

# HPT HIGH PERFORMANCE TAPS



CNC Reduced Neck Design

## MATERIAL SPECIFIC GEOMETRY

Application specific geometries engineered for high performance, high productivity tapping in a variety of materials. Morse Cutting Tools offers a complete selection of styles, sizes and "H" limits including metric sizes enabling you to choose the right tap to optimize your tapping application.

Powder metallurgy high speed steel, unique geometry, surface finish and tool coating ensure consistent, predictable performance, superior thread quality and excellent tool life for lower cost per tapped hole.

## P/M POWDER METALLURGY HIGH SPEED STEEL

Premium Steel Engineered For

Hardness / Wear Resistance / Tool Life  
Heat Resistance / Toughness and Strength  
Performance Under Difficult Cutting Conditions  
Higher Cutting Speeds / Increased Productivity

### Coolant-Through Available

Morse Taps Can Be Supplied With Through-Coolant Holes For Blind And Through-Hole Applications. Contact Morse Cutting Tools For Assistance.

## SURFACE FINISHES / TOOL COATINGS

**Steam Oxide Finish** increases wear resistance, reduces friction, loading and galling, helps retain cutting fluids, improves thread quality and extends tool life.

**Steam Oxide Over Nitride Finish** features a hard abrasion resistant **Nitrided Base** for enhanced tool life in abrasive materials including cast iron. **Steam Oxide** surface treatment helps toughen the nitrided base, reduces friction, loading and galling, helps retain cutting fluids, improves thread quality and extends tool life.

**TiCN - Titanium Carbonitride Coating** increases wear resistance, reduces friction and galling, reduces tapping torque, improves thread quality and allows increased cutting speeds for greatly increased productivity and tool life.

**CrN - Chromium Nitride Coating** increases wear resistance, reduces friction and galling, reduces tapping torque, improves thread quality and allows increased cutting speeds for greatly increased productivity and tool life.

**Recommended for softer materials including aluminum.**

# APPLICATIONS



## FOR ALUMINUM

Spiral Point / Spiral Flute / Bright Finish / CrN (Chromium Nitride) Coated

**Recommended for all types of aluminum alloys. CrN coating especially recommended for high-silicon aluminum alloys.**

## FOR EXOTIC ALLOYS

Spiral Point / Spiral Flute / Steam Oxide Finish / TiCN Coated

**Recommended for steels, steel alloys, stainless steels, titanium alloys, nickel and nickel base alloys, other exotic alloys and a wide variety of materials up to 32Rc hardness.**

## FOR HARD MATERIALS

Spiral Point / Spiral Flute / Steam Oxide Finish / TiCN Coated

**Recommended for harder (32Rc- 45Rc) materials including steel alloys, titanium alloys, nickel base high temperature alloys, tool and mold steels and stainless steels**

## FOR CAST IRON

Straight Flute / Steam Oxide Over Nitride Finish

**Recommended for all types of gray, ductile and malleable cast iron**

# GEOMETRY

**Spiral Point Taps** are designed for efficient tapping of through holes and blind holes with adequate depth for chip accumulation at the bottom of the hole. The shearing action of the point provides freer cutting action and ejects the chips ahead of the tap, eliminating chip evacuation problems and chip damage to the threads. Shallower flutes also result in greater tap strength, allowing for higher cutting speeds.

**Spiral Flute Taps** are designed to lift the chips out of the hole in blind hole tapping, eliminating chip evacuation problems which can result in damaged threads and broken taps. They will also bridge openings, keyways and other interruptions in the tapped hole.

**Plug Style** (3-5 thread chamfer) is the most common chamfer used for tapping applications in through holes and blind holes with sufficient bottom clearance.

**Semi-Bottoming Style** (2-3 thread chamfer) allows threading close to the bottom of blind holes but cuts more efficiently than standard bottoming taps due to a slightly longer chamfer which distributes the cutting load over a greater number of teeth.

**Semi-Interrupted Threads** help to break the chips and enhance coolant flow to the cutting teeth for reduced chance of torn threads and improved thread quality.

**CNC Reduced Neck Design** enhances chip evacuation and cutting fluid flow to the cutting teeth for reduced friction, heat and galling. Also reduces contact between the tap and the workpiece.

# Spiral Point HPT High Performance Taps For Aluminum Plug Style

Taraud à haut rendement

Machuelo de alto rendimiento



Recommended for all types of aluminum alloys.

Premium Powder Metallurgy High Speed Steel  
Bright Finish and CrN (Chromium Nitride) Coated  
Semi-Interrupted Thread (3-Flute taps only)

List No. 2092 Bright Finish

List No. 2092S

CrN - Chromium Nitride Coated

Primarily designed for tapping through holes. The spiral point forces the chips ahead of the tap.

CNC Reduced Neck Design

SIZE	TPI		NO. OF FLUTES	THREAD LENGTH	NECK LENGTH	OAL	BRIGHT FINISH LIST NO. 2092					CRN COATED LIST NO. 2092S						
	UNC	UNF					H1	H2	H3	H4	H5	H1	H2	H3	H4	H5		
4	40	—	2	5/16	1/4	1 7/8	—	30000	—	—	—	—	—	—	60700	—	—	—
4	—	48	2	5/16	1/4	1 7/8	30001	30002	—	—	—	—	60701	60702	—	—	—	
5	40	—	2	5/16	5/16	1 15/16	—	30003	—	—	—	—	—	60703	—	—	—	
6	32	—	2	3/8	5/16	2	—	30004	30005	—	—	—	—	60704	60705	—	—	
6	—	40	2	3/8	5/16	2	—	30006	—	—	—	—	—	60706	—	—	—	
8	32	—	3	3/8	3/8	2 1/8	—	30007	30008	—	—	—	—	60707	60708	—	—	
8	—	36	3	3/8	3/8	2 1/8	—	30009	—	—	—	—	—	60709	—	—	—	
10	24	—	3	1/2	3/8	2 3/8	—	—	30010	—	—	—	—	—	60710	—	—	
10	—	32	3	1/2	3/8	2 3/8	—	30011	30012	—	—	—	—	60711	60712	—	—	
1/4	20	—	3	5/8	3/8	2 1/2	—	—	30013	—	—	30014	—	—	60713	—	60714	
1/4	—	28	3	5/8	3/8	2 1/2	—	—	30015	30016	—	—	—	—	60715	60716	—	
5/16	18	—	3	1 1/16	7/16	2 23/32	—	—	30017	—	—	30018	—	—	60717	—	60718	
5/16	—	24	3	1 1/16	7/16	2 23/32	—	—	30019	30020	—	—	—	—	60719	60720	—	
3/8	16	—	3	3/4	1/2	2 15/16	—	—	30021	—	—	30022	—	—	60721	—	60722	
3/8	—	24	3	3/4	1/2	2 15/16	—	—	30023	30024	—	—	—	—	60723	60724	—	
7/16	14	—	3	7/8	9/16	3 5/32	—	—	30025	—	—	30026	—	—	60725	—	60726	
7/16	—	20	3	7/8	9/16	3 5/32	—	—	30027	—	—	30028	—	—	60727	—	60728	
1/2	13	—	3	1 5/16	23/32	3 3/8	—	—	30029	—	—	30030	—	—	60729	—	60730	
1/2	—	20	3	1 5/16	23/32	3 3/8	—	—	30031	—	—	30032	—	—	60731	—	60732	

Semi-Interrupted Thread on 3-Flute Taps Only

## Metric

List No. 2092M Bright Finish

List No. 2092MS CrN - Chromium Nitride Coated

### Coolant-Through Available

Morse Taps Can Be Provided With Coolant Holes For Through Coolant Capability. Contact Morse Cutting Tools For Assistance.

SIZE	PITCH	PITCH DIA. LIMIT	NO. OF FLUTES	THREAD LENGTH	NECK LENGTH	OAL	BRIGHT FINISH LIST NO. 2092M		CRN COATED LIST NO. 2092MS	
							EDP NO.	EDP NO.	EDP NO.	EDP NO.
M3	0.5	D3	2	5/16	5/16	1 15/16	30050	—	60750	—
M4	0.7	D4	3	3/8	3/8	2 1/8	30051	—	60751	—
M5	0.8	D4	3	1/2	3/8	2 3/8	30052	—	60752	—
M6	1.0	D5	3	5/8	3/8	2 1/2	30053	—	60753	—
M8	1.0	D5	3	1 1/16	7/16	2 23/32	30054	—	60754	—
M8	1.25	D5	3	1 1/16	7/16	2 23/32	30055	—	60755	—
M10	1.5	D6	3	3/4	1/2	2 5/16	30056	—	60756	—
M12	1.5	D5	3	1 5/16	23/32	3 3/8	30057	—	60757	—
M12	1.75	D6	3	1 5/16	23/32	3 3/8	30058	—	60758	—

Semi-Interrupted Thread on 3-Flute Taps Only

# Spiral Flute HPT High Performance Taps For Aluminum

Taraud à haut rendement

Machuelo de alto rendimiento

CNC Reduced Neck Design



## Semi-Bottoming Style

Recommended for all types of aluminum alloys.

Premium Powder Metallurgy High Speed Steel  
Bright Finish and CrN (Chromium Nitride) Coated  
Semi-Interrupted Thread (3-Flute taps only).

List No. 2093 Bright Finish

List No. 2093S

CrN - Chromium Nitride Coated

Primarily designed for tapping blind holes. The spiral flutes draw the chips out of the hole.

SIZE	TPI		NO. OF FLUTES	THREAD LENGTH	NECK LENGTH	OAL	BRIGHT FINISH LIST NO. 2093					CRN COATED LIST NO. 2093S					
	UNC	UNF					H1	H2	H3	H4	H5	H1	H2	H3	H4	H5	
4	40	—	2	15/64	21/64	17/8	—	30070	—	—	—	—	—	60770	—	—	—
4	—	48	2	15/64	21/64	17/8	30071	30072	—	—	—	—	60771	60772	—	—	—
5	40	—	2	15/64	25/64	1 15/16	—	30073	—	—	—	—	—	60773	—	—	—
6	32	—	2	15/64	29/64	2	—	30074	30075	—	—	—	—	60774	60775	—	—
6	—	40	2	15/64	29/64	2	—	30076	—	—	—	—	—	60776	—	—	—
8	32	—	2	15/64	33/64	2 1/8	—	30077	30078	—	—	—	—	60777	60778	—	—
8	—	36	2	15/64	33/64	2 1/8	—	30079	—	—	—	—	—	60779	—	—	—
10	24	—	2	11/32	17/32	2 3/8	—	—	30080	—	—	—	—	—	60780	—	—
10	—	32	2	11/32	17/32	2 3/8	—	30081	30082	—	—	—	—	60781	60782	—	—
1/4	20	—	2	7/16	9/16	2 1/2	—	—	30083	—	—	30084	—	—	60783	—	60784
1/4	—	28	2	7/16	9/16	2 1/2	—	—	30085	30086	—	—	—	—	60785	60786	—
5/16	18	—	2	15/32	21/32	2 23/32	—	—	30087	—	—	30088	—	—	60787	—	60788
5/16	—	24	2	15/32	21/32	2 23/32	—	—	30089	30090	—	—	—	—	60789	60790	—
3/8	16	—	2	35/64	45/64	2 15/16	—	—	30091	—	—	30092	—	—	60791	—	60792
3/8	—	24	2	35/64	45/64	2 15/16	—	—	30093	30094	—	—	—	—	60793	60794	—
7/16	14	—	3	19/32	27/32	3 5/32	—	—	30095	—	—	30096	—	—	60795	—	60796
7/16	—	20	3	19/32	27/32	3 5/32	—	—	30097	—	—	30098	—	—	60797	—	60798
1/2	13	—	3	5/8	1 1/32	3 3/8	—	—	30099	—	—	30100	—	—	60799	—	60800
1/2	—	20	3	5/8	1 1/32	3 3/8	—	—	30101	—	—	30102	—	—	60801	—	60802

Semi-Interrupted Thread on 3-Flute Taps Only

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## Metric

List No. 2093M Bright Finish

List No. 2093MS CrN - Chromium Nitride Coated

SIZE	PITCH	PITCH DIA. LIMIT	NO. OF FLUTES	THREAD LENGTH	NECK LENGTH	OAL	BRIGHT FINISH LIST NO. 2093M		CRN COATED LIST NO. 2093MS	
							EDP NO.	EDP NO.	EDP NO.	EDP NO.
M3	0.5	D3	2	15/64	25/64	1 15/16	30120	—	60820	—
M4	0.7	D4	2	15/64	33/64	2 1/8	30121	—	60821	—
M5	0.8	D4	2	23/64	17/32	2 3/8	30122	—	60822	—
M6	1.0	D5	2	7/16	9/16	2 1/2	30123	—	60823	—
M8	1.0	D5	2	15/32	21/32	2 23/32	30124	—	60824	—
M8	1.25	D5	2	15/32	21/32	2 23/32	30125	—	60825	—
M10	1.5	D6	2	35/64	11/16	2 15/16	30126	—	60826	—
M12	1.5	D5	3	5/8	1 1/64	3 3/8	30127	—	60827	—
M12	1.75	D6	3	5/8	1 1/64	3 3/8	30128	—	60828	—

Semi-Interrupted Thread on 3-Flute Taps Only

HPT High Performance Taps

# Spiral Point HPT High Performance Taps For Exotic Alloys

Taraud à haut rendement

Machuelo de alto rendimiento

CNC Reduced Neck Design

## Plug Style

Recommended for steels, steel alloys, stainless steels, titanium alloys, nickel and nickel base alloys, other exotic alloys and a wide variety of materials up to 32Rc hardness.

Premium Powder Metallurgy High Speed Steel Steam Oxide Finish and TiCN Coated



List No. 2095 Steam Oxide Finish

List No. 2095C

TiCN - Titanium Carbonitride Coated

Primarily designed for tapping through holes. The spiral point forces the chips ahead of the tap.

SIZE	TPI		NO. OF FLUTES	THREAD LENGTH	NECK LENGTH	OAL	STEAM OXIDE FINISH LIST NO. 2095				TiCN COATED		LIST NO. 2095C	
	UNC	UNF					H2	H3	H4	H5	H2	H3	H4	H5
4	40	—	2	5/16	1/4	1 7/8	30200	—	—	—	60840	—	—	—
5	40	—	2	5/16	5/16	1 15/16	30201	—	—	—	60841	—	—	—
6	32	—	2	3/8	5/16	2	30202	30203	—	—	60842	60843	—	—
8	32	—	3	3/8	3/8	2 1/8	30204	30205	—	—	60844	60845	—	—
10	24	—	3	1/2	3/8	2 3/8	—	30206	—	—	—	60846	—	—
10	—	32	3	1/2	3/8	2 3/8	30208	30209	—	—	60848	60849	—	—
1/4	20	—	3	5/8	3/8	2 1/2	—	30210	—	30211	—	60850	—	60851
1/4	—	28	3	5/8	3/8	2 1/2	—	30212	30213	—	—	60852	60853	—
5/16	18	—	3	1 1/16	7/16	2 23/32	—	30214	—	30215	—	60854	—	60855
5/16	—	24	3	1 1/16	7/16	2 23/32	—	30216	30217	—	—	60856	60857	—
3/8	16	—	3	3/4	1/2	2 15/16	—	30218	—	30219	—	60858	—	60859
3/8	—	24	3	3/4	1/2	2 15/16	—	30220	30221	—	—	60860	60861	—
7/16	14	—	3	7/8	9/16	3 5/8	—	30222	—	30223	—	60862	—	60863
7/16	—	20	3	7/8	9/16	3 5/8	—	30224	—	30225	—	60864	—	60865
1/2	13	—	3	1 5/16	23/32	3 3/8	—	30226	—	30227	—	60866	—	60867
1/2	—	20	3	1 5/16	23/32	3 3/8	—	30228	—	30229	—	60868	—	60869
9/16	12	—	4	1	43/64	3 19/32	—	30230	—	30231	—	60870	—	60871
9/16	—	18	4	1	43/64	3 19/32	—	30232	—	30233	—	60872	—	60873
5/8	11	—	4	1 1/8	43/64	3 13/16	—	30234	—	30235	—	60874	—	60875
5/8	—	18	4	1 1/8	43/64	3 13/16	—	30236	—	30237	—	60876	—	60877
3/4	10	—	4	1 7/8	49/64	4 1/4	—	30238	—	30239	—	60878	—	60879
3/4	—	16	4	1 7/8	49/64	4 1/4	—	30240	—	30241	—	60880	—	60881

## Metric

List No. 2095M Steam Oxide Finish

List No. 2095MC TiCN - Titanium Carbonitride Coated

### Coolant-Through Available

Morse Taps Can Be Supplied With Through-Coolant Holes For Blind and Through-Hole Applications. Contact Morse Cutting Tools For Assistance.

SIZE	PITCH	PITCH DIA. LIMIT	NO. OF FLUTES	THREAD LENGTH	NECK LENGTH	OAL	STEAM OXIDE FINISH LIST NO. 2095M		TiCN COATED LIST NO. 2095MC	
							EDP NO.	EDP NO.	EDP NO.	EDP NO.
M3	0.5	D3	2	5/16	5/16	1 15/16	30260	—	60900	—
M4	0.7	D4	3	3/8	3/8	2 1/8	30261	—	60901	—
M5	0.8	D4	3	1/2	3/8	2 3/8	30262	—	60902	—
M6	1.0	D5	3	5/8	3/8	2 1/2	30263	—	60903	—
M8	1.0	D5	3	1 1/16	7/16	2 23/32	30264	—	60904	—
M8	1.25	D5	3	1 1/16	7/16	2 23/32	30265	—	60905	—
M10	1.5	D6	3	3/4	1/2	2 15/16	30266	—	60906	—
M12	1.5	D5	3	1 5/16	23/32	3 3/8	30267	—	60907	—
M12	1.75	D6	3	1 5/16	23/32	3 3/8	30268	—	60908	—

# Spiral Flute HPT High Performance Taps For Exotic Alloys Semi-Bottoming Style

Taraud à haut rendement

Machuelo de alto rendimiento

CNC Reduced Neck Design



Recommended for steels, steel alloys, stainless steels, titanium alloys, nickel and nickel base alloys, other exotic alloys and a wide variety of materials up to 32Rc hardness.

Premium Powder Metallurgy High Speed Steel Steam Oxide Finish and TiCN Coated

List No. 2096 Steam Oxide Finish

List No. 2096C

TiCN - Titanium Carbonitride Coated

Primarily designed for tapping blind holes. The spiral flutes draw the chips out of the hole.

SIZE	TPI		NO. OF FLUTES	THREAD LENGTH	NECK LENGTH	OAL	STEAM OXIDE FINISH LIST NO. 2096				TiCN COATED LIST NO. 2096C				
	UNC	UNF					H2	H3	H4	H5	H2	H3	H4	H5	
4	40	—	3	1 <sup>5</sup> / <sub>64</sub>	2 <sup>1</sup> / <sub>64</sub>	1 <sup>7</sup> / <sub>8</sub>	30280	—	—	—	—	60920	—	—	—
5	40	—	3	1 <sup>5</sup> / <sub>64</sub>	2 <sup>5</sup> / <sub>64</sub>	1 <sup>15</sup> / <sub>16</sub>	30281	—	—	—	—	60921	—	—	—
6	32	—	3	1 <sup>5</sup> / <sub>64</sub>	2 <sup>9</sup> / <sub>64</sub>	2	30282	30283	—	—	—	60922	60923	—	—
8	32	—	3	1 <sup>5</sup> / <sub>64</sub>	3 <sup>3</sup> / <sub>64</sub>	2 <sup>1</sup> / <sub>8</sub>	30284	30285	—	—	—	60924	60925	—	—
10	24	—	3	2 <sup>3</sup> / <sub>64</sub>	1 <sup>7</sup> / <sub>32</sub>	2 <sup>3</sup> / <sub>8</sub>	—	30286	—	—	—	—	60926	—	—
10	—	32	3	2 <sup>3</sup> / <sub>64</sub>	1 <sup>7</sup> / <sub>32</sub>	2 <sup>3</sup> / <sub>8</sub>	30288	30289	—	—	—	60928	60929	—	—
1/4	20	—	3	7/16	9/16	2 1/2	—	30290	—	30291	—	—	60930	—	60931
1/4	—	28	3	7/16	9/16	2 1/2	—	30292	30293	—	—	—	60932	60933	—
5/16	18	—	3	1 <sup>5</sup> / <sub>32</sub>	2 <sup>1</sup> / <sub>32</sub>	2 <sup>23</sup> / <sub>32</sub>	—	30294	—	30295	—	—	60934	—	60935
5/16	—	24	3	1 <sup>5</sup> / <sub>32</sub>	2 <sup>1</sup> / <sub>32</sub>	2 <sup>23</sup> / <sub>32</sub>	—	30296	30297	—	—	—	60936	60937	—
3/8	16	—	3	3 <sup>5</sup> / <sub>64</sub>	1 <sup>1</sup> / <sub>16</sub>	2 <sup>15</sup> / <sub>16</sub>	—	30298	—	30299	—	—	60938	—	60939
3/8	—	24	3	3 <sup>5</sup> / <sub>64</sub>	1 <sup>1</sup> / <sub>16</sub>	2 <sup>15</sup> / <sub>16</sub>	—	30300	30301	—	—	—	60940	60941	—
7/16	14	—	3	1 <sup>9</sup> / <sub>32</sub>	2 <sup>7</sup> / <sub>32</sub>	3 <sup>5</sup> / <sub>32</sub>	—	30302	—	30303	—	—	60942	—	60943
7/16	—	20	3	1 <sup>9</sup> / <sub>32</sub>	2 <sup>7</sup> / <sub>32</sub>	3 <sup>5</sup> / <sub>32</sub>	—	30304	—	30305	—	—	60944	—	60945
1/2	13	—	3	5/8	1 <sup>1</sup> / <sub>64</sub>	3 <sup>3</sup> / <sub>8</sub>	—	30306	—	30307	—	—	60946	—	60947
1/2	—	20	3	5/8	1 <sup>1</sup> / <sub>64</sub>	3 <sup>3</sup> / <sub>8</sub>	—	30308	—	30309	—	—	60948	—	60949
9/16	12	—	3	1 <sup>1</sup> / <sub>16</sub>	6 <sup>3</sup> / <sub>64</sub>	3 <sup>19</sup> / <sub>32</sub>	—	30310	—	30311	—	—	60950	—	60951
9/16	—	18	3	1 <sup>1</sup> / <sub>16</sub>	6 <sup>3</sup> / <sub>64</sub>	3 <sup>19</sup> / <sub>32</sub>	—	30312	—	30313	—	—	60952	—	60953
5/8	11	—	3	3/4	1 <sup>3</sup> / <sub>64</sub>	3 <sup>13</sup> / <sub>16</sub>	—	30314	—	30315	—	—	60954	—	60955
5/8	—	18	3	3/4	1 <sup>3</sup> / <sub>64</sub>	3 <sup>13</sup> / <sub>16</sub>	—	30316	—	30317	—	—	60956	—	60957
3/4	10	—	3	1 <sup>3</sup> / <sub>16</sub>	1 <sup>5</sup> / <sub>32</sub>	4 <sup>1</sup> / <sub>4</sub>	—	30318	—	30319	—	—	60958	—	60959
3/4	—	16	3	1 <sup>3</sup> / <sub>16</sub>	1 <sup>5</sup> / <sub>32</sub>	4 <sup>1</sup> / <sub>4</sub>	—	30320	—	30321	—	—	60960	—	60961

## Metric

Cutting Speeds: Page 159

List No. 2096M Steam Oxide Finish

List No. 2096MC TiCN - Titanium Carbonitride Coated

SIZE	PITCH	PITCH DIA. LIMIT	NO. OF FLUTES	THREAD LENGTH	NECK LENGTH	OAL	STEAM OXIDE FINISH LIST NO. 2096M		TiCN COATED LIST NO. 2096MC	
							EDP NO.	EDP NO.	EDP NO.	EDP NO.
M3	0.5	D3	3	1 <sup>5</sup> / <sub>64</sub>	2 <sup>5</sup> / <sub>64</sub>	1 <sup>15</sup> / <sub>16</sub>	30340	—	60980	—
M4	0.7	D4	3	1 <sup>5</sup> / <sub>64</sub>	3 <sup>3</sup> / <sub>64</sub>	2 <sup>1</sup> / <sub>8</sub>	30341	—	60981	—
M5	0.8	D4	3	2 <sup>3</sup> / <sub>64</sub>	1 <sup>7</sup> / <sub>32</sub>	2 <sup>3</sup> / <sub>8</sub>	30342	—	60982	—
M6	1.0	D5	3	7/16	9/16	2 1/2	30343	—	60983	—
M8	1.0	D5	3	1 <sup>5</sup> / <sub>32</sub>	2 <sup>1</sup> / <sub>32</sub>	2 <sup>23</sup> / <sub>32</sub>	30344	—	60984	—
M8	1.25	D5	3	1 <sup>5</sup> / <sub>32</sub>	2 <sup>1</sup> / <sub>32</sub>	2 <sup>23</sup> / <sub>32</sub>	30345	—	60985	—
M10	1.5	D6	3	3 <sup>5</sup> / <sub>64</sub>	1 <sup>1</sup> / <sub>16</sub>	2 <sup>15</sup> / <sub>16</sub>	30346	—	60986	—
M12	1.5	D5	3	5/8	1 <sup>1</sup> / <sub>64</sub>	3 <sup>3</sup> / <sub>8</sub>	30347	—	60987	—
M12	1.75	D6	3	5/8	1 <sup>1</sup> / <sub>64</sub>	3 <sup>3</sup> / <sub>8</sub>	30348	—	60988	—

HPT High Performance Taps

# Spiral Point HPT High Performance Taps For Hard Materials Plug Style

Taraud à haut rendement

Machuelo de alto rendimiento



Recommended for harder 32Rc-45Rc materials including steel alloys, titanium alloys, nickel base high temp alloys, tool and mold steels and stainless steels.

Premium Powder Metallurgy High Speed Steel  
Steam Oxide Finish and TiCN Coated

List No. 2097 Steam Oxide Finish

List No. 2097C

TiCN - Titanium Carbonitride Coated

Primarily designed for tapping through holes. The spiral point forces the chips ahead of the tap.

SIZE	TPI		NO. OF FLUTES	THREAD LENGTH	NECK LENGTH	OAL	STEAM OXIDE FINISH				TiCN COATED		LIST NO. 2097C	
	UNC	UNF					H2	H3	H4	H5	H2	H3	H4	H5
4	40	—	2	5/16	1/4	1 7/8	30360	—	—	—	61000	—	—	—
5	40	—	3	5/16	5/16	1 15/16	30361	—	—	—	61001	—	—	—
6	32	—	3	3/8	5/16	2	30362	30363	—	—	61002	61003	—	—
8	32	—	3	3/8	3/8	2 1/8	30364	30365	—	—	61004	61005	—	—
10	24	—	3	1/2	3/8	2 3/8	—	30366	—	—	—	61006	—	—
10	—	32	3	1/2	3/8	2 3/8	30368	30369	—	—	61008	61009	—	—
1/4	20	—	3	5/8	3/8	2 1/2	—	30370	—	30371	—	61010	—	61011
1/4	—	28	3	5/8	3/8	2 1/2	—	30372	30373	—	—	61012	61013	—
5/16	18	—	3	1 1/16	7/16	2 23/32	—	30374	—	30375	—	61014	—	61015
5/16	—	24	3	1 1/16	7/16	2 23/32	—	30376	30377	—	—	61016	61017	—
3/8	16	—	3	3/4	1/2	2 15/16	—	30378	—	30379	—	61018	—	61019
3/8	—	24	3	3/4	1/2	2 15/16	—	30380	30381	—	—	61020	61021	—
7/16	14	—	3	7/8	9/16	3 5/32	—	30382	—	30383	—	61022	—	61023
7/16	—	20	3	7/8	9/16	3 5/32	—	30384	—	30385	—	61024	—	61025
1/2	13	—	3	1 5/16	2 3/32	3 3/8	—	30386	—	30387	—	61026	—	61027
1/2	—	20	3	1 5/16	2 3/32	3 3/8	—	30388	—	30389	—	61028	—	61029
9/16	12	—	4	1	4 3/64	3 19/32	—	30390	—	30391	—	61030	—	61031
9/16	—	18	4	1	4 3/64	3 19/32	—	30392	—	30393	—	61032	—	61033
5/8	11	—	4	1 1/8	4 3/64	3 13/16	—	30394	—	30395	—	61034	—	61035
5/8	—	18	4	1 1/8	4 3/64	3 13/16	—	30396	—	30397	—	61036	—	61037
3/4	10	—	4	1 7/8	4 9/64	4 1/4	—	30398	—	30399	—	61038	—	61039
3/4	—	16	4	1 7/8	4 9/64	4 1/4	—	30400	—	30401	—	61040	—	61041

## Metric

CNC Reduced Neck Design

List No. 2097M Steam Oxide Finish

List No. 2097MC TiCN - Titanium Carbonitride Coated

SIZE	PITCH	PITCH DIA. LIMIT	NO. OF FLUTES	THREAD LENGTH	NECK LENGTH	OAL	STEAM OXIDE FINISH		TiCN COATED	
							LIST NO. 2097M	EDP NO.	LIST NO. 2097MC	EDP NO.
M3	0.5	D3	3	5/16	5/16	1 15/16	30420	—	61060	—
M4	0.7	D4	3	3/8	3/8	2 1/8	30421	—	61061	—
M5	0.8	D4	3	1/2	3/8	2 3/8	30422	—	61062	—
M6	1.0	D5	3	5/8	3/8	2 1/2	30423	—	61063	—
M8	1.0	D5	3	1 1/16	7/16	2 23/32	30424	—	61064	—
M8	1.25	D5	3	1 1/16	7/16	2 23/32	30425	—	61065	—
M10	1.5	D6	3	3/4	1/2	2 15/16	30426	—	61066	—
M12	1.5	D5	3	1 5/16	2 3/32	3 3/8	30427	—	61067	—
M12	1.75	D6	3	1 5/16	2 3/32	3 3/8	30428	—	61068	—



# Spiral Flute HPT High Performance Taps For Hard Materials Semi-Bottoming Style

Taraut à haut rendement

Machuelo de alto rendimiento

CNC Reduced Neck Design



Recommended for harder 32Rc-45Rc materials including steel alloys, titanium alloys, nickel base high temp alloys, tool and mold steels and stainless steels.

Premium Powder Metallurgy High Speed Steel Steam Oxide Finish and TiCN Coated

List No. 2098 Steam Oxide Finish

List No. 2098C

TiCN - Titanium Carbonitride Coated

Primarily designed for tapping blind holes. The spiral flutes draw the chips out of the hole.

SIZE	TPI		NO. OF FLUTES	THREAD LENGTH	NECK LENGTH	OAL	STEAM OXIDE FINISH LIST NO. 2098				TiCN COATED LIST NO. 2098C			
	UNC	UNF					H2	H3	H4	H5	H2	H3	H4	H5
4	40	—	2	5/16	1/4	1 1/8	30440	—	—	—	61080	—	—	—
5	40	—	2	5/16	5/16	1 15/16	30441	—	—	—	61081	—	—	—
6	32	—	2	3/8	5/16	2	30442	30443	—	—	61082	61083	—	—
8	32	—	2	3/8	3/8	2 1/8	30444	30445	—	—	61084	61085	—	—
10	24	—	3	1/2	3/8	2 3/8	—	30446	—	—	—	61086	—	—
10	—	32	3	1/2	3/8	2 3/8	30448	30449	—	—	61088	61089	—	—
1/4	20	—	3	5/8	3/8	2 1/2	—	30450	—	30451	—	61090	—	61091
1/4	—	28	3	5/8	3/8	2 1/2	—	30452	30453	—	—	61092	61093	—
5/16	18	—	3	1 1/16	7/16	2 23/32	—	30454	—	30455	—	61094	—	61095
5/16	—	24	3	1 1/16	7/16	2 23/32	—	30456	30457	—	—	61096	61097	—
3/8	16	—	3	3/4	1/2	2 15/16	—	30458	—	30459	—	61098	—	61099
3/8	—	24	3	3/4	1/2	2 15/16	—	30460	30461	—	—	61100	61101	—
7/16	14	—	3	7/8	9/16	3 5/32	—	30462	—	30463	—	61102	—	61103
7/16	—	20	3	7/8	9/16	3 5/32	—	30464	—	30465	—	61104	—	61105
1/2	13	—	3	1 5/16	23/32	3 3/8	—	30466	—	30467	—	61106	—	61107
1/2	—	20	3	1 5/16	23/32	3 3/8	—	30468	—	30469	—	61108	—	61109
9/16	12	—	4	1	43/64	3 19/32	—	30470	—	30471	—	61110	—	61111
9/16	—	18	4	1	43/64	3 19/32	—	30472	—	30473	—	61112	—	61113
5/8	11	—	4	1 1/8	43/64	3 13/16	—	30474	—	30475	—	61114	—	61115
5/8	—	18	4	1 1/8	43/64	3 13/16	—	30476	—	30477	—	61116	—	61117
3/4	10	—	4	1 7/32	49/64	4 1/4	—	30478	—	30479	—	61118	—	61119
3/4	—	16	4	1 7/32	49/64	4 1/4	—	30480	—	30481	—	61120	—	61121

Cutting Speeds: Page 159

## Metric

List No. 2098M Steam Oxide Finish

List No. 2098MC TiCN - Titanium Carbonitride Coated

SIZE	PITCH	PITCH DIA. LIMIT	NO. OF FLUTES	THREAD LENGTH	NECK LENGTH	OAL	STEAM OXIDE FINISH LIST NO. 2098M		TiCN COATED LIST NO. 2098MC	
							EDP NO.	EDP NO.	EDP NO.	EDP NO.
M3	0.5	D3	2	5/16	5/16	1 15/16	30490	—	61140	—
M4	0.7	D4	2	3/8	3/8	2 1/8	30491	—	61141	—
M5	0.8	D4	3	1/2	3/8	2 3/8	30492	—	61142	—
M6	1.0	D5	3	5/8	3/8	2 1/2	30493	—	61143	—
M8	1.0	D5	3	1 1/16	7/16	2 23/32	30494	—	61144	—
M8	1.25	D5	3	1 1/16	7/16	2 23/32	30495	—	61145	—
M10	1.5	D6	3	3/4	1/2	2 15/16	30496	—	61146	—
M12	1.5	D5	3	1 5/16	23/32	3 3/8	30497	—	61147	—
M12	1.75	D6	3	1 5/16	23/32	3 3/8	30498	—	61148	—

HPT High Performance Taps



# Straight Flute HPT High Performance Taps For Cast Iron

Semi-Bottoming Style

Taraud à haut rendement

Machuelo de alto rendimiento



Recommended for all types of gray, ductile and malleable cast iron.

Premium Powder Metallurgy High Speed Steel  
Steam Oxide over Nitride Finish

List No. 2094 Steam Oxide Over Nitride

CNC Reduced Neck Design

SIZE	UNC	TPI		NO. OF FLUTES	THREAD LENGTH	NECK LENGTH	OAL	STEAM OXIDE OVER NITRIDE LIST NO. 2094			
		UNC	UNF					H2	H3	H4	H5
10	24	—	—	3	1/2	3/8	2 3/8	—	30140	—	—
10	—	—	32	3	1/2	3/8	2 3/8	30141	30142	—	—
1/4	20	—	—	4	5/8	3/8	2 1/2	—	30143	—	30144
1/4	—	—	28	4	5/8	3/8	2 1/2	—	30145	30146	—
5/16	18	—	—	4	1 1/16	7/16	2 23/32	—	30147	—	30148
5/16	—	—	24	4	1 1/16	7/16	2 23/32	—	30149	30150	—
3/8	16	—	—	4	3/4	1/2	2 15/16	—	30151	—	30152
3/8	—	—	24	4	3/4	1/2	2 15/16	—	30153	30154	—
7/16	14	—	—	4	7/8	9/16	3 5/32	—	30155	—	30156
7/16	—	—	20	4	7/8	9/16	3 5/32	—	30157	—	30158
1/2	13	—	—	4	1 5/16	23/32	3 3/8	—	30159	—	30160
1/2	—	—	20	4	1 5/16	23/32	3 3/8	—	30161	—	30162

## Metric

List No. 2094M Steam Oxide Over Nitride

**Coolant-Through Available**

Morse Taps Can Be Supplied With Through-Coolant Holes For Blind and Through-Hole Applications. Contact Morse Cutting Tools For Assistance.

SIZE	PITCH	PITCH DIA. LIMIT	NO. OF FLUTES	THREAD LENGTH	NECK LENGTH	OAL	STEAM OXIDE OVER NITRIDE LIST NO. 2094M
							EDP NO.
M6	1.0	D5	4	5/8	3/8	2 1/2	30180
M8	1.0	D5	4	1 1/16	7/16	2 23/32	30181
M8	1.25	D5	4	1 1/16	7/16	2 23/32	30182
M10	1.5	D6	4	3/4	1/2	2 15/16	30183
M12	1.5	D5	4	1 5/16	23/32	3 3/8	30184
M12	1.75	D6	4	1 5/16	23/32	3 3/8	30185

Cutting Speeds: Page 159

## CUTTING FLUIDS

Coolants and lubricants offer many benefits including reduced friction and heat, enhanced chip removal, improved accuracy and surface finish, higher speeds and feeds, corrosion protection and increased tool life.

Proper selection and application of cutting fluids is critical to optimizing machining applications. **Please consult your cutting fluids supplier for advice on your specific machining application.**

# Spiral Flute HPT High Performance Taper Pipe Taps

Taraud à haut rendement

Machuelo de alto rendimiento



Recommended for low to medium carbon steels, alloy steels, tool steels, stainless steels, titanium alloys and many other materials up to 35Rc hardness.

**Premium Powder Metallurgy** high speed steel for increased toughness, wear resistance and heat resistance in a wide range of materials up to 35Rc hardness. **Enhanced Geometry** especially recommended for tapping **Stainless Steel**.

**EXTRA  
Length**

**Steam Oxide Surface Treatment** increases wear resistance, reduces friction, acts as a lubricant, reduces galling and chip welding, improves chip flow and increases tap lubricant retention. **NOT RECOMMENDED FOR NON-FERROUS MATERIALS.**

## List No. 2099

Premium Powder Metallurgy High Speed Steel  
Bright Finish and Steam Oxide Finish  
15° Helix Angle  
2-3½ Thread Chamfer

**Extra Length** – longer than standard USCTI length — provides extra reach in tapping applications

**ANSI Shank** – made to standard American dimensions — fits standard tap holders

**STANDARD PACKAGE** All Sizes — 1 each

Cutting Speeds: Page 159

## NPT/ANPT Taper Pipe Thread

NPT taper pipe taps are commonly used for tapping pipe fittings and couplings. Assembly requires the use of a thread sealant to ensure a tight seal.

Tool Coatings Also Available

SIZE	THREAD LENGTH	OAL	NO. OF FLUTES	BRIGHT EDP NO.	SURFACE TREATED EDP NO.
1/16-27	1¼	2⅞	4	36220	36230
1/8-27* (Sm. Sk.)	¾	2¾	4	36221	36231
1/8-27* (Lg. Sk.)	¾	2¾	4	36222	36232
1/4-18	1½	3	4	36223	36233
3/8-18	1½	3⅞	4	36224	36234
1/2-14	1⅞	3⅝	4	36225	36235
3/4-14	1⅞	4⅞	5	36226	36236
1-11½	1¾	4½	5	36227	36237

\*Large shank furnished unless otherwise specified.

## NPTF Dryseal Taper Pipe Thread

**NPTF Dryseal** taper pipe taps produce threads where a tight seal is achieved during assembly by metal-to-metal contact. Used for applications requiring a tight seal without the use of thread sealants.

## List No. 2099

**STANDARD PACKAGE** All Sizes — 1 each

SIZE	THREAD LENGTH	OAL	NO. OF FLUTES	BRIGHT EDP NO.	SURFACE TREATED EDP NO.
1/16-27	1¼	2⅞	4	36240	36250
1/8-27* (Sm. Sk.)	¾	2¾	4	36241	36251
1/8-27* (Lg. Sk.)	¾	2¾	4	36242	36252
1/4-18	1½	3	4	36243	36253
3/8-18	1½	3⅞	4	36244	36254
1/2-14	1⅞	3⅝	4	36245	36255
3/4-14	1⅞	4⅞	5	36246	36256
1-11½	1¾	4½	5	36247	36257

\*Large shank furnished unless otherwise specified.

HPT High Performance Taps

# Spiral Point - DIN Length HPT High Performance Taps

Taraud à haut rendement

Machuelo de alto rendimiento



## Plug Style

### DIN Length — ANSI Shank

Recommended for steels, steel alloys, stainless steels, titanium alloys and a wide variety of materials up to 36Rc hardness.

Premium Powder Metallurgy High Speed Steel  
Steam Oxide Finish and TiCN Coated

**DIN Length** - longer than standard USCTI length - provides extra reach in tapping applications

**ANSI Shank** - made to standard American dimensions - fits standard tap holders

List No. 2088 Steam Oxide Finish

List No. 2088C

TiCN - Titanium Carbonitride Coated

Primarily designed for tapping through holes. The spiral point forces the chips ahead of the tap.

**DIN Length**

**STANDARD PACKAGE** All Sizes — 1 each

**CNC Reduced Neck Design**

SIZE	TPI		NO. OF FLUTES	THREAD LENGTH	NECK LENGTH	OAL	Steam Oxide Finish				TiCN Coated			
	UNC	UNF					H2	H3	H4	H5	H2	H3	H4	H5
4	40	—	2	.433	.276	2.205	30530	—	—	—	61160	—	—	—
6	32	—	2	.472	.315	2.205	30532	30533	—	—	61162	61163	—	—
8	32	—	3	.512	.315	2.480	30534	30535	—	—	61164	61165	—	—
10	24	—	3	.591	.393	2.756	—	30536	—	—	—	61166	—	—
10	—	32	3	.512	.472	2.756	30537	30538	—	—	61167	61168	—	—
1/4	20	—	3	.669	.512	3.150	—	30539	—	30540	—	61169	—	61170
1/4	—	28	3	.669	.512	3.150	—	30541	30542	—	—	61171	61172	—
5/16	18	—	3	.787	.591	3.543	—	30543	—	30544	—	61173	—	61174
5/16	—	24	3	.669	.709	3.543	—	30545	30546	—	—	61175	61176	—
3/8	16	—	3	.866	.669	3.937	—	30547	—	30548	—	61177	—	61178
3/8	—	24	3	.709	.826	3.937	—	30549	30550	—	—	61179	61180	—
7/16	14	—	3	.866	*	3.937	—	30551	—	30552	—	61181	—	61182
7/16	—	20	3	.866	*	3.937	—	30553	—	30554	—	61183	—	61184
1/2	13	—	3	.984	*	4.331	—	30555	—	30556	—	61185	—	61186
1/2	—	20	3	.866	*	3.937	—	30557	—	30558	—	61187	—	61188
9/16	12	—	4	1.024	*	4.331	—	30559	—	30560	—	61189	—	61190
9/16	—	18	4	.866	*	3.937	—	30561	—	30562	—	61191	—	61192
5/8	11	—	4	1.063	*	4.331	—	30563	—	30564	—	61193	—	61194
5/8	—	18	4	.866	*	3.937	—	30565	—	30566	—	61195	—	61196
3/4	10	—	4	1.181	*	4.921	—	30567	—	30568	—	61197	—	61198
3/4	—	16	4	.984	*	4.331	—	30569	—	30570	—	61199	—	61200
7/8	9	—	4	1.126	*	5.512	—	—	30571	—	—	—	61201	—
7/8	—	14	4	1.024	*	4.921	—	—	30572	—	—	—	61202	—
1	8	—	4	1.417	*	6.299	—	—	30573	—	—	—	61203	—
1	—	12	4	1.102	*	5.512	—	—	30574	—	—	—	61204	—

## Metric

SIZE	PITCH	PITCH DIA. LIMIT	NO. OF FLUTES	THREAD LENGTH MM	NECK LENGTH MM	OAL MM	Steam Oxide Finish	
							List No. 2088M EDP NO.	TiCN Coated List No. 2088MC EDP NO.
M4	0.7	D4	3	13	8	63	30576	61206
M5	0.8	D4	3	15	10	70	30577	61207
M6	1.0	D5	3	17	13	80	30578	61208
M8	1.25	D5	3	20	15	90	30579	61209
M10	1.5	D6	3	22	17	100	30580	61210
M12	1.25	D5	3	22	*	100	30581	61211
M12	1.5	D5	3	22	*	100	30582	61212
M12	1.75	D6	3	24	*	110	30583	61213
M14	1.5	D6	4	22	*	100	30584	61214
M14	2	D7	4	26	*	110	30585	61215
M16	2	D7	4	27	*	110	30586	61216
M18	1.5	D6	4	25	*	110	30587	61217
M20	2.5	D7	4	32	*	140	30588	61218
M24	3	D8	4	34	*	160	30589	61219

\*Reduced Shank (shank diameter is smaller than minor diameter)

# Spiral Flute – DIN Length HPT High Performance Taps

Taraud à haut rendement

Machuelo de alto rendimiento



**Semi-Bottoming Style**  
**DIN Length — ANSI Shank**

Recommended for steels, steel alloys, stainless steels, titanium alloys and a wide variety of materials up to 36Rc hardness.

Premium Powder Metallurgy High Speed Steel  
Steam Oxide Finish and TiCN Coated

**DIN Length** – longer than standard USCTI length – provides extra reach in tapping applications

**ANSI Shank** – made to standard American dimensions – fits standard tap holders

List No. 2089 Steam Oxide Finish

List No. 2089C

TiCN - Titanium Carbonitride Coated

Primarily designed for tapping blind holes. The spiral flutes draw the chips out of the hole.

**DIN Length**

**STANDARD PACKAGE** All Sizes — 1 each

**CNC Reduced Neck Design**

SIZE	TPI		NO. OF FLUTES	THREAD LENGTH	NECK LENGTH	OAL	Steam Oxide Finish				TiCN Coated				
	UNC	UNF					H2	H3	H4	H5	H2	H3	H4	H5	
4	40	—	3	.236	.473	2.205	30600	—	—	—	—	61230	—	—	—
6	32	—	3	.236	.551	2.205	30602	30603	—	—	—	61232	61233	—	—
8	32	—	3	.236	.591	2.480	30604	30605	—	—	—	61234	61235	—	—
10	24	—	3	.354	.630	2.756	—	30606	—	—	—	—	61236	—	—
10	—	32	3	.354	.630	2.756	30607	30608	—	—	—	61237	61238	—	—
1/4	20	—	3	.433	.748	3.150	—	30609	—	30610	—	—	61239	—	61240
1/4	—	28	3	.433	.748	3.150	—	30611	30612	—	—	—	61241	61242	—
5/16	18	—	3	.472	.906	3.543	—	30613	—	30614	—	—	61243	—	61244
5/16	—	24	3	.472	.906	3.543	—	30615	30616	—	—	—	61245	61246	—
3/8	16	—	3	.551	.984	3.937	—	30617	—	30618	—	—	61247	—	61248
3/8	—	24	3	.551	.984	3.937	—	30619	30620	—	—	—	61249	61250	—
7/16	14	—	3	.591	*	3.937	—	30621	—	30622	—	—	61251	—	61252
7/16	—	20	3	.591	*	3.937	—	30623	—	30624	—	—	61253	—	61254
1/2	13	—	3	.630	*	4.331	—	30625	—	30626	—	—	61255	—	61256
1/2	—	20	3	.630	*	3.937	—	30627	—	30628	—	—	61257	—	61258
9/16	12	—	3	.690	*	4.331	—	30629	—	30630	—	—	61259	—	61260
9/16	—	18	3	.690	*	3.937	—	30631	—	30632	—	—	61261	—	61262
5/8	11	—	3	.745	*	4.331	—	30633	—	30634	—	—	61263	—	61264
5/8	—	18	3	.745	*	3.937	—	30635	—	30636	—	—	61265	—	61266
3/4	10	—	3	.820	*	4.921	—	30637	—	30638	—	—	61267	—	61268
3/4	—	16	3	.820	*	4.331	—	30639	—	30640	—	—	61269	—	61270
7/8	9	—	4	.911	*	5.512	—	—	30641	—	—	—	—	61271	—
7/8	—	14	4	.911	*	4.921	—	—	30642	—	—	—	—	61272	—
1	8	—	4	1.025	*	6.299	—	—	30643	—	—	—	—	61273	—
1	—	12	4	1.025	*	5.512	—	—	30644	—	—	—	—	61274	—

## Metric

SIZE	PITCH	PITCH DIA. LIMIT	NO. OF FLUTES	THREAD LENGTH MM	NECK LENGTH MM	OAL MM	Steam Oxide Finish	
							List No. 2089M	List No. 2089MC
							EDP NO.	EDP NO.
M4	0.7	D4	3	6	15	63	30646	61276
M5	0.8	D4	3	9	16	70	30647	61277
M6	1.0	D5	3	11	19	80	30648	61278
M8	1.25	D5	3	12	23	90	30649	61279
M10	1.5	D6	3	14	25	100	30650	61280
M12	1.25	D5	3	16	*	100	30651	61281
M12	1.5	D5	3	16	*	100	30652	61282
M12	1.75	D6	3	16	*	110	30653	61283
M14	1.5	D6	3	18	*	100	30654	61284
M14	2	D7	3	18	*	110	30655	61285
M16	2	D7	3	19	*	110	30656	61286
M18	1.5	D6	3	21	*	110	30657	61287
M20	2.5	D7	3	21	*	140	30658	61288
M24	3	D8	4	26	*	160	30659	61289

\*Reduced Shank (shank diameter is smaller than minor diameter)

**HPT High Performance Taps**

# Thread Forming — DIN Length HPT High Performance Taps

Premium Powder Metallurgy High Speed Steel  
DIN Length, ANSI Shank

**Thread Forming** taps cold form rather than cut the threads. Advantages include no chips to dispose of, stronger higher quality threads, increased tapping speeds, longer tap life and reduced tap breakage.

**DIN Length** — longer than standard USCTI length — provides extra reach in tapping applications

**ANSI Shank** — made to standard American dimensions — fits standard tap holders

**Lube Grooves** provides a path for lubrication and act as vents to relieve pressure in blind hole tapping.

**Plug Style** (4 threads tapered) for through holes and blind holes with adequate depth. The longer taper lead is easier starting, requires less torque, produces less burr above the mouth of the tapped hole and increases tool life.

**Bottoming Style** (2 threads tapered) for blind holes.

Taraud à haut rendement  
Machuelo de alto rendimiento



- List No. 2106 Bright Finish
- List No. 2106G TiN Coated
- List No. 2106C TiCN Coated
- List No. 2106T TiAlN Coated

**DIN Length**

**Powder Metallurgy High Speed Steel** for enhanced performance and increased tool life under difficult tapping conditions. Recommended for a wide variety of ductile materials up to 28Rc hardness.

**NOTE:** Thread forming taps require a larger **tap drill size** than cutting taps because the material flows during the thread forming process. It may be necessary to experiment to determine the required hole size to produce a specific percent of thread. **Countersinking** before tapping is recommended because the forming process usually displaces material above the mouth of the tapped hole.

**STANDARD PACKAGE** All Sizes — 1 each

Cutting Speeds: Page 159

CNC Reduced Neck Design

TAP DRILL SIZES: Page 198
CLASS OF FIT RECOMMENDATIONS: Page 202

## Machine Screw — Plug Style

SIZE	TPI		PITCH DIA. LIMIT	THREAD LENGTH	NECK LENGTH	OAL	NO. OF LUBE GROOVES	BRIGHT	TIN	TICN	TIALN
	UNC	UNF						EDP NO.	COATED EDP NO.	COATED EDP NO.	COATED EDP NO.
4	40	—	H3	.433	.276	2.205	3	<a href="#">30670</a>	<a href="#">94680</a>	<a href="#">61460</a>	<a href="#">61620</a>
	40	—	H5	.433	.276	2.205	3	<a href="#">30671</a>	<a href="#">94681</a>	<a href="#">61461</a>	<a href="#">61621</a>
6	32	—	H3	.472	.315	2.205	3	<a href="#">30672</a>	<a href="#">94682</a>	<a href="#">61462</a>	<a href="#">61622</a>
	32	—	H5	.472	.315	2.205	3	<a href="#">30673</a>	<a href="#">94683</a>	<a href="#">61463</a>	<a href="#">61623</a>
8	32	—	H3	.512	.315	2.480	3	<a href="#">30674</a>	<a href="#">94684</a>	<a href="#">61464</a>	<a href="#">61624</a>
	32	—	H5	.512	.315	2.480	3	<a href="#">30675</a>	<a href="#">94685</a>	<a href="#">61465</a>	<a href="#">61625</a>
10	24	—	H4	.591	.393	2.756	4	<a href="#">30676</a>	<a href="#">94686</a>	<a href="#">61466</a>	<a href="#">61626</a>
	24	—	H6	.591	.393	2.756	4	<a href="#">30677</a>	<a href="#">94687</a>	<a href="#">61467</a>	<a href="#">61627</a>
	—	32	H4	.512	.472	2.756	4	<a href="#">30678</a>	<a href="#">94688</a>	<a href="#">61468</a>	<a href="#">61628</a>
	—	32	H6	.512	.472	2.756	4	<a href="#">30679</a>	<a href="#">94689</a>	<a href="#">61469</a>	<a href="#">61629</a>

**Coolant-Through Available**  
 Morse Taps Can Be Supplied With Through-Coolant  
 Holes For Blind and Through-Hole Applications.  
*Contact Morse Cutting Tools For Assistance.*

**Titanium Nitride (TiN) Coating** results in an extremely hard surface with high lubricity for increased tool life. Improved thread quality, reduced torque and increased tapping speeds for greater productivity.

**Titanium Carbonitride (TiCN) Coating** is harder than TiN coating for more abrasive materials but has a lower temperature resistance.

**Titanium Aluminum Nitride (TiAlN) Coating** is especially recommended for applications generating higher temperatures.

# Thread Forming HPT High Performance Taps

DIN  
Length

## Machine Screw — Bottoming Style

Taraud à haut rendement

Machuelo de alto rendimiento

SIZE	TPI		PITCH DIA. LIMIT	THREAD LENGTH	NECK LENGTH	OAL	NO. OF LUBE GROOVES	BRIGHT	TIN COATED	TICN COATED	TIALN COATED
	UNC	UNF						EDP NO.	EDP NO.	EDP NO.	EDP NO.
4	40	—	H3	.433	.276	2.205	3	30750	94760	61540	61700
	40	—	H5	.433	.276	2.205	3	30751	94761	61541	61701
6	32	—	H3	.472	.315	2.205	3	30752	94762	61542	61702
	32	—	H5	.472	.315	2.205	3	30753	94763	61543	61703
8	32	—	H3	.512	.315	2.480	3	30754	94764	61544	61704
	32	—	H5	.512	.315	2.480	3	30755	94765	61545	61705
10	24	—	H4	.591	.393	2.756	4	30756	94766	61546	61706
	24	—	H6	.591	.393	2.756	4	30757	94767	61547	61707
	—	32	H4	.512	.472	2.756	4	30758	94768	61548	61708
	—	32	H6	.512	.472	2.756	4	30759	94769	61549	61709

CNC Reduced Neck Design

## Fractional — Plug Style

SIZE	TPI		PITCH DIA. LIMIT	THREAD LENGTH	NECK LENGTH	OAL	NO. OF LUBE GROOVES	BRIGHT	TIN COATED	TICN COATED	TIALN COATED
	UNC	UNF						EDP NO.	EDP NO.	EDP NO.	EDP NO.
1/4	20	—	H4	.669	.512	3.150	4	30690	94700	61480	61640
	20	—	H6	.669	.512	3.150	4	30691	94701	61481	61641
	—	28	H4	.669	.512	3.150	4	30692	94702	61482	61642
	—	28	H6	.669	.512	3.150	4	30693	94703	61483	61643
5/16	18	—	H5	.787	.591	3.543	4	30694	94704	61484	61644
	18	—	H7	.787	.591	3.543	4	30695	94705	61485	61645
	—	24	H5	.669	.591	3.543	4	30696	94706	61486	61646
	—	24	H7	.669	.591	3.543	4	30697	94707	61487	61647
3/8	16	—	H5	.866	.669	3.937	4	30698	94708	61488	61648
	16	—	H7	.866	.669	3.937	4	30699	94709	61489	61649
	—	24	H5	.709	.826	3.937	4	30700	94710	61490	61650
	—	24	H7	.709	.826	3.937	4	30701	94711	61491	61651
7/16	14	—	H5	.866	*	3.937	4	30702	94712	61492	61652
	14	—	H8	.866	*	3.937	4	30703	94713	61493	61653
	—	20	H5	.866	*	3.937	4	30704	94714	61494	61654
	—	20	H8	.866	*	3.937	4	30705	94715	61495	61655
1/2	13	—	H5	.984	*	4.331	4	30706	94716	61496	61656
	13	—	H8	.984	*	4.331	4	30707	94717	61497	61657
	—	20	H5	.866	*	3.937	4	30708	94718	61498	61658
	—	20	H8	.866	*	3.937	4	30709	94719	61499	61659
5/8	11	—	H7	1.063	*	4.331	6	30710	94720	61500	61660
	11	—	H10	1.063	*	4.331	6	30711	94721	61501	61661
	—	18	H7	.866	*	3.937	6	30712	94722	61502	61662
	—	18	H10	.866	*	3.937	6	30713	94723	61503	61663
3/4	10	—	H7	1.181	*	4.921	6	30714	94724	61504	61664
	10	—	H10	1.181	*	4.921	6	30715	94725	61505	61665
	—	16	H7	.984	*	4.331	6	30716	94726	61506	61666
	—	16	H10	.984	*	4.331	6	30717	94727	61507	61667

\* Reduced Shank (shank diameter is smaller than minor diameter)

HPT High Performance Taps



# Thread Forming HPT High Performance Taps

## Fractional — Bottoming Style

DIN Length

CNC Reduced Neck Design

Taraud à haut rendement

Machuelo de alto rendimiento

SIZE	TPI		PITCH DIA. LIMIT	THREAD LENGTH	NECK LENGTH	OAL	NO. OF LUBE GROOVES	BRIGHT	TIN COATED	TICN COATED	TIALN COATED
	UNC	UNF						EDP NO.	EDP NO.	EDP NO.	EDP NO.
1/4	20	—	H4	.669	.512	3.150	4	30770	94780	61560	61720
	20	—	H6	.669	.512	3.150	4	30771	94781	61561	61721
	—	28	H4	.669	.512	3.150	4	30772	94782	61562	61722
	—	28	H6	.669	.512	3.150	4	30773	94783	61563	61723
5/16	18	—	H5	.787	.591	3.543	4	30774	94784	61564	61724
	18	—	H7	.787	.591	3.543	4	30775	94785	61565	61725
	—	24	H5	.669	.591	3.543	4	30776	94786	61566	61726
	—	24	H7	.669	.591	3.543	4	30777	94787	61567	61727
3/8	16	—	H5	.866	.669	3.937	4	30778	94788	61568	61728
	16	—	H7	.866	.669	3.937	4	30779	94789	61569	61729
	—	24	H5	.709	.826	3.937	4	30780	94790	61570	61730
	—	24	H7	.709	.826	3.937	4	30781	94791	61571	61731
7/16	14	—	H5	.866	*	3.937	4	30782	94792	61572	61732
	14	—	H8	.866	*	3.937	4	30783	94793	61573	61733
	—	20	H5	.866	*	3.937	4	30784	94794	61574	61734
	—	20	H8	.866	*	3.937	4	30785	94795	61575	61735
1/2	13	—	H5	.984	*	4.331	4	30786	94796	61576	61736
	13	—	H8	.984	*	4.331	4	30787	94797	61577	61737
	—	20	H5	.866	*	3.937	4	30788	94798	61578	61738
	—	20	H8	.866	*	3.937	4	30789	94799	61579	61739
5/8	11	—	H7	1.063	*	4.331	6	30790	94800	61580	61740
	11	—	H10	1.063	*	4.331	6	30791	94801	61581	61741
	—	18	H7	.866	*	3.937	6	30792	94802	61582	61742
	—	18	H10	.866	*	3.937	6	30793	94803	61583	61743
3/4	10	—	H7	1.181	*	4.921	6	30794	94804	61584	61744
	10	—	H10	1.181	*	4.921	6	30795	94805	61585	61745
	—	16	H7	.984	*	4.331	6	30796	94806	61586	61746
	—	16	H10	.984	*	4.331	6	30797	94807	61587	61747

### Metric — Plug Style

SIZE	PITCH	PITCH DIA. LIMIT	THREAD LENGTH MM	NECK LENGTH MM	OAL MM	NO. OF LUBE GROOVES	BRIGHT	TIN COATED	TICN COATED	TIALN COATED
							EDP NO.	EDP NO.	EDP NO.	EDP NO.
M4	0.7	D6	13	8	63	3	30730	94740	61520	61680
M5	0.8	D7	15	10	70	4	30731	94741	61521	61681
M6	1	D8	17	13	80	4	30732	94742	61522	61682
M8	1.25	D9	20	15	90	4	30733	94743	61523	61683
M10	1.5	D10	22	17	100	4	30734	94744	61524	61684
M12	1.75	D11	24	*	110	4	30735	94745	61525	61685
M14	2	D11	26	*	110	6	30736	94746	61526	61686
M16	2	D12	27	*	110	6	30737	94747	61527	61687
M20	2.5	D12	32	*	140	6	30738	94748	61528	61688

### Metric — Bottoming Style

SIZE	PITCH	PITCH DIA. LIMIT	THREAD LENGTH MM	NECK LENGTH MM	OAL MM	NO. OF LUBE GROOVES	BRIGHT	TIN COATED	TICN COATED	TIALN COATED
							EDP NO.	EDP NO.	EDP NO.	EDP NO.
M4	0.7	D6	13	8	63	3	30810	94820	61600	61760
M5	0.8	D7	15	10	70	4	30811	94821	61601	61761
M6	1	D8	17	13	80	4	30812	94822	61602	61762
M8	1.25	D9	20	15	90	4	30813	94823	61603	61763
M10	1.5	D10	22	17	100	4	30814	94824	61604	61764
M12	1.75	D11	24	*	110	4	30815	94825	61605	61765
M14	2	D11	26	*	110	6	30816	94826	61606	61766
M16	2	D12	27	*	110	6	30817	94827	61607	61767
M20	2.5	D12	32	*	140	6	30818	94828	61608	61768

\* Reduced Shank (shank diameter is smaller than minor diameter)



# APPLICATION CHART FOR HPT HIGH PERFORMANCE TAPS

Material		Hardness		Cutting Speed SFM	Recommended Morse Tap	
		BHN	RC			
Type	Examples	BHN	RC	Cutting Speed SFM	Recommended Morse Tap	
Steel	Tool Steels Mold Steels	O1; A2; D2; H13; P20	275-325	28-35	7-20	Exotic Alloys
			330-420	36-45	3-10	Hard Materials
	Alloy Steels Hardened Steel	Hard 1340; 4140; 4150; 4340; 8660; 50B40; 50100; 51100; 51B860; 52100	275-420	28-45	15-25	
Stainless Steel	Austenitic	200 series; 300 series; 304; 310; 316	<275	<28	15-35	Exotic Alloys
	Martensitic Ferritic	400 series; 416Se; 420F; 420FSe; 440F; 440FSe	<275	<28	20-35	
	Hardened	17-4PH; 15-5; 17-7PH; AM350	275-420	28-45	5-15	Hard Materials
Nickel Alloys, Wrought & Cast	—	Nickel 200; 201; 205; 211; 220 Monel 400; 401; 404; 405 Duranickel 301	<200	<20	10-25	Exotic Alloys
	—	Inconel 600; 601; 625; 702; 718; 722; 804; 855	200-300	20-32	5-15	Hard Materials
	—		300-420	32-45	3-12	
Titanium Alloys Wrought	—	99.5; 99.2; 98.9; 99.0 Ti-0.2 Pd; Ti Code-12	<275	<28	25-45	Exotic Alloys
	—	Ti-8MN; Ti-6AL4V	275-330	28-36	10-25	Hard Materials
	—	6 AR 4 V; Ti-8AL 1MO-1V 5 Al 2.55 Sn; Ti-1AL-8V-5FR	330-420	36-45	2-8	
Cast Iron	Gray Ferritic Pearlitic	ASTM A48 class 20; 25; 30; 35; 40; 45; 50; SAIJ 431C Grade G1800; 2500; 3000; 3500; 4000	<260	<26	35-60	Cast Iron
	Ductile Ferritic Pearlitic	ASTM A536 Grades 60-40-18; 65-45-12; 80-55-06	<260	<26	20-40	
	Malleable	ASTM A-47; Grades 32510; 35018 ASTM A 220; Grades 40010; 45006; 60004; 70003; 80002	<260	<26	10-30	
Aluminum Alloys	Wrought	1060; 1100; 1145; 1175; 1235; 2011; 2014; 2017; 2018; 3003; 3005; 5005; 6053; 6061; 6066; 6101; 7001; 7005; 7049; 7075; 7079; 7175; 7178	—	—	70-100	Aluminum
	Cast	208; 213; 224; 242; 295; 360.0; A380.0; B443.0; 514; 520; 705; 707; A850.0; B850.0	—	—	60-80	

**SPEEDS** shown are suggested starting points only and may be increased or decreased depending on actual material and machining conditions. Start conservatively and increase until the machining cycle is optimized.

**SPEEDS** may be **increased** for coated taps, spiral point taps, fine pitch taps and when the percentage of thread is decreased.

**SPEEDS** may need to be **reduced** for spiral flute taps, coarse pitch taps, bottoming taps, difficult materials, longer thread lengths and when the percentage of thread is increased.

**THREAD FORMING TAPS** generally form threads more efficiently at higher speeds. Suggested speeds are 50% to 100% higher than the suggested speeds for cutting taps in similar applications.

**PIPE TAPS** speeds should be between one-half and three-quarters of the speeds of taps of comparable diameter and pitch.