

50 YEARS

NACHI

NACHI EUROPE GmbH

OUR SYNERGY
YOUR PERFORMANCE

INNOVATIVE TAPS

HYPER-Z SERIES



CELEBRATE THE POLE POSITION



**TOP
QUALITY
LEADER**

Optimized cutting
geometry

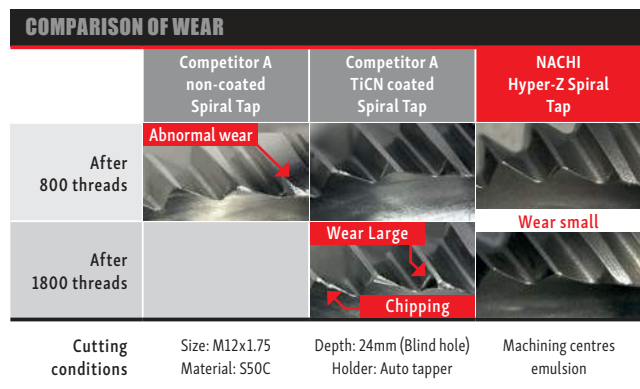
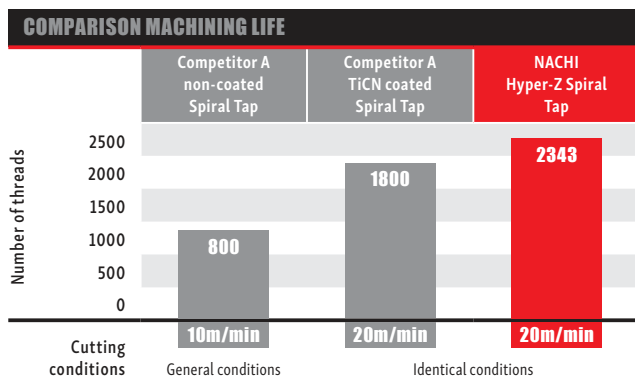


Innovative taps developed with NACHI's comprehensive experience

- ▶ Quality based on NACHI's high vertical integration: in-house steel melting, heat treatment and grinding
- ▶ Longer tool life and higher process reliability as a result of NACHI's long-term experience in broaches and gear cutting tools
- ▶ Efficient and productive processing at low speeds, double and triple tool life compared to non-coated taps, even longer performance than coated taps

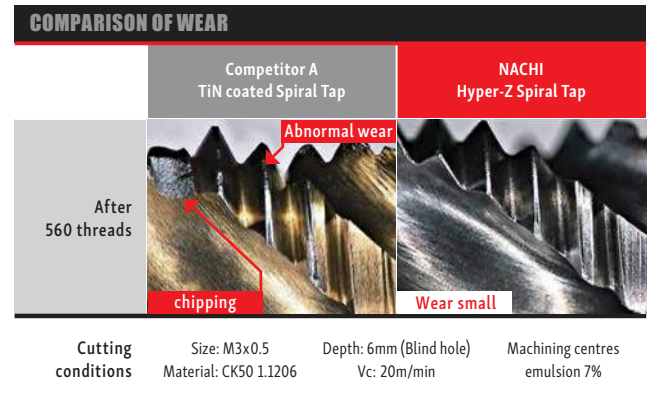
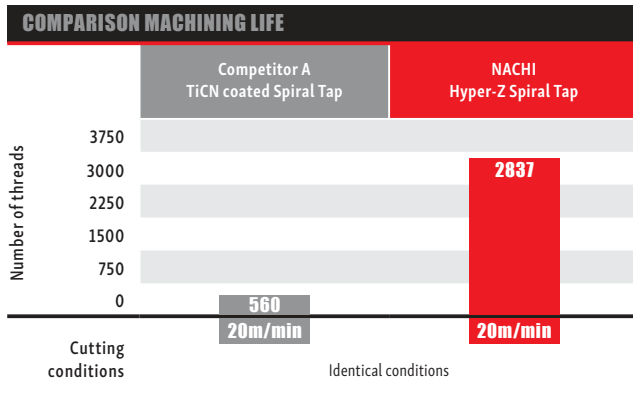
Outstanding stability and reliability at low and medium speeds

Working at twice the cutting speeds compared to conventional non-coated taps NACHI's Hyper-Z taps achieve 2.5x longer tool life. They outperform even competitor's coated taps.



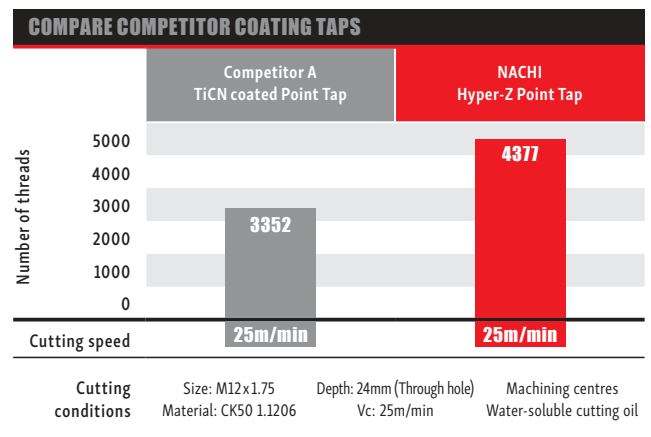
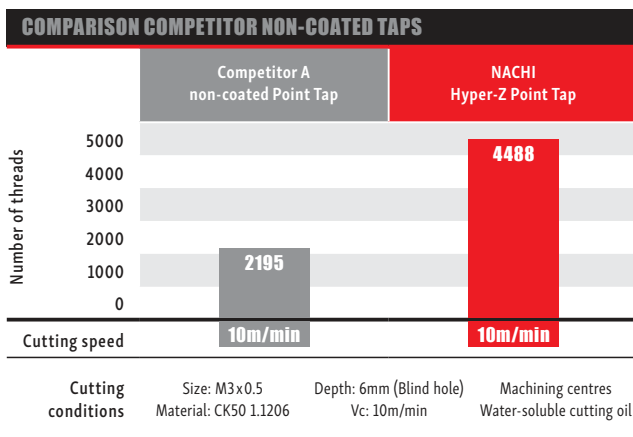
Compared to competitor's taps NACHI's Hyper-Z taps convince with longer tool life and higher reliability

No breakage of cutting edges / no abnormal wear / no adhesion of chips



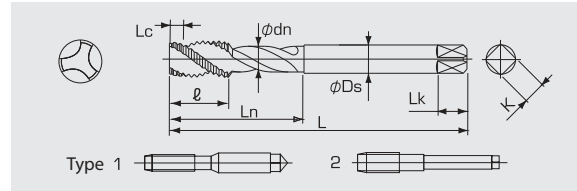
Point taps for through holes also have excellent tool life at low and medium cutting speeds

Compared to non-coated taps NACHI's taps achieve twice the tool life and even longer tool life than coated taps



ZSP – Hyper-Z Spiral Tap

High-performance taps which have long tool life and stable tapping in various cutting conditions. For blind holes.



M HSS-E 43° FORM C TOLERANCE 6H DIN 371 DIN 376
TOOL MATERIAL HELIX ANGLE ISO CLASS 2

LIST: 6862

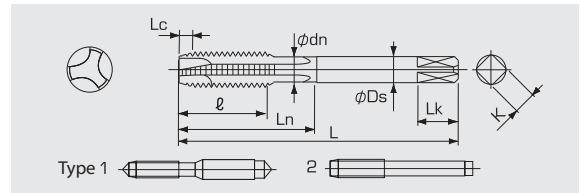
Ø	Pitch	Pitch Chamfer	OAL	Thread Length	Ln	dn	Shank Ø	Square Width	Square Length	Z	Type	DIN	Stock
		Lc	L	ℓ				Ds	K				
3	0.5	2.5P	56	5.6	18	2.35	3.5	2.7	6	3	1	371	●
4	0.7	2.5P	63	8.1	21	3.15	4.5	3.4	6	3	1	371	●
5	0.8	2.5P	70	9.4	25	4.05	6.0	4.9	8	3	1	371	●
6	1	2.5P	80	12	30	4.75	6.0	4.9	8	3	1	371	●
8	1.25	2.5P	90	15.4	35	6.55	8.0	6.2	9	3	1	371	●
10	1.5	2.5P	100	18.9	39	8.25	10.0	8.0	11	3	1	371	●
12	1.75	2.5P	110	22.4	42	9.95	9.0	7.0	10	3	2	376	●
14	2	2.5P	110	25.9	49	11.65	11.0	9.0	12	3	2	376	●
16	2	2.5P	110	25.9	49	13.65	12.0	9.0	12	3	2	376	●
18	2.5	2.5P	125	32.6	55	15.15	14.0	11.0	14	4	2	376	●
20	2.5	2.5P	140	32.6	55	17.15	16.0	12.0	15	4	2	376	●
22	2.5	2.5P	140	32.6	55	19.15	18.0	14.5	17	4	2	376	●
24	3	2.5P	160	38.8	63	20.65	18.0	14.5	17	4	2	376	●

MF HSS-E 43° FORM C TOLERANCE 6H DIN 374
TOOL MATERIAL HELIX ANGLE ISO CLASS 2

Ø	Pitch	Pitch Chamfer	OAL	Thread Length	Ln	dn	Shank Ø	Square Width	Square Length	Z	Type	DIN	Stock
		Lc	L	ℓ				Ds	K				
6	0.75	2.5P	80	9.2	24.5	5.05	4.5	3.4	6	3	2	374	●
8	0.75	2.5P	80	9.2	24.5	7.05	6.0	4.9	8	3	2	374	●
8	1	2.5P	90	12.4	27	6.75	6.0	4.9	8	3	2	374	●
10	1	2.5P	90	12.4	27	8.75	7.0	5.5	8	3	2	374	●
10	1.25	2.5P	100	15.7	33	8.55	7.0	5.5	8	3	2	374	●
12	1.25	2.5P	100	17.2	35	10.55	9.0	7.0	10	3	2	374	●
12	1.5	2.5P	100	20.9	40	10.25	9.0	7.0	10	3	2	374	●
14	1.5	2.5P	100	20.9	40	12.25	11.0	9.0	12	3	2	374	●
16	1.5	2.5P	100	20.9	40	14.25	12.0	9.0	12	3	2	374	●
18	1.5	2.5P	110	20.9	40	16.25	14.0	11.0	14	4	2	374	●
20	1.5	2.5P	125	20.9	40	18.25	16.0	12.0	15	4	2	374	●

ZPO – Hyper-Z Point Tap

High-performance taps which have long tool life and stable tapping in various cutting conditions. For through holes.



LIST: 6864

Ø	Pitch	Pitch Chamfer	OAL	Thread Length			Shank Ø	Square Width	Square Length	Z	Type	DIN	Stock
		Lc	L	ℓ	Ln	dn		K	LK				
3	0.5	5P	56	10	18	2.35	3.5	2.7	6	3	1	371	●
4	0.7	5P	63	12.5	21	3.15	4.5	3.4	6	3	1	371	●
5	0.8	5P	70	14.5	25	4.05	6.0	4.9	8	3	1	371	●
6	1	5P	80	17	30	4.75	6.0	4.9	8	3	1	371	●
8	1.25	5P	90	22	35	6.55	8.0	6.2	9	3	1	371	●
10	1.5	5P	100	27	39	8.25	10.0	8.0	11	3	1	371	●
12	1.75	5P	110	32	-	-	9.0	7.0	10	3	2	376	●
14	2	5P	110	32	-	-	11.0	9.0	12	3	2	376	●
16	2	5P	110	32	-	-	12.0	9.0	12	3	2	376	●
18	2.5	5P	125	37.5	-	-	14.0	11.0	14	3	2	376	●
20	2.5	5P	140	37.5	-	-	16.0	12.0	15	3	2	376	●
22	2.5	5P	140	37.5	-	-	18.0	14.5	17	3	2	376	●
24	3	5P	160	45	-	-	18.0	14.5	17	3	2	376	●



Ø	Pitch	Pitch Chamfer	OAL	Thread Length			Shank Ø	Square Width	Square Length	Z	Type	DIN	Stock
		Lc	L	ℓ	Ln	dn		K	LK				
6	0.75	5P	80	14	-	-	4.5	3.4	6	3	2	374	●
8	0.75	5P	80	14	-	-	6.0	4.9	8	3	2	374	●
8	1	5P	90	17	-	-	6.0	4.9	8	3	2	374	●
10	1	5P	90	17	-	-	7.0	5.5	8	3	2	374	●
10	1.25	5P	100	22	-	-	7.0	5.5	8	3	2	374	●
12	1	5P	100	19	-	-	9.0	7.0	10	3	2	374	●
12	1.25	5P	100	22	-	-	9.0	7.0	10	3	2	374	●
12	1.5	5P	100	22	-	-	9.0	7.0	10	3	2	374	●
14	1.5	5P	100	22	-	-	11.0	9.0	12	3	2	374	●
16	1.5	5P	100	22	-	-	12.0	9.0	12	3	2	374	●
18	1.5	5P	110	25	-	-	14.0	11.0	14	3	2	374	●
20	1.5	5P	125	25	-	-	16.0	12.0	15	3	2	374	●

Hyper-Z is the basis for **SUS** Hyper-Z for stainless steel processing

- ▶ Innovative taps developed with NACHI's comprehensive experience
- ▶ Quality based on NACHI's high vertical integration: in-house steel melting, heat treatment and grinding
- ▶ Longer tool life and higher process reliability as a result of NACHI's long-term experience in broaches and gear cutting tools
- ▶ Efficient and productive processing at low speeds, double and triple tool life compared to non-coated taps, even longer performance than coated taps
- ▶ Outstanding stability and reliability at low and medium speeds
- ▶ No tooth breakage and even wear, ensure high process reliability

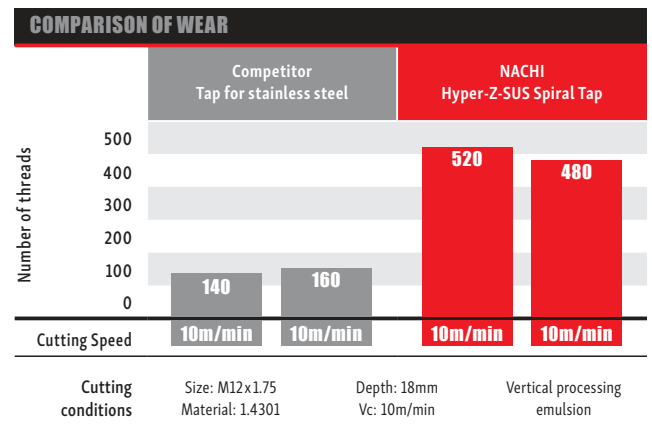
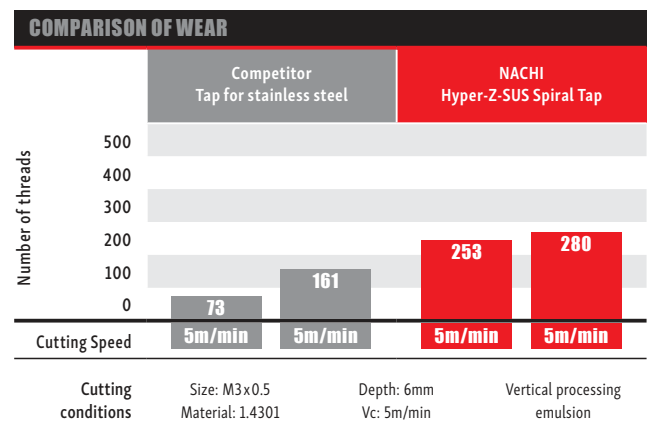
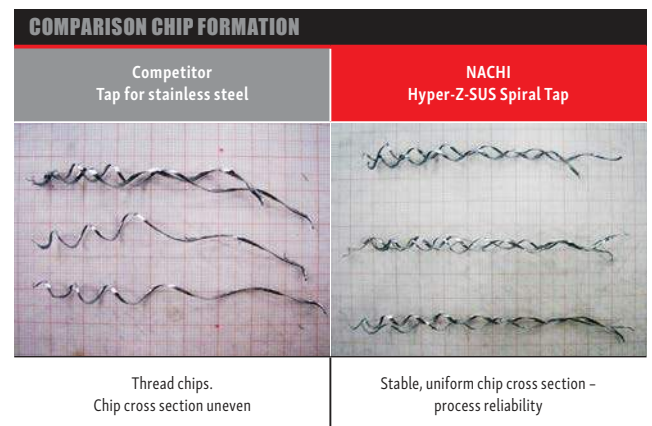
The further development

- ▶ Improved chip removal through the optimisation of the cutting edge and groove shape especially for the stainless steel processing
- ▶ High-performance taps, long life and a stable thread cutting at different cutting conditions



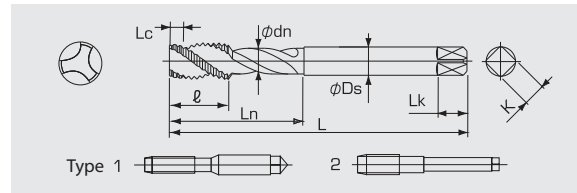


Especially suitable for stainless steel



ZSP – SUS Hyper-Z Spiral Tap

Due to the sharper geometry, the **stainless steel** variant of the Z-series is a tap with high process reliability and a long tool life, also in critical materials. For blind holes.

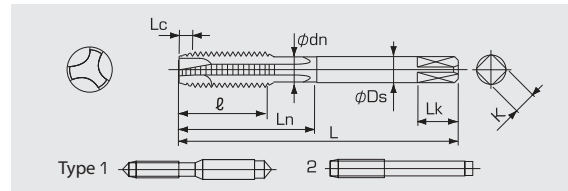


LIST: 6870

Ø	Pitch	Pitch Chamfer	OAL	Thread Length			Shank Ø	Square Width	Square Length	Z	Type	DIN	Stock
		Lc	L	ϕ			Ln	dn	Ds				
3	0.5	2.5P	56	5.6	18	2.35	3.5	2.7	6	3	1	371	●
4	0.7	2.5P	63	8.1	21	3.15	4.5	3.4	6	3	1	371	●
5	0.8	2.5P	70	9.4	25	4.05	6.0	4.9	8	3	1	371	●
6	1	2.5P	80	12	30	4.75	6.0	4.9	8	3	1	371	●
8	1.25	2.5P	90	15.4	35	6.55	8.0	6.2	9	3	1	371	●
10	1.5	2.5P	100	18.9	39	8.25	10.0	8.0	11	3	1	371	●
12	1.75	2.5P	110	22.4	42	9.95	9.0	7.0	10	3	2	376	●
14	2	2.5P	110	25.9	49	11.65	11.0	9.0	12	3	2	376	●
16	2	2.5P	110	25.9	49	13.65	12.0	9.0	12	3	2	376	●
18	2.5	2.5P	125	32.6	55	15.15	14.0	11.0	14	4	2	376	●
20	2.5	2.5P	140	32.6	55	17.15	16.0	12.0	15	4	2	376	●
22	2.5	2.5P	140	32.6	55	19.15	18.0	14.5	17	4	2	376	●
24	3	2.5P	160	38.8	63	20.65	18.0	14.5	17	4	2	376	●

ZPO-SUS Hyper-Z Point Tap

Due to the sharper geometry, the **stainless steel** variant of the Z-series is a tap with high process reliability and a long tool life, also in critical materials. For through holes.



LIST: 6872










Ø	Pitch	Pitch Chamfer	OAL	Thread Length	ℓ	Ln	dn	Shank Ø	Square Width	Square Length	Z	Type	DIN	Stock
		Lc	L	Ds										
3	0.5	5P	56	10	18	2.35	3.5	2.7	6	3	1	371	●	
4	0.7	5P	63	12.5	21	3.15	4.5	3.4	6	3	1	371	●	
5	0.8	5P	70	14.5	25	4.05	6.0	4.9	8	3	1	371	●	
6	1	5P	80	17	30	4.75	6.0	4.9	8	3	1	371	●	
8	1.25	5P	90	22	35	6.55	8.0	6.2	9	3	1	371	●	
10	1.5	5P	100	27	39	8.25	10.0	8.0	11	3	1	371	●	
12	1.75	5P	110	32	-	-	9.0	7.0	10	3	2	376	●	
14	2	5P	110	32	-	-	11.0	9.0	12	3	2	376	●	
16	2	5P	110	32	-	-	12.0	9.0	12	3	2	376	●	
18	2.5	5P	125	37.5	-	-	14.0	11.0	14	3	2	376	●	
20	2.5	5P	140	37.5	-	-	16.0	12.0	15	3	2	376	●	
22	2.5	5P	140	37.5	-	-	18.0	14.5	17	3	2	376	●	
24	3	5P	160	45	-	-	18.0	14.5	17	3	2	376	●	

Technical Specifications

CUTTING CONDITION / RECOMMENDED CUTTING SPEED & CUTTING FLUIDS												
		Recommended Cutting Speed m/min										
Work materials	ST52(SS) Structural Steel	C15(S15C) Low Carbon Steel	C40(S40C) C < 0.45%	C50(S50C) C > 0.45%	20Cr.42CrMo (SCM.SCr) Alloy Steel		Hardened Steel	SUS Stainless Steel	GG(FC) Grey Cast Iron	GGG(FCD) Ductile Cast Iron	AC.ADC Aluminum Alloy	
	Code	~200HB	~200HB	~200HB	~200HB	~200HB	20~30HRC	30~40HRC				
Hyper-Z	ZSP	5~20	5~20	5~20	5~20	5~20	5~10	-	-	-	5~20	10~25
	ZPO	8~20	10~25	6~25	6~25	6~25	5~10	-	-	8~20	6~25	10~30
	ZSP-SUS	5~10	5~10	5~10	5~10	-	-	-	5~10	-	-	10~25
	ZPO-SUS	5~15	5~15	5~15	5~15	-	-	-	5~10	-	-	10~30
Cutting Fluids		Water-based emulsion from 7%										

1. These are general cutting recommendations and may be altered by your conditions.
2. These conditions are for thread depth of $2 \times D_c$.
3. Recommended are non-water-soluble cutting oils for Stainless Steel.

Pictogram overview

 M	Metric thread	 TOLERANCE 6H ISO CLASS 2	Thread tolerance	 DIN 371	Tap with reinforced shaft
 MF	Metric fine thread	 FORM B	Cut part. 3,5-5,5 gears	 DIN 374	Metric fine tap with overflow shaft
 HSS-E TOOL MATERIAL	High-speed steel with cobalt alloy	 FORM C	Cut part. 2-3 gears	 DIN 376	Metric tap with overflow shaft



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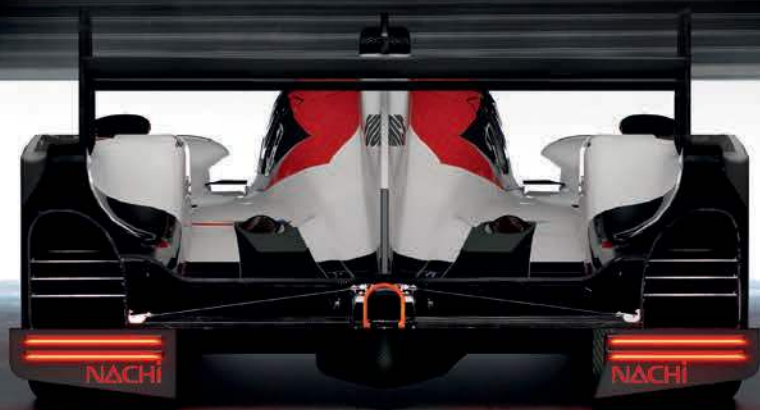
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**OUR SYNERGY
YOUR PERFORMANCE**



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