VERGNANO

General Catalogue

www.vergnano.com

Nr. 60
English

TAppFinder

Everything in one App

TAppFinder allows you to search in the Vergnano catalogue for threading taps that best suit your threading application, based on:

- ✓ Workpiece material
- ✓ Type of hole
- ✓ Type of tool
- ✓ Type of thread
- ✓ Thread tolerance
- ✓ Type of coolant

Technical data sheets for threading taps include:

- ✓ Available sizes
- ✓ Technical drawing
- ✓ Technical characteristics
- ✓ Application field
- ✓ Cutting data

See pages 12 ÷ 27 >

ARTICLE LEGEND

A... Taps for Generic Applications
P... High Performance Taps
S... Synchronous Taps
H... Solid Carbide Taps
B... Taps with internal coolant supply

...**FC** Taps for blind holes
...**FP** Taps for through holes
...**K** Taps in HSSK

...**S** Taps with increased relief
...**L** Taps with long shank
...**N** Forming taps with oil grooves
...**R** Forming taps with internal coolant supply and radial outlet
...**E** Taps with short chamfer (Form E)
...**EG** Taps for wire thread inserts
...**LH** Taps with left hand thread
...**AZ** / **BZ** / **FZ** Taps with interrupted thread

TAP MATERIAL

HSS / **HSSE**: Taps with interrupted thread
HSSK / **HSSZ** / **HSSP**: Powder metallurgy high speed steel
HM: Solid Carbide

LUBRICATION

E Emulsion
O Oli
MQL Minimum quantity lubrication
S Dry

SERIES	
MATERIAL	
CHAMFER FORM	
TYPE OF HOLE	

M	4H
	6H/6HX
	6G/6GX
	7G/7GX
	6H +0,1
MF	6H/6HX
	6G/6GX
UNC	2B/2BX
	3B
UNF	2B/2BX
	3B
UN 8	2B
G	ISO 5969/X
Rp (BSPP)	--
Rc (BSPT)	--
BSW	mc
NPT	--
NPTF	--
Internal lubrication	
Coating	

A1 | 31 Product code / page

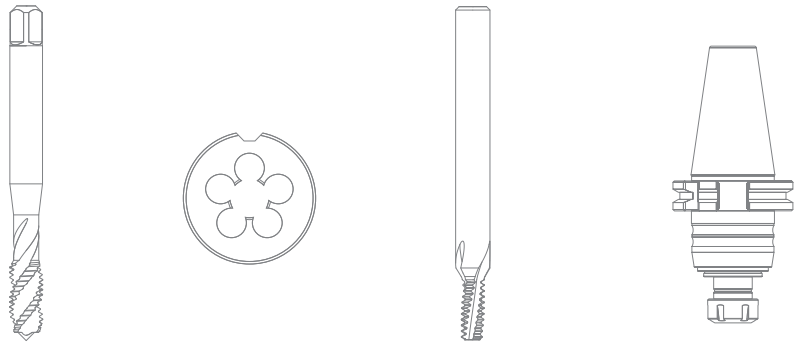
● **20-25** Ideal tap / cutting speed m/min

❍ 15-20 Suitable tap / cutting speed m/min

ISO 513	Material	Group	Application	Res.N/mm²	Lubrication
P	Steel	P.1	Mild / magnetic steel	200 - 400	E, O, MQL
		P.2	Construction steel, case hardening steel	350 - 700	E, O, MQL
		P.3	Carbon steel	350 - 850	E, O, MQL
		P.4	Alloyed steel / tempered steel	500 - 850	E, O, MQL
		P.5	Alloyed steel / tempered steel	850 - 1200	O, MQL
		P.6	Alloyed steel / high strength steel	1200 - 1600	O, MQL
		P.7	Ferritic stainless steel, martensitic stainless steel, precipitation hardening	< 1000	E, O, MQL
M	Stainless steel	M.1	Austenitic stainless steel	< 850	O, MQL
		M.2	Ferritic+austenitic (Duplex)	< 1000	O, MQL
K	Cast iron	K.1	Grey cast iron	< 1000	O, MQL, D
		K.2	Nodular cast iron, malleable cast iron, tempered cast iron	< 1000	E, O, MQL
		K.3	Austempered ductile iron (ADI)	< 1400	O, MQL
N	Aluminium Aluminium alloys	N.1	Pure aluminium	< 300	E, O, MQL
		N.2	Aluminium wrought and die cast alloys with Si < 0,5% (long chipping)	< 500	E, O, MQL
		N.3	Aluminium wrought and die cast alloys with Si < 10% (medium chipping)	< 500	E, O, MQL
		N.4	Aluminium die cast alloys with Si > 10% (short chipping)	< 600	E, O, MQL
	Copper Copper alloys Brass Bronze	N.5	Pure copper	250 - 350	E, O, MQL
		N.6	Copper alloys (long chipping), soft brass	< 700	E, O, MQL
		N.7	Copper alloys (short chipping), hard brass	< 700	E, O, MQL
		N.8	High strength bronze	700 - 1500	E, O, MQL
	Magnesium Magnesium alloys	N.9	Pure magnesium, magnesium alloys	120 - 300	E, O, MQL
		N.10	High strength magnesium alloy	240 - 400	E, O, MQL
S	Titanium Titanium alloys	S.1	Pure titanium	400 - 600	E, O, MQL
		S.2	Titanium alloys	600 - 1000	O, MQL
	Nickel Nickel alloys	S.3	Pure nickel	400 - 600	E, O, MQL
		S.4	Nickel alloys	600 - 1000	O, MQL
H	Hardened materials	H.1	Alloyed steel, hardness HRC 44-55	-	O, MQL
		H.2	Alloyed steel, hardness HRC 56-63	-	O, MQL

**For specific material examples see "Technical Information" section on page 230*

VERGNANO



Taps

Dies

Thread Mills

Tapping Attachments

General Catalogue Nr. 60 - EN

With over 70 years of experience in the cutting tool industry, Vergnano is one of the world's leading manufacturers of high quality precision cutting tools. Over the years, Vergnano has constantly innovated its product range to meet the demands of a continuously evolving market.

The quality of Vergnano tools is the consequence of strict controls of processes and products, constant research in new technical solutions and continuous investments in state-of-the-art technology. Each manufacturing step takes place internally at the Vergnano production plant starting from the steel bar through to the final PVD coating process of the finished tool.

Particular attention is dedicated to the principles of sustainability: environmental compatibility is considered in all products, processes and technologies.

While keeping a firm foothold in its host territory, Vergnano has established itself internationally thanks to commercial subsidiaries in Germany and South Korea and a capillary worldwide distributor network. As result, Vergnano can boast among its customers the most important companies in mechanical industrial branch.

Index

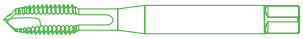
intro

INTRODUCTION

SERIES

"A" SERIES - TAPS FOR GENERIC APPLICATIONS

SERIES



"P" SERIES - HIGH PERFORMANCE TAPS

SERIES

"S" SERIES - SYNCHRONOUS TAPS

H SERIES

"H" SERIES - SOLID CARBIDE TAPS

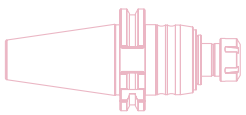
F SERIES

"F" DIES

VR SERIES

THREAD MILLS

VA SERIES



SYNCHRONOUS TAPPING ATTACHMENTS

info

TECHNICAL INFORMATION

A15S LH

Spiral point geometry for lefthand threads for generic applications on through holes.

P M K N

A70S LH

40° spiral geometry for lefthand threads for generic applications on blind holes.

P M K N

A170

New optimised geometry for stainless steels on blind holes.

P M

P130

New high performance tap for high tensile strength materials on blind and through holes.

P N

P180 N

New high performance forming taps optimised for stainless steels.

P M

BP17

Internal radial coolant version of high performance P17 taps for through holes.

P M K N

P45

New high performance taps for cast materials on blind and through holes.

K N

BP45

Internal axial coolant version of high performance P45 taps for cast materials for blind and through holes.

K
N

P45E

New high performance taps with form E chamfer for cast materials on blind holes.

K
N

BP45E

Internal axial coolant version of high performance P45E taps for cast materials for blind holes.

K
N

BP71

Internal axial coolant version of high performance P71 taps for blind holes.

P
M
K
N
S

P71E

New high performance 45° spiral geometry with form E chamfer for blind holes.

P
M
K
N
S

P59E

New high performance 45° spiral geometry with form E chamfer for blind holes.

P
M
K
N
S

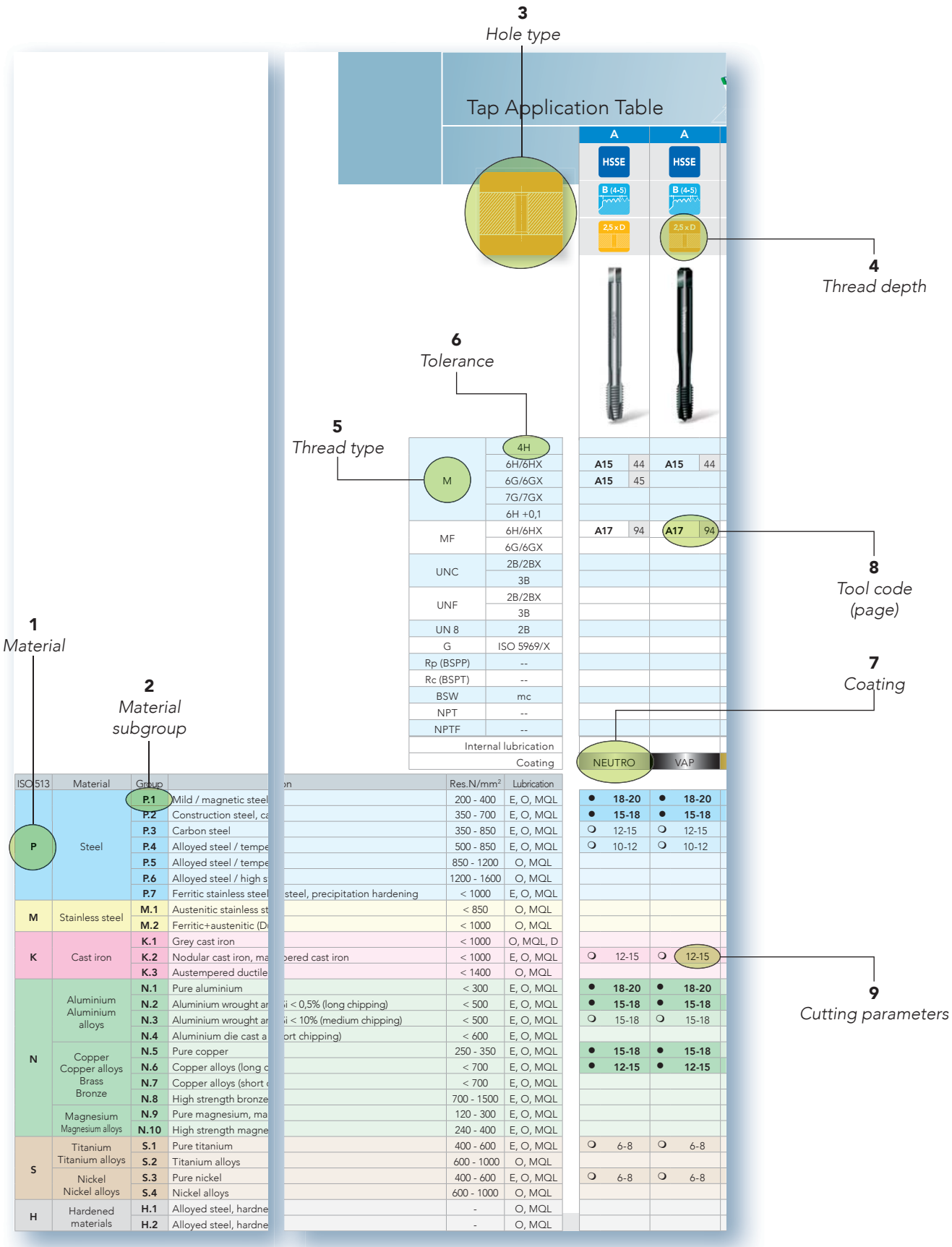
BS45

Internal axial coolant version of synchronous S45 taps for cast materials on blind holes.

K
N

Guide to Tap Application Table

In order to select the correct tap, follow steps 1 to 9.



Thread type

M

DIN 13

A SERIES

MACHINE TAPS for through holes
Straight flutes with spiral point

Application characteristics

2,5 x D | HSSE

Tool code

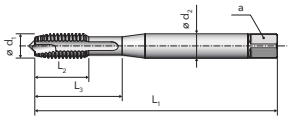
A15 S BRIGHT	A15 S VAP	A15 S TiN	A15 S TiCN

Coating

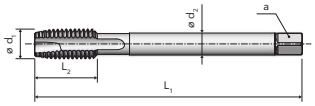
Dimensional standard

A SERIES

DIN 371≤ M10



DIN 376≥ M11



Recommended application range

APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A15 S BRIGHT	A15 S VAP	A15 S TiN	A15 S TiCN
P	P.2	• 20-25	• 20-25	• 30-35	• 30-35
	P.3	• 15-20	• 15-20	• 25-30	• 25-30
	P.4	• 12-15	• 12-15	• 20-25	• 20-25
	P.5			• 10-15	• 10-15
	P.7			• 10-15	• 10-15
M	M.1			• 10-15	• 10-15
K	K.2	• 15-20	• 15-20	• 25-30	• 25-30
N	N.2-3	• 20-25	• 20-25	• 30-35	• 30-35
	N.6	• 15-18	• 15-18	• 25-30	• 25-30

Tap characteristics

	A15 S BRIGHT	A15 S VAP	A15 S TiN	A15 S TiCN
Tolerance	ISO2 6H	ISO2 6H	ISO2 6H	ISO2 6H
Chamfer form	B (4-5)	B (4-5)	B (4-5)	B (4-5)
Hole type	2,5 x D	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH	RH
Through coolant	—	—	—	—

Sizes

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A15 S BRIGHT	A15 S VAP	A15 S TiN	A15 S TiCN
M 2	0,4	45	7	11	2,8	2,1	2	1,6	•	•	•	•
2,2	0,45	45	8	13	2,8	2,1	2	1,75	•	•	•	
2,3	0,4	45	8	13	2,8	2,1	2	1,9	•	•	•	
2,5	0,45	50	9	15	2,8	2,1	3	2,05	•	•	•	•
2,6	0,45	50	9	15	2,8	2,1	3	2,1	•	•	•	
3	0,5	56	10	18	3,5	2,7	3	2,5	•	•	•	•
3,5	0,6	56	11	20	4	3	3	2,9	•	•	•	•
4	0,7	63	12	21	4,5	3,4	3	3,3	•	•	•	•
5	0,8	70	14	24,5	6	4,9	3	4,2	•	•	•	•
6	1	80	16	29	6	4,9	3	5	•	•	•	•
7	1	80	16	29	7	5,5	3	6	•	•	•	•
8	1,25	90	18	33	8	6,2	3	6,8	•	•	•	•
9	1,25	90	18	33	9	7	3	7,8	•	•	•	•
10	1,5	100	20	36	10	8	3	8,5	•	•	•	•
11	1,5	100	22	-	8	6,2	3	9,5	•	•	•	
12	1,75	110	24	-	9	7	4	10,2	•	•	•	•
14	2	110	25	-	11	9	4	12	•	•	•	•
16	2	110	28	-	12	9	4	14	•	•	•	•
18	2,5	125	32	-	14	11	4	15,5	•	•	•	•
20	2,5	140	32	-	16	12	4	17,5	•	•	•	•
22	2,5	140	32	-	18	14,5	4	19,5	•	•	•	•
24	3	160	36	-	18	14,5	4	21	•	•	•	•
27	3	160	36	-	20	16	4	24	•	•	•	•
30	3,5	180	40	-	22	18	4	26,5	•	•	•	•
33	3,5	180	40	-	25	20	5	29,5	•		•	
36	4	200	55	-	28	22	5	32	•		•	

(•) Standard execution

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€ p. 10

Price list page reference

Thread type

VERGNANO

VR SERIES

ISO

DIN 13

SOLID CARBIDE THREAD MILLS
Spiral flutes

Application characteristics

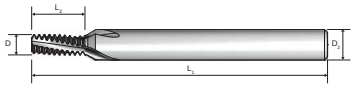
INT | 1,5 x D | 1,5 x D | HM

VR10 TiAlN | VR20 TiAlN | VR30 TiAlN

Tool code

Coating

Technical Drawing



Recommended application range

APPLICATION RANGE

ISO	VR10	VR20	VR30
P	•	•	•
M	•	•	•
K	•	•	•
N	•	•	•
S	•	•	•

For cutting data see page 202

Mill Characteristics

	VR10 TiAlN	VR20 TiAlN	VR30 TiAlN
Thread	INT	INT	INT
Hole type	1,5 x D	1,5 x D	1,5 x D
Direction of cut	RH	RH	RH
Through coolant	—		

Sizes

P [mm]	M	MF	D_2 h6 [mm]	D [mm]	z	L_2 [mm]	L_1 [mm]	VR10 TiAlN	VR20 TiAlN	VR30 TiAlN
0,5		M5x0,5	6	3,8	3	10,3	58	VR10038I0501000		
0,7	M4		6	3,1	3	7,4	58	VR10031I0700700	VR20031I0700700	
0,75		M6x0,75	6	4,5	3	10,1	58		VR20045I0751000	
0,8	M5		6	3,6	3	9,2	58	VR10036I0800900	VR20038I0800900	
1	M6		6	4	3	10,5	58	VR10040I1001000		
1	M6		6	4	3	14,5	58	VR10040I1001400		
1	M6		6	4,8	3	10,5	58			VR30048I1001000
1	M6	M7x1	6	4,6	3	14,5	58		VR20046I1001400	
1		M10x1	8	8	4	16,5	64	VR10080I1001600	VR20080I1001600	VR30080I1001600
1		M12x1	10	10	4	24,5	73		VR20100I1002400	
1,25	M8	M10x1,25	6	5	3	14,4	58	VR10050I1251400		
1,25	M8	M10x1,25	6	6	3	14,4	58		VR20060I1251400	
1,25	M8	M10x1,25	6	5	3	19,4	58	VR10050I1251900		
1,25	M8	M10x1,25	6	6	3	19,4	58		VR20060I1251900	VR30060I1251900
1,5	M10	M12x1,5	8	7	3	17,3	64	VR10070I1501700		
1,5	M10	M12x1,5	8	7	3	24,8	76	VR10070I1502400		
1,5	M10	M12x1,5	8	7,8	3	17	64		VR20078I1501700	VR30078I1501700
1,5		M14x1,5	10	10	4	21,8	73	VR10100I1502100		VR30100I1502100
1,5		M16x1,5	12	12	4	26,3	84		VR20120I1502600	VR30120I1502600
1,75	M12		8	8	3	20,1	64	VR10080I1752000		
1,75	M12		10	9	3	20,1	73		VR20090I1752000	
2	M16		12	11,8	4	27	84		VR20118I2002700	
2,5	M20		16	15	5	48,8	105		VR20150I2504800	
3	M24		20	18	4	58,5	120		VR20180I3005800	

VR SERIES

Tool code

€ p.66

205

Price list page reference

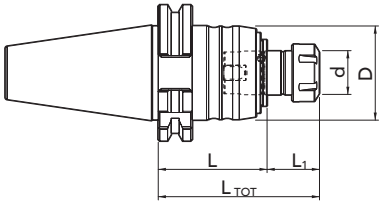
VA SERIES

SYNCHRONOUS ER TAPPING ATTACHMENT with QUICK-CHANGE TAP ADAPTOR
With internal through coolant capability (1)

Application characteristics

SK DIN 69871 AD

Technical Drawing



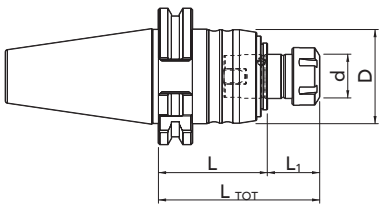
Sizes

Article Code	Attachment	Tap Size	L [mm]	ø D [mm]	ø d [mm]	ER collet	L_1 [mm]	L_{TOT} [mm]
VA01B04002CH160	SK 40 AD	M3 - M8	53	43	20	ER 16	24	77
VA01B05002CH160	SK 50 AD	M3 - M8	53	43	20	ER 16	24	77
VA01B04002CH250	SK 40 AD	M6 - M20	90	60	32	ER 25	28	118
VA01B05002CH250	SK 50 AD	M6 - M20	74	60	32	ER 25	28	102

Tool code

SYNCHRONOUS ER TAPPING ATTACHMENT with QUICK-CHANGE TAP ADAPTOR
With internal through coolant capability (1)

SK DIN 69871 AD+B



Article Code	Attachment	Tap Size	L [mm]	ø D [mm]	ø d [mm]	ER collet	L_1 [mm]	L_{TOT} [mm]
VA01B05002CH400	SK 50 B	M14 - M33	115	87	50	ER 40	32	147

(1) For coolant pressure above 50 bars a special nut screw is available on request

€ p.68

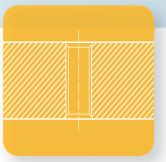
Price list page reference

Tap Application Table

		A	A	A	A	A	A
		HSS	HSS	HSSE	HSS	HSS	HSSE
		C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	—
		2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D	
							
M	4H						
	6H/6HX	A1 30	A1 LH 32	A100 33			A9 77
	6G/6GX						
	7G/7GX						
	6H +0,1						
MF	6H/6HX				A2 83	A2 LH 86	A10 109
	6G/6GX						
UNC	2B/2BX	A7 114					
	3B						
UNF	2B/2BX				A8 123		
	3B						
UN 8	2B						
G	ISO 5969/X				A5 134		
Rp (BSPP)	--						
Rc (BSPT)	--						
BSW	mc	A4 145					
NPT	--						
NPTF	--						
Internal lubrication							
Coating		BRIGHT	BRIGHT	BRIGHT	BRIGHT	BRIGHT	BRIGHT

ISO 513	Material	Gruppo						
P	Steel	P.1	●	●	●	●	●	● 18-20
		P.2	●	●	●	●	●	● 15-18
		P.3	●	●	●	●	●	● 12-15
		P.4	●	●	●	●	●	❍ 10-12
		P.5			●			
		P.6						
		P.7	●	●	●	●	●	
M	Stainless steel	M.1	❍	❍	●	❍	❍	
		M.2	❍	❍	●	❍	❍	
K	Cast iron	K.1	❍	❍	●	❍	❍	
		K.2	●	●	●	●	●	
		K.3			●			
N	Aluminium Aluminium alloys	N.1	●	●	●	●	●	
		N.2	●	●	●	●	●	
		N.3	●	●	●	●	●	
		N.4	❍	❍	●	❍	❍	
	Copper Copper alloys Brass Bronze	N.5	●	●	●	●	●	
		N.6	●	●	●	●	●	
		N.7	●	●	●	●	●	
		N.8			●			
	Magnesium Magnesium alloys	N.9			●			
		N.10			●			
S	Titanium Titanium alloys	S.1	❍	❍	●	❍	❍	
		S.2			❍			
	Nickel Nickel alloys	S.3	❍	❍	●	❍	❍	
		S.4			❍			
H	Hardened materials	H.1						
		H.2						

A	A
HSSE	HSSE
C (2-3)	C (2-3)
	
A6 144	
A6 B 148	A6 BZ 149
A6 F 150	A6 FZ 151
BRIGHT	BRIGHT
○ 12-15	● 12-15
● 10-15	
● 10-12	
● 8-10	
○ 3-5	
○ 2-3	● 2-3
○ 2-3	● 2-3
	○ 2-3
○ 10-12	
● 10-12	
	● 12-15
○ 12-15	● 12-15
○ 10-12	
○ 10-12	
	● 10-12
○ 6-8	● 6-8
○ 10-12	
○ 2-3	
○ 6-8	
○ 2-3	
	○ 5-8
	○ 5-8



A	A	A	A	A
HSSE	HSSE	HSSE	HSSE	HSSE
A (5-6)	A (5-6)	A (5-6)	A (5-6)	A (5-6)
1,5 x D	1,5 x D	1,5 x D	1,5 x D	1,5 x D
				
A21 FP 36		A21 FP 36	A22 FP 39	A22 FP 39
A23 FP 90	A23 FP LH 90	A23 FP 90		
A27 FP 115		A27 FP 115		
A28 FP 124		A28 FP 124		
A26 FP 135				
A24 FP 146				
BRIGHT	BRIGHT	TiN	BRIGHT	TiN
○ 12-15	○ 12-15	● 20-25	○ 12-15	● 20-25
● 10-12	● 10-12	● 15-20	● 10-12	● 15-20
● 8-10	● 8-10	● 12-15	● 8-10	● 12-15
● 8-10	● 8-10	● 12-15	● 8-10	● 12-15
○ 12-15	○ 12-15	● 20-25	○ 12-15	● 20-25
○ 10-12	○ 10-12	○ 15-20	○ 10-12	○ 15-20
○ 10-12	○ 10-12	○ 15-20	○ 10-12	○ 15-20
○ 10-12	○ 10-12	● 15-20	○ 10-12	● 15-20
○ 8-10	○ 8-10	○ 12-15	○ 8-10	○ 12-15

Tap Application Table

VERGNANO

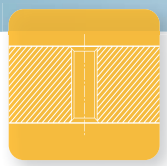
	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8
	A	A	A	A	A	A	A	A
	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE
	B (4-5)	B (4-5)	B (4-5)	B (4-5)	B (4-5)	B (4-5)	B (4-5)	B (4-5)
	2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D

Thread	Tolerance	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8
M	4H								A15 S 50
	6H/6HX	A15 44	A15 44	A15 44	A15 AZ 46	A15 AZ 46	A15 L 47	A15 L 47	A15 S 48
	6G/6GX	A15 45		A15 45					A15 S 51
	7G/7GX								A15 S 52
	6H +0,1								
MF	6H/6HX	A17 94	A17 94	A17 94					A17 S 97
	6G/6GX								A17 S 101
UNC	2B/2BX								A19 S 117
	3B								A19 S 117
UNF	2B/2BX								A20 S 126
	3B								A20 S 126
UN 8	2B								A119 132
G	ISO 5969/X								A18 S 137
Rp (BSPP)	--								
Rc (BSPT)	--								
BSW	mc								
NPT	--								
NPTF	--								
Internal lubrication									
Coating		BRIGHT	VAP	TiN	BRIGHT	TiH1	BRIGHT	TiN	BRIGHT

ISO 513	Material	Group	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8
P	Steel	P.1	● **18-20**	● **18-20**	● **30-35**	● **18-20**	● **30-35**	● **18-20**	● **30-35**	❍ 18-20
		P.2	● **15-18**	● **15-18**	● **25-30**			● **15-18**	● **25-30**	● **20-25**
		P.3	❍ 12-15	❍ 12-15	❍ 20-25			● **12-15**	● **20-25**	● **15-20**
		P.4	❍ 10-12	❍ 10-12	❍ 15-20			❍ 10-12	❍ 15-20	● **12-15**
		P.5								❍ 3-5
		P.6								
		P.7						❍ 3-5	❍ 6-8	❍ 5-7
M	Stainless steel	M.1						❍ 3-5	❍ 6-8	❍ 5-7
		M.2						❍ 2-3	❍ 3-5	❍ 2-3
K	Cast iron	K.1								
		K.2	❍ 12-15	❍ 12-15	❍ 20-25			❍ 12-15	❍ 20-25	● **15-20**
		K.3								
N	Aluminium Aluminium alloys	N.1	● **18-20**	● **18-20**	❍ 30-35	● **18-20**	● **30-40**	● **18-20**	❍ 30-35	❍ 18-20
		N.2	● **15-18**	● **15-18**	● **25-30**	● **15-18**	● **30-40**	● **15-18**	● **25-30**	● **20-25**
		N.3	❍ 15-18	❍ 15-18	❍ 25-30			❍ 15-18	❍ 25-30	● **20-25**
		N.4								
	Copper Copper alloys Brass Bronze	N.5	● **15-18**	● **15-18**	❍ 25-30	● **15-18**	● **30-35**	● **15-18**	❍ 25-30	❍ 15-18
		N.6	● **12-15**	● **12-15**	● **20-25**	● **12-15**	● **30-35**	● **12-15**	● **20-25**	● **15-18**
		N.7								
		N.8								
	Magnesium Magnesium alloys	N.9								
		N.10								
S	Titanium Titanium alloys	S.1	❍ 6-8	❍ 6-8		❍ 6-8		❍ 6-8		❍ 8-10
		S.2								
	Nickel Nickel alloys	S.3	❍ 6-8	❍ 6-8	❍ 8-10	❍ 6-8		❍ 8-10		❍ 8-10
		S.4								
H	Hardened materials	H.1								
		H.2								

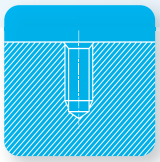
A	A	A	A	A	A	A	A	A	A
HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE
B (4-5)	B (4-5)	B (4-5)	B (4-5)	B (4-5)	B (4-5)	B (4-5)	B (4-5)	B (4-5)	B (4-5)
2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D
									
		A15 S 50							
A15 S LH 53	A15 S 48	A15 S 48	A15 S LH 53	A15 S 48		A16 S 54	A16 S 54	A150 55	A150 55
		A15 S 51							
		A15 S 52							
	A17 S 97	A17 S 97		A17 S 97	A17 S 100				
		A17 S 101							
		A19 S 117		A19 S 117	A19 S 118				
		A20 S 126		A20 S 126	A20 S 127				
		A119 132							
	A18 S 137			A18 S 137	A18 S 137				
BRIGHT	VAP	TiN	TiN	TiCN	TiX2	BRIGHT	TiN	VAP	TiX2
❍ 18-20	❍ 18-20	❍ 30-35	❍ 30-35	❍ 30-35		❍ 18-20	❍ 30-35		
● **20-25**	● **20-25**	● **30-35**	● **30-35**	● **30-35**		● **20-25**	● **30-35**		
● **15-20**	● **15-20**	● **25-30**	● **25-30**	● **25-30**		● **15-20**	● **25-30**		
● **12-15**	● **12-15**	● **20-25**	● **20-25**	● **20-25**		● **12-15**	● **20-25**		
❍ 3-5	❍ 3-5	● **10-15**	● **10-15**	● **10-15**		❍ 3-5	● **10-15**		
❍ 5-7	❍ 5-7	● **10-15**	● **10-15**	● **10-15**	● **10-15**	❍ 5-7	● **10-15**	● **10-12**	● **18-20**
❍ 5-7	❍ 5-7	● **10-15**	● **10-15**	● **10-15**	● **10-15**	❍ 5-7	● **10-15**	● **10-12**	● **18-20**
❍ 2-3	❍ 2-3	❍ 6-8	❍ 6-8	❍ 6-8	❍ 6-8	❍ 2-3	❍ 6-8	● **8-10**	● **10-12**
● **15-20**	● **15-20**	● **25-30**	● **25-30**	● **25-30**		● **15-20**	● **25-30**		
❍ 18-20	❍ 18-20	❍ 30-35	❍ 30-35	❍ 30-35		❍ 18-20	❍ 30-35		
● **20-25**	● **20-25**	● **30-35**	● **30-35**	● **30-35**		● **20-25**	● **30-35**		
● **20-25**	● **20-25**	● **30-35**	● **30-35**	● **30-35**		● **20-25**	● **30-35**		
❍ 15-18	❍ 15-18	❍ 25-30	❍ 25-30	❍ 25-30		❍ 15-18	❍ 25-30		
● **15-18**	● **15-18**	● **25-30**	● **25-30**	● **25-30**		● **15-18**	● **25-30**		
❍ 8-10	❍ 8-10					❍ 8-10			
❍ 8-10	❍ 8-10	❍ 12-15	❍ 12-15	❍ 12-15		❍ 8-10	❍ 12-15		

Tap Application Table

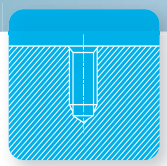


		P	P	P	S	S	S
		HSSP	HSSP	HSSP	HSSK	HSSK	HSSK
		B (4-5)	B (4-5)	B (4-5)	B (4-5)	B (4-5)	B (4-5)
		3xD	3xD	3xD	3xD	3xD	3xD
							
M	4H						
	6H/6HX	**P15** 157	**P15** 157	**BP15** 157	**S15** 179	**S15** 179	**BS15** 179
	6G/6GX	**P15** 157					
	7G/7GX						
	6H +0,1						
MF	6H/6HX	**P17** 167	**P17** 167	**BP17** 167	**S17** 183		
	6G/6GX	**P17** 167					
UNC	2B/2BX						
	3B						
UNF	2B/2BX						
	3B						
UN 8	2B						
G	ISO 5969/X	**P18** 173	**P18** 173				
Rp (BSPP)	--						
Rc (BSPT)	--						
BSW	mc						
NPT	--						
NPTF	--						
Internal lubrication				IKZ-R			IKZ-R
Coating		TiN	TiH1	TiH1	TiN	TiH1	TiH1

ISO 513	Material	Group								
P	Steel	P.1						● **50-60**	● **50-60**	● **50-60**
		P.2	❍ 30-40	❍ 30-40	❍ 30-40	● **50-60**	● **50-60**	● **50-60**
		P.3	● **25-35**	● **25-35**	● **25-35**	● **45-55**	● **45-55**	● **45-55**
		P.4	● **20-30**	● **20-30**	● **20-30**	● **40-50**	● **40-50**	● **40-50**
		P.5	● **10-20**	● **10-20**	● **10-20**	● **15-25**	● **15-25**	● **15-25**
		P.6	● **8-10**	● **8-10**	● **8-10**			
		P.7	● **10-20**	● **10-20**	● **10-20**	● **15-25**	● **15-25**	● **15-25**
M	Stainless steel	M.1	● **10-20**	● **10-20**	● **10-20**	● **15-25**	● **15-25**	● **15-25**
		M.2	● **6-8**	● **6-8**	● **6-8**	● **10-20**	● **10-20**	● **10-20**
K	Cast iron	K.1						
		K.2	● **25-35**	● **25-35**	● **25-35**	● **45-55**	● **45-55**	● **45-55**
		K.3						
N	Aluminium Aluminium alloys	N.1				● **50-60**	● **50-60**	● **50-60**
		N.2	● **30-40**	● **30-40**	● **30-40**	● **45-55**	● **45-55**	● **45-55**
		N.3	● **30-40**	● **30-40**	● **30-40**	● **45-55**	● **45-55**	● **45-55**
		N.4						
	Copper Copper alloys Brass Bronze	N.5				● **40-50**	● **40-50**	● **40-50**
		N.6	● **25-35**	● **25-35**	● **25-35**	● **35-45**	● **35-45**	● **35-45**
		N.7						
		N.8						
	Magnesium Magnesium alloys	N.9						
		N.10						
S	Titanium Titanium alloys	S.1					● **15-25**	● **15-25**
		S.2		❍ 12-18	❍ 12-18		❍ 10-20	❍ 10-20
	Nickel Nickel alloys	S.3				● **15-25**	● **15-25**	● **15-25**
		S.4	❍ 12-18	❍ 12-18	❍ 12-18	❍ 10-20	❍ 10-20	❍ 10-20
H	Hardened materials	H.1						
		H.2						



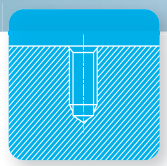
A	A	A	A	A	A	A	A	A
HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE
C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)
1,5 x D	1,5 x D	1,5 x D	1,5 x D	1,5 x D	1,5 x D	1,5 x D	1,5 x D	1,5 x D
								
A21 FC 34	**A21 FC LH** 34	**A21 FC** 34	**A22 FC** 38	**A22 FC** 38	**A29** 56	**A29** 56	**A29** 56	**A29 376** 60
					A29 58		**A29** 58	
A23 FC 87	**A23 FC LH** 87	**A23 FC** 87			**A30** 102		**A30** 102	
A27 FC 115		**A27 FC** 115			**A33** 119		**A33** 119	
					A33 119			
A28 FC 124		**A28 FC** 124			**A34** 128		**A34** 128	
					A34 128			
A26 FC 135					**A32** 138		**A32** 138	
A24 FC 146					**A31** 147		**A31** 147	
BRIGHT	BRIGHT	TiN	BRIGHT	TiN	BRIGHT	VAP	TiN	BRIGHT
❍ 12-15	❍ 12-15	● **20-25**	❍ 12-15	● **20-25**	● **18-20**	● **18-20**	● **30-35**	● **18-20**
● **10-12**	● **10-12**	● **15-20**	● **10-12**	● **15-20**	● **15-18**	● **15-18**	● **25-30**	● **15-18**
● **8-10**	● **8-10**	● **12-15**	● **8-10**	● **12-15**	● **12-15**	● **12-15**	● **20-25**	● **12-15**
					● **10-12**	● **10-12**	● **15-20**	● **10-12**
							● **5-10**	
● **8-10**	● **8-10**	● **12-15**	● **8-10**	● **12-15**	● **12-15**	● **12-15**	● **20-25**	● **12-15**
❍ 12-15	❍ 12-15	● **20-25**	❍ 12-15	● **20-25**	● **18-20**	● **18-20**	❍ 30-35	● **18-20**
❍ 10-12	❍ 10-12	❍ 15-20	❍ 10-12	❍ 15-20	● **15-18**	● **15-18**	● **25-30**	● **15-18**
❍ 10-12	❍ 10-12	❍ 15-20	❍ 10-12	❍ 15-20	● **15-18**	● **15-18**	● **25-30**	● **15-18**
❍ 10-12	❍ 10-12	● **15-20**	❍ 10-12	● **15-20**	● **15-18**	● **15-18**	❍ 25-30	● **15-18**
❍ 8-10	❍ 8-10	❍ 12-15	❍ 8-10	❍ 12-15	● **12-15**	● **12-15**	● **20-25**	● **12-15**
					❍ 6-8	❍ 6-8		❍ 6-8
					❍ 6-8	❍ 6-8	❍ 8-10	❍ 6-8



		A	A	A	A	A	A	A	A
		HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE
		C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)
		1,5 x D	1,5 x D	1,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D
									
M	4H								
	6H/6HX	**A29 376** 60	**A29 L** 59	**A29 L** 59	**A70** 61	**A70** 61	**A70** 61	**A70 L** 63	**A70 L** 63
	6G/6GX				**A70** 62	**A70** 62	**A70** 62		
	7G/7GX								
	6H +0,1								
MF	6H/6HX				**A71** 105		**A71** 105		
	6G/6GX								
UNC	2B/2BX				**A60** 120		**A60** 120		
	3B								
UNF	2B/2BX				**A61** 129		**A61** 129		
	3B								
UN 8	2B								
G	ISO 5969/X				**A59** 139		**A59** 139		
Rp (BSPP)	--								
Rc (BSPT)	--								
BSW	mc								
NPT	--								
NPTF	--								
Internal lubrication									
Coating		TiN	BRIGHT	TiN	BRIGHT	VAP	TiN	BRIGHT	TiN

ISO 513	Material	Group								
P	Steel	P.1	● **30-35**	● **18-20**	● **30-35**	● **12-15**	● **12-15**	● **25-30**	● **12-15**	● **25-30**
		P.2	● **25-30**	● **15-18**	● **25-30**	● **10-15**	● **10-15**	● **20-25**	● **10-15**	● **20-25**
		P.3	● **20-25**	● **12-15**	● **20-25**	❍ 8-10	❍ 8-10	❍ 15-20	❍ 8-10	❍ 15-20
		P.4	● **15-20**	● **10-12**	● **15-20**					
		P.5	● **5-10**		● **5-10**					
		P.6								
		P.7								
M	Stainless steel	M.1								
		M.2								
K	Cast iron	K.1								
		K.2	● **20-25**	● **12-15**	● **20-25**	❍ 8-10	❍ 8-10	❍ 15-20	❍ 8-10	❍ 15-20
		K.3								
N	Aluminium Aluminium alloys	N.1	❍ 30-35	● **18-20**	❍ 30-35	● **12-15**	● **12-15**	❍ 25-30	● **12-15**	❍ 25-30
		N.2	● **25-30**	● **15-18**	● **25-30**	● **12-15**	● **12-15**	● **25-30**	● **12-15**	● **25-30**
		N.3	● **25-30**	● **15-18**	● **25-30**	❍ 10-12	❍ 10-12	❍ 20-25	❍ 10-12	❍ 20-25
		N.4								
	Copper Copper alloys Brass Bronze	N.5	❍ 25-30	● **15-18**	❍ 25-30	● **10-12**	● **10-12**	❍ 20-25	● **10-12**	❍ 20-25
		N.6	● **20-25**	● **12-15**	● **20-25**	● **10-12**	● **10-12**	● **20-25**	● **10-12**	● **20-25**
		N.7								
		N.8								
	Magnesium Magnesium alloys	N.9								
		N.10								
S	Titanium Titanium alloys	S.1		❍ 6-8						
		S.2								
	Nickel Nickel alloys	S.3	❍ 8-10	❍ 6-8	❍ 8-10					
		S.4								
H	Hardened materials	H.1								
		H.2								

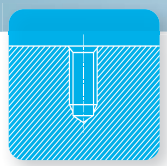
A	A	A	A	A	A	A	A	A	A
HSSK	HSSK	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE
C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	E(1,5-2)
2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D
									
		A70 S 66			A70 S 66				
A70 K 64	A70 K 64	A70 S 65	A70 S LH 71	A70 S 65	A70 S 65	A70 S LH 71	A70 S 65		A70 SE 70
		A70 S 67			A70 S 67				
		A70 S 68			A70 S 68				
		A701 S 69			A701 S 69				
		A71 S 106		A71 S 106	A71 S 106		A71 S 106	A71 S 107	
		A71 S 108			A71 S 108				
		A60 S 121			A60 S 121		A60 S 121	A60 S 121	
		A61 S 130			A61 S 130		A61 S 130	A61 S 130	
		A160 133			A160 133				
		A59 S 140		A59 S 140	A59 S 140		A59 S 140	A59 S 141	
		A159 S 143			A159 S 143				
BRIGHT	TiN	BRIGHT	BRIGHT	VAP	TiN	TiN	TiCN	TiX2	BRIGHT
● 12-15	● 25-30								
● 10-15	● 20-25	❍ 15-20	❍ 15-20	❍ 15-20	❍ 25-30	❍ 25-30	❍ 25-30		❍ 15-20
● 8-10	● 15-20	● 12-15	● 12-15	● 12-15	● 20-25	● 20-25	● 20-25		● 12-15
❍ 8-10	❍ 12-15	● 10-12	● 10-12	● 10-12	● 15-20	● 15-20	● 15-20		● 10-12
		❍ 6-8	❍ 6-8	❍ 6-8	● 5-10	● 5-10	● 5-10		❍ 6-8
		❍ 6-8	❍ 6-8	❍ 6-8	● 8-10	● 8-10	● 8-10	● 8-10	❍ 6-8
		❍ 6-8	❍ 6-8	❍ 6-8	● 8-10	● 8-10	● 8-10	● 8-10	❍ 6-8
					❍ 3-5	❍ 3-5	❍ 3-5	● 5-7	
● 8-10	● 15-20	● 12-15	● 12-15	● 12-15	● 20-25	● 20-25	● 20-25		● 12-15
● 12-15	❍ 25-30								
● 12-15	● 25-30	❍ 18-20	❍ 18-20	❍ 18-20	❍ 30-35	❍ 30-35	❍ 30-35		❍ 18-20
❍ 10-12	❍ 20-25	● 15-18	● 15-18	● 15-18	● 25-30	● 25-30	● 25-30		● 15-18
● 10-12	❍ 20-25								
● 10-12	● 20-25	● 15-18	● 15-18	● 15-18	● 25-30	● 25-30	● 25-30		● 15-18
		❍ 6-8	❍ 6-8	❍ 6-8					❍ 6-8
		❍ 6-8	❍ 6-8	❍ 6-8	❍ 8-10	❍ 8-10	❍ 8-10		❍ 6-8



		A	A	A	A	A	A	A	A
		HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE
		E(1,5-2)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)
		2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D
									
M	4H								
	6H/6HX	A70 SE 70	A76 S 72	A76 S 72	A120 73	A120 73	A120 73	A170 74	A170 74
	6G/6GX								
	7G/7GX								
	6H +0,1								
MF	6H/6HX								
	6G/6GX								
UNC	2B/2BX								
	3B								
UNF	2B/2BX								
	3B								
UN 8	2B								
G	ISO 5969/X								
Rp (BSPP)	--								
Rc (BSPT)	--								
BSW	mc								
NPT	--								
NPTF	--								
Internal lubrication									
Coating		TiN	BRIGHT	TiN	BRIGHT	VAP	TiN	VAP	TiX2

ISO 513	Material	Group																	
P	Steel	P.1									●	**12-15**	●	**12-15**	●	**25-30**			
		P.2	❍	25-30	❍	15-20	❍	25-30	●	**10-15**	●	**10-15**	●	**20-25**				
		P.3	●	**20-25**	●	**12-15**	●	**20-25**	❍	8-10	❍	8-10	❍	15-20				
		P.4	●	**15-20**	●	**10-12**	●	**15-20**										
		P.5	●	**5-10**	❍	6-8	●	**5-10**										
		P.6																
		P.7	●	**8-10**	❍	6-8	●	**8-10**									●	**6-8**	● **8-10**
M	Stainless steel	M.1	●	**8-10**	❍	6-8	●	**8-10**									●	**6-8**	● **8-10**
		M.2	❍	3-5			❍	3-5									❍	3-5	● **5-7**
K	Cast iron	K.1																	
		K.2	●	**20-25**	●	**12-15**	●	**20-25**	❍	8-10	❍	8-10	❍	15-20				
		K.3																
N	Aluminium Aluminium alloys	N.1							●	**12-15**	●	**12-15**	❍	25-30				
		N.2	❍	30-35	❍	18-20	❍	30-35	●	**12-15**	●	**12-15**	●	**25-30**				
		N.3	●	**25-30**	●	**15-18**	●	**25-30**	❍	10-12	❍	10-12	❍	20-25				
		N.4																
	Copper Copper alloys Brass Bronze	N.5							●	**10-12**	●	**10-12**	❍	20-25				
		N.6	●	**25-30**	●	**15-18**	●	**25-30**	●	**10-12**	●	**10-12**	●	**20-25**				
		N.7																
		N.8																
	Magnesium Magnesium alloys	N.9																
		N.10																
S	Titanium Titanium alloys	S.1			❍	6-8												
		S.2																
	Nickel Nickel alloys	S.3	❍	8-10	❍	6-8	❍	8-10										
		S.4																
H	Hardened materials	H.1																
		H.2																

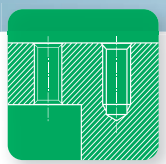
A	A	A	A	P	P	P	P	P	P
HSSE	HSSE	HSSE	HSSE	HSSP	HSSP	HSSP	HSSP	HSSZ	HSSZ
C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)
2,5 x D	2,5 x D	2,5 x D	2,5 x D	2 x D	2 x D	2 x D	2 x D	3 x D	3 x D
									
A62 75	A62 75	A72 76	A72 76	P29 158	P29 158	P29 158	BP29 158	P70 159	P70 159
								P70 160	
				P30 168	P30 168	P30 168	BP30 168	P71 170	P71 170
								P71 170	
A65 122									
A66 131									
								P59 174	P59 174
BRIGHT	TiH1	BRIGHT	TiH1	BRIGHT	TiN	TiH1	IKZ TiH1	TiN	TiH1
		● 12-15	● 25-30						
								❍ 25-35	❍ 25-35
				● 15-18	● 25-30	● 25-30	● 25-30	● 20-30	● 20-30
				● 12-15	● 20-25	● 20-25	● 20-25	● 15-25	● 15-25
				● 8-10	● 10-15	● 10-15	● 10-15	● 5-15	● 5-15
				● 3-5	● 5-10	● 5-10	● 5-10	❍ 5-8	❍ 5-8
				● 8-10	● 10-15	● 10-15	● 10-15	● 10-15	● 10-15
								● 10-15	● 10-15
								● 5-7	● 5-7
				● 15-18	● 25-30	● 25-30	● 25-30	● 20-30	● 20-30
● 12-15	● 25-30	● 12-15	● 25-30						
● 12-15	● 25-30	● 12-15	● 25-30					❍ 30-40	❍ 30-40
❍ 10-12	❍ 20-25	● 10-12	● 20-25	● 15-18	● 25-30	● 25-30	● 25-30	● 25-35	● 25-35
● 10-12	● 20-25	● 10-12	● 20-25						
● 10-12	● 20-25	● 10-12	● 20-25	● 15-18	● 25-30	● 25-30	● 25-30	● 25-35	● 25-35
				● 12-15	● 20-25	● 20-25	● 20-25		
● 6-8	● 10-12								● 10-15
				● 2-3		● 2-3	● 2-3		
● 6-8	● 10-12							● 10-15	● 10-15
				● 2-3	● 2-3	● 2-3	● 2-3		



		P	P	P	S	S	S	P	P
		HSSZ	HSSZ	HSSZ	HSSK	HSSK	HSSK	HSSP	HSSP
		C (2-3)	E(1,5-2)	E(1,5-2)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	E(1,5-2)
		3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD
									
M	4H								
	6H/6HX	**BP70** 159	**P70 E** 161	**P70 E** 161	**S70** 180	**S70** 180	**BS70** 180	**BP43** 154	**P43 E** 155
	6G/6GX			**P70 E** 161					
	7G/7GX								
	6H +0,1								
MF	6H/6HX	**BP71** 170		**P71 E** 171	**S71** 184			**BP45** 169	**P45 E** 169
	6G/6GX								
UNC	2B/2BX								
	3B								
UNF	2B/2BX								
	3B								
UN 8	2B								
G	ISO 5969/X			**P59 E** 174					
Rp (BSPP)	--								
Rc (BSPT)	--								
BSW	mc								
NPT	--								
NPTF	--								
Internal lubrication		IKZ					IKZ	IKZ	
Coating		TiH1	TiN	TiH1	TiN	TiH1	TiH1	ACE	ACE

ISO 513	Material	Group								
P	Steel	P.1					● **45-55**	● **45-55**	● **45-55**		
		P.2	❍ 25-35	❍ 25-35	❍ 25-35	● **45-55**	● **45-55**	● **45-55**		
		P.3	● **20-30**	● **20-30**	● **20-30**	● **40-50**	● **40-50**	● **40-50**		
		P.4	● **15-25**	● **15-25**	● **15-25**	● **35-45**	● **35-45**	● **35-45**		
		P.5	● **5-15**	● **5-15**	● **5-15**	● **15-20**	● **15-20**	● **15-20**		
		P.6	❍ 5-8	❍ 5-8	❍ 5-8					
		P.7	● **10-15**	● **10-15**	● **10-15**	● **15-20**	● **15-20**	● **15-20**		
M	Stainless steel	M.1	● **10-15**	● **10-15**	● **10-15**	● **15-20**	● **15-20**	● **15-20**		
		M.2	● **5-7**	● **5-7**	● **5-7**					
K	Cast iron	K.1							● **40-50**	● **40-50**
		K.2	● **20-30**	● **20-30**	● **20-30**	● **40-50**	● **40-50**	● **40-50**		
		K.3							❍ 10-20	❍ 10-20
N	Aluminium Aluminium alloys	N.1				● **45-55**	● **45-55**	● **45-55**		
		N.2	❍ 30-40	❍ 30-40	❍ 30-40	● **40-50**	● **40-50**	● **40-50**		
		N.3	● **25-35**	● **25-35**	● **25-35**	● **40-50**	● **40-50**	● **40-50**		
		N.4							● **40-50**	● **40-50**
	Copper Copper alloys Brass Bronze	N.5				● **35-45**	● **35-45**	● **35-45**		
		N.6	● **25-35**	● **25-35**	● **25-35**	● **30-40**	● **30-40**	● **30-40**		
		N.7							● **40-50**	● **40-50**
		N.8								
	Magnesium Magnesium alloys	N.9							● **45-55**	● **45-55**
		N.10							● **45-55**	● **45-55**
S	Titanium Titanium alloys	S.1	● **10-15**		● **10-15**		● **15-20**	● **15-20**		
		S.2					❍ 5-15	❍ 5-15		
	Nickel Nickel alloys	S.3	● **10-15**	● **10-15**	● **10-15**	● **15-20**	● **15-20**	● **15-20**		
		S.4				❍ 5-15	❍ 5-15	❍ 5-15		
H	Hardened materials	H.1								
		H.2								

P	S	S	S	H	H	H	H
HSSP	HSSK	HSSK	HSSK	HM	HM	HM	HM
E(1,5-2)	E(1,5-2)	C (2-3)	E(1,5-2)	C (2-3)	C (2-3)	C (2-3)	C (2-3)
3 x D	3 x D	3 x D	3 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D
							
BP43 E 155	**S43 E** 178	**BS43** 178	**BS43 E** 178	**HB43** 186	**HB43** 186	**HB29** 187	**HB29** 187
BP45 E 169		**BS45** 182		**HB45** 190	**HB45** 190		
IKZ ACE	ACE	IKZ ACE	IKZ ACE	IKZ BRIGHT	IKZ TiAlN	IKZ BRIGHT	IKZ TiCN
● **40-50**	● **55-65**	● **55-65**	● **55-65**	● **15-40**	● **40-80**	❍ 15-40	❍ 40-80
				● **10-20**	● **15-40**	❍ 10-20	❍ 15-40
❍ 10-20	❍ 20-30	❍ 20-30	❍ 20-30				
						● **15-30**	● **25-50**
						● **15-30**	● **25-50**
				● **20-30**	● **30-50**	● **20-30**	● **30-50**
● **40-50**	● **55-65**	● **55-65**	● **55-65**	● **15-20**	● **25-40**	● **15-20**	● **25-40**
● **40-50**	● **55-65**	● **55-65**	● **55-65**	❍ 20-25	❍ 30-40	● **20-25**	● **30-40**
● **45-55**	● **55-65**	● **55-65**	● **55-65**				
● **45-55**	● **55-65**	● **55-65**	● **55-65**				



		A	A	A	A	A	A	A	A
		HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE
		C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)
		2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D	2,5 x D
									
M	4H								
	6H/6HX	**A43** 40	**A43** 40	**A43** 40	**A44** 41	**A44** 41	**A44** 41	**A67** 42	**A67** 42
	6G/6GX								
	7G/7GX								
	6H +0,1								
MF	6H/6HX	**A45** 93	**A45** 93	**A45** 93					
	6G/6GX								
UNC	2B/2BX	**A49** 116	**A49** 116						
	3B								
UNF	2B/2BX	**A50** 125	**A50** 125						
	3B								
UN 8	2B								
G	ISO 5969/X	**A48** 136	**A48** 136						
Rp (BSPP)	--								
Rc (BSPT)	--								
BSW	mc								
NPT	--								
NPTF	--								
Internal lubrication									
Coating		NITR	TiCN	ACE	NITR	TiCN	ACE	BRIGHT	TiH1

ISO 513	Material	Group								
P	Steel	P.1							● 12-15	● 20-25
		P.2								
		P.3								
		P.4								
		P.5								
		P.6								
		P.7								
M	Stainless steel	M.1								
		M.2								
K	Cast iron	K.1	● 15-20	● 40-45	● 40-45	● 15-20	● 40-45	● 40-45		
		K.2								
		K.3								
N	Aluminium Aluminium alloys	N.1							● 12-15	● 20-25
		N.2							● 10-12	● 15-20
		N.3								
		N.4	● 15-20	● 40-45	● 40-45	● 15-20	● 40-45	● 40-45		
	Copper Copper alloys Brass Bronze	N.5							● 10-12	● 15-20
		N.6							● 8-10	● 12-15
		N.7	● 15-20	● 40-45	● 40-45	● 15-20	● 40-45	● 40-45		
		N.8								
	Magnesium Magnesium alloys	N.9	● 20-25	● 45-50	● 45-50	● 20-25	● 45-50	● 45-50		
		N.10	● 20-25	● 45-50	● 45-50	● 20-25	● 45-50	● 45-50		
S	Titanium Titanium alloys	S.1								
		S.2								
	Nickel Nickel alloys	S.3								
		S.4								
H	Hardened materials	H.1								
		H.2								

A	A	A	P	P	P	P	S	H	H
HSSK	HSSK	HSSE	HSSP	HSSP	HSSP	HSSP	HSSK	HM	HM
C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	D (4-5)	D (4-5)
2,5 x D	2,5 x D	1,5 x D	3 x D	3 x D	1,5 x D	1,5 x D	3 x D	1,5 x D	1,5 x D
									
A110 43	A110 43	A190-EG 82	P43 154	P43 154	P130 156	P130 156	S43 178	H130 188	H130 188
				P45 169			S45 182		
VAP	CrN	BRIGHT	TiCN	ACE	BRIGHT	ACE	ACE	BRIGHT	TiCN
		❍ 12-15							
		● 10-12							
		● 8-10							
					● 2-3	● 5-8		❍ 2-5	❍ 5-10
			● 40-50	● 40-50			● 55-65		
		● 8-10							
			❍ 10-20	❍ 10-20			❍ 20-30		
		❍ 12-15							
		❍ 10-12							
		❍ 10-12							
			● 40-50	● 40-50			● 55-65		
		❍ 10-12							
		❍ 8-10							
			● 40-50	● 40-50			● 55-65		
					● 3-5	● 8-10			
			● 45-55	● 45-55			● 55-65		
			● 45-55	● 45-55			● 55-65		
● 6-8	● 10-12								
● 3-5	● 6-8								
								● 2-3	● 3-6
								● 1-2	● 2-4

		A	A	A	A	A	A	P	P
		HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSK	HSSK
		C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)	C (2-3)
		1,5 x D	1,5 x D	1,5 x D	2,5 x D	2,5 x D	2,5 x D	1,5 x D	3 x D
									
M	4H								
	6H/6HX	A80 78	A80 78	A80 78	A80 N 80	A80 N 80	A80 N 80	P80 162	P80 N 163
	6G/6GX	A80 79	A80 79	A80 79	A80 N 81	A80 N 81	A80 N 81	P80 162	P80 N 163
	7G/7GX							P80 162	P80 N 163
	6H +0,1								
MF	6H/6HX		A81 110	A81 110		A81 N 112	A81 N 112	P81 172	P81 N 172
	6G/6GX		A81 111	A81 111		A81 N 113	A81 N 113	P81 172	P81 N 172
UNC	2B/2BX								
	3B								
UNF	2B/2BX								
	3B								
UN 8	2B								
G	ISO 5969/X				A82 N 142	A82 N 142	A82 N 142		P82 N 175
Rp (BSPP)	--								
Rc (BSPT)	--								
BSW	mc								
NPT	--								
NPTF	--								
Internal lubrication									
Coating		VAP	TiN	TiCN	VAP	TiN	TiCN	TiN	TiN

ISO 513	Material	Group								
P	Steel	P.1	● 20-25	● 40-45	● 40-45	● 20-25	● 40-45	● 40-45	● 40-45	● 40-45
		P.2	● 20-25	● 40-45	● 40-45	● 20-25	● 40-45	● 40-45	● 40-45	● 40-45
		P.3	● 15-20	● 35-40	● 35-40	● 15-20	● 35-40	● 35-40	● 35-40	● 35-40
		P.4							● 30-35	● 30-35
		P.5							● 15-20	● 15-20
		P.6								
		P.7		❍ 15-20	❍ 15-20		❍ 15-20	❍ 15-20	● 15-20	● 15-20
M	Stainless steel	M.1		❍ 15-20	❍ 15-20		❍ 15-20	❍ 15-20	● 15-20	● 15-20
		M.2								
K	Cast iron	K.1								
		K.2								
		K.3								
N	Aluminium Aluminium alloys	N.1	● 20-25	● 40-45	● 40-45	● 20-25	● 40-45	● 40-45	● 40-45	● 40-45
		N.2		● 40-45	● 40-45		● 40-45	● 40-45	● 40-45	● 40-45
		N.3		● 35-40	● 35-40		● 35-40	● 35-40	● 35-40	● 35-40
		N.4								
	Copper Copper alloys Brass Bronze	N.5	● 20-25	● 40-45	● 40-45	● 20-25	● 40-45	● 40-45	● 40-45	● 40-45
		N.6		● 40-45	● 40-45		● 40-45	● 40-45	● 40-45	● 40-45
		N.7								
		N.8								
	Magnesium Magnesium alloys	N.9								
		N.10								
S	Titanium Titanium alloys	S.1								
		S.2								
	Nickel Nickel alloys	S.3							● 10-15	● 10-15
		S.4							❍ 5-10	❍ 5-10
H	Hardened materials	H.1								
		H.2								

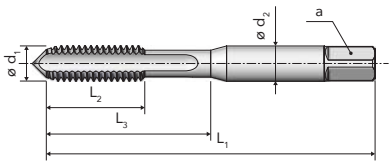
P	P	P	P	P	P	P	S	S	H
HSSK	HSSK	HSSK	HSSK	HSSK	HSSK	HSSZ	HSSK	HSSK	HM
C (2-3)	E(1,5-2)	E(1,5-2)	C (2-3)	C (2-3)	E(1,5-2)	C (2-3)	C (2-3)	C (2-3)	C (2-3)
3xD	1,5xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	2,5xD
									
P80 N 163	P80 E 164	P80 NE 164	BP80 N 165	BP80 NR 165	BP80 NE 164	P180 N 166	S80 N 181	BS80 NR 181	HB80 NR 189
		P80 NE 164					S80 N 181		
			IKZ	IKZ-R	IKZ			IKZ-R	IKZ-R
TiH1	TiN	TiN	TiN	TiN	TiN	TiN	TiN	TiN	TiCN
● 40-45	● 40-45	● 40-45	● 40-45	● 40-45	● 40-45		● 50-60	● 50-60	● 40-50
● 40-45	● 40-45	● 40-45	● 40-45	● 40-45	● 40-45		● 50-60	● 50-60	● 40-50
● 35-40	● 35-40	● 35-40	● 35-40	● 35-40	● 35-40		● 45-55	● 45-55	● 35-45
● 30-35	● 30-35	● 30-35	● 30-35	● 30-35	● 30-35		● 40-50	● 40-50	● 30-40
● 15-20	● 15-20	● 15-20	● 15-20	● 15-20	● 15-20		● 20-30	● 20-30	● 15-25
● 15-20	● 15-20	● 15-20	● 15-20	● 15-20	● 15-20	● 15-20	● 25-35	● 25-35	● 15-25
● 15-20	● 15-20	● 15-20	● 15-20	● 15-20	● 15-20	● 10-15	● 25-35	● 25-35	● 15-25
						● 8-10	● 15-25	● 15-25	
● 40-45	● 40-45	● 40-45	● 40-45	● 40-45	● 40-45		● 50-60	● 50-60	● 40-50
● 40-45	● 40-45	● 40-45	● 40-45	● 40-45	● 40-45		● 50-60	● 50-60	● 40-50
● 35-40	● 35-40	● 35-40	● 35-40	● 35-40	● 35-40		● 45-55	● 45-55	● 35-45
● 40-45	● 40-45	● 40-45	● 40-45	● 40-45	● 40-45		● 50-60	● 50-60	● 40-50
● 40-45	● 40-45	● 40-45	● 40-45	● 40-45	● 40-45		● 50-60	● 50-60	● 40-50
● 10-15									
❍ 5-10									
● 10-15	● 10-15	● 10-15	● 10-15	● 10-15	● 10-15		● 10-20	● 10-20	● 10-20
❍ 5-10	❍ 5-10	❍ 5-10	❍ 5-10	❍ 5-10	❍ 5-10		❍ 5-15	❍ 5-15	❍ 5-15

SERIES

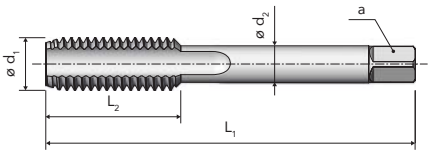
Taps for Generic Applications

HAND TAPS for blind and through holes
In sets of three pieces

DIN 352≤ M6



DIN 352≥ M7



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A1 ROUGHING	A1 SECOND	A1 FINISHING	A1 SET
P	P.1-4	•	•	•	•
	P.7	•	•	•	•
K	K.2	•	•	•	•
N	N.1-3	•	•	•	•
	N.5-7	•	•	•	•

	A1 ROUGHING	A1 SECOND	A1 FINISHING	A1 SET
				
Tolerance	—	—	ISO2 6H	ISO2 6H
Chamfer form	A (5-6)	D (4-5)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH	RH
Through coolant	—	—	—	—

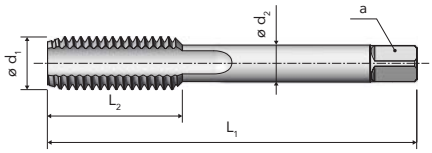
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A1 ROUGHING	A1 SECOND	A1 FINISHING	A1 SET
M 2	0,4	36	7,5	12	2,8	2,1	3	1,6	•	•	•	•
2,2	0,45	36	8,5	13,5	2,8	2,1	3	1,75	•	•	•	•
2,3	0,4	36	8,5	13,5	2,8	2,1	3	1,9	•	•	•	•
2,5	0,45	40	8,5	14,5	2,8	2,1	3	2,05	•	•	•	•
2,6	0,45	40	8,5	14,5	2,8	2,1	3	2,1	•	•	•	•
3	0,5	40	10	18	3,5	2,7	3	2,5	•	•	•	•
3,5	0,6	45	11	20	4	3	3	2,9	•	•	•	•
4	0,7	45	12	21	4,5	3,4	3	3,3	•	•	•	•
4,5	0,75	50	13	23	6	4,9	3	3,7	•	•	•	•
5	0,8	50	14	24	6	4,9	3	4,2	•	•	•	•
6	1	56	16	28	6	4,9	3	5	•	•	•	•
7	1	56	19	-	6	4,9	3	6	•	•	•	•
8	1,25	63	22	-	6	4,9	3	6,8	•	•	•	•
9	1,25	63	22	-	7	5,5	3	7,8	•	•	•	•
10	1,5	70	24	-	7	5,5	3	8,5	•	•	•	•
11	1,5	70	24	-	8	6,2	3	9,5	•	•	•	•
12	1,75	75	28	-	9	7	4	10,2	•	•	•	•
14	2	80	30	-	11	9	4	12	•	•	•	•
16	2	80	32	-	12	9	4	14	•	•	•	•
18	2,5	95	34	-	14	11	4	15,5	•	•	•	•
20	2,5	95	34	-	16	12	4	17,5	•	•	•	•
22	2,5	100	34	-	18	14,5	4	19,5	•	•	•	•
24	3	110	38	-	18	14,5	4	21	•	•	•	•
27	3	110	38	-	20	16	4	24	•	•	•	•
30	3,5	125	45	-	22	18	4	26,5	•	•	•	•
33	3,5	125	50	-	25	20	4	29,5	•	•	•	•

€ p. 4

HAND TAPS for blind and through holes
In sets of three pieces

2,5 x D | HSS

DIN 352



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A1 ROUGHING	A1 SECOND	A1 FINISHING	A1 SET
P	P.1-4	•	•	•	•
	P.7	•	•	•	•
K	K.2	•	•	•	•
N	N.1-3	•	•	•	•
	N.5-7	•	•	•	•

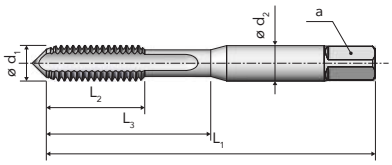
	A1 ROUGHING	A1 SECOND	A1 FINISHING	A1 SET
				
Tolerance	—	—	ISO2 6H	ISO2 6H
Chamfer form	A (5-6)	D (4-5)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH	RH
Through coolant	—	—	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A1 ROUGHING	A1 SECOND	A1 FINISHING	A1 SET
M 36	4	150	56	-	28	22	4	32	•	•	•	•
39	4	150	60	-	32	24	4	35	•	•	•	•
42	4,5	150	60	-	32	24	4	37,5	•	•	•	•
45	4,5	160	65	-	36	29	4	40,5	•	•	•	•
48	5	180	70	-	36	29	4	43	•	•	•	•
52	5	180	70	-	40	32	5	47	•	•	•	•
56	5,5	180	70	-	40	32	5	50,5	•	•	•	•

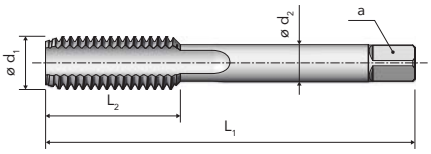
€ p. 4

HAND TAPS for blind and through holes
In sets of three pieces

DIN 352≤ M6



DIN 352≥ M8



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A1 LH ROUGHING	A1 LH SECOND	A1 LH FINISHING	A1 LH SET
P	P.1-4	•	•	•	•
	P.7	•	•	•	•
K	K.2	•	•	•	•
N	N.1-3	•	•	•	•
	N.5-7	•	•	•	•

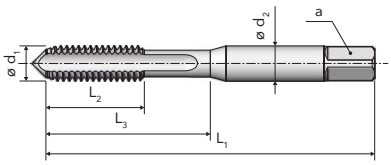
	A1 LH ROUGHING	A1 LH SECOND	A1 LH FINISHING	A1 LH SET
				
Tolerance	—	—	ISO2 6H	ISO2 6H
Chamfer form	A (5-6)	D (4-5)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D	2,5 x D
Direction of cut	LH	LH	LH	LH
Through coolant	—	—	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A1 LH ROUGHING	A1 LH SECOND	A1 LH FINISHING	A1 LH SET
M 2,6	0,45	40	8,5	14,5	2,8	2,1	3	2,1	•	•	•	•
3	0,5	40	10	18	3,5	2,7	3	2,5	•	•	•	•
3,5	0,6	45	11	20	4	3	3	2,9	•	•	•	•
4	0,7	45	12	21	4,5	3,4	3	3,3	•	•	•	•
5	0,8	50	14	24	6	4,9	3	4,2	•	•	•	•
6	1	56	16	28	6	4,9	3	5	•	•	•	•
8	1,25	63	22	-	6	4,9	3	6,8	•	•	•	•
10	1,5	70	24	-	7	5,5	3	8,5	•	•	•	•
12	1,75	75	28	-	9	7	4	10,2	•	•	•	•
14	2	80	30	-	11	9	4	12	•	•	•	•
16	2	80	32	-	12	9	4	14	•	•	•	•
18	2,5	95	34	-	14	11	4	15,5	•	•	•	•
20	2,5	95	34	-	16	12	4	17,5	•	•	•	•
22	2,5	100	34	-	18	14,5	4	19,5	•	•	•	•
24	3	110	38	-	18	14,5	4	21	•	•	•	•
27	3	110	38	-	20	16	4	24	•	•	•	•
30	3,5	125	45	-	22	18	4	26,5	•	•	•	•

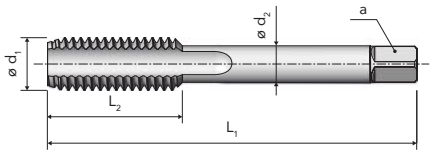
€ p. 4

HAND TAPS for blind and through holes
In sets of three pieces

DIN 352≤ M6



DIN 352≥ M8



APPLICATION RANGE - CUTTING SPEED m/min

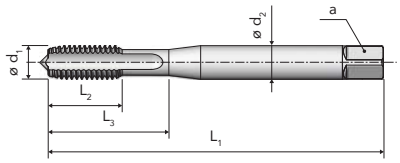
ISO	MG	A100 ROUGHING	A100 SECOND	A100 FINISHING	A100 SET
P	P.1-5	•	•	•	•
	P.7	•	•	•	•
M	M. 1-2	•	•	•	•
K	K.1-3	•	•	•	•
N	N.1-10	•	•	•	•
S	S.1	•	•	•	•
	S.3	•	•	•	•

	A100 ROUGHING	A100 SECOND	A100 FINISHING	A100 SET
				
Tolerance	—	—	ISO2 6H	ISO2 6H
Chamfer form	C (2-3)	C (2-3)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH	RH
Through coolant	—	—	—	—

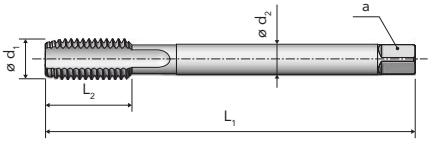
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A100 ROUGHING	A100 SECOND	A100 FINISHING	A100 SET
M 2	0,4	36	7,5	13	2,8	2,1	3	1,6	•	•	•	•
2,5	0,45	40	9	15	2,8	2,1	3	2,05	•	•	•	•
3	0,5	40	10	18	3,5	2,7	3	2,5	•	•	•	•
3,5	0,6	45	11	18	4	3	3	2,9	•	•	•	•
4	0,7	45	12	21	4,5	3,4	3	3,3	•	•	•	•
5	0,8	50	14	24	6	4,9	3	4,2	•	•	•	•
6	1	56	16	28	6	4,9	3	5	•	•	•	•
8	1,25	63	22	-	6	4,9	4	6,8	•	•	•	•
10	1,5	70	24	-	7	5,5	4	8,5	•	•	•	•
12	1,75	75	28	-	9	7	4	10,2	•	•	•	•
14	2	80	30	-	11	9	4	12	•	•	•	•
16	2	80	32	-	12	9	4	14	•	•	•	•
18	2,5	95	34	-	14	11	4	15,5	•	•	•	•
20	2,5	95	34	-	16	12	4	17,5	•	•	•	•

€ p. 5

DIN 371≤ M10



DIN 376≥ M11



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A21 FC BRIGHT	A21 FC TiN	A21 FC LH BRIGHT	
P	P.1		• 20-25		
	P.2	• 10-12	• 15-20	• 10-12	
	P.3	• 8-10	• 12-15	• 8-10	
K	K.2	• 8-10	• 12-15	• 8-10	
N	N.1		• 20-25		
	N.5		• 15-20		

	A21 FC BRIGHT	A21 FC TiN	A21 FC LH BRIGHT
			
Tolerance	ISO2 6H	ISO2 6H	ISO2 6H
Chamfer form	C (2-3)	C (2-3)	C (2-3)
Hole type	1,5 x D	1,5 x D	1,5 x D
Direction of cut	RH	RH	LH
Through coolant	—	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A21 FC BRIGHT	A21 FC TiN	A21 FC LH BRIGHT
M 2	0,4	45	7	11	2,8	2,1	3	1,6	•	•	
2,2	0,45	45	8	13	2,8	2,1	3	1,75	•	•	
2,3	0,4	45	8	13	2,8	2,1	3	1,9	•	•	
2,5	0,45	50	9	15	2,8	2,1	3	2,05	•	•	
2,6	0,45	50	9	15	2,8	2,1	3	2,1	•	•	
3	0,5	56	10	18	3,5	2,7	3	2,5	•	•	•
3,5	0,6	56	11	20	4	3	3	2,9	•	•	
4	0,7	63	12	21	4,5	3,4	3	3,3	•	•	•
5	0,8	70	14	24,5	6	4,9	3	4,2	•	•	•
6	1	80	16	29	6	4,9	3	5	•	•	•
7	1	80	16	29	7	5,5	3	6	•	•	
8	1,25	90	18	33	8	6,2	3	6,8	•	•	•
9	1,25	90	18	33	9	7	3	7,8	•	•	
10	1,5	100	20	36	10	8	3	8,5	•	•	•
11	1,5	100	22	-	8	6,2	3	9,5	•	•	
12	1,75	110	24	-	9	7	3	10,2	•	•	•
14	2	110	25	-	11	9	3	12	•	•	•
16	2	110	28	-	12	9	3	14	•	•	•
18	2,5	125	32	-	14	11	3	15,5	•	•	•
20	2,5	140	32	-	16	12	4	17,5	•	•	•
22	2,5	140	32	-	18	14,5	4	19,5	•	•	•
24	3	160	36	-	18	14,5	4	21	•	•	•
27	3	160	36	-	20	16	4	24	•	•	•
30	3,5	180	40	-	22	18	4	26,5	•	•	•
33	3,5	180	40	-	25	20	4	29,5	•	•	
36	4	200	55	-	28	22	4	32	•	•	

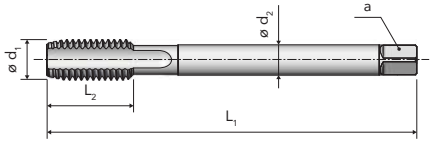
€ p. 5

MACHINE TAPS for blind holes
Straight flutes

HSSE

A21 FC
BRIGHT

DIN 376



APPLICATION RANGE - CUTTING SPEED m/min

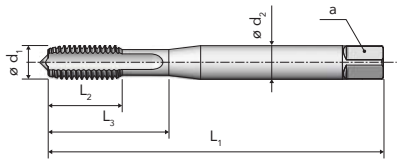
ISO	MG	A21 FC BRIGHT			
P	P.2	• 10-12			
	P.3	• 8-10			
K	K.2	• 8-10			

Tolerance	ISO2 6H
Chamfer form	C (2-3)
Hole type	1,5 x D
Direction of cut	RH
Through coolant	—

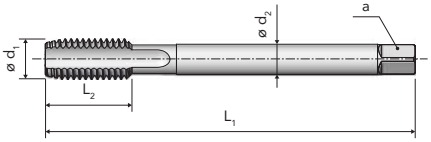
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A21 FC BRIGHT
M 39	4	200	60	-	32	24	4	35	•
42	4,5	200	60	-	32	24	4	37,5	•
45	4,5	220	65	-	36	29	4	40,5	•
48	5	250	70	-	36	29	4	43	•
52	5	250	70	-	40	32	4	47	•

€ p. 5

DIN 371≤ M10



DIN 376≥ M11



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A21 FP BRIGHT	A21 FP TiN		
P	P.1		• 20-25		
	P.2	• 10-12	• 15-20		
	P.3	• 8-10	• 12-15		
K	K.2	• 8-10	• 12-15		
N	N.1		• 20-25		
	N.5		• 15-20		

	A21 FP BRIGHT	A21 FP TiN
		
Tolerance	ISO2 6H	ISO2 6H
Chamfer form	A (5-6)	A (5-6)
Hole type	1,5 x D	1,5 x D
Direction of cut	RH	RH
Through coolant	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A21 FP BRIGHT	A21 FP TiN		
M 2	0,4	45	7	11	2,8	2,1	3	1,6	•	•		
2,2	0,45	45	8	13	2,8	2,1	3	1,75	•	•		
2,3	0,4	45	8	13	2,8	2,1	3	1,9	•	•		
2,5	0,45	50	9	15	2,8	2,1	3	2,05	•	•		
2,6	0,45	50	9	15	2,8	2,1	3	2,1	•	•		
3	0,5	56	10	18	3,5	2,7	3	2,5	•	•		
3,5	0,6	56	11	20	4	3	3	2,9	•	•		
4	0,7	63	12	21	4,5	3,4	3	3,3	•	•		
5	0,8	70	14	24,5	6	4,9	3	4,2	•	•		
6	1	80	16	29	6	4,9	3	5	•	•		
7	1	80	16	29	7	5,5	3	6	•	•		
8	1,25	90	18	33	8	6,2	3	6,8	•	•		
9	1,25	90	18	33	9	7	3	7,8	•	•		
10	1,5	100	20	36	10	8	3	8,5	•	•		
11	1,5	100	22	-	8	6,2	3	9,5	•	•		
12	1,75	110	24	-	9	7	3	10,2	•	•		
14	2	110	25	-	11	9	3	12	•	•		
16	2	110	28	-	12	9	3	14	•	•		
18	2,5	125	32	-	14	11	3	15,5	•	•		
20	2,5	140	32	-	16	12	4	17,5	•	•		
22	2,5	140	32	-	18	14,5	4	19,5	•	•		
24	3	160	36	-	18	14,5	4	21	•	•		
27	3	160	36	-	20	16	4	24	•	•		
30	3,5	180	40	-	22	18	4	26,5	•	•		
33	3,5	180	40	-	25	20	4	29,5	•	•		
36	4	200	55	-	28	22	4	32	•	•		

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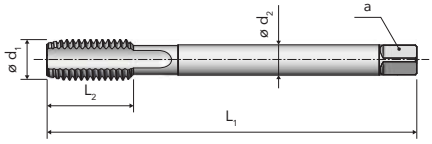
MACHINE TAPS for through holes
Straight flutes

HSSE

A21 FP
BRIGHT

DIN 376



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A21 FC BRIGHT			
P	P.2	• 10-12			
	P.3	• 8-10			
K	K.2	• 8-10			

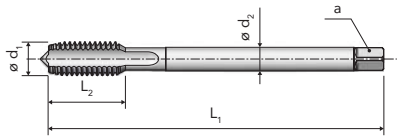
Tolerance	ISO2 6H
Chamfer form	A (5-6)
Hole type	1,5 x D
Direction of cut	RH
Through coolant	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A21 FP BRIGHT
M 39	4	200	60	-	32	24	4	35	•
42	4,5	200	60	-	32	24	4	37,5	•
45	4,5	220	65	-	36	29	4	40,5	•
48	5	250	70	-	36	29	4	43	•
52	5	250	70	-	40	32	4	47	•

€ p. 6

MACHINE TAPS for blind holes
Straight flutes / through shank

DIN 376



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A22 FC BRIGHT	A22 FC TiN		
P	P.1		• 20-25		
	P.2	• 10-12	• 15-20		
	P.3	• 8-10	• 12-15		
K	K.2	• 8-10	• 12-15		
N	N.1		• 20-25		
	N.5		• 15-20		

	A22 FC BRIGHT	A22 FC TiN
		
Tolerance	ISO2 6H	ISO2 6H
Chamfer form	C (2-3)	C (2-3)
Hole type	1,5 x D	1,5 x D
Direction of cut	RH	RH
Through coolant	—	—

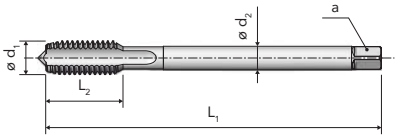
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A22 FC BRIGHT	A22 FC TiN
M 4	0,7	63	12	-	2,8	2,1	3	3,3	•	•
5	0,8	70	14	-	3,5	2,7	3	4,2	•	•
6	1	80	16	-	4,5	3,4	3	5	•	•
7	1	80	16	-	5,5	4,3	3	6	•	•
8	1,25	90	18	-	6	4,9	3	6,8	•	•
9	1,25	90	18	-	7	5,5	3	7,8	•	•
10	1,5	100	20	-	7	5,5	3	8,5	•	•

€ p. 6

MACHINE TAPS for through holes
Straight flutes / through shank

1,5 x D | HSSE

DIN 376



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A22 FC BRIGHT	A22 FC TiN		
P	P.1		• 20-25		
	P.2	• 10-12	• 15-20		
	P.3	• 8-10	• 12-15		
K	K.2	• 8-10	• 12-15		
N	N.1		• 20-25		
	N.5		• 15-20		

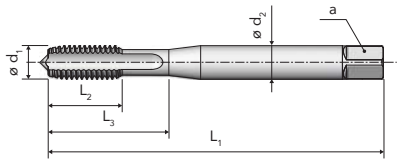
	A22 FP BRIGHT	A22 FP TiN
		
Tolerance	ISO2 6H	ISO2 6H
Chamfer form	A (5-6)	A (5-6)
Hole type	1,5 x D	1,5 x D
Direction of cut	RH	RH
Through coolant	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A22 FP BRIGHT	A22 FP TiN		
M 4	0,7	63	12	-	2,8	2,1	3	3,3	•	•		
5	0,8	70	14	-	3,5	2,7	3	4,2	•	•		
6	1	80	16	-	4,5	3,4	3	5	•	•		
7	1	80	16	-	5,5	4,3	3	6	•	•		
8	1,25	90	18	-	6	4,9	3	6,8	•	•		
9	1,25	90	18	-	7	5,5	3	7,8	•	•		
10	1,5	100	20	-	7	5,5	3	8,5	•	•		

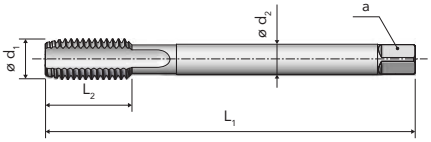
€ p. 7

MACHINE TAPS for blind and through holes
Straight flutes / for cast iron

DIN 371≤ M10



DIN 376≥ M11



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A43 NITRIDED	A43 TiCN	A43 ACE	
K	K.1	• 15-20	• 40-45	• 40-45	
N	N.4	• 15-20	• 40-45	• 40-45	
	N.7	• 15-20	• 40-45	• 40-45	
	N.9-10	• 20-25	• 45-50	• 45-50	

	A43 NITRIDED	A43 TiCN	A43 ACE
			
Tolerance	6HX	6HX	6HX
Chamfer form	C (2-3)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH
Through coolant	—	—	—

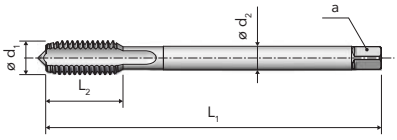
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A43 NITRIDED	A43 TiCN	A43 ACE
M 3	0,5	56	10	18	3,5	2,7	3	2,5	•	•	•
3,5	0,6	56	11	20	4	3	3	2,9	•	•	•
4	0,7	63	12	21	4,5	3,4	3	3,3	•	•	•
5	0,8	70	14	24,5	6	4,9	3	4,2	•	•	•
6	1	80	16	29	6	4,9	4	5	•	•	•
7	1	80	16	29	7	5,5	4	6	•	•	•
8	1,25	90	18	33	8	6,2	4	6,8	•	•	•
9	1,25	90	18	33	9	7	4	7,8	•	•	•
10	1,5	100	20	36	10	8	4	8,5	•	•	•
11	1,5	100	22	-	8	6,2	4	9,5	•	•	•
12	1,75	110	24	-	9	7	4	10,2	•	•	•
14	2	110	25	-	11	9	4	12	•	•	•
16	2	110	28	-	12	9	4	14	•	•	•
18	2,5	125	32	-	14	11	4	15,5	•	•	•
20	2,5	140	32	-	16	12	4	17,5	•	•	•
22	2,5	140	32	-	18	14,5	4	19,5	•	•	•
24	3	160	36	-	18	14,5	5	21	•	•	•
27	3	160	36	-	20	16	5	24	•	•	•
30	3,5	180	40	-	22	18	5	26,5	•	•	•
33	3,5	180	40	-	25	20	5	29,5	•	•	•
36	4	200	55	-	28	22	5	32	•	•	•

€ p. 7

MACHINE TAPS for blind and through holes
Straight flutes / for cast iron / through shank

2,5 x D | HSSE

DIN 376



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A44 NITRIDED	A44 TiCN	A44 ACE
K	K.1	• 15-20	• 40-45	• 40-45
N	N.4	• 15-20	• 40-45	• 40-45
	N.7	• 15-20	• 40-45	• 40-45
	N.9-10	• 20-25	• 45-50	• 45-50

	A44 NITRIDED	A44 TiCN	A44 ACE
			
Tolerance	6HX	6HX	6HX
Chamfer form	C (2-3)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH
Through coolant	—	—	—

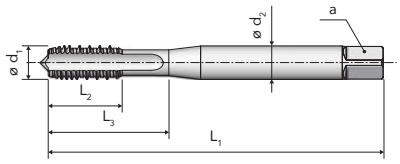
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A44 NITRIDED	A44 TiCN	A44 ACE
M 4	0,7	63	12	-	2,8	2,1	3	3,3	•	•	•
5	0,8	70	14	-	3,5	2,7	3	4,2	•	•	•
6	1	80	16	-	4,5	3,4	4	5	•	•	•
8	1,25	90	18	-	6	4,9	4	6,8	•	•	•
10	1,5	100	20	-	7	5,5	4	8,5	•	•	•

€ p. 7

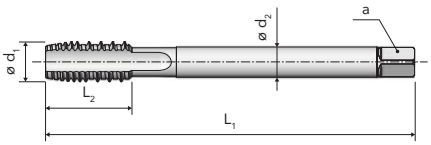
MACHINE TAPS for blind and through holes
Straight flutes / interrupted thread / for light alloys

2,5 x D | HSSE

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A67 BRIGHT	A67 TiH1		
P	P.1	• 12-15	• 20-25		
N	N.1	• 12-15	• 20-25		
	N.2	• 10-12	• 15-20		
	N.5	• 10-12	• 15-20		
	N.6	• 8-10	• 12-15		

	A67 BRIGHT	A67 TiH1
		
Tolerance	ISO2 6H	ISO2 6H
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

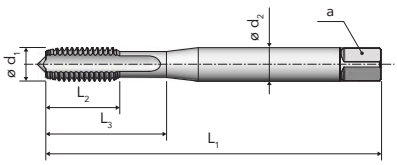
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A67 BRIGHT	A67 TiH1
M 3	0,5	56	10	18	3,5	2,7	3	2,5	•	•
4	0,7	63	12	21	4,5	3,4	3	3,3	•	•
5	0,8	70	14	24,5	6	4,9	3	4,2	•	•
6	1	80	16	29	6	4,9	3	5	•	•
8	1,25	90	18	33	8	6,2	3	6,8	•	•
10	1,5	100	20	36	10	8	3	8,5	•	•
12	1,75	110	24	-	9	7	3	10,2	•	•
14	2	110	25	-	11	9	3	12	•	•
16	2	110	28	-	12	9	3	14	•	•
18	2,5	125	32	-	14	11	3	15,5	•	•
20	2,5	140	32	-	16	12	3	17,5	•	•

€ p. 8

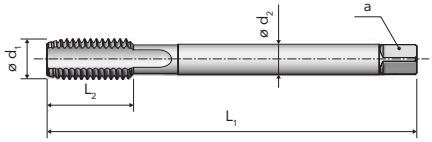
MACHINE TAPS for blind and through holes
Straight flutes / for titanium and titanium alloys

2,5 x D | HSSK

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A110 VAP	A110 CrN		
S	S.1	• 6-8	• 10-12		
	S.2	• 3-5	• 6-8		

	A110 VAP	A110 CrN
		
Tolerance	ISO2 6H	ISO2 6H
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

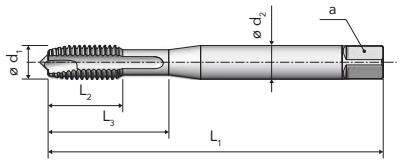
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A110 VAP	A110 CrN		
M 2	0,4	45	7	11	2,8	2,1	3	1,6	•	•		
2,5	0,45	50	9	15	2,8	2,1	3	2,05	•	•		
3	0,5	56	10	18	3,5	2,7	3	2,5	•	•		
4	0,7	63	12	21	4,5	3,4	3	3,3	•	•		
5	0,8	70	14	24,5	6	4,9	3	4,2	•	•		
6	1	80	16	29	6	4,9	4	5	•	•		
8	1,25	90	18	33	8	6,2	4	6,8	•	•		
10	1,5	100	20	36	10	8	4	8,5	•	•		
12	1,75	110	24	-	9	7	4	10,2	•	•		
14	2	110	25	-	11	9	4	12	•	•		
16	2	110	28	-	12	9	4	14	•	•		
18	2,5	125	32	-	14	11	4	15,5	•	•		
20	2,5	140	32	-	16	12	4	17,5	•	•		

€ p. 8

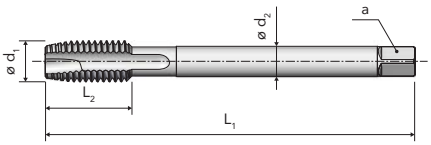
MACHINE TAPS for through holes
Straight flutes with spiral point

A SERIES

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A15 BRIGHT	A15 VAP	A15 TiN
P	P.1	• 18-20	• 18-20	• 30-35
	P.2	• 15-18	• 15-18	• 25-30
N	N.1	• 18-20	• 18-20	
	N.2	• 15-18	• 15-18	• 25-30
	N.5	• 15-18	• 15-18	
	N.6	• 12-15	• 12-15	• 20-25

	A15 BRIGHT	A15 VAP	A15 TiN
			
Tolerance	ISO2 6H	ISO2 6H	ISO2 6H
Chamfer form	B (4-5)	B (4-5)	B (4-5)
Hole type	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH
Through coolant	—	—	—

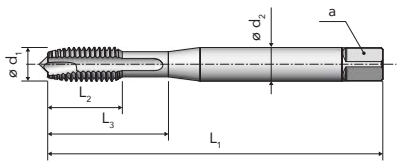
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A15 BRIGHT	A15 VAP	A15 TiN
M 2	0,4	45	7	11	2,8	2,1	2	1,6	•	•	•
2,5	0,45	50	9	15	2,8	2,1	3	2,05	•	•	•
3	0,5	56	10	18	3,5	2,7	3	2,5	•	•	•
3,5	0,6	56	11	20	4	3	3	2,9	•	•	•
4	0,7	63	12	21	4,5	3,4	3	3,3	•	•	•
5	0,8	70	14	24,5	6	4,9	3	4,2	•	•	•
6	1	80	16	29	6	4,9	3	5	•	•	•
8	1,25	90	18	33	8	6,2	3	6,8	•	•	•
10	1,5	100	20	36	10	8	3	8,5	•	•	•
12	1,75	110	24	-	9	7	3	10,2	•	•	•
14	2	110	25	-	11	9	3	12	•	•	•
16	2	110	28	-	12	9	3	14	•	•	•
18	2,5	125	32	-	14	11	4	15,5	•	•	•
20	2,5	140	32	-	16	12	4	17,5	•	•	•
22	2,5	140	32	-	18	14,5	4	19,5	•	•	•
24	3	160	36	-	18	14,5	4	21	•	•	•
27	3	160	36	-	20	16	4	24	•	•	•
30	3,5	180	40	-	22	18	4	26,5	•	•	•

€ p. 8

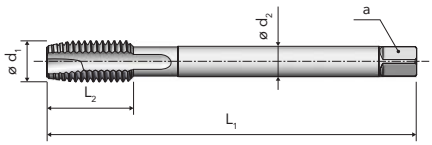
MACHINE TAPS for through holes
Straight flutes with spiral point

2,5 x D | HSSE

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A15 6G BRIGHT	A15 6G TiN		
P	P.1	• 18-20	• 30-35		
	P.2	• 15-18	• 25-30		
N	N.1	• 18-20			
	N.2	• 15-18	• 25-30		
	N.5	• 15-18			
	N.6	• 12-15	• 20-25		

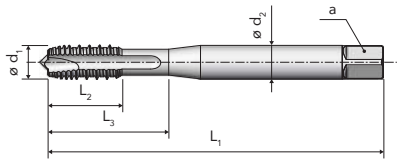
	A15 6G BRIGHT	A15 6G TiN
		
Tolerance	ISO3 6G	ISO3 6G
Chamfer form	B (4-5)	B (4-5)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A15 6G BRIGHT	A15 6G TiN		
M 2	0,4	45	7	11	2,8	2,1	2	1,6	•	•		
2,5	0,45	50	9	15	2,8	2,1	3	2,05	•	•		
3	0,5	56	10	18	3,5	2,7	3	2,5	•	•		
4	0,7	63	12	21	4,5	3,4	3	3,3	•	•		
5	0,8	70	14	24,5	6	4,9	3	4,2	•	•		
6	1	80	16	29	6	4,9	3	5	•	•		
8	1,25	90	18	33	8	6,2	3	6,8	•	•		
10	1,5	100	20	36	10	8	3	8,5	•	•		
12	1,75	110	24	-	9	7	3	10,2	•	•		
14	2	110	25	-	11	9	3	12	•	•		
16	2	110	28	-	12	9	3	14	•	•		

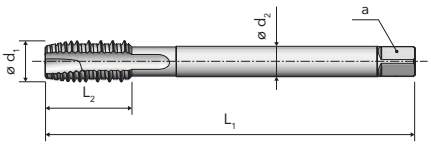
€ p. 9

MACHINE TAPS for through holes
Straight flutes with spiral point / interrupted thread

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A15 AZ BRIGHT	A15 AZ TiN
P	P.1	• 18-20	• 30-35
N	N.1	• 18-20	• 30-40
	N.2	• 15-18	• 30-40
	N.5	• 15-18	• 30-35
	N.6	• 12-15	• 30-35

	A15 AZ BRIGHT	A15 AZ TiH1
		
Tolerance	ISO2 6H	ISO2 6H
Chamfer form	B (4-5)	B (4-5)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

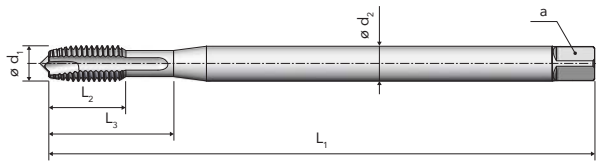
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A15 AZ BRIGHT	A15 AZ TiH1
M 3	0,5	56	10	18	3,5	2,7	3	2,5	•	•
4	0,7	63	12	21	4,5	3,4	3	3,3	•	•
5	0,8	70	14	24,5	6	4,9	3	4,2	•	•
6	1	80	16	29	6	4,9	3	5	•	•
8	1,25	90	18	33	8	6,2	3	6,8	•	•
10	1,5	100	20	36	10	8	3	8,5	•	•
12	1,75	110	24	-	9	7	3	10,2	•	•
14	2	110	25	-	11	9	3	12	•	•
16	2	110	28	-	12	9	3	14	•	•

€ p. 9

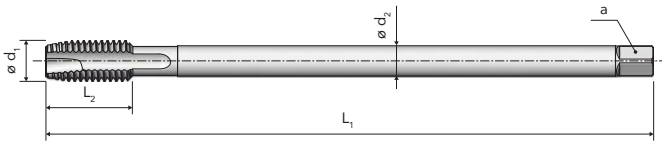
MACHINE TAPS for through holes
Straight flutes with spiral point / long shank

A15 L BRIGHT | **A15 L** TiN

VERGNANO STANDARD≤ M10



VERGNANO STANDARD≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A15 L BRIGHT	A15 L TiN		
P	P.1	• 18-20	• 30-35		
	P.2	• 15-18	• 25-30		
	P.3	• 12-15	• 20-25		
N	N.1	• 18-20			
	N.2	• 15-18	• 25-30		
	N.5	• 15-18			
	N.6	• 12-15	• 20-25		

	A15 L BRIGHT	A15 L TiN
Tolerance	ISO2 6H	ISO2 6H
Chamfer form	B (4-5)	B (4-5)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

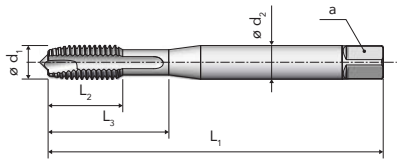
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A15 L BRIGHT	A15 L TiN		
M 3	0,5	112	10	18	3,5	2,7	3	2,5	•	•		
4	0,7	112	12	21	4,5	3,4	3	3,3	•	•		
5	0,8	125	14	24,5	6	4,9	3	4,2	•	•		
6	1	125	16	29	6	4,9	3	5	•	•		
8	1,25	140	18	33	8	6,2	3	6,8	•	•		
10	1,5	160	20	36	10	8	3	8,5	•	•		
12	1,75	180	24	-	9	7	3	10,2	•	•		
16	2	200	28	-	12	9	3	14	•	•		
20	2,5	225	32	-	16	12	4	17,5	•	•		

€ p. 9

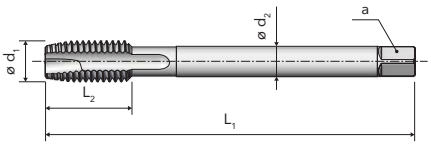
MACHINE TAPS for through holes
Straight flutes with spiral point

2,5 x D | HSSE

DIN 371≤ M10



DIN 376≥ M11



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A15 S BRIGHT	A15 S VAP	A15 S TiN	A15 S TiCN
P	P.2	• 20-25	• 20-25	• 30-35	• 30-35
	P.3	• 15-20	• 15-20	• 25-30	• 25-30
	P.4	• 12-15	• 12-15	• 20-25	• 20-25
	P.5			• 10-15	• 10-15
	P.7			• 10-15	• 10-15
M	M.1			• 10-15	• 10-15
K	K.2	• 15-20	• 15-20	• 25-30	• 25-30
N	N.2-3	• 20-25	• 20-25	• 30-35	• 30-35
	N.6	• 15-18	• 15-18	• 25-30	• 25-30

	A15 S BRIGHT	A15 S VAP	A15 S TiN	A15 S TiCN
				
Tolerance	ISO2 6H	ISO2 6H	ISO2 6H	ISO2 6H
Chamfer form	B (4-5)	B (4-5)	B (4-5)	B (4-5)
Hole type	2,5 x D	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH	RH
Through coolant	—	—	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A15 S BRIGHT	A15 S VAP	A15 S TiN	A15 S TiCN
M 2	0,4	45	7	11	2,8	2,1	2	1,6	•	•	•	•
2,2	0,45	45	8	13	2,8	2,1	2	1,75	•	•	•	
2,3	0,4	45	8	13	2,8	2,1	2	1,9	•	•	•	
2,5	0,45	50	9	15	2,8	2,1	3	2,05	•	•	•	•
2,6	0,45	50	9	15	2,8	2,1	3	2,1	•	•	•	
3	0,5	56	10	18	3,5	2,7	3	2,5	•	•	•	•
3,5	0,6	56	11	20	4	3	3	2,9	•	•	•	•
4	0,7	63	12	21	4,5	3,4	3	3,3	•	•	•	•
5	0,8	70	14	24,5	6	4,9	3	4,2	•	•	•	•
6	1	80	16	29	6	4,9	3	5	•	•	•	•
7	1	80	16	29	7	5,5	3	6	•	•	•	•
8	1,25	90	18	33	8	6,2	3	6,8	•	•	•	•
9	1,25	90	18	33	9	7	3	7,8	•	•	•	•
10	1,5	100	20	36	10	8	3	8,5	•	•	•	•
11	1,5	100	22	-	8	6,2	3	9,5	•	•	•	
12	1,75	110	24	-	9	7	4	10,2	•	•	•	•
14	2	110	25	-	11	9	4	12	•	•	•	•
16	2	110	28	-	12	9	4	14	•	•	•	•
18	2,5	125	32	-	14	11	4	15,5	•	•	•	•
20	2,5	140	32	-	16	12	4	17,5	•	•	•	•
22	2,5	140	32	-	18	14,5	4	19,5	•	•	•	•
24	3	160	36	-	18	14,5	4	21	•	•	•	•
27	3	160	36	-	20	16	4	24	•	•	•	•
30	3,5	180	40	-	22	18	4	26,5	•	•	•	•
33	3,5	180	40	-	25	20	5	29,5	•		•	
36	4	200	55	-	28	22	5	32	•		•	

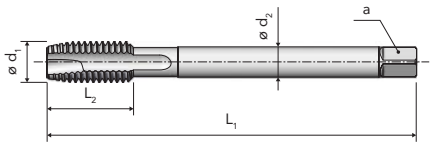
€ p. 10

MACHINE TAPS for through holes
Straight flutes with spiral point

2,5 x D | HSSE

A15 S
BRIGHT

DIN 376



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A15 S BRIGHT			
P	P.2	• 20-25			
	P.3	• 15-20			
	P.4	• 12-15			
K	K.2	• 15-20			
N	N.2-3	• 20-25			
	N.6	• 15-18			

Tolerance — ISO2 6H

Chamfer form — B (4-5)

Hole type — 2,5 x D

Direction of cut — RH

Through coolant — —

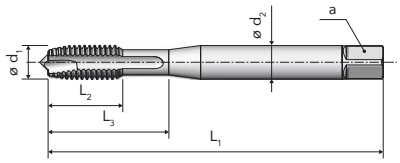
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A15 S BRIGHT
M 39	4	200	60	-	32	24	5	35	•
42	4,5	200	60	-	32	24	5	37,5	•
45	4,5	220	65	-	36	29	5	40,5	•
48	5	250	70	-	36	29	5	43	•
52	5	250	70	-	40	32	5	47	•

€ p. 10

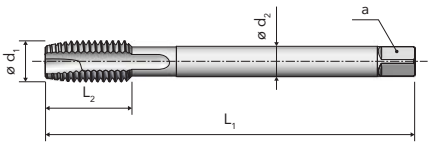
MACHINE TAPS for through holes
Straight flutes with spiral point

2,5 x D | HSSE

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A15 S 4H BRIGHT	A15 S 4H TiN		
P	P.2	• 20-25	• 30-35		
	P.3	• 15-20	• 25-30		
	P.4	• 12-15	• 20-25		
	P.5		• 10-15		
	P.7		• 10-15		
M	M.1		• 10-15		
K	K.2	• 15-20	• 25-30		
N	N.2-3	• 20-25	• 30-35		
	N.6	• 15-18	• 25-30		

	A15 S 4H BRIGHT	A15 S 4H TiN
		
Tolerance	ISO1 4H	ISO1 4H
Chamfer form	B (4-5)	B (4-5)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A15 S 4H BRIGHT	A15 S 4H TiN
M 2	0,4	45	7	11	2,8	2,1	2	1,6	•	•
2,5	0,45	50	9	15	2,8	2,1	3	2,05	•	•
3	0,5	56	10	18	3,5	2,7	3	2,5	•	•
4	0,7	63	12	21	4,5	3,4	3	3,3	•	•
5	0,8	70	14	24,5	6	4,9	3	4,2	•	•
6	1	80	16	29	6	4,9	3	5	•	•
8	1,25	90	18	33	8	6,2	3	6,8	•	•
10	1,5	100	20	36	10	8	3	8,5	•	•
12	1,75	110	24	-	9	7	4	10,2	•	•
14	2	110	25	-	11	9	4	12	•	•
16	2	110	28	-	12	9	4	14	•	•

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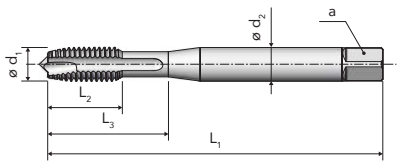
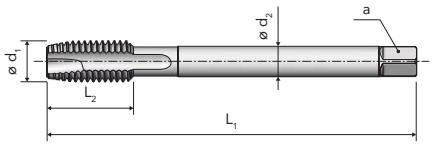
MACHINE TAPS for through holes
Straight flutes with spiral point

2,5 x D | HSSE

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A15 S 6G BRIGHT	A15 S 6G TiN		
P	P.2	• 20-25	• 30-35		
	P.3	• 15-20	• 25-30		
	P.4	• 12-15	• 20-25		
	P.5		• 10-15		
	P.7		• 10-15		
M	M.1		• 10-15		
K	K.2	• 15-20	• 25-30		
N	N.2-3	• 20-25	• 30-35		
	N.6	• 15-18	• 25-30		

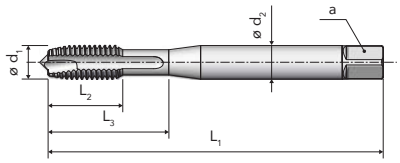
	A15 S 6G BRIGHT	A15 S 6G TiN
		
Tolerance	ISO3 6G	ISO3 6G
Chamfer form	B (4-5)	B (4-5)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A15 S 6G BRIGHT	A15 S 6G TiN		
M 2	0,4	45	7	11	2,8	2,1	2	1,6	•	•		
2,5	0,45	50	9	15	2,8	2,1	3	2,05	•	•		
3	0,5	56	10	18	3,5	2,7	3	2,5	•	•		
4	0,7	63	12	21	4,5	3,4	3	3,3	•	•		
5	0,8	70	14	24,5	6	4,9	3	4,2	•	•		
6	1	80	16	29	6	4,9	3	5	•	•		
8	1,25	90	18	33	8	6,2	3	6,8	•	•		
10	1,5	100	20	36	10	8	3	8,5	•	•		
12	1,75	110	24	-	9	7	4	10,2	•	•		
14	2	110	25	-	11	9	4	12	•	•		
16	2	110	28	-	12	9	4	14	•	•		

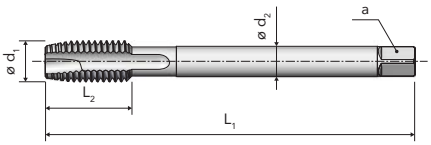
€ p. 11

MACHINE TAPS for through holes
Straight flutes with spiral point

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A15 S 7G BRIGHT	A15 S 7G TiN		
P	P.2	• 20-25	• 30-35		
	P.3	• 15-20	• 25-30		
	P.4	• 12-15	• 20-25		
	P.5		• 10-15		
	P.7		• 10-15		
M	M.1		• 10-15		
K	K.2	• 15-20	• 25-30		
N	N.2-3	• 20-25	• 30-35		
	N.6	• 15-18	• 25-30		

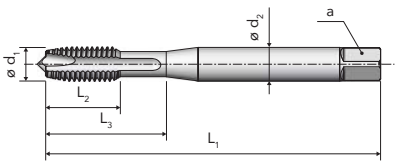
	A15 S 7G BRIGHT	A15 S 7G TiN
		
Tolerance	7G	7G
Chamfer form	B (4-5)	B (4-5)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A15 S 7G BRIGHT	A15 S 7G TiN
M 3	0,5	56	10	18	3,5	2,7	3	2,5	•	•
4	0,7	63	12	21	4,5	3,4	3	3,3	•	•
5	0,8	70	14	24,5	6	4,9	3	4,2	•	•
6	1	80	16	29	6	4,9	3	5	•	•
8	1,25	90	18	33	8	6,2	3	6,8	•	•
10	1,5	100	20	36	10	8	3	8,5	•	•
12	1,75	110	24	-	9	7	4	10,2	•	•
14	2	110	25	-	11	9	4	12	•	•
16	2	110	28	-	12	9	4	14	•	•

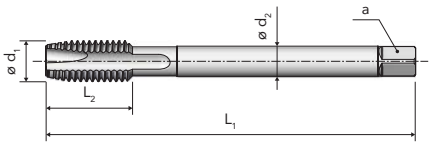
€ p. 11

MACHINE TAPS for through holes
Straight flutes with spiral point

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A15 S LH BRIGHT	A15 S LH TiN		
P	P.2	• 20-25	• 30-35		
	P.3	• 15-20	• 25-30		
	P.4	• 12-15	• 20-25		
	P.5		• 10-15		
	P.7		• 10-15		
M	M.1		• 10-15		
K	K.2	• 15-20	• 25-30		
N	N.2-3	• 20-25	• 30-35		
	N.6	• 15-18	• 25-30		

	NEW A15 S LH BRIGHT	NEW A15 S LH TiN
		
Tolerance	ISO2 6H	ISO2 6H
Chamfer form	B (4-5)	B (4-5)
Hole type	2,5 x D	2,5 x D
Direction of cut	LH	LH
Through coolant	—	—

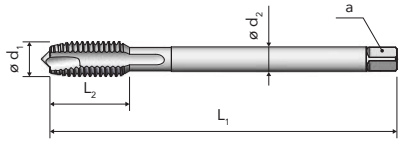
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A15 S LH BRIGHT	A15 S LH TiN		
M 3	0,5	56	10	18	3,5	2,7	3	2,5	•	•		
4	0,7	63	12	21	4,5	3,4	3	3,3	•	•		
5	0,8	70	14	24,5	6	4,9	3	4,2	•	•		
6	1	80	16	29	6	4,9	3	5	•	•		
8	1,25	90	18	33	8	6,2	3	6,8	•	•		
10	1,5	100	20	36	10	8	3	8,5	•	•		
12	1,75	110	24	-	9	7	4	10,2	•	•		
16	2	110	28	-	12	9	4	14	•	•		
20	2,5	140	32	-	16	12	4	17,5	•	•		

€ p. 11

MACHINE TAPS for through holes
Straight flutes with spiral point / through shank

A SERIES

DIN 376



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A16 S BRIGHT	A16 S TiN		
P	P.2	• 20-25	• 30-35		
	P.3	• 15-20	• 25-30		
	P.4	• 12-15	• 20-25		
	P.5		• 10-15		
	P.7		• 10-15		
M	M.1		• 10-15		
K	K.2	• 15-20	• 25-30		
N	N.2-3	• 20-25	• 30-35		
	N.6	• 15-18	• 25-30		

	A16 S BRIGHT	A16 S TiN
		
Tolerance	ISO2 6H	ISO2 6H
Chamfer form	B (4-5)	B (4-5)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

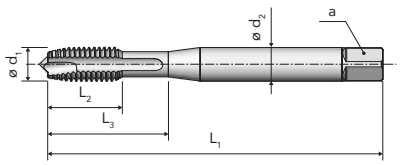
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A16 S BRIGHT	A16 S TiN		
M 4	0,7	63	12	-	2,8	2,1	3	3,3	•	•		
5	0,8	70	14	-	3,5	2,7	3	4,2	•	•		
6	1	80	16	-	4,5	3,4	3	5	•	•		
7	1	80	16	-	5,5	4,3	3	6	•	•		
8	1,25	90	18	-	6	4,9	3	6,8	•	•		
9	1,25	90	18	-	7	5,5	3	7,8	•	•		
10	1,5	100	20	-	7	5,5	3	8,5	•	•		

€ p.11

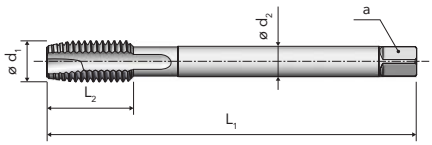
MACHINE TAPS for through holes
Straight flutes with spiral point / for stainless steel

2,5 x D | HSSE

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A150 VAP	A150 TiX2		
P	P.7	• 10-12	• 18-20		
M	M.1	• 10-12	• 18-20		
	M.2	• 8-10	• 10-20		

	A150 VAP	A150 TiX2
		
Tolerance	6HX	6HX
Chamfer form	B (4-5)	B (4-5)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A150 VAP	A150 TiX2		
M 3	0,5	56	10	18	3,5	2,7	3	2,5	•	•		
3,5	0,6	56	11	16	4	3	3	2,9	•	•		
4	0,7	63	12	21	4,5	3,4	3	3,3	•	•		
5	0,8	70	14	24,5	6	4,9	3	4,2	•	•		
6	1	80	16	29	6	4,9	3	5	•	•		
8	1,25	90	18	33	8	6,2	3	6,8	•	•		
10	1,5	100	20	36	10	8	3	8,5	•	•		
12	1,75	110	24	-	9	7	3	10,2	•	•		
14	2	110	25	-	11	9	3	12	•	•		
16	2	110	28	-	12	9	3	14	•	•		
18	2,5	125	32	-	14	11	4	15,5	•	•		
20	2,5	140	32	-	16	12	4	17,5	•	•		

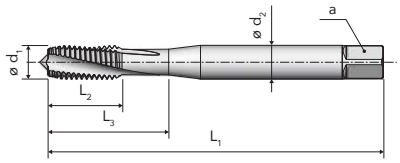
€ p.12

MACHINE TAPS for blind holes
15° spiral flutes

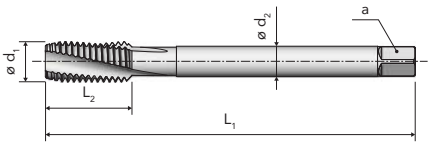
R15 | 1,5 x D | HSSE

A SERIES

DIN 371≤ M10



DIN 376≥ M11



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A29 BRIGHT	A29 VAP	A29 TiN
P	P.1	• 18-20	• 18-20	• 30-35
	P.2	• 15-18	• 15-18	• 25-30
	P.3	• 12-15	• 12-15	• 20-25
	P.4	• 10-12	• 10-12	• 15-20
	P.5			• 5-10
K	K.2	• 12-15	• 12-15	• 20-25
N	N.1	• 18-20	• 18-20	
	N.2-3	• 15-18	• 15-18	• 25-30
	N.5	• 15-18	• 15-18	
	N.6	• 12-15	• 12-15	• 20-25

	A29 BRIGHT	A29 VAP	A29 TiN
			
Tolerance	ISO2 6H	ISO2 6H	ISO2 6H
Chamfer form	C (2-3)	C (2-3)	C (2-3)
Hole type	1,5 x D	1,5 x D	1,5 x D
Direction of cut	RH	RH	RH
Through coolant	—	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A29 BRIGHT	A29 VAP	A29 TiN
M 2	0,4	45	7	11	2,8	2,1	3	1,6	•	•	•
2,2	0,45	45	8	13	2,8	2,1	3	1,75	•		
2,3	0,4	45	8	13	2,8	2,1	3	1,9	•		
2,5	0,45	50	9	15	2,8	2,1	3	2,05	•	•	•
2,6	0,45	50	9	15	2,8	2,1	3	2,1	•		
3	0,5	56	10	18	3,5	2,7	3	2,5	•	•	•
3,5	0,6	56	11	20	4	3	3	2,9	•	•	•
4	0,7	63	12	21	4,5	3,4	3	3,3	•	•	•
4,5	0,75	70	14	24,5	6	4,9	3	3,7	•		
5	0,8	70	14	24,5	6	4,9	3	4,2	•	•	•
6	1	80	16	29	6	4,9	3	5	•	•	•
7	1	80	16	29	7	5,5	3	6	•	•	•
8	1,25	90	18	33	8	6,2	3	6,8	•	•	•
9	1,25	90	18	33	9	7	3	7,8	•	•	•
10	1,5	100	20	36	10	8	3	8,5	•	•	•
11	1,5	100	22	-	8	6,2	3	9,5	•		
12	1,75	110	24	-	9	7	3	10,2	•	•	•
14	2	110	25	-	11	9	3	12	•	•	•
16	2	110	28	-	12	9	3	14	•	•	•
18	2,5	125	32	-	14	11	3	15,5	•	•	•
20	2,5	140	32	-	16	12	4	17,5	•	•	•
22	2,5	140	32	-	18	14,5	4	19,5	•	•	•
24	3	160	36	-	18	14,5	4	21	•	•	•
27	3	160	36	-	20	16	4	24	•	•	•
30	3,5	180	40	-	22	18	4	26,5	•	•	•
33	3,5	180	40	-	25	20	5	29,5	•	•	•

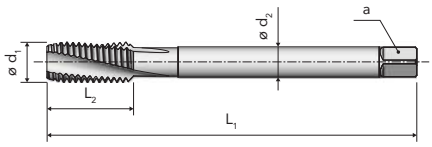
€ p.12

MACHINE TAPS for blind holes
15° spiral flutes

R15 | 1,5 x D | HSSE

A29
BRIGHT

DIN 376



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A29 BRIGHT			
P	P.1	• 18-20			
	P.2	• 15-18			
	P.3	• 12-15			
	P.4	• 10-12			
K	K.2	• 12-15			
N	N.1	• 18-20			
	N.2-3	• 15-18			
	N.5	• 15-18			
	N.6	• 12-15			

Tolerance	ISO2 6H
Chamfer form	C (2-3)
Hole type	1,5 x D
Direction of cut	RH
Through coolant	—

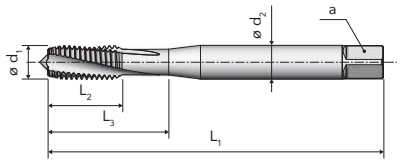
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A29 BRIGHT
M 36	4	200	56	-	28	22	5	32	•
39	4	200	60	-	32	24	5	35	•
42	4,5	200	60	-	32	24	5	37,5	•
45	4,5	220	65	-	36	29	5	40,5	•
48	5	250	70	-	36	29	5	43	•
52	5	250	70	-	40	32	5	47	•

€ p.12

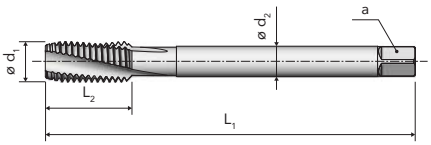
R15 | 1,5 x D | HSSE

A SERIES

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A29 6G BRIGHT	A29 6G TiN		
P	P.1	• 18-20	• 30-35		
	P.2	• 15-18	• 25-30		
	P.3	• 12-15	• 20-25		
	P.4	• 10-12	• 15-20		
	P.5		• 5-10		
K	K.2	• 12-15	• 20-25		
N	N.1	• 18-20			
	N.2-3	• 15-18	• 25-30		
	N.5	• 15-18			
	N.6	• 12-15	• 20-25		

	A29 6G BRIGHT	A29 6G TiN
		
Tolerance	ISO3 6G	ISO3 6G
Chamfer form	C (2-3)	C (2-3)
Hole type	1,5 x D	1,5 x D
Direction of cut	RH	RH
Through coolant	—	—

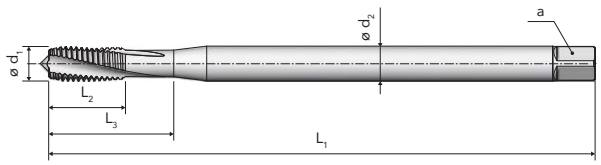
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A29 6G BRIGHT	A29 6G TiN		
M 2	0,4	45	7	11	2,8	2,1	3	1,6	•	•		
2,5	0,45	50	9	15	2,8	2,1	3	2,05	•	•		
3	0,5	56	10	18	3,5	2,7	3	2,5	•	•		
4	0,7	63	12	21	4,5	3,4	3	3,3	•	•		
5	0,8	70	14	24,5	6	4,9	3	4,2	•	•		
6	1	80	16	29	6	4,9	3	5	•	•		
8	1,25	90	18	33	8	6,2	3	6,8	•	•		
10	1,5	100	20	36	10	8	3	8,5	•	•		
12	1,75	110	24	-	9	7	3	10,2	•	•		
14	2	110	25	-	11	9	3	12	•	•		

€ p.13

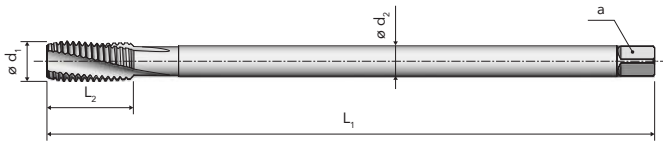
MACHINE TAPS for blind holes
15° spiral flutes / long shank

R15 | 1,5 x D | HSSE

VERGNANO STANDARD≤ M10



VERGNANO STANDARD≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A29 L BRIGHT	A29 L TiN		
P	P.1	• 18-20	• 30-35		
	P.2	• 15-18	• 25-30		
	P.3	• 12-15	• 20-25		
	P.4	• 10-12	• 15-20		
	P.5		• 5-10		
K	K.2	• 12-15	• 20-25		
N	N.1	• 18-20			
	N.2-3	• 15-18	• 25-30		
	N.5	• 15-18			
	N.6	• 12-15	• 20-25		

	A29 L BRIGHT	A29 L TiN
		
Tolerance	ISO2 6H	ISO2 6H
Chamfer form	C (2-3)	C (2-3)
Hole type	1,5 x D	1,5 x D
Direction of cut	RH	RH
Through coolant	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A29 L BRIGHT	A29 L TiN
M 4	0,7	112	12	21	4,5	3,4	3	3,3	•	•
5	0,8	125	14	24,5	6	4,9	3	4,2	•	•
6	1	125	16	29	6	4,9	3	5	•	•
8	1,25	140	18	33	8	6,2	3	6,8	•	•
10	1,5	160	20	36	10	8	3	8,5	•	•
12	1,75	180	24	-	9	7	3	10,2	•	•

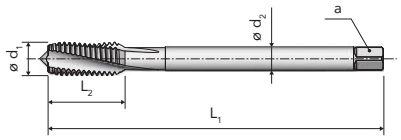
€ p.13

MACHINE TAPS for blind holes
15° spiral flutes / through shank

R15 | 1,5 x D | HSSE

A SERIES

DIN 376



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A29 DIN 376 BRIGHT	A29 DIN 376 TiN		
P	P.1	• 18-20	• 30-35		
	P.2	• 15-18	• 25-30		
	P.3	• 12-15	• 20-25		
	P.4	• 10-12	• 15-20		
	P.5		• 5-10		
K	K.2	• 12-15	• 20-25		
N	N.1	• 18-20			
	N.2-3	• 15-18	• 25-30		
	N.5	• 15-18			
	N.6	• 12-15	• 20-25		

	A29 DIN 376 BRIGHT	A29 DIN 376 TiN
		
Tolerance	ISO2 6H	ISO2 6H
Chamfer form	C (2-3)	C (2-3)
Hole type	1,5 x D	1,5 x D
Direction of cut	RH	RH
Through coolant	—	—

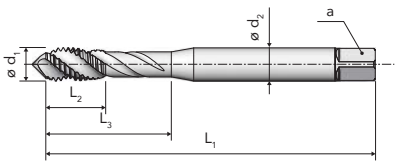
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A29 DIN 376 BRIGHT	A29 DIN 376 TiN		
M 5	0,8	70	14	-	3,5	2,7	3	4,2	•	•		
6	1	80	16	-	4,5	3,4	3	5	•	•		
8	1,25	90	18	-	6	4,9	3	6,8	•	•		
10	1,5	100	20	-	7	5,5	3	8,5	•	•		

€ p.13

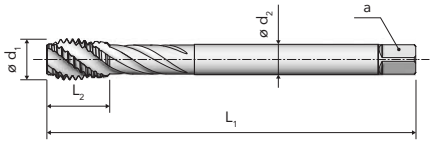
MACHINE TAPS for blind holes
40° spiral flutes / back tapered

R40 | 2,5 x D | HSSE

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A70 BRIGHT	A70 VAP	A70 TiN
P	P.1	• 12-15	• 12-15	• 25-30
	P.2	• 10-15	• 10-15	• 20-25
N	N.1	• 12-15	• 12-15	
	N.2	• 12-15	• 12-15	• 25-30
	N.5	• 10-12	• 10-12	
	N.6	• 10-12	• 10-12	• 20-25

	A70 BRIGHT	A70 VAP	A70 TiN
			
Tolerance	ISO2 6H	ISO2 6H	ISO2 6H
Chamfer form	C (2-3)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH
Through coolant	—	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A70 BRIGHT	A70 VAP	A70 TiN
M 2	0,4	45	6	12	2,8	2,1	3	1,6	•	•	•
2,5	0,45	50	6,5	15	2,8	2,1	3	2,05	•	•	•
3	0,5	56	7	15	3,5	2,7	3	2,5	•	•	•
4	0,7	63	8,5	21	4,5	3,4	3	3,3	•	•	•
5	0,8	70	10	24,5	6	4,9	3	4,2	•	•	•
6	1	80	12	29	6	4,9	3	5	•	•	•
8	1,25	90	15	33	8	6,2	3	6,8	•	•	•
10	1,5	100	17,5	38	10	8	3	8,5	•	•	•
12	1,75	110	18	-	9	7	4	10,2	•	•	•
14	2	110	20,5	-	11	9	4	12	•	•	•
16	2	110	20,5	-	12	9	4	14	•	•	•
18	2,5	125	25,5	-	14	11	4	15,5	•	•	•
20	2,5	140	29,5	-	16	12	4	17,5	•	•	•
22	2,5	140	29,5	-	18	14,5	4	19,5	•	•	•
24	3	160	35,5	-	18	14,5	4	21	•	•	•
27	3	160	37,5	-	20	16	4	24	•	•	•
30	3,5	180	42	-	22	18	4	26,5	•	•	•
33	3,5	180	43,5	-	25	20	4	29,5	•	•	•
36	4	200	47	-	28	22	4	32	•	•	•

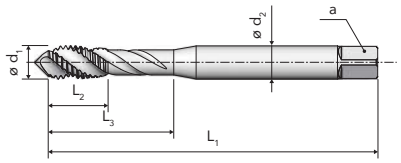
€ p.14

MACHINE TAPS for blind holes
40° spiral flutes / back tapered

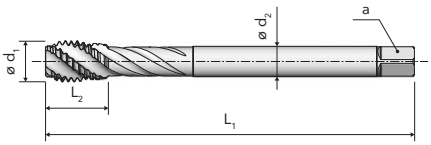
R40 | 2,5 x D | HSSE

A SERIES

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A70 6G BRIGHT	A70 6G VAP	A70 6G TiN
P	P.1	• 12-15	• 12-15	• 25-30
	P.2	• 10-15	• 10-15	• 20-25
N	N.1	• 12-15	• 12-15	
	N.2	• 12-15	• 12-15	• 25-30
	N.5	• 10-12	• 10-12	
	N.6	• 10-12	• 10-12	• 20-25

	A70 6G BRIGHT	A70 6G VAP	A70 6G TiN
			
Tolerance	ISO3 6G	ISO3 6G	ISO3 6G
Chamfer form	C (2-3)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH
Through coolant	—	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A70 6G BRIGHT	A70 6G VAP	A70 6G TiN
M 2	0,4	45	6	12	2,8	2,1	3	1,6	•	•	•
2,5	0,45	50	6,5	15	2,8	2,1	3	2,05	•	•	•
3	0,5	56	7	15	3,5	2,7	3	2,5	•	•	•
4	0,7	63	8,5	21	4,5	3,4	3	3,3	•	•	•
5	0,8	70	10	24,5	6	4,9	3	4,2	•	•	•
6	1	80	12	29	6	4,9	3	5	•	•	•
8	1,25	90	15	33	8	6,2	3	6,8	•	•	•
10	1,5	100	17,5	38	10	8	3	8,5	•	•	•
12	1,75	110	18	-	9	7	4	10,2	•	•	•

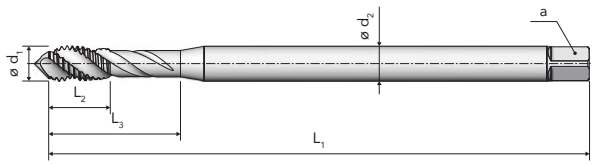
€ p.14

MACHINE TAPS for blind holes
40° spiral flutes / back tapered / long shank

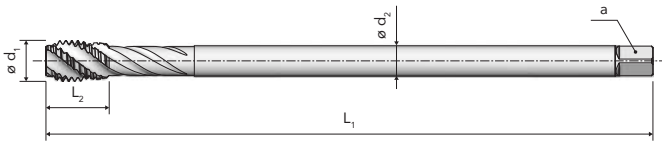
A70 L BRIGHT

A70 L TIN

VERGNANO STANDARD≤ M10



VERGNANO STANDARD≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A70 L BRIGHT	A70 L TIN		
P	P.1	• 12-15	• 25-30		
	P.2	• 10-15	• 20-25		
N	N.1	• 12-15			
	N.2	• 12-15	• 25-30		
	N.5	• 10-12			
	N.6	• 10-12	• 20-25		

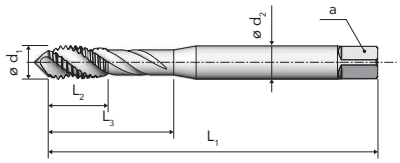
	A70 L BRIGHT	A70 L TIN
Tolerance	ISO2 6H	ISO2 6H
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A70 L BRIGHT	A70 L TIN		
M 3	0,5	112	7	15	3,5	2,7	3	2,5	•	•		
4	0,7	112	8,5	21	4,5	3,4	3	3,3	•	•		
5	0,8	125	10	24,5	6	4,9	3	4,2	•	•		
6	1	125	12	29	6	4,9	3	5	•	•		
8	1,25	140	15	33	8	6,2	3	6,8	•	•		
10	1,5	160	17,5	38	10	8	3	8,5	•	•		
12	1,75	180	18	-	9	7	4	10,2	•	•		
16	2	200	20,5	-	12	9	4	14	•	•		
20	2,5	225	29,5	-	16	12	4	17,5	•	•		

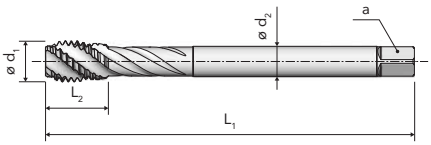
€ p.14

MACHINE TAPS for blind holes
40° spiral flutes / back tapered

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A70 K BRIGHT	A70 K TiN		
P	P.1	• 12-15	• 25-30		
	P.2	• 10-15	• 20-25		
	P.3	• 8-10	• 15-20		
K	K.2	• 8-10	• 15-20		
N	N.1	• 12-15			
	N.2	• 12-15	• 25-30		
	N.5	• 10-12			
	N.6	• 10-12	• 20-25		

	A70 K BRIGHT	A70 K TiN
		
Tolerance	ISO2 6H	ISO2 6H
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

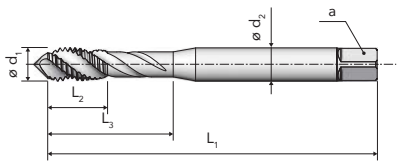
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A70 K BRIGHT	A70 K TiN
M 3	0,5	56	7	15	3,5	2,7	3	2,5	•	•
4	0,7	63	8,5	21	4,5	3,4	3	3,3	•	•
5	0,8	70	10	24,5	6	4,9	3	4,2	•	•
6	1	80	12	29	6	4,9	3	5	•	•
8	1,25	90	15	33	8	6,2	3	6,8	•	•
10	1,5	100	17,5	38	10	8	3	8,5	•	•
12	1,75	110	18	-	9	7	4	10,2	•	•
14	2	110	20,5	-	11	9	4	12	•	•
16	2	110	20,5	-	12	9	4	14	•	•
18	2,5	125	25,5	-	14	11	4	15,5	•	•
20	2,5	140	29,5	-	16	12	4	17,5	•	•

€ p.15

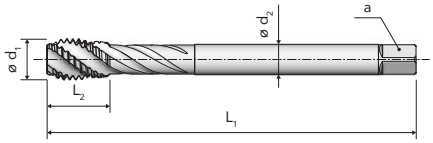
MACHINE TAPS for blind holes
40° spiral flutes / back tapered

R40 | 2,5 x D | HSSE

DIN 371≤ M10



DIN 376≥ M11



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A70 S BRIGHT	A70 S VAP	A70 S TiN	A70 S TiCN
P	P.3	• 12-15	• 12-15	• 20-25	• 20-25
	P.4	• 10-12	• 10-12	• 15-20	• 15-20
	P.5			• 5-10	• 5-10
	P.7			• 8-10	• 8-10
M	M.1			• 8-10	• 8-10
K	K.2	• 12-15	• 12-15	• 20-25	• 20-25
N	N.3	• 15-18	• 15-18	• 25-30	• 25-30
	N.6	• 15-18	• 15-18	• 25-30	• 25-30

	A70 S BRIGHT	A70 S VAP	A70 S TiN	A70 S TiCN
				
Tolerance	ISO2 6H	ISO2 6H	ISO2 6H	ISO2 6H
Chamfer form	C (2-3)	C (2-3)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH	RH
Through coolant	—	—	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A70 S BRIGHT	A70 S VAP	A70 S TiN	A70 S TiCN
M 2	0,4	45	6	12	2,8	2,1	3	1,6	•	•	•	•
2,5	0,45	50	6,5	15	2,8	2,1	3	2,05	•	•	•	•
3	0,5	56	7	15	3,5	2,7	3	2,5	•	•	•	•
3,5	0,6	56	8	18,5	4	3	3	2,9	•	•	•	•
4	0,7	63	8,5	21	4,5	3,4	3	3,3	•	•	•	•
5	0,8	70	10	24,5	6	4,9	3	4,2	•	•	•	•
6	1	80	12	29	6	4,9	3	5	•	•	•	•
7	1	80	12	29	7	5,5	3	6	•	•	•	•
8	1,25	90	15	33	8	6,2	3	6,8	•	•	•	•
9	1,25	90	15	33	9	7	3	7,8	•	•	•	•
10	1,5	100	17,5	38	10	8	3	8,5	•	•	•	•
11	1,5	100	17,5	-	8	6,2	3	9,5	•	•	•	•
12	1,75	110	18	-	9	7	4	10,2	•	•	•	•
14	2	110	20,5	-	11	9	4	12	•	•	•	•
16	2	110	20,5	-	12	9	4	14	•	•	•	•
18	2,5	125	25,5	-	14	11	4	15,5	•	•	•	•
20	2,5	140	29,5	-	16	12	4	17,5	•	•	•	•
22	2,5	140	29,5	-	18	14,5	4	19,5	•	•	•	•
24	3	160	35,5	-	18	14,5	4	21	•	•	•	•
27	3	160	37,5	-	20	16	5	24	•	•	•	•
30	3,5	180	42	-	22	18	5	26,5	•	•	•	•
33	3,5	180	43,5	-	25	20	5	29,5	•	•	•	
36	4	200	47	-	28	22	5	32	•	•	•	
42	4,5	200	55	-	32	24	6	37,5	•			
48	5	250	59,5	-	36	29	6	43	•			
52	5	250	59,5	-	40	32	6	47	•			

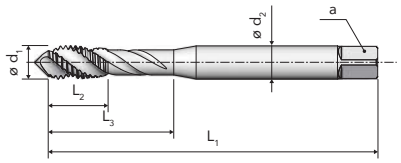
€ p.15

MACHINE TAPS for blind holes
40° spiral flutes / back tapered

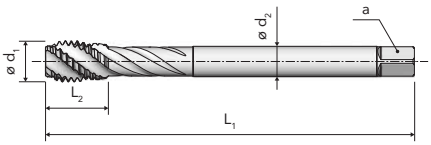
R40 | 2,5 x D | HSSE

A SERIES

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A70 S 4H BRIGHT	A70 S 4H TiN		
P	P.3	• 12-15	• 20-25		
	P.4	• 10-12	• 15-20		
	P.5		• 5-10		
	P.7		• 8-10		
M	M.1		• 8-10		
K	K.2	• 12-15	• 20-25		
N	N.3	• 15-18	• 25-30		
	N.6	• 15-18	• 25-30		

	A70 S 4H BRIGHT	A70 S 4H TiN
		
Tolerance	ISO1 4H	ISO1 4H
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A70 S 4H BRIGHT	A70 S 4H TiN
M 2	0,4	45	6	12	2,8	2,1	3	1,6	•	•
2,5	0,45	50	6,5	15	2,8	2,1	3	2,05	•	•
3	0,5	56	7	15	3,5	2,7	3	2,5	•	•
4	0,7	63	8,5	21	4,5	3,4	3	3,3	•	•
5	0,8	70	10	24,5	6	4,9	3	4,2	•	•
6	1	80	12	29	6	4,9	3	5	•	•
8	1,25	90	15	33	8	6,2	3	6,8	•	•
10	1,5	100	17,5	38	10	8	3	8,5	•	•
12	1,75	110	18	-	9	7	4	10,2	•	•

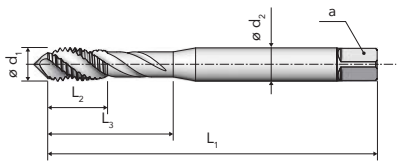
€ p.16

MACHINE TAPS for blind holes
40° spiral flutes / back tapered

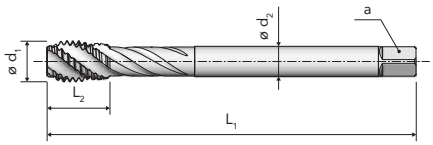
R40 | 2,5 x D | HSSE

A70 S 6G BRIGHT | **A70 S 6G** TiN

DIN 371≤ M10



DIN 376≥ M12




APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A70 S 6G BRIGHT	A70 S 6G TiN		
P	P.3	• 12-15	• 20-25		
	P.4	• 10-12	• 15-20		
	P.5		• 5-10		
	P.7		• 8-10		
M	M.1		• 8-10		
K	K.2	• 12-15	• 20-25		
N	N.3	• 15-18	• 25-30		
	N.6	• 15-18	• 25-30		

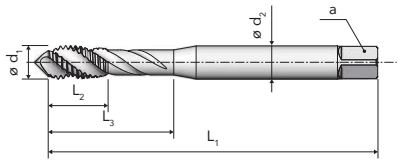
	A70 S 6G BRIGHT	A70 S 6G TiN
Tolerance	ISO3 6G	ISO3 6G
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A70 S 6G BRIGHT	A70 S 6G TiN		
M 3	0,5	56	7	15	3,5	2,7	3	2,5	•	•		
4	0,7	63	8,5	21	4,5	3,4	3	3,3	•	•		
5	0,8	70	10	24,5	6	4,9	3	4,2	•	•		
6	1	80	12	29	6	4,9	3	5	•	•		
8	1,25	90	15	33	8	6,2	3	6,8	•	•		
10	1,5	100	17,5	38	10	8	3	8,5	•	•		
12	1,75	110	18	-	9	7	4	10,2	•	•		
14	2	110	20,5	-	11	9	4	12	•	•		
16	2	110	20,5	-	12	9	4	14	•	•		

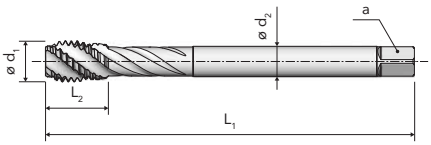
€ p.16

MACHINE TAPS for blind holes
40° spiral flutes / back tapered

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A70 S 7G BRIGHT	A70 S 7G TiN		
P	P.3	• 12-15	• 20-25		
	P.4	• 10-12	• 15-20		
	P.5		• 5-10		
	P.7		• 8-10		
M	M.1		• 8-10		
K	K.2	• 12-15	• 20-25		
N	N.3	• 15-18	• 25-30		
	N.6	• 15-18	• 25-30		

	A70 S 7G BRIGHT	A70 S 7G TiN
		
Tolerance	7G	7G
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

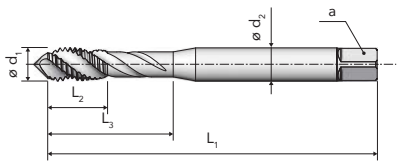
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A70 S 7G BRIGHT	A70 S 7G TiN
M 3	0,5	56	7	15	3,5	2,7	3	2,5	•	•
4	0,7	63	8,5	21	4,5	3,4	3	3,3	•	•
5	0,8	70	10	24,5	6	4,9	3	4,2	•	•
6	1	80	12	29	6	4,9	3	5	•	•
8	1,25	90	15	33	8	6,2	3	6,8	•	•
10	1,5	100	17,5	38	10	8	3	8,5	•	•
12	1,75	110	18	-	9	7	4	10,2	•	•
14	2	110	20,5	-	11	9	4	12	•	•
16	2	110	20,5	-	12	9	4	14	•	•

€ p.16

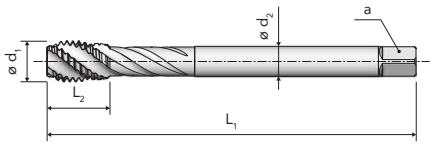
MACHINE TAPS for blind holes
40° spiral flutes / back tapered

R40 | 2,5 x D | HSSE

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A701 S BRIGHT	A701 S TiN		
P	P.3	• 12-15	• 20-25		
	P.4	• 10-12	• 15-20		
	P.5		• 5-10		
	P.7		• 8-10		
M	M.1		• 8-10		
K	K.2	• 12-15	• 20-25		
N	N.3	• 15-18	• 25-30		
	N.6	• 15-18	• 25-30		

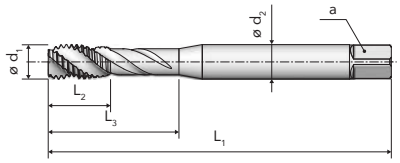
	A701 S BRIGHT	A701 S TiN
		
Tolerance	6H +0,1 mm	6H +0,1 mm
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

	Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A701 S BRIGHT	A701 S TiN		
NEW	M 4	0,7	63	8,5	21	4,5	3,4	3	3,3	•	•		
	5	0,8	70	10	24,5	6	4,9	3	4,2	•	•		
	6	1	80	12	29	6	4,9	3	5	•	•		
	8	1,25	90	15	33	8	6,2	3	6,8	•	•		
	10	1,5	100	17,5	38	10	8	3	8,5	•	•		
	12	1,75	110	18	-	9	7	4	10,2	•	•		
	14	2	110	20,5	-	11	9	4	12	•	•		
	16	2	110	20,5	-	12	9	4	14	•	•		

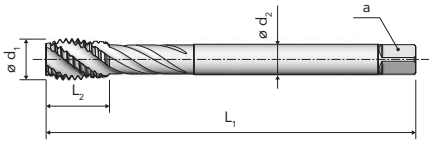
€ p.16

MACHINE TAPS **for blind holes**
40° spiral flutes / back tapered / chamfer form E

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A70 SE BRIGHT	A70 SE TiN		
P	P.3	• 12-15	• 20-25		
	P.4	• 10-12	• 15-20		
	P.5		• 5-10		
	P.7		• 8-10		
M	M.1		• 8-10		
K	K.2	• 12-15	• 20-25		
N	N.3	• 15-18	• 25-30		
	N.6	• 15-18	• 25-30		

	A70 SE BRIGHT	A70 SE TiN
		
Tolerance	ISO2 6H	ISO2 6H
Chamfer form	E(1,5-2)	E(1,5-2)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A70 SE BRIGHT	A70 SE TiN
M 3	0,5	56	7	15	3,5	2,7	3	2,5	•	•
4	0,7	63	8,5	21	4,5	3,4	3	3,3	•	•
5	0,8	70	10	24,5	6	4,9	3	4,2	•	•
6	1	80	12	29	6	4,9	3	5	•	•
8	1,25	90	15	33	8	6,2	3	6,8	•	•
10	1,5	100	17,5	38	10	8	3	8,5	•	•
12	1,75	110	18	-	9	7	4	10,2	•	•
16	2	110	20,5	-	12	9	4	14	•	•

€ p.16

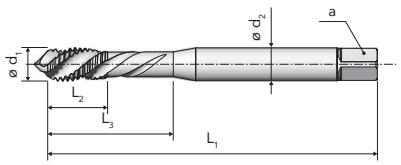
MACHINE TAPS **for blind holes**
40° spiral flutes / back tapered

R40 | 2,5 x D | HSSE | LH

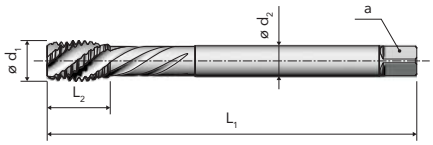
NEW A70 S LH BRIGHT

NEW A70 S LH TiN

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A70 S LH BRIGHT	A70 S LH TiN		
P	P.3	• 12-15	• 20-25		
	P.4	• 10-12	• 15-20		
	P.5		• 5-10		
	P.7		• 8-10		
M	M.1		• 8-10		
K	K.2	• 12-15	• 20-25		
N	N.3	• 15-18	• 25-30		
	N.6	• 15-18	• 25-30		

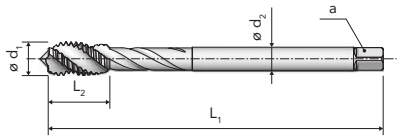
	A70 S LH BRIGHT	A70 S LH TiN
Tolerance	ISO2 6H	ISO2 6H
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	LH	LH
Through coolant	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A70 S LH BRIGHT	A70 S LH TiN		
M 3	0,5	56	7	15	3,5	2,7	3	2,5	•	•		
4	0,7	63	8,5	21	4,5	3,4	3	3,3	•	•		
5	0,8	70	10	24,5	6	4,9	3	4,2	•	•		
6	1	80	12	29	6	4,9	3	5	•	•		
8	1,25	90	15	33	8	6,2	3	6,8	•	•		
10	1,5	100	17,5	38	10	8	3	8,5	•	•		
12	1,75	110	18	-	9	7	4	10,2	•	•		
16	2	110	20,5	-	12	9	4	14	•	•		
20	2,5	140	29,5	-	16	12	4	17,5	•	•		

€ p.17

MACHINE TAPS **for blind holes**
40° spiral flutes / back tapered / through shank

DIN 376



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A76 S BRIGHT	A76 S TiN		
P	P.3	• 12-15	• 20-25		
	P.4	• 10-12	• 15-20		
	P.5		• 5-10		
	P.7		• 8-10		
M	M.1		• 8-10		
K	K.2	• 12-15	• 20-25		
N	N.3	• 15-18	• 25-30		
	N.6	• 15-18	• 25-30		

	A76 S BRIGHT	A76 S TiN
Tolerance	ISO2 6H	ISO2 6H
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

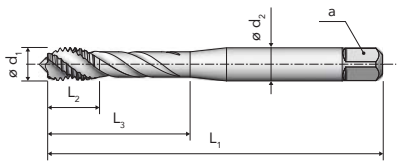
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A76 S BRIGHT	A76 S TiN		
M 4	0,7	63	8,5	-	2,8	2,1	3	3,3	•	•		
5	0,8	70	10	-	3,5	2,7	3	4,2	•	•		
6	1	80	12	-	4,5	3,4	3	5	•	•		
8	1,25	90	15	-	6	4,9	3	6,8	•	•		
10	1,5	100	17,5	-	7	5,5	3	8,5	•	•		

€ p.17

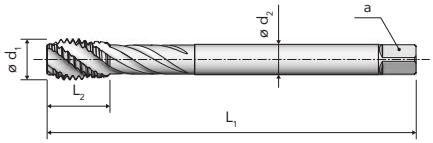
MACHINE TAPS for blind holes
40° spiral flutes / back tapered

R40 | 2,5 x D | HSSE

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A120 BRIGHT	A120 VAP	A120 TiN
P	P.3	• 12-15	• 12-15	• 20-25
	P.4	• 10-12	• 10-12	• 15-20
	P.5			• 5-10
	P.7			• 8-10
M	M.1			• 8-10
K	K.2	• 12-15	• 12-15	• 20-25
N	N.3	• 15-18	• 15-18	• 25-30
	N.6	• 15-18	• 15-18	• 25-30

	A120 BRIGHT	A120 VAP	A120 TiN
			
Tolerance	ISO2 6H	ISO2 6H	ISO2 6H
Chamfer form	C (2-3)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH
Through coolant	—	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A120 BRIGHT	A120 VAP	A120 TiN
M 2	0,4	45	5	14	2,8	2,1	3	1,6	•	•	•
2,5	0,45	50	5	18	2,8	2,1	3	2,05	•	•	•
3	0,5	56	5	21	3,5	2,7	3	2,5	•	•	•
4	0,7	63	5	27	4,5	3,4	3	3,3	•	•	•
5	0,8	70	6,5	30	6	4,9	3	4,2	•	•	•
6	1	80	7	34,5	6	4,9	3	5	•	•	•
8	1,25	90	9	38,5	8	6,2	3	6,8	•	•	•
10	1,5	100	11	43	10	8	3	8,5	•	•	•
12	1,75	110	13	-	9	7	3	10,2	•	•	•
14	2	110	16,5	-	11	9	3	12	•	•	•
16	2	110	19,5	-	12	9	3	14	•	•	•
18	2,5	125	24	-	14	11	3	15,5	•	•	•
20	2,5	140	25,5	-	16	12	3	17,5	•	•	•
22	2,5	140	25,5	-	18	14,5	3	19,5	•	•	•
24	3	160	32	-	18	14,5	3	21	•	•	•

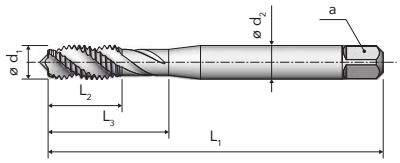
€ p.17

MACHINE TAPS for blind holes
40° spiral flutes / for stainless steel

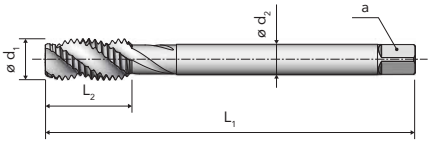
R40 | 2,5 x D | HSSE

A SERIES

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A170 VAP	A170 TiX2		
P	P.7	• 6-8	• 8-10		
M	M.1	• 6-8	• 8-10		
	M.2		• 5-7		

	A170 VAP	A170 TiX2
		
Tolerance	ISO2 6H	ISO2 6H
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A170 VAP	A170 TiX2
M 3	0,5	56	10	18	3,5	2,7	3	2,5	•	•
4	0,7	63	12	21	4,5	3,4	3	3,3	•	•
5	0,8	70	14	24,5	6	4,9	3	4,2	•	•
6	1	80	16	29	6	4,9	3	5	•	•
8	1,25	90	18	33	8	6,2	3	6,8	•	•
10	1,5	100	20	36	10	8	3	8,5	•	•
12	1,75	110	24	-	9	7	3	10,2	•	•
14	2	110	25	-	11	9	4	12	•	•
16	2	110	28	-	12	9	4	14	•	•
18	2,5	125	32	-	14	11	4	15,5	•	•
20	2,5	140	32	-	16	12	4	17,5	•	•

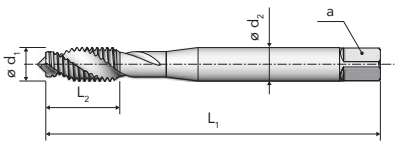
€ p.18

MACHINE TAPS **for blind holes**
Two 40° spiral flutes / for light alloys

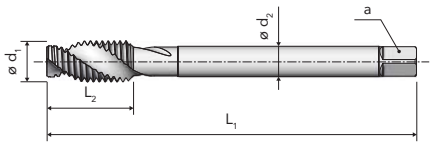
R40 z2 | 2,5 x D | HSSE

A SERIES

DIN 371≤ M10



DIN 376≥ M11



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A62 BRIGHT	A62 TiH1		
N	N.1-2	• 12-15	• 25-30		
	N.5-6	• 10-12	• 20-25		
S	S.1	• 6-8	• 10-12		
	S.3	• 6-8	• 10-12		

	A62 BRIGHT	A62 TiH1
		
Tolerance	ISO2 6H	ISO2 6H
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

	Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A62 BRIGHT	A62 TiH1
	M 2	0,4	45	7	11	2,8	2,1	2	1,6	•	•
	2,2	0,45	45	8	13	2,8	2,1	2	1,75	•	•
	2,3	0,4	45	8	13	2,8	2,1	2	1,9	•	•
	2,5	0,45	50	9	15	2,8	2,1	2	2,05	•	•
	2,6	0,45	50	9	15	2,8	2,1	2	2,1	•	•
	3	0,5	56	10	18	3,5	2,7	2	2,5	•	•
	3,5	0,6	56	11	20	4	3	2	2,9	•	•
	4	0,7	63	12	21	4,5	3,4	2	3,3	•	•
	5	0,8	70	14	24,5	6	4,9	2	4,2	•	•
	6	1	80	16	29	6	4,9	2	5	•	•
	7	1	80	16	29	7	5,5	2	6	•	•
	8	1,25	90	18	33	8	6,2	2	6,8	•	•
	9	1,25	90	18	33	9	7	2	7,8	•	•
	10	1,5	100	20	36	10	8	2	8,5	•	•
	11	1,5	100	20	-	8	6,2	2	9,5	•	•
	12	1,75	110	24	-	9	7	2	10,2	•	•
	14	2	110	25	-	11	9	2	12	•	•
NEW	**16**	2	110	28	-	12	9	3	14	•	•

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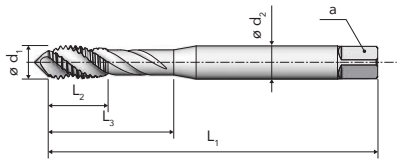
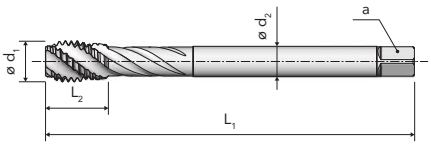
MACHINE TAPS **for blind holes**

40° spiral flutes / back tapered / for light alloys

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A72 BRIGHT	A72 TiH1		
P	P.1	• 12-15	• 25-30		
N	N.1-2	• 12-15	• 25-30		
	N.3	• 10-12	• 20-25		
	N.5	• 10-12	• 20-25		
	N.6	• 10-12	• 20-25		

	A72 BRIGHT	A72 TiH1
		
Tolerance	ISO2 6H	ISO2 6H
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A72 BRIGHT	A72 TiH1
M 3	0,5	56	7	15	3,5	2,7	3	2,5	•	•
4	0,7	63	8,5	21	4,5	3,4	3	3,3	•	•
5	0,8	70	10	24,5	6	4,9	3	4,2	•	•
6	1	80	12	29	6	4,9	3	5	•	•
8	1,25	90	15	33	8	6,2	3	6,8	•	•
10	1,5	100	17,5	38	10	8	3	8,5	•	•
12	1,75	110	18	-	9	7	3	10,2	•	•
14	2	110	20,5	-	11	9	3	12	•	•
16	2	110	20,5	-	12	9	3	14	•	•
18	2,5	125	25,5	-	14	11	3	15,5	•	•
20	2,5	140	29,5	-	16	12	3	17,5	•	•

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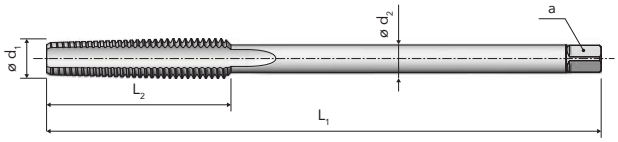
MACHINE NUT TAPS
Straight flutes

HSSE

A9
BRIGHT

DIN 357



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A9 BRIGHT			
P	P.1	• 18-20			
	P.2	• 15-18			
	P.3	• 12-15			

Tolerance — ISO2 6H

Chamfer form —

Hole type

Direction of cut — RH

Through coolant —

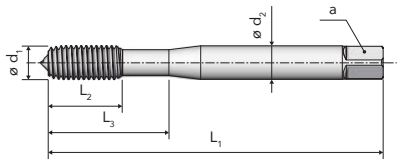
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A9 BRIGHT
M 4	0,7	90	25	-	2,8	2,1	3	3,3	•
5	0,8	100	28	-	3,5	2,7	3	4,2	•
6	1	110	32	-	4,5	3,4	3	5	•
8	1,25	125	40	-	6	4,9	3	6,8	•
10	1,5	140	45	-	7	5,5	3	8,5	•
12	1,75	180	50	-	9	7	3	10,2	•
14	2	200	56	-	11	9	3	12	•
16	2	200	63	-	12	9	3	14	•
18	2,5	220	63	-	14	11	3	15,5	•
20	2,5	250	70	-	16	12	3	17,5	•
22	2,5	280	80	-	18	14,5	3	19,5	•
24	3	280	80	-	18	14,5	3	21	•
27	3	315	90	-	20	16	3	24	•
30	3,5	315	100	-	22	18	3	26,5	•

€ p.19

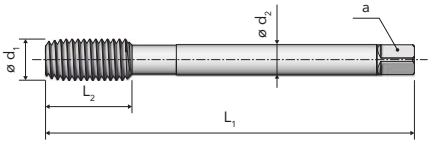
COLD FORMING TAPS for blind holes and through holes
Without oil grooves

A SERIES

DIN 2174 (371)≤ M10



DIN 2174 (376)≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A80 VAP	A80 TiN	A80 TiCN
P	P.1-2	• 20-25	• 40-45	• 40-45
	P.3	• 15-20	• 35-40	• 35-40
N	N.1	• 20-25	• 40-45	• 40-45
	N.2		• 40-45	• 40-45
	N.3		• 35-40	• 35-40
	N.5	• 20-25	• 40-45	• 40-45
	N.6		• 40-45	• 40-45

	A80 VAP	A80 TiN	A80 TiCN
			
Tolerance	6HX	6HX	6HX
Chamfer form	C (2-3)	C (2-3)	C (2-3)
Hole type	1,5 x D	1,5 x D	1,5 x D
Direction of cut	RH	RH	RH
Through coolant	—	—	—

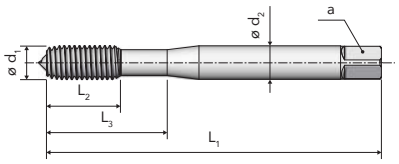
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A80 VAP	A80 TiN	A80 TiCN
M 2	0,4	45	7	11	2,8	2,1	3	1,85	•	•	•
2,5	0,45	50	9	15	2,8	2,1	3	2,3	•	•	•
3	0,5	56	10	18	3,5	2,7	4	2,8	•	•	•
3,5	0,6	56	11	20	4	3	4	3,25	•	•	•
4	0,7	63	12	21	4,5	3,4	5	3,7	•	•	•
5	0,8	70	14	24,5	6	4,9	5	4,65	•	•	•
6	1	80	16	29	6	4,9	5	5,55	•	•	•
8	1,25	90	18	33	8	6,2	5	7,4	•	•	•
10	1,5	100	20	36	10	8	5	9,3	•	•	•
12	1,75	110	24	-	9	7	5	11,2	•	•	•
14	2	110	25	-	11	9	6	13,1	•	•	•
16	2	110	28	-	12	9	6	15,1	•	•	•

€ p.19

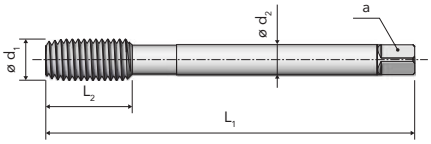
COLD FORMING TAPS for blind holes and through holes
Without oil grooves

1,5 x D | HSSE

DIN 2174 (371)≤ M10



DIN 2174 (376)≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A80 6GX VAP	A80 6GX TiN	A80 6GX TiCN
P	P.1-2	• 20-25	• 40-45	• 40-45
	P.3	• 15-20	• 35-40	• 35-40
N	N.1	• 20-25	• 40-45	• 40-45
	N.2		• 40-45	• 40-45
	N.3		• 35-40	• 35-40
	N.5	• 20-25	• 40-45	• 40-45
	N.6		• 40-45	• 40-45

	A80 6GX VAP	A80 6GX TiN	A80 6GX TiCN
			
Tolerance	6GX	6GX	6GX
Chamfer form	C (2-3)	C (2-3)	C (2-3)
Hole type	1,5 x D	1,5 x D	1,5 x D
Direction of cut	RH	RH	RH
Through coolant	—	—	—

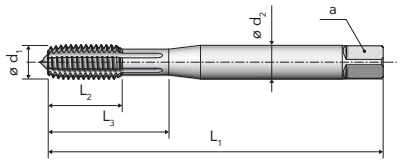
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A80 6GX VAP	A80 6GX TiN	A80 6GX TiCN
M 2	0,4	45	7	11	2,8	2,1	3	1,85	•	•	•
2,5	0,45	50	9	15	2,8	2,1	3	2,3	•	•	•
3	0,5	56	10	18	3,5	2,7	4	2,8	•	•	•
3,5	0,6	56	11	20	4	3	4	3,25	•	•	•
4	0,7	63	12	21	4,5	3,4	5	3,7	•	•	•
5	0,8	70	14	24,5	6	4,9	5	4,65	•	•	•
6	1	80	16	29	6	4,9	5	5,55	•	•	•
8	1,25	90	18	33	8	6,2	5	7,4	•	•	•
10	1,5	100	20	36	10	8	5	9,3	•	•	•
12	1,75	110	24	-	9	7	5	11,2	•	•	•
14	2	110	25	-	11	9	6	13,1	•	•	•
16	2	110	28	-	12	9	6	15,1	•	•	•

€ p.19

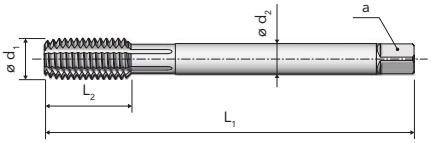
COLD FORMING TAPS for blind holes and through holes
With oil grooves

A SERIES

DIN 2174 (371)≤ M10



DIN 2174 (376)≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A80 N VAP	A80 N TiN	A80 N TiCN
P	P.1-2	• 20-25	• 40-45	• 40-45
	P.3	• 15-20	• 35-40	• 35-40
N	N.1	• 20-25	• 40-45	• 40-45
	N.2		• 40-45	• 40-45
	N.3		• 35-40	• 35-40
	N.5	• 20-25	• 40-45	• 40-45
	N.6		• 40-45	• 40-45

	A80 N VAP	A80 N TiN	A80 N TiCN
			
Tolerance	6HX	6HX	6HX
Chamfer form	C (2-3)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH
Through coolant	—	—	—

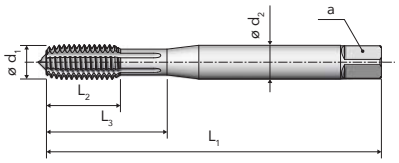
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A80 N VAP	A80 N TiN	A80 N TiCN
M 2	0,4	45	7	11	2,8	2,1	3	1,85	•	•	•
2,5	0,45	50	9	15	2,8	2,1	3	2,3	•	•	•
3	0,5	56	10	18	3,5	2,7	4	2,8	•	•	•
3,5	0,6	56	11	20	4	3	4	3,25	•	•	•
4	0,7	63	12	21	4,5	3,4	5	3,7	•	•	•
5	0,8	70	14	24,5	6	4,9	5	4,65	•	•	•
6	1	80	16	29	6	4,9	5	5,55	•	•	•
8	1,25	90	18	33	8	6,2	5	7,4	•	•	•
10	1,5	100	20	36	10	8	5	9,3	•	•	•
12	1,75	110	24	-	9	7	5	11,2	•	•	•
14	2	110	25	-	11	9	6	13,1	•	•	•
16	2	110	28	-	12	9	6	15,1	•	•	•
18	2,5	125	28	-	14	11	8	16,9	•	•	•
20	2,5	140	30	-	16	12	8	18,9	•	•	•

€ p.20

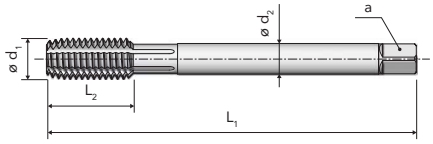
COLD FORMING TAPS for blind holes and through holes
With oil grooves

2,5 x D | HSSE

DIN 2174 (371)≤ M10



DIN 2174 (376)≤ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A80 N 6GX VAP	A80 N 6GX TiN	A80 N 6GX TiCN
P	P.1-2	• 20-25	• 40-45	• 40-45
	P.3	• 15-20	• 35-40	• 35-40
N	N.1	• 20-25	• 40-45	• 40-45
	N.2		• 40-45	• 40-45
	N.3		• 35-40	• 35-40
	N.5	• 20-25	• 40-45	• 40-45
	N.6		• 40-45	• 40-45

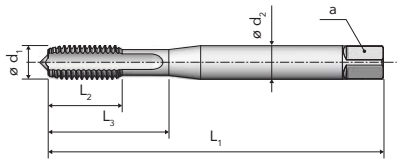
	A80 N 6GX VAP	A80 N 6GX TiN	A80 N 6GX TiCN
			
Tolerance	6GX	6GX	6GX
Chamfer form	C (2-3)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH
Through coolant	—	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A80 N 6GX VAP	A80 N 6GX TiN	A80 N 6GX TiCN
M 2	0,4	45	7	11	2,8	2,1	3	1,85	•	•	•
2,5	0,45	50	9	15	2,8	2,1	3	2,3	•	•	•
3	0,5	56	10	18	3,5	2,7	4	2,8	•	•	•
3,5	0,6	56	11	20	4	3	4	3,25	•	•	•
4	0,7	63	12	21	4,5	3,4	5	3,7	•	•	•
5	0,8	70	14	24,5	6	4,9	5	4,65	•	•	•
6	1	80	16	29	6	4,9	5	5,55	•	•	•
8	1,25	90	18	33	8	6,2	5	7,4	•	•	•
10	1,5	100	20	36	10	8	5	9,3	•	•	•
12	1,75	110	24	-	9	7	5	11,2	•	•	•
14	2	110	25	-	11	9	6	13,1	•	•	•
16	2	110	28	-	12	9	6	15,1	•	•	•

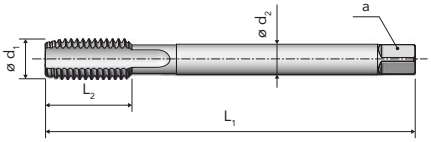
€ p.20

MACHINE TAPS for blind holes and through holes
Straight flutes / for wire thread inserts

DIN 40435≤ EG-M8



DIN 40435≥ EG-M10



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A190 BRIGHT			
P	P.2	• 10-12			
	P.3	• 8-10			
K	K.2	• 8-10			

	A190 BRIGHT
	
Tolerance	6H mod
Chamfer form	C (2-3)
Hole type	1,5 x D
Direction of cut	RH
Through coolant	—

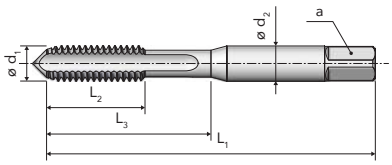
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A190 BRIGHT
EG-M 3	0,5	63	12	17	4,5	3,4	3	3,15	•
4	0,7	70	14	24,5	6	4,9	3	4,2	•
5	0,8	80	16	29	6	4,9	3	5,25	•
6	1	90	18	33	8	6,2	3	6,3	•
8	1,25	100	20	36	10	8	3	8,4	•
10	1,5	100	22	-	9	7	3	10,5	•
12	1,75	110	25	-	11	9	3	12,5	•
14	2	110	28	-	12	9	3	14,5	•
16	2	125	28	-	14	11	4	16,5	•

€ p.20

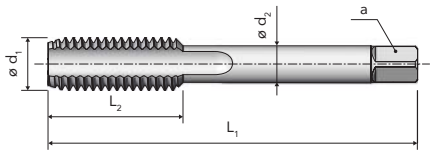
HAND TAPS for blind holes and through holes
In sets of two pieces

2,5 x D | HSS

DIN 2181≤ M6



DIN 2181≥ M7



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A2 ROUGHING	A2 FINISHING	A2 SET	
P	P.1-4	•	•	•	
	P.7	•	•	•	
K	K.2	•	•	•	
N	N.1-3	•	•	•	
	N.5-7	•	•	•	

	A2 ROUGHING	A2 FINISHING	A2 SET
			
Tolerance	—	ISO2 6H	ISO2 6H
Chamfer form	A (5-6)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH
Through coolant	—	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A2 ROUGHING	A2 FINISHING	A2 SET	
M 2	0,25	36	7,5	12	2,8	2,1	3	1,75	•	•	•	
2,3	0,25	36	8,5	13,5	2,8	2,1	3	2,05	•	•	•	
2,5	0,35	40	8,5	14,5	2,8	2,1	3	2,15	•	•	•	
2,6	0,35	40	8,5	14,5	2,8	2,1	3	2,25	•	•	•	
3	0,35	40	8	18	3,5	2,7	3	2,65	•	•	•	
3,5	0,35	45	9	19	4	3	3	3,15	•	•	•	
4	0,5	45	10	21	4,5	3,4	3	3,5	•	•	•	
4,5	0,5	50	12	23	6	4,9	3	4	•	•	•	
5	0,5	50	12	24	6	4,9	3	4,5	•	•	•	
6	0,5	56	14	28	6	4,9	3	5,5	•	•	•	
6	0,75	56	14	28	6	4,9	3	5,2	•	•	•	
7	0,75	56	14	-	6	4,9	3	6,2	•	•	•	
8	0,75	56	18	-	6	4,9	3	7,2	•	•	•	
8	1	63	22	-	6	4,9	3	7	•	•	•	
9	1	63	22	-	7	5,5	3	8	•	•	•	
10	0,75	63	20	-	7	5,5	4	9,2	•	•	•	
10	1	63	20	-	7	5,5	4	9	•	•	•	
10	1,25	70	24	-	7	5,5	3	8,8	•	•	•	
11	1	63	20	-	8	6,2	4	10	•	•	•	
12	0,75	70	22	-	9	7	4	11,2	•	•	•	
12	1	70	22	-	9	7	4	11	•	•	•	
12	1,25	70	22	-	9	7	4	10,8	•	•	•	
12	1,5	70	22	-	9	7	4	10,5	•	•	•	
14	1	70	22	-	11	9	4	13	•	•	•	
14	1,25	70	22	-	11	9	4	12,8	•	•	•	
14	1,5	70	22	-	11	9	4	12,5	•	•	•	

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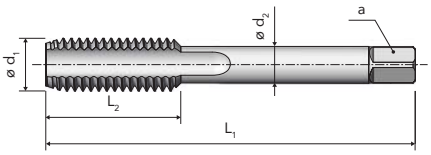
HAND TAPS for blind holes and through holes
In sets of two pieces

DIN 2181



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A2 ROUGHING	A2 FINISHING	A2 SET	
P	P.1-4	•	•	•	
	P.7	•	•	•	
K	K.2	•	•	•	
N	N.1-3	•	•	•	
	N.5-7	•	•	•	

	A2 ROUGHING	A2 FINISHING	A2 SET
			
Tolerance	—	ISO2 6H	ISO2 6H
Chamfer form	A (5-6)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH
Through coolant	—	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A2 ROUGHING	A2 FINISHING	A2 SET
M 15	1	70	22	-	12	9	4	14	•	•	•
15	1,5	70	22	-	12	9	4	13,5	•	•	•
16	1	70	22	-	12	9	4	15	•	•	•
16	1,25	70	22	-	12	9	4	14,8	•	•	•
16	1,5	70	22	-	12	9	4	14,5	•	•	•
18	1	80	22	-	14	11	4	17	•	•	•
18	1,5	80	22	-	14	11	4	16,5	•	•	•
18	2	80	22	-	14	11	4	16	•	•	•
20	1	80	22	-	16	12	4	19	•	•	•
20	1,5	80	22	-	16	12	4	18,5	•	•	•
20	2	80	22	-	16	12	4	18	•	•	•
22	1	80	22	-	18	14,5	4	21	•	•	•
22	1,5	80	22	-	18	14,5	4	20,5	•	•	•
22	2	80	22	-	18	14,5	4	20	•	•	•
24	1	90	22	-	18	14,5	4	23	•	•	•
24	1,5	90	22	-	18	14,5	4	22,5	•	•	•
24	2	90	22	-	18	14,5	4	22	•	•	•
25	1,5	90	22	-	18	14,5	4	23,5	•	•	•
25	2	90	22	-	18	14,5	4	23	•	•	•
26	1,5	90	22	-	18	14,5	4	24,5	•	•	•
26	2	90	22	-	18	14,5	4	24	•	•	•
27	1,5	90	22	-	20	16	4	25,5	•	•	•
27	2	90	22	-	20	16	4	25	•	•	•
28	1,5	90	22	-	20	16	4	26,5	•	•	•
28	2	90	22	-	20	16	4	26	•	•	•
30	1,5	90	22	-	22	18	4	28,5	•	•	•

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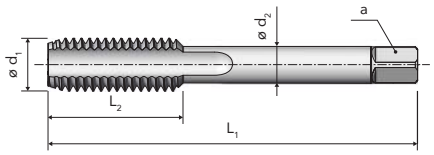
HAND TAPS for blind holes and through holes
In sets of two pieces

2,5 x D | HSS

DIN 2181



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A2 ROUGHING	A2 FINISHING	A2 SET	
P	P.1-4	•	•	•	
	P.7	•	•	•	
K	K.2	•	•	•	
N	N.1-3	•	•	•	
	N.5-7	•	•	•	

	A2 ROUGHING	A2 FINISHING	A2 SET
Tolerance	—	ISO2 6H	ISO2 6H
Chamfer form	A (5-6)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH
Through coolant	—	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A2 ROUGHING	A2 FINISHING	A2 SET	
M 30	2	90	22	-	22	18	4	28	•	•	•	
32	1,5	90	22	-	22	18	5	30,5	•	•	•	
32	2	90	22	-	22	18	4	30	•	•	•	
33	2	100	25	-	25	20	4	31	•	•	•	
35	1,5	100	25	-	28	22	5	33,5	•	•	•	
35	2	125	30	-	28	22	5	33	•	•	•	
36	1,5	100	25	-	28	22	5	34,5	•	•	•	
36	2	125	30	-	28	22	5	34	•	•	•	
36	3	125	40	-	28	22	4	33	•	•	•	
38	1,5	100	25	-	28	22	5	36,5	•	•	•	
39	2	125	32	-	32	24	5	37	•	•	•	
39	3	125	40	-	32	24	4	36	•	•	•	
40	1,5	110	25	-	32	24	6	38,5	•	•	•	
40	2	125	32	-	32	24	5	38	•	•	•	
40	3	125	40	-	32	24	4	37	•	•	•	
42	1,5	110	25	-	32	24	6	40,5	•	•	•	
42	2	125	32	-	32	24	5	40	•	•	•	
42	3	125	40	-	32	24	4	39	•	•	•	
45	1,5	110	25	-	36	29	6	43,5	•	•	•	
45	2	125	32	-	36	29	5	43	•	•	•	
45	3	125	40	-	36	29	5	42	•	•	•	
48	1,5	140	25	-	36	29	6	46,5	•	•	•	
48	2	140	32	-	36	29	6	46	•	•	•	
48	3	140	40	-	36	29	5	45	•	•	•	

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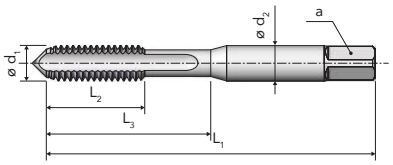
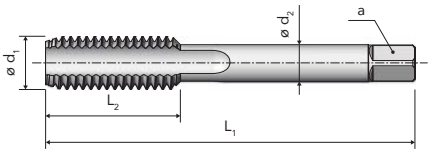
HAND TAPS for blind holes and through holes
In sets of two pieces

DIN 2181≤ M6



DIN 2181≥ M8



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A2 LH ROUGHING	A2 LH FINISHING	A2 LH SET	
P	P.1-4	•	•	•	
	P.7	•	•	•	
K	K.2	•	•	•	
N	N.1-3	•	•	•	
	N.5-7	•	•	•	

	A2 LH ROUGHING	A2 LH FINISHING	A2 LH SET
			
Tolerance	—	ISO2 6H	ISO2 6H
Chamfer form	A (5-6)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D
Direction of cut	LH	LH	LH
Through coolant	—	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A2 LH ROUGHING	A2 LH FINISHING	A2 LH SET
M 4	0,5	45	10	21	4,5	3,4	3	3,5	•	•	•
5	0,5	50	12	24	6	4,9	3	4,5	•	•	•
6	0,75	56	14	28	6	4,9	3	5,2	•	•	•
8	1	63	22	-	6	4,9	3	7	•	•	•
10	1	63	20	-	7	5,5	4	9	•	•	•
10	1,25	70	24	-	7	5,5	3	8,8	•	•	•
11	1	63	20	-	8	6,2	4	10	•	•	•
12	1	70	22	-	9	7	4	11	•	•	•
12	1,25	70	22	-	9	7	4	10,8	•	•	•
12	1,5	70	22	-	9	7	4	10,5	•	•	•
14	1,5	70	22	-	11	9	4	12,5	•	•	•
16	1,5	70	22	-	12	9	4	14,5	•	•	•
18	1,5	80	22	-	14	11	4	16,5	•	•	•
20	1,5	80	22	-	16	12	4	18,5	•	•	•

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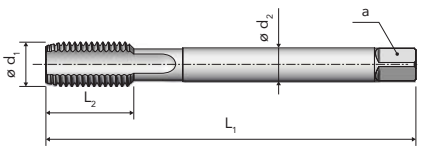
MACHINE TAPS for blind holes
Straight flutes

1,5 x D | HSSE

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A23 FC BRIGHT	A23 FC TiN	A23 FC LH BRIGHT	
P	P.1		• 20-25		
	P.2	• 10-12	• 15-20	• 10-12	
	P.3	• 8-10	• 12-15	• 8-10	
K	K.2	• 8-10	• 12-15	• 8-10	
N	N.1		• 20-25		
	N.5		• 15-20		

	A23 FC BRIGHT	A23 FC TiN	A23 FC LH BRIGHT
			
Tolerance	ISO2 6H	ISO2 6H	ISO2 6H
Chamfer form	C (2-3)	C (2-3)	C (2-3)
Hole type	1,5 x D	1,5 x D	1,5 x D
Direction of cut	RH	RH	LH
Through coolant	—	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A23 FC BRIGHT	A23 FC TiN	A23 FC LH BRIGHT	
M 3	0,35	56	8	-	2,2	-	3	2,65	•			
3,5	0,35	56	9	-	2,5	2,1	3	3,15	•			
4	0,5	63	10	-	2,8	2,1	3	3,5	•			
5	0,5	70	12	-	3,5	2,7	3	4,5	•			
6	0,5	80	14	-	4,5	3,4	3	5,5	•	•		
6	0,75	80	14	-	4,5	3,4	3	5,2	•	•	•	
7	0,75	80	14	-	5,5	4,3	3	6,2	•	•		
8	0,75	80	16	-	6	4,9	3	7,2	•			
8	1	90	16	-	6	4,9	3	7	•	•	•	
9	1	90	16	-	7	5,5	3	8	•			
10	0,5	90	18	-	7	5,5	4	9,5	•	•		
10	0,75	90	18	-	7	5,5	3	9,2	•			
10	1	90	18	-	7	5,5	3	9	•	•	•	
10	1,25	100	18	-	7	5,5	3	8,8	•	•	•	
11	1	90	20	-	8	6,2	3	10	•			
12	0,75	100	22	-	9	7	4	11,2	•	•		
12	1	100	22	-	9	7	4	11	•	•		
12	1,25	100	22	-	9	7	3	10,8	•	•	•	
12	1,5	100	22	-	9	7	3	10,5	•	•	•	
14	1	100	22	-	11	9	4	13	•	•		
14	1,25	100	22	-	11	9	3	12,8	•	•		
14	1,5	100	22	-	11	9	3	12,5	•	•	•	
15	1	100	22	-	12	9	4	14	•			
15	1,5	100	22	-	12	9	3	13,5	•			
16	1	100	22	-	12	9	4	15	•	•		
16	1,25	100	22	-	12	9	4	14,8	•	•		

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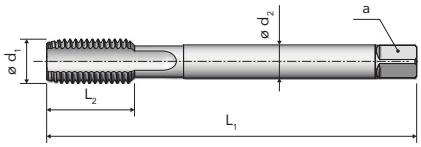
DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A23 FC BRIGHT	A23 FC TiN	A23 FC LH BRIGHT
P	P.1		• 20-25	
	P.2	• 10-12	• 15-20	• 10-12
	P.3	• 8-10	• 12-15	• 8-10
K	K.2	• 8-10	• 12-15	• 8-10
N	N.1		• 20-25	
	N.5		• 15-20	

	A23 FC BRIGHT	A23 FC TiN	A23 FC LH BRIGHT
			
Tolerance	ISO2 6H	ISO2 6H	ISO2 6H
Chamfer form	C (2-3)	C (2-3)	C (2-3)
Hole type	1,5 x D	1,5 x D	1,5 x D
Direction of cut	RH	RH	LH
Through coolant	—	—	—

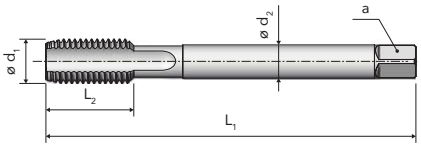
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A23 FC BRIGHT	A23 FC TiN	A23 FC LH BRIGHT
M 16	1,5	100	22	-	12	9	3	14,5	•	•	•
17	1	100	22	-	12	9	4	16	•		
17	1,5	100	22	-	12	9	4	15,5	•		
18	1	110	25	-	14	11	4	17	•		
18	1,5	110	25	-	14	11	4	16,5	•	•	•
18	2	125	28	-	14	11	4	16	•		
20	1	125	25	-	16	12	4	19	•		
20	1,5	125	25	-	16	12	4	18,5	•	•	•
20	2	140	28	-	16	12	4	18	•		
22	1	125	25	-	18	14,5	4	21	•		
22	1,5	125	25	-	18	14,5	4	20,5	•	•	
22	2	140	28	-	18	14,5	4	20	•		
24	1	140	25	-	18	14,5	4	23	•		
24	1,5	140	25	-	18	14,5	4	22,5	•		
24	2	140	28	-	18	14,5	4	22	•		
25	1	140	25	-	18	14,5	4	24	•		
25	1,5	140	25	-	18	14,5	4	23,5	•		
25	2	140	28	-	18	14,5	4	23	•		
26	1	140	25	-	18	14,5	4	25	•		
26	1,5	140	25	-	18	14,5	4	24,5	•		
26	2	140	28	-	18	14,5	4	24	•		
27	1,5	140	28	-	20	16	4	25,5	•		
27	2	140	28	-	20	16	4	25	•		
28	1,5	140	28	-	20	16	4	26,5	•		
28	2	140	28	-	20	16	4	26	•		
30	1	150	25	-	22	18	5	29	•		

€ p.23

MACHINE TAPS for blind holes
Straight flutes

A23 FC
BRIGHT

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A23 FC BRIGHT			
P	P.2	• 10-12			
	P.3	• 8-10			
K	K.2	• 8-10			

Tolerance — ISO2 6H

Chamfer form — C (2-3)

Hole type — 1,5 x D

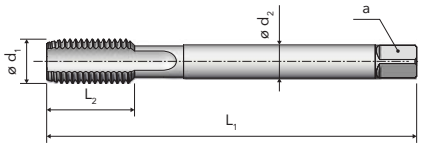
Direction of cut — RH

Through coolant —

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A23 FC BRIGHT			
M 30	1,5	150	28	-	22	18	4	28,5	•			
30	2	150	28	-	22	18	4	28	•			
32	1,5	150	28	-	22	18	5	30,5	•			
32	2	150	28	-	22	18	4	30	•			
33	1,5	160	30	-	25	20	5	31,5	•			
33	2	160	30	-	25	20	4	31	•			
35	1,5	170	30	-	28	22	5	33,5	•			
35	2	170	30	-	28	22	5	33	•			
36	1,5	170	30	-	28	22	5	34,5	•			
36	2	170	30	-	28	22	5	34	•			
36	3	200	56	-	28	22	4	33	•			
39	3	200	60	-	32	24	5	36	•			
40	1,5	170	30	-	32	24	5	38,5	•			
40	2	170	30	-	32	24	5	38	•			
40	3	200	60	-	32	24	5	37	•			
42	1,5	170	30	-	32	24	6	40,5	•			
42	2	170	30	-	32	24	5	40	•			
42	3	200	60	-	32	24	5	39	•			
45	1,5	180	32	-	36	29	6	43,5	•			
45	2	180	32	-	36	29	5	43	•			
45	3	200	50	-	36	29	5	42	•			
48	1,5	190	32	-	36	29	6	46,5	•			
48	2	190	32	-	36	29	6	46	•			
48	3	225	50	-	36	29	5	45	•			
52	1,5	190	32	-	40	32	6	50,5	•			
52	2	190	32	-	40	32	6	50	•			
52	3	225	50	-	40	32	5	49	•			

€ p.23

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A23 FP BRIGHT	A23 FP TiN	A23 FP LH BRIGHT
P	P.1		• 20-25	
	P.2	• 10-12	• 15-20	• 10-12
	P.3	• 8-10	• 12-15	• 8-10
K	K.2	• 8-10	• 12-15	• 8-10
N	N.1		• 20-25	
	N.5		• 15-20	

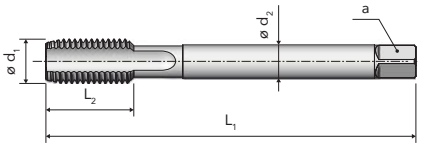
	A23 FP BRIGHT	A23 FP TiN	A23 FP LH BRIGHT
			
Tolerance	ISO2 6H	ISO2 6H	ISO2 6H
Chamfer form	A (5-6)	A (5-6)	A (5-6)
Hole type	1,5 x D	1,5 x D	1,5 x D
Direction of cut	RH	RH	LH
Through coolant	—	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A23 FP BRIGHT	A23 FP TiN	A23 FP LH BRIGHT
M 3	0,35	56	8	-	2,2	-	3	2,65	•		
3,5	0,35	56	9	-	2,5	2,1	3	3,15	•		
4	0,5	63	10	-	2,8	2,1	3	3,5	•		
5	0,5	70	12	-	3,5	2,7	3	4,5	•		
6	0,5	80	14	-	4,5	3,4	3	5,5	•	•	
6	0,75	80	14	-	4,5	3,4	3	5,2	•	•	•
7	0,75	80	14	-	5,5	4,3	3	6,2	•	•	
8	0,75	80	16	-	6	4,9	3	7,2	•		
8	1	90	16	-	6	4,9	3	7	•	•	•
9	1	90	16	-	7	5,5	3	8	•		
10	0,5	90	18	-	7	5,5	4	9,5	•	•	
10	0,75	90	18	-	7	5,5	3	9,2	•		
10	1	90	18	-	7	5,5	3	9	•	•	•
10	1,25	100	18	-	7	5,5	3	8,8	•	•	•
11	1	90	20	-	8	6,2	3	10	•		
12	0,75	100	22	-	9	7	4	11,2	•	•	
12	1	100	22	-	9	7	4	11	•	•	
12	1,25	100	22	-	9	7	3	10,8	•	•	•
12	1,5	100	22	-	9	7	3	10,5	•	•	•
14	1	100	22	-	11	9	4	13	•	•	
14	1,25	100	22	-	11	9	3	12,8	•	•	
14	1,5	100	22	-	11	9	3	12,5	•	•	•
15	1	100	22	-	12	9	4	14	•		
15	1,5	100	22	-	12	9	3	13,5	•		
16	1	100	22	-	12	9	4	15	•	•	
16	1,25	100	22	-	12	9	4	14,8	•	•	

€ p.24

MACHINE TAPS for through holes
Straight flutes

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A23 FP BRIGHT	A23 FP TiN	A23 FP LH BRIGHT	
P	P.1		• 20-25		
	P.2	• 10-12	• 15-20	• 10-12	
	P.3	• 8-10	• 12-15	• 8-10	
K	K.2	• 8-10	• 12-15	• 8-10	
N	N.1		• 20-25		
	N.5		• 15-20		

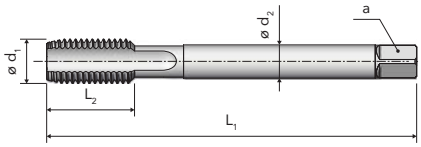
	A23 FP BRIGHT	A23 FP TiN	A23 FP LH BRIGHT
			
Tolerance	ISO2 6H	ISO2 6H	ISO2 6H
Chamfer form	A (5-6)	A (5-6)	A (5-6)
Hole type	1,5 x D	1,5 x D	1,5 x D
Direction of cut	RH	RH	LH
Through coolant	—	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A23 FP BRIGHT	A23 FP TiN	A23 FP LH BRIGHT
M 16	1,5	100	22	-	12	9	3	14,5	•	•	•
17	1	100	22	-	12	9	4	16	•		
17	1,5	100	22	-	12	9	4	15,5	•		
18	1	110	25	-	14	11	4	17	•		
18	1,5	110	25	-	14	11	4	16,5	•	•	•
18	2	125	28	-	14	11	4	16	•		
20	1	125	25	-	16	12	4	19	•		
20	1,5	125	25	-	16	12	4	18,5	•	•	•
20	2	140	28	-	16	12	4	18	•		
22	1	125	25	-	18	14,5	4	21	•		
22	1,5	125	25	-	18	14,5	4	20,5	•	•	
22	2	140	28	-	18	14,5	4	20	•		
24	1	140	25	-	18	14,5	4	23	•		
24	1,5	140	25	-	18	14,5	4	22,5	•		
24	2	140	28	-	18	14,5	4	22	•		
25	1	140	25	-	18	14,5	4	24	•		
25	1,5	140	25	-	18	14,5	4	23,5	•		
25	2	140	28	-	18	14,5	4	23	•		
26	1	140	25	-	18	14,5	4	25	•		
26	1,5	140	25	-	18	14,5	4	24,5	•		
26	2	140	28	-	18	14,5	4	24	•		
27	1,5	140	28	-	20	16	4	25,5	•		
27	2	140	28	-	20	16	4	25	•		
28	1,5	140	28	-	20	16	4	26,5	•		
28	2	140	28	-	20	16	4	26	•		
30	1	150	25	-	22	18	5	29	•		

€ p.24

A SERIES

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A23 FP BRIGHT			
P	P.2	• 10-12			
	P.3	• 8-10			
K	K.2	• 8-10			

A23 FP
BRIGHT

Tolerance — ISO2 6H

Chamfer form — A (5-6)

Hole type — 1,5 x D

Direction of cut — RH

Through coolant —

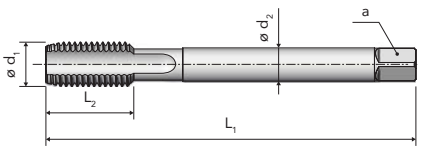
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A23 FP BRIGHT			
M 30	1,5	150	28	-	22	18	4	28,5	•			
30	2	150	28	-	22	18	4	28	•			
32	1,5	150	28	-	22	18	5	30,5	•			
32	2	150	28	-	22	18	4	30	•			
33	1,5	160	30	-	25	20	5	31,5	•			
33	2	160	30	-	25	20	4	31	•			
35	1,5	170	30	-	28	22	5	33,5	•			
35	2	170	30	-	28	22	5	33	•			
36	1,5	170	30	-	28	22	5	34,5	•			
36	2	170	30	-	28	22	5	34	•			
36	3	200	56	-	28	22	4	33	•			
39	3	200	60	-	32	24	5	36	•			
40	1,5	170	30	-	32	24	5	38,5	•			
40	2	170	30	-	32	24	5	38	•			
40	3	200	60	-	32	24	5	37	•			
42	1,5	170	30	-	32	24	6	40,5	•			
42	2	170	30	-	32	24	5	40	•			
42	3	200	60	-	32	24	5	39	•			
45	1,5	180	32	-	36	29	6	43,5	•			
45	2	180	32	-	36	29	5	43	•			
45	3	200	50	-	36	29	5	42	•			
48	1,5	190	32	-	36	29	6	46,5	•			
48	2	190	32	-	36	29	6	46	•			
48	3	225	50	-	36	29	5	45	•			
52	1,5	190	32	-	40	32	6	50,5	•			
52	2	190	32	-	40	32	6	50	•			
52	3	225	50	-	40	32	5	49	•			

€ p.24

MACHINE TAPS for blind and through holes
Straight flutes / for cast iron

2,5 x D | HSSE

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A45 NITRIDED	A45 TiCN	A45 ACE
K	K.1	• 15-20	• 40-45	• 40-45
N	N.4	• 15-20	• 40-45	• 40-45
	N.7	• 15-20	• 40-45	• 40-45
	N.9-10	• 20-25	• 45-50	• 45-50

	A45 NITRIDED	A45 TiCN	A45 ACE
			
Tolerance	6HX	6HX	6HX
Chamfer form	C (2-3)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH
Through coolant	—	—	—

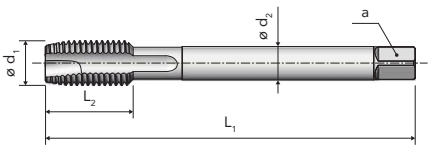
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A45 NITRIDED	A45 TiCN	A45 ACE
M 4	0,5	63	12	-	2,8	2,1	3	3,5	•	•	•
5	0,5	70	14	-	3,5	2,7	3	4,5	•	•	•
6	0,75	80	16	-	4,5	3,4	3	5,2	•	•	•
8	1	90	16	-	6	4,9	4	7	•	•	•
9	1	90	16	-	7	5,5	4	8	•		
10	1	90	18	-	7	5,5	4	9	•	•	•
10	1,25	100	18	-	7	5,5	4	8,8	•	•	•
11	1	90	20	-	8	6,2	4	10	•		
12	1	100	22	-	9	7	4	11	•		
12	1,25	100	22	-	9	7	4	10,8	•	•	•
12	1,5	100	22	-	9	7	4	10,5	•	•	•
14	1	100	22	-	11	9	4	13	•		
14	1,25	100	22	-	11	9	4	12,8	•	•	•
14	1,5	100	22	-	11	9	4	12,5	•	•	•
16	1	100	22	-	12	9	4	15	•		
16	1,5	100	22	-	12	9	4	14,5	•	•	•
18	1,5	110	25	-	14	11	4	16,5	•	•	•
20	1,5	125	25	-	16	12	4	18,5	•	•	•
22	1,5	125	25	-	18	14,5	4	20,5	•		
24	1,5	140	25	-	18	14,5	5	22,5	•		
24	2	140	28	-	18	14,5	5	22	•		
27	1,5	140	28	-	20	16	5	25,5	•		
27	2	140	28	-	20	16	5	25	•		
30	1,5	150	28	-	22	18	5	28,5	•		
30	2	150	28	-	22	18	5	28	•		

€ p.26

MACHINE TAPS for through holes
Straight flutes with spiral point

A SERIES

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A17 BRIGHT	A17 VAP	A17 TiN
P	P.1	• 18-20	• 18-20	• 30-35
	P.2	• 15-18	• 15-18	• 25-30
N	N.1	• 18-20	• 18-20	
	N.2	• 15-18	• 15-18	• 25-30
	N.5	• 15-18	• 15-18	
	N.6	• 12-15	• 12-15	• 20-25

	A17 BRIGHT	A17 VAP	A17 TiN
			
Tolerance	ISO2 6H	ISO2 6H	ISO2 6H
Chamfer form	B (4-5)	B (4-5)	B (4-5)
Hole type	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH
Through coolant	—	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A17 BRIGHT	A17 VAP	A17 TiN
M 4	0,5	63	10	-	2,8	2,1	3	3,5	•		
5	0,5	70	12	-	3,5	2,7	3	4,5	•		
6	0,75	80	14	-	4,5	3,4	3	5,2	•	•	•
7	0,75	80	14	-	5,5	4,3	3	6,2	•		
8	0,75	80	16	-	6	4,9	3	7,2	•		
8	1	90	16	-	6	4,9	3	7	•	•	•
9	1	90	16	-	7	5,5	3	8	•		
10	0,75	90	18	-	7	5,5	4	9,2	•		
10	1	90	18	-	7	5,5	4	9	•	•	•
10	1,25	100	18	-	7	5,5	3	8,8	•	•	•
11	1	90	20	-	8	6,2	4	10	•		
12	1	100	22	-	9	7	4	11	•	•	•
12	1,25	100	22	-	9	7	4	10,8	•	•	•
12	1,5	100	22	-	9	7	3	10,5	•	•	•
14	1	100	22	-	11	9	4	13	•		
14	1,25	100	22	-	11	9	4	12,8	•	•	•
14	1,5	100	22	-	11	9	4	12,5	•	•	•
15	1	100	22	-	12	9	4	14	•		
15	1,5	100	22	-	12	9	4	13,5	•		
16	1	100	22	-	12	9	4	15	•		
16	1,5	100	22	-	12	9	4	14,5	•	•	•
18	1	110	25	-	14	11	4	17	•		
18	1,5	110	25	-	14	11	4	16,5	•	•	•
20	1	125	25	-	16	12	4	19	•		
20	1,5	125	25	-	16	12	4	18,5	•	•	•
22	1	125	25	-	18	14,5	4	21	•		

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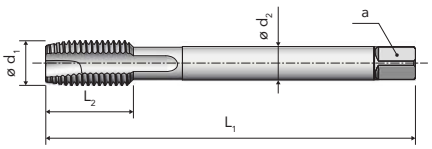
MACHINE TAPS for through holes
Straight flutes with spiral point

A17
BRIGHT

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A17 BRIGHT			
P	P.1	• 18-20			
	P.2	• 15-18			
N	N.1	• 18-20			
	N.2	• 15-18			
	N.5	• 15-18			
	N.6	• 12-15			

	A17 BRIGHT
Tolerance	ISO2 6H
Chamfer form	B (4-5)
Hole type	2,5 x D
Direction of cut	RH
Through coolant	—

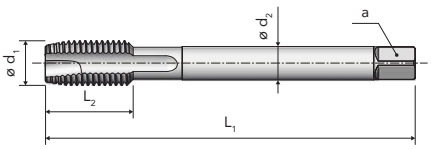
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A17 BRIGHT			
M 22	1,5	125	25	-	18	14,5	4	20,5	•			
24	1	140	25	-	18	14,5	5	23	•			
24	1,5	140	25	-	18	14,5	4	22,5	•			
24	2	140	28	-	18	14,5	4	22	•			
25	1,5	140	25	-	18	14,5	4	23,5	•			
25	2	140	28	-	18	14,5	4	23	•			
26	1,5	140	25	-	18	14,5	4	24,5	•			
26	2	140	28	-	18	14,5	4	24	•			
27	1,5	140	28	-	20	16	4	25,5	•			
27	2	140	28	-	20	16	4	25	•			
28	1,5	140	28	-	20	16	4	26,5	•			
28	2	140	28	-	20	16	4	26	•			
30	1,5	150	28	-	22	18	4	28,5	•			
30	2	150	28	-	22	18	4	28	•			
32	1,5	150	28	-	22	18	5	30,5	•			
32	2	150	28	-	22	18	4	30	•			
36	1,5	170	30	-	28	22	5	34,5	•			
36	2	170	30	-	28	22	5	34	•			
36	3	200	56	-	28	22	4	33	•			
40	1,5	170	30	-	32	24	5	38,5	•			
40	2	170	30	-	32	24	5	38	•			
40	3	200	60	-	32	24	4	37	•			
42	1,5	170	30	-	32	24	5	40,5	•			
42	2	170	30	-	32	24	5	40	•			
42	3	200	60	-	32	24	5	39	•			
45	1,5	180	32	-	36	29	6	43,5	•			

€ p.26

MACHINE TAPS for through holes
Straight flutes with spiral point

A SERIES

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A17 BRIGHT			
P	P.1	• 18-20			
	P.2	• 15-18			
N	N.1	• 18-20			
	N.2	• 15-18			
	N.5	• 15-18			
	N.6	• 12-15			

A17 BRIGHT

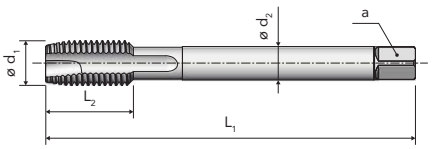
Tolerance	ISO2 6H
Chamfer form	B (4-5)
Hole type	2,5 x D
Direction of cut	RH
Through coolant	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A17 BRIGHT
M 45	2	180	32	-	36	29	5	43	•
45	3	200	50	-	36	29	5	42	•
48	1,5	190	32	-	36	29	6	46,5	•
48	2	190	32	-	36	29	5	46	•
48	3	225	50	-	36	29	5	45	•

€ p.26

MACHINE TAPS for through holes
Straight flutes with spiral point

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A17 S BRIGHT	A17 S VAP	A17 S TiN	A17 S TiCN
P	P.2	• 20-25	• 20-25	• 30-35	• 30-35
	P.3	• 15-20	• 15-20	• 25-30	• 25-30
	P.4	• 12-15	• 12-15	• 20-25	• 20-25
	P.5			• 10-15	• 10-15
	P.7			• 10-15	• 10-15
M	M.1			• 10-15	• 10-15
K	K.2	• 15-20	• 15-20	• 25-30	• 25-30
N	N.2-3	• 20-25	• 20-25	• 30-35	• 30-35
	N.6	• 15-18	• 15-18	• 25-30	• 25-30

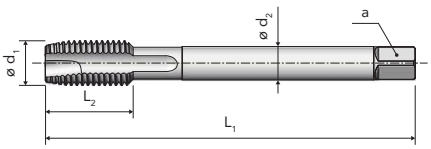
	A17 S BRIGHT	A17 S VAP	A17 S TiN	A17 S TiCN
				
Tolerance	ISO2 6H	ISO2 6H	ISO2 6H	ISO2 6H
Chamfer form	B (4-5)	B (4-5)	B (4-5)	B (4-5)
Hole type	2,5 x D	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH	RH
Through coolant	—	—	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A17 S BRIGHT	A17 S VAP	A17 S TiN	A17 S TiCN
M 4	0,5	63	10	-	2,8	2,1	3	3,5	•			
5	0,5	70	12	-	3,5	2,7	3	4,5	•			
6	0,75	80	14	-	4,5	3,4	3	5,2	•	•	•	•
7	0,75	80	14	-	5,5	4,3	3	6,2	•			
8	0,75	80	16	-	6	4,9	3	7,2	•			
8	1	90	16	-	6	4,9	3	7	•	•	•	•
9	1	90	16	-	7	5,5	3	8	•			
10	0,75	90	18	-	7	5,5	4	9,2	•			
10	1	90	18	-	7	5,5	4	9	•	•	•	•
10	1,25	100	18	-	7	5,5	3	8,8	•	•	•	•
11	1	90	20	-	8	6,2	4	10	•			
12	1	100	22	-	9	7	4	11	•	•	•	•
12	1,25	100	22	-	9	7	4	10,8	•	•	•	•
12	1,5	100	22	-	9	7	3	10,5	•	•	•	•
14	1	100	22	-	11	9	4	13	•			
14	1,25	100	22	-	11	9	4	12,8	•	•	•	•
14	1,5	100	22	-	11	9	4	12,5	•	•	•	•
15	1	100	22	-	12	9	4	14	•			
15	1,5	100	22	-	12	9	4	13,5	•			
16	1	100	22	-	12	9	4	15	•			
16	1,5	100	22	-	12	9	4	14,5	•	•	•	•
18	1	110	25	-	14	11	4	17	•			
18	1,5	110	25	-	14	11	4	16,5	•	•	•	•
20	1	125	25	-	16	12	4	19	•			
20	1,5	125	25	-	16	12	4	18,5	•	•	•	•
22	1	125	25	-	18	14,5	4	21	•			

€ p.27

A SERIES

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A17 S BRIGHT	A17 S TiN		
P	P.2	• 20-25	• 30-35		
	P.3	• 15-20	• 25-30		
	P.4	• 12-15	• 20-25		
	P.5		• 10-15		
	P.7		• 10-15		
M	M.1		• 10-15		
K	K.2	• 15-20	• 25-30		
N	N.2-3	• 20-25	• 30-35		
	N.6	• 15-18	• 25-30		

	A17 S BRIGHT	A17 S TiN
		
Tolerance	ISO2 6H	ISO2 6H
Chamfer form	B (4-5)	B (4-5)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A17 S BRIGHT	A17 S TiN		
M 22	1,5	125	25	-	18	14,5	4	20,5	•	•		
24	1	140	25	-	18	14,5	5	23	•			
24	1,5	140	25	-	18	14,5	4	22,5	•	•		
24	2	140	28	-	18	14,5	4	22	•			
25	1,5	140	25	-	18	14,5	4	23,5	•			
25	2	140	28	-	18	14,5	4	23	•			
26	1,5	140	25	-	18	14,5	4	24,5	•			
26	2	140	28	-	18	14,5	4	24	•			
27	1,5	140	28	-	20	16	4	25,5	•	•		
27	2	140	28	-	20	16	4	25	•			
28	1,5	140	28	-	20	16	4	26,5	•			
28	2	140	28	-	20	16	4	26	•			
30	1,5	150	28	-	22	18	4	28,5	•	•		
30	2	150	28	-	22	18	4	28	•			
32	1,5	150	28	-	22	18	5	30,5	•			
32	2	150	28	-	22	18	4	30	•			
36	1,5	170	30	-	28	22	5	34,5	•			
36	2	170	30	-	28	22	5	34	•			
36	3	200	56	-	28	22	4	33	•			
40	1,5	170	30	-	32	24	5	38,5	•			
40	2	170	30	-	32	24	5	38	•			
40	3	200	60	-	32	24	4	37	•			
42	1,5	170	30	-	32	24	5	40,5	•			
42	2	170	30	-	32	24	5	40	•			
42	3	200	60	-	32	24	5	39	•			
45	1,5	180	32	-	36	29	6	43,5	•			

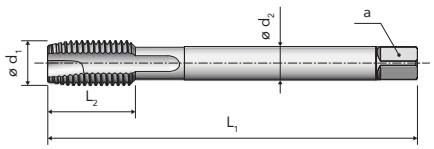
€ p.27

MACHINE TAPS for through holes
Straight flutes with spiral point

2,5 x D | HSSE

A17 S
BRIGHT

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A17 S BRIGHT			
P	P.2	• 20-25			
	P.3	• 15-20			
	P.4	• 12-15			
K	K.2	• 15-20			
N	N.2-3	• 20-25			
	N.6	• 15-18			

Tolerance — ISO2 6H

Chamfer form — B (4-5)

Hole type — 2,5 x D

Direction of cut — RH

Through coolant — —

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A17 S BRIGHT
M 45	2	180	32	-	36	29	5	43	•
45	3	200	50	-	36	29	5	42	•
48	1,5	190	32	-	36	29	6	46,5	•
48	2	190	32	-	36	29	5	46	•
48	3	225	50	-	36	29	5	45	•

€ p.27

MACHINE TAPS for through holes
Straight flutes with spiral point / for stainless steel

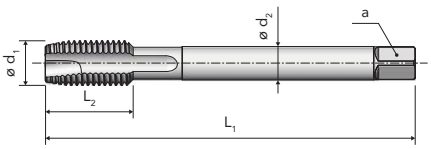
DIN 13

A SERIES

2,5 x D | HSSE

NEW
A17 S
TiX2

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A17 S TiX2			
P	P.7	• 10-15			
M	M.1	• 10-15			

Tolerance: ISO2 6H

Chamfer form: B (4-5)

Hole type: 2,5 x D

Direction of cut: RH

Through coolant: —

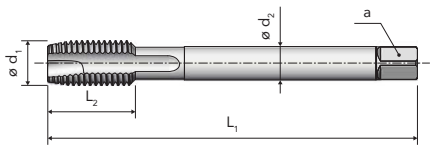
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A17 S TiX2
M 6	0,75	80	14	-	4,5	3,4	3	5,2	•
8	1	90	16	-	6	4,9	3	7	•
10	1	90	18	-	7	5,5	4	9	•
10	1,25	100	18	-	7	5,5	3	8,8	•
12	1,25	100	22	-	9	7	4	10,8	•
12	1,5	100	22	-	9	7	3	10,5	•
14	1,25	100	22	-	11	9	4	12,8	•
14	1,5	100	22	-	11	9	4	12,5	•
16	1,5	100	22	-	12	9	4	14,5	•
20	1,5	125	25	-	16	12	4	18,5	•

€ p.28

MACHINE TAPS for through holes
Straight flutes with spiral point

2,5 x D | HSSE

DIN 374



	A17 S 6G BRIGHT	A17 S 6G TiN
		
Tolerance	ISO3 6G	ISO3 6G
Chamfer form	B (4-5)	B (4-5)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A17 S 6G BRIGHT	A17 S 6G TiN		
P	P.2	• 20-25	• 30-35		
	P.3	• 15-20	• 25-30		
	P.4	• 12-15	• 20-25		
	P.5		• 10-15		
	P.7		• 10-15		
M	M.1		• 10-15		
K	K.2	• 15-20	• 25-30		
N	N.2-3	• 20-25	• 30-35		
	N.6	• 15-18	• 25-30		

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A17 S 6G BRIGHT	A17 S 6G TiN		
M 6	0,75	80	14	-	4,5	3,4	3	5,2	•	•		
8	1	90	16	-	6	4,9	3	7	•	•		
10	1	90	18	-	7	5,5	4	9	•	•		
10	1,25	100	18	-	7	5,5	3	8,8	•	•		
12	1,5	100	22	-	9	7	3	10,5	•	•		
14	1,5	100	22	-	11	9	4	12,5	•	•		

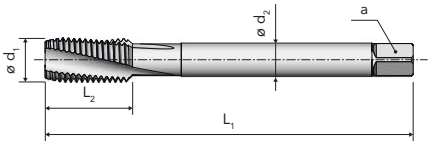
€ p.29

MACHINE TAPS for blind holes
15° spiral flutes

R15 | 1,5 x D | HSSE

A SERIES

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A30 BRIGHT	A30 TiN		
P	P.1	• 18-20	• 30-35		
	P.2	• 15-18	• 25-30		
	P.3	• 12-15	• 20-25		
	P.4	• 10-12	• 15-20		
	P.5		• 5-10		
K	K.2	• 12-15	• 20-25		
N	N.1	• 18-20			
	N.2-3	• 15-18	• 25-30		
	N.5	• 15-18			
	N.6	• 12-15	• 20-25		

	A30 BRIGHT	A30 TiN
Tolerance	ISO2 6H	ISO2 6H
Chamfer form	C (2-3)	C (2-3)
Hole type	1,5 x D	1,5 x D
Direction of cut	RH	RH
Through coolant	—	—

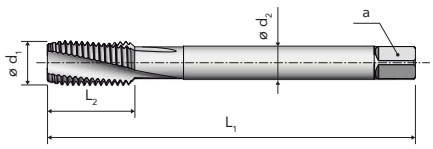
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A30 BRIGHT	A30 TiN		
M 3	0,35	56	8	-	2,2	-	3	2,65	•			
3,5	0,35	56	9	-	2,5	2,1	3	3,15	•			
4	0,5	63	10	-	2,8	2,1	3	3,5	•			
5	0,5	70	12	-	3,5	2,7	3	4,5	•			
6	0,75	80	14	-	4,5	3,4	3	5,2	•	•		
7	0,75	80	14	-	5,5	4,3	3	6,2	•			
8	0,75	80	16	-	6	4,9	3	7,2	•			
8	1	90	16	-	6	4,9	3	7	•	•		
9	1	90	16	-	7	5,5	3	8	•			
10	0,75	90	18	-	7	5,5	3	9,2	•			
10	1	90	18	-	7	5,5	3	9	•	•		
10	1,25	100	18	-	7	5,5	3	8,8	•	•		
11	1	90	20	-	8	6,2	3	10	•			
12	1	100	22	-	9	7	3	11	•	•		
12	1,25	100	22	-	9	7	3	10,8	•	•		
12	1,5	100	22	-	9	7	3	10,5	•	•		
14	1	100	22	-	11	9	3	13	•			
14	1,25	100	22	-	11	9	3	12,8	•	•		
14	1,5	100	22	-	11	9	3	12,5	•	•		
15	1	100	22	-	12	9	4	14	•			
15	1,5	100	22	-	12	9	3	13,5	•			
16	1	100	22	-	12	9	4	15	•			
16	1,25	100	22	-	12	9	4	14,8	•			
16	1,5	100	22	-	12	9	4	14,5	•	•		
17	1	100	22	-	12	9	4	16	•			
17	1,5	100	22	-	12	9	4	15,5	•			

€ p.29

MACHINE TAPS for blind holes
15° spiral flutes

R15 | 1,5 x D | HSSE

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A30 BRIGHT	A30 TiN		
P	P.1	• 18-20	• 30-35		
	P.2	• 15-18	• 25-30		
	P.3	• 12-15	• 20-25		
	P.4	• 10-12	• 15-20		
	P.5		• 5-10		
K	K.2	• 12-15	• 20-25		
N	N.1	• 18-20			
	N.2-3	• 15-18	• 25-30		
	N.5	• 15-18			
	N.6	• 12-15	• 20-25		

	A30 BRIGHT	A30 TiN
Tolerance	ISO2 6H	ISO2 6H
Chamfer form	C (2-3)	C (2-3)
Hole type	1,5 x D	1,5 x D
Direction of cut	RH	RH
Through coolant	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A30 BRIGHT	A30 TiN		
M 18	1	110	25	-	14	11	4	17	•			
18	1,5	110	25	-	14	11	4	16,5	•	•		
20	1	125	25	-	16	12	4	19	•			
20	1,5	125	25	-	16	12	4	18,5	•	•		
22	1	125	25	-	18	14,5	4	21	•			
22	1,5	125	25	-	18	14,5	4	20,5	•	•		
24	1	140	25	-	18	14,5	4	23	•			
24	1,5	140	25	-	18	14,5	4	22,5	•	•		
24	2	140	28	-	18	14,5	4	22	•			
25	1	140	25	-	18	14,5	4	24	•			
25	1,5	140	25	-	18	14,5	4	23,5	•			
25	2	140	28	-	18	14,5	4	23	•			
26	1	140	25	-	18	14,5	4	25	•			
26	1,5	140	25	-	18	14,5	4	24,5	•			
26	2	140	28	-	18	14,5	4	24	•			
27	1,5	140	28	-	20	16	4	25,5	•	•		
27	2	140	28	-	20	16	4	25	•			
28	1,5	140	28	-	20	16	4	26,5	•			
28	2	140	28	-	20	16	4	26	•			
30	1	150	25	-	22	18	5	29	•			
30	1,5	150	28	-	22	18	4	28,5	•	•		
30	2	150	28	-	22	18	4	28	•			
32	1,5	150	28	-	22	18	5	30,5	•			
32	2	150	28	-	22	18	4	30	•			
36	1,5	170	30	-	28	22	5	34,5	•			
36	2	170	30	-	28	22	5	34	•			

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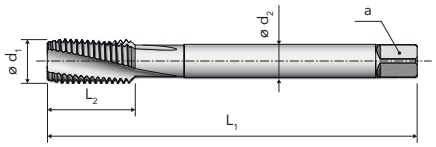
R15 | 1,5 x D | HSSE

A30
BRIGHT

A SERIES

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A30 BRIGHT			
P	P.1	• 18-20			
	P.2	• 15-18			
	P.3	• 12-15			
	P.4	• 10-12			
K	K.2	• 12-15			
N	N.1	• 18-20			
	N.2-3	• 15-18			
	N.5	• 15-18			
	N.6	• 12-15			

	A30 BRIGHT
Tolerance	ISO2 6H
Chamfer form	C (2-3)
Hole type	1,5 x D
Direction of cut	RH
Through coolant	—

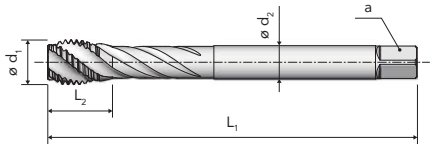
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A30 BRIGHT
M 36	3	200	56	-	28	22	4	33	•
40	1,5	170	30	-	32	24	5	38,5	•
40	2	170	30	-	32	24	5	38	•
40	3	200	60	-	32	24	5	37	•
42	1,5	170	30	-	32	24	6	40,5	•
42	2	170	30	-	32	24	5	40	•
42	3	200	60	-	32	24	5	39	•
45	1,5	180	32	-	36	29	6	43,5	•
45	2	180	32	-	36	29	5	43	•
45	3	200	50	-	36	29	5	42	•
48	1,5	190	32	-	36	29	6	46,5	•
48	2	190	32	-	36	29	6	46	•
48	3	225	50	-	36	29	5	45	•

€ p.29

MACHINE TAPS for blind holes
40° spiral flutes / back tapered

R40 | 2,5 x D | HSSE

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A71 BRIGHT	A71 TiN		
P	P.1	• 12-15	• 25-30		
	P.2	• 10-15	• 20-25		
N	N.1	• 12-15			
	N.2	• 12-15	• 25-30		
	N.5	• 10-12			
	N.6	• 10-12	• 20-25		

	A71 BRIGHT	A71 TiN
Tolerance	ISO2 6H	ISO2 6H
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A71 BRIGHT	A71 TiN		
M 6	0,75	80	7,5	-	4,5	3,4	3	5,2	•	•		
8	1	90	10	-	6	4,9	3	7	•	•		
10	1	90	10	-	7	5,5	3	9	•	•		
10	1,25	100	11,5	-	7	5,5	3	8,8	•	•		
12	1	100	13	-	9	7	4	11	•	•		
12	1,25	100	13,5	-	9	7	4	10,8	•	•		
12	1,5	100	14	-	9	7	4	10,5	•	•		
14	1,5	100	15,5	-	11	9	4	12,5	•	•		
16	1,5	100	15,5	-	12	9	4	14,5	•	•		
18	1,5	110	16	-	14	11	4	16,5	•	•		
20	1	125	15	-	16	12	4	19	•			
20	1,5	125	17	-	16	12	4	18,5	•	•		
22	1,5	125	19	-	18	14,5	4	20,5	•			
24	1,5	140	21	-	18	14,5	4	22,5	•			
24	2	140	26	-	18	14,5	4	22	•			
26	1,5	140	23	-	18	14,5	4	24,5	•			
27	1,5	140	23	-	20	16	4	25,5	•			
27	2	140	28	-	20	16	4	25	•			
28	1,5	140	23	-	20	16	4	26,5	•			
30	1,5	150	25	-	22	18	5	28,5	•			
30	2	150	29	-	22	18	4	28	•			
36	3	200	46	-	28	22	4	33	•			
42	3	200	51	-	32	24	5	39	•			

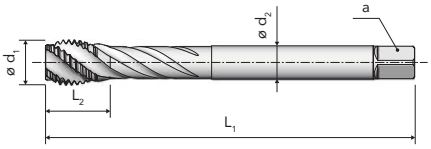
€ p.30

MACHINE TAPS for blind holes
40° spiral flutes / back tapered

R40 | 2,5 x D | HSSE

A SERIES

DIN 374



	A71 S BRIGHT	A71 S VAP	A71 S TiN	A71 S TiCN
				
Tolerance	ISO2 6H	ISO2 6H	ISO2 6H	ISO2 6H
Chamfer form	C (2-3)	C (2-3)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH	RH
Through coolant	—	—	—	—

APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A71 S BRIGHT	A71 S VAP	A71 S TiN	A71 S TiCN
P	P.3	• 12-15	• 12-15	• 20-25	• 20-25
	P.4	• 10-12	• 10-12	• 15-20	• 15-20
	P.5			• 5-10	• 5-10
	P.7			• 8-10	• 8-10
M	M.1			• 8-10	• 8-10
K	K.2	• 12-15	• 12-15	• 20-25	• 20-25
N	N.3	• 15-18	• 15-18	• 25-30	• 25-30
	N.6	• 15-18	• 15-18	• 25-30	• 25-30

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A71 S BRIGHT	A71 S VAP	A71 S TiN	A71 S TiCN
M 6	0,75	80	7,5	-	4,5	3,4	3	5,2	•	•	•	•
8	1	90	10	-	6	4,9	3	7	•	•	•	•
10	1	90	10	-	7	5,5	3	9	•	•	•	•
10	1,25	100	11,5	-	7	5,5	3	8,8	•	•	•	•
12	1	100	13	-	9	7	4	11	•	•	•	•
12	1,25	100	13,5	-	9	7	4	10,8	•	•	•	•
12	1,5	100	14	-	9	7	4	10,5	•	•	•	•
14	1,5	100	15,5	-	11	9	4	12,5	•	•	•	•
16	1,5	100	15,5	-	12	9	4	14,5	•	•	•	•
18	1,5	110	16	-	14	11	4	16,5	•	•	•	•
20	1	125	15	-	16	12	4	19	•			
20	1,5	125	17	-	16	12	4	18,5	•	•	•	•
22	1,5	125	19	-	18	14,5	4	20,5	•	•	•	•
24	1,5	140	21	-	18	14,5	4	22,5	•		•	
24	2	140	26	-	18	14,5	4	22	•			
26	1,5	140	23	-	18	14,5	4	24,5	•			
27	1,5	140	23	-	20	16	4	25,5	•		•	
27	2	140	28	-	20	16	4	25	•			
28	1,5	140	23	-	20	16	4	26,5	•			
30	1,5	150	25	-	22	18	5	28,5	•		•	
30	2	150	29	-	22	18	5	28	•			
36	3	200	46	-	28	22	5	33	•			
42	3	200	51	-	32	24	6	39	•			

€ p.31

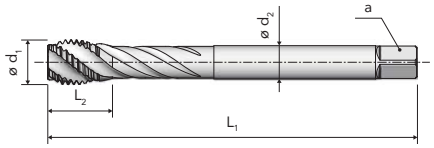
MACHINE TAPS **for blind holes**
40° spiral flutes / back tapered / for stainless steel

R40 | 2,5 x D | HSSE

NEW
A71 S
TiX2

A SERIES

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A71 S TiX2			
P	P.7	• 8-10			
M	M.1	• 8-10			
	M.2	• 5-7			

Tolerance — ISO2 6H

Chamfer form — C (2-3)

Hole type — 2,5 x D

Direction of cut — RH

Through coolant —

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A71 S TiX2			
M 6	0,75	80	7,5	-	4,5	3,4	3	5,2	•			
8	1	90	10	-	6	4,9	3	7	•			
10	1	90	10	-	7	5,5	3	9	•			
10	1,25	100	11,5	-	7	5,5	3	8,8	•			
12	1,25	100	13,5	-	9	7	4	10,8	•			
12	1,5	100	14	-	9	7	4	10,5	•			
14	1,5	100	15,5	-	11	9	4	12,5	•			
16	1,5	100	15,5	-	12	9	4	14,5	•			
20	1,5	125	17	-	16	12	4	18,5	•			

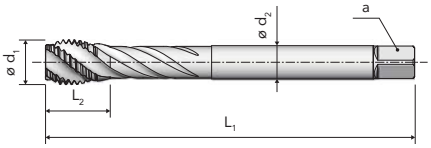
€ p.31

MACHINE TAPS for blind holes
40° spiral flutes / back tapered

R40 | 2,5 x D | HSSE

A SERIES

DIN 374



	A71 S 6G BRIGHT	A71 S 6G TiN
		
Tolerance	ISO3 6G	ISO3 6G
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A71 S 6G BRIGHT	A71 S 6G TiN		
P	P.3	• 12-15	• 20-25		
	P.4	• 10-12	• 15-20		
	P.5		• 5-10		
	P.7		• 8-10		
M	M.1		• 8-10		
K	K.2	• 12-15	• 20-25		
N	N.3	• 15-18	• 25-30		
	N.6	• 15-18	• 25-30		

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A71 S 6G BRIGHT	A71 S 6G TiN
M 6	0,75	80	7,5	-	4,5	3,4	3	5,2	•	•
8	1	90	10	-	6	4,9	3	7	•	•
10	1	90	10	-	7	5,5	3	9	•	•
10	1,25	100	11,5	-	7	5,5	3	8,8	•	•
12	1	100	13	-	9	7	4	11	•	•
12	1,25	100	13,5	-	9	7	4	10,8	•	•
12	1,5	100	14	-	9	7	4	10,5	•	•
14	1,5	100	15,5	-	11	9	4	12,5	•	•

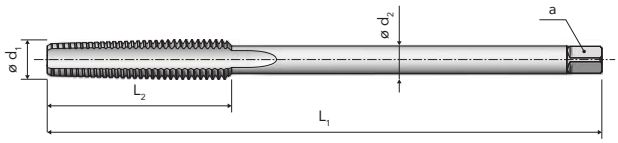
€ p.31

MACHINE NUT TAPS
Straight flutes

HSSE

A10
BRIGHT

VERGNANO STANDARD



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A10 BRIGHT			
P	P.1	• 18-20			
	P.2	• 15-18			
	P.3	• 12-15			

Tolerance	ISO2 6H
Chamfer form	—
Hole type	
Direction of cut	RH
Through coolant	—

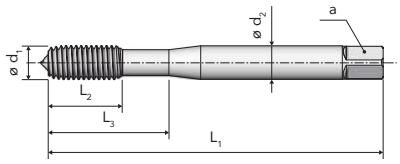
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A10 BRIGHT
M 4	0,5	80	20	-	2,8	2,1	3	3,5	•
5	0,5	85	22	-	3,5	2,7	3	4,5	•
8	1	115	30	-	6	4,9	3	7	•
10	1	130	35	-	7	5,5	3	9	•
10	1,25	140	45	-	7	5,5	3	8,8	•
12	1,25	160	45	-	9	7	3	10,8	•
12	1,5	160	45	-	9	7	3	10,5	•
14	1,5	180	45	-	11	9	3	12,5	•
16	1,5	190	48	-	12	9	3	14,5	•
18	1,5	200	48	-	14	11	3	16,5	•
20	1,5	220	50	-	16	12	3	18,5	•

€ p.32

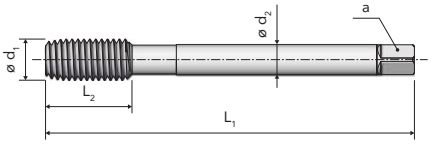
COLD FORMING TAPS for blind and through holes
Without oil grooves

A SERIES

DIN 2174 (371)≤ M10



DIN 2174 (374)≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A81 TiN	A81 TiCN		
P	P.1-2	• 40-45	• 40-45		
	P.3	• 35-40	• 35-40		
N	N.1-2	• 40-45	• 40-45		
	N.3	• 35-40	• 35-40		
	N.5-6	• 40-45	• 40-45		

	A81 TiN	A81 TiCN
		
Tolerance	6HX	6HX
Chamfer form	C (2-3)	C (2-3)
Hole type	1,5 x D	1,5 x D
Direction of cut	RH	RH
Through coolant	—	—

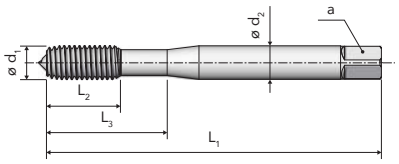
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A81 TiN	A81 TiCN		
M 3	0,35	56	10	18	3,5	2,7	4	2,85	•	•		
4	0,5	63	12	21	4,5	3,4	5	3,8	•	•		
5	0,5	70	14	24,5	6	4,9	5	4,8	•	•		
6	0,75	80	16	29	6	4,9	5	5,65	•	•		
8	1	90	18	33	8	6,2	5	7,55	•	•		
10	1	90	18	34	10	8	6	9,55	•	•		
10	1,25	100	20	36	10	8	6	9,4	•	•		
12	1	100	22	-	9	7	6	11,55	•	•		
12	1,25	100	22	-	9	7	6	11,4	•	•		
12	1,5	100	22	-	9	7	6	11,3	•	•		
14	1,25	100	22	-	11	9	6	13,4	•	•		
14	1,5	100	22	-	11	9	6	13,3	•	•		
16	1,5	100	22	-	12	9	6	15,3	•	•		

€ p.32

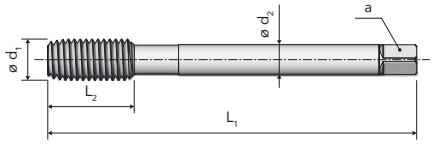
COLD FORMING TAPS for blind and through holes
Without oil grooves

1,5 x D | HSSE

DIN 2174 (371)≤ M10



DIN 2174 (374)≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A81 6GX TiN	A81 6GX TiCN		
P	P.1-2	• 40-45	• 40-45		
	P.3	• 35-40	• 35-40		
N	N.1-2	• 40-45	• 40-45		
	N.3	• 35-40	• 35-40		
	N.5-6	• 40-45	• 40-45		

	A81 6GX TiN	A81 6GX TiCN
		
Tolerance	6GX	6GX
Chamfer form	C (2-3)	C (2-3)
Hole type	1,5 x D	1,5 x D
Direction of cut	RH	RH
Through coolant	—	—

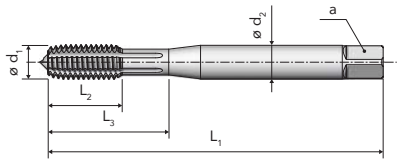
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A81 6GX TiN	A81 6GX TiCN		
M 3	0,35	56	10	18	3,5	2,7	4	2,85	•	•		
4	0,5	63	12	21	4,5	3,4	5	3,8	•	•		
5	0,5	70	14	24,5	6	4,9	5	4,8	•	•		
6	0,75	80	16	29	6	4,9	5	5,65	•	•		
8	1	90	18	33	8	6,2	5	7,55	•	•		
10	1	90	18	34	10	8	6	9,55	•	•		
10	1,25	100	20	36	10	8	6	9,4	•	•		
12	1	100	22	-	9	7	6	11,55	•	•		
12	1,25	100	22	-	9	7	6	11,4	•	•		
12	1,5	100	22	-	9	7	6	11,3	•	•		
14	1,25	100	22	-	11	9	6	13,4	•	•		
14	1,5	100	22	-	11	9	6	13,3	•	•		
16	1,5	100	22	-	12	9	6	15,3	•	•		

€ p.32

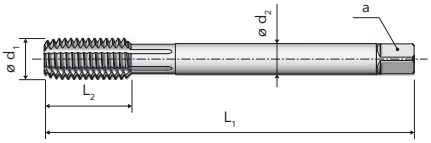
COLD FORMING TAPS for blind and through holes
With oil grooves

A SERIES

DIN 2174 (371)≤ M10



DIN 2174 (374)≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A81 N TiN	A81 N TiCN		
P	P.1-2	• 40-45	• 40-45		
	P.3	• 35-40	• 35-40		
N	N.1-2	• 40-45	• 40-45		
	N.3	• 35-40	• 35-40		
	N.5-6	• 40-45	• 40-45		

	A81 N TiN	A81 N TiCN
		
Tolerance	6HX	6HX
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

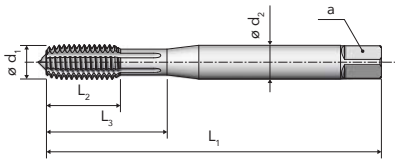
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A81 N TiN	A81 N TiCN		
M 3	0,35	56	10	18	3,5	2,7	4	2,85	•	•		
4	0,5	63	12	21	4,5	3,4	5	3,8	•	•		
5	0,5	70	14	24,5	6	4,9	5	4,8	•	•		
6	0,75	80	16	29	6	4,9	5	5,65	•	•		
8	1	90	18	33	8	6,2	5	7,55	•	•		
10	1	90	18	34	10	8	6	9,55	•	•		
10	1,25	100	20	36	10	8	6	9,4	•	•		
12	1	100	22	-	9	7	6	11,55	•	•		
12	1,25	100	22	-	9	7	6	11,4	•	•		
12	1,5	100	22	-	9	7	6	11,3	•	•		
14	1,25	100	22	-	11	9	6	13,4	•	•		
14	1,5	100	22	-	11	9	6	13,3	•	•		
16	1,5	100	22	-	12	9	6	15,3	•	•		
18	1,5	110	22	-	14	11	8	17,3	•	•		
20	1,5	125	25	-	16	12	8	19,3	•	•		

€ p.33

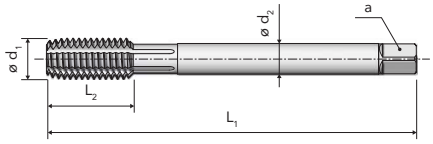
COLD FORMING TAPS for blind and through holes
With oil grooves

2,5 x D | HSSE

DIN 2174 (371)≤ M10



DIN 2174 (374)≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A81 N 6GX TiN	A81 N 6GX TiCN		
P	P.1-2	• 40-45	• 40-45		
	P.3	• 35-40	• 35-40		
N	N.1-2	• 40-45	• 40-45		
	N.3	• 35-40	• 35-40		
	N.5-6	• 40-45	• 40-45		

	A81 N 6GX TiN	A81 N 6GX TiCN
		
Tolerance	6GX	6GX
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

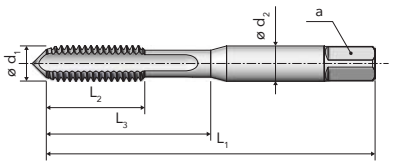
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A81 N 6GX TiN	A81 N 6GX TiCN		
M 3	0,35	56	10	18	3,5	2,7	4	2,85	•	•		
4	0,5	63	12	21	4,5	3,4	5	3,8	•	•		
5	0,5	70	14	24,5	6	4,9	5	4,8	•	•		
6	0,75	80	16	29	6	4,9	5	5,65	•	•		
8	1	90	18	33	8	6,2	5	7,55	•	•		
10	1	90	18	34	10	8	6	9,55	•	•		
10	1,25	100	20	36	10	8	6	9,4	•	•		
12	1	100	22	-	9	7	6	11,55	•	•		
12	1,25	100	22	-	9	7	6	11,4	•	•		
12	1,5	100	22	-	9	7	6	11,3	•	•		
14	1,25	100	22	-	11	9	6	13,4	•	•		
14	1,5	100	22	-	11	9	6	13,3	•	•		
16	1,5	100	22	-	12	9	6	15,3	•	•		
18	1,5	110	22	-	14	11	8	17,3	•	•		
20	1,5	125	25	-	16	12	8	19,3	•	•		

€ p.33

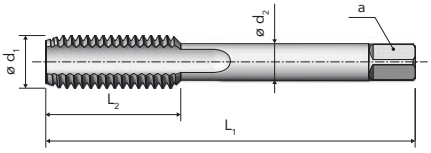
HAND TAPS for blind and through holes
In sets of three pieces

2,5 x D | HSS

DIN 2184-2≤Ø 1/4"



DIN 2184-2≥Ø 5/16"



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A7 ROUGHING	A7 SECOND	A7 FINISHING	A7 SET
P	P.1-4	•	•	•	•
	P.7	•	•	•	•
K	K.2	•	•	•	•
N	N.1-3	•	•	•	•
	N.5-7	•	•	•	•

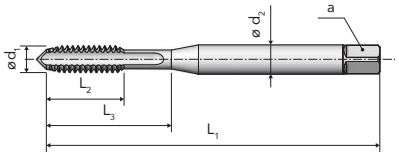
	A7 ROUGHING	A7 SECOND	A7 FINISHING	A7 SET
Tolerance	—	—	2B	2B
Chamfer form	A (5-6)	D (4-5)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH	RH
Through coolant	—	—	—	—

UNC	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A7 ROUGHING	A7 SECOND	A7 FINISHING	A7 SET
Nr.1	64	1,854	36	7,5	12	2,8	2,1	3	1,55	•	•	•	•
Nr.2	56	2,184	36	8,5	13,5	2,8	2,1	3	1,85	•	•	•	•
Nr.3	48	2,515	40	8,5	14,5	2,8	2,1	3	2,1	•	•	•	•
Nr.4	40	2,845	40	10	18	3,5	2,7	3	2,35	•	•	•	•
Nr.5	40	3,175	40	10	18	3,5	2,7	3	2,65	•	•	•	•
Nr.6	32	3,505	45	11	20	4	3	3	2,85	•	•	•	•
Nr.8	32	4,166	45	12	21	4,5	3,4	3	3,5	•	•	•	•
Nr.10	24	4,826	50	14	23	6	4,9	3	3,9	•	•	•	•
Nr.12	24	5,486	56	16	28	6	4,9	3	4,5	•	•	•	•
1/4"	20	6,35	56	16	28	6	4,9	3	5,1	•	•	•	•
5/16"	18	7,938	63	22	-	6	4,9	3	6,6	•	•	•	•
3/8"	16	9,525	70	24	-	7	5,5	3	8	•	•	•	•
7/16"	14	11,113	70	24	-	8	6,2	3	9,4	•	•	•	•
1/2"	13	12,7	75	28	-	9	7	3	10,8	•	•	•	•
9/16"	12	14,288	80	28	-	11	9	4	12,2	•	•	•	•
5/8"	11	15,875	80	30	-	12	9	4	13,5	•	•	•	•
3/4"	10	19,05	95	32	-	14	11	4	16,5	•	•	•	•
7/8"	9	22,225	100	32	-	18	14,5	4	19,5	•	•	•	•
1"	8	25,4	110	36	-	18	14,5	4	22,25	•	•	•	•
1 1/8"	7	28,575	125	40	-	22	18	4	25	•	•	•	•
1 1/4"	7	31,75	125	40	-	22	18	4	28	•	•	•	•

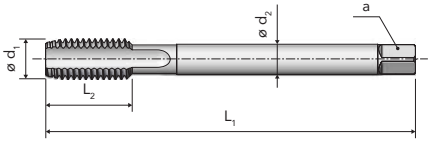
€ p.34

MACHINE TAPS **FC** = for blind holes - **FP** = for through holes
Straight flutes

DIN 2184-1≤Ø 1/4"



DIN 2184-1≥Ø 5/16"



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A27 FC BRIGHT	A27 FC TiN	A27 FP BRIGHT	A27 FP TiN
P	P.1		• 20-25		• 20-25
	P.2	• 10-12	• 15-20	• 10-12	• 15-20
	P.3	• 8-10	• 12-15	• 8-10	• 12-15
K	K.2	• 8-10	• 12-15	• 8-10	• 12-15
N	N.1		• 20-25		• 20-25
	N.5		• 15-20		• 15-20

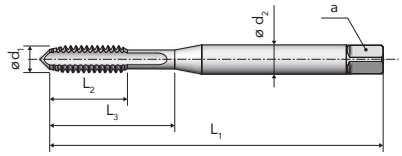
	A27 FC BRIGHT	A27 FC TiN	A27 FP BRIGHT	A27 FP TiN
				
Tolerance	2B	2B	2B	2B
Chamfer form	C (2-3)	C (2-3)	A (5-6)	A (5-6)
Hole type	1,5 x D	1,5 x D	1,5 x D	1,5 x D
Direction of cut	RH	RH	RH	RH
Through coolant	—	—	—	—

UNC	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A27 FC BRIGHT	A27 FC TiN	A27 FP BRIGHT	A27 FP TiN
Nr.2	56	2,184	45	9	13	2,8	2,1	3	1,85	•	•	•	•
Nr.3	48	2,515	50	9	15	2,8	2,1	3	2,1	•	•	•	•
Nr.4	40	2,845	56	10	18	3,5	2,7	3	2,35	•	•	•	•
Nr.5	40	3,175	56	10	18	3,5	2,7	3	2,65	•	•	•	•
Nr.6	32	3,505	56	11	20	4	3	3	2,85	•	•	•	•
Nr.8	32	4,166	63	13	22	4,5	3,4	3	3,5	•	•	•	•
Nr.10	24	4,826	70	16	26,5	6	4,9	3	3,9	•	•	•	•
Nr.12	24	5,486	80	16	26,5	6	4,9	3	4,5	•	•	•	•
1/4"	20	6,35	80	17	30	7	5,5	3	5,1	•	•	•	•
5/16"	18	7,938	90	18	-	6	4,9	3	6,6	•	•	•	•
3/8"	16	9,525	100	22	-	7	5,5	3	8	•	•	•	•
7/16"	14	11,113	100	24	-	8	6,2	3	9,4	•	•	•	•
1/2"	13	12,7	110	26	-	9	7	3	10,8	•	•	•	•
9/16"	12	14,288	110	28	-	11	9	3	12,2	•	•	•	•
5/8"	11	15,875	110	28	-	12	9	3	13,5	•	•	•	•
3/4"	10	19,05	125	32	-	14	11	4	16,5	•	•	•	•
7/8"	9	22,225	140	32	-	18	14,5	4	19,5	•	•	•	•
1"	8	25,4	160	36	-	18	14,5	4	22,25	•	•	•	•
1 1/8"	7	28,575	180	40	-	22	18	4	25	•		•	
1 1/4"	7	31,75	180	40	-	22	18	4	28	•		•	
1 3/8"	6	34,925	200	50	-	28	22	4	30,75	•		•	
1 1/2"	6	38,1	200	50	-	28	22	4	34	•		•	

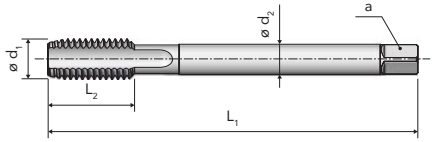
€ p.34

MACHINE TAPS for blind and through holes
Straight flutes / for cast iron

DIN 2184-1≤Ø 1/4"



DIN 2184-1≥Ø 5/16"



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A49 NITRIDED	A49 TiCN		
K	K.1	• 15-20	• 40-45		
N	N.4	• 15-20	• 40-45		
	N.7	• 15-20	• 40-45		
	N.9-10	• 20-25	• 45-50		

	A49 NITRIDED	A49 TiCN
		
Tolerance	2BX	2BX
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

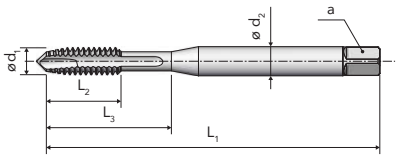
UNC	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A49 NITRIDED	A49 TiCN
Nr.2	56	2,184	45	9	13	2,8	2,1	3	1,85	•	•
Nr.3	48	2,515	50	9	15	2,8	2,1	3	2,1	•	•
Nr.4	40	2,845	56	10	18	3,5	2,7	3	2,35	•	•
Nr.5	40	3,175	56	10	18	3,5	2,7	3	2,65	•	•
Nr.6	32	3,505	56	11	20	4	3	3	2,85	•	•
Nr.8	32	4,166	63	13	22	4,5	3,4	3	3,5	•	•
Nr.10	24	4,826	70	16	26,5	6	4,9	3	3,9	•	•
Nr.12	24	5,486	80	16	26,5	6	4,9	3	4,5	•	•
1/4"	20	6,35	80	17	30	7	5,5	3	5,1	•	•
5/16"	18	7,938	90	18	-	6	4,9	4	6,6	•	•
3/8"	16	9,525	100	22	-	7	5,5	4	8	•	•
7/16"	14	11,113	100	24	-	8	6,2	4	9,4	•	•
1/2"	13	12,7	110	26	-	9	7	4	10,8	•	•
9/16"	12	14,288	110	28	-	11	9	4	12,2	•	•
5/8"	11	15,875	110	28	-	12	9	4	13,5	•	•
3/4"	10	19,05	125	32	-	14	11	4	16,5	•	•
7/8"	9	22,225	140	32	-	18	14,5	4	19,5	•	•
1"	8	25,4	160	36	-	18	14,5	5	22,25	•	•
1 1/8"	7	28,575	180	40	-	22	18	5	25	•	
1 1/4"	7	31,75	180	40	-	22	18	5	28	•	
1 3/8"	6	34,925	200	50	-	28	22	5	30,75	•	
1 1/2"	6	38,1	200	50	-	28	22	5	34	•	

€ p.35

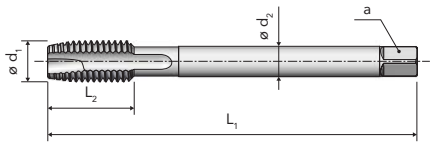
MACHINE TAPS for through holes
Straight flutes with spiral point

2,5 x D | HSSE

DIN 2184-1≤Ø 1/4"



DIN 2184-1≥Ø 5/16"



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A19 S BRIGHT	A19 S TiN	A19 S TiCN	A19 S 3B BRIGHT
P	P.2	• 20-25	• 30-35	• 30-35	• 20-25
	P.3	• 15-20	• 25-30	• 25-30	• 15-20
	P.4	• 12-15	• 20-25	• 20-25	• 12-15
	P.5		• 10-15	• 10-15	
	P.7		• 10-15	• 10-15	
M	M.1		• 10-15	• 10-15	
K	K.2	• 15-20	• 25-30	• 25-30	• 15-20
N	N.2-3	• 20-25	• 30-35	• 30-35	• 20-25
	N.6	• 15-18	• 25-30	• 25-30	• 15-18

	A19 S BRIGHT	A19 S TiN	A19 S TiCN	A19 S 3B BRIGHT
				
Tolerance	2B	2B	2B	3B
Chamfer form	B (4-5)	B (4-5)	B (4-5)	B (4-5)
Hole type	2,5 x D	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH	RH
Through coolant	—	—	—	—

UNC	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A19 S BRIGHT	A19 S TiN	A19 S TiCN	A19 S 3B BRIGHT
Nr.2	56	2,184	45	8	13	2,8	2,1	2	1,85	•	•	•	
Nr.3	48	2,515	50	9	15	2,8	2,1	3	2,1	•	•	•	
Nr.4	40	2,845	56	10	18	3,5	2,7	3	2,35	•	•	•	
Nr.5	40	3,175	56	10	18	3,5	2,7	3	2,65	•	•	•	
Nr.6	32	3,505	56	11	20	4	3	3	2,85	•	•	•	•
Nr.8	32	4,166	63	13	22	4,5	3,4	3	3,5	•	•	•	•
Nr.10	24	4,826	70	16	26,5	6	4,9	3	3,9	•	•	•	•
Nr.12	24	5,486	80	16	26,5	6	4,9	3	4,5	•	•	•	•
1/4"	20	6,35	80	17	30	7	5,5	3	5,1	•	•	•	•
5/16"	18	7,938	90	18	-	6	4,9	3	6,6	•	•	•	•
3/8"	16	9,525	100	22	-	7	5,5	3	8	•	•	•	•
7/16"	14	11,113	100	24	-	8	6,2	3	9,4	•	•	•	•
1/2"	13	12,7	110	26	-	9	7	3	10,8	•	•	•	•
9/16"	12	14,288	110	28	-	11	9	3	12,2	•	•	•	•
5/8"	11	15,875	110	28	-	12	9	3	13,5	•	•	•	•
3/4"	10	19,05	125	32	-	14	11	4	16,5	•	•	•	•
7/8"	9	22,225	140	32	-	18	14,5	4	19,5	•	•	•	
1"	8	25,4	160	36	-	18	14,5	4	22,25	•	•	•	
NEW **1 1/4"**	7	31,75	180	40	-	22	18	4	28	•			
NEW **1 1/2"**	6	38,1	200	50	-	28	22	4	34	•			

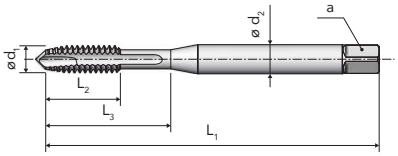
€ p.35

MACHINE TAPS for through holes
Straight flutes with spiral point / for stainless steel

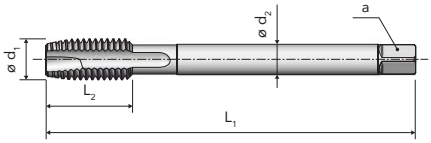
2,5 x D | HSSE

NEW
A19 S
TiX2

DIN 2184-1≤Ø 1/4"



DIN 2184-1≥Ø 5/16"



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A19 S TiX2			
P	P.7	• 10-15			
M	M.1	• 10-15			

Tolerance	2B
Chamfer form	B (4-5)
Hole type	2,5 x D
Direction of cut	RH
Through coolant	—

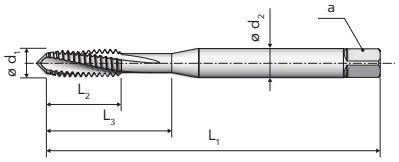
UNC	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A19 S TiX2
Nr.6	32	3,505	56	11	20	4	3	3	2,85	•
Nr.8	32	4,166	63	13	22	4,5	3,4	3	3,5	•
Nr.10	24	4,826	70	16	26,5	6	4,9	3	3,9	•
Nr.12	24	5,486	80	16	26,5	6	4,9	3	4,5	•
1/4"	20	6,35	80	17	30	7	5,5	3	5,1	•
5/16"	18	7,938	90	18	-	6	4,9	3	6,6	•
3/8"	16	9,525	100	22	-	7	5,5	3	8	•
7/16"	14	11,113	100	24	-	8	6,2	3	9,4	•
1/2"	13	12,7	110	26	-	9	7	3	10,8	•
9/16"	12	14,288	110	28	-	11	9	3	12,2	•
5/8"	11	15,875	110	28	-	12	9	3	13,5	•
3/4"	10	19,05	125	32	-	14	11	4	16,5	•
7/8"	9	22,225	140	32	-	18	14,5	4	19,5	•
1"	8	25,4	160	36	-	18	14,5	4	22,25	•

€ p.36

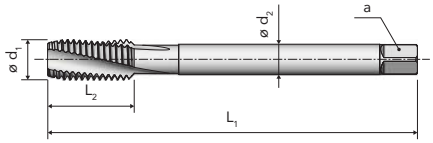
MACHINE TAPS for blind holes
15° spiral flutes

R15 | 1,5 x D | HSSE

DIN 2184-1≤Ø 1/4"



DIN 2184-1≥Ø 5/16"



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A33 BRIGHT	A33 TiN	A33 3B BRIGHT
P	P.1	• 18-20	• 30-35	• 18-20
	P.2	• 15-18	• 25-30	• 15-18
	P.3	• 12-15	• 20-25	• 12-15
	P.4	• 10-12	• 15-20	• 10-12
	P.5		• 5-10	
K	K.2	• 12-15	• 20-25	• 12-15
N	N.1	• 18-20		• 18-20
	N.2-3	• 15-18	• 25-30	• 15-18
	N.5	• 15-18		• 15-18
	N.6	• 12-15	• 20-25	• 12-15

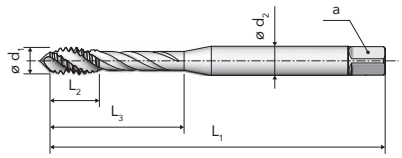
	A33 BRIGHT	A33 TiN	A33 3B BRIGHT
Tolerance	2B	2B	3B
Chamfer form	C (2-3)	C (2-3)	C (2-3)
Hole type	1,5 x D	1,5 x D	1,5 x D
Direction of cut	RH	RH	RH
Through coolant	—	—	—

UNC	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A33 BRIGHT	A33 TiN	A33 3B BRIGHT
Nr.2	56	2,184	45	8	13	2,8	2,1	3	1,85	•	•	
Nr.3	48	2,515	50	9	15	2,8	2,1	3	2,1	•	•	
Nr.4	40	2,845	56	10	18	3,5	2,7	3	2,35	•	•	
Nr.5	40	3,175	56	10	18	3,5	2,7	3	2,65	•	•	
Nr.6	32	3,505	56	11	20	4	3	3	2,85	•	•	•
Nr.8	32	4,166	63	13	20	4,5	3,4	3	3,5	•	•	•
Nr.10	24	4,826	70	16	26,5	6	4,9	3	3,9	•	•	•
Nr.12	24	5,486	80	16	29	6	4,9	3	4,5	•	•	•
1/4"	20	6,35	80	17	30	7	5,5	3	5,1	•	•	•
5/16"	18	7,938	90	18	-	6	4,9	3	6,6	•	•	•
3/8"	16	9,525	100	22	-	7	5,5	3	8	•	•	•
7/16"	14	11,113	100	24	-	8	6,2	3	9,4	•	•	•
1/2"	13	12,7	110	26	-	9	7	3	10,8	•	•	•
9/16"	12	14,288	110	28	-	11	9	3	12,2	•	•	•
5/8"	11	15,875	110	28	-	12	9	3	13,5	•	•	•
3/4"	10	19,05	125	32	-	14	11	4	16,5	•	•	•
7/8"	9	22,225	140	32	-	18	14,5	4	19,5	•	•	
1"	8	25,4	160	36	-	18	14,5	4	22,25	•	•	
1 1/8"	7	28,575	180	40	-	22	18	4	25	•		
1 1/4"	7	31,75	180	40	-	22	18	4	28	•		
1 3/8"	6	34,925	200	50	-	28	22	4	30,75	•		
1 1/2"	6	38,1	200	50	-	28	22	4	34	•		

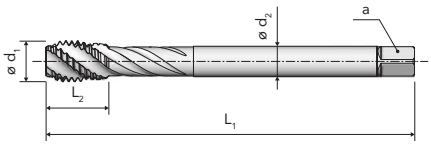
€ p.36

MACHINE TAPS for blind holes
40° spiral flutes / back tapered

DIN 2184-1≤Ø 1/4"



DIN 2184-1≥Ø 5/16"



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A60 BRIGHT	A60 TiN		
P	P.1	• 12-15	• 25-30		
	P.2	• 10-15	• 20-25		
N	N.1	• 12-15			
	N.2	• 12-15	• 25-30		
	N.5	• 10-12			
	N.6	• 10-12	• 20-25		

	A60 BRIGHT	A60 TiN
		
Tolerance	2B	2B
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

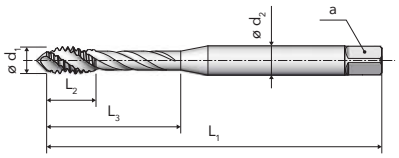
UNC	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A60 BRIGHT	A60 TiN
Nr.2	56	2,184	45	6	13	2,8	2,1	3	1,85	•	•
Nr.3	48	2,515	50	6	15	2,8	2,1	3	2,1	•	•
Nr.4	40	2,845	56	6,5	21	3,5	2,7	3	2,35	•	•
Nr.5	40	3,175	56	6,5	21	3,5	2,7	3	2,65	•	•
Nr.6	32	3,505	56	7,5	22,5	4	3	3	2,85	•	•
Nr.8	32	4,166	63	7,5	26	4,5	3,4	3	3,5	•	•
Nr.10	24	4,826	70	10	28,5	6	4,9	3	3,9	•	•
Nr.12	24	5,486	80	10	28,5	6	4,9	3	4,5	•	•
1/4"	20	6,35	80	11,5	32	7	5,5	3	5,1	•	•
5/16"	18	7,938	90	13	-	6	4,9	3	6,6	•	•
3/8"	16	9,525	100	14	-	7	5,5	3	8	•	•
7/16"	14	11,113	100	17	-	8	6,2	3	9,4	•	•
1/2"	13	12,7	110	19	-	9	7	4	10,8	•	•
9/16"	12	14,288	110	21	-	11	9	4	12,2	•	•
5/8"	11	15,875	110	22,5	-	12	9	4	13,5	•	•
3/4"	10	19,05	125	26	-	14	11	4	16,5	•	•
7/8"	9	22,225	140	30	-	18	14,5	4	19,5	•	•
1"	8	25,4	160	36,5	-	18	14,5	4	22,25	•	•

€ p.37

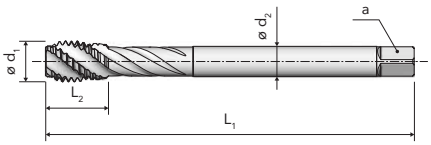
MACHINE TAPS for blind holes
40° spiral flutes / back tapered

R40 | 2,5 x D | HSSE

DIN 2184-1≤Ø 1/4"



DIN 2184-1≥Ø 5/16"



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A60 BRIGHT	A60 TiN	A60 TiCN	A60 TiX2
P	P.3	• 12-15	• 20-25	• 20-25	
	P.4	• 10-12	• 15-20	• 15-20	
	P.5		• 5-10	• 5-10	
	P.7		• 8-10	• 8-10	• 8-10
M	M.1		• 8-10	• 8-10	• 8-10
	M.2				• 5-7
K	K.2	• 12-15	• 20-25	• 20-25	
N	N.3	• 15-18	• 25-30	• 25-30	
	N.6	• 15-18	• 25-30	• 25-30	

	A60 S BRIGHT	A60 S TiN	A60 S TiCN	A60 S TiX2
				
Tolerance	2B	2B	2B	2B
Chamfer form	C (2-3)	C (2-3)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH	RH
Through coolant	—	—	—	—

UNC	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A60 S BRIGHT	A60 S TiN	A60 S TiCN	A60 S TiX2
Nr.2	56	2,184	45	6	13	2,8	2,1	3	1,85	•	•	•	•
Nr.3	48	2,515	50	6	15	2,8	2,1	3	2,1	•	•	•	•
Nr.4	40	2,845	56	6,5	21	3,5	2,7	3	2,35	•	•	•	•
Nr.5	40	3,175	56	6,5	21	3,5	2,7	3	2,65	•	•	•	•
Nr.6	32	3,505	56	7,5	22,5	4	3	3	2,85	•	•	•	•
Nr.8	32	4,166	63	7,5	26	4,5	3,4	3	3,5	•	•	•	•
Nr.10	24	4,826	70	10	28,5	6	4,9	3	3,9	•	•	•	•
Nr.12	24	5,486	80	10	28,5	6	4,9	3	4,5	•	•	•	•
1/4"	20	6,35	80	11,5	32	7	5,5	3	5,1	•	•	•	•
5/16"	18	7,938	90	13	-	6	4,9	3	6,6	•	•	•	•
3/8"	16	9,525	100	14	-	7	5,5	3	8	•	•	•	•
7/16"	14	11,113	100	17	-	8	6,2	3	9,4	•	•	•	•
1/2"	13	12,7	110	19	-	9	7	4	10,8	•	•	•	•
9/16"	12	14,288	110	21	-	11	9	4	12,2	•	•	•	•
5/8"	11	15,875	110	22,5	-	12	9	4	13,5	•	•	•	•
3/4"	10	19,05	125	26	-	14	11	4	16,5	•	•	•	•
7/8"	9	22,225	140	30	-	18	14,5	4	19,5	•	•	•	•
1"	8	25,4	160	36,5	-	18	14,5	4	22,25	•	•	•	•
NEW **1 1/4"**	7	31,75	180	42	-	22	18	5	28	•			
NEW **1 1/2"**	6	38,1	200	49	-	28	22	5	34	•			

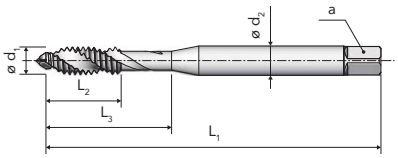
€ p.37

MACHINE TAPS **for blind holes**
Two 40° spiral flutes / for light alloys

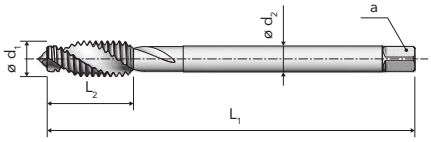
R40 z2 | 2,5 x D | HSSE

A65 BRIGHT

DIN 2184-1≤Ø 1/4"



DIN 2184-1≥Ø 5/16"



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A65 BRIGHT			
N	P.1-2	• 12-15			
	P.5-6	• 10-15			
S	S.1	• 6-8			
	S.3	• 6-8			

	A65 BRIGHT
Tolerance	2B
Chamfer form	C (2-3)
Hole type	2,5 x D
Direction of cut	RH
Through coolant	—

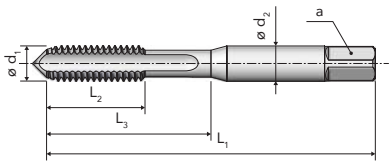
UNC	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A65 BRIGHT
Nr.3	48	2,515	50	9	15	2,8	2,1	2	2,1	•
Nr.4	40	2,845	56	10	18	3,5	2,7	2	2,35	•
Nr.5	40	3,175	56	10	18	3,5	2,7	2	2,65	•
Nr.6	32	3,505	56	11	20	4	3	2	2,85	•
Nr.8	32	4,166	63	13	20	4,5	3,4	2	3,5	•
Nr.10	24	4,826	70	16	26,5	6	4,9	2	3,9	•
Nr.12	24	5,486	80	16	29	6	4,9	2	4,5	•
1/4"	20	6,35	80	17	30	7	5,5	2	5,1	•
5/16"	18	7,938	90	18	-	6	4,9	2	6,6	•
3/8"	16	9,525	100	22	-	7	5,5	2	8	•

€ p.38

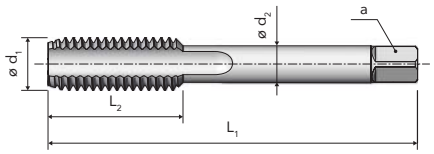
HAND TAPS for blind and through holes
In sets of two pieces

2,5 x D | HSS

DIN 2184-2≤Ø 1/4"



DIN 2184-2≥Ø 5/16"



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A8 ROUGHING	A8 FINISHING	A8 SET
P	P.1-4	•	•	•
	P.7	•	•	•
K	K.2	•	•	•
N	N.1-3	•	•	•
	N.5-7	•	•	•

	A8 ROUGHING	A8 FINISHING	A8 SET
			
Tolerance	—	2B	2B
Chamfer form	A (5-6)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH
Through coolant	—	—	—

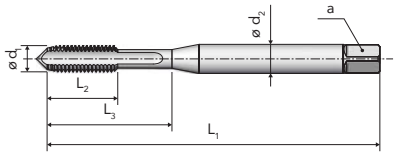
UNF	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A8 ROUGHING	A8 FINISHING	A8 SET
Nr.2	64	2,184	36	9	15	2,8	2,1	3	1,85	•	•	•
Nr.3	56	2,515	40	9	15	2,8	2,1	3	2,15	•	•	•
Nr.4	48	2,845	40	10	18	3,5	2,7	3	2,4	•	•	•
Nr.5	44	3,175	40	10	18	3,5	2,7	3	2,7	•	•	•
Nr.6	40	3,505	45	11	20	4	3	3	2,95	•	•	•
Nr.8	36	4,166	45	12	21	4,5	3,4	3	3,5	•	•	•
Nr.10	32	4,826	50	14	23	6	4,9	3	4,1	•	•	•
Nr.12	28	5,486	56	16	28	6	4,9	3	4,6	•	•	•
1/4"	28	6,35	56	16	28	6	4,9	3	5,5	•	•	•
5/16"	24	7,938	63	18	-	6	4,9	3	6,9	•	•	•
3/8"	24	9,525	63	18	-	7	5,5	3	8,5	•	•	•
7/16"	20	11,113	70	20	-	8	6,2	3	9,9	•	•	•
1/2"	20	12,7	70	20	-	9	7	4	11,5	•	•	•
9/16"	18	14,288	70	22	-	11	9	4	12,9	•	•	•
5/8"	18	15,875	70	22	-	12	9	4	14,5	•	•	•
3/4"	16	19,05	80	22	-	14	11	4	17,5	•	•	•
7/8"	14	22,225	80	22	-	18	14,5	4	20,4	•	•	•
1"	12	25,4	90	22	-	18	14,5	4	23,25	•	•	•
1 1/8"	12	28,575	90	22	-	22	18	4	26,5	•	•	•
1 1/4"	12	31,75	90	22	-	22	18	4	29,5	•	•	•

€ p.38

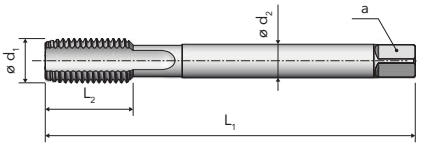
MACHINE TAPS FC = for blind holes - FP = for through holes
Straight flutes

1,5 x D | 1,5 x D | HSSE

DIN 2184-1≤Ø 1/4"



DIN 2184-1≥Ø 5/16"



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A28 FC BRIGHT	A28 FC TiN	A28 FP BRIGHT	A28 FP TiN
P	P.1		• 20-25		• 20-25
	P.2	• 10-12	• 15-20	• 10-12	• 15-20
	P.3	• 8-10	• 12-15	• 8-10	• 12-15
K	K.2	• 8-10	• 12-15	• 8-10	• 12-15
N	N.1		• 20-25		• 20-25
	N.5		• 15-20		• 15-20

	A28 FC BRIGHT	A28 FC TiN	A28 FP BRIGHT	A28 FP TiN
				
Tolerance	2B	2B	2B	2B
Chamfer form	C (2-3)	C (2-3)	A (5-6)	A (5-6)
Hole type	1,5 x D	1,5 x D	1,5 x D	1,5 x D
Direction of cut	RH	RH	RH	RH
Through coolant	—	—	—	—

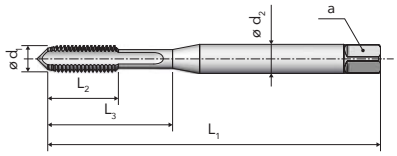
UNF	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A28 FC BRIGHT	A28 FC TiN	A28 FP BRIGHT	A28 FP TiN
Nr.2	64	2,184	45	9	13	2,8	2,1	3	1,85	•	•	•	•
Nr.3	56	2,515	50	9	15	2,8	2,1	3	2,15	•	•	•	•
Nr.4	48	2,845	56	10	18	3,5	2,7	3	2,4	•	•	•	•
Nr.5	44	3,175	56	10	18	3,5	2,7	3	2,7	•	•	•	•
Nr.6	40	3,505	56	11	20	4	3	3	2,95	•	•	•	•
Nr.8	36	4,166	63	12	21	4,5	3,4	3	3,5	•	•	•	•
Nr.10	32	4,826	70	14	24,5	6	4,9	3	4,1	•	•	•	•
Nr.12	28	5,486	80	16	26,5	6	4,9	3	4,6	•	•	•	•
1/4"	28	6,35	80	16	30	7	5,5	3	5,5	•	•	•	•
5/16"	24	7,938	90	18	-	6	4,9	3	6,9	•	•	•	•
3/8"	24	9,525	90	18	-	7	5,5	3	8,5	•	•	•	•
7/16"	20	11,113	100	20	-	8	6,2	3	9,9	•	•	•	•
1/2"	20	12,7	100	22	-	9	7	3	11,5	•	•	•	•
9/16"	18	14,288	100	22	-	11	9	3	12,9	•	•	•	•
5/8"	18	15,875	100	22	-	12	9	3	14,5	•	•	•	•
3/4"	16	19,05	110	25	-	14	11	4	17,5	•	•	•	•
7/8"	14	22,225	125	25	-	18	14,5	4	20,4	•	•	•	•
1"	12	25,4	140	28	-	18	14,5	4	23,25	•	•	•	•
1 1/8"	12	28,575	150	28	-	22	18	4	26,5	•		•	
1 1/4"	12	31,75	150	28	-	22	18	4	29,5	•		•	
1 3/8"	12	34,925	170	30	-	28	22	4	32,75	•		•	
1 1/2"	12	38,1	170	30	-	28	22	5	36	•		•	

€ p.39

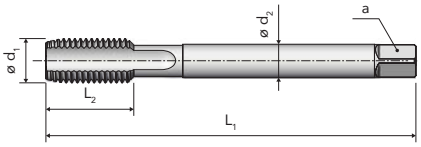
MACHINE TAPS for blind and through holes
Straight flutes / for cast iron

HSSE

DIN 2184-1≤Ø 1/4"



DIN 2184-1≥Ø 5/16"



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A50 NITRIDED	A50 TiCN		
K	K.1	• 15-20	• 40-45		
N	N.4	• 15-20	• 40-45		
	N.7	• 15-20	• 40-45		
	N.9-10	• 20-25	• 45-50		

	A50 NITRIDED	A50 TiCN
		
Tolerance	2BX	2BX
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

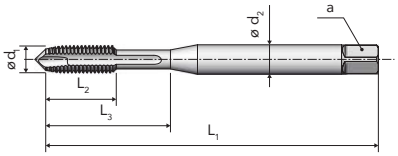
UNF	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A50 NITRIDED	A50 TiCN		
Nr.8	36	4,166	63	12	21	4,5	3,4	3	3,5	•	•		
Nr.10	32	4,826	70	14	24,5	6	4,9	3	4,1	•	•		
Nr.12	28	5,486	80	16	26,5	6	4,9	3	4,6	•	•		
1/4"	28	6,35	80	16	30	7	5,5	3	5,5	•	•		
5/16"	24	7,938	90	18	-	6	4,9	4	6,9	•	•		
3/8"	24	9,525	90	18	-	7	5,5	4	8,5	•	•		
7/16"	20	11,113	100	20	-	8	6,2	4	9,9	•	•		
1/2"	20	12,7	100	22	-	9	7	4	11,5	•	•		
9/16"	18	14,288	100	22	-	11	9	4	12,9	•	•		
5/8"	18	15,875	100	22	-	12	9	4	14,5	•	•		
3/4"	16	19,05	110	25	-	14	11	4	17,5	•	•		
7/8"	14	22,225	125	25	-	18	14,5	4	20,4	•	•		
1"	12	25,4	140	28	-	18	14,5	5	23,25	•	•		
1 1/8"	12	28,575	150	28	-	22	18	5	26,5	•			
1 1/4"	12	31,75	150	28	-	22	18	5	29,5	•			
1 3/8"	12	34,925	170	30	-	28	22	5	32,75	•			
1 1/2"	12	38,1	170	30	-	28	22	5	36	•			

€ p.40

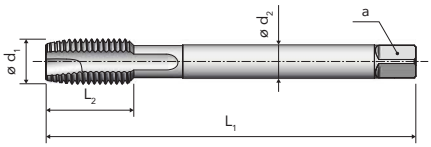
MACHINE TAPS for through holes
Straight flutes with spiral point

A SERIES

DIN 2184-1≤Ø 1/4"



DIN 2184-1≥Ø 5/16"



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A20 S BRIGHT	A20 S TiN	A20 S TiCN	A20 S 3B BRIGHT
P	P.2	• 20-25	• 30-35	• 30-35	• 20-25
	P.3	• 15-20	• 25-30	• 25-30	• 15-20
	P.4	• 12-15	• 20-25	• 20-25	• 12-15
	P.5		• 10-15	• 10-15	
	P.7		• 10-15	• 10-15	
M	M.1		• 10-15	• 10-15	
K	K.2	• 15-20	• 25-30	• 25-30	• 15-20
N	N.2-3	• 20-25	• 30-35	• 30-35	• 20-25
	N.6	• 15-18	• 25-30	• 25-30	• 15-18

	A20 S BRIGHT	A20 S TiN	A20 S TiCN	A20 S 3B BRIGHT
				
Tolerance	2B	2B	2B	3B
Chamfer form	B (4-5)	B (4-5)	B (4-5)	B (4-5)
Hole type	2,5 x D	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH	RH
Through coolant	—	—	—	—

UNF	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A20 S BRIGHT	A20 S TiN	A20 S TiCN	A20 S 3B BRIGHT	
Nr.2	64	2,184	45	8	13	2,8	2,1	2	1,85	•	•	•		
Nr.3	56	2,515	50	9	15	2,8	2,1	3	2,15	•	•	•		
Nr.4	48	2,845	56	10	18	3,5	2,7	3	2,4	•	•	•		
Nr.5	44	3,175	56	10	18	3,5	2,7	3	2,7	•	•	•		
Nr.6	40	3,505	56	11	20	4	3	3	2,95	•	•	•	•	
Nr.8	36	4,166	63	12	21	4,5	3,4	3	3,5	•	•	•	•	
Nr.10	32	4,826	70	14	24,5	6	4,9	3	4,1	•	•	•	•	
Nr.12	28	5,486	80	16	26,5	6	4,9	3	4,6	•	•	•	•	
1/4"	28	6,35	80	16	30	7	5,5	3	5,5	•	•	•	•	
5/16"	24	7,938	90	18	-	6	4,9	3	6,9	•	•	•	•	
3/8"	24	9,525	90	18	-	7	5,5	3	8,5	•	•	•	•	
7/16"	20	11,113	100	20	-	8	6,2	3	9,9	•	•	•	•	
1/2"	20	12,7	100	22	-	9	7	4	11,5	•	•	•	•	
9/16"	18	14,288	100	22	-	11	9	4	12,9	•	•	•	•	
5/8"	18	15,875	100	22	-	12	9	4	14,5	•	•	•	•	
3/4"	16	19,05	110	25	-	14	11	4	17,5	•	•	•	•	
7/8"	14	22,225	125	25	-	18	14,5	4	20,4	•	•	•		
1"	12	25,4	140	28	-	18	14,5	4	23,25	•	•	•		
1 1/4"	12	31,75	150	28	-	22	18	4	29,5	•				NEW
1 1/2"	12	38,1	170	30	-	28	22	5	36	•				NEW

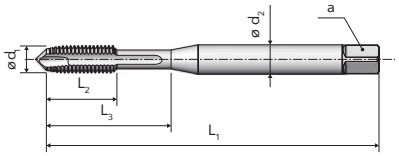
€ p.40

MACHINE TAPS for through holes
Straight flutes with spiral point / for stainless steel

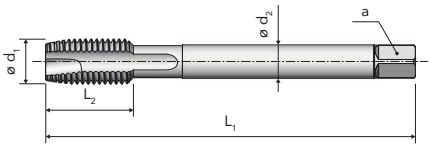
2,5 x D | HSSE

NEW
A20 S
TiX2

DIN 2184-1≤Ø 1/4"



DIN 2184-1≥Ø 5/16"



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A20 S TiX2			
P	P.7	• 10-15			
M	M.1	• 10-15			

	A20 S TiX2
Tolerance	2B
Chamfer form	B (4-5)
Hole type	2,5 x D
Direction of cut	RH
Through coolant	—

UNF	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A20 S TiX2
Nr.6	40	3,505	56	11	20	4	3	3	2,95	•
Nr.8	36	4,166	63	12	21	4,5	3,4	3	3,5	•
Nr.10	32	4,826	70	14	24,5	6	4,9	3	4,1	•
Nr.12	28	5,486	80	16	26,5	6	4,9	3	4,6	•
1/4"	28	6,35	80	16	30	7	5,5	3	5,5	•
5/16"	24	7,938	90	18	-	6	4,9	3	6,9	•
3/8"	24	9,525	90	18	-	7	5,5	3	8,5	•
7/16"	20	11,113	100	20	-	8	6,2	3	9,9	•
1/2"	20	12,7	100	22	-	9	7	4	11,5	•
9/16"	18	14,288	100	22	-	11	9	4	12,9	•
5/8"	18	15,875	100	22	-	12	9	4	14,5	•
3/4"	16	19,05	110	25	-	14	11	4	17,5	•
7/8"	14	22,225	125	25	-	18	14,5	4	20,4	•
1"	12	25,4	140	28	-	18	14,5	4	23,25	•

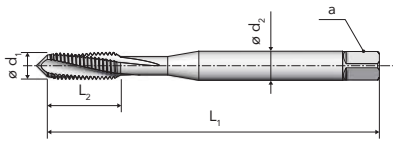
€ p.41

MACHINE TAPS for blind holes
15° spiral flutes

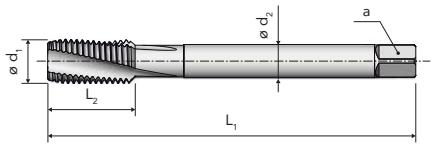
R15 | 1,5 x D | HSSE

A SERIES

DIN 2184-1≤Ø 1/4"



DIN 2184-1≥Ø 5/16"



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A34 BRIGHT	A34 TiN	A34 3B BRIGHT	
P	P.1	• 18-20	• 30-35	• 18-20	
	P.2	• 15-18	• 25-30	• 15-18	
	P.3	• 12-15	• 20-25	• 12-15	
	P.4	• 10-12	• 15-20	• 10-12	
	P.5		• 5-10		
K	K.2	• 12-15	• 20-25	• 12-15	
N	N.1	• 18-20		• 18-20	
	N.2-3	• 15-18	• 25-30	• 15-18	
	N.5	• 15-18		• 15-18	
	N.6	• 12-15	• 20-25	• 12-15	

	A34 BRIGHT	A34 TiN	A34 3B BRIGHT
			
Tolerance	2B	2B	3B
Chamfer form	C (2-3)	C (2-3)	C (2-3)
Hole type	1,5 x D	1,5 x D	1,5 x D
Direction of cut	RH	RH	RH
Through coolant	—	—	—

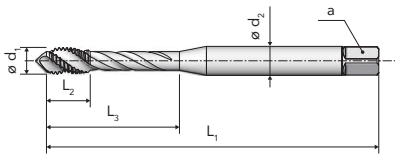
UNF	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A34 BRIGHT	A34 TiN	A34 3B BRIGHT
Nr.2	64	2,184	45	8	13	2,8	2,1	3	1,85	•	•	
Nr.3	56	2,515	50	9	15	2,8	2,1	3	2,15	•	•	
Nr.4	48	2,845	56	10	18	3,5	2,7	3	2,4	•	•	
Nr.5	44	3,175	56	10	18	3,5	2,7	3	2,7	•	•	
Nr.6	40	3,505	56	11	20	4	3	3	2,95	•	•	•
Nr.8	36	4,166	63	12	21	4,5	3,4	3	3,5	•	•	•
Nr.10	32	4,826	70	14	24,5	6	4,9	3	4,1	•	•	•
Nr.12	28	5,486	80	16	26,5	6	4,9	3	4,6	•	•	•
1/4"	28	6,35	80	16	30	7	5,5	3	5,5	•	•	•
5/16"	24	7,938	90	18	-	6	4,9	3	6,9	•	•	•
3/8"	24	9,525	90	18	-	7	5,5	3	8,5	•	•	•
7/16"	20	11,113	100	20	-	8	6,2	3	9,9	•	•	•
1/2"	20	12,7	100	22	-	9	7	3	11,5	•	•	•
9/16"	18	14,288	100	22	-	11	9	3	12,9	•	•	•
5/8"	18	15,875	100	22	-	12	9	3	14,5	•	•	•
3/4"	16	19,05	110	25	-	14	11	4	17,5	•	•	•
7/8"	14	22,225	125	25	-	18	14,5	4	20,4	•	•	
1"	12	25,4	140	28	-	18	14,5	4	23,25	•	•	
1 1/8"	12	28,575	150	28	-	22	18	4	26,5	•		
1 1/4"	12	31,75	150	28	-	22	18	4	29,5	•		
1 3/8"	12	34,925	170	30	-	28	22	5	32,75	•		
1 1/2"	12	38,1	170	30	-	28	22	5	36	•		

€ p.41

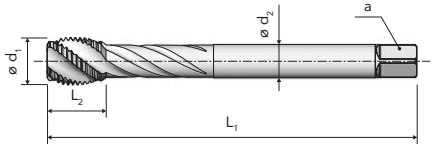
MACHINE TAPS for blind holes
40° spiral flutes / back tapered

R40 | 2,5 x D | HSSE

DIN 2184-1≤Ø 1/4"



DIN 2184-1≥Ø 5/16"



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A61 BRIGHT	A61 TiN		
P	P.1	• 12-15	• 25-30		
	P.2	• 10-15	• 20-25		
N	N.1	• 12-15			
	N.2	• 12-15	• 25-30		
	N.5	• 10-12			
	N.6	• 10-12	• 20-25		

	A61 BRIGHT	A61 TiN
		
Tolerance	2B	2B
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

UNF	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A61 BRIGHT	A61 TiN
Nr.2	64	2,184	45	5,5	13	2,8	2,1	3	1,85	•	•
Nr.3	56	2,515	50	6	18	2,8	2,1	3	2,15	•	•
Nr.4	48	2,845	56	6	18	3,5	2,7	3	2,4	•	•
Nr.5	44	3,175	56	6	18	3,5	2,7	3	2,7	•	•
Nr.6	40	3,505	56	6,5	22	4	3	3	2,95	•	•
Nr.8	36	4,166	63	7	26,5	4,5	3,4	3	3,5	•	•
Nr.10	32	4,826	70	8	29	6	4,9	3	4,1	•	•
Nr.12	28	5,486	80	9	29,5	6	4,9	3	4,6	•	•
1/4"	28	6,35	80	10	32	7	5,5	3	5,5	•	•
5/16"	24	7,938	90	11	-	6	4,9	3	6,9	•	•
3/8"	24	9,525	90	12	-	7	5,5	3	8,5	•	•
7/16"	20	11,113	100	13,5	-	8	6,2	3	9,9	•	•
1/2"	20	12,7	100	14,5	-	9	7	4	11,5	•	•
9/16"	18	14,288	100	15,5	-	11	9	4	12,9	•	•
5/8"	18	15,875	100	16	-	12	9	4	14,5	•	•
3/4"	16	19,05	110	18	-	14	11	4	17,5	•	•
7/8"	14	22,225	125	23,5	-	18	14,5	4	20,4	•	•
1"	12	25,4	140	26	-	18	14,5	4	23,25	•	•

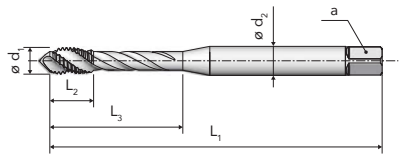
€ p.42

MACHINE TAPS for blind holes
40° spiral flutes / back tapered

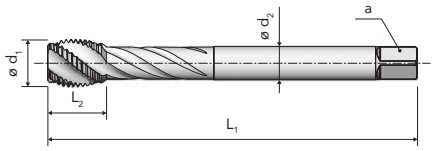
R40 | 2,5 x D | HSSE

A SERIES

DIN 2184-1≤Ø 1/4"



DIN 2184-1≥Ø 5/16"



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A61 S BRIGHT	A61 S TiN	A61 S TiCN	A61 S TiX2
P	P.3	• 12-15	• 20-25	• 20-25	
	P.4	• 10-12	• 15-20	• 15-20	
	P.5		• 5-10	• 5-10	
	P.7		• 8-10	• 8-10	• 8-10
M	M.1		• 8-10	• 8-10	• 8-10
	M.2				• 5-7
K	K.2	• 12-15	• 20-25	• 20-25	
N	N.3	• 15-18	• 25-30	• 25-30	
	N.6	• 15-18	• 25-30	• 25-30	

	A61 S BRIGHT	A61 S TiN	A61 S TiCN	NEW A61 S TiX2
				
Tolerance	2B	2B	2B	2B
Chamfer form	C (2-3)	C (2-3)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH	RH
Through coolant	—	—	—	—

UNF	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A61 S BRIGHT	A61 S TiN	A61 S TiCN	A61 S TiX2	
Nr.2	64	2,184	45	5,5	13	2,8	2,1	3	1,85	•	•	•		
Nr.3	56	2,515	50	6	18	2,8	2,1	3	2,15	•	•	•		
Nr.4	48	2,845	56	6	18	3,5	2,7	3	2,4	•	•	•		
Nr.5	44	3,175	56	6	18	3,5	2,7	3	2,7	•	•	•		
Nr.6	40	3,505	56	6,5	22	4	3	3	2,95	•	•	•	•	
Nr.8	36	4,166	63	7	26,5	4,5	3,4	3	3,5	•	•	•	•	
Nr.10	32	4,826	70	8	29	6	4,9	3	4,1	•	•	•	•	
Nr.12	28	5,486	80	9	29,5	6	4,9	3	4,6	•	•	•	•	
1/4"	28	6,35	80	10	32	7	5,5	3	5,5	•	•	•	•	
5/16"	24	7,938	90	11	-	6	4,9	3	6,9	•	•	•	•	
3/8"	24	9,525	90	12	-	7	5,5	3	8,5	•	•	•	•	
7/16"	20	11,113	100	13,5	-	8	6,2	3	9,9	•	•	•	•	
1/2"	20	12,7	100	14,5	-	9	7	4	11,5	•	•	•	•	
9/16"	18	14,288	100	15,5	-	11	9	4	12,9	•	•	•	•	
5/8"	18	15,875	100	16	-	12	9	4	14,5	•	•	•	•	
3/4"	16	19,05	110	18	-	14	11	4	17,5	•	•	•	•	
7/8"	14	22,225	125	23,5	-	18	14,5	4	20,4	•	•	•	•	
1"	12	25,4	140	26	-	18	14,5	4	23,25	•	•	•	•	
1 1/4"	12	31,75	150	26	-	22	18	5	29,5	•				NEW
1 1/2"	12	38,1	170	29	-	28	22	5	36	•				NEW

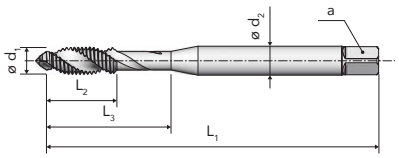
€ p.42

MACHINE TAPS **for blind holes**
Two 40° spiral flutes / for light alloys

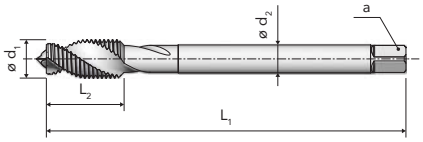
R40 z2 | 2,5 x D | HSSE

A66 BRIGHT

DIN 2184-1≤Ø 1/4"



DIN 2184-1≥Ø 5/16"



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A66 BRIGHT			
N	N.1-2	• 12-15			
	N.5-6	• 10-12			
S	S.1	• 6-8			
	S.3	• 6-8			

	A66 BRIGHT
Tolerance	2B
Chamfer form	C (2-3)
Hole type	2,5 x D
Direction of cut	RH
Through coolant	—

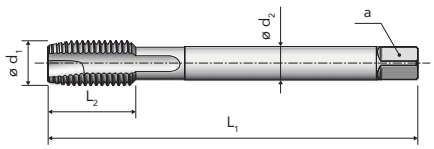
UNF	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A66 BRIGHT
Nr.2	64	2,184	45	8	13	2,8	2,1	2	1,85	•
Nr.3	56	2,515	50	9	15	2,8	2,1	2	2,15	•
Nr.4	48	2,845	56	10	18	3,5	2,7	2	2,4	•
Nr.5	44	3,175	56	10	18	3,5	2,7	2	2,7	•
Nr.6	40	3,505	56	11	20	4	3	2	2,95	•
Nr.8	36	4,166	63	12	21	4,5	3,4	2	3,5	•
Nr.10	32	4,826	70	14	24,5	6	4,9	2	4,1	•
Nr.12	28	5,486	80	16	26,5	6	4,9	2	4,6	•
1/4"	28	6,35	80	16	30	7	5,5	2	5,5	•
5/16"	24	7,938	90	18	-	6	4,9	2	6,9	•
3/8"	24	9,525	90	18	-	7	5,5	2	8,5	•

€ p.43

MACHINE TAPS for through holes
Straight flutes with spiral point

2,5 x D | HSSE

VERGNANO STANDARD



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A119 BRIGHT	A119 TiN		
P	P.2	• 20-25	• 30-35		
	P.3	• 15-20	• 25-30		
	P.4	• 12-15	• 20-25		
	P.5		• 10-15		
	P.7		• 10-15		
M	M.1		• 10-15		
K	K.2	• 15-20	• 25-30		
N	N.2-3	• 20-25	• 30-35		
	N.6	• 15-18	• 25-30		

	A119 BRIGHT	A119 TiN
		
Tolerance	2B	2B
Chamfer form	B (4-5)	B (4-5)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

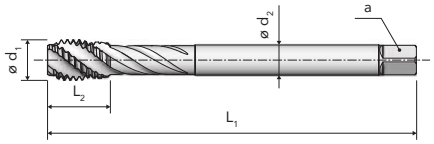
8-UN	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A119 BRIGHT	A119 TiN
1 1/8"	8	28,575	180	40	-	22	18	4	25,4	•	•
1 1/4"	8	31,75	180	40	-	25	20	4	28,6	•	•
1 3/8"	8	34,925	200	50	-	28	22	4	31,8	•	•
1 1/2"	8	38,1	200	50	-	32	24	4	35	•	•
1 5/8"	8	41,275	200	50	-	32	24	5	38,1	•	•
1 3/4"	8	44,45	200	50	-	36	29	5	41,3	•	•
1 7/8"	8	47,625	225	60	-	36	29	5	44,5	•	•
2"	8	50,8	225	60	-	40	32	5	47,7	•	•

€ p.43

MACHINE TAPS for blind holes
40° spiral flutes / back tapered

R40 | 2,5 x D | HSSE

VERGNANO STANDARD



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A160 BRIGHT	A160 TiN		
P	P.3	• 12-15	• 20-25		
	P.4	• 10-12	• 15-20		
	P.5		• 5-10		
	P.7		• 8-10		
M	M.1		• 8-10		
K	K.2	• 12-15	• 20-25		
N	N.3	• 15-18	• 25-30		
	N.6	• 15-18	• 25-30		

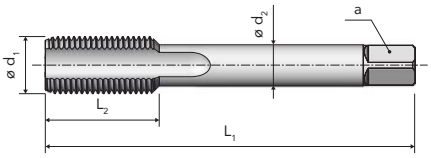
	A160 BRIGHT	A160 TiN
		
Tolerance	2B	2B
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

8-UN	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A160 BRIGHT	A160 TiN		
1 1/8"	8	28,575	180	40	-	22	18	4	25,4	•	•		
1 1/4"	8	31,75	180	41,5	-	25	20	4	28,6	•	•		
1 3/8"	8	34,925	200	50	-	28	22	4	31,1	•	•		
1 1/2"	8	38,1	200	50	-	32	24	5	35	•	•		
1 5/8"	8	41,275	200	52	-	32	24	5	38,1	•	•		
1 3/4"	8	44,45	200	52	-	36	29	5	41,3	•	•		
1 7/8"	8	47,625	225	53,5	-	36	29	5	44,5	•	•		
2"	8	50,8	225	61,5	-	40	32	5	47,7	•	•		

€ p.43

HAND TAPS for blind and through holes
In sets of two pieces

DIN 5157



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A5 ROUGHING	A5 FINISHING	A5 SET	
P	P.1-4	•	•	•	
	P.7	•	•	•	
K	K.2	•	•	•	
N	N.1-3	•	•	•	
	N.5-7	•	•	•	

	A5 ROUGHING	A5 FINISHING	A5 SET
			
Tolerance	—	ISO 5969	ISO 5969
Chamfer form	A (5-6)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH
Through coolant	—	—	—

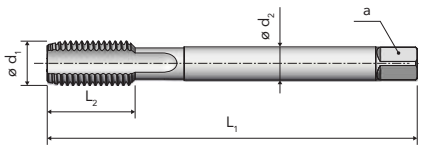
G	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A5 ROUGHING	A5 FINISHING	A5 SET
1/8"	28	9,728	63	18	-	7	5,5	3	8,8	•	•	•
1/4"	19	13,157	70	20	-	11	9	4	11,8	•	•	•
3/8"	19	16,662	70	20	-	12	9	4	15,25	•	•	•
1/2"	14	20,955	80	22	-	16	12	4	19	•	•	•
5/8"	14	22,911	80	22	-	18	14,5	4	21	•	•	•
3/4"	14	26,441	90	22	-	20	16	4	24,5	•	•	•
7/8"	14	30,201	90	22	-	22	18	4	28,25	•	•	•
1"	11	33,249	100	25	-	25	20	4	30,75	•	•	•
1 1/8"	11	37,897	125	32	-	28	22	5	35,5	•	•	•
1 1/4"	11	41,91	125	32	-	32	24	5	39,5	•	•	•
1 1/2"	11	47,803	140	32	-	36	29	6	45,25	•	•	•
1 3/4"	11	53,746	140	36	-	40	32	6	51	•	•	•
2"	11	59,614	160	36	-	45	35	6	57	•	•	•

€ p.44

MACHINE TAPS **FC** = for blind holes - **FP** = for through holes
Straight flutes

1,5 x D | 1,5 x D | HSSE

DIN 5156



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A26 FC BRIGHT	A26 FP BRIGHT		
P	P.2	• 10-12	• 10-12		
	P.3	• 8-10	• 8-10		
K	K.2	• 8-10	• 8-10		

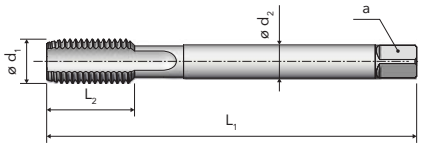
	A26 FC BRIGHT	A26 FP BRIGHT
		
Tolerance	ISO 5969	ISO 5969
Chamfer form	C (2-3)	A (5-6)
Hole type	1,5 x D	1,5 x D
Direction of cut	RH	RH
Through coolant	—	—

G	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A26 FC BRIGHT	A26 FP BRIGHT		
1/8"	28	9,728	90	18	-	7	5,5	3	8,8	•	•		
1/4"	19	13,157	100	22	-	11	9	3	11,8	•	•		
3/8"	19	16,662	100	22	-	12	9	3	15,25	•	•		
1/2"	14	20,955	125	25	-	16	12	4	19	•	•		
5/8"	14	22,911	125	25	-	18	14,5	4	21	•	•		
3/4"	14	26,441	140	28	-	20	16	4	24,5	•	•		
7/8"	14	30,201	150	28	-	22	18	4	28,25	•	•		
1"	11	33,249	160	30	-	25	20	4	30,75	•	•		
1 1/8"	11	37,897	170	30	-	28	22	5	35,5	•	•		
1 1/4"	11	41,91	170	30	-	32	24	5	39,5	•	•		
1 1/2"	11	47,803	190	32	-	36	29	6	45,25	•	•		
1 3/4"	11	53,746	190	32	-	40	32	6	51	•	•		
2"	11	59,614	220	40	-	45	35	6	57	•	•		
2 1/2"	11	75,184	250	50	-	45	35	8	72,8	•	•		

€ p.44

MACHINE TAPS for blind and through holes
Straight flutes / for cast iron

DIN 5156



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A48 NITRIDED	A48 TiCN		
K	K.1	• 15-20	• 40-45		
N	N.4	• 15-20	• 40-45		
	N.7	• 15-20	• 40-45		
	N.9-10	• 20-25	• 45-50		

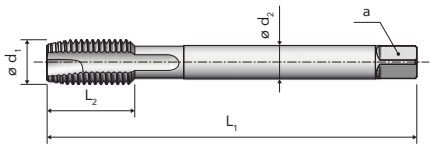
	A48 NITRIDED	A48 TiCN
		
Tolerance	ISO 5969 X	ISO 5969 X
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

G	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A48 NITRIDED	A48 TiCN
1/8"	28	9,728	90	18	-	7	5,5	4	8,8	•	•
1/4"	19	13,157	100	22	-	11	9	4	11,8	•	•
3/8"	19	16,662	100	22	-	12	9	4	15,25	•	•
1/2"	14	20,955	125	25	-	16	12	4	19	•	•
5/8"	14	22,911	125	25	-	18	14,5	4	21	•	•
3/4"	14	26,441	140	28	-	20	16	5	24,5	•	•
7/8"	14	30,201	150	28	-	22	18	5	28,25	•	•
1"	11	33,249	160	30	-	25	20	5	30,75	•	•
1 1/8"	11	37,897	170	30	-	28	22	6	35,5	•	
1 1/4"	11	41,91	170	30	-	32	24	6	39,5	•	
1 1/2"	11	47,803	190	32	-	36	29	6	45,25	•	

€ p.44

MACHINE TAPS for through holes
Straight flutes with spiral point

DIN 5156



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A18 S BRIGHT	A18 S VAP	A18 S TiCN	A18 S TiX2
P	P.2	• 20-25	• 20-25	• 30-35	
	P.3	• 15-20	• 15-20	• 25-30	
	P.4	• 12-15	• 12-15	• 20-25	
	P.5			• 10-15	
	P.7			• 10-15	• 10-15
M	M.1			• 10-15	• 10-15
K	K.2	• 15-20	• 15-20	• 25-30	
N	N.2-3	• 20-25	• 20-25	• 30-35	
	N.6	• 15-18	• 15-18	• 25-30	

	A18 S BRIGHT	A18 S VAP	A18 S TiCN	A18 S TiX2
				
Tolerance	ISO 5969	ISO 5969	ISO 5969	ISO 5969
Chamfer form	B (4-5)	B (4-5)	B (4-5)	B (4-5)
Hole type	2,5 x D	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH	RH
Through coolant	—	—	—	—

G	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A18 S BRIGHT	A18 S VAP	A18 S TiCN	A18 S TiX2
1/8"	28	9,728	90	18	-	7	5,5	4	8,8	•	•	•	•
1/4"	19	13,157	100	22	-	11	9	4	11,8	•	•	•	•
3/8"	19	16,662	100	22	-	12	9	4	15,25	•	•	•	•
1/2"	14	20,955	125	25	-	16	12	4	19	•	•	•	•
5/8"	14	22,911	125	25	-	18	14,5	4	21	•	•	•	•
3/4"	14	26,441	140	28	-	20	16	4	24,5	•	•	•	•
7/8"	14	30,201	150	28	-	22	18	4	28,25	•	•	•	•
1"	11	33,249	160	30	-	25	20	4	30,75	•	•	•	•
1 1/8"	11	37,897	170	30	-	28	22	5	35,5	•			
1 1/4"	11	41,91	170	30	-	32	24	5	39,5	•			
1 1/2"	11	47,803	190	32	-	36	29	5	45,25	•			

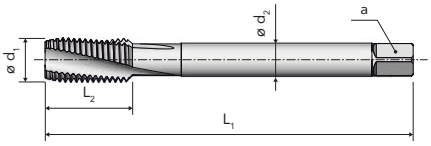
€ p.45

MACHINE TAPS for blind holes
15° spiral flutes

R15 | 1,5 x D | HSSE

A SERIES

DIN 5156



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A32 BRIGHT	A32 TiN		
P	P.1	• 18-20	• 30-35		
	P.2	• 15-18	• 25-30		
	P.3	• 12-15	• 20-25		
	P.4	• 10-12	• 15-20		
	P.5		• 5-10		
K	K.2	• 12-15	• 20-25		
N	N.1	• 18-20			
	N.2-3	• 15-18	• 25-30		
	N.5	• 15-18			
	N.6	• 12-15	• 20-25		

	A32 BRIGHT	A32 TiN
		
Tolerance	ISO 5969	ISO 5969
Chamfer form	C (2-3)	C (2-3)
Hole type	1,5 x D	1,5 x D
Direction of cut	RH	RH
Through coolant	—	—

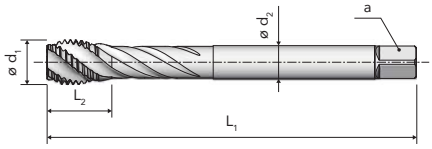
G	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A32 BRIGHT	A32 TiN		
1/8"	28	9,728	90	18	-	7	5,5	3	8,8	•	•		
1/4"	19	13,157	100	22	-	11	9	3	11,8	•	•		
3/8"	19	16,662	100	22	-	12	9	3	15,25	•	•		
1/2"	14	20,955	125	25	-	16	12	4	19	•	•		
5/8"	14	22,911	125	25	-	18	14,5	4	21	•	•		
3/4"	14	26,441	140	28	-	20	16	4	24,5	•	•		
7/8"	14	30,201	150	28	-	22	18	4	28,25	•	•		
1"	11	33,249	160	30	-	25	20	4	30,75	•	•		
1 1/8"	11	37,897	170	30	-	28	22	5	35,5	•			
1 1/4"	11	41,91	170	30	-	32	24	5	39,5	•			
1 1/2"	11	47,803	190	32	-	36	29	6	45,25	•			
1 3/4"	11	53,746	190	32	-	40	32	6	51	•			
2"	11	59,614	220	40	-	45	35	6	57	•			
2 1/2"	11	75,184	250	50	-	45	35	8	72,8	•			

€ p.45

MACHINE TAPS for blind holes
40° spiral flutes / back tapered

R40 | 2,5 x D | HSSE

DIN 5156



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A59 BRIGHT	A59 TiN		
P	P.1	• 12-15	• 25-30		
	P.2	• 10-15	• 20-25		
N	N.1	• 12-15			
	N.2	• 12-15	• 25-30		
	N.5	• 10-12			
	N.6	• 10-12	• 20-25		

	A59 BRIGHT	A59 TiN
		
Tolerance	ISO 5969	ISO 5969
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

G	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A59 BRIGHT	A59 TiN
1/8"	28	9,728	90	17	-	7	5,5	3	8,8	•	•
1/4"	19	13,157	100	23	-	11	9	4	11,8	•	•
3/8"	19	16,662	100	23	-	12	9	4	15,25	•	•
1/2"	14	20,955	125	29	-	16	12	4	19	•	•
5/8"	14	22,911	125	29	-	18	14,5	4	21	•	•
3/4"	14	26,441	140	29	-	20	16	4	24,5	•	•
7/8"	14	30,201	150	32	-	22	18	4	28,25	•	•
1"	11	33,249	160	34,5	-	25	20	4	30,75	•	•
1 1/8"	11	37,897	170	34,5	-	28	22	5	35,5	•	
1 1/4"	11	41,91	170	34,5	-	32	24	5	39,5	•	
1 1/2"	11	47,803	190	37,5	-	36	29	6	45,25	•	

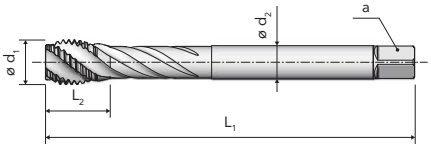
€ p.45

MACHINE TAPS for blind holes
40° spiral flutes / back tapered

R40 | 2,5 x D | HSSE

A SERIES

DIN 5156



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A59 S BRIGHT	A59 S VAP	A59 S TiN	A59 S TiCN
P	P.3	• 12-15	• 12-15	• 20-25	• 20-25
	P.4	• 10-12	• 10-12	• 15-20	• 15-20
	P.5			• 5-10	• 5-10
	P.7			• 8-10	• 8-10
M	M.1			• 8-10	• 8-10
K	K.2	• 12-15	• 12-15	• 20-25	• 20-25
N	N.3	• 15-18	• 15-18	• 25-30	• 25-30
	N.6	• 15-18	• 15-18	• 25-30	• 25-30

	A59 S BRIGHT	A59 S VAP	A59 S TiN	A59 S TiCN
				
Tolerance	ISO 5969	ISO 5969	ISO 5969	ISO 5969
Chamfer form	C (2-3)	C (2-3)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH	RH
Through coolant	—	—	—	—

G	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A59 S BRIGHT	A59 S VAP	A59 S TiN	A59 S TiCN
1/8"	28	9,728	90	17	-	7	5,5	3	8,8	•	•	•	•
1/4"	19	13,157	100	23	-	11	9	4	11,8	•	•	•	•
3/8"	19	16,662	100	23	-	12	9	4	15,25	•	•	•	•
1/2"	14	20,955	125	29	-	16	12	5	19	•	•	•	•
5/8"	14	22,911	125	29	-	18	14,5	5	21	•	•	•	•
3/4"	14	26,441	140	29	-	20	16	5	24,5	•	•	•	•
7/8"	14	30,201	150	32	-	22	18	5	28,25	•	•	•	•
1"	11	33,249	160	34,5	-	25	20	5	30,75	•	•	•	•
1 1/8"	11	37,897	170	34,5	-	28	22	5	35,5	•	•		
1 1/4"	11	41,91	170	34,5	-	32	24	5	39,5	•	•		
1 1/2"	11	47,803	190	37,5	-	36	29	6	45,25	•	•		

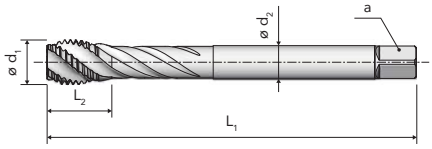
€ p.46

MACHINE TAPS **for blind holes**
40° spiral flutes / back tapered / for stainless steel

R40 | 2,5 x D | HSSE

A59 S TiX2

DIN 5156



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A59 S TiX2			
P	P.7	• 8-10			
M	M.1	• 8-10			
	M.2	• 5-7			

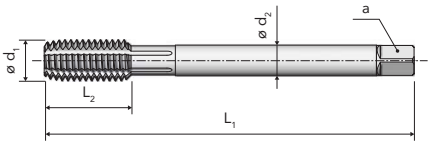
	A59 S TiX2
Tolerance	ISO 5969
Chamfer form	C (2-3)
Hole type	2,5 x D
Direction of cut	RH
Through coolant	—

G	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A59 S TiX2
1/8"	28	9,728	90	17	-	7	5,5	3	8,8	•
1/4"	19	13,157	100	23	-	11	9	4	11,8	•
3/8"	19	16,662	100	23	-	12	9	4	15,25	•
1/2"	14	20,955	125	29	-	16	12	5	19	•
5/8"	14	22,911	125	29	-	18	14,5	5	21	•
3/4"	14	26,441	140	29	-	20	16	5	24,5	•
7/8"	14	30,201	150	32	-	22	18	5	28,25	•
1"	11	33,249	160	34,5	-	25	20	5	30,75	•

€ p.46

COLD FORMING TAPS for blind and through holes
With oil grooves

DIN 2189



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A82 N VAP	A82 N TiN	A82 N TiCN
P	P.1-2	• 20-25	• 40-45	• 40-45
	P.3	• 15-20	• 35-40	• 35-40
N	N.1	• 20-25	• 40-45	• 40-45
	N.2		• 40-45	• 40-45
	N.3		• 35-40	• 35-40
	N.5	• 20-25	• 40-45	• 40-45
	N.6		• 40-45	• 40-45

	A82 N VAP	A82 N TiN	A82 N TiCN
			
Tolerance	ISO 5969 X	ISO 5969 X	ISO 5969 X
Chamfer form	C (2-3)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH
Through coolant	—	—	—

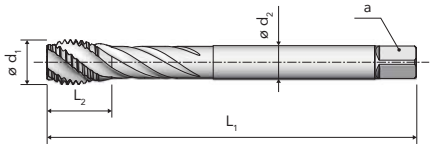
G	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A82 N VAP	A82 N TiN	A82 N TiCN	
1/8"	28	9,728	90	18	-	7	5,5	6	9,25	•	•	•	
1/4"	19	13,157	100	22	-	11	9	6	12,5	•	•	•	
3/8"	19	16,662	100	22	-	12	9	6	16	•	•	•	
1/2"	14	20,955	125	25	-	16	12	6	20	•	•	•	
3/4"	14	26,441	140	28	-	20	16	6	25,5	•	•	•	
1"	11	33,249	160	30	-	25	20	8	32		•		NEW

€ p.46

MACHINE TAPS for blind holes
40° spiral flutes / back tapered

R40 | 2,5 x D | HSSE

DIN 5156



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A159 S BRIGHT	A159 S TiN		
P	P.3	• 12-15	• 20-25		
	P.4	• 10-12	• 15-20		
	P.5		• 5-10		
	P.7		• 8-10		
M	M.1		• 8-10		
K	K.2	• 12-15	• 20-25		
N	N.3	• 15-18	• 25-30		
	N.6	• 15-18	• 25-30		

	A159 S BRIGHT	A159 S TiN
		
Tolerance	—	—
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant	—	—

Rp	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A159 S BRIGHT	A159 S TiN
1/8"	28	9,728	90	17	-	7	5,5	3	8,6	•	•
1/4"	19	13,157	100	23	-	11	9	4	11,5	•	•
3/8"	19	16,662	100	23	-	12	9	4	15	•	•
1/2"	14	20,955	125	29	-	16	12	5	18,5	•	•
3/4"	14	26,441	140	29	-	20	16	5	24	•	•

€ p.46

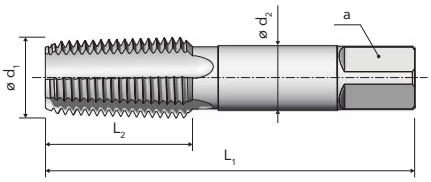
MACHINE TAPS for conical blind holes
Straight flutes

HSSE

A6 BRIGHT

A SERIES

VERGNANO STANDARD



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A6 BRIGHT			
P	P.2	• 10-15			
	P.3	• 10-15			
	P.4	• 8-10			
K	K.2	• 10-12			

	A6 BRIGHT
Tolerance	—
Chamfer form	C (2-3)
Hole type	
Direction of cut	RH
Through coolant	—

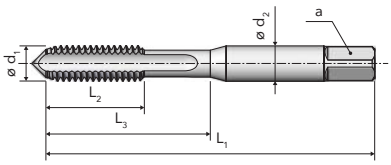
Rc	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A6 BRIGHT
1/8"	28	9,728	63	17,5	-	7	5,5	4	8,2 (a)	•
1/4"	19	13,157	63	23,5	-	11	9	4	11 (a)	•
3/8"	19	16,662	70	24	-	12	9	4	14,5 (a)	•
1/2"	14	20,955	80	29	-	16	12	4	18 (a)	•
3/4"	14	26,441	100	32	-	20	16	5	23,5 (a)	•
1"	11	33,249	110	36	-	25	20	5	29,5 (a)	•
1 1/4"	11	41,91	125	44	-	32	24	5	38 (a)	•
1 1/2"	11	47,803	140	46	-	36	29	6	44 (a)	•
2"	11	59,614	160	50	-	45	35	6	55,5 (a)	•

(a) - Cylindrical hole (see page 238)

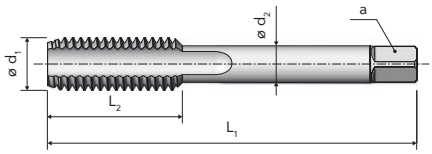
€ p.47

HAND TAPS for blind and through holes
In sets of three pieces

DIN 2184-2≤Ø 1/4"



DIN 2184-2≥Ø 5/16"



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A4 ROUGHING	A4 SECOND	A4 FINISHING	A4 SET
P	P.1-4	•	•	•	•
	P.7	•	•	•	•
K	K.2	•	•	•	•
N	N.1-3	•	•	•	•
	N.5-7	•	•	•	•

	A4 ROUGHING	A4 SECOND	A4 FINISHING	A4 SET
				
Tolerance	—	—	mc	mc
Chamfer form	A (5-6)	D (4-5)	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D	2,5 x D	2,5 x D
Direction of cut	RH	RH	RH	RH
Through coolant	—	—	—	—

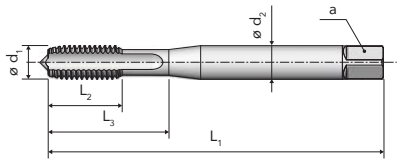
BSW	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A4 ROUGHING	A4 SECOND	A4 FINISHING	A4 SET
3/32"	48	2,381	40	9	15	2,8	2,1	3	1,9	•	•	•	•
1/8"	40	3,175	40	10	18	3,5	2,7	3	2,55	•	•	•	•
5/32"	32	3,969	45	12	21	4,5	3,4	3	3,2	•	•	•	•
3/16"	24	4,763	50	14	23	6	4,9	3	3,7	•	•	•	•
7/32"	24	5,556	56	16	28	6	4,9	3	4,5	•	•	•	•
1/4"	20	6,35	56	16	28	6	4,9	3	5,1	•	•	•	•
5/16"	18	7,938	63	22	-	6	4,9	3	6,5	•	•	•	•
3/8"	16	9,525	70	24	-	7	5,5	3	7,9	•	•	•	•
7/16"	14	11,113	70	24	-	8	6,2	3	9,25	•	•	•	•
1/2"	12	12,7	75	28	-	9	7	4	10,5	•	•	•	•
9/16"	12	14,288	80	28	-	11	9	4	12	•	•	•	•
5/8"	11	15,875	80	30	-	12	9	4	13,5	•	•	•	•
3/4"	10	19,05	95	32	-	14	11	4	16,4	•	•	•	•
7/8"	9	22,225	100	32	-	18	14,5	4	19,25	•	•	•	•
1"	8	25,4	110	36	-	18	14,5	4	22	•	•	•	•
1 1/8"	7	28,575	125	40	-	22	18	4	24,75	•	•	•	•
1 1/4"	7	31,75	125	40	-	22	18	4	27,75	•	•	•	•

€ p.47

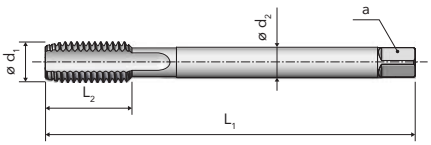
MACHINE TAPS FC = for blind holes - FP = for through holes
Straight flutes

1,5 x D | 1,5 x D | HSSE

DIN 2184-1≤Ø 3/8"



DIN 2184-1≥Ø 7/16"



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A24 FC BRIGHT	A24 FP BRIGHT		
P	P.2	• 10-12	• 10-12		
	P.3	• 8-10	• 8-10		
K	K.2	• 8-10	• 8-10		

	A24 FC BRIGHT	A24 FP BRIGHT
		
Tolerance	mc	mc
Chamfer form	C (2-3)	A (5-6)
Hole type	1,5 x D	1,5 x D
Direction of cut	RH	RH
Through coolant	—	—

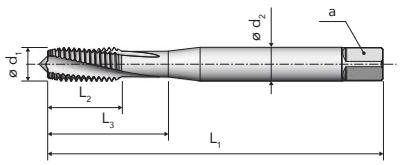
BSW	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A24 FC BRIGHT	A24 FP BRIGHT
3/32"	48	2,381	50	9	15	2,8	2,1	3	1,9	•	•
1/8"	40	3,175	56	11	17	3,5	2,7	3	2,55	•	•
5/32"	32	3,969	63	12	21	4,5	3,4	3	3,2	•	•
3/16"	24	4,763	70	14	24	6	4,9	3	3,7	•	•
7/32"	24	5,556	80	15	28	6	4,9	3	4,5	•	•
1/4"	20	6,35	80	16	29	7	5,5	3	5,1	•	•
5/16"	18	7,938	90	18	33	8	6,2	3	6,5	•	•
3/8"	16	9,525	100	20	36	10	8	3	7,9	•	•
7/16"	14	11,113	100	22	-	8	6,2	3	9,25	•	•
1/2"	12	12,7	110	25	-	9	7	3	10,5	•	•
9/16"	12	14,288	110	27	-	11	9	3	12	•	•
5/8"	11	15,875	110	28	-	12	9	3	13,5	•	•
3/4"	10	19,05	125	32	-	14	11	4	16,4	•	•
7/8"	9	22,225	140	32	-	18	14,5	4	19,25	•	•
1"	8	25,4	160	36	-	18	14,5	4	22	•	•
1 1/8"	7	28,575	180	40	-	22	18	4	24,75	•	•
1 1/4"	7	31,75	180	40	-	22	18	4	27,75	•	•

€ p.47

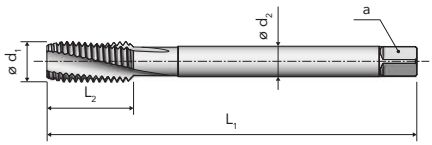
MACHINE TAPS for blind holes
15° spiral flutes

R15 | 1,5 x D | HSSE

DIN 2184-1≤Ø 3/8"



DIN 2184-1≥Ø 7/16"



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A31 BRIGHT	A31 TiN		
P	P.1	• 18-20	• 30-35		
	P.2	• 15-18	• 25-30		
	P.3	• 12-15	• 20-25		
	P.4	• 10-12	• 15-20		
	P.5		• 5-10		
K	K.2	• 12-15	• 20-25		
N	N.1	• 18-20			
	N.2-3	• 15-18	• 25-30		
	N.5	• 15-18			
	N.6	• 12-15	• 20-25		

	A31 BRIGHT	A31 TiN
		
Tolerance	mc	mc
Chamfer form	C (2-3)	C (2-3)
Hole type	1,5 x D	1,5 x D
Direction of cut	RH	RH
Through coolant	—	—

BSW	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A31 BRIGHT	A31 TiN
3/32"	48	2,381	50	9	15	2,8	2,1	3	1,9	•	•
1/8"	40	3,175	56	11	17	3,5	2,7	3	2,55	•	•
5/32"	32	3,969	63	12	21	4,5	3,4	3	3,2	•	•
3/16"	24	4,763	70	14	24	6	4,9	3	3,7	•	•
7/32"	24	5,556	80	15	28	6	4,9	3	4,5	•	•
1/4"	20	6,35	80	16	29	7	5,5	3	5,1	•	•
5/16"	18	7,938	90	18	33	8	6,2	3	6,5	•	•
3/8"	16	9,525	100	20	36	10	8	3	7,9	•	•
7/16"	14	11,113	100	22	-	8	6,2	3	9,25	•	•
1/2"	12	12,7	110	25	-	9	7	3	10,5	•	•
9/16"	12	14,288	110	27	-	11	9	3	12	•	•
5/8"	11	15,875	110	28	-	12	9	3	13,5	•	•
3/4"	10	19,05	125	32	-	14	11	4	16,4	•	•
7/8"	9	22,225	140	32	-	18	14,5	4	19,25	•	•
1"	8	25,4	160	36	-	18	14,5	4	22	•	•
1 1/8"	7	28,575	180	40	-	22	18	4	24,75	•	
1 1/4"	7	31,75	180	40	-	22	18	4	27,75	•	

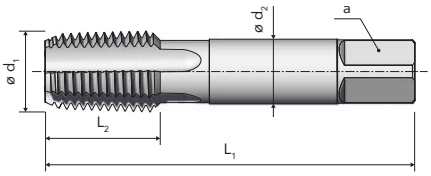
€ p.48

HSSE

A6 B
BRIGHT

A SERIES

VERGNANO STANDARD



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A6 B BRIGHT			
P	P.2	• 10-15			
	P.3	• 10-12			
	P.4	• 8-10			
K	K.2	• 10-12			

	A6 B BRIGHT
Tolerance	—
Chamfer form	C (2-3)
Hole type	
Direction of cut	RH
Through coolant	—

NPT	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A6 B BRIGHT
1/16"	27	7,938	63	12	-	6	4,9	4	6,15 (a)	•
1/8"	27	10,287	63	12	-	7	5,5	4	8,5 (a)	•
1/4"	18	13,716	63	18	-	11	9	4	11 (a)	•
3/8"	18	17,145	70	18	-	12	9	4	14,5 (a)	•
1/2"	14	21,336	80	23	-	16	12	4	17,85 (a)	•
3/4"	14	26,67	100	24	-	20	16	5	23,2 (a)	•
1"	11 1/2	33,401	110	30	-	25	20	5	29 (a)	•
1 1/4"	11 1/2	42,164	125	32	-	32	24	5	37,8 (a)	•
1 1/2"	11 1/2	48,26	140	32	-	36	29	6	44 (a)	•
2"	11 1/2	60,325	160	34	-	45	35	6	56 (a)	•

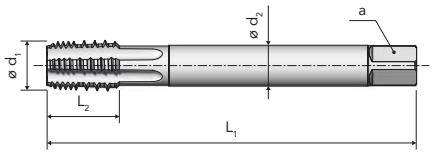
(a) - Cylindrical hole (see page 238)

€ p.48

MACHINE TAPS for conical blind holes
Straight flutes / interrupted thread

A6 BZ
BRIGHT

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A6 BZ BRIGHT			
P	P.1	• 12-15			
	P.7	• 2-3			
M	M.1	• 2-3			
N	N.1-2	• 12-15			
	N.5	• 10-12			
	N.6	• 6-8			

	A6 BZ BRIGHT
Tolerance	—
Chamfer form	C (2-3)
Hole type	
Direction of cut	RH
Through coolant	—

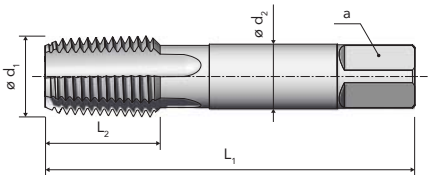
NPT	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A6 BZ BRIGHT
1/16"	27	7,938	90	12	-	6	4,9	3	6,15 (a)	•
1/8"	27	10,287	100	12	-	7	5,5	5	8,5 (a)	•
1/4"	18	13,716	100	18	-	11	9	5	11 (a)	•
3/8"	18	17,145	110	18	-	12	9	5	14,5 (a)	•
1/2"	14	21,336	140	23	-	16	12	5	17,85 (a)	•
3/4"	14	26,67	150	24	-	20	16	5	23,2 (a)	•
1"	11 1/2	33,401	170	30	-	25	20	5	29 (a)	•

(a) = Cylindrical hole (see page 238)

€ p.48

A6 F
BRIGHT

NORMA VERGNANO



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A6 F BRIGHT			
P	P.2	• 10-15			
	P.3	• 10-12			
	P.4	• 8-10			
K	K.2	• 10-12			

Tolerance	—
Chamfer form	C (2-3)
Hole type	
Direction of cut	RH
Through coolant	—

NPTF	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A6 F BRIGHT
1/16"	27	7,938	63	12	-	6	4,9	4	6,15 [a]	•
1/8"	27	10,287	63	12	-	7	5,5	4	8,5 [a]	•
1/4"	18	13,716	63	18	-	11	9	4	11 [a]	•
3/8"	18	17,145	70	18	-	12	9	4	14,5 [a]	•
1/2"	14	21,336	80	23	-	16	12	4	17,8 [a]	•
3/4"	14	26,67	100	24	-	20	16	5	23 [a]	•
1"	11 1/2	33,401	110	30	-	25	20	5	29 [a]	•
1 1/4"	11 1/2	42,164	125	32	-	32	24	5	37,8 [a]	•
1 1/2"	11 1/2	48,26	140	32	-	36	29	6	43,8 [a]	•
2"	11 1/2	60,325	160	34	-	45	35	6	56 [a]	•

[a] - Cylindrical hole (see page 238)

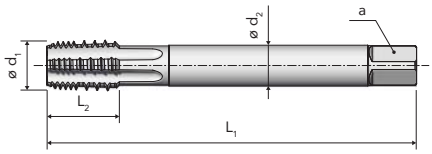
€ p.49

MACHINE TAPS for conical blind holes
Straight flutes / interrupted thread

HSSE

A6 FZ
BRIGHT

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	A6 FZ BRIGHT			
P	P.1	• 12-15			
	P.7	• 2-3			
M	M.1	• 2-3			
N	N.1-2	• 12-15			
	N.5	• 10-12			
	N.6	• 6-8			

	A6 FZ BRIGHT
Tolerance	—
Chamfer form	C (2-3)
Hole type	
Direction of cut	RH
Through coolant	—

NPTF	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	A6 FZ BRIGHT
1/16"	27	7,938	90	12	-	6	4,9	3	6,15 (a)	•
1/8"	27	10,287	100	12	-	7	5,5	5	8,5 (a)	•
1/4"	18	13,716	100	18	-	11	9	5	11 (a)	•
3/8"	18	17,145	110	18	-	12	9	5	14,5 (a)	•
1/2"	14	21,336	140	23	-	16	12	5	17,8 (a)	•
3/4"	14	26,67	150	24	-	20	16	5	23 (a)	•
1"	11 1/2	33,401	170	30	-	25	20	5	29 (a)	•

(a) = Cylindrical hole (see page 238)

€ p.49

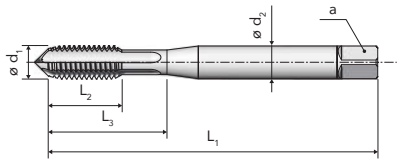
SERIES

High Performance Taps

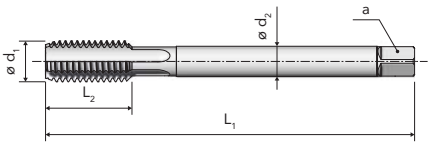
HIGH PERFORMANCE MACHINE TAPS for blind and through holes
Straight flutes / for cast iron

3xD 3xD HSSP

DIN 371≤ M10

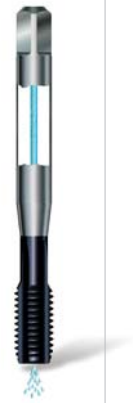


DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	P43 TiCN	P43 ACE	BP43 ACE
K	K.1	• 40-50	• 40-50	• 40-50
N	N.4	• 40-50	• 40-50	• 40-50
	N.7	• 40-50	• 40-50	• 40-50
	N.9-10	• 45-55	• 45-55	• 45-55

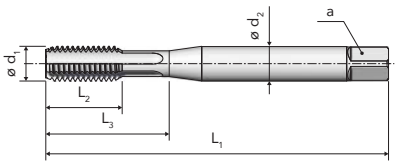
	P43 TiCN	P43 ACE	BP43 ACE
			
Tolerance	6HX	6HX	6HX
Chamfer form	C (2-3)	C (2-3)	C (2-3)
Hole type	3xD	3xD	3xD
Direction of cut	RH	RH	RH
Through coolant	—	—	

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	P43 TiCN	P43 ACE	BP43 ACE
M 3	0,5	56	10	18	3,5	2,7	3	2,5	•	•	
4	0,7	63	12	21	4,5	3,4	4	3,3	•	•	
5	0,8	70	14	24,5	6	4,9	4	4,2	•	•	•
6	1	80	16	29	6	4,9	4	5	•	•	•
8	1,25	90	18	33	8	6,2	4	6,8	•	•	•
10	1,5	100	20	36	10	8	4	8,5	•	•	•
12	1,75	110	24	-	9	7	4	10,2	•	•	•
14	2	110	25	-	11	9	4	12	•	•	•
16	2	110	28	-	12	9	4	14	•	•	•
18	2,5	125	32	-	14	11	4	15,5	•	•	•
20	2,5	140	32	-	16	12	4	17,5	•	•	•

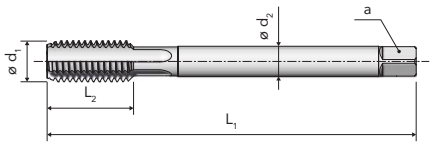
€ p.50

HIGH PERFORMANCE MACHINE TAPS for blind holes
Straight flutes / for cast iron / chamfer form E

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	P43 E ACE	BP43 E ACE		
K	K.1	• 40-50	• 40-50		
N	N.4	• 40-50	• 40-50		
	N.7	• 40-50	• 40-50		
	N.9-10	• 45-55	• 45-55		

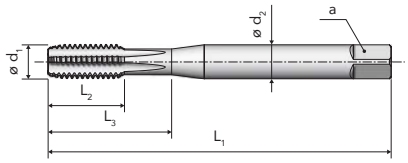
	P43 E ACE	NEW BP43 E ACE
		
Tolerance	6HX	6HX
Chamfer form	E(1,5-2)	E(1,5-2)
Hole type	3xD	3xD
Direction of cut	RH	RH
Through coolant	—	

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	P43 E ACE	BP43 E ACE		
M 4	0,7	63	12	21	4,5	3,4	4	3,3	•			
5	0,8	70	14	24,5	6	4,9	4	4,2	•	•		
6	1	80	16	29	6	4,9	4	5	•	•		
8	1,25	90	18	33	8	6,2	4	6,8	•	•		
10	1,5	100	20	36	10	8	4	8,5	•	•		
12	1,75	110	24	-	9	7	4	10,2	•	•		

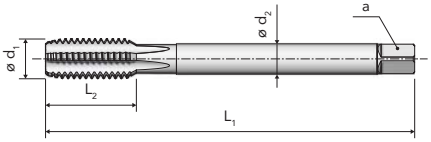
€ p.50

HIGH PERFORMANCE MACHINE TAPS for blind and through holes
Straight flutes / for high strength materials

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	P130 BRIGHT	P130 ACE		
P	P.6	• 2-3	• 5-8		
N	N.8	• 3-5	• 8-10		

	NEW P130 BRIGHT	NEW P130 ACE
		
Tolerance	6HX	6HX
Chamfer form	C (2-3)	C (2-3)
Hole type	1,5 x D	1,5 x D
Direction of cut	RH	RH
Through coolant	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	P130 BRIGHT	P130 ACE		
M 4	0,7	63	12	21	4,5	3,4	4	3,4 (*)	•	•		
5	0,8	70	14	24,5	6	4,9	4	4,3 (*)	•	•		
6	1	80	16	29	6	4,9	5	5,1 (*)	•	•		
8	1,25	90	18	33	8	6,2	5	6,9 (*)	•	•		
10	1,5	100	20	36	10	8	5	8,6 (*)	•	•		
12	1,75	110	24	-	9	7	5	10,4 (*)	•	•		
14	2	110	25	-	11	9	5	12,2 (*)	•	•		
16	2	110	28	-	12	9	5	14,2 (*)	•	•		
20	2,5	140	32	-	16	12	5	17,7(*)	•	•		

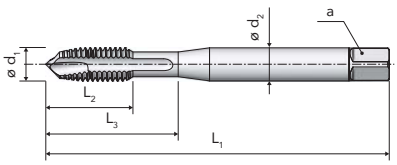
(*) = The hole diameters are oversized.

€ p.50

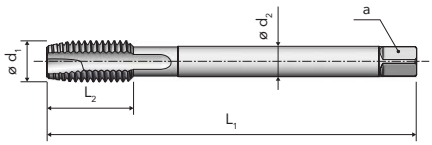
HIGH PERFORMANCE MACHINE TAPS for through holes
Straight flutes with spiral point

3xD HSSP

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	P15 TiN	P15 TiH1	P15 6GX TiN	BP15 TiH1
P	P.3	• 25-35	• 25-35	• 25-35	• 25-35
	P.4	• 20-30	• 20-30	• 20-30	• 20-30
	P.5	• 10-20	• 10-20	• 10-20	• 10-20
	P.6	• 8-10	• 8-10	• 8-10	• 8-10
	P.7	• 10-20	• 10-20	• 10-20	• 10-20
M	M.1	• 10-20	• 10-20	• 10-20	• 10-20
	M.2	• 6-8	• 6-8	• 6-8	• 6-8
K	K.2	• 25-35	• 25-35	• 25-35	• 25-35
N	N.2-3	• 30-40	• 30-40	• 30-40	• 30-40
	N.6	• 25-35	• 25-35	• 25-35	• 25-35

	P15 TiN	P15 TiH1	P15 6GX TiN	BP15 TiH1
				
Tolerance	6HX	6HX	6GX	6HX
Chamfer form	B (4-5)	B (4-5)	B (4-5)	B (4-5)
Hole type	3xD	3xD	3xD	3xD
Direction of cut	RH	RH	RH	RH
Internal coolant	—	—	—	•

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	P15 TiN	P15 TiH1	P15 6GX TiN	BP15 TiH1
M 1(*)	0,25	40	5,5	7,5	2,5	2,1	2	0,75	•	•		
1,2(*)	0,25	40	5,5	7,5	2,5	2,1	2	0,95	•	•		
1,4(*)	0,3	40	7	10	2,5	2,1	2	1,1	•	•		
1,6	0,35	40	8	11	2,5	2,1	2	1,25	•	•		
1,7	0,35	40	8	11	2,5	2,1	2	1,35	•	•		
1,8	0,35	40	8	11	2,5	2,1	2	1,45	•	•		
2	0,4	45	7	11	2,8	2,1	3	1,6	•	•		
2,5	0,45	50	9	15	2,8	2,1	3	2,05	•	•		
3	0,5	56	10	18	3,5	2,7	3	2,5	•	•		
4	0,7	63	12	21	4,5	3,4	3	3,3	•	•	•	
5	0,8	70	14	24,5	6	4,9	3	4,2	•	•	•	•
6	1	80	16	29	6	4,9	3	5	•	•	•	•
8	1,25	90	18	33	8	6,2	3	6,8	•	•	•	•
10	1,5	100	20	36	10	8	3	8,5	•	•	•	•
12	1,75	110	24	-	9	7	4	10,2	•	•	•	•
14	2	110	25	-	11	9	4	12	•	•	•	•
16	2	110	28	-	12	9	4	14	•	•	•	•
18	2,5	125	32	-	14	11	4	15,5	•	•		
20	2,5	140	32	-	16	12	4	17,5	•	•		
24	3	160	36	-	18	14,5	4	21	•	•		
27	3	160	36	-	20	16	4	24	•	•		
30	3,5	180	40	-	22	18	4	26,5	•	•		
33	3,5	180	40	-	25	20	5	29,5	•	•		
36	4	200	55	-	28	22	5	32	•	•		

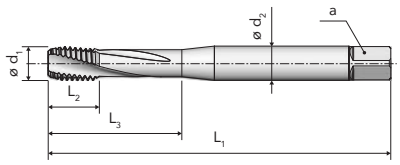
(*) = Tolerance 5HX

€ p.51

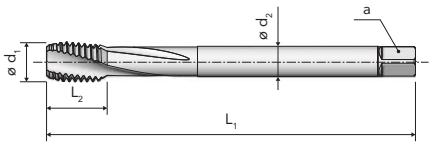
HIGH PERFORMANCE MACHINE TAPS for blind holes
15° spiral flutes

R15 | 2xD | HSSP

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	P29 BRIGHT	P29 TiN	P29 TiH1	BP29 TiH1
P	P.3	• 15-18	• 25-30	• 25-30	• 25-30
	P.4	• 12-15	• 20-25	• 20-25	• 20-25
	P.5	• 8-10	• 10-15	• 10-15	• 10-15
	P.6	• 3-5	• 5-10	• 5-10	• 5-10
	P.7	• 8-10	• 10-15	• 10-15	• 10-15
K	K.2	• 15-18	• 25-30	• 25-30	• 25-30
N	N.3	• 15-18	• 25-30	• 25-30	• 25-30
	N.6	• 15-18	• 25-30	• 25-30	• 25-30
	N.7	• 12-15	• 20-25	• 20-25	• 20-25
S	S.2	• 2-3		• 2-3	• 2-3
	S.4	• 2-3	• 2-3	• 2-3	• 2-3

	P29 BRIGHT	P29 TiN	P29 TiH1	BP29 TiH1
				
Tolerance	6HX	6HX	6HX	6HX
Chamfer form	C (2-3)	C (2-3)	C (2-3)	C (2-3)
Hole type	2xD	2xD	2xD	2xD
Direction of cut	RH	RH	RH	RH
Internal coolant	—	—	—	

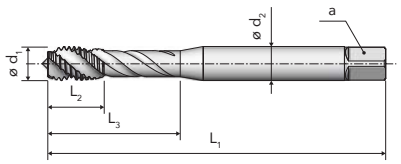
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	P29 BRIGHT	P29 TiN	P29 TiH1	BP29 TiH1	
M 3	0,5	56	5	18	3,5	2,7	3	2,5	•	•	•		
4	0,7	63	7	21	4,5	3,4	3	3,3	•	•	•		
5	0,8	70	9	25	6	4,9	3	4,2	•	•	•	•	
6	1	80	11	30	6	4,9	3	5	•	•	•	•	
8	1,25	90	12	35	8	6,2	3	6,8	•	•	•	•	
10	1,5	100	13	39	10	8	3	8,5	•	•	•	•	
12	1,75	110	15	-	9	7	3	10,2	•	•	•	•	
14	2	110	18	-	11	9	3	12	•	•	•	•	
16	2	110	18	-	12	9	3	14	•	•	•	•	
18	2,5	125	20	-	14	11	4	15,5	•	•	•	•	
20	2,5	140	20	-	16	12	4	17,5	•	•	•	•	
24	3	160	25	-	18	14,5	4	21	•	•	•		NEW
27	3	160	25	-	20	16	4	24	•	•	•		NEW
30	3,5	180	29	-	22	18	4	26,5	•	•	•		NEW
36	4	200	34	-	28	22	4	32	•	•	•		NEW

€ p.51

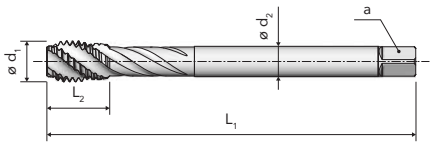
HIGH PERFORMANCE MACHINE TAPS for blind holes
45° spiral flutes / back tapered

R45 | 3xD | HSSZ

DIN 371≤ M10

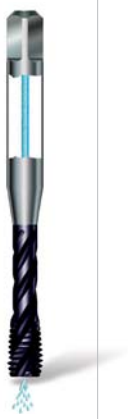


DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	P70 TiN	P70 TiH1	BP70 TiH1
P	P.3	• 20-30	• 20-30	• 20-30
	P.4	• 15-25	• 15-25	• 15-25
	P.5	• 5-15	• 5-15	• 5-15
	P.7	• 10-15	• 10-15	• 10-15
M	M.1	• 10-15	• 10-15	• 10-15
	M.2	• 5-7	• 5-7	• 5-7
K	K.2	• 20-30	• 20-30	• 20-30
N	N.3	• 25-35	• 25-35	• 25-35
	N.6	• 25-35	• 25-35	• 25-35
S	S.1		• 10-15	• 10-15
	S.3	• 10-15	• 10-15	• 10-15

	P70 TiN	P70 TiH1	BP70 TiH1
			
Tolerance	6HX	6HX	6HX
Chamfer form	C (2-3)	C (2-3)	C (2-3)
Hole type	3xD	3xD	3xD
Direction of cut	RH	RH	RH
Internal coolant	—	—	

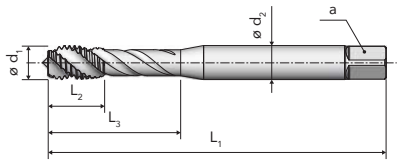
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	P70 TiN	P70 TiH1	BP70 TiH1
M 2	0,4	45	6	12	2,8	2,1	3	1,6	•	•	
2,5	0,45	50	6,5	15	2,8	2,1	3	2,05	•	•	
3	0,5	56	7	15	3,5	2,7	3	2,5	•	•	
4	0,7	63	8,5	21	4,5	3,4	3	3,3	•	•	
5	0,8	70	10	24,5	6	4,9	3	4,2	•	•	•
6	1	80	12	29	6	4,9	3	5	•	•	•
8	1,25	90	14	33	8	6,2	3	6,8	•	•	•
10	1,5	100	17	39	10	8	3	8,5	•	•	•
12	1,75	110	18	-	9	7	4	10,2	•	•	•
14	2	110	20,5	-	11	9	4	12	•	•	•
16	2	110	20,5	-	12	9	4	14	•	•	•
18	2,5	125	25,5	-	14	11	4	15,5	•	•	
20	2,5	140	25,5	-	16	12	4	17,5	•	•	
24	3	160	32	-	18	14,5	4	21	•	•	
27	3	160	32	-	20	16	5	24	•	•	
30	3,5	180	37	-	22	18	5	26,5	•	•	
33	3,5	180		-	25	20	5	29,5	•	•	
36	4	200	42	-	28	22	5	32	•	•	

€ p.52

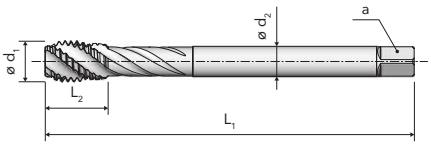
HIGH PERFORMANCE MACHINE TAPS for blind holes
45° spiral flutes / back tapered

P70 6GX
TiN

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	P70 6GX TiN			
P	P.3	• 20-30			
	P.4	• 15-25			
	P.5	• 5-15			
	P.7	• 10-15			
M	M.1	• 10-15			
	M.2	• 5-7			
K	K.2	• 20-30			
N	N.3	• 25-35			
	N.6	• 25-35			
S	S.3	• 10-15			

Tolerance	6GX
Chamfer form	C (2-3)
Hole type	3 x D
Direction of cut	RH
Internal coolant	—

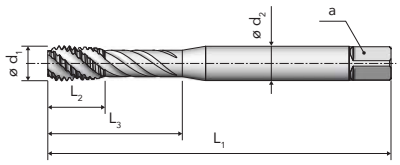
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	P70 6GX TiN
M 3	0,5	56	7	15	3,5	2,7	3	2,5	•
4	0,7	63	8,5	21	4,5	3,4	3	3,3	•
5	0,8	70	10	24,5	6	4,9	3	4,2	•
6	1	80	12	29	6	4,9	3	5	•
8	1,25	90	14	33	8	6,2	3	6,8	•
10	1,5	100	17	39	10	8	3	8,5	•
12	1,75	110	18	-	9	7	4	10,2	•
14	2	110	20,5	-	11	9	4	12	•
16	2	110	20,5	-	12	9	4	14	•
18	2,5	125	25,5	-	14	11	4	15,5	•
20	2,5	140	25,5	-	16	12	4	17,5	•

€ p.52

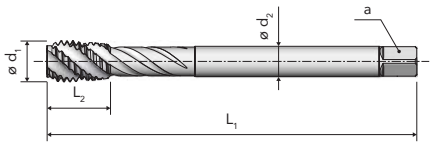
HIGH PERFORMANCE MACHINE TAPS for blind holes
45° spiral flutes / back tapered / chamfer form E

R45 | 3xD | HSSZ | E(1,5-2)

DIN 371≤ M10



DIN 376≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	P70 E TiN	P70 E TiH1	P70 E 6GX TiH1
P	P.3	• 20-30	• 20-30	• 20-30
	P.4	• 15-25	• 15-25	• 15-25
	P.5	• 5-15	• 5-15	• 5-15
	P.7	• 10-15	• 10-15	• 10-15
M	M.1	• 10-15	• 10-15	• 10-15
	M.2	• 5-7	• 5-7	• 5-7
K	K.2	• 20-30	• 20-30	• 20-30
N	N.3	• 25-35	• 25-35	• 25-35
	N.6	• 25-35	• 25-35	• 25-35
S	S.1		• 10-15	• 10-15
	S.3	• 10-15	• 10-15	• 10-15

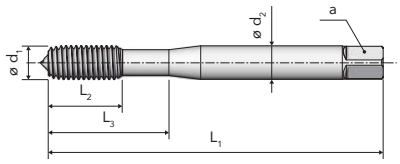
	P70 E TiN	P70 E TiH1	NEW P70 E 6GX TiH1
			
Tolerance	6HX	6HX	6GX
Chamfer form	E(1,5-2)	E(1,5-2)	E(1,5-2)
Hole type	3xD	3xD	3xD
Direction of cut	RH	RH	RH
Internal coolant	—	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	P70 E TiN	P70 E TiH1	P70 E 6GX TiH1
M 3	0,5	56	7	15	3,5	2,7	3	2,5	•	•	•
4	0,7	63	8,5	21	4,5	3,4	3	3,3	•	•	•
5	0,8	70	10	24,5	6	4,9	3	4,2	•	•	•
6	1	80	12	29	6	4,9	3	5	•	•	•
8	1,25	90	14	33	8	6,2	4	6,8	•	•	•
10	1,5	100	17	39	10	8	4	8,5	•	•	•
12	1,75	110	18	-	9	7	4	10,2	•	•	•
14	2	110	20,5	-	11	9	5	12	•	•	•
16	2	110	20,5	-	12	9	5	14	•	•	•
20	2,5	140	25,5	-	16	12	5	17,5	•	•	

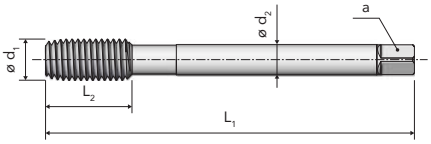
€ p.52

HIGH PERFORMANCE COLD FORMING TAPS for blind and through holes
Without oil grooves

DIN 2174 (371)≤ M10



DIN 2174 (376)≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	P80 TiN	P80 6GX TiN	P80 7GX TiN
P	P.1-2	• 40-45	• 40-45	• 40-45
	P.3	• 35-40	• 35-40	• 35-40
	P.4	• 30-35	• 30-35	• 30-35
	P.5	• 15-20	• 15-20	• 15-20
	P.7	• 15-20	• 15-20	• 15-20
M	M.1	• 15-20	• 15-20	• 15-20
N	N.1-2	• 40-45	• 40-45	• 40-45
	N.3	• 35-40	• 35-40	• 35-40
	N.5-6	• 40-45	• 40-45	• 40-45
S	S.3	• 10-15	• 10-15	• 10-15

	P80 TiN	P80 6GX TiN	P80 7GX TiN
			
Tolerance	6HX	6GX	7GX
Chamfer form	C (2-3)	C (2-3)	C (2-3)
Hole type	1,5 x D	1,5 x D	1,5 x D
Direction of cut	RH	RH	RH
Internal coolant	—	—	—

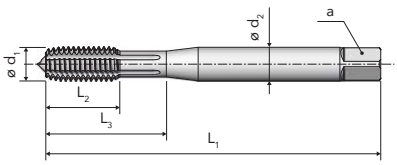
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	P80 TiN	P80 6GX TiN	P80 7GX TiN
M 2	0,4	45	7	11	2,8	2,1	3	1,85	•	•	
2,5	0,45	50	9	15	2,8	2,1	3	2,3	•	•	
3	0,5	56	10	18	3,5	2,7	4	2,8	•	•	•
3,5	0,6	56	11	20	4	3	4	3,25	•	•	•
4	0,7	63	12	21	4,5	3,4	5	3,7	•	•	•
5	0,8	70	14	24,5	6	4,9	5	4,65	•	•	•
6	1	80	16	29	6	4,9	5	5,55	•	•	•
8	1,25	90	18	33	8	6,2	5	7,4	•	•	•
10	1,5	100	20	36	10	8	5	9,3	•	•	•
12	1,75	110	24	-	9	7	5	11,2	•	•	•
14	2	110	25	-	11	9	6	13,1	•	•	•
16	2	110	28	-	12	9	6	15,1	•	•	•

€ p.53

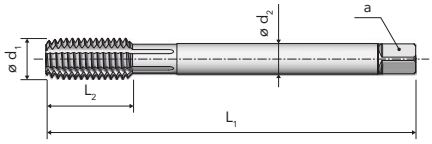
HIGH PERFORMANCE COLD FORMING TAPS for blind and through holes
Oil grooves

3xD HSSK

DIN 2174 (371)≤ M10



DIN 2174 (376)≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	P80 N TiN	P80 N TiH1	P80 N 6GX TiN	P80 N 7GX TiN
P	P.1-2	• 40-45	• 40-45	• 40-45	• 40-45
	P.3	• 35-40	• 35-40	• 35-40	• 35-40
	P.4	• 30-35	• 30-35	• 30-35	• 30-35
	P.5	• 15-20	• 15-20	• 15-20	• 15-20
	P.7	• 15-20	• 15-20	• 15-20	• 15-20
M	M.1	• 15-20	• 15-20	• 15-20	• 15-20
N	N.1-2	• 40-45	• 40-45	• 40-45	• 40-45
	N.3	• 35-40	• 35-40	• 35-40	• 35-40
	N.5-6	• 40-45	• 40-45	• 40-45	• 40-45
S	S.1		• 10-15		
	S.3	• 10-15	• 10-15	• 10-15	• 10-15

	P80 N TiN	P80 N TiH1	P80 N 6GX TiN	P80 N 7GX TiN
				
Tolerance	6HX	6HX	6GX	7GX
Chamfer form	C (2-3)	C (2-3)	C (2-3)	C (2-3)
Hole type	3xD	3xD	3xD	3xD
Direction of cut	RH	RH	RH	RH
Internal coolant	—	—	—	—

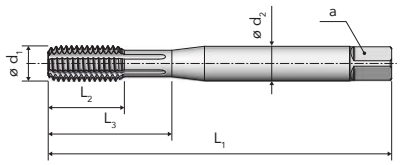
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	P80 N TiN	P80 N TiH1	P80 N 6GX TiN	P80 N 7GX TiN
M 2	0,4	45	7	11	2,8	2,1	3	1,85	•	•	•	
2,5	0,45	50	9	15	2,8	2,1	3	2,3	•	•	•	
3	0,5	56	10	18	3,5	2,7	4	2,8	•	•	•	•
3,5	0,6	56	11	20	4	3	4	3,25	•	•	•	•
4	0,7	63	12	21	4,5	3,4	5	3,7	•	•	•	•
5	0,8	70	14	24,5	6	4,9	5	4,65	•	•	•	•
6	1	80	16	29	6	4,9	5	5,55	•	•	•	•
8	1,25	90	18	33	8	6,2	5	7,4	•	•	•	•
10	1,5	100	20	36	10	8	5	9,3	•	•	•	•
12	1,75	110	24	-	9	7	5	11,2	•	•	•	•
14	2	110	25	-	11	9	6	13,1	•	•	•	•
16	2	110	28	-	12	9	6	15,1	•	•	•	•
18	2,5	125	28	-	14	11	8	16,9	•	•	•	
20	2,5	140	30	-	16	12	8	18,9	•	•	•	

€ p.53

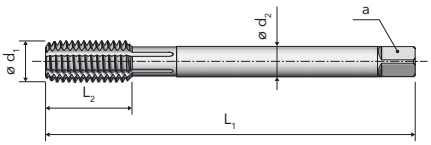
HIGH PERFORMANCE COLD FORMING TAPS for blind holes
Chamfer form E

P80 E TiN	P80 N E TiN	P80 N E 6GX TiN	NEW BP80 N E TiN

DIN 2174 (371)≤ M10



DIN 2174 (376)≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	P80 E TiN	P80 N E TiN	P80 N E 6GX TiN	BP80 N E TiN
P	P.1-2	• 40-45	• 40-45	• 40-45	• 40-45
	P.3	• 35-40	• 35-40	• 35-40	• 35-40
	P.4	• 30-35	• 30-35	• 30-35	• 30-35
	P.5	• 15-20	• 15-20	• 15-20	• 15-20
	P.7	• 15-20	• 15-20	• 15-20	• 15-20
M	M.1	• 15-20	• 15-20	• 15-20	• 15-20
N	N.1-2	• 40-45	• 40-45	• 40-45	• 40-45
	N.3	• 35-40	• 35-40	• 35-40	• 35-40
	N.5-6	• 40-45	• 40-45	• 40-45	• 40-45
S	S.3	• 10-15	• 10-15	• 10-15	• 10-15

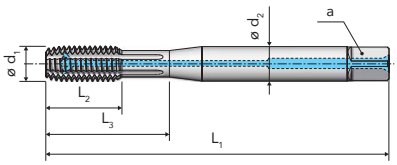
	P80 E TiN	P80 N E TiN	P80 N E 6GX TiN	BP80 N E TiN
Tolerance	6HX	6HX	6GX	6HX
Chamfer form	E(1,5-2)	E(1,5-2)	E(1,5-2)	E(1,5-2)
Hole type	1,5 x D	3 x D	3 x D	3 x D
Direction of cut	RH	RH	RH	RH
Internal coolant	—	—	—	●

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	P80 E TiN	P80 N E TiN	P80 N E 6GX TiN	BP80 N E TiN
M 3	0,5	56	10	18	3,5	2,7	4	2,8	•	•	•	
3,5	0,6	56	11	20	4	3	4	3,25	•	•	•	
4	0,7	63	12	21	4,5	3,4	5	3,7	•	•	•	
5	0,8	70	14	24,5	6	4,9	5	4,65	•	•	•	•
6	1	80	16	29	6	4,9	5	5,55	•	•	•	•
8	1,25	90	18	33	8	6,2	5	7,4	•	•	•	•
10	1,5	100	20	36	10	8	5	9,3	•	•	•	•
12	1,75	110	24	-	9	7	5	11,2		•		•
16	2	110	28	-	12	9	6	15,1		•		•

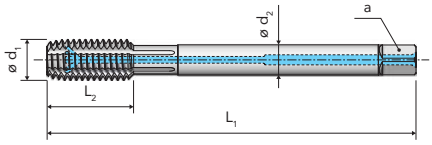
€ p.53

HIGH PERFORMANCE COLD FORMING TAPS for blind and through holes
Oil grooves / internal coolant

DIN 2174 (371)≤ M10



DIN 2174 (376)≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	BP80 N TiN	BP80 NR TiN		
P	P.1-2	• 40-45	• 40-45		
	P.3	• 35-40	• 35-40		
	P.4	• 30-35	• 30-35		
	P.5	• 15-20	• 15-20		
	P.7	• 15-20	• 15-20		
M	M.1	• 15-20	• 15-20		
N	N.1-2	• 40-45	• 40-45		
	N.3	• 35-40	• 35-40		
	N.5-6	• 40-45	• 40-45		
S	S.3	• 10-15	• 10-15		

	BP80 N TiN	BP80 NR TiN
Tolerance	6HX	6HX
Chamfer form	C (2-3)	C (2-3)
Hole type	3xD	3xD
Direction of cut	RH	RH
Internal coolant		

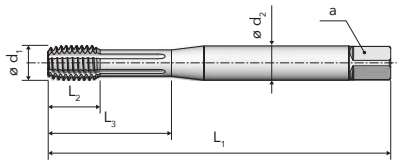
	Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	BP80 N TiN	BP80 NR TiN		
	M 5	0,8	70	14	24,5	6	4,9	5	4,65	•	•		
	6	1	80	16	29	6	4,9	5	5,55	•	•		
	8	1,25	90	18	33	8	6,2	5	7,4	•	•		
	10	1,5	100	20	36	10	8	5	9,3	•	•		
NEW	12	1,75	110	24	-	9	7	5	11,2	•	•		
NEW	16	2	110	28	-	12	9	6	15,1	•	•		
	20	2,5	140	30	-	16	12	8	18,9		•		
	24	3	160	35	-	18	14,5	8	22,7		•		
	27	3	160	35	-	20	16	8	25,7		•		
	30	3,5	180	40	-	22	18	8	28,45		•		

€ p.54

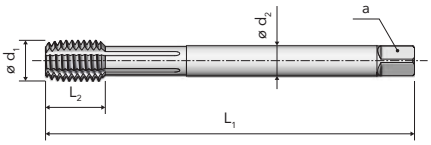
HIGH PERFORMANCE COLD FORMING TAPS for blind and through holes
Oil grooves / for stainless steel

NEW
P180 N
TiN

DIN 2174 (371)≤ M10



DIN 2174 (376)≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	P180 N TiN			
P	P.7	• 15-20			
M	M.1	• 10-15			
	M.2	• 8-10			

Tolerance	6HX
Chamfer form	C (2-3)
Hole type	3xD
Direction of cut	RH
Internal coolant	—

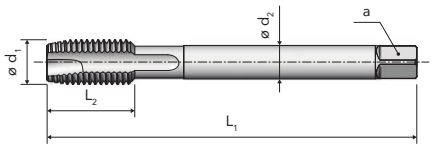
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	P180 N TiN
M 4	0,7	70	7	18	4,5	3,4	5	3,7	•
5	0,8	70	8	23	6	4,9	5	4,65	•
6	1	80	10	29	6	4,9	5	5,6	•
8	1,25	90	11	33	8	6,2	5	7,45	•
10	1,5	100	13	36	10	8	5	9,35	•
12	1,75	110	16	-	9	7	5	11,25	•
16	2	110	20	-	12	9	6	15,1	•

€ p.54

HIGH PERFORMANCE MACHINE TAPS for through holes
Straight flutes with spiral point

3xD HSSP

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	P17 TiN	P17 TiH1	P17 6GX TiN	BP17 TiH1
P	P.3	• 25-35	• 25-35	• 25-35	• 25-35
	P.4	• 20-30	• 20-30	• 20-30	• 20-30
	P.5	• 10-20	• 10-20	• 10-20	• 10-20
	P.6	• 8-10	• 8-10	• 8-10	• 8-10
	P.7	• 10-20	• 10-20	• 10-20	• 10-20
M	M.1	• 10-20	• 10-20	• 10-20	• 10-20
	M.2	• 6-8	• 6-8	• 6-8	• 6-8
K	K.2	• 25-35	• 25-35	• 25-35	• 25-35
N	N.2-3	• 30-40	• 30-40	• 30-40	• 30-40
	N.6	• 25-35	• 25-35	• 25-35	• 25-35

	P17 TiN	P17 TiH1	P17 6GX TiN	NEW BP17 TiH1
Tolerance	6HX	6HX	6GX	6HX
Chamfer form	B (4-5)	B (4-5)	B (4-5)	B (4-5)
Hole type	3xD	3xD	3xD	3xD
Direction of cut	RH	RH	RH	RH
Internal coolant	—	—	—	●

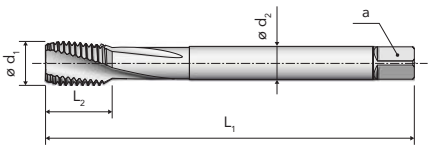
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	P17 TiN	P17 TiH1	P17 6GX TiN	BP17 TiH1
M 8	1	90	16	-	6	4,9	3	7	•	•	•	•
10	1	90	18	-	7	5,5	3	9	•	•	•	•
10	1,25	100	18	-	7	5,5	3	8,8	•	•	•	•
12	1	100	22	-	9	7	4	11	•	•	•	
12	1,25	100	22	-	9	7	4	10,8	•	•	•	•
12	1,5	100	22	-	9	7	4	10,5	•	•	•	•
14	1,5	100	22	-	11	9	4	12,5	•	•	•	•
16	1,5	100	22	-	12	9	4	14,5	•	•	•	•
18	1,5	110	25	-	14	11	4	16,5	•	•	•	•
20	1,5	125	25	-	16	12	4	18,5	•	•	•	•

€ p.54

HIGH PERFORMANCE MACHINE TAPS for blind holes
15° spiral flutes

R15 | 2xD | HSSP

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	P30 BRIGHT	P30 TiN	P30 TiH1	BP30 TiH1
P	P.3	• 15-18	• 25-30	• 25-30	• 25-30
	P.4	• 12-15	• 20-25	• 20-25	• 20-25
	P.5	• 8-10	• 10-15	• 10-15	• 10-15
	P.6	• 3-5	• 5-10	• 5-10	• 5-10
	P.7	• 8-10	• 10-15	• 10-15	• 10-15
K	K.2	• 15-18	• 25-30	• 25-30	• 25-30
N	N.3	• 15-18	• 25-30	• 25-30	• 25-30
	N.6	• 15-18	• 25-30	• 25-30	• 25-30
	N.7	• 12-15	• 20-25	• 20-25	• 20-25
S	S.2	• 2-3		• 2-3	• 2-3
	S.4	• 2-3	• 2-3	• 2-3	• 2-3

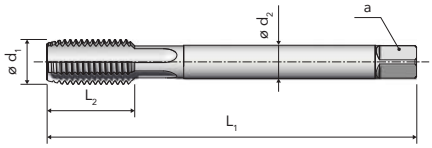
	P30 BRIGHT	P30 TiN	P30 TiH1	BP30 TiH1
Tolerance	6HX	6HX	6HX	6HX
Chamfer form	C (2-3)	C (2-3)	C (2-3)	C (2-3)
Hole type	2xD	2xD	2xD	2xD
Direction of cut	RH	RH	RH	RH
Internal coolant	—	—	—	●

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	P30 BRIGHT	P30 TiN	P30 TiH1	BP30 TiH1
M 8	1	90	10	-	6	4,9	3	7	•	•	•	
10	1	90	11	-	7	5,5	3	9	•	•	•	
10	1,25	100	12	-	7	5,5	3	8,8	•	•	•	•
12	1,25	100	14	-	9	7	3	10,8	•	•	•	•
12	1,5	100	15	-	9	7	3	10,5	•	•	•	•
14	1,5	100	16	-	11	9	3	12,5	•	•	•	•
16	1,5	100	16	-	12	9	3	14,5	•	•	•	•
18	1,5	110	18	-	14	11	4	16,5	•	•	•	•
20	1,5	125	18	-	16	12	4	18,5	•	•	•	•

HIGH PERFORMANCE MACHINE TAPS for blind and through holes
Straight flutes / for cast iron

3xD 3xD HSSP

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	P45 ACE	BP45 ACE	P45 E ACE	BP45 E ACE
K	K.1	• 40-50	• 40-50	• 40-50	• 40-50
N	N.4	• 40-50	• 40-50	• 40-50	• 40-50
	N.7	• 40-50	• 40-50	• 40-50	• 40-50
	N.9-10	• 45-55	• 45-55	• 45-55	• 45-55

	NEW P45 ACE	NEW BP45 ACE	NEW P45 E ACE	NEW BP45 E ACE
				
Tolerance	6HX	6HX	6HX	6HX
Chamfer form	C (2-3)	C (2-3)	E(1,5-2)	E(1,5-2)
Hole type	3xD	3xD	3xD	3xD
Direction of cut	RH	RH	RH	RH
Internal coolant	—		—	

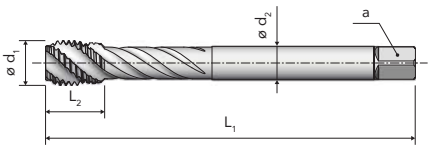
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	P45 ACE	BP45 ACE	P45 E ACE	BP45 E ACE
M 8	1	90	16	-	6	4,9	4	7	•	•	•	•
10	1	90	18	-	7	5,5	4	9	•	•	•	•
10	1,25	100	18	-	7	5,5	4	8,8	•	•	•	•
12	1,25	100	22	-	9	7	4	10,8	•	•	•	•
12	1,5	100	22	-	9	7	4	10,5	•	•	•	•
14	1,25	100	22	-	11	9	4	12,8	•	•		
14	1,5	100	22	-	11	9	4	12,5	•	•	•	•
16	1,5	100	22	-	12	9	4	14,5	•	•	•	•
20	1,5	125	25	-	16	12	4	18,5	•	•		

€ p.55

HIGH PERFORMANCE MACHINE TAPS for blind holes
45° spiral flutes / back tapered

R45 | 3xD | HSSZ

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	P71 TiN	P71 TiH1	P71 6GX TiN	BP71 TiH1
P	P.3	• 20-30	• 20-30	• 20-30	• 20-30
	P.4	• 15-25	• 15-25	• 15-25	• 15-25
	P.5	• 5-15	• 5-15	• 5-15	• 5-15
	P.7	• 10-15	• 10-15	• 10-15	• 10-15
M	M.1	• 10-15	• 10-15	• 10-15	• 10-15
	M.2	• 5-7	• 5-7	• 5-7	• 5-7
K	K.2	• 20-30	• 20-30	• 20-30	• 20-30
N	N.3	• 25-35	• 25-35	• 25-35	• 25-35
	N.6	• 25-35	• 25-35	• 25-35	• 25-35
S	S.1		• 10-15		• 10-15
	S.3	• 10-15	• 10-15	• 10-15	• 10-15

	P71 TiN	P71 TiH1	P71 6GX TiN	NEW BP71 TiH1
				
Tolerance	6HX	6HX	6GX	6HX
Chamfer form	C (2-3)	C (2-3)	C (2-3)	C (2-3)
Hole type	3xD	3xD	3xD	3xD
Direction of cut	RH	RH	RH	RH
Internal coolant	—	—	—	•

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	P71 TiN	P71 TiH1	P71 6GX TiN	BP71 TiH1
M 8	1	90	12	-	6	4,9	3	7	•	•	•	•
10	1	90	12	-	7	5,5	3	9	•	•	•	•
10	1,25	100	14	-	7	5,5	3	8,8	•	•	•	•
12	1	100	14	-	9	7	4	11	•	•	•	
12	1,25	100	14	-	9	7	4	10,8	•	•	•	•
12	1,5	100	15	-	9	7	4	10,5	•	•	•	•
14	1,5	100	16	-	11	9	4	12,5	•	•	•	•
16	1,5	100	16	-	12	9	4	14,5	•	•	•	•
18	1,5	110	18	-	14	11	4	16,5	•	•	•	•
20	1,5	125	18	-	16	12	4	18,5	•	•	•	•

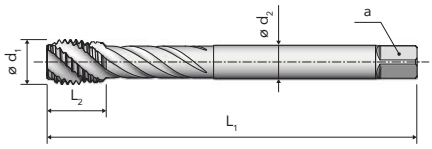
€ p.55

HIGH PERFORMANCE MACHINE TAPS **for blind holes**
45° spiral flutes / back tapered / chamfer form E

R45 | 3xD | HSSZ | E(1,5-2)

NEW
P71 E
TiH1

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	P71 E TiH1			
P	P.3	• 20-30			
	P.4	• 15-25			
	P.5	• 5-15			
	P.7	• 10-15			
M	M.1	• 10-15			
	M.2	• 5-7			
K	K.2	• 20-30			
N	N.3	• 25-35			
	N.6	• 25-35			
S	S.1	• 10-15			
	S.3	• 10-15			

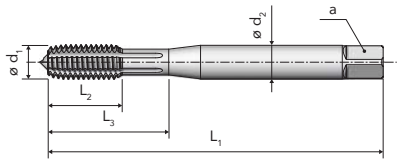
Tolerance	6HX
Chamfer form	E(1,5-2)
Hole type	3xD
Direction of cut	RH
Internal coolant	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	P71 E TiH1			
M 8	1	90	12	-	6	4,9	3	7	•			
10	1	90	12	-	7	5,5	3	9	•			
10	1,25	100	14	-	7	5,5	3	8,8	•			
12	1	100	14	-	9	7	4	11	•			
12	1,25	100	14	-	9	7	4	10,8	•			
12	1,5	100	15	-	9	7	4	10,5	•			
14	1,5	100	16	-	11	9	4	12,5	•			
16	1,5	100	16	-	12	9	4	14,5	•			

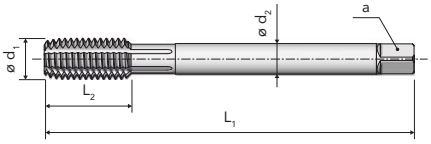
€ p.56

HIGH PERFORMANCE COLD FORMING TAPS for blind and through holes

DIN 2174 (371)≤ M10



DIN 2174 (374)≥ M12



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	P81 TiN	P81 6GX TiN	P81 N TiN	P81 N 6GX TiN
P	P.1-2	• 40-45	• 40-45	• 40-45	• 40-45
	P.3	• 35-40	• 35-40	• 35-40	• 35-40
	P.4	• 30-35	• 30-35	• 30-35	• 30-35
	P.5	• 15-20	• 15-20	• 15-20	• 15-20
	P.7	• 15-20	• 15-20	• 15-20	• 15-20
M	M.1	• 15-20	• 15-20	• 15-20	• 15-20
N	N.1-2	• 40-45	• 40-45	• 40-45	• 40-45
	N.3	• 35-40	• 35-40	• 35-40	• 35-40
	N.5-6	• 40-45	• 40-45	• 40-45	• 40-45
S	S.3	• 10-15	• 10-15	• 10-15	• 10-15

	P81 TiN	P81 6GX TiN	P81 N TiN	P81 N 6GX TiN
				
Tolerance	6HX	6GX	6HX	6GX
Chamfer form	C (2-3)	C (2-3)	C (2-3)	C (2-3)
Hole type	1,5 x D	1,5 x D	3 x D	3 x D
Direction of cut	RH	RH	RH	RH
Internal coolant	—	—	—	—

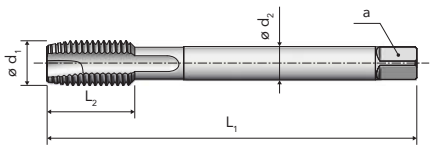
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	P81 TiN	P81 6GX TiN	P81 N TiN	P81 N 6GX TiN
M 4	0,5	63	12	21	4,5	3,4	5	3,8	•	•	•	•
5	0,5	70	14	24,5	6	4,9	5	4,8	•	•	•	•
6	0,75	80	16	29	6	4,9	5	5,65	•	•	•	•
8	1	90	18	33	8	6,2	5	7,55	•	•	•	•
10	1	90	18	34	10	8	6	9,55	•	•	•	•
10	1,25	100	20	36	10	8	6	9,4	•	•	•	•
12	1	100	22	-	9	7	6	11,55	•	•	•	•
12	1,25	100	22	-	9	7	6	11,4	•	•	•	•
12	1,5	100	22	-	9	7	6	11,3	•	•	•	•
14	1,25	100	22	-	11	9	6	13,4	•	•	•	•
14	1,5	100	22	-	11	9	6	13,3	•	•	•	•
16	1,5	100	22	-	12	9	6	15,3	•	•	•	•
18	1,5	110	22	-	14	11	8	17,3			•	•
20	1,5	125	25	-	16	12	8	19,3			•	•

€ p.56

HIGH PERFORMANCE MACHINE TAPS for through holes
Straight flutes with spiral point

3xD HSSP

DIN 5156



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	P18 TiN	P18 TiH1		
P	P.3	• 25-35	• 25-35		
	P.4	• 20-30	• 20-30		
	P.5	• 10-20	• 10-20		
	P.6	• 8-10	• 8-10		
	P.7	• 10-20	• 10-20		
M	M.1	• 10-20	• 10-20		
	M.2	• 6-8	• 6-8		
K	K.2	• 25-35	• 25-35		
N	N.2-3	• 30-40	• 30-40		
	N.6	• 25-35	• 25-35		

	P18 TiN	P18 TiH1
Tolerance	ISO 5969 X	ISO 5969 X
Chamfer form	B (4-5)	B (4-5)
Hole type	3xD	3xD
Direction of cut	RH	RH
Internal coolant	—	—

G	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	P18 TiN	P18 TiH1		
1/8"	28	9,728	90	18	-	7	5,5	3	8,8	•	•		
1/4"	19	13,157	100	22	-	11	9	4	11,8	•	•		
3/8"	19	16,662	100	22	-	12	9	4	15,25	•	•		
1/2"	14	20,955	125	25	-	16	12	4	19	•	•		
5/8"	14	22,911	125	25	-	18	14,5	4	21	•	•		
3/4"	14	26,441	140	28	-	20	16	5	24,5	•	•		
1"	11	33,249	160	30	-	25	20	5	30,75	•	•		

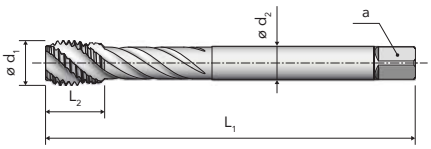
€ p.56

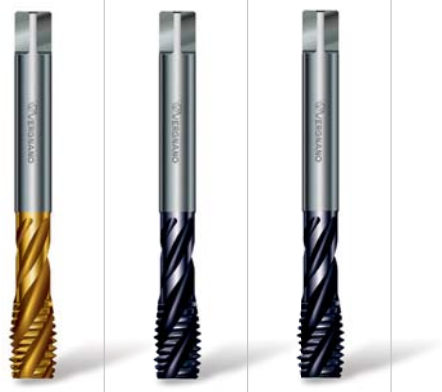
HIGH PERFORMANCE MACHINE TAPS for blind holes
45° spiral flutes / back tapered

R45 | 3xD | HSSZ

	P59 TiN	P59 TiH1	NEW P59 E TiH1

DIN 5156





	P59 TiN	P59 TiH1	P59 E TiH1
Tolerance	ISO 5969 X	ISO 5969 X	ISO 5969 X
Chamfer form	C (2-3)	C (2-3)	E(1,5-2)
Hole type	3xD	3xD	3xD
Direction of cut	RH	RH	RH
Internal coolant	—	—	—

APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	P59 TiN	P59 TiH1	P59 E TiH1
P	P.3	• 20-30	• 20-30	• 20-30
	P.4	• 15-25	• 15-25	• 15-25
	P.5	• 5-15	• 5-15	• 5-15
	P.7	• 10-15	• 10-15	• 10-15
M	M.1	• 10-15	• 10-15	• 10-15
	M.2	• 5-7	• 5-7	• 5-7
K	K.2	• 20-30	• 20-30	• 20-30
N	N.3	• 25-35	• 25-35	• 25-35
	N.6	• 25-35	• 25-35	• 25-35
S	S.1		• 10-15	• 10-15
	S.3	• 10-15	• 10-15	• 10-15

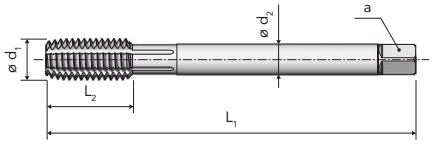
G	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	P59 TiN	P59 TiH1	P59 E TiH1
1/8"	28	9,728	90	13	-	7	5,5	3	8,8	•	•	•
1/4"	19	13,157	100	16	-	11	9	4	11,8	•	•	•
3/8"	19	16,662	100	16,5	-	12	9	4	15,25	•	•	•
1/2"	14	20,955	125	20,5	-	16	12	5	19	•	•	•
5/8"	14	22,911	125	20,5	-	18	14,5	5	21	•	•	•
3/4"	14	26,441	140	21,5	-	20	16	5	24,5	•	•	•
1"	11	33,249	160	25,5	-	25	20	5	30,75	•	•	

€ p.57

HIGH PERFORMANCE COLD FORMING TAPS for blind and through holes
Oil grooves

P82 N
TiN

DIN 2189



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	P82 N TiN			
P	P.1-2	• 40-45			
	P.3	• 35-40			
	P.4	• 30-35			
	P.5	• 15-20			
	P.7	• 15-20			
M	M.1	• 15-20			
N	N.1-2	• 40-45			
	N.3	• 35-40			
	N.5-6	• 40-45			
S	S.3	• 10-15			

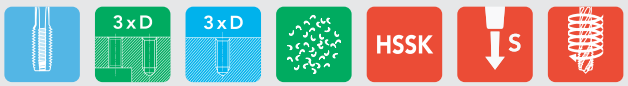
Tolerance	ISO 5969 X
Chamfer form	C (2-3)
Hole type	3xD
Direction of cut	RH
Internal coolant	—

G	P [TPI]	Ød1 [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h9 [mm]	a h12 [mm]	z [-]	[mm]	P82 N TiN
1/8"	28	9,728	90	18	-	7	5,5	6	9,25	•
1/4"	19	13,157	100	22	-	11	9	6	12,5	•
3/8"	19	16,662	100	22	-	12	9	6	16	•
1/2"	14	20,955	125	25	-	16	12	6	20	•
3/4"	14	26,441	140	28	-	20	16	6	25,5	•

€ p.57

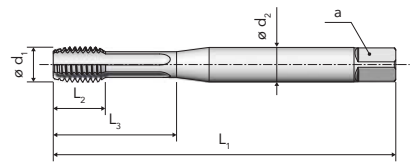
Synchronous Taps

MACHINE TAPS FOR SYNCHRONOUS TAPPING for blind and through holes
Straight flutes / for cast iron

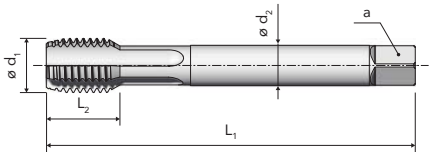


	S43 ACE	BS43 ACE	S43 E ACE	BS43 E ACE
				
Tolerance	6HX	6HX	6HX	6HX
Chamfer form	C (2-3)	C (2-3)	E(1,5-2)	E(1,5-2)
Hole type	3xD	3xD	3xD	3xD
Direction of cut	RH	RH	RH	RH
Internal coolant	—	•	—	•

DIN 371≤ Ø 12(*)



DIN 376≤ Ø 16(*)



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	S43 ACE	BS43 ACE	S43 E ACE	BS43 E ACE
K	K.1	• 55-65	• 55-65	• 55-65	• 55-65
N	N.4	• 55-65	• 55-65	• 55-65	• 55-65
	N.7	• 55-65	• 55-65	• 55-65	• 55-65
	N.9-10	• 55-65	• 55-65	• 55-65	• 55-65

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h6 [mm]	a h12 [mm]	z [-]	[mm]	S43 ACE	BS43 ACE	S43 E ACE	BS43 E ACE	
M 3	0,5	70	5	15	6	4,9	3	2,5	•				
4	0,7	70	7	18	6	4,9	3	3,3	•		•		
5	0,8	70	8	23	6	4,9	3	4,2	•	•	•	•	
6	1	80	10	29	6	4,9	4	5	•	•	•	•	
8	1,25	90	11	33	8	6,2	4	6,8	•	•	•	•	
10	1,5	100	13	36	10	8	4	8,5	•	•	•	•	
12	1,75	110	16	42	12	9	4	10,2	•	•	•	•	
16	2	110	18	-	12	9	4	14	•	•	•	•	NEW
20	2,5	140	23	-	16	12	4	17,5	•	•	•	•	NEW

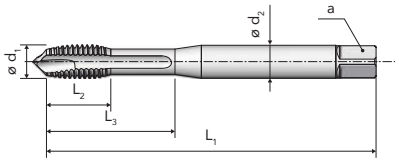
(*) = DIN 1835-B on request

€ p.58

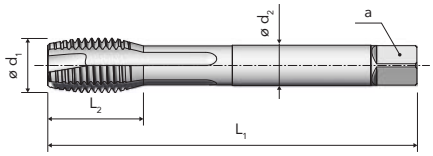
MACHINE TAPS FOR SYNCHRONOUS TAPPING for through holes
Straight flutes with spiral point

3xD | HSSK | S

~ DIN 371≤ M12(*)

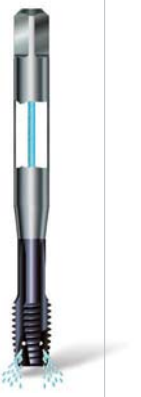


~ DIN 376≥ M14(*)



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	S15 TiN	S15 TiH1	BS15 TiH1
P	P.1-2	• 50-60	• 50-60	• 50-60
	P.3	• 45-55	• 45-55	• 45-55
	P.4	• 40-50	• 40-50	• 40-50
	P.5	• 15-25	• 15-25	• 15-25
	P.7	• 15-25	• 15-25	• 15-25
M	M.1	• 15-25	• 15-25	• 15-25
	M.2	• 10-20	• 10-20	• 10-20
K	K.2	• 45-55	• 45-55	• 45-55
N	N.1	• 50-60	• 50-60	• 50-60
	N.2-3	• 45-55	• 45-55	• 45-55
	N.5	• 40-50	• 40-50	• 40-50
	N.6	• 35-45	• 35-45	• 35-45
S	S.1		• 15-25	• 15-25
	S.3	• 15-25	• 15-25	• 15-25

	S15 TiN	S15 TiH1	BS15 TiH1
			
Tolerance	6HX	6HX	6HX
Chamfer form	B (4-5)	B (4-5)	B (4-5)
Hole type	3xD	3xD	3xD
Direction of cut	RH	RH	RH
Internal coolant	—	—	•

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h6 [mm]	a h12 [mm]	z [-]	[mm]	S15 TiN	S15 TiH1	BS15 TiH1
M 3	0,5	70	5	15	6	4,9	3	2,5	•	•	
4	0,7	70	7	18	6	4,9	3	3,3	•	•	
5	0,8	70	8	25	6	4,9	3	4,2	•	•	•
6	1	80	10	30	6	4,9	3	5	•	•	•
8	1,25	90	12,5	35	8	6,2	3	6,8	•	•	•
10	1,5	100	15	39	10	8	3	8,5	•	•	•
12	1,75	110	17,5	42	12	9	3	10,2	•	•	•
14	2	110	20	-	12	9	3	12	•	•	
16	2	110	20	-	12	9	4	14	•	•	•

(*) = DIN 1835-B on request

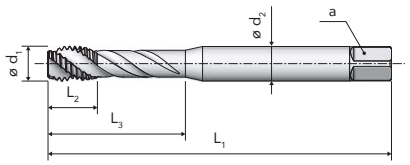
€ p.58

MACHINE TAPS FOR SYNCHRONOUS TAPPING for blind holes
40° spiral flutes / back tapered

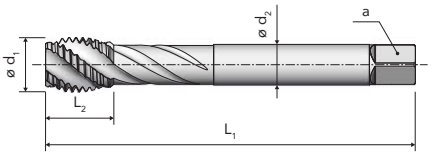
R40 | 3xD | HSSK | S

	S70 TiN	S70 TiH1	BS70 TiH1

~ DIN 371≤ M12(*)



~ DIN 376≥ M14(*)



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	S70 TiN	S70 TiH1	BS70 TiH1
P	P.1-2	• 45-55	• 45-55	• 45-55
	P.3	• 40-50	• 40-50	• 40-50
	P.4	• 35-45	• 35-45	• 35-45
	P.5	• 15-20	• 15-20	• 15-20
	P.7	• 15-20	• 15-20	• 15-20
M	M.1	• 15-20	• 15-20	• 15-20
K	K.2	• 40-50	• 40-50	• 40-50
N	N.1	• 45-55	• 45-55	• 45-55
	N.2-3	• 40-50	• 40-50	• 40-50
	N.5	• 35-45	• 35-45	• 35-45
	N.6	• 30-40	• 30-40	• 30-40
S	S.1		• 15-20	• 15-20
	S.3	• 15-20	• 15-20	• 15-20

	S70 TiN	S70 TiH1	BS70 TiH1
Tolerance	6HX	6HX	6HX
Chamfer form	C (2-3)	C (2-3)	C (2-3)
Hole type	3xD	3xD	3xD
Direction of cut	RH	RH	RH
Internal coolant	—	—	

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h6 [mm]	a h12 [mm]	z [-]	[mm]	S70 TiN	S70 TiH1	BS70 TiH1
M 3	0,5	70	5,5	14	6	4,9	3	2,5	•	•	
4	0,7	70	7,5	18	6	4,9	3	3,3	•	•	
5	0,8	70	8,5	25	6	4,9	3	4,2	•	•	•
6	1	80	10,5	30	6	4,9	3	5	•	•	•
8	1,25	90	11,5	35	8	6,2	3	6,8	•	•	•
10	1,5	100	14	40	10	8	3	8,5	•	•	•
12	1,75	110	16,5	42	12	9	3	10,2	•	•	•
14	2	110	19	-	12	9	3	12	•	•	
16	2	110	19	-	12	9	4	14	•	•	•

(*) = DIN 1835-B on request

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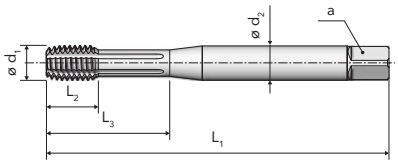
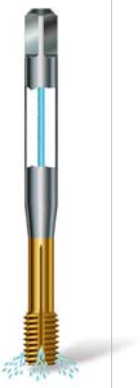
COLD FORMING TAPS FOR SYNCHRONOUS TAPPING for blind and through holes
Oil grooves

~ DIN 371(*)



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	S80 N TiN	S80 N 6GX TiN	BS80 NR TiN
P	P.1-2	• 50-60	• 50-60	• 50-60
	P.3	• 45-55	• 45-55	• 45-55
	P.4	• 40-50	• 40-50	• 40-50
	P.5	• 20-30	• 20-30	• 20-30
	P.7	• 25-35	• 25-35	• 25-35
M	M.1	• 25-35	• 25-35	• 25-35
	M.2	• 15-25	• 15-25	• 15-25
N	N.1-2	• 50-60	• 50-60	• 50-60
	N.3	• 45-55	• 45-55	• 45-55
	N.5-6	• 50-60	• 50-60	• 50-60
S	S.3	• 10-20	• 10-20	• 10-20

	S80 N TiN	S80 N 6GX TiN	BS80 NR TiN
			
Tolerance	6HX	6GX	6HX
Chamfer form	C (2-3)	C (2-3)	C (2-3)
Hole type	3xD	3xD	3xD
Direction of cut	RH	RH	RH
Internal coolant	—	—	•

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h6 [mm]	a h12 [mm]	z [-]	[mm]	S80 N TiN	S80 N 6GX TiN	BS80 NR TiN
M 4	0,7	70	7	18	6	4,9	5	3,7	•	•	•
5	0,8	70	8	23	6	4,9	5	4,65	•	•	•
6	1	80	10	29	6	4,9	5	5,55	•	•	•
8	1,25	90	11	33	8	6,2	5	7,4	•	•	•
10	1,5	100	13	36	10	8	5	9,3	•	•	•
12	1,75	110	16	42	12	9	5	11,2	•	•	•

(*) = DIN 1835-B on request

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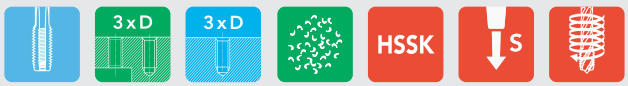
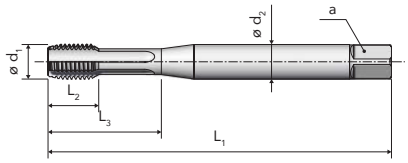
MACHINE TAPS FOR SYNCHRONOUS TAPPING for blind and through holes

Straight flutes / for cast iron

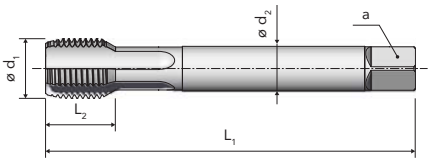


	S45 ACE	NEW BS45 ACE
		
Tolerance	6HX	6HX
Chamfer form	C (2-3)	C (2-3)
Hole type	3xD	3xD
Direction of cut	RH	RH
Internal coolant	—	

~ DIN 371≤ M12(*)



~ DIN 374≥ M14(*)



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	S45 ACE	BS45 ACE		
K	K.1	• 55-65	• 55-65		
N	N.4	• 55-65	• 55-65		
	N.7	• 55-65	• 55-65		
	N.9-10	• 55-65	• 55-65		

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h6 [mm]	a h12 [mm]	z [-]	[mm]	S45 ACE	BS45 ACE			
M 8	1	90	10	33	8	6,2	4	7	•	•			
10	1	90	10	33	10	8	4	9	•	•			
10	1,25	100	12,5	33	10	8	4	8,8	•	•			
12	1,25	100	12,5	33	12	9	4	10,8	•	•			
12	1,5	100	15	37	12	9	4	10,5	•	•			
14	1,5	100	15	-	12	9	4	12,5	•	•			
16	1,5	100	15	-	12	9	4	14,5	•	•			
20	1,5	125	17	-	16	12	4	18,5	•	•			NEW

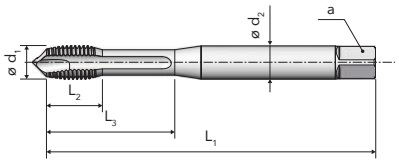
(*) = DIN 1835-B on request

€ p.59

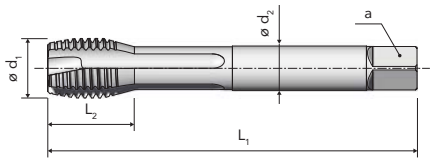
MACHINE TAPS FOR SYNCHRONOUS TAPPING for through holes
Straight flutes with spiral point

S17
TiN

~ DIN 371≤ M12(*)



~ DIN 374≥ M14(*)



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	S15 TiN
P	P.1-2	• 50-60
	P.3	• 45-55
	P.4	• 40-50
	P.5	• 15-25
	P.7	• 15-25
M	M.1	• 15-25
	M.2	• 10-20
K	K.2	• 45-55
N	N.1	• 50-60
	N.2-3	• 45-55
	N.5	• 40-50
	N.6	• 35-45
S	S.3	• 15-25

Tolerance	6HX
Chamfer form	B (4-5)
Hole type	3xD
Direction of cut	RH
Internal coolant	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h6 [mm]	a h12 [mm]	z [-]	[mm]	S17 TiN
M 8	1	90	10	35	8	6,2	3	7	•
10	1	90	10	39	10	8	3	9	•
10	1,25	100	12,5	39	10	8	3	8,8	•
12	1,25	100	12,5	42	12	9	3	10,8	•
12	1,5	100	15	42	12	9	3	10,5	•
14	1,5	100	15	-	12	9	3	12,5	•
16	1,5	100	15	-	12	9	4	14,5	•

(*) = DIN 1835-B on request

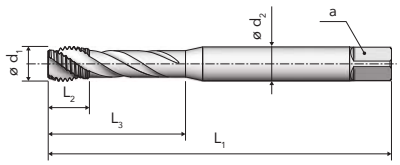
€ p.59

MACHINE TAPS FOR SYNCHRONOUS TAPPING for blind holes
40° spiral flutes / back tapered

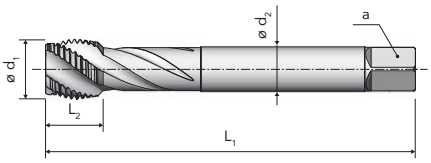
R40 | 3xD | HSSK | S

S71
TiN

~ DIN 371≤ M12(*)



~ DIN 374≥ M14(*)



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	S71 TiN
P	P.1-2	• 45-55
	P.3	• 40-50
	P.4	• 35-45
	P.5	• 15-20
	P.7	• 15-20
M	M.1	• 15-20
K	K.2	• 40-50
N	N.1	• 45-55
	N.2-3	• 40-50
	N.5	• 35-45
	N.6	• 30-40
S	S.3	• 15-20

Tolerance: 6HX

Chamfer form: C (2-3)

Hole type: 3xD

Direction of cut: RH

Internal coolant: —

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h6 [mm]	a h12 [mm]	z [-]	[mm]	S71 TiN
M 8	1	90	10	35	8	6,2	3	7	•
10	1	90	10	40	10	8	3	9	•
10	1,25	100	11,5	40	10	8	3	8,8	•
12	1,25	100	11,5	40	12	9	3	10,8	•
12	1,5	100	14	42	12	9	3	10,5	•
14	1,5	100	14	-	12	9	4	12,5	•
16	1,5	100	14	-	12	9	4	14,5	•

(*) = DIN 1835-B on request

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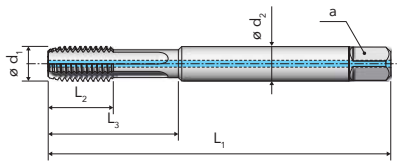
H SERIES

Solid Carbide Taps

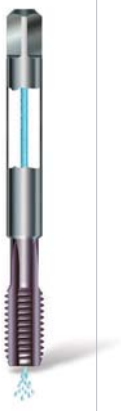
SOLID CARBIDE MACHINE TAPS for blind holes
Straight flutes / internal coolant / for cast iron

DIN 371



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	HB43 BRIGHT	HB43 TiAlN		
K	K.1	• 15-40	• 40-80		
	N.2	• 10-20	• 15-40		
N	N.3	• 20-30	• 30-50		
	N.4	• 15-20	• 25-40		

	HB43 BRIGHT	HB43 TiAlN
		
Tolerance	6HX	6HX
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Internal coolant		

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h6 [mm]	a h12 [mm]	z [-]	[mm]	HB43 BRIGHT	HB43 TiAlN		
M 3(*)	0,5	56	8	18	3,5	2,7	3	2,5	•	•		
4(*)	0,7	63	10	21	4,5	3,4	3	3,3	•	•		
5	0,8	70	10	25	6	4,9	4	4,2	•	•		
6	1	80	12	30	6	4,9	4	5	•	•		
8	1,25	90	16	35	8	6,2	4	6,8	•	•		
10	1,5	100	18	39	10	8	4	8,5	•	•		

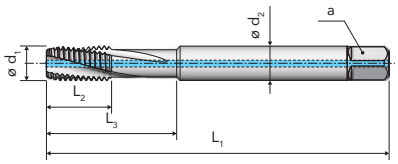
(*) = Taps without through coolant

€ p.60

SOLID CARBIDE MACHINE TAPS for blind holes
15° spiral flutes / internal coolant

R15 | 2,5 x D | HM

DIN 371



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	HB29 BRIGHT	HB29 TiCN		
N	N.1-2	• 15-30	• 25-50		
	N.3	• 20-30	• 30-50		
	N.4	• 15-20	• 25-40		
	N.7	• 20-25	• 30-40		

	HB29 BRIGHT	HB29 TiCN
Tolerance	6HX	6HX
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Internal coolant		

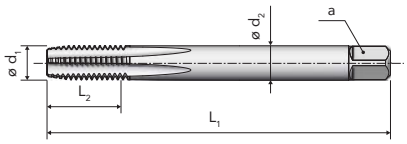
Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h6 [mm]	a h12 [mm]	z [-]	[mm]	HB29 BRIGHT	HB29 TiCN		
M 3(*)	0,5	56	8	18	3,5	2,7	3	2,5	•	•		
4(*)	0,7	63	10	21	4,5	3,4	3	3,3	•	•		
5	0,8	70	10	25	6	4,9	3	4,2	•	•		
6	1	80	12	30	6	4,9	3	5	•	•		
8	1,25	90	16	35	8	6,2	3	6,8	•	•		
10	1,5	100	18	39	10	8	3	8,5	•	•		

(*) = Taps without through coolant

€ p.60

SOLID CARBIDE MACHINE TAPS for blind and through holes
Straight flutes / for high strength materials

NORM VERGNANO



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	H130 BRIGHT	H130 TiCN		
H	H.1	• 2-3	• 3-6		
	H.2	• 1-2	• 2-4		

	H130 BRIGHT	H130 TiCN
		
Tolerance	ISO2 6H	ISO2 6H
Chamfer form	D (4-5)	D (4-5)
Hole type	1,5 x D	1,5 x D
Direction of cut	RH	RH
Internal coolant	—	—

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h6 [mm]	a h12 [mm]	z [-]	[mm]	H130 BRIGHT	H130 TiCN
M 3	0,5	56	12	17	3,5	2,7	3	2,6 (*)	•	•
4	0,7	63	14	19	4,5	3,4	4	3,4 (*)	•	•
5	0,8	70	17	22	6	4,9	4	4,3 (*)	•	•
6	1	80	20	-	6	4,9	4	5,1 (*)	•	•
8	1,25	90	20	-	8	6,2	5	6,9 (*)	•	•
10	1,5	100	24	-	10	8	5	8,6 (*)	•	•
12	1,75	110	28	-	12	9	5	10,4 (*)	•	•

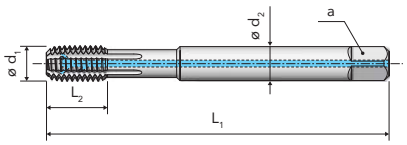
(*) = The hole diameters are oversized.

€ p.60

SOLID CARBIDE COLD FORMING TAPS for blind and through holes
Oil grooves / internal coolant

HB80 NR
TiCN

DIN 371



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	HB80 NR TiCN			
P	P.1-2	• 40-50			
	P.3	• 35-45			
	P.4	• 30-40			
	P.5	• 15-25			
	P.7	• 15-25			
M	M.1	• 15-25			
N	N.1-2	• 40-50			
	N.3	• 35-45			
	N.5-6	• 40-50			
S	S.3	• 10-20			

Tolerance — 6HX

Chamfer form — C (2-3)

Hole type — 2,5 x D

Direction of cut — RH

Through coolant

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h6 [mm]	a h12 [mm]	z [-]	[mm]	HB80 NR TiCN			
M 3(*)	0,5	56	6	18	3,5	2,7	4	2,8	•			
4(*)	0,7	63	7,5	21	4,5	3,4	4	3,7	•			
5	0,8	70	8,5	25	6	4,9	4	4,65	•			
6	1	80	11	30	6	4,9	5	5,55	•			
8	1,25	90	14	35	8	6,2	5	7,4	•			
10	1,5	100	16	39	10	8	5	9,3	•			

(*) = Taps without through coolant

€ p.60

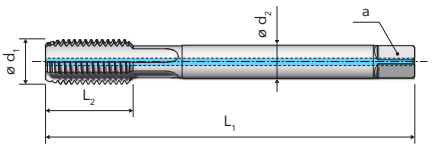
SOLID CARBIDE MACHINE TAPS for blind holes

DIN 13

Straight flutes / internal coolant / for cast iron

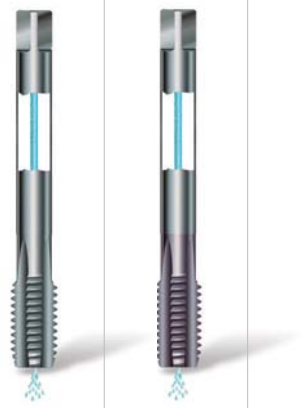
2,5 x D | HM

DIN 374



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	HB45 BRIGHT	HB45 TiAlN		
K	K.1	• 15-40	• 40-80		
	N.2	• 10-20	• 15-40		
N	N.3	• 20-30	• 30-50		
	N.4	• 15-20	• 25-40		



	HB45 BRIGHT	HB45 TiAlN
Tolerance	6HX	6HX
Chamfer form	C (2-3)	C (2-3)
Hole type	2,5 x D	2,5 x D
Direction of cut	RH	RH
Through coolant		

Ød1 [mm]	P [mm]	L1 js 16 [mm]	L2 [mm]	L3 [mm]	Ød2 h6 [mm]	a h12 [mm]	z [-]	[mm]	HB45 BRIGHT	HB45 TiAlN			
M 10	1	90	18	-	7	5,5	4	9	•	•			NEW
12	1,25	100	22	-	9	7	4	10,8	•	•			NEW
12	1,5	100	22	-	9	7	4	10,5	•	•			
14	1,5	100	22	-	11	9	4	12,5	•	•			
16	1,5	100	22	-	12	9	4	14,5	•	•			

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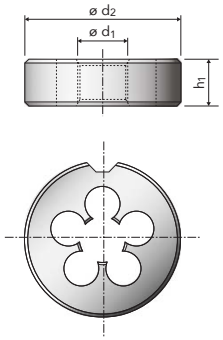
F
SERIES

Dies

DIES
With spiral point

HSS

DIN EN 22568



APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	X200 BRIGHT	X200 LH BRIGHT		
P	P.1-4	•	•		
	P.7	•	•		
M	M.1	•	•		
K	K.2	•	•		
N	N.1-3	•	•		
	N.5-7	•	•		

	X200 BRIGHT	X200 LH BRIGHT
		
Tolerance	ISO 6g	ISO 6g
Chamfer form	1,75xP	1,75xP
Hole type	—	—
Direction of cut	RH	LH
Through coolant	—	—

Ød1 [mm]	P [mm]	Ød2 [mm]	h1 [mm]	X200 BRIGHT	X200 LH BRIGHT
M 2	0,4	16	5	•	
2,2	0,45	16	5	•	
2,5	0,45	16	5	•	
3	0,5	20	5	•	•
3,5	0,6	20	5	•	
4	0,7	20	5	•	•
5	0,8	20	7	•	•
6	1	20	7	•	•
7	1	25	9	•	
8	1,25	25	9	•	•
9	1,25	25	9	•	
10	1,5	30	11	•	•
11	1,5	30	11	•	
12	1,75	38	14	•	•
14	2	38	14	•	•
16	2	45	18	•	
18	2,5	45	18	•	
20	2,5	45	18	•	
22	2,5	55	22	•	
24	3	55	22	•	
27	3	65	25	•	
30	3,5	65	25	•	
33	3,5	65	25	•	
36	4	65	25	•	
39	4	75	30	•	

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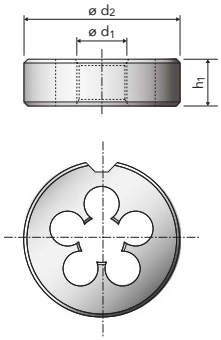
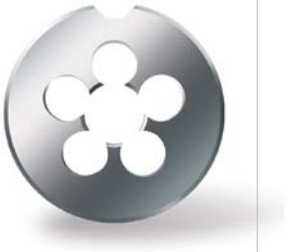
X201
BRIGHT

DIN EN 22568





APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	X201 BRIGHT			
P	P.1-4	•			
	P.7	•			
M	M.1	•			
K	K.2	•			
N	N.1-3	•			
	N.5-7	•			

	X201 BRIGHT
Tolerance	ISO 6g
Chamfer form	1,75xP
Hole type	—
Direction of cut	RH
Through coolant	—

Ød1 [mm]	P [mm]	Ød2 [mm]	h1 [mm]	X201 BRIGHT	
M 2	0,25	16	5	•	
2,2	0,25	16	5	•	
2,5	0,35	16	5	•	
3	0,35	20	5	•	
4	0,5	20	5	•	
5	0,5	20	5	•	
6	0,75	20	7	•	
7	0,75	25	9	•	
8	0,75	25	9	•	
8	1	25	9	•	
9	1	25	9	•	
10	0,75	30	11	•	
10	1	30	11	•	
10	1,25	30	11	•	
11	1	30	11	•	
12	1	38	10	•	
12	1,25	38	10	•	
12	1,5	38	10	•	
14	1	38	10	•	
14	1,25	38	10	•	
14	1,5	38	10	•	
15	1	38	10	•	
15	1,5	38	10	•	
16	1	45	14	•	
16	1,5	45	14	•	
18	1	45	14	•	

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X201
BRIGHT

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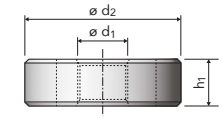

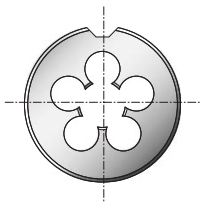

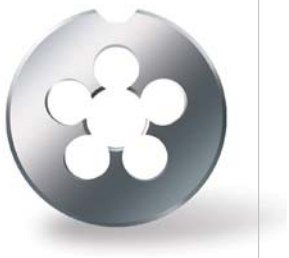

APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	X201 BRIGHT			
P	P.1-4	•			
	P.7	•			
M	M.1	•			
K	K.2	•			
N	N.1-3	•			
	N.5-7	•			

Tolerance	ISO 6g
Chamfer form	1,75xP
Hole type	—
Direction of cut	RH
Through coolant	—

Ød1 [mm]	P [mm]	Ød2 [mm]	h1 [mm]	X201 BRIGHT	
M 18	1,5	45	14	•	
18	2	45	14	•	
20	1	45	14	•	
20	1,5	45	14	•	
20	2	45	14	•	
22	1	55	16	•	
22	1,5	55	16	•	
22	2	55	16	•	
24	1	55	16	•	
24	1,5	55	16	•	
24	2	55	16	•	
25	1	55	16	•	
25	1,5	55	16	•	
25	2	55	16	•	
26	1,5	55	16	•	
27	1,5	65	18	•	
27	2	65	18	•	
28	1,5	65	18	•	
28	2	65	18	•	
30	1	65	18	•	
30	1,5	65	18	•	
30	2	65	18	•	
32	1,5	65	18	•	
32	2	65	18	•	
33	2	65	18	•	
35	1,5	65	18	•	

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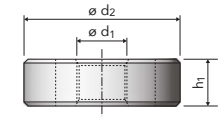
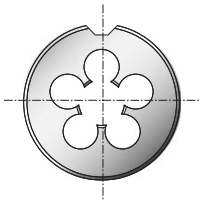
X201
BRIGHT

DIN EN 22568





APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	X201 BRIGHT			
P	P.1-4	•			
	P.7	•			
M	M.1	•			
K	K.2	•			
N	N.1-3	•			
	N.5-7	•			

	X201 BRIGHT
Tolerance	ISO 6g
Chamfer form	1,75xP
Hole type	—
Direction of cut	RH
Through coolant	—

Ød1 [mm]	P [mm]	Ød2 [mm]	h1 [mm]	X201 BRIGHT	
M 36	1,5	65	18	•	
36	2	65	18	•	
36	3	65	25	•	

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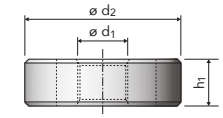
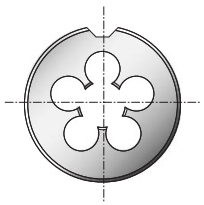
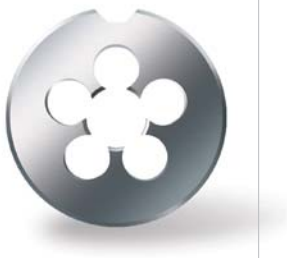
X204
BRIGHT

DIN EN 22568







APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	X204 BRIGHT			
P	P.1-4	•			
	P.7	•			
M	M.1	•			
K	K.2	•			
N	N.1-3	•			
	N.5-7	•			

Tolerance	2A
Chamfer form	1,75xP
Hole type	—
Direction of cut	RH
Through coolant	—

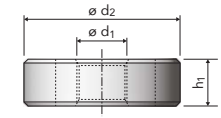
UNC	P [TPI]	Ød1 [mm]	Ød2 [mm]	h1 [mm]	X204 BRIGHT	
Nr. 2	56	2,184	16	5	•	
Nr. 4	40	2,845	20	5	•	
Nr. 5	40	3,175	20	5	•	
Nr. 6	32	3,505	20	7	•	
Nr. 8	32	4,166	20	7	•	
Nr. 10	24	4,826	20	7	•	
Nr. 12	24	5,486	20	7	•	
1/4"	20	6,35	20	7	•	
5/16"	18	7,938	25	9	•	
3/8"	16	9,525	30	11	•	
7/16"	14	11,113	30	11	•	
1/2"	13	12,7	38	14	•	
9/16"	12	14,288	38	14	•	
5/8"	11	15,875	45	18	•	
3/4"	10	19,05	45	18	•	
7/8"	9	22,225	55	22	•	
1"	8	25,4	55	22	•	

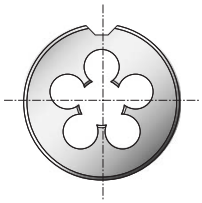
DIES
With spiral point

HSS

X205
BRIGHT

DIN EN 22568





APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	X205 BRIGHT			
P	P.1-4	•			
	P.7	•			
M	M.1	•			
K	K.2	•			
N	N.1-3	•			
	N.5-7	•			

Tolerance	2A
Chamfer form	1,75xP
Hole type	—
Direction of cut	RH
Through coolant	—

UNF	P [TPI]	Ød1 [mm]	Ød2 [mm]	h1 [mm]	X205 BRIGHT	
Nr. 3	56	2,515	16	5	•	
Nr. 4	48	2,845	20	5	•	
Nr. 5	44	3,175	20	5	•	
Nr. 6	40	3,505	20	5	•	
Nr. 8	36	4,166	20	7	•	
Nr. 10	32	4,826	20	7	•	
Nr. 12	28	5,486	20	7	•	
1/4"	28	6,35	20	7	•	
5/16"	24	7,938	25	9	•	
3/8"	24	9,525	30	11	•	
7/16"	20	11,113	30	11	•	
1/2"	20	12,7	38	10	•	
9/16"	18	14,288	38	10	•	
5/8"	18	15,875	45	14	•	
3/4"	16	19,05	45	14	•	
7/8"	14	22,225	55	16	•	
1"	12	25,4	55	16	•	

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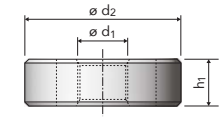
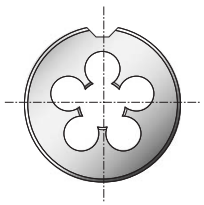
DIES
With spiral point

HSS

X203
BRIGHT

DIN EN 24231





APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	X203 BRIGHT			
P	P.1-4	•			
	P.7	•			
M	M.1	•			
K	K.2	•			
N	N.1-3	•			
	N.5-7	•			

Tolerance	A
Chamfer form	1,75xP
Hole type	—
Direction of cut	RH
Through coolant	—

G	P [TPI]	Ød1 [mm]	Ød2 [mm]	h1 [mm]	X203 BRIGHT	
1/8"	28	9,728	30	11	•	
1/4"	19	13,157	38	10	•	
3/8"	19	16,662	45	14	•	
1/2"	14	20,955	45	14	•	
5/8"	14	22,911	55	16	•	
3/4"	14	26,441	55	16	•	
7/8"	14	30,201	65	18	•	
1"	11	33,249	65	18	•	
1 1/4"	11	41,91	75	20	•	
1 1/2"	11	47,803	90	22	•	
2"	11	59,614	105	22	•	

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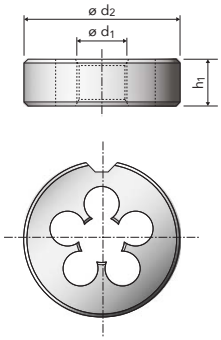
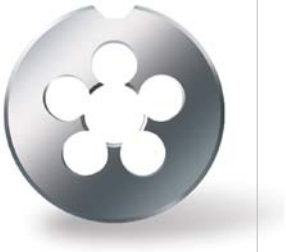
DIES
With spiral point

HSS

DIN EN 22568





X202
BRIGHT

APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	X202 BRIGHT			
P	P.1-4	•			
	P.7	•			
M	M.1	•			
K	K.2	•			
N	N.1-3	•			
	N.5-7	•			

Tolerance	mc
Chamfer form	1,75xP
Hole type	—
Direction of cut	RH
Through coolant	—

BSW	P [TPI]	Ød1 [mm]	Ød2 [mm]	h1 [mm]	X202 BRIGHT	
3/32"	48	2,381	20	5	•	
1/8"	40	3,175	20	5	•	
3/16"	24	4,763	20	7	•	
1/4"	20	6,35	25	9	•	
5/16"	18	7,938	25	9	•	
3/8"	16	9,525	30	11	•	
7/16"	14	11,113	30	11	•	
1/2"	12	12,7	38	14	•	
5/8"	11	15,875	45	18	•	
3/4"	10	19,05	45	18	•	
7/8"	9	22,225	55	22	•	
1"	8	25,4	55	22	•	

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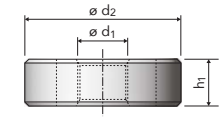
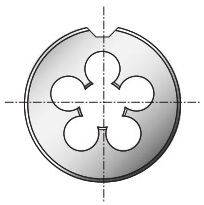
DIES
With spiral point

HSS

X206
BRIGHT

DIN EN 22568





APPLICATION RANGE - CUTTING SPEED m/min

ISO	MG	X206 BRIGHT			
P	P.1-4	•			
	P.7	•			
M	M.1	•			
K	K.2	•			
N	N.1-3	•			
	N.5-7	•			

	X206 BRIGHT
Tolerance	—
Chamfer form	1,75xP
Hole type	—
Direction of cut	RH
Through coolant	—

NPT	P [TPI]	Ød1 [mm]	Ød2 [mm]	h1 [mm]	X206 BRIGHT	
1/16"	27	7,938	25	10	•	
1/8"	27	10,287	30	10	•	
1/4"	18	13,716	38	15	•	
3/8"	18	17,145	45	15,3	•	
1/2"	14	21,336	45	20	•	
3/4"	14	26,67	55	20,2	•	
1"	11 1/2	33,401	65	25	•	

VERGNANO

VR SERIES

Thread Mills

APPLICATION AND CUTTING SPEED TABLE

VR10 - VR20 - VR30

ISO 513	Material	Group	Application	N/mm²	Vc m/min	Feed (mm/tooth)									
						Ø2	Ø3	Ø4	Ø6	Ø8	Ø10	Ø12	Ø14	Ø16	Ø20
P	Steel	P.1	Mild / magnetic steel	200 - 400	100-250	0,03	0,04	0,04	0,06	0,07	0,08	0,09	0,11	0,12	0,15
		P.2	Construction steel, case hardening steel	350 - 700	100-250	0,03	0,04	0,04	0,06	0,07	0,08	0,09	0,11	0,12	0,15
		P.3	Carbon steel	350 - 850	100-250	0,03	0,04	0,04	0,06	0,07	0,08	0,09	0,11	0,12	0,15
		P.4	Alloyed steel, tempered steel	500 - 850	110-180	0,02	0,03	0,03	0,05	0,06	0,07	0,08	0,09	0,1	0,12
		P.5	Alloyed steel, tempered steel	850 - 1200	90-160	0,02	0,02	0,03	0,03	0,04	0,05	0,05	0,06	0,07	0,08
		P.6	Alloyed steel / high strength steel	1200 - 1600	90-140	0,02	0,02	0,02	0,02	0,03	0,04	0,04	0,05	0,06	0,07
		P.7	Ferritic / martensitic stainless steel	< 1000	110-180	0,02	0,03	0,03	0,05	0,06	0,07	0,08	0,09	0,1	0,12
M	Stainless steel	M.1	Austenitic	< 850	60-120	0,02	0,02	0,03	0,03	0,04	0,05	0,05	0,06	0,07	0,08
		M.2	Ferritic-austenitic (Duplex)	< 1000	50-100	0,02	0,02	0,03	0,03	0,04	0,05	0,05	0,06	0,07	0,08
K	Cast iron	K.1	Grey cast iron	< 1000	70-150	0,03	0,04	0,04	0,06	0,07	0,08	0,09	0,11	0,12	0,15
		K.2	Nodular cast iron	< 1000	100-250	0,03	0,04	0,04	0,06	0,07	0,08	0,09	0,11	0,12	0,15
		K.3	Austempered ductile iron (ADI)	< 1400	70-120	0,03	0,03	0,03	0,04	0,05	0,06	0,07	0,08	0,09	0,1
N	Aluminium alloys	N.1	Pure aluminium	< 300	150-350	0,03	0,04	0,04	0,06	0,07	0,08	0,09	0,11	0,12	0,15
		N.2	Aluminium alloys Si < 0,5% (long chipping)	< 500	150-350	0,03	0,04	0,04	0,06	0,07	0,08	0,09	0,11	0,12	0,15
		N.3	Aluminium alloys Si < 10% (medium chipping)	< 500	150-350	0,03	0,04	0,04	0,06	0,07	0,08	0,09	0,11	0,12	0,15
		N.4	Aluminium alloys Si > 10% (short chipping)	< 600	100-250	0,02	0,02	0,03	0,03	0,04	0,05	0,05	0,06	0,07	0,08
	Copper alloys	N.5	Pure copper	250 - 350	150-350	0,03	0,04	0,04	0,06	0,07	0,08	0,09	0,11	0,12	0,15
		N.6	Copper alloys, Brass (long chipping)	< 700	150-350	0,03	0,04	0,04	0,06	0,07	0,08	0,09	0,11	0,12	0,15
		N.7	Copper alloys, Brass (short chipping)	< 700	100-250	0,02	0,02	0,03	0,03	0,04	0,05	0,05	0,06	0,07	0,08
		N.8	High strength bronze	700 - 1500	90-140	0,02	0,02	0,02	0,02	0,03	0,04	0,04	0,05	0,06	0,07
	Magnesium alloys	N.9	Pure Magnesium / Magnesium alloys	120 - 300	150-350	0,03	0,04	0,04	0,06	0,07	0,08	0,09	0,11	0,12	0,15
		N.10	High strength Magnesium alloys	240 - 400	150-350	0,03	0,04	0,04	0,06	0,07	0,08	0,09	0,11	0,12	0,15
S	Titanium alloys	S.1	Pure titanium	400 - 600	20-90	0,02	0,02	0,02	0,03	0,04	0,04	0,04	0,05	0,05	0,05
		S.2	Titanium alloys	600 - 1000	20-80	0,02	0,02	0,02	0,03	0,03	0,03	0,03	0,04	0,04	0,04
	Nickel alloys	S.3	Pure nickel	400 - 600	20-90	0,02	0,02	0,02	0,03	0,04	0,04	0,04	0,05	0,05	0,05
		S.4	Nickel alloys	600 - 1000	20-80	0,02	0,02	0,02	0,03	0,03	0,03	0,03	0,04	0,04	0,04

APPLICATION AND CUTTING SPEED TABLE

VR40 - VR45

ISO 513	Material	Group	Application	N/mm²	Vc m/min	Feed (mm/tooth)													
						Ø1	Ø1,5	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø12	Ø14	Ø16
P	Steel	P.1	Mild / magnetic steel	200 - 400	60-120	0,04	0,05	0,05	0,07	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,17	0,18	0,18
		P.2	Construction steel, case hardening steel	350 - 700	60-120	0,04	0,05	0,05	0,07	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,17	0,18	0,18
		P.3	Carbon steel	350 - 850	60-120	0,04	0,05	0,05	0,07	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,17	0,18	0,18
		P.4	Alloyed steel, tempered steel	500 - 850	60-90	0,03	0,04	0,05	0,06	0,08	0,09	0,1	0,12	0,13	0,14	0,14	0,16	0,17	0,18
		P.5	Alloyed steel, tempered steel	850 - 1200	50-80	0,03	0,04	0,04	0,05	0,05	0,06	0,07	0,07	0,08	0,09	0,1	0,12	0,13	0,14
		P.6	Alloyed steel / high strength steel	1200 - 1600	50-70	0,02	0,02	0,02	0,03	0,04	0,05	0,06	0,06	0,07	0,08	0,09	0,1	0,12	0,13
		P.7	Ferritic / martensitic stainless steel	< 1000	60-90	0,03	0,04	0,05	0,06	0,08	0,09	0,1	0,12	0,13	0,14	0,14	0,16	0,17	0,18
M	Stainless steel	M.1	Austenitic	< 850	60-90	0,02	0,03	0,03	0,04	0,05	0,06	0,06	0,07	0,08	0,09	0,1	0,11	0,12	0,13
		M.2	Ferritic-austenitic (Duplex)	< 1000	50-80	0,02	0,03	0,03	0,04	0,05	0,06	0,06	0,07	0,08	0,09	0,10	0,11	0,12	0,13
K	Cast iron	K.1	Grey cast iron	< 1000	40-80	0,04	0,05	0,05	0,07	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,17	0,18	0,18
		K.2	Nodular cast iron	< 1000	60-120	0,04	0,05	0,05	0,07	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,17	0,18	0,18
		K.3	Austempered ductile iron (ADI)	< 1400	40-70	0,04	0,04	0,04	0,05	0,05	0,06	0,07	0,08	0,09	0,1	0,11	0,12	0,12	0,12
N	Aluminium alloys	N.1	Pure aluminium	< 300	100-200	0,04	0,05	0,05	0,07	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,17	0,18	0,18
		N.2	Aluminium alloys Si < 0,5% (long chipping)	< 500	100-200	0,04	0,05	0,05	0,07	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,17	0,18	0,18
		N.3	Aluminium alloys Si < 10% (medium chipping)	< 500	100-200	0,04	0,05	0,05	0,07	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,17	0,18	0,18
		N.4	Aluminium alloys Si > 10% (short chipping)	< 600	60-140	0,03	0,03	0,03	0,04	0,05	0,06	0,06	0,07	0,08	0,09	0,1	0,11	0,13	0,14
	Copper alloys	N.5	Pure copper	250 - 350	100-200	0,04	0,05	0,05	0,07	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,17	0,18	0,18
		N.6	Copper alloys, Brass (long chipping)	< 700	100-200	0,04	0,05	0,05	0,07	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,17	0,18	0,18
		N.7	Copper alloys, Brass (short chipping)	< 700	60-140	0,03	0,03	0,03	0,04	0,05	0,06	0,06	0,07	0,08	0,09	0,1	0,11	0,13	0,14
		N.8	High strength bronze	700 - 1500	60-100	0,03	0,03	0,03	0,03	0,04	0,04	0,05	0,05	0,06	0,08	0,08	0,09	0,09	0,1
	Magnesium alloys	N.9	Pure Magnesium / Magnesium alloys	120 - 300	100-200	0,04	0,05	0,05	0,07	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,17	0,18	0,18
		N.10	High strength Magnesium alloys	240 - 400	100-200	0,04	0,05	0,05	0,07	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,17	0,18	0,18
S	Titanium alloys	S.1	Pure titanium	400 - 600	20-50	0,03	0,03	0,03	0,04	0,05	0,06	0,06	0,06	0,07	0,07	0,08	0,08	0,08	0,08
		S.2	Titanium alloys	600 - 1000	20-40	0,03	0,03	0,03	0,04	0,04	0,05	0,06	0,06	0,06	0,07	0,07	0,07	0,08	0,08
	Nickel alloys	S.3	Pure nickel	400 - 600	20-50	0,03	0,03	0,03	0,04	0,05	0,06	0,06	0,06	0,07	0,07	0,08	0,08	0,08	0,08
		S.4	Nickel alloys	600 - 1000	20-40	0,03	0,03	0,03	0,04	0,04	0,05	0,06	0,06	0,06	0,07	0,07	0,07	0,08	0,08

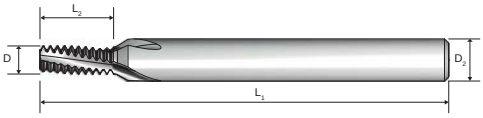
APPLICATION AND CUTTING SPEED TABLE

VR50 - VR55

ISO 513	Material	Group	Application	N/mm²	Vc m/min	Feed (mm/tooth)													
						Ø1	Ø1,5	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø12	Ø14	Ø16
S	Titanium alloys	S.2	Titanium alloys	600 - 1000	20-40	0,03	0,03	0,03	0,04	0,04	0,05	0,06	0,06	0,06	0,07	0,07	0,07	0,08	0,08
	Nickel alloys	S.4	Nickel alloys	600 - 1000	20-40	0,03	0,03	0,03	0,04	0,04	0,05	0,06	0,06	0,06	0,07	0,07	0,07	0,08	0,08
H	Hardened materials	H.1	Alloyed steel, hardness HRC 44-55	-	50-60	0,02	0,03	0,03	0,04	0,04	0,05	0,05	0,06	0,06	0,07	0,07	0,08	0,09	0,1
		H.2	Alloyed steel, hardness HRC 56-62	-	40-50	0,01	0,02	0,02	0,03	0,03	0,04	0,05	0,05	0,06	0,06	0,06	0,07	0,08	0,09

SOLID CARBIDE THREAD MILLS
Spiral flutes

INT | 1,5 x D | 1,5 x D | HM



APPLICATION RANGE

ISO	VR10	VR20	VR30
P	•	•	•
M	•	•	•
K	•	•	•
N	•	•	•
S	•	•	•

For cutting data see page 202

	VR10 TiAlN	VR20 TiAlN	VR30 TiAlN
			
Thread	INT	INT	INT
Hole type	1,5 x D	1,5 x D	1,5 x D
Direction of cut	RH	RH	RH
Through coolant	—		

P [mm]	M	MF	D_2 h6 [mm]	D [mm]	z	L_2 [mm]	L_1 [mm]	VR10 TiAlN	VR20 TiAlN	VR30 TiAlN
0,5		M5x0,5	6	3,8	3	10,3	58	VR10038I0501000		
0,7	M4		6	3,1	3	7,4	58	VR10031I0700700	VR20031I0700700	
0,75		M6x0,75	6	4,5	3	10,1	58		VR20045I0751000	
0,8	M5		6	3,6	3	9,2	58	VR10036I0800900	VR20038I0800900	
1	M6		6	4	3	10,5	58	VR10040I1001000		
1	M6		6	4	3	14,5	58	VR10040I1001400		
1	M6		6	4,8	3	10,5	58			VR30048I1001000
1	M6	M7x1	6	4,6	3	14,5	58		VR20046I1001400	
1		M10x1	8	8	4	16,5	64	VR10080I1001600	VR20080I1001600	VR30080I1001600
1		M12x1	10	10	4	24,5	73		VR20100I1002400	
1,25	M8	M10x1,25	6	5	3	14,4	58	VR10050I1251400		
1,25	M8	M10x1,25	6	6	3	14,4	58		VR20060I1251400	
1,25	M8	M10x1,25	6	5	3	19,4	58	VR10050I1251900		
1,25	M8	M10x1,25	6	6	3	19,4	58		VR20060I1251900	VR30060I1251900
1,5	M10	M12x1,5	8	7	3	17,3	64	VR10070I1501700		
1,5	M10	M12x1,5	8	7	3	24,8	76	VR10070I1502400		
1,5	M10	M12x1,5	8	7,8	3	17	64		VR20078I1501700	VR30078I1501700
1,5		M14x1,5	10	10	4	21,8	73	VR10100I1502100		VR30100I1502100
1,5		M16x1,5	12	12	4	26,3	84		VR20120I1502600	VR30120I1502600
1,75	M12		8	8	3	20,1	64	VR10080I1752000		
1,75	M12		10	9	3	20,1	73		VR20090I1752000	
2	M16		12	11,8	4	27	84		VR20118I2002700	
2,5	M20		16	15	5	48,8	105		VR20150I2504800	
3	M24		20	18	4	58,5	120		VR20180I3005800	

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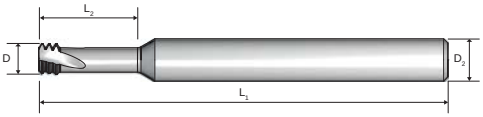
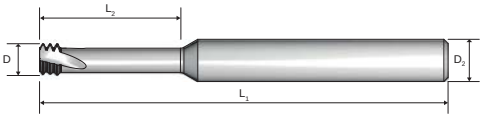
INT | 2xD | 3xD | HM

VR40



VR45



APPLICATION RANGE

ISO	VR40	VR45	
P	•	•	
M	•	•	
K	•	•	
N	•	•	
S	•	•	

For cutting data see page 203

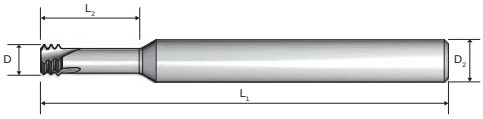
	VR40 TiAlN	VR45 TiAlN
		
Thread	INT	INT
Hole type	2xD	3xD
Direction of cut	RH	RH
Through coolant	—	—

P [mm]	M	D_2 h6 [mm]	D [mm]	z	L_2 [mm]	L_1 [mm]	VR40 TiAlN	VR45 TiAlN
0,3	M1,4	3	1,05	3	4	39		VR45010I0300400
0,35	M1,6	3	1,2	3	4,8	39		VR45012I0350400
0,4	M2	6	1,53	3	4,5	58	VR40015I0400400	
0,4	M2	3	1,53	3	6	39		VR45015I0400600
0,5	M3	6	2,37	3	6,5	58	VR40023I0500600	
0,5	M3	6	2,37	3	9,5	58		VR45023I0500900
0,5	M3	6	2,37	3	9,5	105		VR45023I050090L
0,7	M4	6	3,1	3	9	58	VR40031I0700900	
0,7	M4	6	3,1	3	12,5	58		VR45031I0701200
0,7	M4	6	3,1	3	12,5	105		VR45031I080120L
0,8	M5	6	3,8	3	12,5	58	VR40038I0801200	
0,8	M5	6	3,8	3	16	58		VR45038I0801600
0,8	M5	6	3,8	3	16	105		VR45038I080160L
1	M6	6	4,65	3	14	58	VR40046I1001400	
1	M6	6	4,65	3	20	58		VR45046I1002000
1	M6	6	4,65	3	20	105		VR45046I100200L
1,25	M8	6	5,95	3	18	58	VR40059I1251800	
1,25	M8	6	6	3	24	58		VR45060I1252400
1,5	M10	8	7,8	3	23	64	VR40078I1502300	
1,75	M12	10	9	3	26	73	VR40090I1752600	
2	M16	12	11,8	4	35	84	VR40118I2003500	

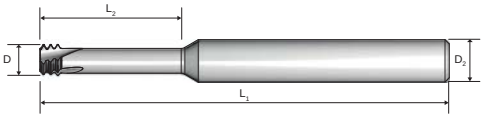
SOLID CARBIDE THREAD MILLS for hardened materials
Lefthand spiral flutes

INT | 2xD | 3xD | HM

VR50



VR55



APPLICATION RANGE

ISO	VR50	VR55	
S	•	•	
H	•	•	

For cutting data see page 204

	VR50 TiAlN	VR55 TiAlN
		
Thread	INT	INT
Hole type	2xD	3xD
Direction of cut	LH	LH
Through coolant	—	—

P [mm]	M	D_2 h6 [mm]	D [mm]	z	L_2 [mm]	L_1 [mm]	VR50 TiAlN	VR55 TiAlN
0,4	M2	6	1,53	3	4,5	58	VR50151I0400400	
0,5	M3	6	2,37	3	6,5	58	VR50231I0500600	
0,7	M4	6	3,1	3	9	58	VR50311I0700900	
0,7	M4	6	3,1	3	12,5	58		VR55031I0701200
0,8	M5	6	3,8	3	12,5	58	VR50381I0801200	
0,8	M5	6	3,8	3	16	58		VR55038I0801600
1	M6	6	4,65	3	14	58	VR50461I1001400	
1	M6	6	4,65	3	20	58		VR55046I1002000
1,25	M8	6	6	3	18	58	VR50601I1251800	
1,25	M8	6	6	3	24	58		VR55060I1252400
1,5	M10	8	7,8	3	23	64	VR50781I1502300	
1,75	M12	10	9	3	26	73	VR50901I1752600	
2	M16	12	11,8	4	35	84	VR51181I2003500	

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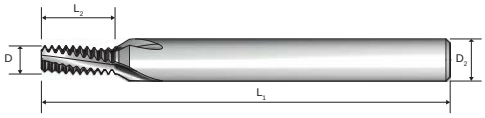
SOLID CARBIDE THREAD MILLS
Spiral flutes

INT | 1,5 x D | 1,5 x D | HM



APPLICATION RANGE

ISO	VR10	VR20	
P	•	•	
M	•	•	
K	•	•	
N	•	•	
S	•	•	

For cutting data see page 202

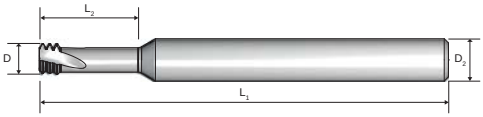
	VR10 TiAlN	VR20 TiAlN
Thread	INT	INT
Hole type	1,5 x D	1,5 x D
Direction of cut	RH	RH
Through coolant	—	

P (TPI)	UNC	UNF	D_2 [mm]	D [mm]	z	L_2 [mm]	L_1 [mm]	VR10 TiAlN	VR20 TiAlN
28		1/4"	6	4	3	11,3	58	VR10040U28T1100	
28		1/4"	6	5	3	11,3	58		VR20050U28T1100
24		5/16"	6	5	3	14,3	58	VR10050U24T1400	
24		3/8"	8	7	3	20,6	64	VR10070U24T2000	
24		5/16"	8	6,6	3	14,3	64		VR20066U24T1400
24		3/8"	8	8	4	20,6	64		VR20080U24T2000
20	1/4"		6	4,5	3	12,1	58	VR10045U20T1200	
20		7/16"-1/2"	8	7	3	21	64	VR10070U20T2100	
20	1/4"		6	4,7	3	12,1	58		VR20047U20T1200
20		7/16"	8	8	3	21	64		VR20080U20T2100
20		1/2"	10	10	4	22,3	73		VR20100U20T2200
18	5/16"		6	5	3	14,8	58	VR10050U18T1400	
18	5/16"		6	5,6	3	14,8	58		VR20056U18T1400
16	3/8"		6	6	3	16,7	58	VR10060U16T1600	
16	3/8"		8	6,7	3	16,7	64		VR20067U16T1600
14	7/16"		8	7	3	20,9	64	VR10070U14T2000	
14	7/16"		8	7,7	3	20,9	64		VR20077U14T2000
13	1/2"		8	8	3	22,5	64	VR10080U13T2200	
13	1/2"		10	9,2	3	22,5	73		VR20092U13T2200
11	5/8"		10	10	3	28,9	73	VR10100U11T2800	
11	5/8"		12	11,4	3	28,9	84		VR20114U11T2800

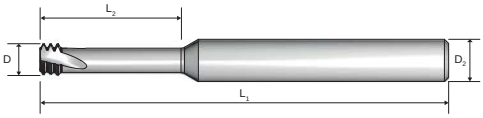
SOLID CARBIDE THREAD MILLS
Spiral flutes

INT | 2xD | 3xD | HM

VR40



VR45



APPLICATION RANGE

ISO	VR40	VR45	
P	•	•	
M	•	•	
K	•	•	
N	•	•	
S	•	•	

For cutting data see page 203

	VR40 TiAIN	VR45 TiAIN
		
Thread	INT	INT
Hole type	2xD	3xD
Direction of cut	RH	RH
Through coolant	—	—

P (TPI)	UNC	UNF	D_2 [mm]	D [mm]	z	L_2 [mm]	L_1 [mm]	VR40 TiAIN	VR45 TiAIN
28		1/4"	6	5	3	14,5	58	VR40050U28T1400	
28		1/4"	6	5	3	19	58		VR45050U28T1900
24		5/16"-3/8"	8	6,6	3	17	64	VR40066U24T1700	
24		5/16"-3/8"	8	6,6	3	24	64		VR45066U24T2400
20	1/4"		6	4,75	3	14	58	VR40047U20T1400	
20		7/16"	8	8	3	25	64	VR40080U20T2500	
20	1/4"		6	4,75	3	19	58		VR45047U20T1900
18	5/16"		6	6	3	17	58	VR40060U18T1700	
18		5/8"	12	12	4	35	84	VR40120U18T3500	
18	5/16"		6	6	3	23	58		VR45060U18T2300
16	3/8"		8	6,7	3	22	64	VR40067U16T2200	
14	7/16"		8	7,7	3	25	64	VR40077U14T2500	
13	1/2"		10	9,2	3	27,5	73	VR40092U13T2700	
11	5/8"		12	11,4	3	34,5	84	VR40114U11T3400	

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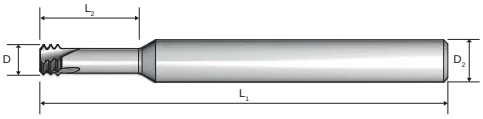
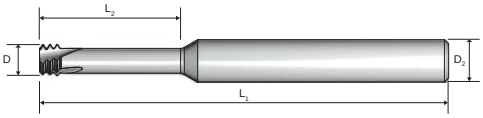
SOLID CARBIDE THREAD MILLS for hardened materials
Lefthand spiral flutes

INT | 2xD | 3xD | HM

VR50



VR55



APPLICATION RANGE

ISO	VR50	VR55	
S	•	•	
H	•	•	

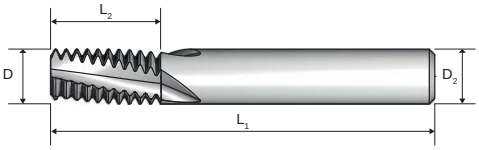
For cutting data see page 204

	VR50 TiAlN	VR55 TiAlN
		
Thread	INT	INT
Hole type	2xD	3xD
Direction of cut	LH	LH
Through coolant	—	—

P (TPI)	UNC	UNF	D_2 [mm]	D [mm]	z	L_2 [mm]	L_1 [mm]	VR50 TiAlN	VR55 TiAlN
28		1/4"	6	5	3	14,5	58	VR50050U28T1400	
28		1/4"	6	5	3	19	58		VR55050U28T1900
24		5/16"-3/8"	8	6,6	3	17	64	VR50066U24T1700	
24		5/16"-3/8"	8	6,6	3	24	64		VR55066U24T2400
20	1/4"		6	4,75	3	14	58	VR50047U20T1400	
20		7/16"	8	8	3	25	64	VR50080U20T2500	
20	1/4"		6	4,75	3	19	58		VR55047U20T1900
18	5/16"		6	6	3	17	58	VR50060U18T1700	
18		5/8"	12	12	4	35	84	VR50012U18T3500	
18	5/16"		6	6	3	23	58		VR55060U18T2300
16	3/8"		8	6,7	3	22	64	VR50067U16T2200	
14	7/16"		8	7,7	3	25	64	VR50077U14T2500	
13	1/2"		10	9,2	3	27,5	73	VR50092U13T2700	
11	5/8"		12	11,4	3	34,5	84	VR50114U11T3400	

SOLID CARBIDE THREAD MILLS
Spiral flutes

INT | EXT | 1,5 x D | 1,5 x D | HM



APPLICATION RANGE

ISO	VR10	VR20	
P	•	•	
M	•	•	
K	•	•	
N	•	•	
S	•	•	

For cutting data see page 202

	VR10 TiAlN	VR20 TiAlN
		
Thread	INT EXT	INT EXT
Hole type	1,5 x D	1,5 x D
Direction of cut	RH	RH
Through coolant	—	

P (TPI)	G	D_2 [mm]	D [mm]	z	L_2 [mm]	L_1 [mm]	VR10 TiAlN	VR20 TiAlN
28	1/6 - 1/8"	6	6	3	9,5	58	VR10060G28T0900	
28	1/8"	8	7,8	3	14,1	64		VR20078G28T1400
19	1/4" - 3/8"	8	8	3	14	64	VR10080G19T1400	
19	1/4" - 3/8"	10	10	4	16,7	73		VR20100G19T1600
14	1/2" - 7/8"	12	12	4	19	84	VR10120G14T1900	
14	1/2" - 7/8"	16	16	5	26,3	105		VR20160G14T2600
11	1" - 1 1/2"	12	12	3	24,2	84	VR10120G11T2400	
11	1" - 1 1/2"	16	16	4	38,1	105		VR20160G11T3800

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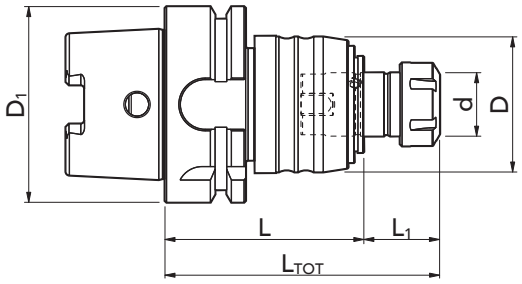
VERGNANO

VA SERIES

Synchronous Tapping Attachments

SYNCHRONOUS ER TAPPING ATTACHMENT with QUICK-CHANGE TAP ADAPTOR
With internal through coolant capability (1)

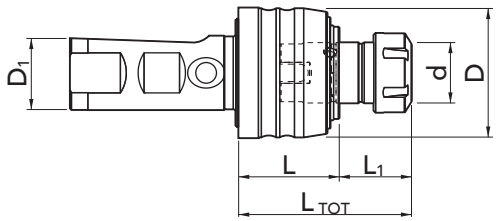
DIN 69893 HSK A



Article Code	Attachment øD1 [mm]	Tap Size	L [mm]	ø D [mm]	ø d [mm]	ER collet	L1 [mm]	LTOT [mm]
VA01A06302CH160	HSK-A63	M3 - M8	64	43	20	ER 16	20,5	84,5
VA01A06302CH250	HSK-A63	M6 - M20	97	60	32	ER 25	23,5	120,5
VA01A10002CH400	HSK-A100	M14 - M33	115	87	50	ER 40	28,5	143,5

SYNCHRONOUS ER TAPPING ATTACHMENT with QUICK-CHANGE TAP ADAPTOR
With internal through coolant capability (1)

DIN 1835 B+E



Article Code	Attachment øD1 [mm]	Tap Size	L [mm]	ø D [mm]	ø d [mm]	ER collet	L1 [mm]	LTOT [mm]
VA01C02502CH160	25	M3 - M8	34	43	20	ER 16	20,5	54,5
VA01C02502CH250	25	M6 - M20	56	60	32	ER 25	23,5	79,5
VA01C04002CH400	40	M14 - M33	80	87	50	ER 40	28,5	108,5

(1) For coolant pressure above 50 bars a special nut screw is available on request

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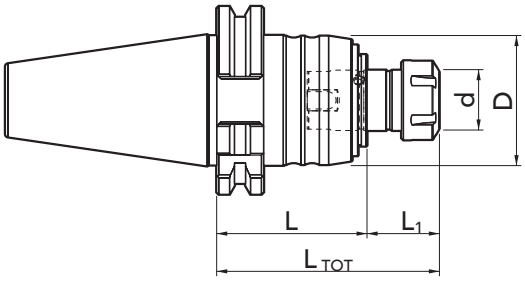
SYNCHRONOUS ER TAPPING ATTACHMENT with QUICK-CHANGE TAP ADAPTOR
With internal through coolant capability (1)

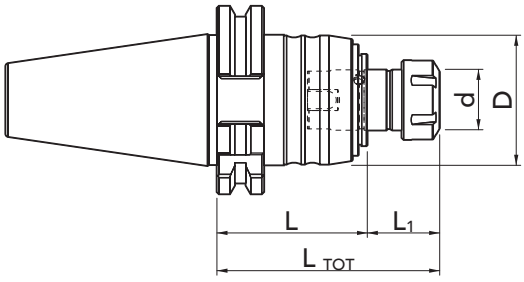
SK DIN 69871 AD



Article Code	Attachment	Tap Size	L [mm]	ø D [mm]	ø d [mm]	ER collet	L_1 [mm]	L_{TOT} [mm]
VA01B04002CH160	SK 40 AD	M3 - M8	53	43	20	ER 16	20,5	73,5
VA01B05002CH160	SK 50 AD	M3 - M8	53	43	20	ER 16	20,5	73,5
VA01B04002CH250	SK 40 AD	M6 - M20	90	60	32	ER 25	23,5	113,5
VA01B05002CH250	SK 50 AD	M6 - M20	74	60	32	ER 25	23,5	97,5

SYNCHRONOUS ER TAPPING ATTACHMENT with QUICK-CHANGE TAP ADAPTOR
With internal through coolant capability (1)

SK DIN 69871 AD+B



Article Code	Attachment	Tap Size	L [mm]	ø D [mm]	ø d [mm]	ER collet	L_1 [mm]	L_{TOT} [mm]
VA01B05002CH400	SK 50 B	M14 - M33	115	87	50	ER 40	28,5	143,5

(1) For coolant pressure above 50 bars a special nut screw is available on request

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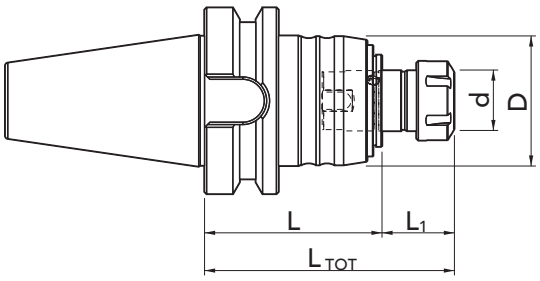
SYNCHRONOUS ER TAPPING ATTACHMENT with QUICK-CHANGE TAP ADAPTOR
With internal through coolant capability (1)

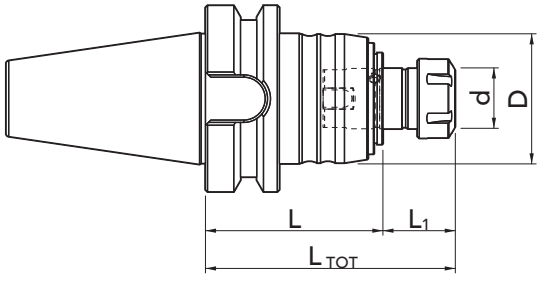
MAS 403 BT



Article Code	Attachment	Tap Size	L [mm]	ø D [mm]	ø d [mm]	ER collet	L_1 [mm]	L_{TOT} [mm]
VA01M04002CH160	BT 40	M3 - M8	61	43	20	ER 16	20,5	81,5
VA01M05002CH160	BT 50	M3 - M8	72	43	20	ER 16	20,5	92,5
VA01M04002CH250	BT 40	M6 - M20	82	60	32	ER 25	23,5	105,5
VA01M05002CH250	BT 50	M6 - M20	93	60	32	ER 25	23,5	116,5

SYNCHRONOUS ER TAPPING ATTACHMENT with QUICK-CHANGE TAP ADAPTOR
With internal through coolant capability (1)

MAS 403 BT - B



Article Code	Attachment	Tap Size	L [mm]	ø D [mm]	ø d [mm]	ER collet	L_1 [mm]	L_{TOT} [mm]
VA01M05002CH400	BT 50 B	M14 - M33	124	87	50	ER 40	28,5	152,5

(1) For coolant pressure above 50 bars a special nut screw is available on request

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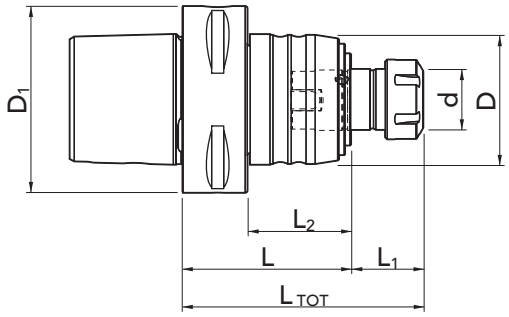
SYNCHRONOUS ER TAPPING ATTACHMENT with QUICK-CHANGE TAP ADAPTOR
With internal through coolant capability (1)

POLIGONAL Attachment ISO 26623-1



Article Code	Attachment øD$_1$ [mm]	Tap Size	L [mm]	L$_2$ [mm]	ø D [mm]	ø d [mm]	ER collet	L$_1$ [mm]	L$_{TOT}$ [mm]
VA01P04002CH160	C40	M3 - M8	55	35	43	20	ER 16	20,5	75,5
VA01P05002CH160	C50	M3 - M8	55	35	43	20	ER 16	20,5	75,5
VA01P06302CH160	C63	M3 - M8	57	35	43	20	ER 16	20,5	77,5
VA01P08002CH160	C80	M3 - M8	66	36	43	20	ER 16	20,5	86,5
VA01P04002CH250	C40	M6 - M20	75	55	60	32	ER 25	23,5	98,5
VA01P05002CH250	C50	M6 - M20	75	55	60	32	ER 25	23,5	98,5
VA01P06302CH250	C63	M6 - M20	77	55	60	32	ER 25	23,5	100,5
VA01P08002CH250	C80	M6 - M20	86	56	60	32	ER 25	23,5	109,5
VA01P08002CH400	C80	M14 - M33	116	86	87	50	ER 40	28,5	144,5

(1) For coolant pressure above 50 bars a special nut screw is available on request

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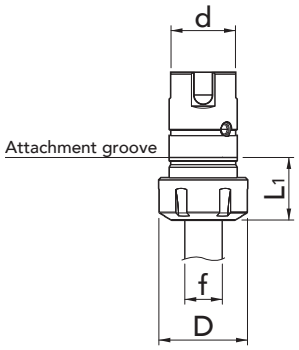
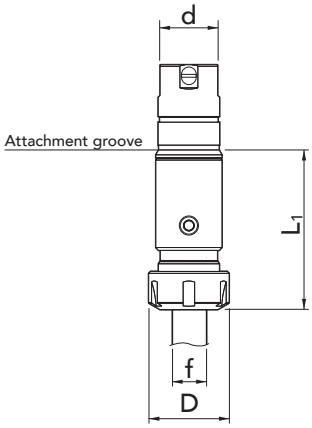
QUICK-CHANGE TAP ADAPTOR



Article Code	Tap Size	Shaft Ø f [mm]	ø d [mm]	ø D [mm]	L_1	ER collet
*CHADAP160310000	M3 - M8	03 - 08	20	28	20,5	ER 16
CHADAP250316000	M6 - M20	03 - 16	32	42	23,5	ER 25
CHADAP400626000	M14 - M33	06 - 25	50	63	28,5	ER 40

EXTENDED QUICK-CHANGE TAP ADAPTOR



Article Code	Tap Size	Shaft Ø f [mm]	ø d [mm]	ø D [mm]	L_1	ER collet
*CHEXAD160310000	M3 - M8	03 - 08	20	28	51,5	ER 16
CHEXAD250316000	M6 - M20	03 - 16	32	42	80,5	ER 25
CHEXAD400626000	M14 - M33	06 - 25	50	63	90,5	ER 40

* Hexagonal nut screw

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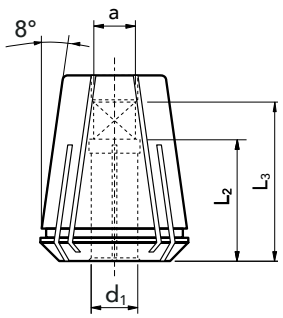
ER COLLET (sealed) - with internal square

DIN 6499



Article Code	ER collet	ø d_1 [mm]	a [mm]	L_2 [mm]	L_3 [mm]
SLERGB160103500	ER 16	3,5	2,7	18	24
SLERGB160104500	ER 16	4,5	3,4	18	24
SLERGB160105500	ER 16	5,5	4,3	18	25
SLERGB160106000	ER 16	6	4,9	18	26
SLERGB160107000	ER 16	7	5,5	18	26
SLERGB160108000	ER 16	8	6,2	22	31
SLERGB250103500	ER 25	3,5	2,7	18	24
SLERGB250104500	ER 25	4,5	3,4	18	24
SLERGB250105500	ER 25	5,5	4,3	18	25
SLERGB250106000	ER 25	6	4,9	18	26
SLERGB250107000	ER 25	7	5,5	18	26
SLERGB250108000	ER 25	8	6,2	22	31
SLERGB250109000	ER 25	9	7	22	32
SLERGB250110000	ER 25	10	8	25	36
SLERGB250111000	ER 25	11	9	25	37
SLERGB250112000	ER 25	12	9	25	37
SLERGB250114000	ER 25	14	11	25	39
SLERGB250116000	ER 25	16	12	25	40
SLERGB400106000	ER 40	6	4,9	18	26
SLERGB400106000	ER 40	7	5,5	18	26
SLERGB400108000	ER 40	8	6,2	22	31
SLERGB400109000	ER 40	9	7	22	32
SLERGB400110000	ER 40	10	8	25	36
SLERGB400111000	ER 40	11	9	25	37
SLERGB400112000	ER 40	12	9	25	37
SLERGB400114000	ER 40	14	11	25	39
SLERGB400116000	ER 40	16	12	25	40
SLERGB400118000	ER 40	18	14,5	25	42
SLERGB400120000	ER 40	20	16	28	47
SLERGB400122000	ER 40	22	18	28	49
SLERGB400125000	ER 40	25	20	33	56

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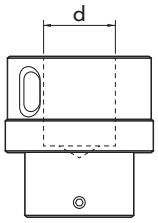
ASSEMBLY SUPPORT



Article Code	ER collet	ø d [mm]
ASCHADAP1620000	ER 16	20
ASCHADAP2532000	ER 25	32
ASCHADAP4050000	ER 40	50

WRENCH for nut screw

Article Code	Nut Screw	ER collet
KE02ER160200000	Esagonale	ER 16
KE04ER250200000	Standard	ER 25
KE04ER400200000	Standard	ER 40

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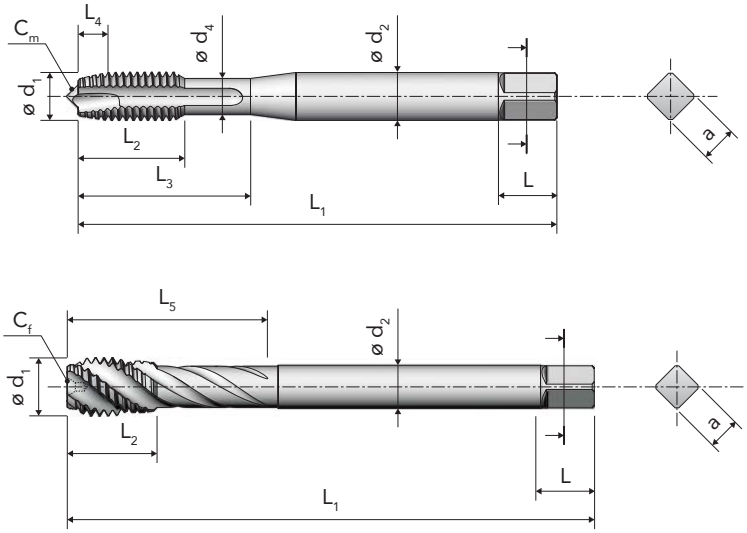
Technical Information

Tap and Die Terminology



TAP TERMINOLOGY

Nominal diameter (d_1):
the diameter used for the purpose of general identification.

Pitch diameter (d_m):
the diameter measured where the width of the thread is equal to half the pitch.

Shank diameter (d_2):
the diameter of the shank, important for the tapping attachment.

Chamfer diameter (d_3):
the diameter at the leading end of the chamfer.

Neck diameter (d_4):
the diameter of the reduced section between the thread and shank of the tap.

Core diameter (d_5):
the diameter of a circle tangent to the bottom of the flutes.

Chamfer:
the taper on the threads at the front end of the tap made by grinding and relieving the crests of the first few teeth.

Square (a):
the square with rounded corners formed by four flats parallel to the tap axis. The square serves to drive the tap.

Square length (L):
the length of the flats that form the square.

Total length (L_1):
the complete length of the tap from end to end, excluding external centres.

Thread length (L_2):
the length of the threaded section of the tap.

Usable length (L_3):
the length measured from the front end of the tap to the end of the neck section. This length determines the maximum threadable depth on taps with reinforced shank.

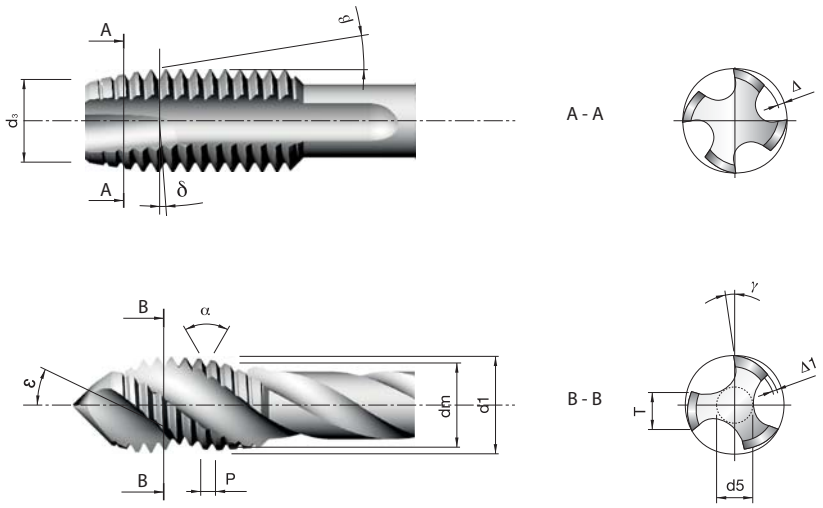
Chamfer length (L_4):
the length of the chamfer measured parallel to the tap axis, excluding the chamfer bevel.

Flute length (L_5):
the axial length of the flute including the cutter sweep.

External center (C_m):
the pointed end of the tap.

Internal center (C_f):
the countersink in one or both ends of the tap.

Tap and Die Terminology



Pitch (P):
the distance, measured parallel to the tap axis, between two corresponding and successive points on the thread profile.

Angle of thread (α):
the angle between the flanks of the thread (measured in an axial plane).

Thread lead angle (δ):
the angle made by the spiral of the thread and a plane perpendicular to the tap axis, measured on the pitch diameter line.

Chamfer angle (β):
the angle between the chamfer and the tap axis, measured in an axial plane.

Rake angle (γ):
the angle between the cutting face of the tap and a radial line passing through the crest of the tooth at the cutting edge.

Land width (T):
the chordal width of material between two successive flutes.

Flute:
the longitudinal channels in a tap which create cutting edges. The flutes provide space for chips and passage for coolant/ lubricant.

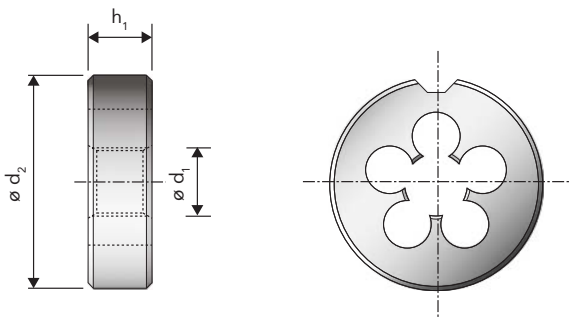
Spiral flute angle (ε):
the angle formed by the flutes and the tap axis.

Pitch diameter relief (Δ1):
the radial reduction of the pitch and/or major diameter behind the cutting edge of the tap. The relief confers cutting properties and provides clearance between the part being threaded and the tap threads.

Chamfer relief (Δ):
the radial reduction of the major diameter on the tap chamfer behind the cutting edge. The chamfer relief confers cutting properties to the tap.

DIE TERMINOLOGY

d_1: nominal diameter
d_2: outside diameter
h_1: thickness
l_1: length of full thread



Types of Chamfer Forms and Centres

The types of chamfer are defined in standards DIN 2175 and DIN 2197 for forming taps and cutting taps, respectively.

	Form A	Form B	Form C	Form D	Form E
Chamfer form and length					
Flute type					

The tap manufacturer, according to the diameter and the application, defines the types of centres. Types of centre and chamfer are generally combined together as in the following table, but for specific applications exceptions are possible.

		Form A	Form B	Form C	Form D	Form E
Male centre 	M	M2 ≤ Ø ≤ M8	M2 ≤ Ø ≤ M8	M2 ≤ Ø ≤ M8	M2 ≤ Ø ≤ M8	-
	MF	M2 ≤ Ø ≤ M6	M4 ≤ Ø ≤ M6	M2 ≤ Ø ≤ M6	M5 ≤ Ø ≤ M6	-
	UNC	Nr.2-56 ≤ Ø ≤ 1/4"-18	Nr.2-56 ≤ Ø ≤ 1/4"-18	Nr.2-56 ≤ Ø ≤ 1/4"-18	Nr.2-56 ≤ Ø ≤ 1/4"-18	-
	UNF	Nr.2-64 ≤ Ø ≤ 1/4"-28	Nr.2-64 ≤ Ø ≤ 1/4"-28	Nr.2-64 ≤ Ø ≤ 1/4"-28	-	-
	G	-	-	-	-	-
Half centre 	M	M8 < Ø ≤ M10	M8 < Ø ≤ M10	M8 < Ø ≤ M10	M8 < Ø ≤ M10	-
	MF	M6 < Ø ≤ M10	M6 < Ø ≤ M10	M6 < Ø ≤ M10	M6 < Ø ≤ M10	-
	UNC	5/16"-18 ≤ Ø ≤ 3/8"-16	5/16"-18 ≤ Ø ≤ 3/8"-16	5/16"-18 ≤ Ø ≤ 3/8"-16	-	-
	UNF	5/16"-24 ≤ Ø ≤ 3/8"-24	5/16"-24 ≤ Ø ≤ 3/8"-24	5/16"-24 ≤ Ø ≤ 3/8"-24	-	-
	G	Ø = 1/8"-28	Ø = 1/8"-28	Ø = 1/8"-28	-	-
Female centre 	M	Ø > M10	Ø > M10	Ø > M10	Ø > M10	Ø > M10
	MF					
	UNC	Ø ≥ 7/16"-14	Ø ≥ 7/16"-14	Ø ≥ 7/16"-14	Ø ≥ 5/16"-18	-
	UNF	Ø ≥ 7/16"-20	Ø ≥ 7/16"-20	Ø ≥ 7/16"-20	-	-
	G	Ø ≥ 1/4"-19	Ø ≥ 1/4"-19	Ø ≥ 1/4"-19	-	-
Removed centre 	M	-	-	-	-	Ø ≤ M10
	MF					
	UNC	-	-	-	-	-
	UNF	-	-	-	-	-
	G	-	-	-	-	-

Formulae

Parameter	Formula	Unit of Measurement
Cutting speed	$V_c = \frac{N \cdot \pi \cdot d_1}{1000}$	$\frac{m}{min}$
Rotational speed	$N = \frac{1000 \cdot V_c}{\pi \cdot d_1}$	rpm
Torque (*)	$M_t = \frac{K_c \cdot p^2 \cdot z^{0,6} \cdot d_1}{10^4}$	N · m
Spindle power	$P = \frac{M_t \cdot 2 \cdot \pi \cdot N}{60}$	W
Nominal diameter	d_1	mm
Feed	$p \cdot N$	$\frac{mm}{min}$
p	Thread pitch	mm
z	Number of flutes	-
K_c	Cutting force coefficient (function of the material and of tap wear)	$\frac{N}{mm^2}$

(*) The torque value is valid for a new cutting tap.
For worn-out taps, the value can increase up to 2-3 times. For forming taps, the value must be multiplied by 1,5-2 times.

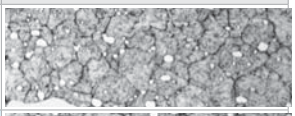
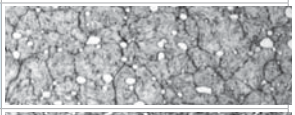
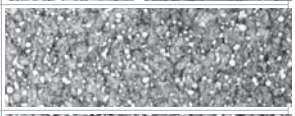
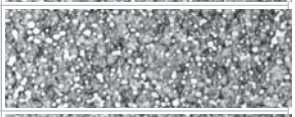
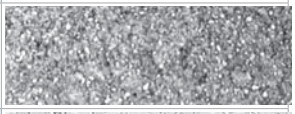
M.G.	Kc [N/mm²]
P.1	1300
P.2	1400
P.3	1400
P.4	1600
P.5	1700
P.6	2000
P.7	1400
M.1	1600
M.2	1800
K.1	1100
K.2	1500
K.3	1600
N.1	600
N.2	800
N.3	900
N.4	1000
N.5	700
N.6	850
N.7	900
N.8	2500
N.9	400
N.10	500
S.1	1200
S.2	1900
S.3	1300
S.4	2400

Conversion Table Hardness vs Tensile Strength

Tensile Strength	Hardness		
R [N/mm²]	HB Brinell	HRC Rockwell C	HV Vickers
3400	700	68	1008
3120	688	67	955
2960	676	66	920
2890	670	65	885
2770	659	64	850
2240	650	63	826
2190	635	62	797
2140	627	61	772
2100	613	60	746
2050	600	59	720
2010	587	58	693
1970	574	57	666
1930	561	56	646
1890	548	55	623
1850	536	54	604
1810	524	53	585
1780	512	52	567
1730	500	51	549
1680	488	50	528
1630	476	49	513
1590	464	48	497
1560	453	47	482
1520	442	46	468
1480	430	45	453
1440	419	44	440

Tensile Strength	Hardness		
R [N/mm²]	HB Brinell	HRC Rockwell C	HV Vickers
1400	408	43	427
1360	398	42	416
1320	389	41	404
1300	377	40	391
1260	367	39	381
1230	357	38	371
1190	347	37	357
1150	337	36	345
1120	327	35	332
1100	319	34	323
1060	309	33	314
1040	301	32	304
1010	294	31	296
980	286	30	288
960	279	29	280
940	272	28	273
910	265	27	266
890	259	26	259
870	253	25	253
850	247	24	247
830	241	23	241
810	235	22	235
790	230	21	230
770	225	20	225

High Speed Steel and Solid Carbide for Taps

Vergnano Designation	Designation according to ISO 11054	Hardness	Toughness	Applicazioni	Structure (500x)
HSS	HSS	•	•	Used exclusively for hand taps (except A100).	
HSSE	HSS-E	•	• •	For general applications.	
HSSK	HSS-E-PM	• •	• • •	Used in applications where a compromise between high hardness and high toughness is needed.	
HSSZ	HSS-E-PM	• •	• • •	For applications where extremely high performance and productivity are requested.	
HSSP	HSS-E-PM	• • •	• •	For tough materials and extreme applications.	
HM	-	• • •	-	For heat-treated steels and abrasive materials.	

Coatings - Properties

Type of coating / treatment	Structure	Hardness	Friction Coefficient	Oxidation temperature	Features
TiN	Mono-layer	• •	• •	•	Wear resistance
TiCN	Mono-layer	• •	• •	•	Wear resistance
TiX2	Multi-layer	• • •	• • •	• •	Oxidation and wear resistance, chip evacuation
TiH1	Multi-layer	• • •	• • •	• •	Oxidation and wear resistance, chip evacuation
CrN	Mono-layer	•	• •	• •	Oxidation and wear resistance
TiAlN	Nano structured	• • •	• •	• • •	Oxidation and wear resistance
ACE	Mono-layer	• • •	• •	• • •	Oxidation and wear resistance
Steam tempering	Surface oxidation	-	• •	•	Chip evacuation
Nitriding	Surface hardening	•	•	•	Wear resistance

• • • Excellent • • Very good • Good

Coatings - Applications

COATINGS RECOMMENDED FOR CUTTINGS TAPS				TiN	TiCN	TiX2	TiH1	CrN	TiAlN	ACE	VAP	NiTR
ISO	Material	Group	Application	Coating								
P	Steel	P.1	Mild / magnetic steel	❍			❍				●	
		P.2	Construction steel, case hardening steel	●			❍				❍	
		P.3	Carbon steel	●			❍					
		P.4	Alloyed steel / tempered steel	❍	❍		●					
		P.5	Alloyed steel / tempered steel	❍	❍		●					
		P.6	Alloyed steel / high strength steel	❍	❍		●					
		P.7	Ferritic stainless steel, martensitic stainless steel, precipitation hardening	❍		●					❍	
M	Stainless Steel	M.1	Austenitic stainless steel			●	❍				❍	
		M.2	Ferritic+austenitic (Duplex)			●	❍				❍	
K	Cast iron	K.1	Grey cast iron		❍					●		❍
		K.2	Nodular cast iron, malleable cast iron, tempered cast iron	●			❍					
		K.3	Austempered ductile iron (ADI)							●		
N	Aluminium Aluminium alloys	N.1	Pure aluminium				●				❍	
		N.2	Aluminium wrought and die cast alloys with Si < 0,5% (long chipping)	❍			●				❍	
		N.3	Aluminium wrought and die cast alloys with Si > 10% (medium chipping)	❍			●				❍	
		N.4	Aluminium die cast alloys with Si > 10% (short chipping)		❍					●		❍
	Copper Copper alloys Brass Bronze	N.5	Pure copper				●				❍	
		N.6	Copper alloys (long chipping), soft brass	❍			●				❍	
		N.7	Copper alloys (short chipping), hard brass		●							❍
		N.8	High strength bronze		❍					●		❍
	Magnesium Magnesium alloys	N.9	Pure magnesium, magnesium alloys		❍							●
		N.10	High strength magnesium alloy		❍							●
S	Titanium Titanium alloys	S.1	Pure titanium				❍	●				
		S.2	Titanium alloys				❍	●				
	Nickel Nickel alloys	S.3	Pure nickel	❍			●					
		S.4	Nickel alloys	❍			●					
H	Hardened materials	H.1	Alloyed steel, hardness HRC 44-55						●	❍		
		H.2	Alloyed steel, hardness HRC 56-63						●	❍		

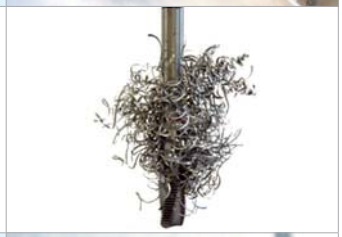
COATINGS RECOMMENDED FOR COLD FORMING TAPS				TiN	TiCN	TiH1	VAP
ISO	Material	Group	Application	Coating			
P	Steel	P.1	Mild / magnetic steel	❍			●
		P.2	Construction steel, case hardening steel	●			❍
		P.3	Carbon steel	●	❍		
		P.4	Alloyed steel / tempered steel	●	❍		
		P.5	Alloyed steel / tempered steel	●	❍		
		P.7	Ferritic stainless steel, martensitic stainless steel, precipitation hardening	❍		●	
M	Stainless Steel	M.1	Austenitic stainless steel	❍		●	
		M.2	Ferritic+austenitic (Duplex)	❍		●	
N	Aluminium Aluminium alloys	N.1	Pure aluminium	❍			●
		N.2	Aluminium wrought and die cast alloys with Si < 0,5% (long chipping)	●	❍		❍
		N.3	Aluminium wrought and die cast alloys with Si < 10 % (medium chipping)	●	❍		❍
	Copper Copper alloys Brass Bronze	N.5	Pure copper	❍		●	
		N.6	Copper alloys (long chipping), soft brass	●	❍		❍
S	Titanium Titanium alloys	S.1	Pure titanium			●	
		S.2	Titanium alloys			●	
	Nickel Nickel alloys	S.3	Pure nickel	❍		●	
		S.4	Nickel alloys	❍		●	

● Ideal ❍ Suitable

Troubleshooting

Tapping is a complex process and often the last machining operation performed on the workpiece. Therefore, incorrect or faulty tapping can compromise the quality of the entire workpiece.
Numerous factors influence the process: cutting parameters, drilling parameters, lubrication, machine conditions. The choice of the correct tool is paramount in order to obtain high quality threads.

The following table summarises the most common problems encountered during tapping and their possible solutions.

Problem	Solution	
Chipped teeth on tap	• Choose correct tap, with lower rake angle or longer chamfer. • Reduce cutting speed. • Check drilled hole size is not too small. • Check tap alignment and run-out of tap on tapping attachment. • For deep blind holes (≥ 2,5xD) use taps with back-tapering.	
Excessive tap wear	• Improve quality (richer emulsion, neat oil) and quantity (higher pressure) of lubrication. • Use correct tap, with more relief or longer chamfer if possible. • Choose coating suitable for specific application. • Use recommended cutting parameters for specific application.	
Chips clogging flutes	• Use tap with lower spiral flute angle. • Choose correct tap with suitable rake angle and relief for specific application. • Use tap with sharp cutting edge (bright tap or vapourised tap).	
Poor finish on threaded workpiece	• Check wear on tap. If necessary, resharpen or change tap. • Improve quality and quantity of lubrication. • Choose correct tap with suitable rake angle and relief for specific application. • Use recommended cutting parameters for specific application.	
Built-up-edge	• Choose correct tap with lower rake angle and/or higher relief. • Choose coating suitable for specific application. • Increase cutting speed. • Improve quality and quantity of lubrication.	

Troubleshooting

Poblem	Solution	
Tap sticking	• Choose correct tap with lower rake angle and/or higher relief. • Choose coating suitable for specific application. • Increase cutting speed. • Improve quality and quantity of lubrication.	
Crater wear	• Choose suitable tap, with base material in HSSE-PM. • Use coated tap. • Improve quality and quantity of lubrication.	
Tap breakage	• Check drilled hole size. • Check alignment between tap and drilled hole. • Reduce cutting speed. • On blind holes, check that tapping depth is less than hole depth. • Use tapping attachment with slip clutch. • Use compensated tapping attachment.	
Oversized thread	• Check tap tolerance is compatible with requested workpiece (nut) tolerance. • Choose correct tap with suitable rake angle and relief for specific application. • Reduce feed rate (revs x pitch) or use rigid / synchronous tapping attachment. • Reduce cutting speed. • Check tap alignment and that workpiece is fastened steadily. • Remove clogged chips from flutes.	
Undersized thread	• Check drilled hole size is not too small. • Check tap tolerance is compatible with requested workpiece (nut) tolerance. • Use coated tap to avoid tap sticking. • On forming taps, use slightly larger drilled hole size. • Check wear on tap. If necessary, resharpen or change tap. • Choose correct tap with higher rake angle and relief. • Use rigid / synchronous tapping attachment. • Improve quality and quantity of lubrication.	
Excessive power requirement	• On high strength materials, increase drilled hole size. • Check wear on tap. If necessary, resharpen or change tap. • Choose correct tap with higher rake angle and relief. • Improve quality and quantity of lubrication.	

Material Examples

ISO 513	Application	W.Nr.	Germany DIN	Italy UNI	France AFNOR	United States AISI/SAE/ASTM
P STEEL	Mild/magnetic	1.1015	RFe60			
		1.1014	RFe80			
		1.1013	RFe100			
	Structural	1.0037	St 37-2	Fe360B	E 24-2	1013
		1.0044	St 44-2	Fe430B	E 28-2	1021
		1.0050	St 50-2	Fe490	A 50-2	A 570 (50)
		1.0060	St 60-2	Fe590	A 60-2	A 572 (65)
		1.0570	St 52-3	Fe510B	E 36-3	1024
	Case hardening	1.0301	C10	C10	C10	1010
		1.0401	C15	C15	C18	1015
		1.7131	16MnCr5	16MnCr5	16 MC 5	5115
		1.7147	20MnCr5	20MnCr5	20 MC 5	5120
		1.7243	18CrMo4	18CrMo4		
		1.5919	15CrNi6	16CrNi4	16 NC 6	4320
		1.6523	21NiCrMo2	20NiCrMo2	20 NCD 2	8620
		1.6587	17CrNiMo1106	18NiCrMo5-7	18 NCD6/18 NCD7	4320
	Nitriding	1.8515	31CrMo12	31CrMo12	30 CD 12	A/B
		1.8519	31CrMoV9	31CrMoV10		
		1.8507	34CrAlMo5	34CrAlMo7	30 CAD 6.12	A355CI.D
		1.8509	41CrAlMo7	41CrAlMo7	40 CAD 6.12	E7140
	Free cutting	1.0711	9S20	9S20		1212
		1.0715	9SMn28	9SMn28	S 250	1213
		1.0718	9SMnPb28	9SMnPb28	S 250 Pb	12 L 13
		1.0726	35S20	35S20	35 MF 4	1140
		1.0736	9SMn36	9SMn36	S 300	1215
		1.0737	9SMnPb36	9SMnPb36	S 300 Pb	12 L 14
	Heat-treatable	1.0406	C25	C25	AF 50 C 30	1025
		1.0528	C30	C30		1030
		1.0501	C35	C35	AF 55 C 35	1035
		1.0511	C40	C40	AF 60 C 40	1040
		1.0503	C45	C45	AF 65 C 45	1045
		1.0540	C50	C50		1050
		1.0535	C55	C55	C54	1055
		1.0601	C60	C60	C60	1060
		1.7035	41Cr4	41Cr4	41Cr4	5140
		1.8159	51CrV4	51CrV4	50 CV 4	6150
		1.7218	25CrMo4	25CrMo4	25 CD 4	4130
		1.7220	34CrMo4	34CrMo4	35 CD 4	4137
		1.7225	42CrMo4	42CrMo4	42 CD 4	4140
		1.7228	50CrMo4	50CrMo4	50CrMo4	4150
		1.6580	30CrNiMo8	30CrNiMo8	30 NCD 8	
		1.6582	34CrNiMo6	34CrNiMo6	35 NCD 6	4337
		1.6511	36CrNiMo4	36CrNiMo4	40 NCD 3	9840
		1.6773	36NiCrMo16	36NiCrMo16		
	Ball bearing	1.3505	100Cr6	100Cr6	100C6	52100
		1.3536	100CrMo7-3	100CrMo7		
	Spring	1.1231	Ck67	C67	XC 68	1070
		1.1248	Ck75	C75		1074
		1.1269	Ck85	C85	C90	1086
		1.1274	Ck101	C100	C100	1095
		1.5021		48Si7		
		1.5026	55Si7	55Si7	56SC7	9255
		1.5027		60Si7	60Si7	9260
		1.7108	60SiCr7	60SiCr8		9262
		1.8159	51CrV4	51CrV4	50 CV 4	6150
		1.7176	55Cr3	55Cr3	55 C 3	5155
		1.7701	51CrMoV4	51CrMoV4		
	Superficial hardening	1.1183	Cf 35	C36	XC 68 H1TS	
		1.1193	Cf 45	C43	XC 42 H1TS	
		1.1213	Cf 53	C53	XC 48 H1TS	1050
		1.7005	45Cr2	45Cr2		
		1.7043	38Cr4	38Cr4		
		1.7034	37Cr4	36CrMn4	38 C 4	5135
		1.7223	41CrMo4	41CrMo4	42 CD 4 TS	4142

Russia GOST	Japan JIS	China GB	India IS	MG Vergnano	Application	ISO 513
20860				P.1	Mild/magnetic	P STEEL
20880				P.1		
20895				P.1		
St3kp/St3ps	STKM12C	Q235A		P.2	Structural	
St4ps/St4sp	STK400	Q275B	Fe440	P.2		
St5ps/St5sp	SS490	Q275	Fe490	P.2		
St6ps/St6sp	S45C	45	Fe570	P.2		
17G1S	STK490	16Mn	Fe540	P.2		
10	S10C	10		P.2	Case hardening	
15	S15C	15	14C6	P.2		
18ChG	SCR415	20CrMn	16Mn5Cr4	P.2		
18 ChG	SMnC420H	20CrMn	20Mn5Cr5	P.2		
				P.2		
15ChGN2T	SNCM415M		15Cr6Ni6	P.2		
20ChGNM	SNCM220M	20CrNiMo		P.2		
20ChN2M			16Ni6Cr7Mo3	P.2		
	SBV1A/SBV1B			P.4	Nitriding	
				P.5		
				P.4		
38Ch2MJuA	SACM645	38CrMoAl	40Cr7Al10Mo2	P.5		
A11	SUM21	Y12		P.1	Free cutting	
	SUM22	Y15		P.1		
	SUM22L	Y15Pb		P.1		
A35		Y35		P.2		
	SUM25			P.1		
	SUM24L			P.1		
25	S25C	25	25C4	P.3	Heat-treatable	
30	S30C	30	30C8	P.3		
35	S35C	35	35C8	P.3		
40	S40C	40	40C8	P.3		
45	S45C	45	45C8	P.3		
50	S50C	50	50C8	P.3		
55	S55C	55	55C8	P.3		
60	S58C	60	C604	P.3		
40Ch	SCr440(H)	40Cr	40Cr4	P.4 (norm.) / P.5 (bonif.)		
50Ch	SUP10	50CrVA	50Cr4V2	P.4 (norm.) / P.5 (bonif.)		
30ChM	SCCrM1	30CrMo	21Cr4Mo2	P.4 (norm.) / P.5 (bonif.)		
35ChML	SCM435	35CrMo		P.4 (norm.) / P.5 (bonif.)		
38ChA	SCM440	42CrMo	40CrMoH	P.4 (norm.) / P.5 (bonif.)		
50Ch	SCM445(H)	ZG50Cr1Mo		P.4 (norm.) / P.5 (bonif.)		
	SNCM431			P.5 (norm.) / P.6 (bonif.)		
38Ch2N2MA	SNCM439			P.5 (norm.) / P.6 (bonif.)		
40ChGMN		40CrNiMoA		P.4 (norm.) / P.5 (bonif.)		
				P.5 (norm.) / P.6 (bonif.)		
SChCh15	SUJ2/SUJ4	GCr15		P.4 (norm.)	Ball bearing	
				P.4 (norm.)		
65	S70C-CSP	65	70C6	P.3	Spring	
75A	S75CM	75		P.3		
85A	SK85	85		P.3		
	SK4-CSP	T10A	98C6	P.3		
				P.4 (norm.) / P.5 (bonif.)		
55S2/55S2A		55Si2Mn	55Si7	P.4 (norm.) / P.5 (bonif.)		
60S2	SUP6	60Si2Mn	60Si7	P.4 (norm.) / P.5 (bonif.)		
60S2G		60Si2CrA		P.4 (norm.) / P.5 (bonif.)		
50Ch	SUP10	50CrVA	50Cr4V2	P.4 (norm.) / P.6 (bonif.)		
50ChGA	SUP9(A)	55CrMnA	55Cr3	P.4 (norm.) / P.6 (bonif.)		
				P.4 (norm.) / P.6 (bonif.)		
				P.3	Superficial hardening	
				P.3		
50	S50C			P.3		
				P.4		
		38CrA		P.5		
35Ch	SCr435H	35Cr		P.5		
40ChFA	SNB22	42CrMo	40Cr4Mo3	P.5		

Material Examples

ISO 513	Application	W.Nr.	Germany DIN	Italy UNI	France AFNOR	United States AISI/SAE/ASTM
P STEEL	Hot-work	1.2767	45NiCrMo16	40NiCrMoV16 KU	Y35NCD16	
		1.2713	55NiCrMoV7	55NiCrMoV7 KU	55NiCrMoV7	L6
		1.2311		35CrMo8 KU		
		1.2365	32CrMoV12-28	30CrMoV12-27 KU	32CDV12-28	H10
		1.2343	X38CrMoV5-1	X37CrMoV5-1 KU	Z38CDV5	H11
		1.2344	X40CrMoV5-1	X40CrMoV5-1-1 KU	Z40CDV5	H13
		1.2567	X30WCrV5-3	X30WCrV5-3 KU	Z32WCV5	H14
		1.2581	X30WCrV9-3	X30WCrV9-3 KU	Z30WCV9	H21
	Ferritic stainless steel	1.4002	X6CrAl13	X6CrAl13	Z 8 CA 12	405
		1.4512	X2CrTi12	X6CrTi12	Z 3 CT 12	409
		1.4016	X6Cr17	X8Cr17	Z 8 C 17	430
		1.4104	X14CrMoS17	X10CrS17	Z 13 CF 17	430F
	Martensitic stainless steel	1.4006	X12Cr13	X12Cr13	Z 10 C 13	410
		1.4005	X12CrS13	X12CrS13	Z 11 CF 13	416
		1.4021	X20Cr13	X20Cr13	Z 20 C 13	420
		1.4028	X30Cr13	X30Cr13	Z 30 C 13	420
		1.4057	X17CrNi16-2	X16CrNi16	Z 15 CN 16-02	431
		1.4125	X105CrMo17		Z 100 CD 17	440C
	Precipitation hardening	1.4542	X5CrNiCuNb16-4		Z 7 CNU 15-05	630
M STAINLESS STEEL	Austenitic	1.4319	X3CrNiN17-8	X10CrNi1809		302
		1.4305	X8CrNiS18-9	X10CrNiS1809	Z 8 CNF 18-09	303
		1.4301	X5CrNi18-10	X5CrNi1810	Z 4 CN 19-10 FF	304
		1.4306	X2CrNi19-11	X2CrNi1811	Z 1 CN 18-12	304L
		1.4303	X4CrNi18-12	X8CrNi1812	Z 5 CN 18-11 FF	305
		1.4828	X15CrNiSi20-12	X16CrNi2314	Z 9 CN 24-13	309
		1.4841	X15CrNiSi25-20	X22CrNiSi2520	Z 15 CNS 25-20	310
		1.4401	X5CrNiMo17-12-2	X5CrNiMo1712	Z 3 CND 17-11-01	316
		1.4404	X2CrNiMo17-12-2	X2CrNiMo1712	Z 2 CND 17-12	316L
		1.4541	X6CrNiTi18-10	X6CrNiTi1811	Z 6 CNT 18-10	321
		1.4550	X6CrNiNb18-10	X6CrNiNb1811	Z 6 CNNb 18-10	347
	Duplex	1.4462	X2CrNiMoN22-5-3	X2CrNiMoN22-5-3	Z 3 CND 22-05 Az	S31803
		1.4501	X2CrNiMoCuWN25-7-4	X2CrNiMoCuWN25-7-4		S32760
K CAST IRON	Grey cast iron	0.6010	GG10	G10	Ft10D	A48-20B
		0.6015	GG15	G15	Ft15D	A48-25B
		0.6020	GG20	G20	Ft20D	A48-30B
		0.6025	GG25	G25	Ft25D	A48-40B
		0.6030	GG30	G30	Ft30D	A48-45B
		0.6035	GG35	G35	Ft35D	A48-50B
		0.6040	GG40	G40	Ft40D	A48-60B
	Nodular cast iron / tempered	0.7040	GGG40	GS400-12	FGS400-12	60-40-18
		0.7050	GGG50	GS500-7	FGS500-7	65-45-12
		0.7060	GGG60	GS600-3	FGS600-3	80-55-06
		0.7070	GGG70	GS700-2	FGS700-2	100-70-03
	Malleable cast iron	0.8035	GTW35-04			
		0.8055	GTW55			
	Austempered ductile iron		EN-GJS-800-8			
			EN-GJS-1000-5			
			EN-GJS-1200-2			
			EN-GJS-1400-1			
N NON-FERROUS METALS	Pure aluminium	3.0205	Al99	9001/1	1200 (A4)	1200
		3.0305	Al99.9			
	Al wrought alloys	3.0505	AlMn0.5Mg0.5		3105	
		3.0915	AlFeSi	8011	8011	
		3.3315	AlMg1	9005/1	5005 (AlMg1)	5005
		3.3525	AlMg2Mn0.3		5251	5251
		3.3527	AlMg2Mn0.8		5049	5049
		3.3545	AlMg4Mn	9005/4	5086 (AG4MC)	5086
		3.3555	AlMg5			
		3.0615	AlMgSiPb		6012	

Russia GOST	Japan JIS	China GB	India IS	MG Vergnano	Application	ISO 513
				P.5 (ricott.)	Hot-work	P STEEL
5ChNM	SKT4	5CrNiMo	T55Ni7Cr3Mo3V1	P.4 (ricott.)		
				P.4 (ricott.)		
3Ch3M3F	SKD7	4Cr3Mo3SiV		P.4 (ricott.)		
4Ch5MFS	SKD6	4Cr5MoSiV	XT35Cr5Mo1V3	P.4 (ricott.)		
4Ch5MF1S	SKD61	4Cr5MoSiV1	XT35Cr5Mo1V1	P.4 (ricott.)		
4Ch2W5MF	SKD4	30W4Cr2VA		P.4 (ricott.)		
3Ch3W8F	SKD5	3Cr2W8V	XT33W9Cr3V4	P.4 (ricott.)		
	SUS405	0Cr13Al	X04Cr13	P.7	Ferritic stainless steel	
	SUS409TB	022Cr11NbTi		P.7		
	SUS430	1Cr17	X07Cr17	P.7		
	SUS430F	Y1Cr17		P.7		
	SUS410	1Cr13	X12Cr12	P.7	Martensitic stainless steel	
	SUS416	Y1Cr13		P.7		
20Ch13	SUS420J1	2Cr13	X20Cr13	P.7		
30Ch13	SUS420J2	3Cr13	X30Cr13	P.7		
14Ch17N2	SUS431	1Cr17Ni2	X15Cr16Ni2	P.7		
95Ch18	SUS440C	108Cr17	X108Cr17Mo	P.7		
	SUS630/SCS24	0Cr17Ni4Cu4Nb		M.2	Precipitation hardening	
	SUS302			M.1	Austenitic	M STAINLESS STEEL
	SUS303			M.1		
08Ch18N10	SUS304	0Cr18Ni9	X04Cr18Ni10	M.1		
03Ch18N11	SUS304L/SCS19	00Cr19Ni10	X02Cr19Ni10	M.1		
12Ch18N12T	SUS305J1	1Cr18Ni12		M.1		
	SUH309	1Cr20Ni14Si2	X15Cr24Ni13	M.1		
20Ch25N20S2	SUH310	1Cr25Ni20Si2	X20Cr25Ni20	M.1		
08Ch16N11M3	SUS316	0Cr17Ni12Mo2	X04Cr17Ni12Mo2	M.1		
	SUS316L	00Cr17Ni14Mo2	X02Cr17Ni12Mo2	M.1		
08Ch18N10T	SUS321	0Cr18Ni10Ti	X04Cr18Ni10Ti	M.1		
08Ch18N12B	SUS347	0Cr18Ni11Nb	X04Cr18Ni10Nb	M.1		
	SUS329J3L	022Cr22Ni5Mo3N		M.2	Duplex	
		022Cr25Ni7Mo3WCuN		M.2		
Sc10	FC10			K.1	Grey cast iron	K CAST IRON
Sc15	FC15			K.1		
Sc20	FC20			K.1		
Sc25	FC25			K.1		
Sc30	FC30			K.1		
Sc35	FC35			K.1		
Sc40				K.1		
VC 42-12	FCD40			K.2	Malleable cast iron	
VC 50-2	FCD50			K.2		
VC 60-2	FCD60			K.2		
VC 70-2	FCD70			K.2		
				K.2	ghisa malleabile	
				K.2		
				K.3	Austempered ductile iron	
				K.3		
				K.3		
				K.3		
	A1200			N.1	Pure aluminium	N NON-FERROUS METALS
				N.1		
	A3105			N.2	Al wrought alloys	
				N.2		
	A5005			N.2		
				N.2		
				N.2		
	A5086			N.2		
	A5056			N.2		
				N.2		

Material Examples

ISO 513	Application	W.Nr.	Germany DIN	Italy UNI	France AFNOR	United States AISI/SAE/ASTM
N NON-FERROUS METALS	Al wrought alloys	3.1255	AlCuSiMn	9002/3	2014	2014
		3.1325	AlCuMg1	9002/2	2017 A (AU4G)	2017A
		3.1355	AlCuMg2	9002/4	2024 (AU4G1)	2024
		3.1645	AlCuMgPb	9002/8	2030 (AU4PB)	2030
		3.4335	AlZn4.5Mg1	9007/1	7020 (AZ5G)	7020
	Al casting alloys	3.1371	G-AlCu4TiMg			
		3.2134	G-AlSi5Cu1Mg			
		3.3241	G-AlMg3Si			
		3.3261	G-AlMg5Si			
		3.3541	G-AlMg3			
		3.2373	G-AlSi9Mg			
		3.2381	G-AlSi10Mg			
		3.2383	G-AlSi10Mg(Cu)			
		3.2581	G-AlSi12			
		3.2583	G-AlSi12(Cu)			
	Pure copper	2.0060	E-Cu57			C11000
		2.0065	E-Cu58	5649	CuA1	C11000
	Cu wrought alloys	2.1525	CuSi3Mn	CuSi3Mn1		C65500
		2.0855	CuNi2Si	CuNi2Si		C64700
		2.1247	CuBe2	Classe IV		C17200
		2.1285	CuCo2Be	Classe III		C17510
	Brass	2.0240	CuZn15			
		2.0250	CuZn20			
		2.0265	CuZn30			C26000
		2.0280	CuZn33			
		2.0321	CuZn37			C27450
		2.0360	CuZn40			C28000
		2.0410	CuZn44Pb2	CuZn43Pb2Al		C38000
		2.0550	CuZn40Al2	CuZn37Mn3Al2PbSi		C67410
	Bronze	2.1016	CuSn4			
		2.1020	CuSn6			
		2.1030	CuSn8			
		2.1086	G-CuSn10Zn	7013	U-E12P7U-E8Z2	C90500
		2.0978	CuAl11Ni6Fe6	CuAl11Fe6Ni6		
		2.0940	CuAl10Fe	5274		C95400
		2.0882	CuNi30Mn1Fe			
		3.5312	MgAl3Zn			
		3.5632	MgAl6Zn3			
		3.5912	MgAl9Zn1			
		3.5161	MgZn6Zr			
S SUPERALLOYS AND TITANIUM	Pure titanium	3.7024	Ti99.5			
		3.7034	Ti99.7			
	Titanium alloys	3.7165	TiAl6V4		T-A6V	
		3.7174	TiAl6V4Sn2			
	Pure Nickel	1.3911	RNi24			
		1.3926	RNi12			
	Nickel alloys	2.4858	NiCr21Mo (Incoloy 825)			
		2.4668	NiCr19Fe19NbMo (Inconel 718)		INCONEL 718	
		2.4630	Ni-Cr20Ti (Nimonic 75)		NIMONIC 75	
		2.4665	NiCr22Fe18Mo (Hastelloy X)			
H HARDENED MATERIALS	Ball bearing	1.3505	100Cr6	100Cr6	100C6	52100
		1.3536	100CrMo6	100CrMo7	100CD7	3
	Hot-work	1.2767	45NiCrMo16	40NiCrMoV16 KU	Y35NCD16	
		1.2713	55NiCrMoV7	55NiCrMoV7 KU	55NiCrMoV7	L6
		1.2311		35CrMo8 KU		
		1.2365	32CrMoV12-28	30CrMoV12-27 KU	32CDV12-28	H10
		1.2343	X38CrMoV5-1	X37CrMoV5-1 KU	Z38CDV5	H11
		1.2344	X40CrMoV5-1	X40CrMoV5-1-1 KU	Z40CDV5	H13
		1.2567	X30WCrV5-3	X30WCrV5-3 KU	Z32WCV5	H14
		1.2581	X30WCrV9-3	X30WCrV9-3 KU	Z30WCV9	H21

Russia GOST	Japan JIS	China GB	India IS	MG Vergnano	Application	ISO 513
	A2014			N.2	Al wrought alloys	N NON-FERROUS METALS
	A2017			N.2		
	A2024			N.2		
				N.2		
	A7N01			N.2		
	AC1B			N.2	Al casting alloys	
	AC4D			N.3		
				N.2		
				N.2		
				N.2		
	AC4A			N.3		
				N.4		
	ADC3			N.4		
	AC3A			N.4		
	ADC1			N.4		
	C1100			N.5	Pure copper	
	C1100			N.5		
				N.6	Cu wrought alloys	
				N.6		
				N.6		
				N.6		
				N.6	Brass	
				N.6		
	C2600			N.6		
				N.6		
	C2700			N.6		
	C2800			N.7		
				N.7		
				N.7		
				N.6	Bronze	
				N.6		
				N.6		
	CAC403C (BC3)			N.7		
				N.8		
	CAC702C			N.8		
				N.8		
				N.9		
				N.9		
				N.9		
				N.10		
				S.1	Pure titanium	S SUPERALLOYS AND TITANIUM
				S.1		
				S.2	Titanium alloys	
				S.2		
				S.3	Pure Nickel	
				S.3		
	NCF825			S.4	Nickel alloys	
				S.4		
				S.4		
				S.4		
SChCh15	SUJ2/SUJ4	GCr15		H.2 (bonif.)	Ball bearing	H HARDENED MATERIALS
				H.2 (bonif.)		
	SKT6			H.1 (bonif.)	Hot-work	
5ChNM	SKT4	5CrNiMo	T55Ni7Cr3Mo3V1	H.1 (bonif.)		
				H.1 (bonif.)		
3Ch3M3F	SKD7	4Cr3Mo3SiV		H.1 (bonif.)		
4Ch5MFS	SKD6	4Cr5MoSiV	XT35Cr5Mo1V3	H.1 (bonif.)		
4Ch5MF1S	SKD61	4Cr5MoSiV1	XT35Cr5Mo1V1	H.1 (bonif.)		
4Ch2W5MF	SKD4	30W4Cr2VA		H.1 (bonif.)		
3Ch3W8F	SKD5	3Cr2W8V	XT33W9Cr3V4	H.1 (bonif.)		

Drill Sizes Cutting Taps

ISO Metric coarse thread DIN 13			
M	Pitch [mm]	Maximum core diam. (toll. 6H) [mm]	Drill size* [mm]
M1	0,25	0,785 (1)	0,75
1,1	0,25	0,885 (1)	0,85
1,2	0,25	0,985 (1)	0,95
1,4	0,3	1,142 (1)	1,1
1,6	0,35	1,321	1,25
1,7 (3)	0,35	1,421	1,35
1,8	0,35	1,521	1,45
2	0,4	1,679	1,6
2,2	0,45	1,838	1,75
2,3 (3)	0,4	1,938	1,9
2,5	0,45	2,138	2,05
2,6 (3)	0,45	2,238	2,1
3	0,5	2,599	2,5
3,5	0,6	3,010	2,9
4	0,7	3,422	3,3
4,5	0,75	3,878	3,7
5	0,8	4,334	4,2
6	1	5,153	5
7	1	6,153	6
8	1,25	6,912	6,8
9	1,25	7,912	7,8
10	1,5	8,676	8,5
11	1,5	9,676	9,5
12	1,75	10,441	10,2
14	2	12,210	12
16	2	14,210	14
18	2,5	15,744	15,5
20	2,5	17,744	17,5
22	2,5	19,744	19,5
24	3	21,252	21
27	3	24,252	24
30	3,5	26,771	26,5
33	3,5	29,771	29,5
36	4	32,270	32
39	4	35,270	35
42	4,5	37,799	37,5
45	4,5	40,799	40,5
48	5	43,297	43
52	5	47,297	47
56	5,5	50,796	50,5
60 (3)	5,5	54,796	54,5
64 (3)	6	58,305	58
68 (3)	6	62,305	62

ISO Metric coarse thread DIN 13			
M	Pitch [mm]	Maximum core diam. (toll. 6H) [mm]	Drill size* [mm]
M2 (3)	0,25	1,774 (2)	1,75
2,3 (3)	0,25	2,085	2,05
2,5	0,35	2,221	2,15
3	0,35	2,721	2,65
3,5	0,35	3,221	3,15
4	0,5	3,599	3,5
4,5	0,5	4,099	4
5	0,5	4,599	4,5
5,5	0,5	5,099	5
6	0,75	5,378	5,2
7	0,75	6,378	6,2
8	0,75	7,378	7,2
8	1	7,153	7
9	0,75	8,378	8,2
9	1	8,153	8
10	0,75	9,378	9,2
10	1	9,153	9
10	1,25	8,912	8,8
11	0,75	10,378	10,2
11	1	10,153	10
12 (3)	0,75	11,378	11,2
12	1	11,153	11
12	1,25	10,912	10,8
12	1,5	10,676	10,5
14	1	13,153	13
14	1,25	12,912	12,8
14	1,5	12,676	12,5
15	1	14,153	14
15	1,5	13,676	13,5
16	1	15,153	15
16	1,5	14,676	14,5
17	1	16,153	16
17	1,5	15,676	15,5
18	1	17,153	17
18	1,5	16,676	16,5
18	2	16,210	16
20	1	19,153	19
20	1,5	18,676	18,5
20	2	18,210	18
22	1	21,153	21
22	1,5	20,676	20,5
22	2	20,210	20
24	1	23,153	23
24	1,5	22,676	22,5
24	2	22,210	22

ISO Metric coarse thread DIN 13			
M	Pitch [mm]	Maximum core diam. (toll. 6H) [mm]	Drill size* [mm]
M25	1	24,153	24
25	1,5	23,676	23,5
25	2	23,210	23
26	1,5	24,676	24,5
27	1	26,153	26
27	1,5	25,676	25,5
27	2	25,210	25
28	1	27,153	27
28	1,5	26,676	26,5
28	2	26,210	26
30	1	29,153	29
30	1,5	28,676	28,5
30	2	28,210	28
30	3	27,252	27
32	1,5	30,675	30,5
32	2	30,210	30
33	1,5	31,676	31,5
33	2	31,210	31
33	3	30,252	30
35	1,5	33,676	33,5
36	1,5	34,676	34,5
36	2	34,210	34
36	3	33,252	33
38	1,5	36,676	36,5
39	1,5	37,676	37,5
39	2	37,210	37
39	3	36,252	36
40	1,5	38,676	38,5
40	2	38,210	38
40	3	37,252	37
42	1,5	40,676	40,5
42	2	40,210	40
42	3	39,252	39
45	1,5	43,676	43,5
45	2	43,210	43
45	3	42,252	42
48	1,5	46,676	46,5
48	2	46,210	46
48	3	45,252	45
50	1,5	48,676	48,5
50	2	48,210	48
50	3	47,252	47
52	1,5	50,676	50,5
52	2	50,210	50
52	3	49,252	49

(*) Drill size according to DIN 336

(1) Tolerance 5H

(2) Tolerance 4H

(3) Size not included in DIN 336

Drill Sizes Cutting Taps

ISO Metric coarse thread DIN 8140 Part 2	
EG-M	Drill size* [mm]
3	3,15
4	4,2
5	5,25
6	6,3
8	8,4
10	10,5
12	12,5
14	14,5
16	16,5

Unified coarse thread UNC ASME - B1.1			
UNC	TPI	Maximum core diam. (toll. 3B) [mm]	Drill size* [mm]
Nr. 1	64	1,582	1,55
Nr. 2	56	1,872	1,85
Nr. 3	48	2,146	2,1
Nr. 4	40	2,385	2,35
Nr. 5	40	2,697	2,65
Nr. 6	32	2,896	2,85
Nr. 8	32	3,528	3,5
Nr. 10	24	3,950	3,9
Nr. 12	24	4,590	4,5
1/4"	20	5,250	5,1
5/16"	18	6,680	6,6
3/8"	16	8,082	8
7/16"	14	9,441	9,4
1/2"	13	10,881	10,8
9/16"	12	12,301	12,2
5/8"	11	13,693	13,5
3/4"	10	16,624	16,5
7/8"	9	19,520	19,5
1"	8	22,344	22,25
1 1/8"	7	25,082	25
1 1/4"	7	28,258	28
1 3/8"	6	30,851	30,75
1 1/2"	6	34,026	34
1 3/4"	5	39,560	39,5
2"	4,5	45,367	45

Unified coarse thread UNF ASME - B1.1			
UNF	TPI	Maximum core diam. (toll. 3B) [mm]	Drill size* [mm]
Nr. 0	80	1,306	1,25
Nr. 1	72	1,613	1,55
Nr. 2	64	1,913	1,85
Nr. 3	56	2,197	2,15
Nr. 4	48	2,459	2,4
Nr. 5	44	2,741	2,7
Nr. 6	40	3,012	2,95
Nr. 8	36	3,597	3,5
Nr. 10	32	4,168	4,1
Nr. 12	28	4,717	4,6
1/4"	28	5,563	5,5
5/16"	24	6,995	6,9
3/8"	24	8,565	8,5
7/16"	20	9,947	9,9
1/2"	20	11,524	11,5
9/16"	18	12,969	12,9
5/8"	18	14,554	14,5
3/4"	16	17,546	17,5
7/8"	14	20,493	20,4
1"	12	23,363	23,25
1 1/8"	12	26,538	26,5
1 1/4"	12	29,713	29,5
1 3/8"	12	32,888	32,75
1 1/2"	12	36,063	36

8-UN thread ASME B1.1			
8-UN	TPI	Maximum core diam. (toll. 3B) [mm]	Drill size* [mm]
1 1/8"	8	25,519	25,4
1 1/4"	8	28,694	28,6
1 3/8"	8	31,869	31,8
1 1/2"	8	35,044	35,0
1 5/8"	8	38,219	38,1
1 3/4"	8	41,394	41,3
1 7/8"	8	44,569	44,5
2"	8	47,744	47,7

Rp thread (BSPP) DIN EN 10226-1			
Rp	TPI	Maximum core diam. [mm]	Drill size* [mm]
1/8"	28	8,637	8,60
1/4"	19	11,549	11,50
3/8"	19	15,054	15,00
1/2"	14	18,773	18,50
3/4"	14	24,259	24,00

Whitworth thread BSW - BS 84			
BSW	TPI	Maximum core diam. [mm]	Drill size* [mm]
3/32"	48	1,912	1,9
1/8"	40	2,591	2,55
5/32"	32	3,214	3,2
3/16"	24	3,744	3,7
7/32"	24	4,539	4,5
1/4"	20	5,156	5,1
5/16"	18	6,589	6,5
3/8"	16	7,988	7,9
7/16"	14	9,332	9,25
1/2"	12	10,589	10,5
9/16"	12	12,177	12
5/8"	11	13,559	13,5
3/4"	10	16,485	16,4
7/8"	9	19,355	19,25
1"	8	22,149	22
1 1/8"	7	24,831	24,75
1 1/4"	7	28,006	27,75
1 3/8"	6	30,528	30,3
1 1/2"	6	33,703	33,5
1 5/8"	5	35,961	35,5
1 3/4"	5	39,136	39
1 7/8"	4,5	41,702	41,5
2"	4,5	44,877	44,5
2 1/4"	4	50,465	50
2 1/2"	4	56,815	56,3
2 3/4"	3,5	62,182	61,5
3"	3,5	68,532	68

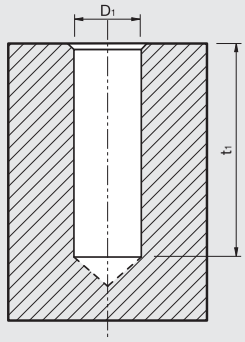
Whitworth pipe thread EN - ISO 228			
G	TPI	Maximum core diam. [mm]	Drill size* [mm]
1/8"	28	8,848	8,8
1/4"	19	11,890	11,8
3/8"	19	15,395	15,25
1/2"	14	19,172	19
5/8"	14	21,128	21
3/4"	14	24,658	24,5
7/8"	14	28,418	28,25
1"	11	30,931	30,75
1 1/8"	11	35,579	35,5
1 1/4"	11	39,592	39,5
1 3/8"	11	42,005	41,9
1 1/2"	11	45,485	45,25
1 3/4"	11	51,428	51
2"	11	57,296	57
2 1/4"	11	63,392	63,3
2 3/8"	11	67,080	67
2 1/2"	11	72,866	72,8
2 3/4"	11	79,216	79,1
3"	11	85,566	85,5
3 1/4"	11	91,662	91,5
3 1/2"	11	98,012	98
3 3/4"	11	104,362	104
4"	11	110,712	110,5

(*) Drill size according to DIN 336

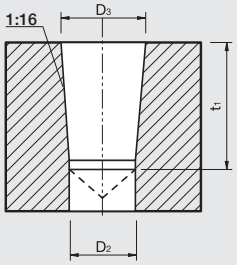
Drill Sizes Cutting Taps

Rc Conical gas thread (BSPT), taper 1:16 - BS 21 e DIN EN 10226-2
NPT National pipe thread, taper 1:16 - ASME/ANSI B1.20.1
NPTF Dryseal National pipe thread, taper 1:16 - ASME/ANSI B1.20.3

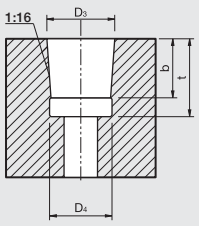
Cylindrical hole, without using a reamer							
Tap sizes	TPI		D1 [mm]			t1 [mm]	
	NPT NPTF	Rc (BSPT)	NPT	NPTF	Rc (BSPT)	NPT NPTF	Rc (BSPT)
1/16"	27	28	6,15	6,15	6,2	12	11,9
1/8"	27	28	8,5	8,5	8,2	12	11,9
1/4"	18	19	11	11	11	17,5	17,7
3/8"	18	19	14,5	14,5	14,5	17,6	18,1
1/2"	14	14	17,85	17,8	18	22,9	24
3/4"	14	14	23,2	23	23,5	23	25,3
1"	11 1/2	11	29	29	29,5	27,4	30,6
1 1/4"	11 1/2	11	37,8	37,8	38	28,1	32,9
1 1/2"	11 1/2	11	44	43,8	44	28,4	32,9
2"	11 1/2	11	56	56	55,5	28,4	37,2



Cylindrical holes with use of tapered reamer									
Tap sizes	TPI		D2 [mm]		D3 [mm]			t1 [mm]	
	NPT NPTF	Rc (BSPT)	NPT NPTF	Rc (BSPT)	NPT	NPTF	Rc (BSPT)	NPT NPTF	Rc (BSPT)
1/16"	27	28	5,95	6,1	6,39	6,41	6,56	12	11,9
1/8"	27	28	8,25	8,1	8,74	8,76	8,57	12	11,9
1/4"	18	19	10,75	10,75	11,36	11,4	11,45	17,5	17,7
3/8"	18	19	14,1	14,25	14,8	14,84	14,95	17,6	18,1
1/2"	14	14	17,5	17,75	18,32	18,33	18,63	22,9	24
3/4"	14	14	22,7	23	23,67	23,68	24,12	23	25,3
1"	11 1/2	11	28,6	29	29,69	29,72	30,29	27,4	30,6
1 1/4"	11 1/2	11	37,3	37,5	38,45	38,48	38,95	28,1	32,9
1 1/2"	11 1/2	11	43,4	43,5	44,52	44,55	44,85	28,4	32,9
2"	11 1/2	11	55,5	55	56,56	56,59	56,66	28,4	37,2



Preparation of tapered blind hole															
Tap sizes	TPI		D3 [mm]			b [mm]			t [mm]			D4 [mm]			
	NPT NPTF	Rc (BSPT)	NPT	NPTF	Rc (BSPT)	NPT	NPTF	Rc (BSPT)	NPT	NPTF	Rc (BSPT)	NPT	NPTF	Rc (BSPT)	
1/16"	27	28	6,39	6,41	6,56	7	8	5,6	10	11	9,5	7,6	7,4	7,6	
1/8"	27	28	8,74	8,76	8,57	7	8	5,6	10	11	9,5	10	9,8	9,6	
1/4"	18	19	11,36	11,4	11,45	10,2	11,6	8,4	14,5	15,5	14	13,1	12,9	13	
3/8"	18	19	14,8	14,84	14,95	10,6	12	8,8	15	16	14,4	16,5	16,3	16,5	
1/2"	14	14	18,32	18,33	18,63	13,8	15,6	11,4	19	20,5	19	20,5	20,3	20,6	
3/4"	14	14	23,67	23,68	24,12	14,2	16	12,7	20	21,5	20,3	25,8	25,6	26	
1"	11 1/2	11	29,69	29,72	30,29	17	19,2	14,5	24	26	24,3	32,2	32	32,8	
1 1/4"	11 1/2	11	38,45	38,48	38,95	17,5	19,7	16,8	24,5	26,5	26,6	41	40,8	40,2	
1 1/2"	11 1/2	11	44,52	44,55	44,85	17,5	19,7	16,8	24,5	26,5	26,6	47,2	47	47,2	
2"	11 1/2	11	56,56	56,59	56,66	18	20,2	21,1	25	27	30,9	59,2	59	58,7	



Drill Sizes Forming Taps

ISO Metric coarse thread DIN 13		
M	Pitch [mm]	Drill size [mm]
M 2	0,4	1,85 ± 0,03
2,5	0,45	2,30 ± 0,03
3	0,5	2,80 ± 0,03
3,5	0,6	3,25 ± 0,03
4	0,7	3,70 ± 0,03
5	0,8	4,65 ± 0,03
6	1	5,55 ± 0,05
8	1,25	7,40 ± 0,05
10	1,5	9,30 ± 0,05
12	1,75	11,20 ± 0,05
14	2	13,10 ± 0,05
16	2	15,10 ± 0,05
18	2,5	16,90 ± 0,05
20	2,5	18,90 ± 0,05
24	3	22,70 ± 0,05
27	3	25,70 ± 0,05
30	3,5	28,45 ± 0,05

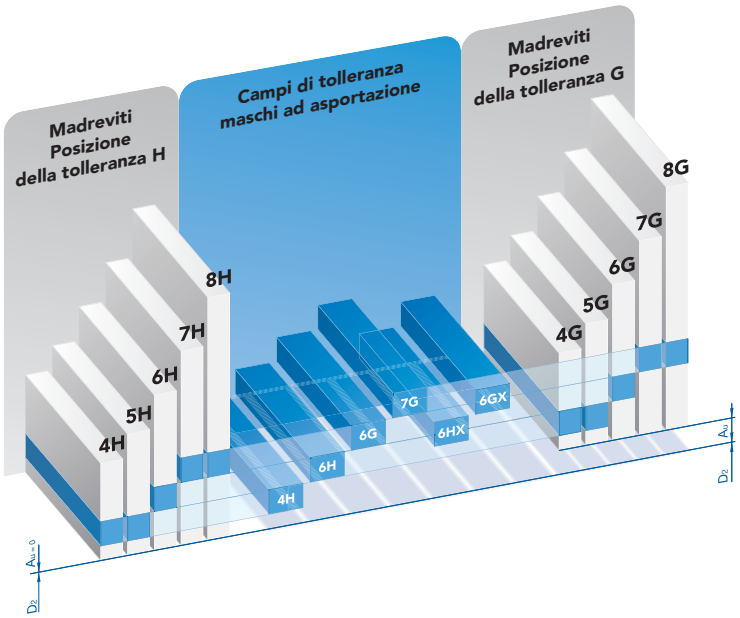
ISO Metric fine thread DIN 13		
MF	Pitch [mm]	Drill size [mm]
M 3	0,35	2,85 ± 0,03
4	0,5	3,80 ± 0,03
5	0,5	4,80 ± 0,03
6	0,75	5,65 ± 0,03
8	1	7,55 ± 0,05
10	1	9,55 ± 0,05
10	1,25	9,40 ± 0,05
12	1	11,55 ± 0,05
12	1,25	11,40 ± 0,05
12	1,5	11,30 ± 0,05
14	1,25	13,40 ± 0,05
14	1,5	13,30 ± 0,05
16	1,5	15,30 ± 0,05
18	1,5	17,30 ± 0,05
20	1,5	19,30 ± 0,05

Whitworth pipe thread EN - ISO 228		
G	TPI	Drill size [mm]
G 1/8"	28	9,25 ± 0,05
1/4"	19	12,50 ± 0,05
3/8"	19	16,00 ± 0,05
1/2"	14	20,00 ± 0,05
3/4"	14	25,50 ± 0,05
1"	11	32,00 ± 0,05

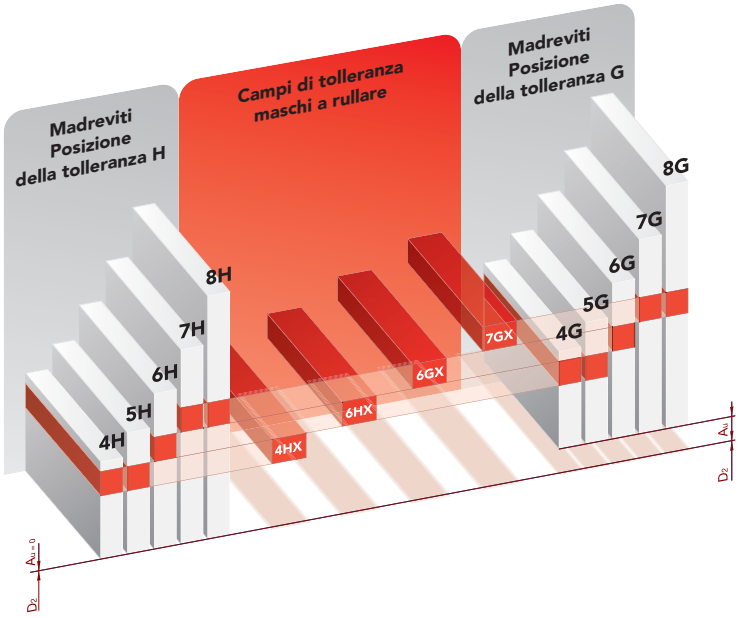
Other drill sizes = theorical flank diameter + pitch/5

In order to obtain the requested tolerance, the formation of a complete internal thread and guarantee the tap tool life, it is important to respect the drill hole diameters and their tight tolerances.
The core diameter of the internal thread obtained by forming is not only a function of the drill hole diameter but also depends on the workpiece material properties. For this reason the tolerance on the core diameter is 7H compared to 6H for cutting taps. For more detailed information see the DIN 13-50 standard.

Cutting Tap Tolerance Range



Forming Tap Tolerance Range



Standard fit for a thread corresponds to tolerance class ISO 2/6H. For more precise fits, without allowance on thread flank, tolerance class ISO 1/4H must be chosen. ISO 3/6G is used in case of loose fits, with large allowance, which is often required for subsequent coatings.

Between classes 6H and 6G, as well as between classes 6G and 7G, tap manufacturers produce taps with tolerance 6HX and 6GX. These taps are used for tapping abrasive materials, such as cast iron or Al-Si alloys, in order to increase their tool life. Another important application is on forming taps, which create the thread by plastic deformation and not by cutting. In this case, due to the elastic return of the material, in order to obtain a thread 6H tolerance, a 6HX tap must be used.

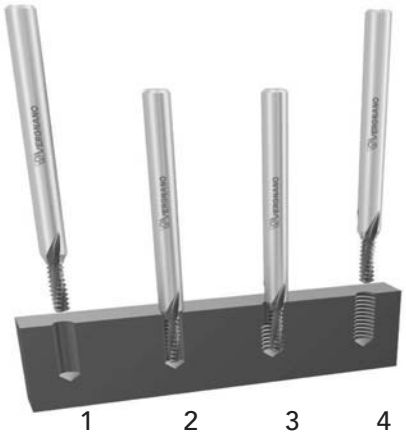
The tolerances described above are collected in the European standard EN 22857.

Tolerance Table

Nominal diameter (mm)		Pitch (mm)	Limits on pitch diameter (µm)*			
			Class			
>	≤		4H (ISO1)	6H (ISO 2)	6G (ISO 3)	7G
0,99	1,4	0,2	+ 15	-	-	-
			+ 5	-	-	-
		0,25	+ 17	-	-	-
			+ 6	-	-	-
		0,3	+ 18	+ 30	-	-
			+ 6	+ 18	-	-
1,4	2,8	0,2	+ 16	-	-	-
			+ 5	-	-	-
		0,25	+ 18	-	-	-
			+ 6	-	-	-
		0,35	+ 20	+ 34	-	-
			+ 7	+ 20	-	-
		0,4	+ 21	+ 36	-	-
			+ 7	+ 21	-	-
		0,45	+ 23	+ 38	-	-
			+ 8	+ 23	-	-
2,8	5,6	0,35	+ 21	+ 36	-	-
			+ 7	+ 21	-	-
		0,5	+ 24	+ 40	+ 56	+ 70
			+ 8	+ 24	+ 40	+ 55
		0,6	+ 27	+ 45	+ 63	+ 81
			+ 9	+ 27	+ 45	+ 63
		0,7	+ 29	+ 48	+ 67	+ 86
			+ 10	+ 29	+ 48	+ 67
		0,75	+ 29	+ 48	+ 67	+ 86
			+ 10	+ 29	+ 48	+ 67
		0,8	+ 30	+ 50	+ 70	+ 90
			+ 10	+ 30	+ 50	+ 70
5,6	11,2	0,75	+ 32	+ 53	+ 74	-
			+ 11	+ 32	+ 53	-
		1	+ 35	+ 59	+ 83	+ 107
			+ 12	+ 35	+ 59	+ 83
		1,25	+ 38	+ 63	+ 88	+ 113
			+ 13	+ 38	+ 63	+ 88
		1,5	+ 42	+ 70	+ 98	+ 126
			+ 14	+ 42	+ 70	+ 98
11,2	22,4	1	+ 38	+ 63	+ 88	+ 113
			+ 13	+ 38	+ 63	+ 88
		1,25	+ 42	+ 70	+ 98	+ 126
			+ 14	+ 42	+ 70	+ 98
		1,5	+ 45	+ 75	+ 105	+ 135
			+ 15	+ 45	+ 75	+ 105
		1,75	+ 48	+ 80	+ 112	+ 144
			+ 16	+ 48	+ 80	+ 112
		2	+ 51	+ 85	+ 119	+ 153
			+ 17	+ 51	+ 85	+ 119
		2,5	+ 54	+ 90	+ 126	+ 162
			+ 18	+ 54	+ 90	+ 126
22,4	45	1	+ 40	+ 66	+ 92	+ 118
			+ 13	+ 40	+ 66	+ 92
		1,5	+ 48	+ 80	+ 112	+ 144
			+ 16	+ 48	+ 80	+ 112
		2	+ 54	+ 90	+ 126	+ 162
			+ 18	+ 54	+ 90	+ 126
		3	+ 64	+ 106	+ 148	+ 190
			+ 21	+ 64	+ 106	+ 148
		3,5	+ 67	+ 112	+ 157	+ 202
			+ 22	+ 67	+ 112	+ 157
		4	+ 71	+ 118	+ 165	+ 212
			+ 24	+ 71	+ 118	+ 165
		4,5	+ 75	+ 125	+ 175	+ 225
			+ 25	+ 75	+ 125	+ 125
45	90	1,5	+ 51	+ 85	+ 119	+ 153
			+ 17	+ 51	+ 85	+ 119
		2	+ 57	+ 95	+ 133	+ 171
			+ 19	+ 57	+ 95	+ 133
		3	+ 67	+ 112	+ 157	+ 202
			+ 22	+ 67	+ 112	+ 157
		4	+ 75	+ 125	+ 175	+ 225
			+ 25	+ 75	+ 125	+ 175
		5	+ 80	+ 133	+ 186	+ 239
			+ 27	+ 80	+ 133	+ 186
		5,5	+ 84	+ 140	+ 196	+ 252
			+ 28	+ 84	+ 140	+ 196
		6	+ 90	+ 150	+ 210	+ 270
			+ 30	+ 90	+ 150	+ 210

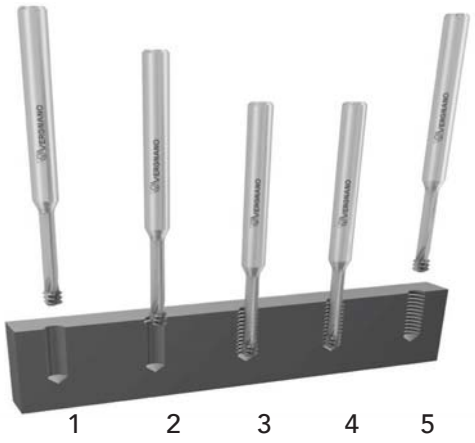
(*) According to EN 22857

VR10 - VR20 - VR30

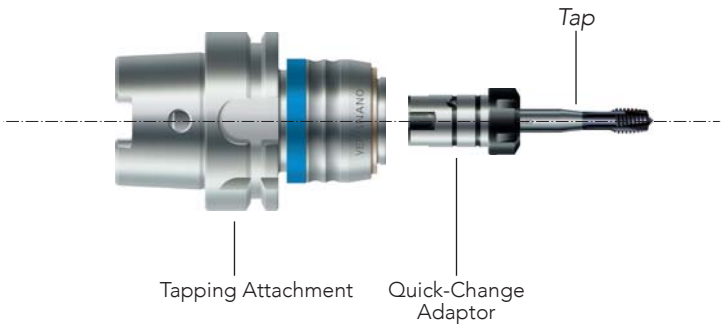


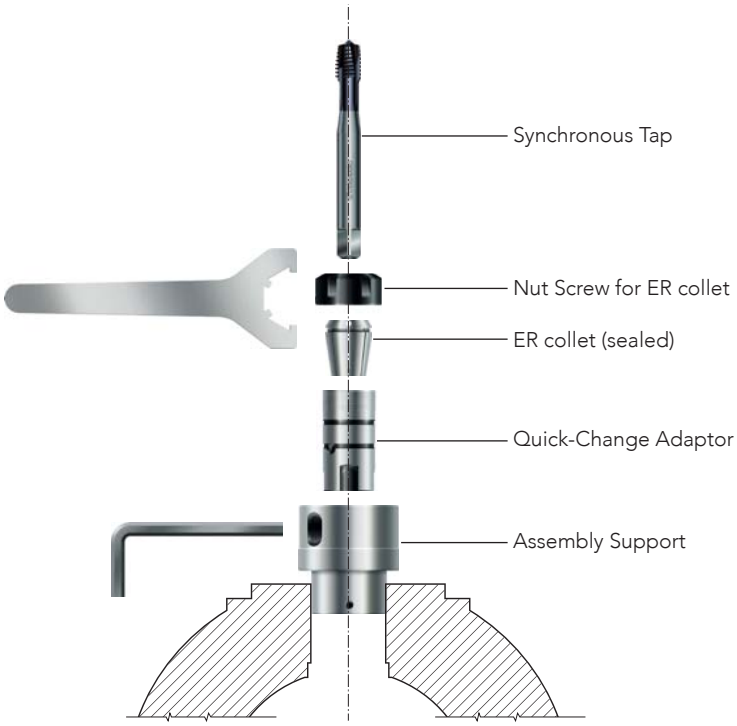
1	Start point - center position
2	Axial movement down to required thread depth, then 45° arc entrance
3	Thread milling (360°)
4	45° arc exit, then axial movement to start point

VR40 - VR45 - VR50 - VR55



1	Start point - center position
2	45° arc entrance
3	Thread milling to required thread depth
4	45° arc exit
5	Axial movement to start point





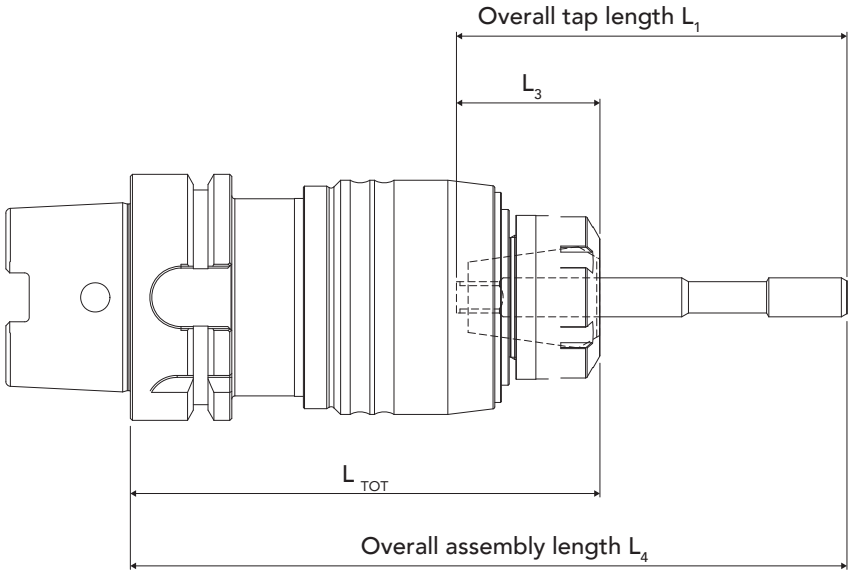
1. Place the quick-change adaptor in the assembly support
2. Insert the ER collet in the nut screw
3. Partially tighten the nut screw on the quick-change adaptor
4. Insert the tap in the quick-change adaptor until it stops
5. Securely tighten the nut screw with a wrench
6. Insert the quick-change adaptor into the tapping attachment by pulling back the sleeve

Tightening Torque Table

It is recommended to tighten the nut screws with the torque values shown in the table below.

ER Collet	Torque [Nm]
ER 16	45
ER 25	70
ER 40	150

Overall Length of Tapping Attachment Assembly



In the example below, the overall assembly length of the tapping attachment with a mounted tap is shown.
This calculation is useful to avoid collisions. (*)

MACHINE TAP M10 S15

Ød1 [mm]	P [mm]	L_1 js 16 [mm]	L_2 [mm]	L_3 [mm]	Ød2 h6 [mm]	a h12 [mm]	z [-]	[mm]
M 10	1,5	100	15	39	10	8	3	8,5

ER COLLET (sealed) - with internal square

Article Code	ER Collet	Ø d_1 [mm]	a [mm]	L_2 [mm]	L_3 [mm]
SLERGB250110000	ER25	10	8	25	36

TAPPING ATTACHMENT - DIN 69893 HSK A

Article Code	Attachment ØD_1 [mm]	Tap Size	L [mm]	ØD [mm]	Ød [mm]	ER Collet	L_1 [mm]	L_{TOT} [mm]
VA01A06302CH250	HSK-A63	M6 - M20	97	60	32	ER25	23,5	120,5

Overall assembly length $L_4 = (L_1-L_3) + L_{TOT}$

(*) The calculation does not consider male centres.

Icon Description

Tap and Die Geometry


Hand tap


Tap with straight flutes


Tap with straight flutes and spiral point


Tap with straight flutes with interrupted thread


Tap with straight flutes and spiral point with interrupted thread

Tap with 15° right hand spiral

Tap with 15° left hand spiral

Tap with 40° right hand spiral and 2 flutes

Tap with 40° right hand spiral

Tap with 45° right hand spiral


Forming tap without oil grooves


Forming tap with oil grooves


Through coolant tap with internal axial hole, for blind holes


Through coolant tap with internal axial and radial holes, for through holes


Through coolant tap with internal axial hole, for blind holes


Through coolant forming tap with internal axial hole, for blind holes


Through coolant forming tap with internal axial and radial holes, for through holes


Thread Mills with internal axial coolant


Thread Mills with internal radial coolant


Die


Back tapering


Tap with long shank


Tap with through shank

Hole Type and Depth


Through

Through, up to 1 x d_1

Through, up to 1,5 x d_1

Through, up to 2,5 x d_1

Through, up to 3 x d_1


Blind

Blind, up to 1,5 x d_1

Blind, up to 2 x d_1

Blind, up to 2,5 x d_1

Blind, up to 3 x d_1


Blind and through

Blind and through, up to 1,5 x d_1

Blind and through, up to 2 x d_1

Icon Description

Blind and through, up to 2,5 x d_1

Blind and through, up to 3 x d_1


Tapered hole


Nut

Direction of Cut

Right hand cut

Left hand cut

Type of Chip


Short chipping


Medium chipping


Medium to long chipping


Long chipping


Plastic deformation without chip formation

Coloured Ring


Orange ring - Taps for tough materials

Tap and Die Tolerance

Tolerance 4H / ISO1

Tolerance 6H / ISO2

Tolerancea 6G / ISO3

Tolerance 7G

Tolerance 6HX

Tolerance 6GX

Tolerance 7GX

Tolerance 6H + 0,1 mm

Modified 6H Tolerance

Tolerance 3B

Tolerance 2B

Tolerance 2BX

Tolerance ISO 5969

Tolerance ISO 5969X

Medium Tolerance

Tolerance ISO 6g

Tolerance 2A

Tolerance Classe A

Material

Material: solid carbide

Material: conventional high speed steel

Material: conventional high speed steel

Icon Description

HSSK — Material: powder metallurgy high speed steel

HSSZ — Material: high performance powder metallurgy high speed steel

HSSP — Material: high performance powder metallurgy high speed steel

Thread Type

M — ISO Metric coarse thread

MF — ISO Metric fine thread

UNC — Unified coarse thread - UNC ASME B1.1

UNF — Unified fine thread - UNF ASME B1.1

8-UN — 8-UN thread - ASME B1.1

G — Whitworth pipe thread - EN ISO 228

Rp (BSPP) — Rp thread (BSPP) - DIN EN 10226-1

Rc (BSPT) — Conical gas thread Rc (BSPT) taper 1:16 - BS 21 and DIN EN 10226-2

BSW — Whitworth thread - BS 84

NPT — National pipe thread, taper 1:16 - ASME/ANSI B1.20.1

NPTF — Dryseal National pipe thread, taper 1:16 - ASME/ANSI B1.20.3

EG-M — ISO Metric coarse thread - DIN 8140-2

ISO — ISO thread DIN 13

UN — American Unified Thread ASME B1.1

GAS — GAS thread EN ISO 228

Chamfer Form

Chamfer form A: 5 - 6 threads for through holes

Chamfer form B: 4 - 5 threads for through holes

Chamfer form C: 2 - 3 threads for blind and through holes

Chamfer form D: 4 - 5 threads for through holes

Chamfer form E: 1,5 - 2 threads for blind holes

Die chamfer form: 1,75 x P

Application Information

Tap only for rigid tapping attachment (synchronous)

High recommended cutting speed

High tool life

Thread Mills

INT — For internal threads

EXT — For external threads

Notes

Notes

Notes

Notes

TOOL CODE LIST

A SERIES		
TOOL CODE	Thread	Page
A1	M	30
A1 LH	M	32
A2	MF	83
A2 LH	MF	86
A4	BSW	145
A5	G	134
A6	Rc (BSPT)	144
A6 B	NPT	148
A6 BZ	NPT	149
A6 F	NPTF	150
A6 FZ	NPTF	151
A7	UNC	114
A8	UNF	123
A9	M	77
A10	MF	109
A15	M	44
A15 VAP	M	44
A15 TiN	M	44
A15 6G	M	45
A15 6G TiN	M	45
A15 AZ	M	46
A15 AZ TiH1	M	46
A15 L	M	47
A15 L TiN	M	47
A15 S	M	48
A15 S VAP	M	48
A15 S TiN	M	48
A15 S TiCN	M	48
A15 S 4H	M	50
A15 S 4H TiN	M	50
A15 S 6G	M	51
A15 S 6G TiN	M	51
A15 S 7G	M	52
A15 S7G TiN	M	52
A15 S LH	M	53
A15 S LH TiN	M	53
A16 S	M	54
A16 S TiN	M	54
A17	MF	94
A17 VAP	MF	94
A17 TiN	MF	94
A17 S	MF	97
A17 S VAP	MF	97
A17 S TiN	MF	97
A17 S TiCN	MF	97
A17 S TiX2	MF	100
A17 S 6G	MF	101
A17 S 6G TiN	MF	101
A18 S	G	137
A18 S VAP	G	137
A18 S TiCN	G	137
A18 S TiX2	G	137
A19 S	UNC	117
A19 S TiN	UNC	117
A19 S TiCN	UNC	117
A19 S 3B	UNC	117
A19 S TiX2	UNC	118
A20 S	UNF	126
A20 S TiN	UNF	126
A20 S TiCN	UNF	126
A20 S 3B	UNF	126
A20 S TiX2	UNF	127
A21 FC	M	34
A21 FC TiN	M	34
A21 FC LH	M	34
A21 FP	M	36
A21 FP TiN	M	36
A22 FC	M	38
A22 FC TiN	M	38
A22 FP	M	39
A22 FP TiN	M	39
A23 FC	MF	87
A23 FC TiN	MF	87
A23 FC LH	MF	87
A23 FP	MF	90
A23 FP TiN	MF	90
A23 FP LH	MF	90

A SERIES		
TOOL CODE	Thread	Page
A24 FC	BSW	146
A24 FP	BSW	146
A26 FC	G	135
A26 FP	G	135
A27 FC	UNC	115
A27 FC TiN	UNC	115
A27 FP	UNC	115
A27 FP TiN	UNC	115
A28 FC	UNF	124
A28 FC TiN	UNF	124
A28 FP	UNF	124
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