast		-	-	30-50	●	●	●	●	●								
Copper, Wrought	Annealed	<100Rs	-	30-90											○	○	○
Magnesium Alloys, Wrought	Treated & Aged	< 125	-	60-90											○	○	○
Plastics, Therosetting & Thermoplastic		UP TO 125Rm		30 to 50											○	○	○
Cast Iron, Gray																	
Ferritic	Annealed	120 to 150		40-70			●					●					
Pearlitic-Ferritic	As Cast	160 to 200		30-50			●					●					
Pearlitic	As Cast	190 to 220		20-40			●					●					
Pearlitic + Free Carbides	As Cast	220 to 260					●					●					
Cast Iron, Ductile																	
Ferritic	Annealed	140 to 190		30-50	●	●	●	●	●	●							
Ferritic-Pearlitic	As Cast	190 to 225		15-35	●	●	●	●	●	●							
Pearlitic-Martensitic	Normalized & Tempered	240 to 300		15-20	●	●	●	●	●	●							
Martensitic	Quenched & Tempered	270 to 300		15	●	●	●	●	●	●							
Cast Iron, Malleable																	
Ferritic 32510, 35018	Malleablized	110 to 160		30-50	●	●	●	●	●	●							
Pearlitic 40010, 45008	Malleablized	160 to 200		20-40	●	●	●	●	●	●							
43010, 48005, 45006, 50005	& Heat Treated	200 to 240		15-25	●	●	●	●	●	●							
Martensitic 53004, 60003, 60004	Malleablized & Heat Treated	200 to 255		14-25	●	●	●	●	●	●							

FIRST CHOICE ● ALTERNATE TiN ● ALTERNATE TiCN ● BRIGHT SURFACE ○

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SUGGESTED SFM TO RPM CONVERSION CHART BY SIZE

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



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