

The Right Tool at the Right Time



High Performance Taps

Red Ring for Steel and Alloy Steel,
DIN standard



Features & Benefits

MATERIAL

HSCo-XP powder steel material gives longer tool life than replaced taps.

SURFACE TREATMENT

Available in bright finish and TiAlN-Top coating. TiAlN-Top has high toughness properties for longer tool life, reduced “built-up edge” and a smooth cutting action.

FLUTE GEOMETRY

Spiral Point taps for through holes. Spiral Flute (48°) with reduced land for blind holes allows adequate room for chip formation, with rapid and smooth chip evacuation. Back tapering on the spiral flute taps promotes high quality threading in Alloy Steel.

THREADING DEPTH

Threading to depths of up to 2.5 x Diameter.

THREAD FORM

All taps are available in Metric thread form.

RANGE

M3 – M20 in Spiral Flute and Spiral Point geometry. Sizes up to M36 available on bright finish Spiral Flute tap, E393, with 40° helix angle on sizes over M20.

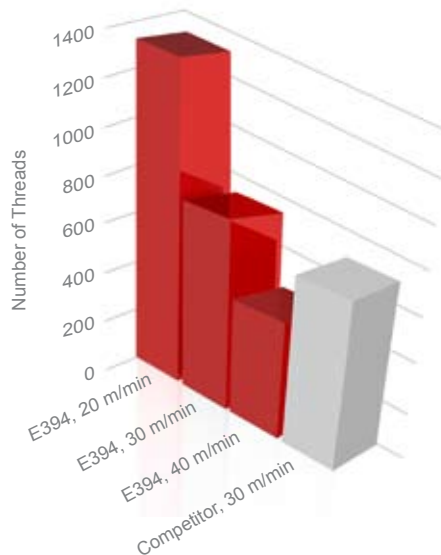
COLOUR RING CODING

The red ring identifies these taps as the highest performers in Alloy Steel.



Test Results

Productivity v Tool Life in AMG 1.5, M8 taps to a thread depth of 2 x D in blind holes



If high productivity is a more important factor than long tool life, cutting speeds can be increased. The test was set up to show productivity relative to tool life, up to a value of two times the cutting speed recommended by Dormer on the E394 spiral flute tap. A nearest equivalent competitor tap was also tested at 30m/min.

At double the recommended speed, 460 threads were achieved by the E394 before end of tool life, compared to 1287 threads at the recommended speed of 20m/min. A SynchroFlex toolholder was used with cutting speeds of 30 and 40m/min. At 20m/min, a floating toolholder was used.

It can be concluded from the above test that the new E394 coated Red Shark tap can be used with higher cutting data than recommended start values, giving higher productivity.



Customer *Benefits*

- High productivity when threading in steel and alloy steel.
- Increased tool life, thanks to optimum combination of material, coating and geometry.
- Higher tool life is combined with higher speed, to give improved productivity when compared to the replaced taps.
- Narrow, regular chips and adequate flute space mean negligible chip congestion and therefore, a continuous production process.
- Back tapering reduces torque during reversing motion, which reduces the risk of breakage and chipping.
- TiAlN-Top coated Red Shark taps can be operated at double the speed of the bright finish ones, to further increase productivity.



E396



E394

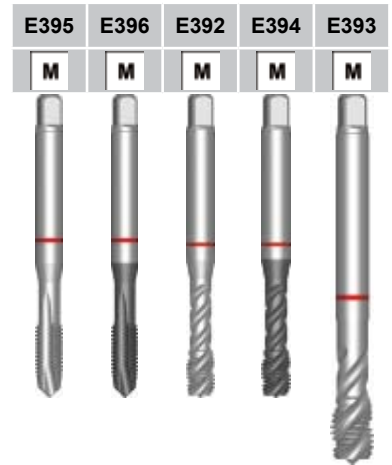


Application *Material Groups*

- Excellent for Application
- Good for Application

Example

16 = Peripheral speed in metres/minute +/- 10%



HSCo XP	HSCo XP	HSCo XP	HSCo XP	HSCo XP
	TAIN Top		TAIN Top	
DIN 3714/10 3716/12	DIN 3714/10 3716/12	DIN 371	DIN 3714/10 3716/12	DIN 3716
6H	6H	6H	6H	6H
2.5xD	2.5xD	2.5xD	2.5xD	2.5xD
B 3.5 - 5	B 3.5 - 5	C 2 - 3	C 2 - 3	C 2 - 3
M3 - M20	M3 - M20	M3 - M10	M3 - M20	M5 - M36
NEW	NEW	NEW	NEW	NEW
2009.02	2009.02	2009.02	2009.02	2009.02
5	5	6	6	7

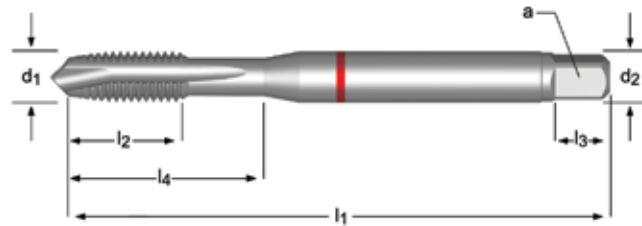
■16	■30	■16	■30	■16
●10	●20	●10	●20	●10
●5	●11	●5	●11	●5

●10	●13	●10	●13	●10
●5	●10	●5	●10	●5

Application Material Groups (AMG)		Hardness HB	Tensile Strength N/mm ²
1. Steel	1.1 Magnetic soft steel	<120	<400
	1.2 Structural Steel / case carburising steel	<200	<700
	1.3 Plain Carbon steel	<250	<850
	1.4 Alloy steel	<250	<850
	1.5 Alloy steel/ Hardened and tempered steel	>250 <350	>850 <1200
	1.6 Alloy steel/ Hardened and tempered steel	>350	>1200 <1620
	1.7 Alloy steel Hardened	49-55HRC	>1620
	1.8 Alloy steel Hardened	55-63HRC	<1960
2. Stainless Steel	2.1 Free machining Stainless Steel	<250	<850
	2.2 Austenitic	<320	<1100
	2.3 Ferritic + Austenitic, Martensitic	<300	<1000
	2.4 Precipitation Hardened	>320 <410	>1100 <1400
3. Cast Iron	3.1 Lamellar graphite	<150	<500
	3.2 Lamellar graphite	>150 <300	>500 <1000
	3.3 Nodular graphite/ Malleable Cast Iron	<200	<700
	3.4 Nodular graphite/ Malleable Cast Iron	>200 <300	>700 <1000
4. Titanium	4.1 Titanium, unalloyed	<200	<700
	4.2 Titanium, alloyed	>270	<900
	4.3 Titanium, alloyed	>270 <350	>900 <1250
5. Nickel	5.1 Nickel, unalloyed	<150	<500
	5.2 Nickel, alloyed	<270	<900
	5.3 Nickel, alloyed	>270 <350	>900 <1200
6. Copper	6.1 Copper	<100	<350
	6.2 β-Brass, Bronze	<200	<700
	6.3 α-Brass	<200	<700
	6.4 High Strength Bronze	<470	<1500
7. Aluminium Magnesium	7.1 Al, Mg, unalloyed	<100	<350
	7.2 Al alloyed, Si<0.5%	<150	<500
	7.3 Al alloyed, Si>0.5%<10%	<120	<400
	7.4 Al alloyed, Si>10% Whisker reinforced Al-alloys, Mg alloys	<120	<400
8. Synthetic Materials	8.1 Thermoplastics	---	---
	8.2 Thermosetting plastics	---	---
	8.3 Reinforced plastic materials	---	---
9. Hard Materials	9.1 Cermets (Metal-ceramics)	<550	<1700
10. Graphite	10.1 Standard graphite	---	<100

E395 / E396

- Machine Tap, Red Shark
- Maschinen-Gewindebohrer, Rotring, Shark
- Machinetappen, Shark Roodring
- Tarauds machine, Shark bague rouge
- Machos de máquina Shark (Anillo Rojo)
- Macho de Máq., Vermelho Shark

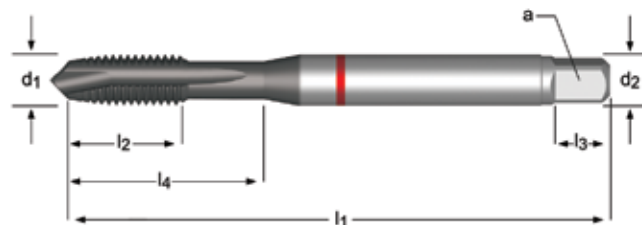


E395



- 1.4
- 1.5 1.6 4.2 5.2

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	a mm	l_3 mm	z	\leftrightarrow	l_4 mm	e-Code
3	0.50	56	9	3.5	2.7	6	3	2.5	18	E395M3
4	0.70	63	12	4.5	3.4	6	3	3.3	21	E395M4
5	0.80	70	13	6.0	4.9	8	3	4.2	25	E395M5
6	1.00	80	15	6.0	4.9	8	3	5	30	E395M6
8	1.25	90	18	8.0	6.2	9	3	6.8	35	E395M8
10	1.50	100	20	10.0	8.0	11	3	8.5	39	E395M10
12	1.75	110	23	9.0	7.0	10	3	10.3		E395M12
14	2.00	110	25	11.0	9.0	12	3	12		E395M14
16	2.00	110	25	12.0	9.0	12	3	14		E395M16
18	2.50	125	30	14.0	11.0	14	4	15.5		E395M18
20	2.50	140	30	16.0	12.0	15	4	17.5		E395M20



E396

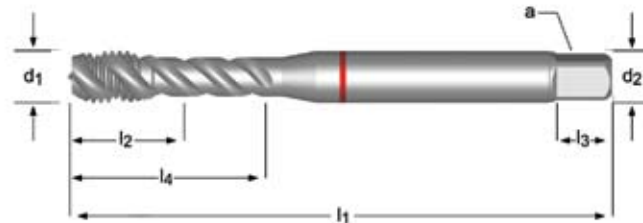


- 1.4 1.5
- 1.6 4.2 5.2

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	a mm	l_3 mm	z	\leftrightarrow	l_4 mm	e-Code
3	0.50	56	9	3.5	2.7	6	3	2.5	18	E396M3
4	0.70	63	12	4.5	3.4	6	3	3.3	21	E396M4
5	0.80	70	13	6.0	4.9	8	3	4.2	25	E396M5
6	1.00	80	15	6.0	4.9	8	3	5	30	E396M6
8	1.25	90	18	8.0	6.2	9	3	6.8	35	E396M8
10	1.50	100	20	10.0	8.0	11	3	8.5	39	E396M10
12	1.75	110	23	9.0	7.0	10	3	10.3		E396M12
14	2.00	110	25	11.0	9.0	12	3	12		E396M14
16	2.00	110	25	12.0	9.0	12	3	14		E396M16
18	2.50	125	30	14.0	11.0	14	4	15.5		E396M18
20	2.50	140	30	16.0	12.0	15	4	17.5		E396M20

E392 / E394

- Machine Tap, Red Shark, back tapered
- Maschinentapen, Shark Roofring, achtergeslepen
- Machos de máquina Shark (Anillo Rojo)
- Macho de Máq., Vermelho Shark, Saída Cônica
- Tarauds Shark rouge pas métrique
- Machos de máquina Shark (Anillo Rojo) con rosca achaflanada hacia atras



E392



- 1.4
- 1.5 1.6 4.2 5.2

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	a mm	l_3 mm	z	l_4 mm	e-Code
3	0.50	56	6	3.5	2.7	6	3	18	E392M3
4	0.70	63	7	4.5	3.4	6	3	21	E392M4
5	0.80	70	8	6.0	4.9	8	3	25	E392M5
6	1.00	80	10	6.0	4.9	8	3	30	E392M6
8	1.25	90	13	8.0	6.2	9	3	35	E392M8
10	1.50	100	15	10.0	8.0	11	3	39	E392M10



E394

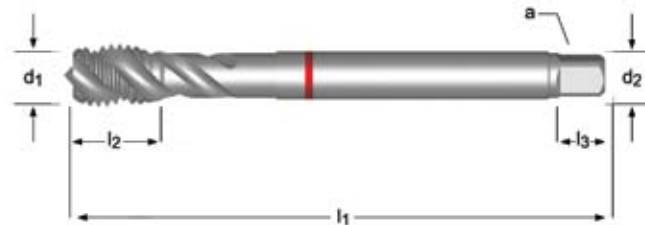


- 1.4 1.5
- 1.6 4.2 5.2

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	a mm	l_3 mm	z	l_4 mm	e-Code
3	0.50	56	6	3.5	2.7	6	3	18	E394M3
4	0.70	63	7	4.5	3.4	6	3	21	E394M4
5	0.80	70	8	6.0	4.9	8	3	25	E394M5
6	1.00	80	10	6.0	4.9	8	3	30	E394M6
8	1.25	90	13	8.0	6.2	9	3	35	E394M8
10	1.50	100	15	10.0	8.0	11	3	39	E394M10
12	1.75	110	18	9.0	7.0	10	3	10.3	E394M12
14	2.00	110	20	11.0	9.0	12	3	12	E394M14
16	2.00	110	20	12.0	9.0	12	3	14	E394M16
18	2.50	125	25	14.0	11.0	14	4	15.5	E394M18
20	2.50	140	25	16.0	12.0	15	4	17.5	E394M20

E393

- Machine Tap, Red Shark, back tapered
- Maschinentapen, Shark Roodring, achtergeslepen
- Machos de máquina Shark (Anillo Rojo) con rosca achaflanada hacia atras
- Macho de Máq., Vermelho Shark, Saída Cônica



E393



- 1.4
- 1.5 1.6 4.2 5.2

M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	a mm	l ₃ mm	z	↔	e-Code
5	0.80	70	8	3.5	2.7	6	3	4.2	E393M5
6	1.00	80	10	4.5	3.4	6	3	5	E393M6
8	1.25	90	13	6.0	4.9	8	3	6.8	E393M8
10	1.50	100	15	7.0	5.5	8	3	8.5	E393M10
12	1.75	110	18	9.0	7.0	10	3	10.3	E393M12
14	2.00	110	20	11.0	9.0	12	3	12	E393M14
16	2.00	110	20	12.0	9.0	12	3	14	E393M16
18	2.50	125	25	14.0	11.0	14	4	15.5	E393M18
20	2.50	140	25	16.0	12.0	15	4	17.5	E393M20
22	2.50	140	25	18.0	14.5	17	4	19.5	E393M22 ¹⁾
24	3.00	160	30	18.0	14.5	17	4	21	E393M24 ¹⁾
27	3.00	160	30	20.0	16.0	19	4	24	E393M27 ¹⁾
30	3.50	180	36	22.0	18.0	21	4	26.5	E393M30 ¹⁾
33	3.50	180	36	25.0	20.0	23	4	29.5	E393M33 ¹⁾
36	4.00	200	40	28.0	22.0	25	4	32	E393M36 ¹⁾

¹⁾ Helix 40°, not back tapered / 40° Spirale, nicht abgeflacht / Spiraalhoek 40°, zonder extra reductie van de flankendiameter naar de schacht / Angle d'hélice 40°, sans conicité arrière / Hélice 40°, sin salida cónica / Helix 40°, cônica na parte posterior

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