







































































































# Machine Taps 2024









## High-Performance Machine Taps

Machine Taps  
2024



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97120	ISO Metric Fine Thread M8–M16		HSS-E	<b>P</b> <b>M</b> <b>K</b> N S H 31
97130	ISO Metric Fine Thread M8–M16		HSS-E	<b>P</b> <b>M</b> <b>K</b> N S H 31
97140	Standard Metric Thread M2–M30		HSS-E	<b>M</b> <b>K</b> N S H 32
97150	Standard Metric Thread M2–M30		HSS-E	<b>M</b> <b>K</b> N S H 32
97160	ISO Metric Fine Thread M4–M24		HSS-E	<b>M</b> <b>K</b> N S H 33
97170	ISO Metric Fine Thread M4–M24		HSS-E	<b>M</b> <b>K</b> N S H 33
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Material class	Suitable	Partly suitable	Not suitable
Steel	<b>P</b>	<b>P</b>	<b>P</b>
INOX	<b>M</b>	<b>M</b>	<b>M</b>
Cast iron	<b>K</b>	<b>K</b>	<b>K</b>
Non-ferrous metals	<b>N</b>	<b>N</b>	<b>N</b>
Special and titanium alloys	<b>S</b>	<b>S</b>	<b>S</b>
Hard materials	<b>H</b>	<b>H</b>	<b>H</b>

All prices are per unit plus VAT. Our General Terms and Conditions shall apply.

Catalogue 2024 | © 2023 TOOL FACTORY Cutting Tool Solutions GmbH | Subject to modifications. Errors and omissions excepted

## More than 25 years of expertise

The company name „TOOL FACTORY Cutting Tool Solutions GmbH“ stands for efficient manufacturing cutting solutions. Along with offering tools, we offer advise and services on all elements of machining. Since 1995 we have been developing precision tools made from durable and high-performance cutting material.



## Collaborating with us gives you a high degree of planning security

Among our customers are well-known companies from numerous industries across Germany and abroad. Yet our tools are also strongly established in the retail and private label business. Our partnership with the specialized trade make us a reliable supplier that is much appreciated by our customers.

## On-schedule delivery by 12 noon on the next working day

Efficient and economical production is important to us, which is why we process your orders as fast and straightforward as possible. We always have over 22,000 different items available. With our computer-assisted and route-optimized warehouse management system, we are able to quickly dispatch your order. We can also ensure that your order is delivered on time by 12 noon on the next working day due to our excellent cooperation with our shipping partner UPS®.

## Established solutions for smooth production

High-performance tools for metal cutting – that is what we are good at. Permanently analysing new market trends and technical innovations, our employees continuously work on improving our products and services.

## Your challenges push us to always become better.

The development of new technologies and materials has a substantial impact on your productivity. Companies are compelled to respond due to increasing time and cost constraints, as well as demanding standards of quality. The usage of state-of-the-art cutting technologies may result in time savings of up to 60%. So, providing effective solutions is becoming increasingly vital.

No matter where you operate, with our global network we are able to support you worldwide.



## Only tools in use prove their quality of use

We know the machining challenges you face, and to ensure that you never will experience reliability issues or downtime in your production, it's important to have a supportive partner by your side.



## With a wide product assortment we cover your requirements

We offer a product portfolio that provides you with the right tool for almost every application – from the smallest diameter to solutions for machining high-strength materials using complex tool sets. We make a continuous effort to enhance and optimize our product range to ensure that we have the perfect solution for each of your varied needs.

## Top quality management to the highest standards

The tool won't be put up for sale until we are perfectly content with its functionality, efficacy, and performance results. As such, you can be sure that you'll get a top-notch solution for efficient use.

Since 2017, we hold an ISO 9001:2015 certification for the development, distribution, and logistics of precision tools.



## More than just standard – the right tool for every application

In our catalog „Machine Taps“ you will find our HSS-PM taps as well as our HSS-E machine taps which guarantee a reliable performance.

**Professional Line:** Our Professional Line includes our HSS-PM taps for universal applications – from steels and stainless steels to heat-resistant materials. In addition to the metric ISO standard thread, fine and oversize threads, we also offer Whitworth pipe threads and American Unified Threads.

**Standard Line:** Our metric HSS-E machine taps are of particular interest to one-off manufacturers and users working with small batch sizes. They achieve good results when machining steel, stainless steel and cast materials.

We also stock a wide range of indexable inserts and holders as well as single-point cutting tools.





## Where standard tools are not sufficient, special solutions are required

Another focus is the development of custom-fit solutions to your specifications or engineering drawings. A special tool can offer specific technical or economic added value for many applications. You benefit from our years of expertise and industry knowledge.

## Highly efficient tools tailored to your specific demands

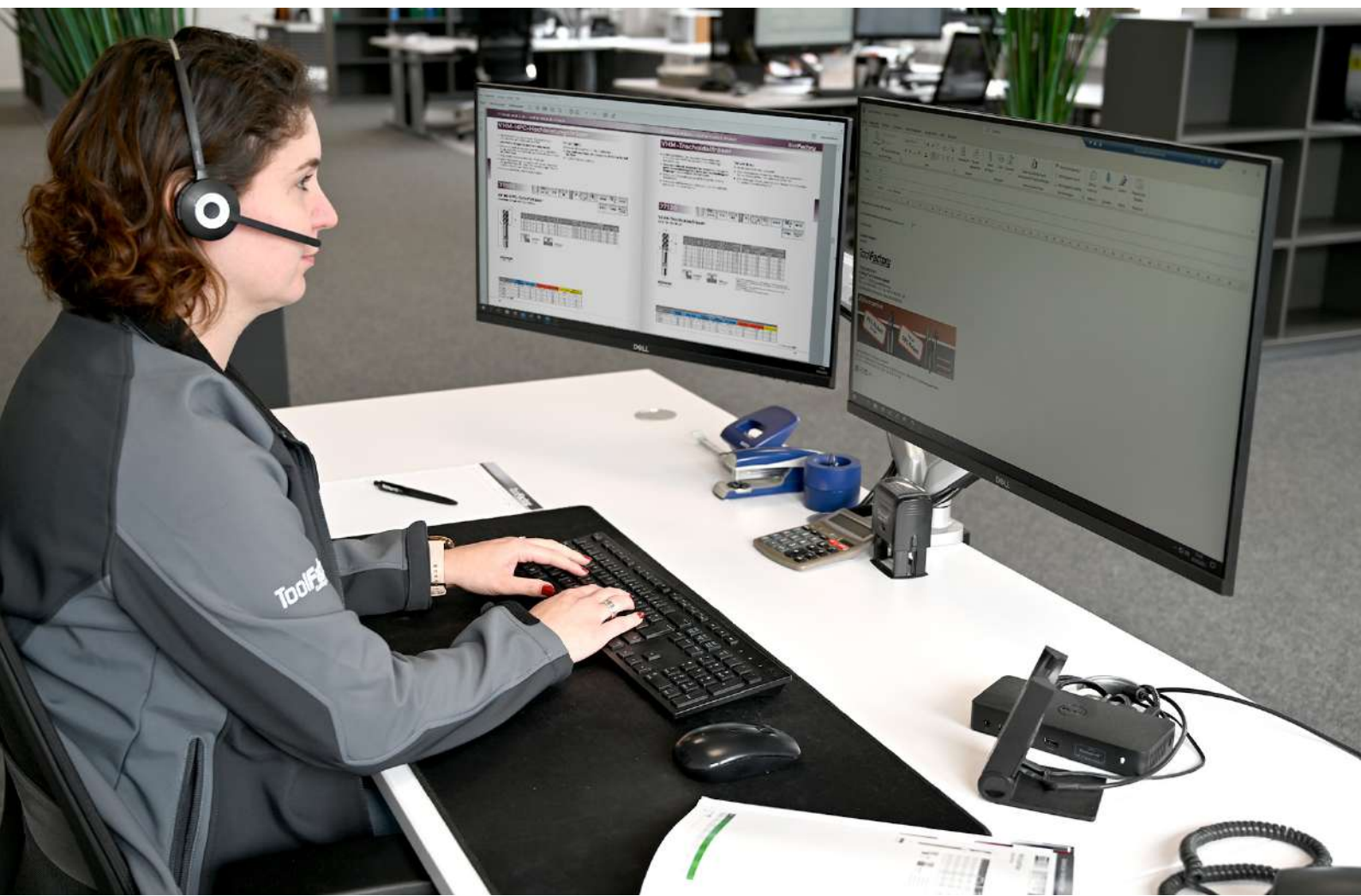
No matter whether you need to machine a specific material or a special geometry, we will give you comprehensive advice on individual applications and support you throughout the entire process, from the first idea to the final tool. You can also rely on the high quality and excellent functionality of our special tools.



<p>Nein / No N 6535 HB</p>	<p>Beschichtung / Coating</p> <p><b>ToolFactory</b> Cutting Tool Solutions</p>	<p>Werkstoff / Material: VHM / Solid Carbide</p> <p>Erstellt durch / Designed by:</p> <p>Bezeichnung / Reference: VHM-HPC-Schafffräs Ø 10</p>
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## Our services boost your success

We provide you with the right services to help you make your tools smart auxiliaries. From personal advice and Private Label Services to regrinding – whatever your requirements, we are here to support you.

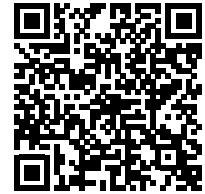


## Our customer service is ready to help

We are here to assist you – in person and/or online. Our specialists are happy to help and advise you on the technical specifications of our products. If you have any questions about suitability, fields of application or cutting values, please do not hesitate to contact us:

+492174 79153 0 or [info@tool-factory.de](mailto:info@tool-factory.de)

You can also contact us if you need help with optimizing your processes and machining strategies.



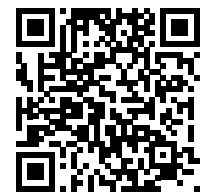
## Your benefit is our years of expertise

To keep you up to date with the latest knowledge, we have developed our white papers on various topics and our SPAN-ART® videos.

### White paper

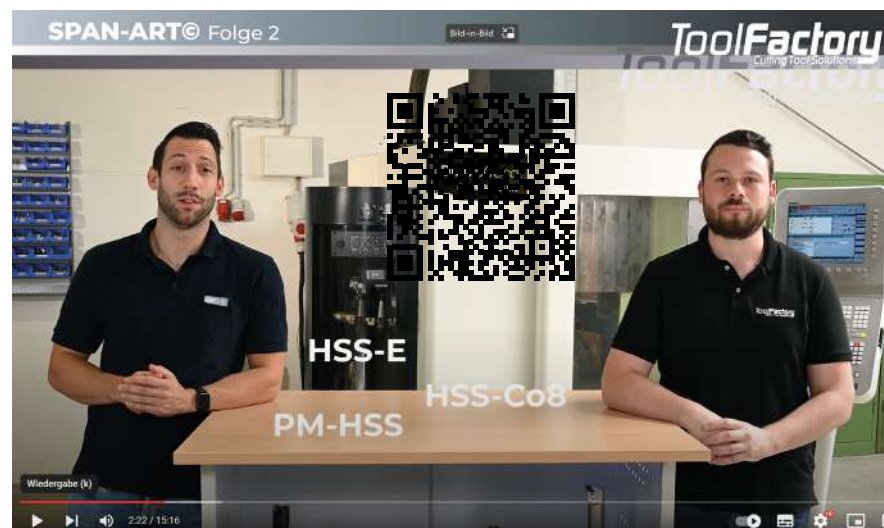
A white paper is a NEWtral document providing specialist information on specific topics. We spend a lot of time on researching and creating our white papers in order to communicate relevant topics to you in a hands-on and understandable way. Ideal for anyone who wants to know more. You can download all our available white papers from our homepage:

<https://www.tool-factory.de/en/media-library/>



### SPAN-ART®

Our SPAN-ART® videos are explanatory videos covering the most important topics relating to machining. In cooperation with the Institute for Tooling and Production Technology (iWFT) at the RFH Cologne in Germany, we explain how chips are formed, how to select turning tools and much more. We provide an informative mix of both theory and practice.



## Our Private Label Service helps you stay ahead of the game

Our precision tools are not always delivered straight to the end user but are also sold by our distributors – this is where our Private Label Service comes in. This special service allows you to compile an assortment of products that is flexibly tailored to your requirements. We deliver all products featuring your own corporate identity, which means that the tools are individually lasered, labeled and packaged. We will also gladly support you in compiling your product range.

### You will benefit from:

- Flexibility and unique position, regardless of the purchase quantity
- Uncomplicated processing
- Reduced warehousing and less logistical and organizational effort
- Supporting marketing measures, from videos and catalogs to supporting social media activities

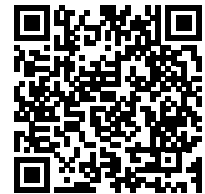


## Prolonging the service life of your tools through regrinding

Economical production is the key. Did you know that tools can be reground up to three times without any major loss of quality? You can save up to 60% on costs with our regrinding service instead of buying new tools. We therefore recommend to always check the regrinding options before purchasing new tools.

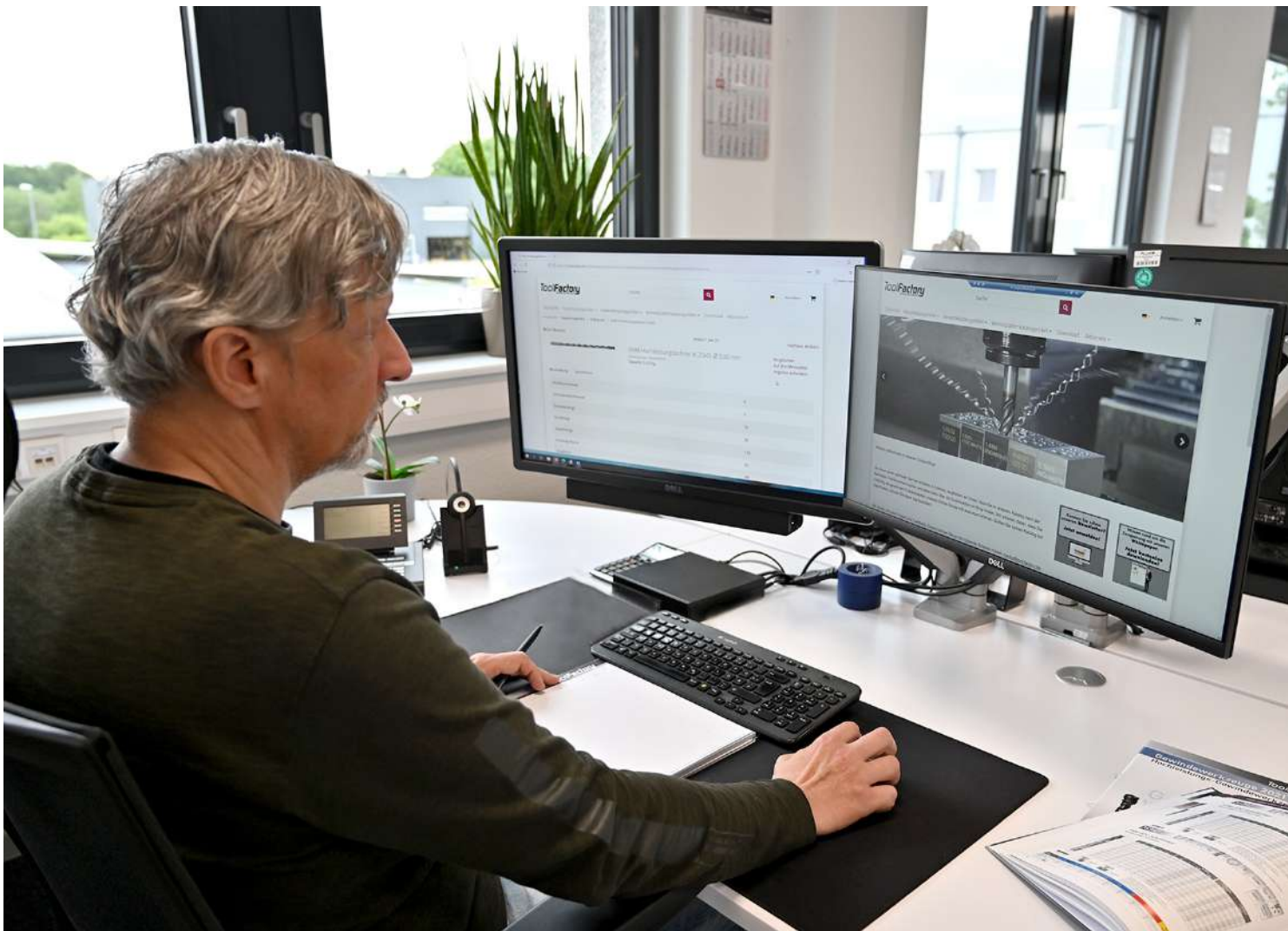
We regrind your tools, no matter of which manufacturer. We check whether regrinding is a viable option from a technical and economic point of view and whether the reconditioned tools will still achieve almost original tool life and process reliability. You will receive your reconditioned tools back within 10 working days.

<https://www.tool-factory.de/en/services/regrinding-service/regrinding-form/>



## Order your tools online in our online store!

Regardless of opening hours, you can order the tools you need around the clock from our online store.



## Flexibility with our online store

Do you already know our online store? Here you can quickly and easily access and order our standard tools. Not only can you see whether your required item is available, but also your specific terms and all relevant product specifications. We guarantee delivery by 12 noon on the next working day – with no minimum order value.

## Your benefits

- Our online store also allows you to easily import and order orders from a list. This saves a lot of time, especially for recurring orders.
- Particularly for larger companies, it can also be of interest to use our store's approval process to have full transparency about your orders all the time. Simply contact us and together we will discuss your requirements and set the approval process up for you.
- We also offer an additional service for non-registered users: View our standard prices and request a quote for interesting items with just one click.

In our online store you can order 22,000 precision tools around the clock!

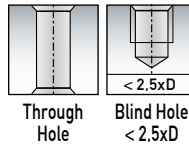
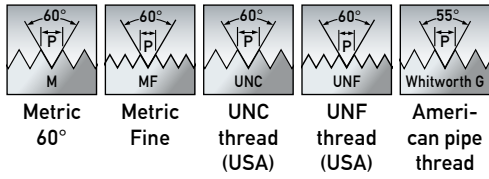
Register now:

[shop.tool-factory.de/en/home](https://shop.tool-factory.de/en/home)

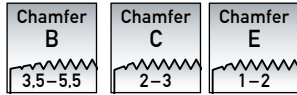


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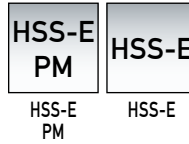
### Thread form



### Chamfer



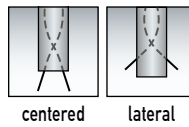
### Grade



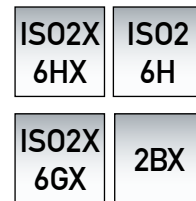
### Coating



### Internal coolant



### Tolerances





# Professional Line

## HSS-PM High Performance Machine Tap

- High-performance machine tap featuring an innovative geometry for the use in a wide range of materials
- Highest level of cutting performance and process reliability with best chip evacuation
- Smooth high-performance coating featuring extremely high hardness
- Usable in machines with a synchronous spindle, a tension/compression compensation chuck, thread-cutting machines and more
- Excellent results with cutting fluids and minimum lubrication systems

**Optimum chip removal**  
due to extremely hard and wear-resistant Hardlube coating

**Universally applicable** in tool steel, stainless steel, cast iron and special Ni alloys as well as in high-strength aluminum and Hardox up to 40 HRC

**Longer tool life**  
of up to 70% compared to HSS-E taps

**Process reliable threads** when using a PM HSS tap

**Reduced costs** and processing time

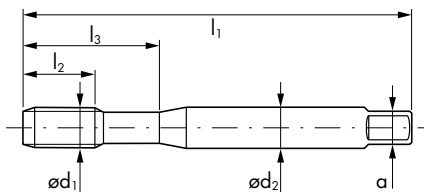
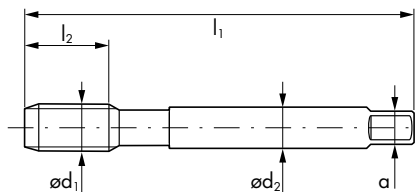


**97700**

**HSS-E  
PM**

**Chamfer  
B  
3.5-5.5**
**ISO2X  
6HX**


## HSS-PM High Performance Machine Tap Through Hole ISO Metric Coarse Thread DIN-13

**DIN-371**

**DIN-374 / DIN-376**


Ø d <sub>1</sub>	P	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Ø d <sub>2</sub>	a		DIN	coated	
									Part No.	€/pc.
M 1	0.25	40	6	12	2.5	2.1	0.75	371	97700010	45.42
M 1.1	0.25	40	6	12	2.5	2.1	0.85	371	97700011	45.42
M 1.2	0.25	40	6	12	2.5	2.1	0.95	371	97700012	45.42
M 1.4	0.3	40	8	12	2.5	2.1	1.10	371	97700014	45.42
M 1.6	0.35	40	8	12	2.5	2.1	1.25	371	97700016	45.42
M 1.7	0.35	40	8	12	2.5	2.1	1.35	371	97700017	45.42
M 1.8	0.35	40	8	12	2.5	2.1	1.45	371	97700018	45.42
M 2	0.40	45	10	12	2.8	2.1	1.60	371	97700020	27.85
M 2.2	0.45	45	10	12	2.8	2.1	1.75	371	97700022	27.85
M 2.3	0.40	45	10	12	2.8	2.1	1.90	371	97700023	27.85
M 2.5	0.45	50	9	14	2.8	2.1	2.05	371	97700025	27.85
M 2.6	0.45	50	9	14	2.8	2.1	2.15	371	97700026	28.82
M 3	0.50	56	5	18	3.5	2.7	2.50	371	97700030	21.56
M 3.5	0.60	56	6	20	4.0	3.0	2.90	371	97700035	22.70
M 4	0.70	63	7	21	4.5	3.4	3.30	371	97700040	22.70
M4.5	0.75	70	7.5	25	6.0	4.9	3.80	371	97700045	28.73
M 5	0.80	70	8	25	6.0	4.9	4.20	371	97700050	24.66
M 6	1.00	80	10	30	6.0	4.9	5.00	371	97700060	25.55
M 8	1.25	90	13	35	8.0	6.2	6.80	371	97700080	30.67
M 10	1.50	100	15	39	10.0	8.0	8.50	371	97700100	40.37
M 12	1.75	110	18	—	9.0	7.0	10.20	376	97700120	59.46
M 14	2.00	110	20	—	11.0	9.0	12.00	376	97700140	77.96
M 16	2.00	110	20	—	12.0	9.0	14.00	376	97700160	83.81
M 18	2.50	125	25	—	14.0	11.0	15.50	376	97700180	110.80
M 20	2.50	140	25	—	16.0	12.0	17.50	376	97700200	120.92
M 22	2.50	140	25	—	18.0	14.5	19.50	376	97700220	163.81
M 24	3.00	160	30	—	18.0	14.5	21.00	376	97700240	166.18
M 27	3.00	160	30	—	20.0	16.0	24.00	376	97700270	212.52
M 30	3.50	180	35	—	22.0	18.0	26.50	376	97700300	249.71
M 33	3.50	180	35	—	25.0	20.0	29.50	376	97700330	358.45
M 36	4.00	200	40	—	28.0	22.0	32.00	376	97700360	483.28

Material	Structural steels / free machining steels	Low-alloy steel	Tool steel	High-alloy steel	Stainless steel	Cast iron	Aluminium alloys	Nickel alloys
Tensile strength / Hardness	< 850 N/mm <sup>2</sup>	< 900 N/mm <sup>2</sup>	< 1000 N/mm <sup>2</sup>	< 1250 N/mm <sup>2</sup>	< 1000 N/mm <sup>2</sup>	< 850 N/mm <sup>2</sup>	< 600 N/mm <sup>2</sup>	< 1300 N/mm <sup>2</sup>
V <sub>c</sub> (m/min)	18-45	18-45	5-25	5-25	5-25	10-40	10-40	5-15

**97710**



**HSS-E  
PM**



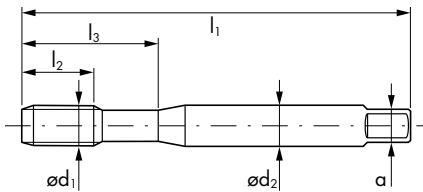
**Chamfer  
C  
2-3**

**ISO2X  
6HX**

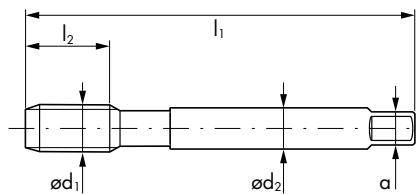


## HSS-PM High Performance Machine Tap Blind Hole ISO Metric Coarse Thread DIN-13

DIN-371



DIN-374 / DIN-376



Ø d <sub>1</sub>	P	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Ø d <sub>2</sub>	a		DIN	coated	
									Part No.	€/pc.
M 1	0.25	40	6	12	2.5	2.1	0.75	371	97710010	45.42
M 1.1	0.25	40	6	12	2.5	2.1	0.85	371	97710011	45.42
M 1.2	0.25	40	6	12	2.5	2.1	0.95	371	97710012	45.42
M 1.4	0.3	40	8	12	2.5	2.1	1.10	371	97710014	45.42
M 1.6	0.35	40	8	12	2.5	2.1	1.25	371	97710016	45.42
M 1.7	0.35	40	8	12	2.5	2.1	1.35	371	97710017	45.42
M 1.8	0.35	40	8	12	2.5	2.1	1.45	371	97710018	45.42
M 2	0.40	45	10	12	2.8	2.1	1.60	371	97710020	30.96
M 2.2	0.45	45	10	12	2.8	2.1	1.75	371	97710022	37.26
M 2.3	0.40	45	10	12	2.8	2.1	1.90	371	97710023	37.26
M 2.5	0.45	50	9	14	2.8	2.1	2.05	371	97710025	30.96
M 2.6	0.45	50	9	14	2.8	2.1	2.15	371	97710026	32.05
M 3	0.50	56	5	18	3.5	2.7	2.50	371	97710030	23.94
M 3.5	0.60	56	6	20	4.0	3.0	2.90	371	97710035	25.22
M 4	0.70	63	7	21	4.5	3.4	3.30	371	97710040	25.22
M4.5	0.75	70	7.5	25	6.0	4.9	3.80	371	97710045	33.12
M 5	0.80	70	8	25	6.0	4.9	4.20	371	97710050	27.42
M 6	1.00	80	10	30	6.0	4.9	5.00	371	97710060	28.39
M 8	1.25	90	13	35	8.0	6.2	6.80	371	97710080	34.11
M 10	1.50	100	15	39	10.0	8.0	8.50	371	97710100	44.83
M 12	1.75	110	18	—	9.0	7.0	10.20	376	97710120	66.08
M 14	2.00	110	20	—	11.0	9.0	12.00	376	97710140	86.61
M 16	2.00	110	20	—	12.0	9.0	14.00	376	97710160	93.14
M 18	2.50	125	25	—	14.0	11.0	15.50	376	97710180	119.83
M 20	2.50	140	25	—	16.0	12.0	17.50	376	97710200	143.04
M 22	2.50	140	25	—	18.0	14.5	19.50	376	97710220	177.35
M 24	3.00	160	30	—	18.0	14.5	21.00	376	97710240	174.35
M 27	3.00	160	30	—	20.0	16.0	24.00	376	97710270	229.22
M 30	3.50	180	35	—	22.0	18.0	26.50	376	97710300	269.36
M 33	3.50	180	35	—	25.0	20.0	29.50	376	97710330	406.78
M 36	4.00	200	40	—	28.0	22.0	32.00	376	97710360	548.18

Material	Structural steels / free machining steels	Low-alloy steel	Tool steel	High-alloy steel	Stainless steel	Cast iron	Aluminium alloys	Nickel alloys
Tensile strength / Hardness	< 850 N/mm <sup>2</sup>	< 900 N/mm <sup>2</sup>	< 1000 N/mm <sup>2</sup>	< 1250 N/mm <sup>2</sup>	< 1000 N/mm <sup>2</sup>	< 850 N/mm <sup>2</sup>	< 600 N/mm <sup>2</sup>	< 1300 N/mm <sup>2</sup>
V <sub>c</sub> (m/min)	18-45	18-45	5-25	5-25	5-25	10-40	10-40	5-15

97720



HSS-E  
PM



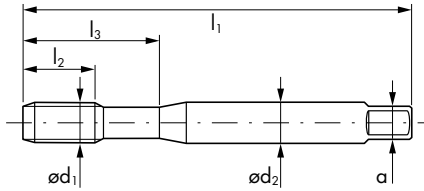
Chamfer  
E  
1-2

ISO2X  
6HX

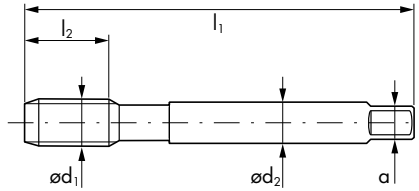


### HSS-PM High Performance Machine Tap Blind Hole ISO Metric Coarse Thread DIN-13

DIN-371



DIN-374 / DIN-376



$\varnothing d_1$	P	$l_1$	$l_2$	$l_3$	$\varnothing d_2$	$a$		DIN	coated	
									Part No.	€/pc.
M 3	0.50	56	5	18	3.5	2.7	2.50	371	97720030	23.94
M 4	0.70	63	7	21	4.5	3.4	3.30	371	97720040	25.22
M 5	0.80	70	8	25	6.0	4.9	4.20	371	97720050	27.42
M 6	1.00	80	10	30	6.0	4.9	5.00	371	97720060	28.39
M 8	1.25	90	13	35	8.0	6.2	6.80	371	97720080	34.11
M 10	1.50	100	15	39	10.0	8.0	8.50	371	97720100	44.83
M 12	1.75	110	18	–	9.0	7.0	10.20	376	97720120	66.08
M 14	2.00	110	20	–	11.0	9.0	12.00	376	97720140	86.61
M 16	2.00	110	20	–	12.0	9.0	14.00	376	97720160	93.14

97730



HSS-E  
PM



Chamfer  
B  
3.5-5.5



ISO2X  
6HX



### HSS-PM High Performance Machine Tap IC Through Hole ISO Metric Coarse Thread DIN-13



$\varnothing d_1$	P	$l_1$	$l_2$	$l_3$	$\varnothing d_2$	$a$		DIN	coated	
									Part No.	€/pc.
M 5	0.80	70	8	25	6.0	4.9	4.20	371	97730050	40.75
M 6	1.00	80	10	30	6.0	4.9	5.00	371	97730060	41.65
M 8	1.25	90	13	35	8.0	6.2	6.80	371	97730080	48.57
M 10	1.50	100	15	39	10.0	8.0	8.50	371	97730100	60.04
M 12	1.75	110	18	–	9.0	7.0	10.20	376	97730120	83.61
M 14	2.00	110	20	–	11.0	9.0	12.00	376	97730140	108.33
M 16	2.00	110	20	–	12.0	9.0	14.00	376	97730160	114.18

Material	Structural steels / free machining steels	Low-alloy steel	Tool steel	High-alloy steel	Stainless steel	Cast iron	Aluminium alloys	Nickel alloys
Tensile strength / Hardness	< 850 N/mm <sup>2</sup>	< 900 N/mm <sup>2</sup>	< 1000 N/mm <sup>2</sup>	< 1250 N/mm <sup>2</sup>	< 1000 N/mm <sup>2</sup>	< 850 N/mm <sup>2</sup>	< 600 N/mm <sup>2</sup>	< 1300 N/mm <sup>2</sup>
V <sub>c</sub> (m/min)	18-45	18-45	5-25	5-25	5-25	10-40	10-40	5-15

**97740**



**HSS-E  
PM**



**Chamfer  
E  
1-2**

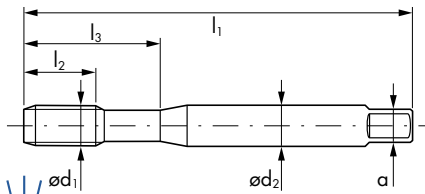


**ISO2X  
6HX**

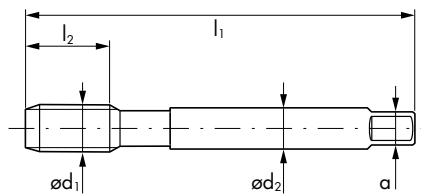


## HSS-PM High Performance Machine Tap IC Blind Hole ISO Metric Coarse Thread DIN-13

DIN-371



DIN-374 / DIN-376



Ø d <sub>1</sub>	P	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Ø d <sub>2</sub>	α		DIN	coated	
									Part No.	€/pc.
M 5	0.80	70	8	25	6.0	4.9	4.20	371	97740050	40.27
M 6	1.00	80	10	30	6.0	4.9	5.00	371	97740060	41.23
M 8	1.25	90	13	35	8.0	6.2	6.80	371	97740080	48.43
M 10	1.50	100	15	39	10.0	8.0	8.50	371	97740100	60.59
M 12	1.75	110	18	–	9.0	7.0	10.20	376	97740120	85.37
M 14	2.00	110	20	–	11.0	9.0	12.00	376	97740140	110.92
M 16	2.00	110	20	–	12.0	9.0	14.00	376	97740160	117.42

**97701**



**HSS-E  
PM**



**Chamfer  
B  
3.5-5.5**

**ISO2X  
6GX**



## HSS-PM High Performance Machine Tap Through Hole ISO Metric Oversize Thread DIN-13



Ø d <sub>1</sub>	P	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Ø d <sub>2</sub>	α		DIN	coated	
									Part No.	€/pc.
M 3	0.50	56	5	18	3.5	2.7	2.50	371	97701030	21.56
M 4	0.70	63	7	21	4.5	3.4	3.30	371	97701040	22.70
M 5	0.80	70	8	25	6.0	4.9	4.20	371	97701050	24.66
M 6	1.00	80	10	30	6.0	4.9	5.00	371	97701060	25.55
M 8	1.25	90	13	35	8.0	6.2	6.80	371	97701080	30.67
M 10	1.50	100	15	39	10.0	8.0	8.50	371	97701100	40.37
M 12	1.75	110	18	–	9.0	7.0	10.20	376	97701120	59.46
M 14	2.00	110	20	–	11.0	9.0	12.00	376	97701140	77.96
M 16	2.00	110	20	–	12.0	9.0	14.00	376	97701160	83.81

- Oversize 0.02–0.04 mm
- For workpieces with subsequent surface treatment. e.g: Electroplating, hard coating
- For workpieces that shrink slightly after heat treatment

Material	Structural steels / free machining steels	Low-alloy steel	Tool steel	High-alloy steel	Stainless steel	Cast iron	Aluminium alloys	Nickel alloys
Tensile strength / Hardness	< 850 N/mm <sup>2</sup>	< 900 N/mm <sup>2</sup>	< 1000 N/mm <sup>2</sup>	< 1250 N/mm <sup>2</sup>	< 1000 N/mm <sup>2</sup>	< 850 N/mm <sup>2</sup>	< 600 N/mm <sup>2</sup>	< 1300 N/mm <sup>2</sup>
V <sub>c</sub> (m/min)	18–45	18–45	5–25	5–25	5–25	10–40	10–40	5–15

97711



HSS-E  
PM



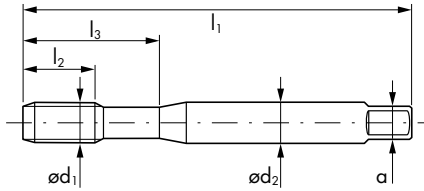
Chamfer  
C  
2-3

ISO2X  
6GX

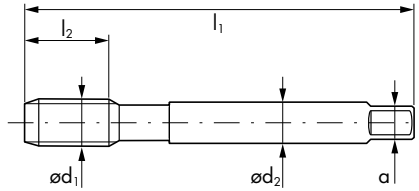


## HSS-PM High Performance Machine Tap Blind Hole ISO Metric Oversize Thread DIN-13

DIN-371



DIN-374 / DIN-376



Ø d <sub>1</sub>	P	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Ø d <sub>2</sub>	α		DIN	coated	
									Part No.	€/pc.
M 3	0.50	56	5	18	3.5	2.7	2.50	371	97711030	23.94
M 4	0.70	63	7	21	4.5	3.4	3.30	371	97711040	25.22
M 5	0.80	70	8	25	6.0	4.9	4.20	371	97711050	25.22
M 6	1.00	80	10	30	6.0	4.9	5.00	371	97711060	28.39
M 8	1.25	90	13	35	8.0	6.2	6.80	371	97711080	34.11
M 10	1.50	100	15	39	10.0	8.0	8.50	371	97711100	44.83
M 12	1.75	110	18	–	9.0	7.0	10.20	376	97711120	66.08
M 14	2.00	110	20	–	11.0	9.0	12.00	376	97711140	86.61
M 16	2.00	110	20	–	12.0	9.0	14.00	376	97711160	93.14

- Oversize 0.02–0.04 mm
- For workpieces with subsequent surface treatment. e.g. Electroplating, hard coating
- For workpieces that shrink slightly after heat treatment

97721



HSS-E  
PM



Chamfer  
E  
1-2

ISO2X  
6GX



## HSS-PM High Performance Machine Tap Blind Hole ISO Metric Oversize Thread DIN-13



Ø d <sub>1</sub>	P	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Ø d <sub>2</sub>	α		DIN	coated	
									Part No.	€/pc.
M 3	0.50	56	5	18	3.5	2.7	2.50	371	97721030	23.94
M 4	0.70	63	7	21	4.5	3.4	3.30	371	97721040	25.22
M 5	0.80	70	8	25	6.0	4.9	4.20	371	97721050	27.42
M 6	1.00	80	10	30	6.0	4.9	5.00	371	97721060	28.39
M 8	1.25	90	13	35	8.0	6.2	6.80	371	97721080	34.11
M 10	1.50	100	15	39	10.0	8.0	8.50	371	97721100	44.83
M 12	1.75	110	18	–	9.0	7.0	10.20	376	97721120	66.08
M 14	2.00	110	20	–	11.0	9.0	12.00	376	97721140	86.61
M 16	2.00	110	20	–	12.0	9.0	14.00	376	97721160	93.14

- Oversize 0.02–0.04 mm
- For workpieces with subsequent surface treatment. e.g. Electroplating, hard coating
- For workpieces that shrink slightly after heat treatment

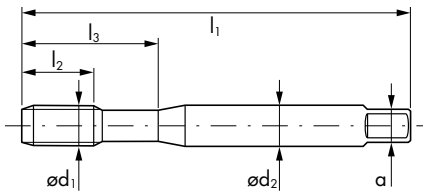
Material	Structural steels / free machining steels	Low-alloy steel	Tool steel	High-alloy steel	Stainless steel	Cast iron	Aluminium alloys	Nickel alloys
Tensile strength / Hardness	< 850 N/mm <sup>2</sup>	< 900 N/mm <sup>2</sup>	< 1000 N/mm <sup>2</sup>	< 1250 N/mm <sup>2</sup>	< 1000 N/mm <sup>2</sup>	< 850 N/mm <sup>2</sup>	< 600 N/mm <sup>2</sup>	< 1300 N/mm <sup>2</sup>
V <sub>c</sub> (m/min)	18–45	18–45	5–25	5–25	5–25	10–40	10–40	5–15

**97760**

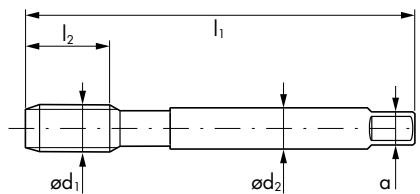


## HSS-PM High Performance Machine Tap Through Hole ISO Metric Fine Thread DIN-13

DIN-371



DIN-374 / DIN-376



Ø d <sub>1</sub>	P	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Ø d <sub>2</sub>	α		DIN	coated	
									Part No.	€/pc.
M 3	0.35	56	5	18	3.5	2.7	2.65	371	97760031	78.19
M 3.5	0.35	56	5	20	4.0	3.0	3.15	371	97760036	75.37
M 4	0.5	63	7	21	4.5	3.4	3.5	371	97760041	31.51
M 5	0.5	70	8	25	6.0	4.9	4.5	371	97760051	44.00
M 6	0.5	80	10	30	6.0	4.9	5.5	371	97760061	35.39
M 6	0.75	80	10	30	6.0	4.9	5.2	371	97760062	33.10
M 8	0.75	80	10	30	6.0	6.2	7.2	371	97760082	42.36
M 8	1.00	90	10	–	6.0	4.9	7.00	374	97760081	42.36
M 10	1.00	90	10	–	7.0	5.5	9.00	374	97760101	55.68
M 10	1.25	100	15	–	7.0	5.5	8.80	374	97760102	57.88
M 12	1.50	100	15	–	9.0	7.0	10.50	374	97760121	69.75
M 12	1.00	100	10	–	9.0	7.0	11.00	374	97760122	81.20
M 12	1.25	100	15	–	9.0	7.0	10.80	374	97760123	81.20
M 14	1.50	100	15	–	11.0	9.0	12.50	374	97760141	92.25
M 16	1.50	100	15	–	12.0	9.0	14.50	374	97760161	96.41
M 18	1.50	110	17	–	14.0	11.0	16.50	374	97760181	111.24
M 20	1.50	125	17	–	16.0	12.0	18.50	374	97760201	125.86
M 22	1.50	125	17	–	18.0	14.5	20.50	374	97760221	163.81
M 24	1.50	140	20	–	18.0	14.5	22.50	374	97760241	187.56

Material	Structural steels / free machining steels	Low-alloy steel	Tool steel	High-alloy steel	Stainless steel	Cast iron	Aluminium alloys	Nickel alloys
Tensile strength / Hardness	< 850 N/mm <sup>2</sup>	< 900 N/mm <sup>2</sup>	< 1000 N/mm <sup>2</sup>	< 1250 N/mm <sup>2</sup>	< 1000 N/mm <sup>2</sup>	< 850 N/mm <sup>2</sup>	< 600 N/mm <sup>2</sup>	< 1300 N/mm <sup>2</sup>
V <sub>c</sub> (m/min)	25–55	25–55	5–25	5–25	5–30	15–50	15–50	5–15

Product family **166**

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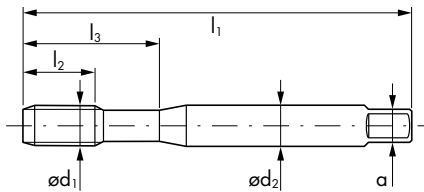
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97770

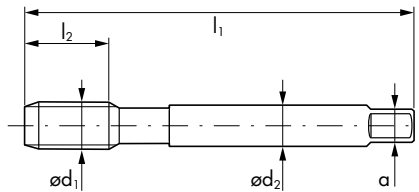


## HSS-PM High Performance Machine Tap Blind Hole ISO Metric Fine Thread DIN-13

DIN-371



DIN-374 / DIN-376



Ø d <sub>1</sub>	P	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Ø d <sub>2</sub>	α		DIN	coated	
									Part No.	€/pc.
M 3	0.35	56	5	18	3.5	2.7	2.65	371	97770031	84.46
M 3.5	0.35	56	5	20	4.0	3.0	3.15	371	97770036	82.63
M 4	0.5	63	7	21	4.5	3.4	3.5	371	97770041	34.34
M 5	0.5	70	8	25	6.0	4.9	4.5	371	97770051	48.01
M 6	0.5	80	10	30	6.0	4.9	5.5	371	97770061	38.38
M 6	0.75	80	10	30	6.0	4.9	5.2	371	97770062	37.38
M 8	0.75	80	10	30	6.0	6.2	7.2	371	97770082	47.05
M 8	1.00	90	10	–	6.0	4.9	7.00	374	97770081	47.05
M 10	1.00	90	10	–	7.0	5.5	9.00	374	97770101	61.87
M 10	1.25	100	15	–	7.0	5.5	8.80	374	97770102	64.29
M 12	1.50	100	15	–	9.0	7.0	10.50	374	97770121	77.52
M 12	1.00	100	10	–	9.0	7.0	11.00	374	97770122	65.25
M 12	1.25	100	15	–	9.0	7.0	10.80	374	97770123	88.26
M 14	1.50	100	15	–	11.0	9.0	12.50	374	97770141	102.50
M 16	1.50	100	15	–	12.0	9.0	14.50	374	97770161	107.11
M 18	1.50	110	17	–	14.0	11.0	16.50	374	97770181	129.61
M 20	1.50	125	17	–	16.0	12.0	18.50	374	97770201	147.90
M 22	1.50	125	17	–	18.0	14.5	20.50	374	97770221	186.25
M 24	1.50	140	20	–	18.0	14.5	22.50	374	97770241	202.08

97780



## HSS-PM High Performance Machine Tap Blind Hole ISO Metric Fine Thread DIN-13



Ø d <sub>1</sub>	P	l <sub>1</sub>	l <sub>2</sub>	Ø d <sub>2</sub>	α		DIN	coated	
								Part No.	€/pc.
M 8	1.00	90	10	6.0	4.9	7.00	374	97780081	47.05
M 10	1.00	90	10	7.0	5.5	9.00	374	97780101	61.87
M 10	1.25	100	15	7.0	5.5	8.80	374	97780102	64.29
M 12	1.50	100	15	9.0	7.0	10.50	374	97780121	77.52
M 14	1.50	100	15	11.0	9.0	12.50	374	97780141	102.50
M 16	1.50	100	15	12.0	9.0	14.50	374	97780161	107.11

Material	Structural steels / free machining steels	Low-alloy steel	Tool steel	High-alloy steel	Stainless steel	Cast iron	Aluminium alloys	Nickel alloys
Tensile strength / Hardness	< 850 N/mm <sup>2</sup>	< 900 N/mm <sup>2</sup>	< 1000 N/mm <sup>2</sup>	< 1250 N/mm <sup>2</sup>	< 1000 N/mm <sup>2</sup>	< 850 N/mm <sup>2</sup>	< 600 N/mm <sup>2</sup>	< 1300 N/mm <sup>2</sup>
V <sub>c</sub> (m/min)	18–45	18–45	5–25	5–25	5–25	10–40	10–40	5–15





97785



HSS-E  
PM



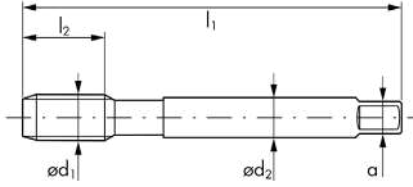
Chamfer  
B  
3,5-5,5

ISO2X  
6HX



## HSS-PM High Performance Machine Tap Through Hole Whitworth Pipe Thread DIN-ISO 228

DIN-5156



G	Ø d <sub>1</sub>	1"/P	P	l <sub>1</sub>	l <sub>2</sub>	Ø d <sub>2</sub>	α		DIN	coated	
										Part No.	€/pc.
G-1/8	9.728	28	0.907	90	10	7.0	5.5	8.80	5156	97785097	53.83
G-1/4	13.157	19	1.337	100	14	11.0	9.0	11.80	5156	97785131	88.70
G-3/8	16.662	19	1.337	100	15	12.0	9.0	15.25	5156	97785166	98.46
G-1/2	20.955	14	1.814	125	17	16.0	12.0	19.00	5156	97785209	121.24
G-5/8	22.911	14	1.814	125	20	18.0	14.5	21.00	5156	97785229	183.50
G-3/4	26.441	14	1.814	140	20	20.0	16.0	24.50	5156	97785264	206.08
G-7/8	30.201	14	1.814	150	22	22.0	18.0	28.25	5156	97785302	270.05
G-1	33.249	11	2.309	160	24	25.0	20.0	30.75	5156	97785332	371.22

97790



HSS-E  
PM



Chamfer  
C  
< 2.5xD  
2-3

ISO2X  
6HX



## HSS-PM High Performance Machine Tap Blind Hole Whitworth Pipe Thread DIN-ISO 228



G	Ø d <sub>1</sub>	1"/P	P	l <sub>1</sub>	l <sub>2</sub>	Ø d <sub>2</sub>	α		DIN	coated	
										Part No.	€/pc.
G-1/8	9.728	28	0.907	90	10	7.0	5.5	8.80	5156	97790097	58.15
G-1/4	13.157	19	1.337	100	14	11.0	9.0	11.80	5156	97790131	96.27
G-3/8	16.662	19	1.337	100	15	12.0	9.0	15.25	5156	97790166	105.61
G-1/2	20.955	14	1.814	125	17	16.0	12.0	19.00	5156	97790209	130.58
G-5/8	22.911	14	1.814	125	20	18.0	14.5	21.00	5156	97790229	198.25
G-3/4	26.441	14	1.814	140	20	20.0	16.0	24.50	5156	97790264	222.38
G-7/8	30.201	14	1.814	150	22	22.0	18.0	28.25	5156	97790302	291.44
G-1	33.249	11	2.309	160	24	25.0	20.0	30.75	5156	97790332	402.65

Material	Structural steels / free machining steels	Low-alloy steel	Tool steel	High-alloy steel	Stainless steel	Cast iron	Aluminium alloys	Nickel alloys
Tensile strength / Hardness	< 850 N/mm <sup>2</sup>	< 900 N/mm <sup>2</sup>	< 1000 N/mm <sup>2</sup>	< 1250 N/mm <sup>2</sup>	< 1000 N/mm <sup>2</sup>	< 850 N/mm <sup>2</sup>	< 600 N/mm <sup>2</sup>	< 1300 N/mm <sup>2</sup>
V <sub>c</sub> (m/min)	18-45	18-45	5-25	5-25	5-25	10-40	10-40	5-15

**97781**



**HSS-E  
PM**

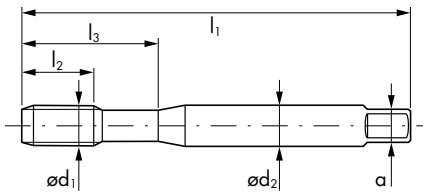


**2BX**

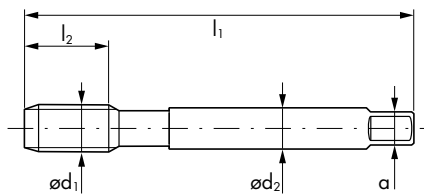


## HSS-PM High Performance Machine Tap Through Hole UNC Coarse Thread ANSI B-1.1

DIN-371



DIN-374 / DIN-376



UNC	ø d <sub>1</sub>	P	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	ø d <sub>2</sub>	α		DIN	coated	
										Part No.	€/pc.
No 4-40	2.844	0.635	56	5	18	3.5	2.7	2.35	371	97781028	33.51
No 5-40	3.175	0.635	56	7	18	3.5	2.7	2.65	371	97781031	32.27
No 6-32	3.505	0.794	56	6	20	4.0	3.0	2.85	371	97781035	32.27
No 8-32	4.165	0.794	63	7	21	4.5	3.4	3.50	371	97781041	29.01
No 10-24	4.826	1.058	70	8	25	6.0	4.9	3.90	371	97781048	32.21
No 12-24	5.486	1.058	80	10	30	6.0	4.9	4.50	371	97781054	33.72
1/4-20	6.350	1.270	80	13	30	7.0	5.5	5.10	371	97781063	35.14
5/16-18	7.938	1.411	90	13	35	8.0	6.0	6.60	371	97781079	39.31
3/8-16	9.525	1.588	100	15	39	10.0	8.0	8.0	371	97781095	52.28
7/16-14	11.112	1.814	100	15	—	8.0	6.2	9.40	376	97781111	64.52
1/2-13	12.700	1.954	110	18	—	9.0	7.0	10.80	376	97781127	90.67
9/16-12	14.288	2.117	110	20	—	11.0	9.0	12.20	376	97781142	89.61
5/8-11	15.875	2.309	110	22	—	12.0	9.0	13.50	376	97781158	82.89

**97782**



**HSS-E  
PM**



**2BX**



## HSS-PM High Performance Machine Tap Blind Hole UNC Coarse Thread ANSI B-1.1



UNC	ø d <sub>1</sub>	P	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	ø d <sub>2</sub>	α		DIN	coated	
										Part No.	€/pc.
No 4-40	2.844	0.635	56	5	18	3.5	2.7	2.35	371	97782028	38.22
No 5-40	3.175	0.635	56	7	18	3.5	2.7	2.65	371	97782031	37.27
No 6-32	3.505	0.794	56	6	20	4.0	3.0	2.85	371	97782035	37.27
No 8-32	4.165	0.794	63	7	21	4.5	3.4	3.50	371	97782041	35.06
No 10-24	4.826	1.058	70	8	25	6.0	4.9	3.90	371	97782048	34.93
No 12-24	5.486	1.058	80	10	30	6.0	4.9	4.50	371	97782054	36.62
1/4-20	6.350	1.270	80	13	30	7.0	5.5	5.10	371	97782063	45.70
5/16-18	7.938	1.411	90	13	35	8.0	6.0	6.60	371	97782079	45.70
3/8-16	9.525	1.588	100	15	39	10.0	8.0	8.0	371	97782095	57.30
7/16-14	11.112	1.814	100	15	—	8.0	6.2	9.40	376	97782111	69.80
1/2-13	12.700	1.954	110	18	—	9.0	7.0	10.80	376	97782127	97.22
9/16-12	14.288	2.117	110	20	—	11.0	9.0	12.20	376	97782142	97.03
5/8-11	15.875	2.309	110	22	—	12.0	9.0	13.50	376	97782158	89.52

Material	Structural steels / free machining steels	Low-alloy steel	Tool steel	High-alloy steel	Stainless steel	Cast iron	Aluminium alloys	Nickel alloys
Tensile strength / Hardness	< 850 N/mm <sup>2</sup>	< 900 N/mm <sup>2</sup>	< 1000 N/mm <sup>2</sup>	< 1250 N/mm <sup>2</sup>	< 1000 N/mm <sup>2</sup>	< 850 N/mm <sup>2</sup>	< 600 N/mm <sup>2</sup>	< 1300 N/mm <sup>2</sup>
V <sub>c</sub> (m/min)	18 – 45	18 – 45	5 – 25	5 – 25	5 – 25	10 – 40	10 – 40	5 – 15

97783



HSS-E  
PM



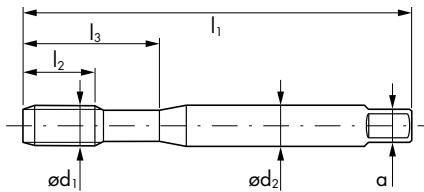
Chamfer  
B  
3.5-5.5

2BX

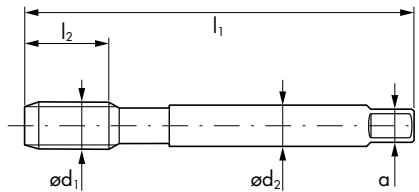


## HSS-PM High Performance Machine Tap Through Hole UNF Fine Thread ANSI B-1.1

DIN-371



DIN-374 / DIN-376



UNF	ø d <sub>1</sub>	P	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	ø d <sub>2</sub>	a		DIN	coated	
										Part No.	€/Stk.
No 4-48	2.844	0.529	56	5	18	3.5	2.7	2.40	371	97783028	37.85
No 5-44	3.175	0.557	56	7	18	3.5	2.7	2.70	371	97783031	36.47
No 6-40	3.505	0.635	56	6	20	4.0	3.0	2.95	371	97783035	36.47
No 8-36	4.165	0.705	63	7	21	4.5	3.4	3.50	371	97783041	32.74
No 10-32	4.826	0.794	70	8	25	6.0	4.9	4.10	371	97783048	43.24
No 12-28	5.486	0.907	80	10	30	6.0	4.9	4.60	371	97783054	38.12
1/4-28	6.350	0.907	80	10	30	7.0	5.5	5.50	371	97783063	39.36
5/16-24	7.938	1.058	90	13	35	8.0	6.0	6.90	371	97783079	44.09
3/8-24	9.525	1.058	100	15	39	10.0	8.0	8.50	371	97783095	58.54
7/16-20	11.112	1.270	100	15	-	8.0	6.2	9.90	374	97783111	72.25
1/2-20	12.700	1.270	100	15	-	9.0	7.0	11.50	374	97783127	101.92
9/16-18	14.288	1.411	100	15	-	11.0	9.0	12.90	374	97783142	102.98
5/8-18	15.875	1.411	100	15	-	12.0	9.0	14.50	374	97783158	94.49

97784



HSS-E  
PM



Chamfer  
C  
< 2.5xD  
2-3

2BX



## HSS-PM High Performance Machine Tap Blind Hole UNF Fine Thread ANSI B-1.1



UNF	ø d <sub>1</sub>	P	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	ø d <sub>2</sub>	a		DIN	coated	
										Part No.	€/pc.
No 4-48	2.844	0.529	56	5	18	3.5	2.7	2.40	371	97784028	43.17
No 5-44	3.175	0.557	56	7	18	3.5	2.7	2.70	371	97784031	42.18
No 6-40	3.505	0.635	56	6	20	4.0	3.0	2.95	371	97784035	42.18
No 8-36	4.165	0.705	63	7	21	4.5	3.4	3.50	371	97784041	39.64
No 10-32	4.826	0.794	70	8	25	6.0	4.9	4.10	371	97784048	47.03
No 12-28	5.486	0.907	80	10	30	6.0	4.9	4.60	371	97784054	41.37
1/4-28	6.350	0.907	80	10	30	7.0	5.5	5.50	371	97784063	52.55
5/16-24	7.938	1.058	90	13	35	8.0	6.0	6.90	371	97784079	52.55
3/8-24	9.525	1.058	100	15	39	10.0	8.0	8.50	371	97784095	65.88
7/16-20	11.112	1.270	100	15	-	8.0	6.2	9.90	374	97784111	78.18
1/2-20	12.700	1.270	100	15	-	9.0	7.0	11.50	374	97784127	111.15
9/16-18	14.288	1.411	100	15	-	11.0	9.0	12.90	374	97784142	111.57
5/8-18	15.875	1.411	100	15	-	12.0	9.0	14.50	374	97784158	102.02

Material	Structural steels / free machining steels	Low-alloy steel	Tool steel	High-alloy steel	Stainless steel	Cast iron	Aluminium alloys	Nickel alloys
Tensile strength / Hardness	< 850 N/mm <sup>2</sup>	< 900 N/mm <sup>2</sup>	< 1000 N/mm <sup>2</sup>	< 1250 N/mm <sup>2</sup>	< 1000 N/mm <sup>2</sup>	< 850 N/mm <sup>2</sup>	< 600 N/mm <sup>2</sup>	< 1300 N/mm <sup>2</sup>
V <sub>c</sub> (m/min)	18 – 45	18 – 45	5 – 25	5 – 25	5 – 25	10 – 40	10 – 40	5 – 15

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97100



HSS-E



Chamfer B  
3.5-5.5

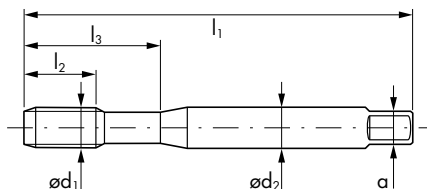
ISO2  
6H



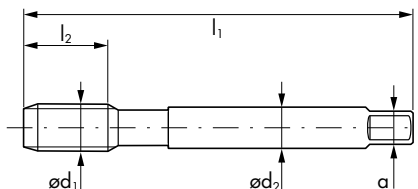
P M K  
N S H

## HSS-E Machine Tap Through Hole ISO Metric Coarse Thread DIN-13

DIN-371



DIN-374 / DIN-376



Ø d <sub>1</sub>	P	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Ø d <sub>2</sub>	α		DIN	coated	
									Part No.	€/pc.
M 3	0.50	56	10	18	3.5	2.7	2.50	371	97100030	19.90
M 4	0.70	63	12	21	4.5	3.4	3.30	371	97100040	20.09
M 5	0.80	70	14	25	6.0	4.9	4.20	371	97100050	21.95
M 6	1.00	80	18	30	6.0	4.9	5.00	371	97100060	22.74
M 8	1.25	90	20	35	8.0	6.2	6.80	371	97100080	27.20
M 10	1.50	100	20	39	10.0	8.0	8.50	371	97100100	35.81
M 12	1.75	110	24	—	9.0	7.0	10.20	376	97100120	49.68
M 14	2.00	110	25	—	11.0	9.0	12.00	376	97100140	65.48
M 16	2.00	110	32	—	12.0	9.0	14.00	376	97100160	71.05
M 18	2.50	125	32	—	14.0	11.0	15.50	376	97100180	96.43
M 20	2.50	140	32	—	16.0	12.0	17.50	376	97100200	105.55
M 22	2.50	140	32	—	18.0	14.5	19.50	376	97100220	142.22
M 24	3.00	160	38	—	18.0	14.5	21.00	376	97100240	145.53
M 27	3.00	160	38	—	20.0	16.0	24.00	376	97100270	194.63
M 30	3.50	180	45	—	22.0	18.0	26.50	376	97100300	228.70

97110



HSS-E



Chamfer C  
< 2.5xD  
2-3

ISO2  
6H



P M K  
N S H

## HSS-E Machine Tap Blind Hole ISO Metric Coarse Thread DIN-13



Ø d <sub>1</sub>	P	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Ø d <sub>2</sub>	α		DIN	coated	
									Part No.	€/pc.
M 3	0.50	56	5	18	3.5	2.7	2.50 <sub>a</sub>	371	97110030	20.81
M 4	0.70	63	7	21	4.5	3.4	3.30	371	97110040	20.99
M 5	0.80	70	8	25	6.0	4.9	4.20	371	97110050	22.85
M 6	1.00	80	10	30	6.0	4.9	5.00	371	97110060	23.65
M 8	1.25	90	13	35	8.0	6.2	6.80	371	97110080	28.41
M 10	1.50	100	15	39	10.0	8.0	8.50	371	97110100	37.33
M 12	1.75	110	18	—	9.0	7.0	10.20	376	97110120	53.45
M 14	2.00	110	20	—	11.0	9.0	12.00	376	97110140	70.68
M 16	2.00	110	20	—	12.0	9.0	14.00	376	97110160	76.59
M 18	2.50	125	25	—	14.0	11.0	15.50	376	97110180	104.04
M 20	2.50	140	25	—	16.0	12.0	17.50	376	97110200	113.61
M 22	2.50	140	25	—	18.0	14.5	19.50	376	97110220	153.60
M 24	3.00	160	30	—	18.0	14.5	21.00	376	97110240	156.15
M 27	3.00	160	30	—	20.0	16.0	24.00	376	97110270	199.55
M 30	3.50	180	35	—	22.0	18.0	26.50	376	97110300	234.43

Material	Structural steels / free machining steels	Low-alloy steel	Tool steel	High-alloy steel	Cast iron
Tensile strength / Hardness	< 850 N/mm <sup>2</sup>	< 900 N/mm <sup>2</sup>	< 1000 N/mm <sup>2</sup>	< 1250 N/mm <sup>2</sup>	< 850 N/mm <sup>2</sup>
V <sub>c</sub> (m/min)	10-30	10-30	5-15	5-15	15-30

**97120**



HSS-E



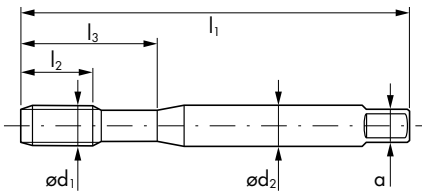
Chamfer B  
3.5–5.5

ISO2  
6H

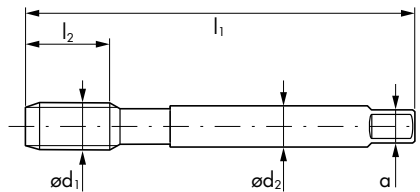


## HSS-E Machine Tap Through Hole ISO Metric Fine Thread DIN-13

DIN-371



DIN-374 / DIN-376



Ø d <sub>1</sub>	P	l <sub>1</sub>	l <sub>2</sub>	Ø d <sub>2</sub>	a		DIN	coated	
								Part No.	€/pc.
M 8	1.00	90	20	6.0	4.9	7.00	371	97120081	33.98
M 10	1.00	90	20	7.0	5.5	9.00	371	97120101	45.53
M 10	1.25	100	20	7.0	5.5	8.80	371	97120102	50.30
M 12	1.50	100	20	9.0	7.0	10.50	374	97120121	57.30
M 14	1.50	100	20	11.0	9.0	12.50	374	97120141	75.92
M 16	1.50	100	20	12.0	9.0	14.50	374	97120161	79.44

**97130**



HSS-E



Chamfer C  
< 2.5xD  
2–3

ISO2  
6H



## HSS-E Machine Tap Blind Hole ISO Metric Fine Thread DIN-13



Ø d <sub>1</sub>	P	l <sub>1</sub>	l <sub>2</sub>	Ø d <sub>2</sub>	a		DIN	coated	
								Part No.	€/pc.
M 8	1.00	90	10	6.0	4.9	7.00	371	97130081	42.68
M 10	1.00	90	13	7.0	5.5	9.00	371	97130101	50.13
M 10	1.25	100	15	7.0	5.5	8.80	371	97130102	54.47
M 12	1.50	100	5	9.0	7.0	10.50	374	97130121	61.76
M 14	1.50	100	7	11.0	9.0	12.50	374	97130141	82.14
M 16	1.50	100	8	12.0	9.0	14.50	374	97130161	85.77

Material	Structural steels / free machining steels	Low-alloy steel	Tool steel	High-alloy steel	Cast iron
Tensile strength / Hardness	< 850 N/mm <sup>2</sup>	< 900 N/mm <sup>2</sup>	< 1000 N/mm <sup>2</sup>	< 1250 N/mm <sup>2</sup>	< 850 N/mm <sup>2</sup>
V <sub>c</sub> (m/min)	10–30	10–30	5–15	5–15	15–30

97140



HSS-E



Chamfer B  
3,5-5,5

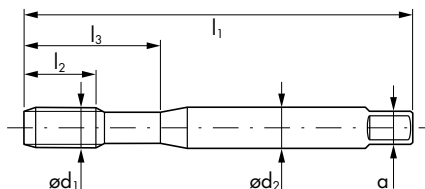
ISO2  
6H

Hardlube

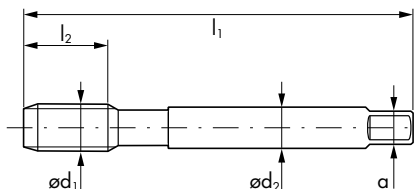


## HSS-E Machine Tap Through Hole ISO Metric Coarse Thread DIN-13

DIN-371



DIN-374 / DIN-376



Ø d <sub>1</sub>	P	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Ø d <sub>2</sub>	α		DIN	coated	
									Part No.	€/pc.
M 2	0.40	45	8	12	2.8	2.1	1.60	371	97140020	31.37
M 3	0.50	56	10	18	3.5	2.7	2.50	371	97140030	22.50
M 4	0.70	63	12	21	4.5	3.4	3.30	371	97140040	22.68
M 5	0.80	70	14	25	6.0	4.9	4.20	371	97140050	25.16
M 6	1.00	80	18	30	6.0	4.9	5.00	371	97140060	26.59
M 8	1.25	90	20	35	8.0	6.2	6.80	371	97140080	32.39
M 10	1.50	100	20	39	10.0	8.0	8.50	371	97140100	43.28
M 12	1.75	110	29	—	9.0	7.0	10.20	376	97140120	59.42
M 14	2.00	110	30	—	11.0	9.0	12.00	376	97140140	76.78
M 16	2.00	110	32	—	12.0	9.0	14.00	376	97140160	84.02
M 20	2.50	140	34	—	16.0	12.0	17.50	376	97140200	126.23
M 24	3.00	160	38	—	18.0	14.5	21.00	376	97140240	177.85
M 30	3.50	180	45	—	22.0	18.0	26.50	376	97140300	285.83

97150



HSS-E



Chamfer C  
< 2.5xD  
2-3

ISO2  
6H

Hardlube



## HSS-E Machine Tap Blind Hole ISO Metric Coarse Thread DIN-13



Ø d <sub>1</sub>	P	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Ø d <sub>2</sub>	α		DIN	coated	
									Part No.	€/pc.
M 2	0.40	45	8	12	2.8	2.1	1.60	371	97150020	35.35
M 3	0.50	56	5	18	3.5	2.7	2.50	371	97150030	24.19
M 4	0.70	63	7	21	4.5	3.4	3.30	371	97150040	24.35
M 5	0.80	70	8	25	6.0	4.9	4.20	371	97150050	26.90
M 6	1.00	80	10	30	6.0	4.9	5.00	371	97150060	28.35
M 8	1.25	90	13	35	8.0	6.2	6.80	371	97150080	34.51
M 10	1.50	100	15	39	10.0	8.0	8.50	371	97150100	45.94
M 12	1.75	110	18	—	9.0	7.0	10.20	376	97150120	63.08
M 16	2.00	110	20	—	12.0	9.0	14.00	376	97150160	89.51
M 20	2.50	140	25	—	16.0	12.0	17.50	376	97150200	134.31
M 24	3.00	160	30	—	18.0	14.5	21.00	376	97150240	188.47
M 30	3.50	180	35	—	22.0	18.0	26.50	376	97150300	268.86

Material	Stainless steel	Stainless steel
Tensile strength / Hardness	< 750 N/mm <sup>2</sup>	< 1000 N/mm <sup>2</sup>
V <sub>c</sub> (m/min)	10-30	10-25

Product family 167



**97160**



HSS-E

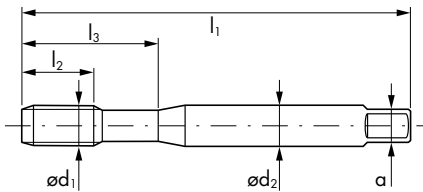


ISO2  
6H

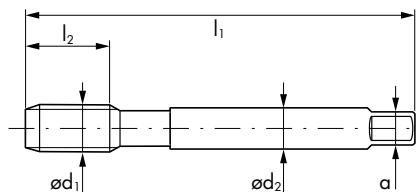


## HSS-E Machine Tap Through Hole ISO Metric Fine Thread DIN-13

DIN-371



DIN-374 / DIN-376



Ø d <sub>1</sub>	P	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Ø d <sub>2</sub>	a		DIN	coated	
									Part No.	€/pc.
M 4	0.50	63	10	21	4.5	3.4	3.50	371	97160041	33.78
M 6	0.75	80	14	30	6.0	4.9	5.20	371	97160061	39.05
M 8	1.00	90	20	30	8.0	6.2	7.00	371	97160081	40.47
M 10	1.00	90	20	35	10.0	8.0	9.00	371	97160101	50.96
M 12	1.00	100	20	–	9.0	7.0	11.00	374	97160121	66.94
M 12	1.50	100	20	–	9.0	7.0	10.50	374	97160122	67.18
M 14	1.25	100	20	–	11.0	9.0	12.80	374	97160141	93.39
M 16	1.50	100	20	–	12.0	9.0	14.50	374	97160161	92.40
M 18	1.50	110	24	–	14.0	11.0	16.50	374	97160181	108.17
M 20	1.00	125	24	–	16.0	12.0	19.00	374	97160201	157.50
M 20	2.00	140	32	–	16.0	12.0	18.00	374	97160202	170.60
M 22	1.50	125	24	–	18.0	14.5	20.50	374	97160221	197.10
M 24	2.00	140	45	–	18.0	14.5	22.00	374	97160241	206.53

**97170**



HSS-E



ISO2  
6H



## HSS-E Machine Tap Blind Hole ISO Metric Fine Thread DIN-13



Ø d <sub>1</sub>	P	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Ø d <sub>2</sub>	a		DIN	coated	
									Part No.	€/pc.
M 4	0.50	63	7	21	4.5	3.4	3.50	371	97170041	37.18
M 6	0.75	80	10	30	6.0	4.9	5.20	371	97170061	42.96
M 8	1.00	90	13	35	8.0	6.2	7.00	371	97170081	43.28
M 10	1.00	90	13	35	10.0	8.0	9.00	371	97170101	54.33
M 12	1.00	100	10	–	9.0	7.0	11.00	374	97170121	83.50
M 12	1.50	100	15	–	9.0	7.0	10.50	374	97170122	73.92
M 14	1.25	100	15	–	11.0	9.0	12.80	374	97170141	102.71
M 16	1.50	100	15	–	12.0	9.0	14.50	374	97170161	105.06
M 18	1.50	110	17	–	14.0	11.0	16.50	374	97170181	118.98
M 20	1.00	125	10	–	16.0	12.0	19.00	374	97170201	173.28
M 20	2.00	140	17	–	16.0	12.0	18.00	374	97170202	187.67
M 22	1.50	125	17	–	18.0	14.5	20.50	374	97170221	216.81
M 24	2.00	140	20	–	18.0	14.5	22.00	374	97170241	227.19

Material	Stainless steel	Stainless steel
Tensile strength / Hardness	< 750 N/mm <sup>2</sup>	< 1000 N/mm <sup>2</sup>
V <sub>c</sub> (m/min)	10–30	10–25

## General Terms and Conditions

### § 1 Scope of application – Privacy

1. Our General Terms and Conditions shall apply exclusively to all our deliveries and services including any associated consulting and information. We do not accept any conflicting Terms and Conditions or any Terms that differ from our Terms unless we had approved their validity in writing.
2. Our Terms and Conditions shall also apply, if we fully execute delivery to the customer knowing any conflicting or differing Terms and Conditions of the customer.
3. These Terms shall also apply to all future contractual relations with companies according to § 310 BGB (German Civil Code). Terms and Conditions that are identified as such shall also apply to them.
4. Within a business relationship between entrepreneurs, receipt of our deliveries and services implies that the customer accepts the legal validity of our Terms and Conditions. Any agreements including collateral agreements that differ from our Terms and Conditions or contain any kind of confirmation from our side shall only be effective in writing.
5. Customer information will be saved (acc. to Sections 28, 33 BDSG, German Federal Data Protection Act).

### § 2 Quotations – Conclusion of the contract

1. The customer's order shall be binding. Upon our choice, we shall be entitled to accept this order within 14 days by providing an order confirmation or by shipping the ordered goods.
2. Our quotations in business transactions with companies shall always be non-binding unless otherwise provided in the order confirmation. Oral agreements and confirmations only apply if we have confirmed the same in writing.

### § 3 Prices – Delivery and payment terms

1. Unless another price agreement has been agreed upon in written form, our prices are net plus applicable VAT according to our latest catalogues and price lists valid on the day of order. Catalogues and price lists are accessible at our premises or can be ordered from us.
2. Our deliveries are supplied carriage paid including packaging from an net order value of € 200,00. Any other orders will be shipped at the owner's expense.
3. Unless otherwise agreed, our invoices are payable within 8 days from date of invoice with 2% discount or 30 days net. Checks and payment orders will only be accepted on account of performance. Payment shall be deemed completed when the amount is credited to our account.
4. The customer is in default at the latest, if he fails to pay within 30 days when an invoice is due or after the receipt of the invoice or another payment schedule. Thereupon, we shall be entitled to charge the applicable default interest and charge € 10,00 for each payment reminder. We shall reserve the right to furnish proof of higher damage caused by default.
5. Any discounts or periods allowed for payment granted by us can be refused if the customer defaults on payment of previous invoices or following filings for insolvency. In these cases we shall be entitled to declare all due as well as any deferred invoice amounts immediately payable. In such cases, delivery of ordered goods will only be made on cash payment.
6. Set off rights can only be granted to the Buyer, if his counter claims have been stated legally binding, undisputed or recognized by our company. The customer's rights of retention only exist for counter claims resulting from the same contractual relationship.
7. In the case of the case of returned goods, we shall be entitled to retain a fee of 20% of the goods value as contribution to the coverage of costs. We can only take back tools in good order and condition and without any labels or with the TOOL FACTORY label only. Special tools and products with customized labelling are excluded from return. If the return shall be due to a fault of TOOL FACTORY, the take-back is free of charge to the customer. Only tools delivered within the last 6 months can be returned.

### § 4 Delivery terms – Receipt of the goods

1. Delivery times or dates shall only be binding upon agreement in writing.
2. Particularly in the case of larger deliveries, we shall be entitled for part-in deliveries to an extent that is reasonable for the customer.
3. As long as the customer is in delay with trade accounts payable, our obligation to deliver is in rest.
4. From our part, delivery term shall be deemed complied when the delivered goods have been sent to the customer prior to its expiry. The delivery period shall be reasonably extended against the background of measures taken within the scope of industrial action, particularly with regard to strikes and lockouts, as well as upon the occurrence of unforeseeable obstacles that are beyond our will, as far as such obstacles have a provable material influence on the delivery objects' completion or delivery. This shall also apply to circumstances which may occur at sub-suppliers. The aforementioned circumstances shall also be deemed to be beyond our control if they arise from a pre-existing delay. In important cases, we will inform the customer as soon as possible of the beginning and the end of such circumstances. If delivery or performance is rendered impossible or unreasonable by virtue of the indicated circumstances, we are relieved from the delivery obligation.
5. If we are in default towards companies due to reasons for which we bear responsibility, the client is entitled to a reimbursement for damages caused by arrears to the sum of 1% of the value of the declared value of goods for each full week of the delay, limited however to a maximum of 15% of the value of goods. Any additional claims due to delay of delivery are exclusively subject to § 8 of these Conditions.
6. If we are in default and if the customer – under the consideration of the statutory exceptions – grants to us a reasonable period of time for performance and if this period of time is not adhered to, the customer shall be entitled to withdrawal in accordance with statutory regulations. Any additional claims due to delay of delivery are exclusively subject to § 8 of these Conditions.
7. If the customer defaults in taking delivery or infringes other duties to cooperate, we shall be entitled to claim compensation for the damage suffered by us, including any additional expenses. In this case, the risk of accidental loss or of accidental degradation of the item purchased shall transfer to the customer at the time the customer falls into default of acceptance.
8. Where the customer does not accept the goods within the extension period, we are entitled, to

request compensation for damages without any special proof due to non-fulfilment to an amount of 20% of the rejected goods value, as well as the incurred shipping cost plus applicable VAT. Both the customer and we reserve the right to provide evidence of higher or lower damages in the individual case.

### § 5 Transfer of risk – Dispatch

1. The goods shall be delivered or dispatched at the customer's risk in any case. Type and route of dispatch are left to us, unless otherwise agreed upon. As soon as the goods have been handed over to the forwarder/carrier, or, at the latest, when they have left our warehouse, the risk for the goods shall pass on to the customer.
2. If dispatch is delayed due to circumstances for which the customer bears responsibility, then the risk shall be transferred to the customer from the day on which the goods are ready for dispatch.
3. Delivered items shall be accepted by the customer even if there is evidence of minor faults, regardless of the rights arising from § 7.

### § 6 Retention of title

1. We shall retain full title of the goods that have been delivered in accordance with the delivery contract until the receipt of the full payment.
2. If the realisable value of the securities held by us exceeds the total value of our claims by more than 20%, we shall be obliged by request of the customer to the release of securities of our own choice.
3. The customer must inform us immediately in writing in relation to any attachments asserted by third parties, or any other such interventions, and it is also required to inform the attaching creditor of the existence of the retention of title.
4. In case of breach of contract by the client, in particular in case of default of payment, we shall be entitled to take back the object of sale. Our repossession of the object of sale shall not constitute a withdrawal from the contract, unless we make explicit written declaration thereof or imperative provisions of the consumer credit act shall apply to the contract. If we obtain the attachment of the object of sale this shall always be construed as a cancellation of the contract. We shall be entitled to re-market goods taken back from the company by implementing a resale at our sole discretion, provided that we have given advance reasonable notice of the threat of resale. After taking back the purchased goods, we shall be entitled to dispose of them. We shall offset the proceeds from such a sale against the client's liabilities, less appropriate administrative cost, in general 10% of the goods value.
5. If we are entitled to take back the goods, the customer is obliged to enable one of our employees to perform a stock check of the reserved goods.

### § 7 Defects of quality

1. We bear liability for defects as to quality as follows: All those parts which within the limitation period prove to have a defect, shall at our choice and at no expense to us be either repaired, delivered anew or performed again, insofar as the cause for the defect existed at the time of the transfer of risk.
2. The customer shall notify us in writing of any defects of quality immediately after their discovery.
3. If notice is given of defects, payments by the customer shall only be retained to such extent as is justified in proportion to the defects that have occurred. The customer may withhold payments only if the complaint as to defects is justified and incontestable. If the complaint is unjustified, we shall be entitled to demand from the customer reimbursement of the incurred expenses.
4. First, we must get the opportunity to provide subsequent fulfilment within a reasonable period.
5. If the subsequent fulfilment fails, the customer may withdraw from the contract or reduce the remuneration irrespective of any eventual indemnification claims pursuant to § 8.
6. There shall be no claims for defects where the discrepancy from the agreed condition is insignificant, where the impairment of use is insignificant, where there is normal wear and tear or where damages arise after the passing of risk as a consequence of incorrect or careless handling, excessive operational demands, unsuitable equipment or as a consequence of special exterior influences which in the agreement were not assumed. If improper modifications are made by the customer or third parties, they are not entitled to assert claims for damages on these goods and the consequences resulting thereof.
7. Claims by the customer concerning the expenses necessary for the purpose of supplementary performance, in particular costs of transport, travel, labour and material are precluded insofar as the expenses have risen because the delivery item has been moved to a different location subsequently, unless the move conforms to its intended use.

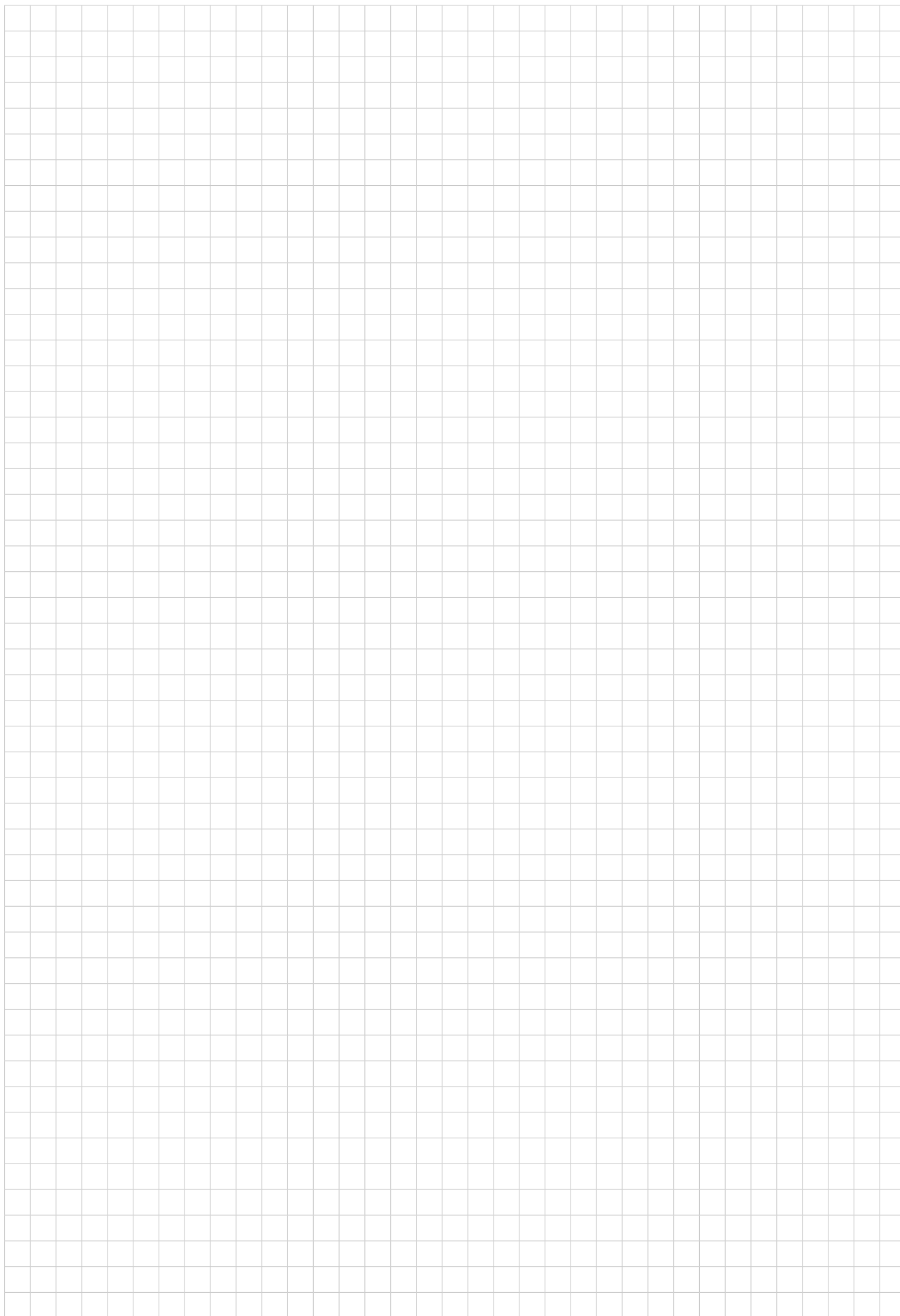
### § 8 Other claims for damages

1. Claims to damages and reimbursement of expenditure of the customer (hereinafter claims to damages), shall be excluded irrespective of their legal basis, including, but not limited to, the breach of duties under the law of obligations and under tort.
2. Claims for damages due to the infringement of material contractual duties, however, shall be limited to contract-typical, predictable damages, provided there is no intent or gross negligence, or that liability is assumed on account of damage to life, physical injury or damage to health. A change of the burden of proof to the disadvantage of the client is not associated with the aforementioned conditions.
3. Insofar as the customer is entitled to claims for damages in accordance with this section, they become statute-barred according to § 7 art. 2 of these conditions after the expiration of the limitation period applicable for claims for defects of quality. The legal provisions for limitation periods shall apply to claims for damage in accordance with the German product liability law.

### § 9 Place of fulfilment and court of jurisdiction

1. Though we ship the goods to the customer, our registered office shall remain the place of fulfilment.
2. Provided the customer is a company (entrepreneur), the court of jurisdiction shall be our registered office, however, upon our choice, also the company's registered office.

**Notes**



## ToolFactory

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