

Die Digitale Produktion Bausteine der Umsetzung

KST. 2050 Profilschleifen



Start

1.



SCHUMACHER
PRECISION TOOLS SINCE 1918

KATALOG NR. 125 G - GEWINDETECHNIK



Edition

Threading Technology

Products | Applications | Digital Services

Catalogue No. 125 G
Threading Technology

Products | Applications | Digital Services



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product range design



geometry development



fully-automated measurement process for new developments

Research & Development

Research and Development focuses on two crucial areas: tool know-how and machining technology by **Schumacher Precision Tools (SPT)** and systems for digital process control in small and medium-sized enterprises by **GAP (Gesellschaft für angewandte Prozesslenkung)**.

For the development of new machining technology, **Schumacher** utilizes the standardized product technology database of the module **ToolDesign**, which contains more than 20,000 tool variants. This technology can be used for both new designs and ongoing developments, drawing upon algorithms. CAD-variant construction will be deployed for the respective tool models.

Schumacher can rely on an established network of renowned institutions in research disciplines such as high-speed steel and carbide substrates, heat and surface treatment, or hard material coating.

The management and technology modules developed by **GAP** in cooperation with technical universities ensure a consistent digital networking within the company. Data base-oriented product design with the module **ToolDesign** combined with the digital control system of the module **ToolProduction** fulfill the objectives of the government's initiative 'Industry 4.0'. **ToolProduction** represents digital process structures in production, a know-how advantage that is applied for the internal process optimization of **Schumacher Precision Tools**. Moreover, the cross-departmental nature of **ToolProduction** allows partial or complete synchronization with partner companies in designated sections.



R&D
by Schumacher



ToolProduction
by Schumacher



DigitalProcessPlanning
by Schumacher



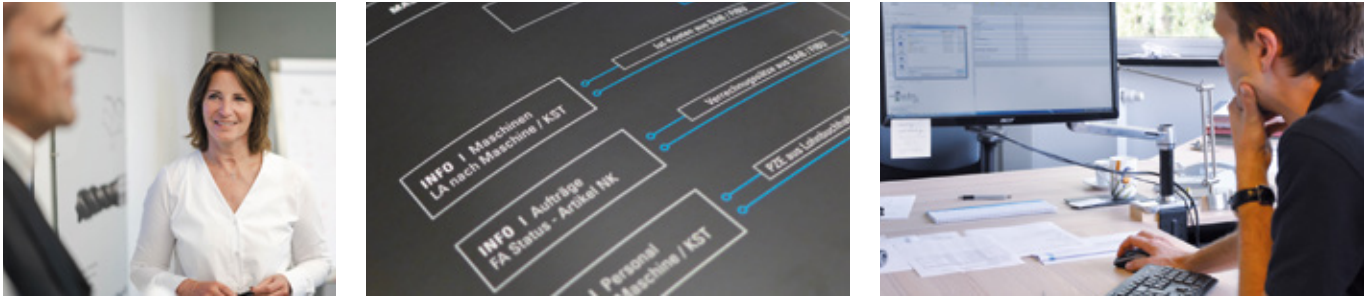
SCHUMACHER
PRECISION TOOLS SINCE 1918

GAP

Gesellschaft für angewandte Prozesslenkung

RWTH AACHEN
UNIVERSITY

research cooperation with
various technical universities



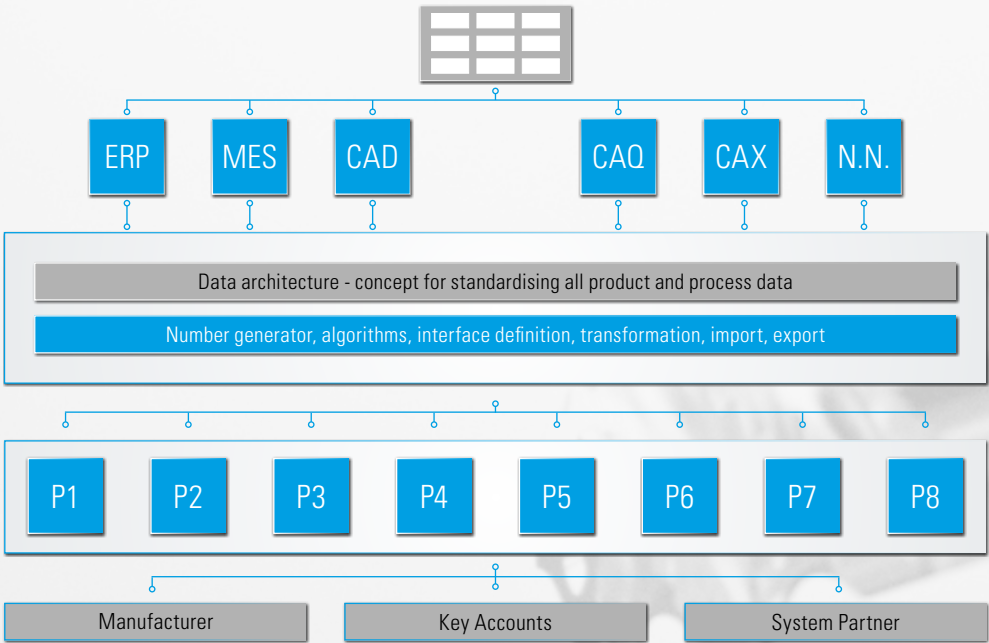
GAP - ToolProduction

1. integrated user interface GAP / SPT

2. IT modules

3. Standardised data platform

4. 8-platform strategy



Practical solution approach for industrial SMEs

Data Integration & Resource Efficiency

Due to the political and economic framework conditions, resource conservation in all its facets is becoming increasingly important.

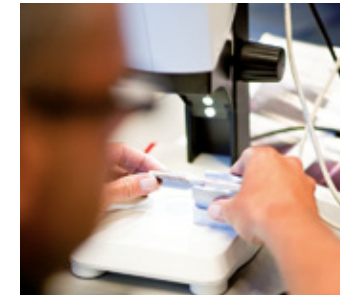
- › The introduction of cross-divisional digital process control is an obvious choice due to its high efficiency and holistic nature for conserving all resources in industrial processes.
- › To increase this efficiency, the use of artificial intelligence can achieve additional positive effects. For such a development in the SME class of companies considered here, however, the prerequisites for the realisation of digital process control must be planned with targeted solution approaches.
- › he integration of different IT modules for a control system is a major challenge in this class of company. Data integration is also a key success factor in order to ensure comprehensive process flows between the necessary standard IT modules - not least for AI applications. If this integration is not successful across all areas, redundancies arise which, in the view of the experts, would thwart all the prerequisites for successful digitalisation.



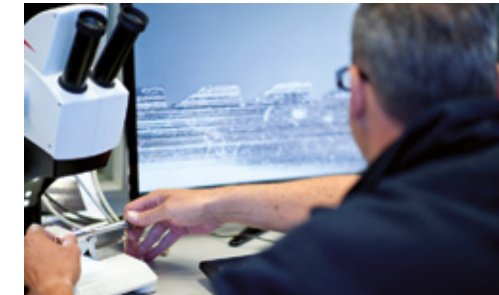
ToolDesign
by Schumacher



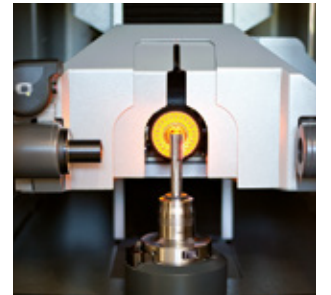
ToolSimulation
by Schumacher



measurement process



profile inspection



digital measurement process

Simulation-based test runs before start of production
increase the quality of new tool variants development

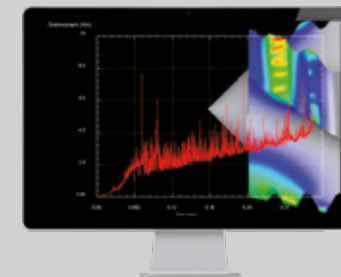
Design & Simulation

The ToolSimulation Principle

The Objective:

The GAP-module **Tool-Simulation** uses the **FEM method** to simulate the cutting performance of precision tools. In this context, 3D tool models from **ToolDesign** can be tested virtually in defined work pieces with their material properties before tool production begins.

The simulation process was realized with high computer processing power through extensive modification of a standard simulation software. At the start, an interactive work piece description for the process is provided to the user of **ToolSimulation**. This digital work piece receives information about all material properties that are necessary for the simulation process from an edited system data base. The geometry variations and material properties of the precision tools are available through the 3D volume models from **ToolDesign**.

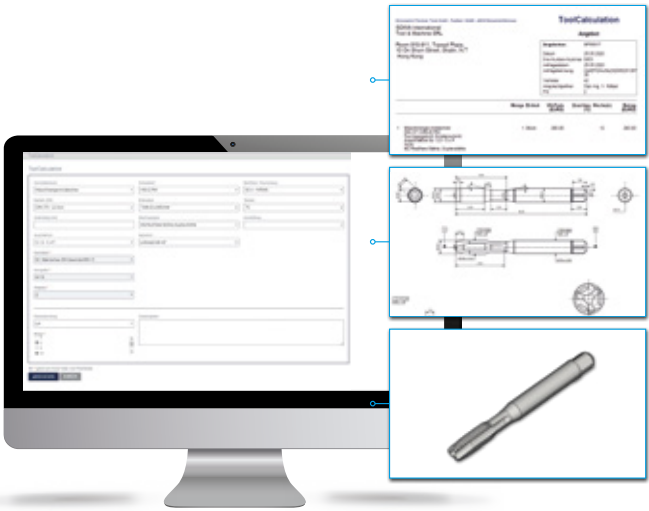


torque curve through FEM simulation

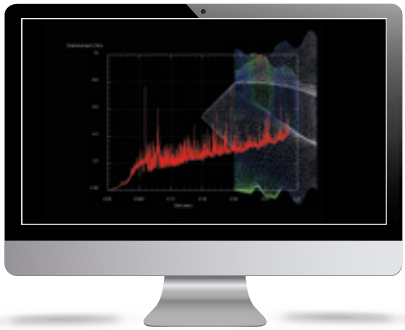
ToolSimulation – FEATURES:

- › Digital preparation of 3D volume models for simulation process
- › Data transfer of 3D volume tool models from ToolDesign
- › Development of 3D volume work piece models
- › Material classification of the work piece and tool models
- › Simulation – testing new tool variants
- › Interpretation of results





WEB-based quotation system



Solid state simulation FEM

Data Integration & Digital Transformation

Decentralised 3D printing of precision tools using the 'Additive Manufacturing AM process' with internal cooling variants has already been successfully tested by ToolProduction (TP) at the customer's premises.

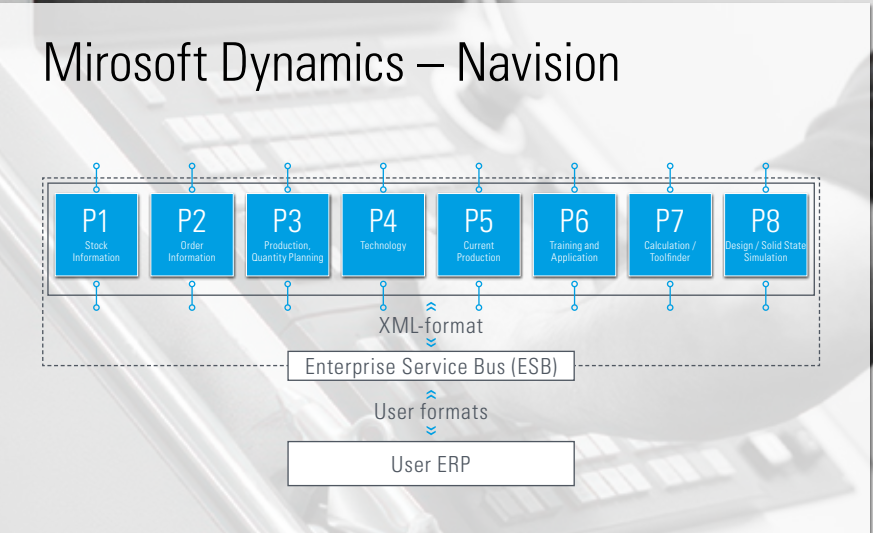
At TP, retrofit solutions ensure the continuity of the control of operating resources that are not 100% digital-capable.

Utilising the data structures of the TP steering system, GAP is developing a WEB-based 8-platform strategy for this application support.

These 8 platforms enable the tool manufacturer to network with its markets and offer product users in all relevant disciplines 'digital transformation' with value-added services that go beyond the primary product.



ToolProduction by Schumacher DigitalProcessPlanning by Schumacher





ToolProduction
by Schumacher



DigitalProcessPlanning
by Schumacher

Production & Digital Process Control

The ToolProduction Principle

The Objective: Introduction of Digital Process Control according to 'Industry 4.0'

The required framework conditions for a successful introduction of digital and decentralized process control at SPT were provided through various modules of computer-aided information processing in all departments. By the early 1990s, SPT had completed connecting all departments related to production with a cross-departmental information system. This was part of the introduction of a CIM strategy (Computer Integrated Manufacturing).

Smart services for customers through data generated during production



Robot-loaded grinding center

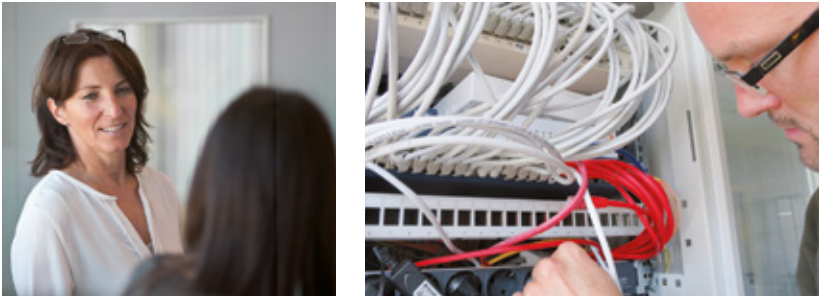


Examination of test results



Performance tests

Location-independent digital description of entire processing



As of Today, use of IT comprises the following technical-organizational sections:

- › stock management
- › sales
- › development and design
- › production scheduling
- › production planning and control
- › manufacturing
- › logistics and quality control
- › finance

Production & Digital Process Control

The current GAP-initiative **ToolProduction** with many features from 'Industry 4.0' considers the change in the industry's framework conditions and leads to the digital transformation of all processes. This is related to the introduction of **Smart Services**, a platform making any relevant process and technology data generated during production available in real-time.



ToolProduction
by Schumacher



DigitalProcessPlanning
by Schumacher



suitability code	☒ well-suited	☐ suited
core hole types	1 blind holes 3 blind and through holes	2 through holes 4 blind holes > 2 xd
coolant	O cutting oil P paraffin	E emulsion A air

Reference cutting speeds V_c page 8.5

Type of Thread & Catalogue 125 page	M	2.2	2.5	2.6	2.6	2.6	2.8	2.10	2.12	2.13	2.13	2.15	2.15	2.15	2.18	2.18	
	MF	3.1		3.5								3.6				3.6	
	G	4.1		4.2								4.3				4.3	
	UNC/UN	5.1		5.3								5.5				5.5	
	UNF	5.22		5.24								5.26				5.26	
	NPT																
	PG	6.4															
	TR																



Material Groups DIN ISO 513		Description	Example	Lubricating Coolant	ST HSS-E	MS HSS-E	GG HSS-E	GG HSS-E	GG HSS-E	HARD HSS-E/PM	HARD HSS-E/PM	MG HSS-E/PM	AL HSS-E/PM	AL HSS-E/PM	ST HSS-E	ST 6G HSS-E	ST 7G HSS-E	ST LH HSS-E	ST HSS-E
P	P1	General construction steels ($\leq 800N$)	St37-2, 16 MnCr5, C60	E, O	☒										☒	☒	☒	☒	☒
	P2	Cementation, Heat-treatable, Nitriding steels ($\leq 1200N$)	42CrMo4, 30CrNiMo8	E, O	☒										☐	☐	☐	☐	☐
	P3	High-alloyed steels, Heat-resistant steels ($\leq 1400N$)	X38CrMoV5-3, Toolox44	O						☒	☒				☐	☐	☐	☐	☐
M	M1	Stainless steels austenitic	X 5 Cr Ni 18 10, X 6 Ni Mo Ti 17 12 2, X 10 Cr Ni S 18 9	O															
	M1	Stainless steels ferritic, martensitic	X 6 Cr 13, X 4 Cr Mo S 18, X 30 Cr 13, X 12 Cr Mo S 17	O															
	M2	Duplex steels	X2CrNiMoN22-5-3	O, P															
K	K1	Grey cast iron	EN-GJL-200 (GG 20), EN-GJL-300 (GG 30)	E, O			☒	☒	☒										
	K2	Nodular cast iron	EN-GJS-400-15 (GGG 40), EN-GJS-600-3 (GGG 60)	E, O			☐	☐	☐						☒	☒	☒	☒	☒
	K3	Malleable cast iron	EN-GJMB-450-06 (GTS 45), EN-GJMW-350-04 (GTW 35)	E, O			☐	☐	☐						☒	☒	☒	☒	☒
N	N1	Aluminium wrought alloys	Al Mg Si, Al Mn 1	E, O									☒	☒	☐	☐	☐	☐	☐
	N1	Aluminium cast alloys < 10 % Si ($< 10\% Si$)	G-Al Mg 3, G-Al Si 9 Cu 3	E, O			☐	☐	☐				☒	☒					
	N2	Aluminium cast alloys $\geq 10\%$ Si ($\geq 10\% Si$)	G-Al Si 10 Mg, G-AISi 12	E, O	☐		☒	☒	☒										
	N3	Copper alloys	E-Cu, SE-Cu	E, O															
	N3	Special copper alloys (AMPCO)	Ampco 18, Ampco 20, Ampco 25	dry															
	N4	Brass long chipping	Cu Zn 30	E, O		☒							☒	☒					
	N4	Brass short chipping	Cu Zn 39 Pb 2 (MS 58), Cu Zn 40 Al 2	E, O		☒							☒	☒					
	N5	Bronze long chipping	G Cu Sn 10 Zn (Rg 10)	E, O		☒							☒	☒					
	N5	Bronze short chipping	G Cu Pb 5 Sn (RG 5), Cu Sn 8 (Rg 7)	E, O		☒							☒	☒					
	N6	Thermoplastics	Hostalen/Makrolon/PS/PVC	E, O									☒	☒	☐	☐	☐	☐	☐
	N7	Duroplastics/Fibre reinforced	Bakelit/Pertinax/Ferrozell/Resopal	E, O	☐		☐	☐	☐										
	N8	Magnesium alloys	Az 91	O, A						☒	☒								
	N9	Graphite	C 8000	A															
S	S1	Pure titanium/titanium alloys	Ti 99, 5, Ti 99.4, Ti Al 5 Sn 2, Ti Al 6 V 4	E, O, P															
	S2	Pure nickel/nickel alloys	Ni 99,6, Inconel 718	O, P															
H	H1	Hard materials up to 50 HRC	Hardox 450	O, P						☒	☒								
	H2	Hard materials up to 60 HRC	Hardox 550	O, P															
Core hole types					3	3	3	3	3	3	3	3	2	2	2	2	2	2	2

[illegible]

suitability code	☒ well-suited	☐ suited	Type of Thread & Catalogue 125 page	M		2.57	2.59	2.59	2.62	2.64	2.66	2.66	2.68	2.70	2.70	2.72	2.72	2.74	2.76	2.76	
core hole types	1 blind holes	2 through holes		MF			3.14				3.15	3.15									
	3 blind and through holes	4 blind holes > 2 xd		G			4.8				4.9	4.9									
				UNC/UN			5.18				5.16	5.16									
coolant	O cutting oil	E emulsion		UNF			5.38				5.35	5.35							Thread former		
	P paraffin	A air		NPT																	
				PG																	
Reference cutting speeds V_c page 8.5				TR																	



Material Groups DIN ISO 513		Description	Example	Lubricating Coolant	ST, CNC HSS-E/PM	Uni HSS-E	Uni HSS-E	Uni HSS/PM	VG HSS-E/PM	VA HSS-E	VA HSS-E	VA HSS-E/PM	AL HSS-E/PM	AL HSS-E/PM	VG HSS-E	VG HSS-E	Uni HSS-E/PM	AL HSS-E/PM	AL HSS-E/PM	
P	P1	General construction steels	($\leq 800N$) St37-2, 16 MnCr5, C60	E, O	☒	☒	☒	☒	☒						☐	☐	☒			
	P2	Cementation, Heat-treatable, Nitriding steels	($\leq 1200N$) 42CrMo4, 30CrNiMo8	E, O	☒	☒	☒	☒	☒	☒	☒	☒			☒	☒	☒			
	P3	High-alloyed steels, Heat-resistant steels	($\leq 1400N$) X38CrMoV5-3, Toolox44	O	☐										☒	☒				
M	M1	Stainless steels austenitic	X 5 Cr Ni 18 10, X 6 Ni Mo Ti 17 12 2, X 10 Cr Ni S 18 9	O	☒	☒	☒	☒	☒	☒	☒	☒					☒			
	M1	Stainless steels ferritic, martensitic	X 6 Cr 13, X 4 Cr Mo S 18, X 30 Cr 13, X 12 Cr Mo S 17	O	☒	☒	☒	☒	☒	☒	☒	☒					☒			
	M2	Duplex steels	X2CrNiMoN22-5-3	O, P	☒							☒								
K	K1	Grey cast iron	EN-GJL-200 (GG 20), EN-GJL-300 (GG 30)	E, O																
	K2	Nodular cast iron	EN-GJS-400-15 (GGG 40), EN-GJS-600-3 (GGG 60)	E, O	☒	☒	☒	☒	☒	☒	☒	☒					☒			
	K3	Malleable cast iron	EN-GJMB-450-06 (GTS 45), EN-GJMW-350-04 (GTW 35)	E, O	☒	☒	☒	☒												
N	N1	Aluminium wrought alloys	Al Mg Si, Al Mn 1	E, O	☐	☒	☒	☒					☒	☒			☒	☒	☒	
	N1	Aluminium cast alloys < 10 % Si	($< 10\% Si$) G-Al Mg 3, G-Al Si 9 Cu 3	E, O									☒	☒				☒	☒	
	N2	Aluminium cast alloys $\geq 10\%$ Si	($\geq 10\% Si$) G-Al Si 10 Mg, G-AISi 12	E, O									☒	☒						
	N3	Copper alloys	E-Cu, SE-Cu	E, O													☒			
	N3	Special copper alloys (AMPCO)	Ampco 18, Ampco 20, Ampco 25	dry																
	N4	Brass long chipping	Cu Zn 30	E, O		☒	☒						☒	☒						
	N4	Brass short chipping	Cu Zn 39 Pb 2 (MS 58), Cu Zn 40 Al 2	E, O									☒	☒						
	N5	Bronze long chipping	G Cu Sn 10 Zn (Rg 10)	E, O		☒	☒						☒	☒			☒	☒	☒	
	N5	Bronze short chipping	G Cu Pb 5 Sn (RG 5), Cu Sn 8 (Rg 7)	E, O									☒	☒						
	N6	Thermoplastics	Hostalen/Makrolon/PS/PVC	E, O	☐	☒	☒						☒	☒						
	N7	Duroplastics/Fibre reinforced	Bakelit/Pertinax/Ferrozell/Resopal	E, O									☒	☒						
S	N8	Magnesium alloys	Az 91	O, A																
	N9	Graphite	C 8000	A																
	S1	Pure titanium/titanium alloys	Ti 99, 5, Ti 99.4, Ti Al 5 Sn 2, Ti Al 6 V 4	E, O, P						☐	☐	☐								
	S2	Pure nickel/nickel alloys	Ni 99,6, Inconel 718	O, P																
H	H1	Hard materials up to 50 HRC	Hardox 450	O, P																
	H2	Hard materials up to 60 HRC	Hardox 550	O, P																
Core hole types					4	1	1	1	4	1	1	4	4	4	1	1	3	3	3	

suitability code	■ well-suited	□ suited
core hole types	1 blind holes 3 blind and through holes	2 through holes 4 blind holes > 2 xd
coolant	O cutting oil P paraffin	E emulsion A air
Reference cutting speeds V _c page 8.5		

Type of Thread &
Catalogue 125 page

	2.78	2.80	2.82	2.82	2.82
M					
MF					
G					
UNC/UN			5.20	5.20	
UNF	Thread former				
NPT					
PG					
TR					

2.90	2.91	2.91	2.92	2.93	2.93
		3.19			

VHMtec
CARBIDE by Schumacher





2.2	ISO Metric Coarse Thread DIN 13	M	
2.90	ISO Metric Coarse Thread DIN 13	M /	VHM 
3.1	ISO Metric Fine Thread DIN 13	MF	
3.19	ISO Metric Fine Thread DIN 13	MF /	VHM 
4.1	Whitworth Pipe Thread DIN ISO 228	G	
5.1	Unified Coarse Thread ANSI B1.1	UNC	
5.22	Unified Fine Thread ANSI B1.1	UNF	
6.1	American Tapered Pipe Thread ANSI B 1.20.1	NPT	
6.4	Steel Conduit Thread DIN 40430	PG	
6.6	ISO Metric Trapezoidal Thread DIN 103 1977	TR	
7.1	Tap Holder		
7.2	ER Collet Tap Holder for machines with synchronous spindle		
7.5	Quick Change Tap Holder for machines with synchronous spindle		
7.8	Quick Change Tap Holder Conventional		

2.6 M - ISO Metric Coarse Thread DIN 13

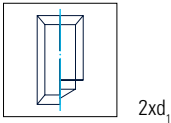
SCHUMACHER

Machine Taps White Ring

DIN 371 HSS-E
straight flutes
for cast iron

Group 3030
for blind and through holes

CAST
IRON



Art-No.							Art-No.						
Technology Page 8.1							Technology Page 8.1						
Chamfer Length Page 8.4							Chamfer Length Page 8.4						
Surface Page 8.2							Surface Page 8.2						
Tolerance Page 8.5							Tolerance Page 8.5						
Cutting Data Page 8.6							Cutting Data Page 8.6						
30300/01 High Volume White Ring							40300/01 High Volume White Ring						
nitrided							nitrided						
6HX							6HX						
K1 grey cast iron N7 duroplastics							K1 grey cast iron N7 duroplastics						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂			Ø d ₁	P _{mm}	L ₁	L ₂	d ₂		
M 1.7	0.35	40	8	2.5	2.1	1.35	M 6	1	80	17	4.5	3.4	5.0
M 1.8	0.35	40	8	2.5	2.1	1.45	M 7	1	80	17	5.5	4.3	6.0
M 2	0.4	45	8	2.8	2.1	1.6	M 8	1.25	90	20	6	4.9	6.8
M 2.2	0.45	45	8	2.8	2.1	1.75	M 9	1.25	90	20	7	5.5	7.8
M 2.3	0.4	45	8	2.8	2.1	1.9	M 10	1.5	100	22	7	5.5	8.5
M 2.5	0.45	50	9	2.8	2.1	2.05	M 12	1.75	110	24	9	7	10.2
M 2.6	0.45	50	9	2.8	2.1	2.15	M 14	2	110	26	11	9	12.0
M 3	0.5	56	11	3.5	2.7	2.5	M 16	2	110	27	12	9	14.0
M 3.5	0.6	56	12	4	3	2.9	M 18	2.5	125	30	14	11	15.5
M 4	0.7	63	13	4.5	3.4	3.3	M 20	2.5	140	32	16	12	17.5
M 5	0.8	70	15	6	4.9	4.2	M 22	2.5	140	32	18	14.5	19.5
M 6	1	80	17	6	4.9	5.0	M 24	3	160	34	18	14.5	21.0
M 7	1	80	17	7	5.5	6.0	M 27	3	160	36	20	16	24.0
M 8	1.25	90	20	8	6.2	6.8	M 30	3.5	180	40	22	18	26.5
M 9	1.25	90	20	9	7	7.8	M 33	3.5	180	40	25	20	29.5
M 10	1.5	100	22	10	8	8.5	M 36	4	200	50	28	22	32.0

■ available – intermediate size on request

2.7 M - ISO Metric Coarse Thread DIN 13

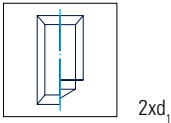
SCHUMACHER

Machine Taps White Ring

DIN 376 HSS-E
straight flutes
for cast iron

Group 4030
for blind and through holes

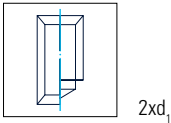
CAST
IRON



Machine Taps Red Ring

DIN 371 HSS-E PM
straight flutes
for hard materials

Group 3080
for blind and through holes

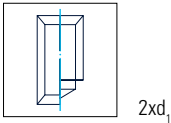


Art.-No.							30800/54						
Technology							PM-Line						
							Hard Steel						
Chamfer Length							A / 6-8 x P						
Surface							TiAlN						
Tolerance							ISO2 (6H)						
Cutting Data							H1 hard materials						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂									
M 1.7	0.35	40	8	2.5	2.1	1.35							
M 1.8	0.35	40	8	2.5	2.1	1.45							
M 2	0.4	45	8	2.8	2.1	1.6							
M 2.2	0.45	45	8	2.8	2.1	1.75							
M 2.3	0.4	45	8	2.8	2.1	1.9							
M 2.5	0.45	50	9	2.8	2.1	2.05							
M 2.6	0.45	50	9	2.8	2.1	2.15							
M 3	0.5	56	11	3.5	2.7	2.5							
M 3.5	0.6	56	12	4	3	2.9							
M 4	0.7	63	13	4.5	3.4	3.3							
M 5	0.8	70	15	6	4.9	4.2							
M 6	1	80	17	6	4.9	5.0							
M 7	1	80	17	7	5.5	6.0							
M 8	1.25	90	20	8	6.2	6.8							
M 9	1.25	90	20	9	7	7.8							
M 10	1.5	100	22	10	8	8.5							

Machine Taps Red Ring

DIN 376 HSS-E PM
straight flutes
for hard materials

Group 4080
for blind and through holes



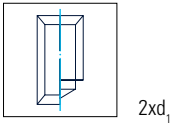
Art.-No.							40800/54						
Technology							PM-Line						
							Hard Steel						
Chamfer Length							A / 6-8 x P						
Surface							TiAlN						
Tolerance							ISO2 (6H)						
Cutting Data							H1 hard materials						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂									
M 6	1	80	17	4.5	3.4	5.0							
M 7	1	80	17	5.5	4.3	6.0							
M 8	1.25	90	20	6	4.9	6.8							
M 9	1.25	90	20	7	5.5	7.8							
M 10	1.5	100	22	7	5.5	8.5							
M 12	1.75	110	24	9	7	10.2							
M 14	2	110	26	11	9	12.0							
M 16	2	110	27	12	9	14.0							
M 18	2.5	125	30	14	11	15.5							
M 20	2.5	140	32	16	12	17.5							
M 22	2.5	140	32	18	14.5	19.5							
M 24	3	160	34	18	14.5	21.0							
M 27	3	160	36	20	16	24.0							
M 30	3.5	180	40	22	18	26.5							
M 33	3.5	180	40	25	20	29.5							
M 36	4	200	50	28	22	32.0							

2.10 M - ISO Metric Coarse Thread DIN 13

Machine Taps Red Ring - CONDOR

DIN 371 HSS-E PM
straight flutes
for hard materials

Group 3081
for blind and through holes



30810/4064

PM-Line

Red Ring

C / 2-3 x P

SG 8

6HX

H1 hard materials

30810/64

PM-Line

Red Ring

C / 2-3 x P

SG 8

6HX

Art.-No.		Technology		Chamfer Length		Surface		Tolerance		Cutting Data	
		Page 8.1		Page 8.4		Page 8.2		Page 8.5		Page 8.6	
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂	□	▨					
M 1.7	0.35	40	8	2.5	2.1	1.35					
M 1.8	0.35	40	8	2.5	2.1	1.45					
M 2	0.4	45	8	2.8	2.1	1.6					
M 2.2	0.45	45	8	2.8	2.1	1.75					
M 2.3	0.4	45	8	2.8	2.1	1.9					
M 2.5	0.45	50	9	2.8	2.1	2.05					
M 2.6	0.45	50	9	2.8	2.1	2.15					
M 3	0.5	56	11	3.5	2.7	2.5					
M 3.5	0.6	56	12	4	3	2.9					
M 4	0.7	63	13	4.5	3.4	3.3					
M 5	0.8	70	15	6	4.9	4.2					
M 6	1	80	17	6	4.9	5.0					
M 7	1	80	17	7	5.5	6.0					
M 8	1.25	90	20	8	6.2	6.8					
M 9	1.25	90	20	9	7	7.8					
M 10	1.5	100	22	10	8	8.5					

■ avialable – intermediate size on request

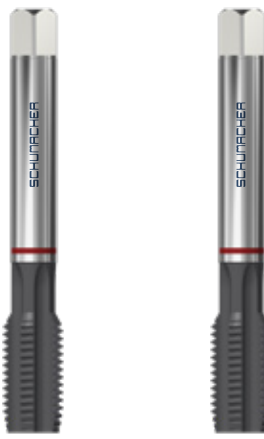
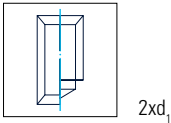
SCHUMACHER

2.11 M - ISO Metric Coarse Thread DIN 13

Machine Taps Red Ring - CONDOR

DIN 376 HSS-E PM
straight flutes
for hard materials

Group 4081
for blind and through holes



40810/4064

PM-Line

Red Ring

C / 2-3 x P

SG 8

6HX

H1 hard materials

40810/64

PM-Line

Red Ring

C / 2-3 x P

SG 8

6HX

Art.-No.		Technology		Chamfer Length		Surface		Tolerance		Cutting Data	
		Page 8.1		Page 8.4		Page 8.2		Page 8.5		Page 8.6	
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂	□	▨					
M 6	1	80	17	4.5	3.4	5.0					
M 7	1	80	17	5.5	4.3	6.0					
M 8	1.25	90	20	6	4.9	6.8					
M 9	1.25	90	20	7	5.5	7.8					
M 10	1.5	100	22	7	5.5	8.5					
M 12	1.75	110	24	9	7	10.2					
M 14	2	110	26	11	9	12.0					
M 16	2	110	27	12	9	14.0					
M 18	2.5	125	30	14	11	15.5					
M 20	2.5	140	32	16	12	17.5					
M 22	2.5	140	32	18	14.5	19.5					
M 24	3	160	34	18	14.5	21.0					
M 27	3	160	36	20	16	24.0					
M 30	3.5	180	40	22	18	26.5					
M 33	3.5	180	40	25	20	29.5					
M 36	4	200	50	28	22	32.0					

■ avialable – intermediate size on request

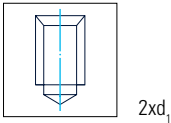
SCHUMACHER

2.12 M - ISO Metric Coarse Thread DIN 13

Machine Taps

DIN 371 HSS-E PM
straight flutes
for magnesium alloys

Group 3090
for blind holes



Cutting Data



Art.-No.							Art.-No.						
Technology Page 8.1							Technology Page 8.1						
Chamfer Length Page 8.4							Chamfer Length Page 8.4						
Surface Page 8.2							Surface Page 8.2						
Tolerance Page 8.5							Tolerance Page 8.5						
Cutting Data Page 8.6							Cutting Data Page 8.6						
30900/4060							31000/02						
PM-Line							PM-Line						
Internal coolant							B / 3,5-5 x P						
C / 2-3 x P							CrN						
SG 4							ISO2 (6H)						
ISO2 (6H)							N1 aluminium alloys						
N8 magnesium alloys							N6 thermoplastics						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂			Ø d ₁	P _{mm}	L ₁	L ₂	d ₂		
M 1.7	0.35	40	8	2.5	2.1	1.35	M 1.7	0.35	40	8	2.5	2.1	1.35
M 1.8	0.35	40	8	2.5	2.1	1.45	M 1.8	0.35	40	8	2.5	2.1	1.45
M 2	0.4	45	8	2.8	2.1	1.6	M 2	0.4	45	8	2.8	2.1	1.6
M 2.2	0.45	45	8	2.8	2.1	1.75	M 2.2	0.45	45	8	2.8	2.1	1.75
M 2.3	0.4	45	8	2.8	2.1	1.9	M 2.3	0.4	45	8	2.8	2.1	1.9
M 2.5	0.45	50	9	2.8	2.1	2.05	M 2.5	0.45	50	9	2.8	2.1	2.05
M 2.6	0.45	50	9	2.8	2.1	2.15	M 2.6	0.45	50	9	2.8	2.1	2.15
M 3	0.5	56	11	3.5	2.7	2.5	M 3	0.5	56	11	3.5	2.7	2.5
M 3.5	0.6	56	12	4	3	2.9	M 3.5	0.6	56	12	4	3	2.9
M 4	0.7	63	13	4.5	3.4	3.3	M 4	0.7	63	13	4.5	3.4	3.3
M 5	0.8	70	15	6	4.9	4.2	M 5	0.8	70	15	6	4.9	4.2
M 6	1	80	17	6	4.9	5.0	M 6	1	80	17	6	4.9	5.0
M 7	1	80	17	7	5.5	6.0	M 7	1	80	17	7	5.5	6.0
M 8	1.25	90	20	8	6.2	6.8	M 8	1.25	90	20	8	6.2	6.8
M 9	1.25	90	20	9	7	7.8	M 9	1.25	90	20	9	7	7.8
M 10	1.5	100	22	10	8	8.5	M 10	1.5	100	22	10	8	8.5

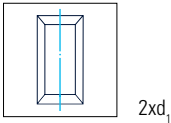
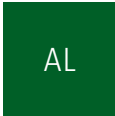
■ avialable – intermediate size on request

2.13 M - ISO Metric Coarse Thread DIN 13

Machine Taps - MISTRAL

DIN 371 HSS-E PM
Spiral point
for aluminium and bronze alloys

Group 3100
for through holes



Cutting Data



High Speed Cutting



High Speed Cutting

DLC
Diamond like Carbon

Innovative surface coating technologies with high hardness and low frictional coefficient

■ avialable – intermediate size on request

2.14 M - ISO Metric Coarse Thread DIN 13

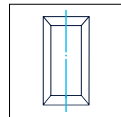
Machine Taps - MISTRAL

DIN 376 HSS-E PM

Spiral point
for aluminium and bronze alloys

Group 4100
for through holes

AL

 $2x d_1$ 

High Speed Cutting
by Schumacher



High Speed Cutting
by Schumacher

SCHUMACHER

Cutting Data



DLC
Diamond like Carbon

Innovative surface coating technologies with high hardness and low frictional coefficient

2.15 M - ISO Metric Coarse Thread DIN 13

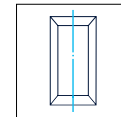
Machine Taps

DIN 371 HSS-E

Spiral point
for general construction steel

Group 3110
for through holes

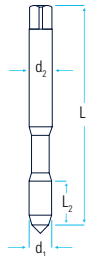
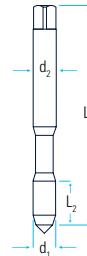
STEEL

 $2x d_1$ 

SCHUMACHER

Cutting Data



Art.-No.		Technology  Page 8.1				41000/02		41000/24		Art.-No.		Technology  Page 8.1				31100		31100 B		31100 E	
PM-Line 		PM-Line 				High Volume 															
B / 3,5-5 x P																					
CrN		DLC				bright		bright				bright									
ISO2 (6H)		ISO2 (6H)				ISO2 (6H) ISO1 (4H)		ISO3 (6G)				7G									
Cutting Data  Page 8.6		Page 8.6				N1 aluminium alloys		N6 thermoplastics				Page 8.6				P1 general construction steel		K2+K3 spheroidal and malleable cast iron			
Ø d ₁		P _{mm}	L ₁	L ₂	d ₂					Ø d ₁		P _{mm}	L ₁	L ₂	d ₂						
M 6	1	80	17	4.5	3.4	5.0				M 1	0.25	40	5.5	2.5	2.1	0.75					
M 7	1	80	17	5.5	4.3	6.0				M 1.2	0.25	40	5.5	2.5	2.1	0.95					
M 8	1.25	90	20	6	4.9	6.8				M 1.4	0.3	40	7	2.5	2.1	1.1					
M 9	1.25	90	20	7	5.5	7.8				M 1.6	0.35	40	8	2.5	2.1	1.25					
M 10	1.5	100	22	7	5.5	8.5				M 1.7	0.35	40	8	2.5	2.1	1.35					
M 12	1.75	110	24	9	7	10.2				M 1.8	0.35	40	8	2.5	2.1	1.45					
M 14	2	110	26	11	9	12.0				M 2	0.4	45	8	2.8	2.1	1.6					
M 16	2	110	27	12	9	14.0				M 2.2	0.45	45	8	2.8	2.1	1.75					
M 18	2.5	125	30	14	11	15.5				M 2.3	0.4	45	8	2.8	2.1	1.9					
M 20	2.5	140	32	16	12	17.5				M 2.5	0.45	50	9	2.8	2.1	2.05					
M 22	2.5	140	32	18	14.5	19.5				M 2.6	0.45	50	9	2.8	2.1	2.15					
M 24	3	160	34	18	14.5	21.0															
M 27	3	160	36	20	16	24.0															
M 30	3.5	180	40	22	18	26.5															
M 33	3.5	180	40	25	20	29.5															
M 36	4	200	50	28	22	32.0															
Continuation »																					

■ available – intermediate size on request

■ available – intermediate size on request

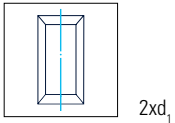
■ available – intermediate size on request

2.18 M - ISO Metric Coarse Thread DIN 13

Machine Taps

DIN 371 HSS-E
Spiral point
for general construction steel

Group 3110
for through holes



SCHUMACHER



High Speed Cutting
by Schumacher

Art-No.							Art-No.						
Technology Page 8.1							Technology Page 8.1						
Chamfer Length Page 8.4							Chamfer Length Page 8.4						
Surface Page 8.2							Surface Page 8.2						
Tolerance Page 8.5							Tolerance Page 8.5						
Cutting Data Page 8.6							Cutting Data Page 8.6						
31105							41100/25						
LH							High Volume						
bright							2 x L1						
ISO2 (6H)							B / 3,5-5 x P						
P1 general construction steel							TiN						
							bright						
							ISO2 (6H)						
							P1 general construction steel K2+K3 spheroidal and malleable cast iron						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂			Ø d ₁	P _{mm}	L ₁	L ₂	d ₂		
M 1.7	0.35	40	8	2.5	2.1	1.35	M 6	1	80	17	4.5	3.4	5.0
M 1.8	0.35	40	8	2.5	2.1	1.45	M 7	1	80	17	5.5	4.3	6.0
M 2	0.4	45	8	2.8	2.1	1.6	M 8	1.25	90	20	6	4.9	6.8
M 2.2	0.45	45	8	2.8	2.1	1.75	M 9	1.25	90	20	7	5.5	7.8
M 2.3	0.4	45	8	2.8	2.1	1.9	M 10	1.5	100	22	7	5.5	8.5
M 2.5	0.45	50	9	2.8	2.1	2.05	M 12	1.75	110	24	9	7	10.2
M 2.6	0.45	50	9	2.8	2.1	2.15	M 14	2	110	26	11	9	12.0
M 3	0.5	56	11	3.5	2.7	2.5	M 16	2	110	27	12	9	14.0
M 3.5	0.6	56	12	4	3	2.9	M 18	2.5	125	30	14	11	15.5
M 4	0.7	63	13	4.5	3.4	3.3	M 20	2.5	140	32	16	12	17.5
M 5	0.8	70	15	6	4.9	4.2	M 22	2.5	140	32	18	14.5	19.5
M 6	1	80	17	6	4.9	5.0	M 24	3	160	34	18	14.5	21.0
M 7	1	80	17	7	5.5	6.0	M 27	3	160	36	20	16	24.0
M 8	1.25	90	20	8	6.2	6.8	M 30	3.5	180	40	22	18	26.5
M 9	1.25	90	20	9	7	7.8	M 33	3.5	180	40	25	20	29.5
M 10	1.5	100	22	10	8	8.5	M 36	4	200	50	28	22	32.0

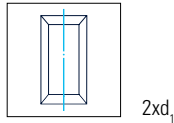
■ available – intermediate size on request

2.19 M - ISO Metric Coarse Thread DIN 13

Machine Taps

DIN 376 HSS-E
Spiral point
for general construction steel

Group 4110
for through holes



SCHUMACHER



High Speed Cutting
by Schumacher

■ available – intermediate size on request

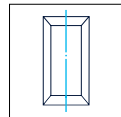
2.20 M - ISO Metric Coarse Thread DIN 13

Machine Taps - NUMERIC

DIN 371 HSS-E PM

Spiral point
for steel

Group 3113
for through holes

 $2x d_1$ 

High Speed Cutting
by Schumacher



Cutting Data

NUMERIC
Supporting Digital Production

For use on CNC machines
with synchronized machining

2.21 M - ISO Metric Coarse Thread DIN 13

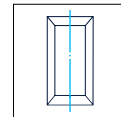
Machine Taps - NUMERIC

DIN 376 HSS-E PM

Spiral point
for steel

Group 4113
for through holes

STEEL

 $2x d_1$ 

High Speed Cutting
by Schumacher



Cutting Data

NUMERIC
Supporting Digital Production

For use on CNC machines
with synchronized machining

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■ available – intermediate size on request

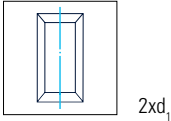
■ available – intermediate size on request

Machine Taps Blue Ring

DIN 371 HSS-E
Spiral point
for chemical resistant steel

Group 3120
for through holes

INOX
Stainless



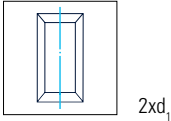
Art-No.							Art-No.						
Technology Page 8.1							Technology Page 8.1						
Chamfer Length Page 8.4							Chamfer Length Page 8.4						
Surface Page 8.2							Surface Page 8.2						
Tolerance Page 8.5							Tolerance Page 8.5						
Cutting Data Page 8.6							Cutting Data Page 8.6						
31200/26 High Volume Blue Ring							41200/26 Blue Ring						
31200/25 High Volume Blue Ring							41200/25 Blue Ring						
B / 3,5-5 x P							B / 3,5-5 x P						
VAP							TiN						
ISO2 (6H)							ISO2 (6H)						
P2 high strength steel							M1 chemical resistant steel						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂			Ø d ₁	P _{mm}	L ₁	L ₂	d ₂		
M 1.7	0.35	40	8	2.5	2.1	1.35	M 6	1	80	17	4.5	3.4	5.0
M 1.8	0.35	40	8	2.5	2.1	1.45	M 7	1	80	17	5.5	4.3	6.0
M 2	0.4	45	8	2.8	2.1	1.6	M 8	1.25	90	20	6	4.9	6.8
M 2.2	0.45	45	8	2.8	2.1	1.75	M 9	1.25	90	20	7	5.5	7.8
M 2.3	0.4	45	8	2.8	2.1	1.9	M 10	1.5	100	22	7	5.5	8.5
M 2.5	0.45	50	9	2.8	2.1	2.05	M 12	1.75	110	24	9	7	10.2
M 2.6	0.45	50	9	2.8	2.1	2.15	M 14	2	110	26	11	9	12.0
M 3	0.5	56	11	3.5	2.7	2.5	M 16	2	110	27	12	9	14.0
M 3.5	0.6	56	12	4	3	2.9	M 18	2.5	125	30	14	11	15.5
M 4	0.7	63	13	4.5	3.4	3.3	M 20	2.5	140	32	16	12	17.5
M 5	0.8	70	15	6	4.9	4.2	M 22	2.5	140	32	18	14.5	19.5
M 6	1	80	17	6	4.9	5.0	M 24	3	160	34	18	14.5	21.0
M 7	1	80	17	7	5.5	6.0	M 27	3	160	36	20	16	24.0
M 8	1.25	90	20	8	6.2	6.8	M 30	3.5	180	40	22	18	26.5
M 9	1.25	90	20	9	7	7.8	M 33	3.5	180	40	25	20	29.5
M 10	1.5	100	22	10	8	8.5	M 36	4	200	50	28	22	32.0

Machine Taps Blue Ring

DIN 376 HSS-E
Spiral point
for chemical resistant steel

Group 4120
for through holes

INOX
Stainless



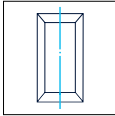
2.24 M - ISO Metric Coarse Thread DIN 13

Machine Taps Blue Ring - POLAR

DIN 371 HSS-E PM
Spiral point
for chemical resistant steel

Group 3121
for through holes

INOX
Stainless



Art-No.							Art-No.						
Technology Page 8.1							Technology Page 8.1						
Chamfer Length Page 8.4							Chamfer Length Page 8.4						
Surface Page 8.2							Surface Page 8.2						
Tolerance Page 8.5							Tolerance Page 8.5						
Cutting Data Page 8.6							Cutting Data Page 8.6						
31210/48 PM-Line Blue Ring B / 3,5-5 x P TiCN 6HX P2 high strength steel M1+M2 chemical resistant steel							41210/48 PM-Line Blue Ring B / 3,5-5 x P TiCN 6HX P2 high strength steel M1+M2 chemical resistant steel						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂			Ø d ₁	P _{mm}	L ₁	L ₂	d ₂		
M 1.7	0.35	40	8	2.5	2.1	1.35	M 6	1	80	17	4.5	3.4	5.0
M 1.8	0.35	40	8	2.5	2.1	1.45	M 7	1	80	17	5.5	4.3	6.0
M 2	0.4	45	8	2.8	2.1	1.6	M 8	1.25	90	20	6	4.9	6.8
M 2.2	0.45	45	8	2.8	2.1	1.75	M 9	1.25	90	20	7	5.5	7.8
M 2.3	0.4	45	8	2.8	2.1	1.9	M 10	1.5	100	22	7	5.5	8.5
M 2.5	0.45	50	9	2.8	2.1	2.05	M 12	1.75	110	24	9	7	10.2
M 2.6	0.45	50	9	2.8	2.1	2.15	M 14	2	110	26	11	9	12.0
M 3	0.5	56	11	3.5	2.7	2.5	M 16	2	110	27	12	9	14.0
M 3.5	0.6	56	12	4	3	2.9	M 18	2.5	125	30	14	11	15.5
M 4	0.7	63	13	4.5	3.4	3.3	M 20	2.5	140	32	16	12	17.5
M 5	0.8	70	15	6	4.9	4.2	M 22	2.5	140	32	18	14.5	19.5
M 6	1	80	17	6	4.9	5.0	M 24	3	160	34	18	14.5	21.0
M 7	1	80	17	7	5.5	6.0	M 27	3	160	36	20	16	24.0
M 8	1.25	90	20	8	6.2	6.8	M 30	3.5	180	40	22	18	26.5
M 9	1.25	90	20	9	7	7.8	M 33	3.5	180	40	25	20	29.5
M 10	1.5	100	22	10	8	8.5	M 36	4	200	50	28	22	32.0

■ avialable – intermediate size on request

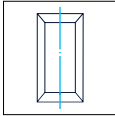
2.25 M - ISO Metric Coarse Thread DIN 13

Machine Taps Blue Ring - POLAR

DIN 376 HSS-E PM
Spiral point
for chemical resistant steel

Group 4121
for through holes

INOX
Stainless



2.26 M - ISO Metric Coarse Thread DIN 13

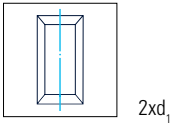
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Machine Taps Red Ring - TYPHOON B

DIN 371 HSS-E PM

Spiral point
for high strength steel

Group 3130
for through holes



Art-No. Technology Page 8.1 Chamfer Length Page 8.4 Surface Page 8.2 Tolerance Page 8.5 Cutting Data Page 8.6							Art-No. Technology Page 8.1 Chamfer Length Page 8.4 Surface Page 8.2 Tolerance Page 8.5 Cutting Data Page 8.6						
31300/48							41300/48						
PM-Line							PM-Line						
Red Ring							Red Ring						
B / 3,5-5 x P							B / 3,5-5 x P						
TiCN							TiCN						
ISO2 (6H)							ISO2 (6H)						
P2 high strength steel M1 chemical resistant steel							P2 high strength steel M1 chemical resistant steel						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂			Ø d ₁	P _{mm}	L ₁	L ₂	d ₂		
M 1.7	0.35	40	8	2.5	2.1	1.35	M 6	1	80	17	4.5	3.4	5.0
M 1.8	0.35	40	8	2.5	2.1	1.45	M 7	1	80	17	5.5	4.3	6.0
M 2	0.4	45	8	2.8	2.1	1.6	M 8	1.25	90	20	6	4.9	6.8
M 2.2	0.45	45	8	2.8	2.1	1.75	M 9	1.25	90	20	7	5.5	7.8
M 2.3	0.4	45	8	2.8	2.1	1.9	M 10	1.5	100	22	7	5.5	8.5
M 2.5	0.45	50	9	2.8	2.1	2.05	M 12	1.75	110	24	9	7	10.2
M 2.6	0.45	50	9	2.8	2.1	2.15	M 14	2	110	26	11	9	12.0
M 3	0.5	56	11	3.5	2.7	2.5	M 16	2	110	27	12	9	14.0
M 3.5	0.6	56	12	4	3	2.9	M 18	2.5	125	30	14	11	15.5
M 4	0.7	63	13	4.5	3.4	3.3	M 20	2.5	140	32	16	12	17.5
M 5	0.8	70	15	6	4.9	4.2	M 22	2.5	140	32	18	14.5	19.5
M 6	1	80	17	6	4.9	5.0	M 24	3	160	34	18	14.5	21.0
M 7	1	80	17	7	5.5	6.0	M 27	3	160	36	20	16	24.0
M 8	1.25	90	20	8	6.2	6.8	M 30	3.5	180	40	22	18	26.5
M 9	1.25	90	20	9	7	7.8	M 33	3.5	180	40	25	20	29.5
M 10	1.5	100	22	10	8	8.5	M 36	4	200	50	28	22	32.0

■ avialable – intermediate size on request

2.27 M - ISO Metric Coarse Thread DIN 13

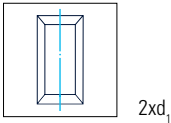
SCHUMACHER

Machine Taps Red Ring - TYPHOON B

DIN 376 HSS-E PM

Spiral point
for high strength steel

Group 4130
for through holes

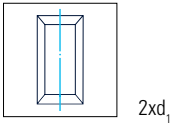


Machine Taps Red Ring

DIN 371 HSS-E PM

Spiral point
for nickel alloys

Group 3140
for through holes



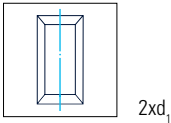
Art-No.							Art-No.						
Technology Page 8.1							Technology Page 8.1						
Chamfer Length Page 8.4							Chamfer Length Page 8.4						
Surface Page 8.2							Surface Page 8.2						
Tolerance Page 8.5							Tolerance Page 8.5						
Cutting Data Page 8.6							Cutting Data Page 8.6						
31400							41400						
PM-Line							PM-Line						
Red Ring							Red Ring						
B / 3,5-5 x P							B / 3,5-5 x P						
bright							bright						
ISO2 (6H)							ISO2 (6H)						
P2 high strength steel S1 titanium alloys S2 nickel alloys							P2 high strength steel S1 titanium alloys S2 nickel alloys						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂			Ø d ₁	P _{mm}	L ₁	L ₂	d ₂		
M 1.7	0.35	40	8	2.5	2.1	1.35	M 6	1	80	17	4.5	3.4	5.0
M 1.8	0.35	40	8	2.5	2.1	1.45	M 7	1	80	17	5.5	4.3	6.0
M 2	0.4	45	8	2.8	2.1	1.6	M 8	1.25	90	20	6	4.9	6.8
M 2.2	0.45	45	8	2.8	2.1	1.75	M 9	1.25	90	20	7	5.5	7.8
M 2.3	0.4	45	8	2.8	2.1	1.9	M 10	1.5	100	22	7	5.5	8.5
M 2.5	0.45	50	9	2.8	2.1	2.05	M 12	1.75	110	24	9	7	10.2
M 2.6	0.45	50	9	2.8	2.1	2.15	M 14	2	110	26	11	9	12.0
M 3	0.5	56	11	3.5	2.7	2.5	M 16	2	110	27	12	9	14.0
M 3.5	0.6	56	12	4	3	2.9	M 18	2.5	125	30	14	11	15.5
M 4	0.7	63	13	4.5	3.4	3.3	M 20	2.5	140	32	16	12	17.5
M 5	0.8	70	15	6	4.9	4.2	M 22	2.5	140	32	18	14.5	19.5
M 6	1	80	17	6	4.9	5.0	M 24	3	160	34	18	14.5	21.0
M 7	1	80	17	7	5.5	6.0	M 27	3	160	36	20	16	24.0
M 8	1.25	90	20	8	6.2	6.8	M 30	3.5	180	40	22	18	26.5
M 9	1.25	90	20	9	7	7.8	M 33	3.5	180	40	25	20	29.5
M 10	1.5	100	22	10	8	8.5	M 36	4	200	50	28	22	32.0

Machine Taps Red Ring

DIN 376 HSS-E PM

Spiral point
for nickel alloys

Group 4140
for through holes



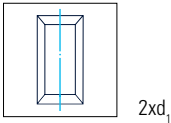
2.34 M - ISO Metric Coarse Thread DIN 13

Machine Taps Yellow Ring

DIN 371 HSS-E PM

Spiral point
for titanium alloys

Group 3180
for through holes



Cutting Data



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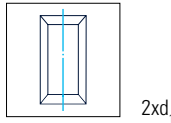
2.35 M - ISO Metric Coarse Thread DIN 13

Machine Taps Yellow Ring

DIN 376 HSS-E PM

Spiral point
for titanium alloys

Group 4180
for through holes



Cutting Data



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31800							41800						
PM-Line							PM-Line						
Yellow Ring							Yellow Ring						
B / 3,5-5 x P							B / 3,5-5 x P						
bright							bright						
ISO2 (6H)							ISO2 (6H)						
P2 high strength steel S1 titanium alloys							P2 high strength steel S1 titanium alloys						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂	□	▨	Ø d ₁	P _{mm}	L ₁	L ₂	d ₂	□	▨
M 1.7	0.35	40	8	2.5	2.1	1.35	M 6	1	80	17	4.5	3.4	5.0
M 1.8	0.35	40	8	2.5	2.1	1.45	M 7	1	80	17	5.5	4.3	6.0
M 2	0.4	45	8	2.8	2.1	1.6	M 8	1.25	90	20	6	4.9	6.8
M 2.2	0.45	45	8	2.8	2.1	1.75	M 9	1.25	90	20	7	5.5	7.8
M 2.3	0.4	45	8	2.8	2.1	1.9	M 10	1.5	100	22	7	5.5	8.5
M 2.5	0.45	50	9	2.8	2.1	2.05	M 12	1.75	110	24	9	7	10.2
M 2.6	0.45	50	9	2.8	2.1	2.15	M 14	2	110	26	11	9	12.0
M 3	0.5	56	11	3.5	2.7	2.5	M 16	2	110	27	12	9	14.0
M 3.5	0.6	56	12	4	3	2.9	M 18	2.5	125	30	14	11	15.5
M 4	0.7	63	13	4.5	3.4	3.3	M 20	2.5	140	32	16	12	17.5
M 5	0.8	70	15	6	4.9	4.2	M 22	2.5	140	32	18	14.5	19.5
M 6	1	80	17	6	4.9	5.0	M 24	3	160	34	18	14.5	21.0
M 7	1	80	17	7	5.5	6.0	M 27	3	160	36	20	16	24.0
M 8	1.25	90	20	8	6.2	6.8	M 30	3.5	180	40	22	18	26.5
M 9	1.25	90	20	9	7	7.8	M 33	3.5	180	40	25	20	29.5
M 10	1.5	100	22	10	8	8.5	M 36	4	200	50	28	22	32.0

■ avialable – intermediate size on request

■ avialable – intermediate size on request

2.36 M - ISO Metric Coarse Thread DIN 13

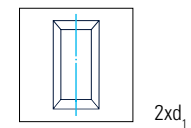
SCHUMACHER

Machine Taps Black Ring

DIN 371 HSS-E

Spiral point
for universal use

Group 3190
for through holes



31900/26	41900/25
High Volume 	High Volume 
Black Ring	Black Ring
B / 3,5-5 x P	B / 3,5-5 x P
VAP	TiN
ISO2 (6H) ISO1 (4H)	ISO2 (6H)
P1 general construction steel	M1 chemical resistant steel
N1 aluminium alloys	N3 copper alloys

■ available – intermediate size on request

2.37 M - ISO Metric Coarse Thread DIN 13

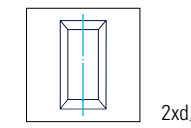
SCHUMACHER

Machine Taps Black Ring

DIN 371 HSS-E

Spiral point
for universal use

Group 3190
for through holes



Art.-No.					
Technology		Page 8.1			
Chamfer Length		Page 8.4			
Surface		Page 8.2			
Tolerance		Page 8.5			
Cutting Data		Page 8.6			

■ available – intermediate size on request

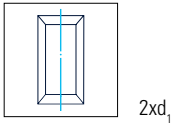
2.40 M - ISO Metric Coarse Thread DIN 13

Machine Taps Black Ring

DIN 376 HSS-E-PM

Spiral point
for universal use

Group 4190
for through holes



SCHUMACHER

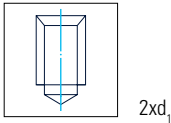
2.41 M - ISO Metric Coarse Thread DIN 13

Machine Taps

DIN 371 HSS-E

RH spiral flutes 15°
for general construction steel

Group 3200
for blind holes



SCHUMACHER

Art.-No. Technology Page 8.1 Chamfer Length Page 8.4 Surface Page 8.2 Tolerance Page 8.5 Cutting Data Page 8.6							Art.-No. Technology Page 8.1 Chamfer Length Page 8.4 Surface Page 8.2 Tolerance Page 8.5 Cutting Data Page 8.6						
41900/5760							32000						
PM-Line							High Volume						
Black Ring							Internal coolant						
B / 3,5-5 x P							C / 2-3 x P						
SG 4							bright						
ISO2 (6H)							ISO2 (6H)						
P1 general construction steel M1 chemical resistant steel N1 Aluminium N3 copper alloys							TiN						
							ISO2 (6H)						
							P1 general construction steel K2+K3 spheroidal and malleable cast iron						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂			Ø d ₁	P _{mm}	L ₁	L ₂	d ₂		
M 6	1	80	17	4.5	3.4	5.0	M 1.7	0.35	40	8	2.5	2.1	1.35
M 7	1	80	17	5.5	4.3	6.0	M 1.8	0.35	40	8	2.5	2.1	1.45
M 8	1.25	90	20	6	4.9	6.8	M 2	0.4	45	8	2.8	2.1	1.6
M 9	1.25	90	20	7	5.5	7.8	M 2.2	0.45	45	8	2.8	2.1	1.75
M 10	1.5	100	22	7	5.5	8.5	M 2.3	0.4	45	8	2.8	2.1	1.9
M 12	1.75	110	24	9	7	10.2	M 2.5	0.45	50	9	2.8	2.1	2.05
M 14	2	110	26	11	9	12.0	M 2.6	0.45	50	9	2.8	2.1	2.15
M 16	2	110	27	12	9	14.0	M 3	0.5	56	6	3.5	2.7	2.5
M 18	2.5	125	30	14	11	15.5	M 3.5	0.6	56	7	4	3	2.9
M 20	2.5	140	32	16	12	17.5	M 4	0.7	63	7	4.5	3.4	3.3
M 22	2.5	140	32	18	14.5	19.5	M 5	0.8	70	8	6	4.9	4.2
M 24	3	160	34	18	14.5	21.0	M 6	1	80	10	6	4.9	5.0
M 27	3	160	36	20	16	24.0	M 7	1	80	10	7	5.5	6.0
M 30	3.5	180	40	22	18	26.5	M 8	1.25	90	13	8	6.2	6.8
M 33	3.5	180	40	25	20	29.5	M 9	1.25	90	13	9	7	7.8
M 36	4	200	50	28	22	32.0	M 10	1.5	100	15	10	8	8.5

■ available – intermediate size on request

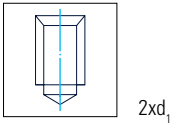
■ available – intermediate size on request

2.44 M - ISO Metric Coarse Thread DIN 13

Machine Taps Red Ring

DIN 376 HSS-E
RH spiral flutes 20°
for high strength steel

Group 4240
for blind holes



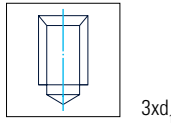
SCHUMACHER

2.45 M - ISO Metric Coarse Thread DIN 13

Machine Taps Red Ring

internal standard HSS-E
RH spiral flutes 20°
for high strength steel

Group 4241
for deep blind holes ≤ 3xd1



SCHUMACHER

Art-No.							Art-No.						
Technology Page 8.1							Technology Page 8.1						
Chamfer Length Page 8.4							Chamfer Length Page 8.4						
Surface Page 8.2							Surface Page 8.2						
Tolerance Page 8.5							Tolerance Page 8.5						
Cutting Data Page 8.6							Cutting Data Page 8.6						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂			Ø d ₁	P _{mm}	L ₁	L ₂	d ₂		
M 6	1	80	10	4.5	3.4	5.0	M 20	2.5	140	25	16	12	17.5
M 7	1	80	10	5.5	4.3	6.0	M 22	2.5	140	25	18	14.5	19.5
M 8	1.25	90	14	6	4.9	6.8	M 24	3	160	30	18	14.5	21.0
M 9	1.25	90	14	7	5.5	7.8	M 27	3	160	30	20	16	24.0
M 10	1.5	100	16	7	5.5	8.5	M 30	3.5	180	35	22	18	26.5
M 12	1.75	110	18	9	7	10.2	M 33	3.5	180	35	25	20	29.5
M 14	2	110	20	11	9	12.0	M 36	4	220	40	28	22	32.0
M 16	2	110	20	12	9	14.0	M 39	4	240	40	32	24	35
M 18	2.5	125	25	14	11	15.5	M42	4.5	240	45	32	24	37.5
M 20	2.5	140	25	16	12	17.5	M45	4.5	270	45	36	29	40.5
M 22	2.5	140	25	18	14.5	19.5	M48	5	270	50	36	29	43
M 24	3	160	30	18	14.5	21.0							
M 27	3	160	30	20	16	24.0							
M 30	3.5	180	35	22	18	26.5							
M 33	3.5	180	35	25	20	29.5							
M 36	4	200	40	28	22	32.0							

■ avialable – intermediate size on request

■ avialable – intermediate size on request

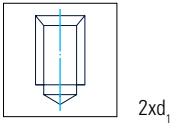
2.46 M - ISO Metric Coarse Thread DIN 13

Machine Taps Red Ring

DIN 371 HSS-E PM

RH spiral flutes 20°
for nickel alloys

Group 3260
for blind holes



Cutting Data



SCHUMACHER

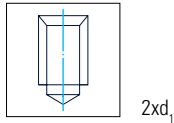
2.47 M - ISO Metric Coarse Thread DIN 13

Machine Taps Red Ring

DIN 376 HSS-E PM

RH spiral flutes 20°
for nickel alloys

Group 4260
for blind holes



Cutting Data



SCHUMACHER

32600							42600						
PM-Line							PM-Line						
Red Ring							Red Ring						
3-4 x P							3-4 x P						
bright							bright						
ISO2 (6H)							ISO2 (6H)						
P2 high strength steel S1 titanium alloys S2 nickel alloys							P2 high strength steel S1 titanium alloys S2 nickel alloys						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂	□	▨	Ø d ₁	P _{mm}	L ₁	L ₂	d ₂	□	▨
M 1.7	0.35	40	8	2.5	2.1	1.35	M 6	1	80	17	4.5	3.4	5.0
M 1.8	0.35	40	8	2.5	2.1	1.45	M 7	1	80	17	5.5	4.3	6.0
M 2	0.4	45	8	2.8	2.1	1.6	M 8	1.25	90	20	6	4.9	6.8
M 2.2	0.45	45	8	2.8	2.1	1.75	M 9	1.25	90	20	7	5.5	7.8
M 2.3	0.4	45	8	2.8	2.1	1.9	M 10	1.5	100	22	7	5.5	8.5
M 2.5	0.45	50	9	2.8	2.1	2.05	M 12	1.75	110	24	9	7	10.2
M 2.6	0.45	50	9	2.8	2.1	2.15	M 14	2	110	26	11	9	12.0
M 3	0.5	56	11	3.5	2.7	2.5	M 16	2	110	27	12	9	14.0
M 3.5	0.6	56	12	4	3	2.9	M 18	2.5	125	30	14	11	15.5
M 4	0.7	63	13	4.5	3.4	3.3	M 20	2.5	140	32	16	12	17.5
M 5	0.8	70	15	6	4.9	4.2	M 22	2.5	140	32	18	14.5	19.5
M 6	1	80	17	6	4.9	5.0	M 24	3	160	34	18	14.5	21.0
M 7	1	80	17	7	5.5	6.0	M 27	3	160	36	20	16	24.0
M 8	1.25	90	20	8	6.2	6.8	M 30	3.5	180	40	22	18	26.5
M 9	1.25	90	20	9	7	7.8	M 33	3.5	180	40	25	20	29.5
M 10	1.5	100	22	10	8	8.5	M 36	4	200	50	28	22	32.0

■ available – intermediate size on request

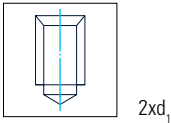
■ available – intermediate size on request

2.48 M - ISO Metric Coarse Thread DIN 13

Machine Taps Yellow Ring

DIN 371 HSS-E PM
RH spiral flutes 20°
for titanium alloys

Group 3280
for blind holes



SCHUMACHER



Art.-No.													
Technology		32800											
		PM-Line											
		Yellow Ring											
Chamfer Length		3-4 x P											
Surface		bright											
Tolerance		ISO2 (6H)											
Cutting Data		P2 high strength steel S1 titanium alloys											
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂	□	▨							
M 1.7	0.35	40	8	2.5	2.1	1.35							
M 1.8	0.35	40	8	2.5	2.1	1.45							
M 2	0.4	45	8	2.8	2.1	1.6							
M 2.2	0.45	45	8	2.8	2.1	1.75							
M 2.3	0.4	45	8	2.8	2.1	1.9							
M 2.5	0.45	50	9	2.8	2.1	2.05							
M 2.6	0.45	50	9	2.8	2.1	2.15							
M 3	0.5	56	11	3.5	2.7	2.5							
M 3.5	0.6	56	12	4	3	2.9							
M 4	0.7	63	13	4.5	3.4	3.3	■						
M 5	0.8	70	15	6	4.9	4.2	■						
M 6	1	80	17	6	4.9	5.0	■						
M 7	1	80	17	7	5.5	6.0							
M 8	1.25	90	20	8	6.2	6.8	■						
M 9	1.25	90	20	9	7	7.8							
M 10	1.5	100	22	10	8	8.5	■						

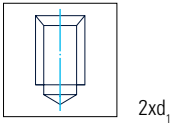
■ avialable – intermediate size on request

2.49 M - ISO Metric Coarse Thread DIN 13

Machine Taps Yellow Ring

DIN 376 HSS-E PM
RH spiral flutes 20°
for titanium alloys

Group 4280
for blind holes



SCHUMACHER



Art.-No.													
Technology		42800											
		PM-Line											
		Yellow Ring											
Chamfer Length		3-4 x P											
Surface		bright											
Tolerance		ISO2 (6H)											
Cutting Data		P2 high strength steel S1 titanium alloys											
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂	□	▨							
M 6	1	80	17	4.5	3.4	5.0							
M 7	1	80	17	5.5	4.3	6.0							
M 8	1.25	90	20	6	4.9	6.8							
M 9	1.25	90	20	7	5.5	7.8							
M 10	1.5	100	22	7	5.5	8.5							
M 12	1.75	110	24	9	7	10.2	■						
M 14	2	110	26	11	9	12.0							
M 16	2	110	27	12	9	14.0	■						
M 18	2.5	125	30	14	11	15.5							
M 20	2.5	140	32	16	12	17.5	■						
M 22	2.5	140	32	18	14.5	19.5							
M 24	3	160	34	18	14.5	21.0							
M 27	3	160	36	20	16	24.0							
M 30	3.5	180	40	22	18	26.5							
M 33	3.5	180	40	25	20	29.5							
M 36	4	200	50	28	22	32.0							

■ avialable – intermediate size on request

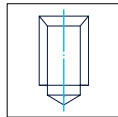
2.50 M - ISO Metric Coarse Thread DIN 13

SCHUMACHER

Machine Taps

DIN 371 HSS-E
RH spiral flutes 40°
for general construction steel

Group 3300
for blind holes

 $2x d_1$ 

Art.-No.			
Technology	 Page 8.1		
Chamfer Length	 Page 8.4		
Surface	 Page 8.2		
Tolerance	 Page 8.5		
Cutting Data	 Page 8.6		

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■ available – intermediate size on request

2.51 M - ISO Metric Coarse Thread DIN 13

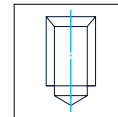
SCHUMACHER

Machine Taps

DIN 371 HSS-E
RH spiral flutes 40°
for general construction steel

Group 3300
for blind holes

STEEL

 $2x d_1$ 

Art.-No.			
Technology	 Page 8.1		
Chamfer Length	 Page 8.4		
Surface	 Page 8.2		
Tolerance	 Page 8.5		
Cutting Data	 Page 8.6		

Ø d ₁	P _{mm}	L ₁	L ₂	d ₂									
M 3	0.5	56	6	3.5	2.7	2.5		■		■		■	
M 3.5	0.6	56	7	4	3	2.9		■					
M 4	0.7	63	7	4.5	3.4	3.3		■		■		■	
M 5	0.8	70	8	6	4.9	4.2		■		■		■	
M 6	1	80	10	6	4.9	5.0		■		■		■	
M 7	1	80	10	7	5.5	6.0		■					
M 8	1.25	90	13	8	6.2	6.8		■		■		■	
M 9	1.25	90	13	9	7	7.8							
M 10	1.5	100	15	10	8	8.5		■		■		■	
M 12	1.75	110	18	12	9	10.2							

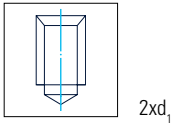
■ available – intermediate size on request

2.54 M - ISO Metric Coarse Thread DIN 13

Machine Taps

DIN 376 HSS-E
RH spiral flutes 40°
for general construction steel

Group 4300
for blind holes



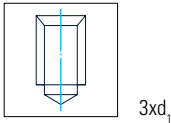
SCHUMACHER

2.55 M - ISO Metric Coarse Thread DIN 13

Machine Taps - BLIZZARD

DIN 371 HSS-E-PM
RH spiral flutes 45°
for general construction steel

Group 3301
for blind holes



SCHUMACHER

Art.-No. Technology Page 8.1 Chamfer Length Page 8.4 Surface Page 8.2 Tolerance Page 8.5 Cutting Data Page 8.6							33010/6368 PM-Line C / 2-3 x P SG 7 6HX P1 general construction steel N1 aluminium alloys N6 thermoplastics						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂									
M 6	1	80	10	4.5	3.4	5.0							
M 7	1	80	10	5.5	4.3	6.0							
M 8	1.25	90	14	6	4.9	6.8							
M 9	1.25	90	14	7	5.5	7.8							
M 10	1.5	100	16	7	5.5	8.5							
M 12	1.75	110	18	9	7	10.2	■		■				
M 14	2	110	20	11	9	12.0	■		■				
M 16	2	110	20	12	9	14.0	■		■				
M 18	2.5	125	25	14	11	15.5							
M 20	2.5	140	25	16	12	17.5	■		■				
M 22	2.5	140	25	18	14.5	19.5							
M 24	3	160	30	18	14.5	21.0	■						
M 27	3	160	30	20	16	24.0							
M 30	3.5	180	35	22	18	26.5	■						
M 33	3.5	180	35	25	20	29.5							
M 36	4	200	40	28	22	32.0							

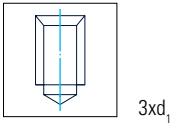
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂									
M 1.7	0.35	40	8	2.5	2.1	1.35							
M 1.8	0.35	40	8	2.5	2.1	1.45							
M 2	0.4	45	8	2.8	2.1	1.6							
M 2.2	0.45	45	8	2.8	2.1	1.75							
M 2.3	0.4	45	8	2.8	2.1	1.9							
M 2.5	0.45	50	9	2.8	2.1	2.05							
M 2.6	0.45	50	9	2.8	2.1	2.15							
M 3	0.5	56	6	3.5	2.7	2.5		■					
M 3.5	0.6	56	7	4	3	2.9							
M 4	0.7	63	7	4.5	3.4	3.3		■					
M 5	0.8	70	8	6	4.9	4.2		■					
M 6	1	80	10	6	4.9	5.0		■					
M 7	1	80	10	7	5.5	6.0							
M 8	1.25	90	13	8	6.2	6.8		■					
M 9	1.25	90	13	9	7	7.8							
M 10	1.5	100	15	10	8	8.5		■					

2.56 M - ISO Metric Coarse Thread DIN 13

Machine Taps - BLIZZARD

DIN 376 HSS-E-PM
RH spiral flutes 45°
for general construction steel

Group 4301
for blind holes



High Speed Cutting
by Schumacher



Cutting Data

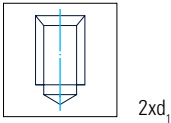
SCHUMACHER

2.57 M - ISO Metric Coarse Thread DIN 13

Machine Taps - NUMERIC

DIN 371 HSS-E PM
RH spiral flutes 45°
for steel

Group 3303
for blind holes



High Speed Cutting
by Schumacher



High Speed Cutting
by Schumacher

DIN 1835-B



Cutting Data

NUMERIC
Supporting Digital Production
For use on CNC machines
with synchronized machining

SCHUMACHER

Art-No.							Art-No.						
Technology Page 8.1							Technology Page 8.1						
Chamfer Length Page 8.4							Chamfer Length Page 8.4						
Surface Page 8.2							Surface Page 8.2						
Tolerance Page 8.5							Tolerance Page 8.5						
Cutting Data Page 8.6							Cutting Data Page 8.6						
43010/63							33030/48						
PM-Line							PM-Line						
C / 2-3 x P							C / 2-3 x P						
SG 7							TiCN						
6HX							6HX						
P1 general construction steel							P1 general construction steel						
N1 aluminium alloys							P2 high strength steel						
N6 thermoplastics							M1 chemical resistant steel						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂			Ø d ₁	P _{mm}	L ₁	L ₂	d ₂		
M 6	1	80	10	4.5	3.4	5.0	M 3	0.5	56	5	3.5	2.7	2.5
M 7	1	80	10	5.5	4.3	6.0	M 4	0.7	63	6	4.5	3.4	3.3
M 8	1.25	90	14	6	4.9	6.8	M 5	0.8	70	7	6	4.9	4.2
M 9	1.25	90	14	7	5.5	7.8	M 6	1	80	8	6	4.9	5.0
M 10	1.5	100	16	7	5.5	8.5	M 7	1	80	8	7	5.5	6.0
M 12	1.75	110	18	9	7	10.2	M 8	1.25	90	10	8	6.2	6.8
M 14	2	110	20	11	9	12.0	M 9	1.25	90	10	9	7	7.8
M 16	2	110	20	12	9	14.0	M 10	1.5	100	12	10	8	8.5
M 18	2.5	125	25	14	11	15.5	M 12	1.75	110	14	12	9	10.2
M 20	2.5	140	25	16	12	17.5							
M 22	2.5	140	25	18	14.5	19.5							
M 24	3	160	30	18	14.5	21.0							
M 27	3	160	30	20	16	24.0							
M 30	3.5	180	35	22	18	26.5							
M 33	3.5	180	35	25	20	29.5							
M 36	4	200	40	28	22	32.0							

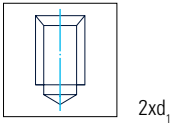
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■ avialable – intermediate size on request

Machine Taps - NUMERIC

DIN 376 HSS-E PM
RH spiral flutes 45°
for steel

Group 4303
for blind holes

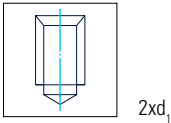


NUMERIC
Supporting Digital Production
For use on CNC machines
with synchronized machining

Machine Taps Black Ring

DIN 371 HSS-E
RH spiral flutes 40°
for universal use

Group 3330
for blind holes

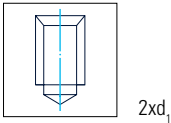


Art-No. Technology Page 8.1 Chamfer Length Page 8.4 Surface Page 8.2 Tolerance Page 8.5 Cutting Data Page 8.6							Art-No. Technology Page 8.1 Chamfer Length Page 8.4 Surface Page 8.2 Tolerance Page 8.5 Cutting Data Page 8.6						
43030/48 PM-Line							33300/26 High Volume Black Ring						
C / 2-3 x P							Black Ring						
TiCN							C / 2-3 x P						
6HX							VAP						
P1 general construction steel P2 high strength steel M1 chemical resistant steeltant steel							ISO1 (4H) ISO2 (6H)						
							ISO2 (6H)						
							P1 general construction steel M1 chemical resistant steel N1 aluminium alloys N3 copper alloys						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂			Ø d ₁	P _{mm}	L ₁	L ₂	d ₂		
M 6	1	80	10	4.5	3.4	5.0	M 1	0.25	40	5.5	2.5	2.1	0.75
M 7	1	80	10	5.5	4.3	6.0	M 1.2	0.25	40	5.5	2.5	2.1	0.95
M 8	1.25	90	14	6	4.9	6.8	M 1.4	0.3	40	7	2.5	2.1	1.1
M 9	1.25	90	14	7	5.5	7.8	M 1.6	0.35	40	8	2.5	2.1	1.25
M 10	1.5	100	16	7	5.5	8.5	M 1.7	0.35	40	8	2.5	2.1	1.35
M 12	1.75	110	18	9	7	10.2	M 1.8	0.35	40	8	2.5	2.1	1.45
M 14	2	110	20	11	9	12.0	M 2	0.4	45	8	2.8	2.1	1.6
M 16	2	110	20	12	9	14.0	M 2.2	0.45	45	8	2.8	2.1	1.75
M 18	2.5	125	25	14	11	15.5	M 2.3	0.4	45	8	2.8	2.1	1.9
M 20	2.5	140	25	16	12	17.5	M 2.5	0.45	50	9	2.8	2.1	2.05
M 22	2.5	140	25	18	14.5	19.5	M 2.6	0.45	50	9	2.8	2.1	2.15
M 24	3	160	30	18	14.5	21.0							
M 27	3	160	30	20	16	24.0							
M 30	3.5	180	35	22	18	26.5							
M 33	3.5	180	35	25	20	29.5							
M 36	4	200	40	28	22	32.0							

Machine Taps Black Ring

DIN 371 HSS-E
RH spiral flutes 40°
for universal use

Group 3330
for blind holes

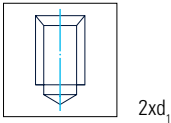


Art.-No.							Art.-No.						
Technology Page 8.1							Technology Page 8.1						
Chamfer Length Page 8.4							Chamfer Length Page 8.4						
Surface Page 8.2							Surface Page 8.2						
Tolerance Page 8.5							Tolerance Page 8.5						
Cutting Data Page 8.6							Cutting Data Page 8.6						
33300/26 High Volume							43300/26 High Volume						
Black Ring							Black Ring						
C / 2-3 x P							C / 2-3 x P						
VAP							TiN						
ISO2 (6H)							ISO2 (6H)						
P1 general construction steel							M1 chemical resistant steel						
							N1 aluminium alloys						
							N3 copper alloys						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂			Ø d ₁	P _{mm}	L ₁	L ₂	d ₂		
M 1.7	0.35	40	8	2.5	2.1	1.35	M 6	1	80	10	4.5	3.4	5.0
M 1.8	0.35	40	8	2.5	2.1	1.45	M 7	1	80	10	5.5	4.3	6.0
M 2	0.4	45	8	2.8	2.1	1.6	M 8	1.25	90	14	6	4.9	6.8
M 2.2	0.45	45	8	2.8	2.1	1.75	M 9	1.25	90	14	7	5.5	7.8
M 2.3	0.4	45	8	2.8	2.1	1.9	M 10	1.5	100	16	7	5.5	8.5
M 2.5	0.45	50	9	2.8	2.1	2.05	M 12	1.75	110	18	9	7	10.2
M 2.6	0.45	50	9	2.8	2.1	2.15	M 14	2	110	20	11	9	12.0
M 3	0.5	56	6	3.5	2.7	2.5	M 16	2	110	20	12	9	14.0
M 3.5	0.6	56	7	4	3	2.9	M 18	2.5	125	25	14	11	15.5
M 4	0.7	63	7	4.5	3.4	3.3	M 20	2.5	140	25	16	12	17.5
M 5	0.8	70	8	6	4.9	4.2	M 22	2.5	140	25	18	14.5	19.5
M 6	1	80	10	6	4.9	5.0	M 24	3	160	30	18	14.5	21.0
M 7	1	80	10	7	5.5	6.0	M 27	3	160	30	20	16	24.0
M 8	1.25	90	13	8	6.2	6.8	M 30	3.5	180	35	22	18	26.5
M 9	1.25	90	13	9	7	7.8	M 33	3.5	180	35	25	20	29.5
M 10	1.5	100	15	10	8	8.5	M 36	4	200	40	28	22	32.0

Machine Taps Black Ring

DIN 376 HSS-E
RH spiral flutes 40°
for universal use

Group 4330
for blind holes

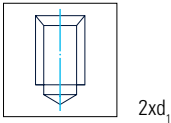


2.62 M - ISO Metric Coarse Thread DIN 13

Machine Taps Black Ring

DIN 371 HSS-E-PM
RH spiral flutes 40°
for universal use

Group 3330
for blind holes



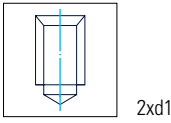
SCHUMACHER

2.63 M - ISO Metric Coarse Thread DIN 13

Machine Taps Black Ring

DIN 376 HSS-E PM
RH spiral flutes 45°
for high strength steel

Group 43300
for blind holes



SCHUMACHER

Art.-No.							Art.-No.						
Technology Page 8.1							Technology Page 8.1						
Chamfer Length Page 8.4							Chamfer Length Page 8.4						
Surface Page 8.2							Surface Page 8.2						
Tolerance Page 8.5							Tolerance Page 8.5						
Cutting Data Page 8.6							Cutting Data Page 8.6						
33300/5760							43300/5760						
PM-Line							PM-Line						
Black Ring							Black Ring						
C / 2-3 x P							C / 2-3 x P						
SG 4							SG 4						
ISO2 (6H)							ISO2 (6H)						
P1 general construction steel M1 chemical resistant steel N1 Aluminium N3 copper alloys							P1 general construction steel M1 chemical resistant steel N1 Aluminium N3 copper alloys						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂			Ø d ₁	P _{mm}	L ₁	L ₂	d ₂		
M 1.7	0.35	40	8	2.5	2.1	1.35	M 6	1	80	10	4.5	3.4	5.0
M 1.8	0.35	40	8	2.5	2.1	1.45	M 7	1	80	10	5.5	4.3	6.0
M 2	0.4	45	8	2.8	2.1	1.6	M 8	1.25	90	14	6	4.9	6.8
M 2.2	0.45	45	8	2.8	2.1	1.75	M 9	1.25	90	14	7	5.5	7.8
M 2.3	0.4	45	8	2.8	2.1	1.9	M 10	1.5	100	16	7	5.5	8.5
M 2.5	0.45	50	9	2.8	2.1	2.05	M 12	1.75	110	18	9	7	10.2
M 2.6	0.45	50	9	2.8	2.1	2.15	M 14	2	110	20	11	9	12.0
M 3	0.5	56	6	3.5	2.7	2.5	M 16	2	110	20	12	9	14.0
M 3.5	0.6	56	7	4	3	2.9	M 18	2.5	125	25	14	11	15.5
M 4	0.7	63	7	4.5	3.4	3.3	M 20	2.5	140	25	16	12	17.5
M 5	0.8	70	8	6	4.9	4.2	M 22	2.5	140	25	18	14.5	19.5
M 6	1	80	10	6	4.9	5.0	M 24	3	160	30	18	14.5	21.0
M 7	1	80	10	7	5.5	6.0	M 27	3	160	30	20	16	24.0
M 8	1.25	90	13	8	6.2	6.8	M 30	3.5	180	35	22	18	26.5
M 9	1.25	90	13	9	7	7.8	M 33	3.5	180	35	25	20	29.5
M 10	1.5	100	15	10	8	8.5	M 36	4	200	40	28	22	32.0

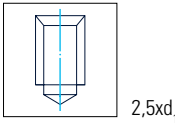
2.64 M - ISO Metric Coarse Thread DIN 13

SCHUMACHER

Machine Taps Red Ring - TYPHOON

DIN 371 HSS-E PM
RH spiral flutes 45°
for high strength steel

Group 3340
for deep blind holes ≤ 2.5 x D



Art.-No. Technology Page 8.1 Chamfer Length Page 8.4 Surface Page 8.2 Tolerance Page 8.5 Cutting Data Page 8.6							33400/48 PM-Line Red Ring C / 2-3 x P TiCN ISO2 (6H) P2 high strength steel M1 chemical resistant steel						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂									
M 1.7	0.35	40	8	2.5	2.1	1.35							
M 1.8	0.35	40	8	2.5	2.1	1.45							
M 2	0.4	45	8	2.8	2.1	1.6							
M 2.2	0.45	45	8	2.8	2.1	1.75							
M 2.3	0.4	45	8	2.8	2.1	1.9							
M 2.5	0.45	50	9	2.8	2.1	2.05							
M 2.6	0.45	50	9	2.8	2.1	2.15							
M 3	0.5	56	6	3.5	2.7	2.5	■						
M 3.5	0.6	56	7	4	3	2.9							
M 4	0.7	63	7	4.5	3.4	3.3	■						
M 5	0.8	70	8	6	4.9	4.2	■						
M 6	1	80	10	6	4.9	5.0	■						
M 7	1	80	10	7	5.5	6.0							
M 8	1.25	90	13	8	6.2	6.8	■						
M 9	1.25	90	13	9	7	7.8							
M 10	1.5	100	15	10	8	8.5	■						

Art.-No. Technology Page 8.1 Chamfer Length Page 8.4 Surface Page 8.2 Tolerance Page 8.5 Cutting Data Page 8.6							43400/48 PM-Line Red Ring C / 2-3 x P TiCN ISO2 (6H) P2 high strength steel M1 chemical resistant steel						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂									
M 6	1	80	10	4.5	3.4	5.0							
M 7	1	80	10	5.5	4.3	6.0							
M 8	1.25	90	14	6	4.9	6.8							
M 9	1.25	90	14	7	5.5	7.8							
M 10	1.5	100	16	7	5.5	8.5							
M 12	1.75	110	18	9	7	10.2	■						
M 14	2	110	20	11	9	12.0							
M 16	2	110	20	12	9	14.0	■						
M 18	2.5	125	25	14	11	15.5							
M 20	2.5	140	25	16	12	17.5	■						
M 22	2.5	140	25	18	14.5	19.5							
M 24	3	160	30	18	14.5	21.0							
M 27	3	160	30	20	16	24.0							
M 30	3.5	180	35	22	18	26.5							
M 33	3.5	180	35	25	20	29.5							
M 36	4	200	40	28	22	32.0							

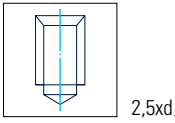
2.65 M - ISO Metric Coarse Thread DIN 13

SCHUMACHER

Machine Taps Red Ring - TYPHOON

DIN 376 HSS-E PM
RH spiral flutes 45°
for high strength steel

Group 4340
for deep blind holes ≤ 2.5 x D

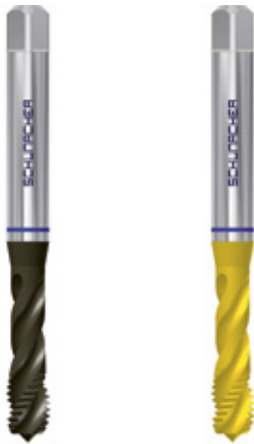
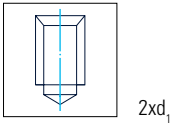


Machine Taps Blue Ring

DIN 371 HSS-E
RH spiral flutes 40°
for chemical resistant steel

Group 3350
for blind holes

INOX
Stainless



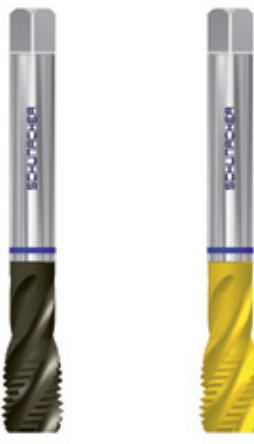
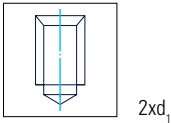
Art.-No.							Art.-No.						
Technology Page 8.1							Technology Page 8.1						
Chamfer Length Page 8.4							Chamfer Length Page 8.4						
Surface Page 8.2							Surface Page 8.2						
Tolerance Page 8.5							Tolerance Page 8.5						
Cutting Data Page 8.6							Cutting Data Page 8.6						
33500/26 High Volume Blue Ring							43500/26 High Volume Blue Ring						
33500/25 High Volume Blue Ring							43500/25 High Volume Blue Ring						
C / 2-3 x P							C / 2-3 x P						
VAP							TiN						
ISO2 (6H)							ISO2 (6H)						
P2 high strength steel							M1 chemical resistant steel						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂			Ø d ₁	P _{mm}	L ₁	L ₂	d ₂		
M 1.7	0.35	40	8	2.5	2.1	1.35	M 6	1	80	10	4.5	3.4	5.0
M 1.8	0.35	40	8	2.5	2.1	1.45	M 7	1	80	10	5.5	4.3	6.0
M 2	0.4	45	8	2.8	2.1	1.6	M 8	1.25	90	14	6	4.9	6.8
M 2.2	0.45	45	8	2.8	2.1	1.75	M 9	1.25	90	14	7	5.5	7.8
M 2.3	0.4	45	8	2.8	2.1	1.9	M 10	1.5	100	16	7	5.5	8.5
M 2.5	0.45	50	9	2.8	2.1	2.05	M 12	1.75	110	18	9	7	10.2
M 2.6	0.45	50	9	2.8	2.1	2.15	M 14	2	110	20	11	9	12.0
M 3	0.5	56	6	3.5	2.7	2.5	M 16	2	110	20	12	9	14.0
M 3.5	0.6	56	7	4	3	2.9	M 18	2.5	125	25	14	11	15.5
M 4	0.7	63	7	4.5	3.4	3.3	M 20	2.5	140	25	16	12	17.5
M 5	0.8	70	8	6	4.9	4.2	M 22	2.5	140	25	18	14.5	19.5
M 6	1	80	10	6	4.9	5.0	M 24	3	160	30	18	14.5	21.0
M 7	1	80	10	7	5.5	6.0	M 27	3	160	30	20	16	24.0
M 8	1.25	90	13	8	6.2	6.8	M 30	3.5	180	35	22	18	26.5
M 9	1.25	90	13	9	7	7.8	M 33	3.5	180	35	25	20	29.5
M 10	1.5	100	15	10	8	8.5	M 36	4	200	40	28	22	32.0

Machine Taps Blue Ring

DIN 376 HSS-E
RH spiral flutes 40°
for chemical resistant steel

Group 4350
for blind holes

INOX
Stainless



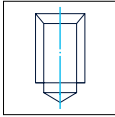
2.68 M - ISO Metric Coarse Thread DIN 13

Machine Taps Blue Ring - POLAR

DIN 371 HSS-E PM
RH spiral flutes 45°
for chemical resistant steel

Group 3351
for deep blind holes ≤ 2.5xd₁

INOX
Stainless



2,5xd₁



Cutting Data

SCHUMACHER

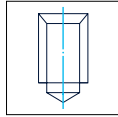
2.69 M - ISO Metric Coarse Thread DIN 13

Machine Taps Blue Ring - POLAR

DIN 376 HSS-E PM
RH spiral flutes 45°
for chemical resistant steel

Group 4351
for deep blind holes ≤ 2.5xd₁

INOX
Stainless

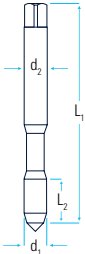
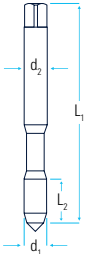


2,5xd₁



Cutting Data

SCHUMACHER

Art.-No.							43510/48						
Technology  Page 8.1							PM-Line  Blue Ring						
Chamfer Length  Page 8.4							C / 2-3 x P						
Surface  Page 8.2							TiCN						
Tolerance  Page 8.5							6HX						
Cutting Data  Page 8.6							P2 high strength steel M1+M2 chemical resistant steel						
													
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂			Ø d ₁	P _{mm}	L ₁	L ₂	d ₂		
M 1.7	0.35	40	8	2.5	2.1	1.35	M 6	1	80	10	4.5	3.4	5.0
M 1.8	0.35	40	8	2.5	2.1	1.45	M 7	1	80	10	5.5	4.3	6.0
M 2	0.4	45	8	2.8	2.1	1.6	M 8	1.25	90	14	6	4.9	6.8
M 2.2	0.45	45	8	2.8	2.1	1.75	M 9	1.25	90	14	7	5.5	7.8
M 2.3	0.4	45	8	2.8	2.1	1.9	M 10	1.5	100	16	7	5.5	8.5
M 2.5	0.45	50	9	2.8	2.1	2.05	M 12	1.75	110	18	9	7	10.2
M 2.6	0.45	50	9	2.8	2.1	2.15	M 14	2	110	20	11	9	12.0
M 3	0.5	56	6	3.5	2.7	2.5	M 16	2	110	20	12	9	14.0
M 3.5	0.6	56	7	4	3	2.9	M 18	2.5	125	25	14	11	15.5
M 4	0.7	63	7	4.5	3.4	3.3	M 20	2.5	140	25	16	12	17.5
M 5	0.8	70	8	6	4.9	4.2	M 22	2.5	140	25	18	14.5	19.5
M 6	1	80	10	6	4.9	5.0	M 24	3	160	30	18	14.5	21.0
M 7	1	80	10	7	5.5	6.0	M 27	3	160	30	20	16	24.0
M 8	1.25	90	13	8	6.2	6.8	M 30	3.5	180	35	22	18	26.5
M 9	1.25	90	13	9	7	7.8	M 33	3.5	180	35	25	20	29.5
M 10	1.5	100	15	10	8	8.5	M 36	4	200	40	28	22	32.0

■ avialable – intermediate size on request

■ avialable – intermediate size on request

2.70 M - ISO Metric Coarse Thread DIN 13

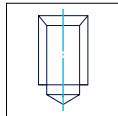
Machine Taps - MISTRAL

DIN 371 HSS-E PM

RH spiral flutes 45°
for aluminium and bronze alloys

Group 3360
for blind holes

AL

 $2x d_1$ 

High Speed Cutting
by Schumacher



High Speed Cutting
by Schumacher



DLC
Diamond like Carbon

Innovative surface coating technologies with high hardness and low frictional coefficient

2.71 M - ISO Metric Coarse Thread DIN 13

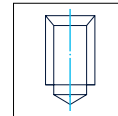
Machine Taps - MISTRAL

DIN 376 HSS-E PM

RH spiral flutes 45°
for aluminium and bronze alloys

Group 4360
for blind holes

AL

 $2x d_1$ 

High Speed Cutting
für Schrägmaschinen



High Speed Cutting
by Schumacher



DLC
Diamond like Carbon

Innovative surface coating technologies with high hardness and low frictional coefficient

[illegible]

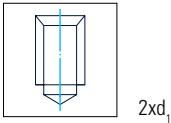
■ available – intermediate size on request

■ available – intermediate size on request

Machine Taps Red Ring

DIN 371 HSS-E
RH spiral flutes 40°
for high strength steel

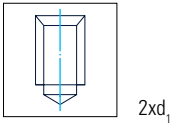
Group 3380
for blind holes



Machine Taps Red Ring

DIN 376 HSS-E
RH spiral flutes 40°
for high strength steel

Group 4380
for blind holes



Art.-No.							Art.-No.						
Technology Page 8.1							Technology Page 8.1						
Chamfer Length Page 8.4							Chamfer Length Page 8.4						
Surface Page 8.2							Surface Page 8.2						
Tolerance Page 8.5							Tolerance Page 8.5						
Cutting Data Page 8.6							Cutting Data Page 8.6						
33800 High Volume Red Ring							43800 High Volume Red Ring						
33800/48 High Volume Red Ring							43800/48 High Volume Red Ring						
C / 2-3 x P							C / 2-3 x P						
bright							TiCN						
ISO2 (6H)							ISO2 (6H)						
P2 high strength steel							P2 high strength steel						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂			Ø d ₁	P _{mm}	L ₁	L ₂	d ₂		
M 1.7	0.35	40	8	2.5	2.1	1.35	M 6	1	80	10	4.5	3.4	5.0
M 1.8	0.35	40	8	2.5	2.1	1.45	M 7	1	80	10	5.5	4.3	6.0
M 2	0.4	45	8	2.8	2.1	1.6	M 8	1.25	90	14	6	4.9	6.8
M 2.2	0.45	45	8	2.8	2.1	1.75	M 9	1.25	90	14	7	5.5	7.8
M 2.3	0.4	45	8	2.8	2.1	1.9	M 10	1.5	100	16	7	5.5	8.5
M 2.5	0.45	50	9	2.8	2.1	2.05	M 12	1.75	110	18	9	7	10.2
M 2.6	0.45	50	9	2.8	2.1	2.15	M 14	2	110	20	11	9	12.0
M 3	0.5	56	6	3.5	2.7	2.5	M 16	2	110	20	12	9	14.0
M 3.5	0.6	56	7	4	3	2.9	M 18	2.5	125	25	14	11	15.5
M 4	0.7	63	7	4.5	3.4	3.3	M 20	2.5	140	25	16	12	17.5
M 5	0.8	70	8	6	4.9	4.2	M 22	2.5	140	25	18	14.5	19.5
M 6	1	80	10	6	4.9	5.0	M 24	3	160	30	18	14.5	21.0
M 7	1	80	10	7	5.5	6.0	M 27	3	160	30	20	16	24.0
M 8	1.25	90	13	8	6.2	6.8	M 30	3.5	180	35	22	18	26.5
M 9	1.25	90	13	9	7	7.8	M 33	3.5	180	35	25	20	29.5
M 10	1.5	100	15	10	8	8.5	M 36	4	200	40	28	22	32.0

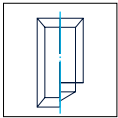
2.76 M - ISO Metric Coarse Thread DIN 13

Forming Taps - MISTRAL

DIN 371 HSS-E PM

straight oil grooves for aluminium and bronze alloys

Group 3051
for blind and through holes



2xd₁



High Speed Cutting



High Speed Cutting



Cutting Data



DLC

Diamond like Carbon

Innovative surface coating technologies with high hardness and low frictional coefficient

SCHUMACHER

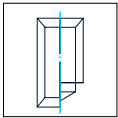
2.77 M - ISO Metric Coarse Thread DIN 13

Forming Taps - MISTRAL

DIN 376 HSS-E PM

straight oil grooves for aluminium and bronze alloys

Group 4051
for blind and through holes



2xd₁



High Speed Cutting



High Speed Cutting



Cutting Data



DLC

Diamond like Carbon

Innovative surface coating technologies with high hardness and low frictional coefficient

SCHUMACHER

Art.-No.							Art.-No.						
Technology							Technology						
Chamfer Length							Chamfer Length						
Surface							Surface						
Tolerance							Tolerance						
Cutting Data							Cutting Data						
30510/0253							40510/0253						
PM-Line							PM-Line						
C / 2-3 x P							C / 2-3 x P						
CrN							CrN						
6HX							6HX						
N1 aluminium alloys							N1 aluminium alloys						
N5 Bronze alloys							N5 Bronze alloys						
N6 thermoplastics							N6 thermoplastics						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂	□	🌀	Ø d ₁	P _{mm}	L ₁	L ₂	d ₂	□	🌀
M 1.7	0.35	40	8	2.5	2.1	1.55	M 6	1	80	17	4.5	3.4	5.55
M 1.8	0.35	40	8	2.5	2.1	1.65	M 7	1	80	17	5.5	4.3	6.55
M 2	0.4	45	8	2.8	2.1	1.85	M 8	1.25	90	20	6	4.9	7.4
M 2.2	0.45	45	8	2.8	2.1	2.0	M 9	1.25	90	20	7	5.5	8.4
M 2.3	0.4	45	8	2.8	2.1	2.1	M 10	1.5	100	22	7	5.5	9.3
M 2.5	0.45	50	9	2.8	2.1	2.3	M 12	1.75	110	24	9	7	11.2
M 2.6	0.45	50	9	2.8	2.1	2.4	M 14	2	110	26	11	9	13.1
M 3	0.5	56	11	3.5	2.7	2.8	M 16	2	110	27	12	9	15.1
M 3.5	0.6	56	12	4	3	3.25	M 18	2.5	125	30	14	11	16.9
M 4	0.7	63	13	4.5	3.4	3.7	M 20	2.5	140	32	16	12	18.9
M 5	0.8	70	15	6	4.9	4.65	M 22	2.5	140	32	18	14.5	20.9
M 6	1	80	17	6	4.9	5.55	M 24	3	160	34	18	14.5	22.65
M 7	1	80	17	7	5.5	6.55	M 27	3	160	36	20	16	25.65
M 8	1.25	90	20	8	6.2	7.4							
M 9	1.25	90	20	9	7	8.4							
M 10	1.5	100	22	10	8	9.3							

■ avialable – intermediate size on request

■ avialable – intermediate size on request

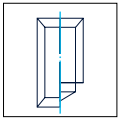
2.78 M - ISO Metric Coarse Thread DIN 13

Forming Taps - NUMERIC

DIN 371 HSS-E PM

straight oil grooves for steel, heat treatable steel and chemical resistant steel

Group 3053
for blind and through holes



High Speed Cutting

Cutting Data



NUMERIC
Supporting Digital Production

For use on CNC machines
with synchronized machining

SCHUMACHER

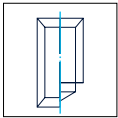
2.79 M - ISO Metric Coarse Thread DIN 13

Forming Taps - NUMERIC

DIN 376 HSS-E PM

straight oil grooves for steel, heat treatable steel and chemical resistant steel

Group 4053
for blind and through holes



High Speed Cutting

Cutting Data



NUMERIC
Supporting Digital Production

For use on CNC machines
with synchronized machining

SCHUMACHER

Art.-No.							Art.-No.						
Technology Page 8.1							Technology Page 8.1						
Chamfer Length Page 8.4							Chamfer Length Page 8.4						
Surface Page 8.2							Surface Page 8.2						
Tolerance Page 8.5							Tolerance Page 8.5						
Cutting Data Page 8.6							Cutting Data Page 8.6						
30530/4853							40530/4853						
PM-Line							PM-Line						
C / 2-3 x P							C / 2-3 x P						
TiCN							TiCN						
6HX							6HX						
P1 general construction steel P2 high strength steel M1 chemical resistant steel							P1 general construction steel P2 high strength steel M1 chemical resistant steel						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂			Ø d ₁	P _{mm}	L ₁	L ₂	d ₂		
M 1.7	0.35	40	8	2.5	2.1	1.55	M 6	1	80	10	4.5	3.4	5.55
M 1.8	0.35	40	8	2.5	2.1	1.65	M 7	1	80	10	5.5	4.3	6.55
M 2	0.4	45	8	2.8	2.1	1.85	M 8	1.25	90	14	6	4.9	7.4
M 2.2	0.45	45	8	2.8	2.1	2.0	M 9	1.25	90	14	7	5.5	8.4
M 2.3	0.4	45	8	2.8	2.1	2.1	M 10	1.5	100	16	7	5.5	9.3
M 2.5	0.45	50	9	2.8	2.1	2.3	M 12	1.75	110	18	9	7	11.2
M 2.6	0.45	50	9	2.8	2.1	2.4	M 14	2	110	20	11	9	13.1
M 3	0.5	56	6	3.5	2.7	2.8	M 16	2	110	20	12	9	15.1
M 3.5	0.6	56	7	4	3	3.25	M 18	2.5	125	25	14	11	16.9
M 4	0.7	63	7	4.5	3.4	3.7	M 20	2.5	140	25	16	12	18.9
M 5	0.8	70	8	6	4.9	4.65	M 22	2.5	140	25	18	14.5	20.9
M 6	1	80	10	6	4.9	5.55	M 24	3	160	30	18	14.5	22.65
M 7	1	80	10	7	5.5	6.55	M 27	3	160	30	20	16	25.65
M 8	1.25	90	13	8	6.2	7.4							
M 9	1.25	90	13	9	7	8.4							
M 10	1.5	100	15	10	8	9.3							

■ available – intermediate size on request

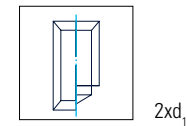
■ available – intermediate size on request

Forming Taps - CONDOR

DIN 371 HSS-E PM

straight oil grooves for high strength steel, heat treatable steel
and chemical resistant steel

Group 3055
for blind and through holes



Cutting Data

Art.-No.

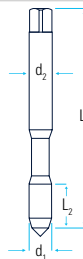
Technology  Page 8.1

Chamfer Length  Page 8.4

Surface  Page 8.2

Tolerance  Page 8.5

Cutting Data  Page 8.6



30550/5367

PM-Line 

Red Ring

C / 2-3 x P

SG 6

6HX

P3 high strength steel M1 chemical resistant steel S1 titanium alloys

Ø d ₁	P _{mm}	L ₁	L ₂	d ₂				
M 1.7	0.35	40	8	2.5	2.1	1.55		
M 1.8	0.35	40	8	2.5	2.1	1.65		
M 2	0.4	45	8	2.8	2.1	1.85		
M 2.2	0.45	45	8	2.8	2.1	2.0		
M 2.3	0.4	45	8	2.8	2.1	2.1		
M 2.5	0.45	50	9	2.8	2.1	2.3		
M 2.6	0.45	50	9	2.8	2.1	2.4		
M 3	0.5	56	6	3.5	2.7	2.8		
M 3.5	0.6	56	7	4	3	3.25		
M 4	0.7	63	7	4.5	3.4	3.7		
M 5	0.8	70	8	6	4.9	4.65		
M 6	1	80	10	6	4.9	5.55		
M 7	1	80	10	7	5.5	6.55		
M 8	1.25	90	13	8	6.2	7.4		
M 9	1.25	90	13	9	7	8.4		
M 10	1.5	100	15	10	8	9.3		

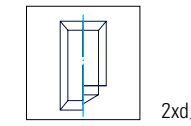
■ available – intermediate size on request

Forming Taps - CONDOR

DIN 376 HSS-E PM

straight oil grooves for high strength steel, heat treatable steel
and chemical resistant steel

Group 4055
for blind and through holes



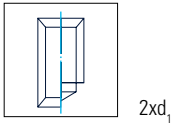
Cutting Data

■ available – intermediate size on request

Forming Taps

DIN 371 HSS-E
straight oil grooves for steel, non-ferrous steel
and heat treatable steel

Group 3060
for blind and through holes



Art.-No.		30600/53		30600/2553		30600 B/2553	
Technology Page 8.1		High Volume		High Volume			
Chamfer Length Page 8.4				C / 2-3 x P			
Surface Page 8.2		bright		TiN		TiN	
Tolerance Page 8.5		4HX 6HX		6HX		6GX	
Cutting Data Page 8.6		P1 general construction steel		P2 high streghth steel		N3 copper alloys	



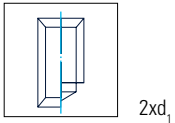
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂								
M 1	0.25	40	5.5	2.5	2.1	0.9						
M 1.2	0.25	40	5.5	2.5	2.1	1.1						
M 1.4	0.3	40	7	2.5	2.1	1.25						
M 1.6	0.35	40	8	2.5	2.1	1.45						
M 1.7	0.35	40	8	2.5	2.1	1.55						
M 1.8	0.35	40	8	2.5	2.1	1.65						
M 2	0.4	45	8	2.8	2.1	1.85						
M 2.2	0.45	45	8	2.8	2.1	2.0						
M 2.3	0.4	45	8	2.8	2.1	2.1						
M 2.5	0.45	50	9	2.8	2.1	2.3						
M 2.6	0.45	50	9	2.8	2.1	2.4						

Continuation »

Forming Taps

DIN 371 HSS-E
straight oil grooves for steel, non-ferrous steel
and heat treatable steel

Group 3060
for blind and through holes



Art.-No.		30600/53		30600/2553		30600 B/2553	
Technology Page 8.1		High Volume		High Volume			
Chamfer Length Page 8.4				C / 2-3 x P			
Surface Page 8.2		bright		TiN		TiN	
Tolerance Page 8.5		6HX		6HX		6GX	
Cutting Data Page 8.6		P1 general construction steel		P2 high strength steel		N3 copper alloys	



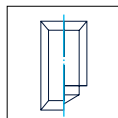
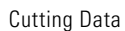
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂								
M 3	0.5	56	11	3.5	2.7	2.8						
M 3.5	0.6	56	12	4	3	3.25						
M 4	0.7	63	13	4.5	3.4	3.7						
M 5	0.8	70	15	6	4.9	4.65						
M 6	1	80	17	6	4.9	5.55						
M 7	1	80	17	7	5.5	6.55						
M 8	1.25	90	20	8	6.2	7.4						
M 9	1.25	90	20	9	7	8.4						
M 10	1.5	100	22	10	8	9.3						
M 12	1.75	110	24	12	9	11.2						

Set of Taps

DIN 352 HSS

set of 3 pieces, straight flutes
for general construction steel

Group 1000
for blind and through holes

 $2x d_1$ [illegible]

■ available – intermediate size on request

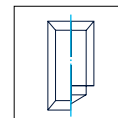
Set of Taps

DIN 352 HSS

set of 3 pieces, straight flutes
for general construction steel

Group 1000 LH
for blind and through holes

STEEL

 $2x_d$ [illegible]

■ available – intermediate size on request

2.88 M - ISO Metric Coarse Thread DIN 13

SCHUMACHER

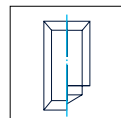
Set of Taps

DIN 352 HSS

set of 3 pieces, straight flutes
for general construction steel

Group 1000 LH
for blind and through holes

STEEL



2xd,

Cutting Data



■ available – intermediate size on request

2.89 M - ISO Metric Coarse Thread DIN 13

SCHUMACHER

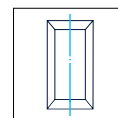
Set of Taps

DIN 352 HSS-E

set of 3 pieces, straight flutes
for high strength steel

Group 2000
for through holes

HIGH
STRENGTH

 $2x d_1$

Cutting Data

[illegible]

■ available – intermediate size on request

2.92 M - ISO Metric Coarse Thread DIN 13

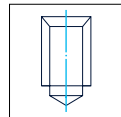
Carbide Machine Taps

DIN 371/376 VHM

RH spiral flutes 20°
for universal use

Group G260
for blind holes

UNI

 $2x d_1$ 

Cutting Data



2.93 M - ISO Metric Coarse Thread DIN 13

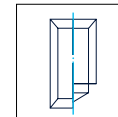
Carbide Forming Taps

DIN 371/376 VHM

straight oil grooves
for high strength steel

Group G060/G070
for blind and through holes



 $2x d_1$ 

Cutting Data

[illegible]

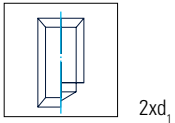
■ available – intermediate size on request

■ available – intermediate size on request

Machine Taps

DIN 374 HSS-E
straight flutes
for general construction steel

Group 5000
for blind and through holes

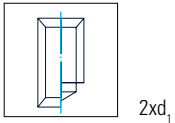


Art-No.										Technology Page 8.1									
Chamfer Length Page 8.4										Chamfer Length Page 8.4									
Surface Page 8.2										Surface Page 8.2									
Tolerance Page 8.5										Tolerance Page 8.5									
Cutting Data Page 8.6										Cutting Data Page 8.6									
50000										50000									
C / 2-3 x P										C / 2-3 x P									
bright										bright									
ISO2 (6H)										ISO2 (6H)									
P1 general construction steel										P1 general construction steel									
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂						Ø d ₁	P _{mm}	L ₁	L ₂	d ₂					
M 4	0.5	63	10	2.8	2.1	3.5	■			M 22	1	125	20	18	14.5	21.0	■		
M 5	0.5	70	11	3.5	2.7	4.5	■			M 24	1	140	20	18	14.5	23.0	■		
M 6	0.5	80	13	4.5	3.4	5.5	■			M 10	1.25	100	22	7	5.5	8.8	■		
M 6	0.75	80	13	4.5	3.4	5.3	■			M 12	1.25	100	22	9	7	10.8	■		
M 8	0.75	80	14	6	4.9	7.3	■			M 14	1.25	100	22	11	9	12.8	■		
M 10	0.75	90	18	7	5.5	9.3	■			M 12	1.5	100	22	9	7	10.5	■		
M 8	1	90	17	6	4.9	7.0	■			M 14	1.5	100	22	11	9	12.5	■		
M 10	1	90	18	7	5.5	9.0	■			M 16	1.5	100	22	12	9	14.5	■		
M 12	1	100	18	9	7	11.0	■			M 18	1.5	110	25	14	11	16.5	■		
M 14	1	100	18	11	9	13.0	■			M 20	1.5	125	25	16	12	18.5	■		
M 16	1	100	18	12	9	15.0	■			M 22	1.5	125	25	18	14.5	20.5	■		
M 18	1	110	20	14	11	17.0	■			M 24	1.5	140	27	18	14.5	22.5	■		
M 20	1	125	20	16	12	19.0	■			M 26	1.5	140	28	18	14.5	24.5	■		
Continuation »										Continuation »									

Machine Taps

DIN 374 HSS-E
straight flutes
for general construction steel

Group 5000
for blind and through holes

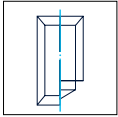


Machine Taps White Ring

DIN 374 HSS-E
straight flutes
for cast iron

Group 5030
for blind and through holes

CAST
IRON



2xd₁



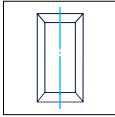
Cutting Data

Machine Taps

DIN 374 HSS-E
Spiral point
for general construction steel

Group 5100
for through holes

STEEL



2xd₁



High Speed Cutting
by Schumacher



Cutting Data

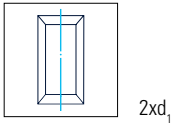
Art-No.							Art-No.						
Technology Page 8.1							Technology Page 8.1						
Chamfer Length Page 8.4							Chamfer Length Page 8.4						
Surface Page 8.2							Surface Page 8.2						
Tolerance Page 8.5							Tolerance Page 8.5						
Cutting Data Page 8.6							Cutting Data Page 8.6						
50300/01							51000						
White Ring							High Volume						
C / 2-3 x P							High Volume						
nitrided							B / 3,5-5 x P						
6HX							bright						
K1 grey cast iron N7 duroplastics							ISO2 (6H)						
							TiN						
							ISO2 (6H)						
							P1 general construction steel K2+K3 spheroidal and malleable cast iron						
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂			Ø d ₁	P _{mm}	L ₁	L ₂	d ₂		
M 5	0.5	70	11	3.5	2.7	4.5	M 4	0.5	63	10	2.8	2.1	3.5
M 6	0.5	80	13	4.5	3.4	5.5	M 5	0.5	70	11	3.5	2.7	4.5
M 6	0.75	80	13	4.5	3.4	5.3	M 6	0.5	80	13	4.5	3.4	5.5
M 8	1	90	17	6	4.9	7.0	M 6	0.75	80	13	4.5	3.4	5.2
M 10	1	90	18	7	5.5	9.0	M 8	0.75	80	14	6	4.9	7.3
M 12	1	100	18	9	7	11.0	M 10	0.75	90	18	7	5.5	9.3
M 14	1	100	18	11	9	13.0	M 8	1	90	17	6	4.9	7.0
M 10	1.25	100	22	7	5.5	8.8	M 10	1	90	18	7	5.5	9.0
M 12	1.25	100	22	9	7	10.8	M 12	1	100	18	9	7	11.0
M 12	1.5	100	22	9	7	10.5	M 14	1	100	18	11	9	13.0
M 14	1.5	100	22	11	9	12.5	M 16	1	100	18	12	9	15.0
M 16	1.5	100	22	12	9	14.5	M 18	1	110	20	14	11	17.0
M 18	1.5	110	25	14	11	16.5							
M 20	1.5	125	25	16	12	18.5							
M 22	1.5	125	25	18	14.5	20.5							
M 24	1.5	140	27	18	14.5	22.5							

Continuation »

Machine Taps

DIN 374 HSS-E
Spiral point
for general construction steel

Group 5100
for through holes



High Speed Cutting
by Schumacher

Art.-No.								Art.-No.							
Technology		Page 8.1						Technology		Page 8.1					
Chamfer Length		Page 8.4						Chamfer Length		Page 8.4					
Surface		Page 8.2						Surface		Page 8.2					
Tolerance		Page 8.5						Tolerance		Page 8.5					
Cutting Data		Page 8.6						Cutting Data		Page 8.6					
51000 High Volume								51000/25 High Volume							
B / 3,5-5 x P								B / 3,5-5 x P							
bright				TiN				bright				TiN			
ISO2 (6H)				ISO2 (6H)				ISO2 (6H)				ISO2 (6H)			
P1 general construction steel				K2+K3 spheroidal and malleable cast iron				P1 general construction steel				K2+K3 spheroidal and malleable cast iron			

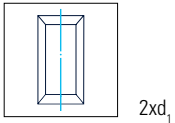
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂															
M 20	1	125	20	16	12	19.0													
M 22	1	125	20	18	14.5	21.0													
M 24	1	140	20	18	14.5	23.0													
M 10	1.25	100	22	7	5.5	8.8													
M 12	1.25	100	22	9	7	10.8													
M 14	1.25	100	22	11	9	12.8													
M 12	1.5	100	22	9	7	10.5													
M 14	1.5	100	22	11	9	12.5													
M 16	1.5	100	22	12	9	14.5													
M 18	1.5	110	25	14	11	16.5													
M 20	1.5	125	25	16	12	18.5													
M 22	1.5	125	25	18	14.5	20.5													
M 24	1.5	140	25	18	14.5	22.5													
Continuation »																			

Ø d ₁	P _{mm}	L ₁	L ₂	d ₂															
M 26	1.5	140	28	18	14.5	24.5													
M 28	1.5	140	28	20	16	26.5													
M 30	1.5	150	30	22	18	28.5													
M 32	1.5	150	30	22	18	30.5													
M 34	1.5	170	33	28	22	32.5													
M 36	1.5	170	33	28	22	34.5													
M 38	1.5	170	33	28	22	36.5													
M 40	1.5	170	33	32	24	38.5													
M 42	1.5	170	33	32	24	40.5													
M 45	1.5	180	33	36	29	43.5													
M 48	1.5	190	36	36	29	46.5													
M 18	2	125	26	14	11	16.0													
M 20	2	140	27	16	12	18.0													
M 22	2	140	27	18	14.5	20.0													
Continuation »																			

Machine Taps

DIN 374 HSS-E
Spiral point
for general construction steel

Group 5100
for through holes



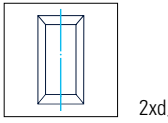
High Speed Cutting
by Schumacher

Machine Taps

DIN 374 HSS-E

Spiral point
for general construction steel

Group 5100
for through holes

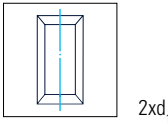


Machine Taps Blue Ring

DIN 374 HSS-E

Spiral point
for chemical resistant steel

Group 5120
for through holes



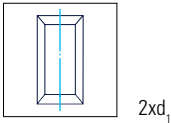
51000										51200									
High Volume										Blue Ring									
B / 3,5-5 x P										Blue Ring									
bright										B / 3,5-5 x P									
ISO2 (6H)										bright									
P1 general construction steel K2+K3 spheroidal and malleable cast iron										TiN									
ISO2 (6H)										ISO2 (6H)									
P2 high strength steel										M1 chemical resistant steel									
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂	□	▨				Ø d ₁	P _{mm}	L ₁	L ₂	d ₂	□	▨			
M 24	2	140	27	18	14.5	22.0	■			M 5	0.5	70	11	3.5	2.7	4.5	■		
M 27	2	140	28	20	16	25.0	■			M 6	0.5	80	13	4.5	3.4	5.5	■		
M 30	2	150	30	22	18	28.0	■			M 6	0.75	80	13	4.5	3.4	5.3	■		
M 33	2	160	32	25	20	31.0	■			M 8	1	90	17	6	4.9	7.0	■	■	
M 36	2	170	33	28	22	34.0	■			M 10	1	90	18	7	5.5	9.0	■	■	
M 39	2	170	33	32	24	37.0	■			M 12	1	100	18	9	7	11.0	■	■	
M 40	2	170	33	32	24	38.0	■			M 14	1	100	18	11	9	13.0	■	■	
M 42	2	180	33	32	24	40.0	■			M 10	1.25	100	22	7	5.5	8.8	■	■	
M 45	2	180	33	36	29	43.0	■			M 12	1.25	100	22	9	7	10.8	■	■	
M 36	3	200	45	28	22	33.0	■			M 12	1.5	100	22	9	7	10.5	■	■	
M 39	3	200	45	32	24	36.0	■			M 14	1.5	100	22	11	9	12.5	■	■	
M 42	3	200	45	32	24	39.0	■			M 16	1.5	100	22	12	9	14.5	■	■	
M 45	3	200	45	36	29	42.0	■			M 18	1.5	110	25	14	11	16.5	■	■	
M 48	3	225	50	36	29	45.0	■			M 20	1.5	125	25	16	12	18.5	■	■	
										M 22	1.5	125	25	18	14.5	20.5	■	■	
										M 24	1.5	140	27	18	14.5	22.5	■	■	

3.11 MF - ISO Metric Fine Thread DIN 13

Machine Taps Black Ring

DIN 374 HSS-E
Spiral point
for universal use

Group 5190
for through holes



SCHUMACHER



Art.-No.													
Technology		51900/26											
		Black Ring											
Chamfer Length		B / 3,5-5 x P											
Surface		VAP											
Tolerance		ISO2 (6H)											
Cutting Data		P1 general construction steel M1 chemical resistant steel N1 Aluminium N3 copper alloys											
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂	□	▨							
M 6	0.75	80	13	4.5	3.4	5.3							
M 8	1	90	17	6	4.9	7.0	■						
M 10	1	90	18	7	5.5	9.0	■						
M 12	1	100	18	9	7	11.0	■						
M 14	1	100	18	11	9	13.0	■						
M 10	1.25	100	22	7	5.5	8.8	■						
M 12	1.25	100	22	9	7	10.8	■						
M 12	1.5	100	22	9	7	10.5	■						
M 14	1.5	100	22	11	9	12.5	■						
M 16	1.5	100	22	12	9	14.5	■						
M 18	1.5	110	25	14	11	16.5	■						
M 20	1.5	125	25	16	12	18.5	■						
M 22	1.5	125	25	18	14.5	20.5							
M 24	1.5	140	27	18	14.5	22.5							
M 26	1.5	140	28	18	14.5	24.5							
M 30	1.5	150	30	22	18	28.5							

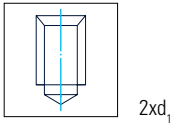
■ avialable – intermediate size on request

3.12 MF - ISO Metric Fine Thread DIN 13

Machine Taps

DIN 374 HSS-E
RH spiral flutes 15°
for general construction steel

Group 5200
for blind holes



SCHUMACHER



Art.-No.													
Technology		52000											
		C / 2-3 x P											
Chamfer Length		bright											
Surface		ISO2 (6H)											
Tolerance		P1 general construction steel K2+K3 spheroidal and malleable cast iron											
Cutting Data													
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂	□	▨							
M 6	0.75	80	13	4.5	3.4	5.3							
M 8	1	90	17	6	4.9	7.0	■						
M 10	1	90	18	7	5.5	9.0	■						
M 12	1	100	18	9	7	11.0	■						
M 14	1	100	18	11	9	13.0	■						
M 10	1.25	100	22	7	5.5	8.8	■						
M 12	1.25	100	22	9	7	10.8	■						
M 12	1.5	100	22	9	7	10.5	■						
M 14	1.5	100	22	11	9	12.5	■						
M 16	1.5	100	22	12	9	14.5	■						
M 18	1.5	110	25	14	11	16.5	■						
M 20	1.5	125	25	16	12	18.5	■						
M 22	1.5	125	25	18	14.5	20.5	■						
M 24	1.5	140	27	18	14.5	22.5	■						
M 26	1.5	140	28	18	14.5	24.5	■						
M 30	1.5	150	30	22	18	28.5	■						

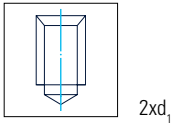
■ avialable – intermediate size on request

3.13 MF - ISO Metric Fine Thread DIN 13

Machine Taps

DIN 374 HSS-E
RH spiral flutes 40°
for general construction steel

Group 5300
for blind holes



High Speed Cutting
by Schumacher

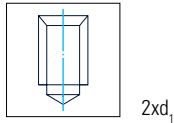
SCHUMACHER

3.14 MF - ISO Metric Fine Thread DIN 13

Machine Taps Black Ring

DIN 374 HSS-E
RH spiral flutes 40°
for universal use

Group 5330
for blind holes



SCHUMACHER

Art.-No.							Art.-No.						
Technology Page 8.1							Technology Page 8.1						
Chamfer Length Page 8.4							Chamfer Length Page 8.4						
Surface Page 8.2							Surface Page 8.2						
Tolerance Page 8.5							Tolerance Page 8.5						
Cutting Data Page 8.6							Cutting Data Page 8.6						
53000 High Volume							53300/26						
53000/25 High Volume							Black Ring						
C / 2-3 x P							C / 2-3 x P						
bright							VAP						
TiN							ISO2 (6H)						
ISO2 (6H)							P1 general construction steel M1 chemical resistant steel N1 Aluminium N3 copper alloys						
P1 general construction steel													
K2+K3 spheroidal and malleable cast iron													
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂			Ø d ₁	P _{mm}	L ₁	L ₂	d ₂		
M 6	0.75	80	8	4.5	3.4	5.3	M 6	0.75	80	8	4.5	3.4	5.3
M 8	1	90	10	6	4.9	7.0	M 8	1	90	10	6	4.9	7.0
M 10	1	90	10	7	5.5	9.0	M 10	1	90	10	7	5.5	9.0
M 12	1	100	11	9	7	11.0	M 12	1	100	11	9	7	11.0
M 14	1	100	11	11	9	13.0	M 14	1	100	11	11	9	13.0
M 10	1.25	100	16	7	5.5	8.8	M 10	1.25	100	16	7	5.5	8.8
M 12	1.25	100	15	9	7	10.8	M 12	1.25	100	15	9	7	10.8
M 12	1.5	100	15	9	7	10.5	M 12	1.5	100	15	9	7	10.5
M 14	1.5	100	15	11	9	12.5	M 14	1.5	100	15	11	9	12.5
M 16	1.5	100	15	12	9	14.5	M 16	1.5	100	15	12	9	14.5
M 18	1.5	110	17	14	11	16.5	M 18	1.5	110	17	14	11	16.5
M 20	1.5	125	17	16	12	18.5	M 20	1.5	125	17	16	12	18.5
M 22	1.5	125	17	18	14.5	20.5	M 22	1.5	125	17	18	14.5	20.5
M 24	1.5	140	20	18	14.5	22.5	M 24	1.5	140	20	18	14.5	22.5
M 26	1.5	140	20	18	14.5	24.5	M 26	1.5	140	20	18	14.5	24.5
M 30	1.5	150	22	22	18	28.5	M 30	1.5	150	22	22	18	28.5

■ available – intermediate size on request

■ available – intermediate size on request

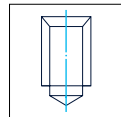
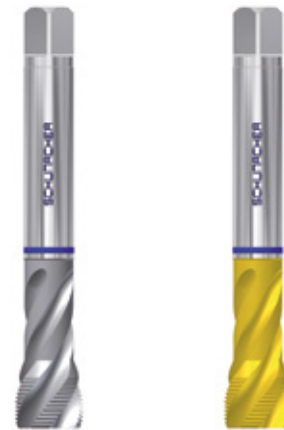
3.15 MF - ISO Metric Fine Thread DIN 13

Machine Taps Blue Ring

DIN 374 HSS-E
RH spiral flutes 40°
for chemical resistant steel

Group 5350
for blind holes

INOX
Stainless

 $2x d_1$ 

Cutting Data



SCHUMACHER

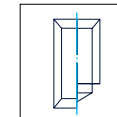
3.16 MF - ISO Metric Fine Thread DIN 13

Set of Taps

DIN 2181 HSS-E
set of 2 pieces, straight flutes
for general construction steel

Group 1200
for blind and through holes

STEEL

 $2x_d$ 

Cutting Data



SCHUMACHER

■ available – intermediate size on request

■ available – intermediate size on request

3.17 MF - ISO Metric Fine Thread DIN 13

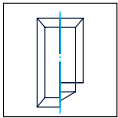
SCHUMACHER

Set of Taps

DIN 2181 HSS-E

set of 2 pieces, straight flutes
for general construction steel

Group 1200
for blind and through holes



Art-No.										Art-No.									
Technology Page 8.1										Technology Page 8.1									
Chamfer Length Page 8.4										Chamfer Length Page 8.4									
Surface Page 8.2										Surface Page 8.2									
Tolerance Page 8.5										Tolerance Page 8.5									
Cutting Data Page 8.6										Cutting Data Page 8.6									
1210012200										1210012200									
D / 3,5-5 x P C / 2-3 x P										D / 3,5-5 x P C / 2-3 x P									
bright bright										bright bright									
Nr. 1Nr. 2 = ISO2 (6H)										Nr. 1Nr. 2 = ISO2 (6H)									
P1 general construction steel K2+K3 spheroidal and malleable cast iron										P1 general construction steel K2+K3 spheroidal and malleable cast iron									
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂						Ø d ₁	P _{mm}	L ₁	L ₂	d ₂					
M 12	1.5	70	20	9	7	10.5	■		■	M 35	1.5	100	25	28	22	33.5	■		■
M 14	1.5	70	20	11	9	12.5	■		■	M 36	1.5	100	25	28	22	34.5	■		■
M 16	1.5	70	20	12	9	14.5	■		■	M18	2	80	22	14	11	16.0	■		■
M 18	1.5	80	22	14	11	16.5	■		■	M 20	2	80	22	16	12	18.0	■		■
M 20	1.5	80	22	16	12	18.5	■		■	M 22	2	80	22	18	14.5	20.0	■		■
M 22	1.5	80	22	18	14.5	20.5	■		■	M 24	2	90	22	18	14.5	22.0	■		■
M 24	1.5	90	22	18	14.5	22.5	■		■	M 27	2	90	22	20	16	25.0	■		■
M 25	1.5	90	22	18	14.5	23.5	■		■	M 30	2	90	22	22	18	28.0	■		■
M 26	1.5	90	22	18	14.5	24.5	■		■	M 36	3	125	36	28	22	33.0	■		■
M 27	1.5	90	22	20	16	25.5	■		■	M 39	3	125	36	32	24	36.0	■		■
M 28	1.5	90	22	20	16	26.5	■		■	M 42	3	125	36	32	24	39.0	■		■
M 30	1.5	90	22	22	18	28.5	■		■	M 45	3	125	36	36	29	42.0	■		■
M 32	1.5	90	25	22	18	30.5	■		■	M 48	3	140	36	36	29	45.0	■		■
M 33	1.5	100	25	25	20	31.5	■		■										
M 34	1.5	100	25	28	22	32.5	■		■										

Continuation »

3.18 MF - ISO Metric Fine Thread DIN 13

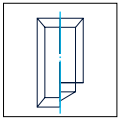
SCHUMACHER

Set of Taps

DIN 2181 HSS-E

set of 2 pieces, straight flutes
for general construction steel

Group 1200
for blind and through holes



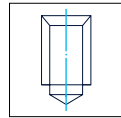
3.19 MF - ISO Metric Fine Thread DIN 13

Carbide Machine Taps

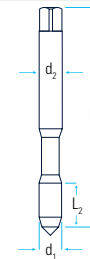
DIN 374 Solid Carbide

Group G580
for blind holes

HARD

 $2x d_1$ 

Cutting Data



Art.-No.		
Technology		Page 8.1
Chamfer Length		Page 8.4
Surface		Page 8.2
Tolerance		Page 8.5
Cutting Data		Page 8.6

Technical drawing of a tapered shaft. The shaft has a total length L and a total diameter d_1 at the bottom. The top diameter is d_2 . The height of the top cylindrical part is h_6 . The length of the tapered section is L_2 .

G5800/40	
VHM 	
Internal coolant	
C / 2-3 x P	
bright	
6HX	
K1 grey cast iron	N3 copper alloys
	H1 hard materials

■ available – intermediate size on request

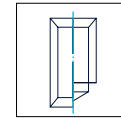
4.1 G - Whitworth Pipe Thread DIN ISO 228

Machine Taps

DIN 5156 HSS-E
straight flutes
for general construction steel

Group 5500
for blind and through holes

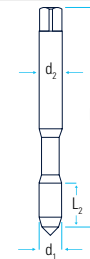
STEEL



2xd.



Cutting Data



Art.-No.	
Technology	 Page 8.1
Chamfer Length	 Page 8.4
Surface	 Page 8.2
Tolerance	 Page 8.5
Cutting Data	 Page 8.6

55000
C / 2-3 x P
bright
1 general construction steel

■ available – intermediate size on request

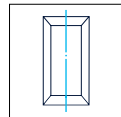
4.4 G - Whitworth Pipe Thread DIN ISO 228

Machine Taps Blue Ring

DIN 5156 HSS-E
Spiral point
for chemical resistant steel

Group 5620
for through holes

INOX
Stainless

 $2x d_1$ [illegible]

■ available – intermediate size on request

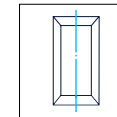
4.5 G - Whitworth Pipe Thread DIN ISO 228

Machine Taps Black Ring

DIN 5156 HSS-E
Spiral point
for universal use

Group 5690
for through holes

UNI



2xd.



■ available – intermediate size on request

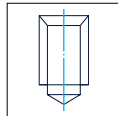
4.6 G - Whitworth Pipe Thread DIN ISO 228

Machine Taps

DIN 5156 HSS-E

RH spiral flutes 15°
for general construction steel

Group 5700
for blind holes

 $2x d_1$ 

Art.-No.	
Technology	 Page 8.1
Chamfer Length	 Page 8.4
Surface	 Page 8.2
Tolerance	 Page 8.5
Cutting Data	 Page 8.6

Technical drawing of a turning tool. The drawing shows a vertical tool with a cutting edge at the bottom. Dimensions are indicated with blue lines and labels: d_1 is the diameter at the cutting edge, d_2 is the diameter at the top of the tool, L_1 is the total length of the tool, and L_2 is the length of the cutting edge.

57000				
C / 2-3 x P				
bright				
P1 general construction steel K2+K3 spheroidal and malleable cast iron				

■ available – intermediate size on request

4.7 G - Whitworth Pipe Thread DIN ISO 228

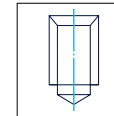
Machine Taps

DIN 5156 HSS-E

RH spiral flutes 40°
for general construction steel

Group 5800
for blind holes

STEEL

 $2x d_1$ 

High Speed Cutting
by Schumacher

Ø d ₁	P	L ₁	L ₂	d ₂									
G 1/8"	28	90	20	7	5.5	8.8		■		■			
G 1/4"	19	100	22	11	9	11.8		■		■			
G 3/8"	19	100	22	12	9	15.3		■		■			
G 1/2"	14	125	25	16	12	19.0		■		■			
G 5/8"	14	125	25	18	14.5	21.0		■		■			
G 3/4"	14	140	28	20	16	24.5		■		■			
G 7/8"	14	150	28	22	18	28.3		■		■			
G 1"	11	160	30	25	20	30.8		■		■			
G 1 1/4"	11	170	30	32	24	39.5		■		■			
G 1 1/2"	11	190	32	36	29	45.3		■		■			

■ available – intermediate size on request

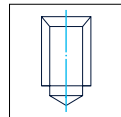
4.8 G - Whitworth Pipe Thread DIN ISO 228

Machine Taps Black Ring

DIN 5156 HSS-E
RH spiral flutes 40°
for universal use

Group 5830
for blind holes

UNI

 $2x d_1$ 

Cutting Data



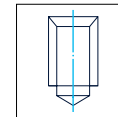
4.9 G - Whitworth Pipe Thread DIN ISO 228

Machine Taps Blue Ring

DIN 5156 HSS-E
RH spiral flutes 40°
for chemical resistant steel

Group 5850
for blind holes

INOX
Stainless



2xd.



Cutting Data



■ available – intermediate size on request

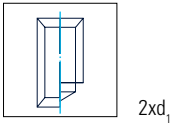
■ available – intermediate size on request

4.10 G - Whitworth Pipe Thread DIN ISO 228

Short Machine Taps

DIN 5157 HSS-E
straight flutes
for copper alloys

Group 1350
for blind and through holes



Cutting Data



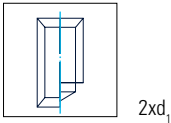
Art-No.															
Technology Page 8.1															
Chamfer Length Page 8.4															
Surface Page 8.2															
Tolerance Page 8.5															
Cutting Data Page 8.6															
13500															
E / 1,5-2 x P															
bright															
N3 copper alloys															
Ø d ₁	P	L ₁	L ₂	d ₂				Ø d ₁	P	L ₁	L ₂	d ₂			
G 1/8"	28	63	22	7	5.5	8.8	■	G 1/8"	28	63	22	7	5.5	8.8	■
G 1/4"	19	70	22	11	9	11.8	■	G 1/4"	19	70	22	11	9	11.8	■
G 3/8"	19	70	22	12	9	15.3	■	G 3/8"	19	70	22	12	9	15.3	■
G 1/2"	14	80	22	16	12	19.0	■	G 1/2"	14	80	22	16	12	19.0	■
G 5/8"	14	80	22	18	14.5	21.0	■	G 5/8"	14	80	22	18	14.5	21.0	■
G 3/4"	14	90	22	20	16	24.5	■	G 3/4"	14	90	22	20	16	24.5	■
G 7/8"	14	90	22	22	18	28.3	■	G 7/8"	14	90	22	22	18	28.3	■
G 1"	11	100	25	25	20	30.8		G 1"	11	100	25	25	20	30.8	■
G 1 1/8"	11	125	40	28	22	35.5		G 1 1/8"	11	125	40	28	22	35.5	■
G 1 1/4"	11	125	40	32	24	39.5	■	G 1 1/4"	11	125	40	32	24	39.5	■
G 1 3/8"	11	125	40	36	29	41.75	■	G 1 3/8"	11	125	40	36	29	41.75	■
G 1 1/2"	11	140	40	36	29	45.3	■	G 1 1/2"	11	140	40	36	29	45.3	■
G 1 3/4"	11	140	40	40	32	51.0		G 1 3/4"	11	140	40	40	32	51.0	
G 2"	11	160	40	45	35	57.0		G 2"	11	160	40	45	35	57.0	

4.11 G - Whitworth Pipe Thread DIN ISO 228

Short Machine Taps

DIN 5157 HSS-E
straight flutes
for cast iron

Group 1360
for blind and through holes



Cutting Data



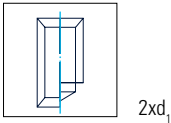
Art-No.															
Technology Page 8.1															
Chamfer Length Page 8.4															
Surface Page 8.2															
Tolerance Page 8.5															
Cutting Data Page 8.6															
13600/01															
C / 2-3 x P															
nitrided															
K1 grey cast iron N7 duroplastics															
Ø d ₁	P	L ₁	L ₂	d ₂				Ø d ₁	P	L ₁	L ₂	d ₂			
G 1/8"	28	63	22	7	5.5	8.8	■	G 1/8"	28	63	22	7	5.5	8.8	■
G 1/4"	19	70	22	11	9	11.8	■	G 1/4"	19	70	22	11	9	11.8	■
G 3/8"	19	70	22	12	9	15.3	■	G 3/8"	19	70	22	12	9	15.3	■
G 1/2"	14	80	22	16	12	19.0	■	G 1/2"	14	80	22	16	12	19.0	■
G 5/8"	14	80	22	18	14.5	21.0	■	G 5/8"	14	80	22	18	14.5	21.0	■
G 3/4"	14	90	22	20	16	24.5	■	G 3/4"	14	90	22	20	16	24.5	■
G 7/8"	14	90	22	22	18	28.3	■	G 7/8"	14	90	22	22	18	28.3	■
G 1"	11	100	25	25	20	30.8	■	G 1"	11	100	25	25	20	30.8	■
G 1 1/8"	11	125	40	28	22	35.5	■	G 1 1/8"	11	125	40	28	22	35.5	■
G 1 1/4"	11	125	40	32	24	39.5	■	G 1 1/4"	11	125	40	32	24	39.5	■
G 1 3/8"	11	125	40	36	29	41.75	■	G 1 3/8"	11	125	40	36	29	41.75	■
G 1 1/2"	11	140	40	36	29	45.3	■	G 1 1/2"	11	140	40	36	29	45.3	■
G 1 3/4"	11	140	40	40	32	51.0		G 1 3/4"	11	140	40	40	32	51.0	
G 2"	11	160	40	45	35	57.0		G 2"	11	160	40	45	35	57.0	

4.12 G - Whitworth Pipe Thread DIN ISO 228

Set of Taps

DIN 5157 HSS-E
set of 2 pieces, straight flutes
for general construction steel

Group 1300
for blind and through holes



Art-No.								Technology  Page 8.1							
Chamfer Length  Page 8.4								Surface  Page 8.2							
Tolerance  Page 8.5								Cutting Data  Page 8.6							
13100								13200							
D / 3,5-5 x P								C / 2-3 x P							
bright								bright							
Nr. 1								Nr. 2							
P1 general construction steel								K2+K3 spheroidal and malleable cast iron							
Ø d ₁	P	L ₁	L ₂	d ₂											
G 1/8"	28	63	22	7	5.5	8.8									
G 1/4"	19	70	22	11	9	11.8									
G 3/8"	19	70	22	12	9	15.3									
G 1/2"	14	80	22	16	12	19.0									
G 5/8"	14	80	22	18	14.5	21.0									
G 3/4"	14	90	22	20	16	24.5									
G 7/8"	14	90	22	22	18	28.3									
G 1"	11	100	25	25	20	30.8									
G 1 1/8"	11	125	40	28	22	35.5									
G 1 1/4"	11	125	40	32	24	39.5									
G 1 3/8"	11	125	40	36	29	41.75									
G 1 1/2"	11	140	40	36	29	45.3									
G 1 3/4"	11	140	40	40	32	51.0									
G 2"	11	160	40	45	35	57.0									

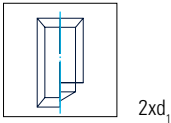
Art-No.								Technology  Page 8.1							
Chamfer Length  Page 8.4								Surface  Page 8.2							
Tolerance  Page 8.5								Cutting Data  Page 8.6							
34000															
C / 2-3 x P															
bright															
2 B															
P1 general construction steel															
Ø d ₁	P	L ₁	L ₂	d ₂											
Nr. 4	40	56	11	3.5	2.7	2.35									
Nr. 5	40	56	11	3.5	2.7	2.65									
Nr. 6	32	56	12	4	3	2.85									
Nr. 8	32	63	13	4.5	3.4	3.5									
Nr. 10	24	70	15	6	4.9	3.9									
Nr. 12	24	80	17	6	4.9	4.5									
1/4"	20	80	17	7	5.5	5.2									
5/16"	18	90	20	8	6.2	6.6									
3/8"	16	100	22	9	7	8.0									

5.1 UNC - Unified Coarse Thread ANSI B1.1

Machine Taps

DIN 371 HSS-E
straight flutes
for general construction steel

Group 3400
for blind and through holes

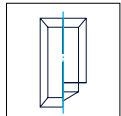


5.2 UNC - Unified Coarse Thread ANSI B1.1

Machine Taps

DIN 376 HSS-E
straight flutes
for general construction steel

Group 4400
for blind and through holes

 $2x d_1$ 

Cutting Data



SCHUMACHER

■ available – intermediate size on request

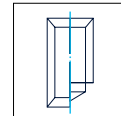
5.3 UNC - Unified Coarse Thread ANSI B1.1

Machine Taps White Ring

DIN 371 HSS-E
straight flutes
for cast iron

Group 3430
for blind and through holes

CAST
IRON



2xd.



Cutting Data



SCHUMACHER

■ available – intermediate size on request

5.4 UNC - Unified Coarse Thread ANSI B1.1

SCHUMACHER

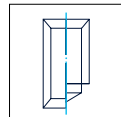
Machine Taps White Ring

DIN 376 HSS-E

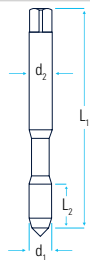
straight flutes
for cast iron

Group 4430
for blind and through holes

CAST
IRON

 $2x d_1$ 

Art.-No.	
Technology	 Page 8.1
Chamfer Length	 Page 8.4
Surface	 Page 8.2
Tolerance	 Page 8.5
Cutting Data	 Page 8.6



44300/01
White Ring
C / 2-3 x P
nitrided
2 B
K1 grey cast iron N7 duroplastics

[illegible]

■ available – intermediate size on request

5.5 UNC - Unified Coarse Thread ANSI B1.1

SCHUMACHER

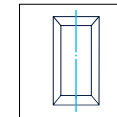
Machine Taps

DIN 371 HSS-E

Spiral point
for general construction steel

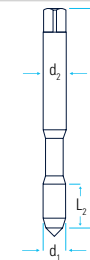
Group 3450
for through holes

STEEL

 $2x d_1$ 

High Speed Cutting
by Schumacher

Art.-No.	
Technology	 Page 8.1
Chamfer Length	 Page 8.4
Surface	 Page 8.2
Tolerance	 Page 8.5
Cutting Data	 Page 8.6



34500	34500/25
High Volume 🚚	High Volume 🚚
B / 3,5-5 x P	
bright	TiN
2 B	2 B
P1 general construction steel	K2+K3 spheroidal and malleable cast iron

[illegible]

■ available – intermediate size on request

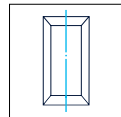
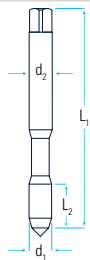
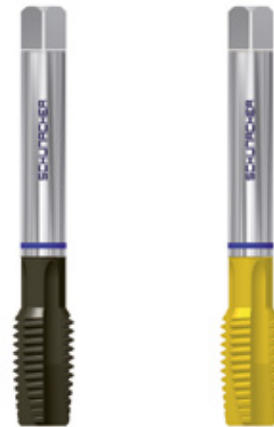
5.8 UNC - Unified Coarse Thread ANSI B1.1

Machine Taps Blue Ring

DIN 376 HSS-E
Spiral point
for chemical resistant steel

Group 4460
for through holes

INOX
Stainless

 $2x d_1$ 

44600/26	44600/25
Blue Ring	Blue Ring
B / 3,5-5 x P	
VAP	TiN
2 B	2 B
P2 high strength steel	M1 chemical resistant steel

[illegible]

■ available – intermediate size on request

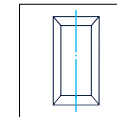
5.9 UNC - Unified Coarse Thread ANSI B1.1

Machine Taps Black Ring

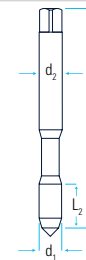
DIN 376 HSS-E
Spiral point
for universal use

Group 3490
for through holes

UNI



2xd.



Art.-No.	
Technology	Page 8.1
Chamfer Length	Page 8.4
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Tolerance	Page 8.5
Cutting Data	Page 8.6

[illegible]

■ available – intermediate size on request

■ available – intermediate size on request

5.12 UNC - Unified Coarse Thread ANSI B1.1

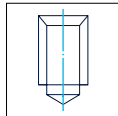
Machine Taps Red Ring

DIN 371 HSS-E PM

RH spiral flutes 20°
for nickel alloys

Group 3480
for blind holes



 $2x d_1$ 

Cutting Data



5.13 UNC - Unified Coarse Thread ANSI B1.1

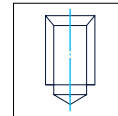
Machine Taps Red Ring

DIN 371 HSS-E PM

RH spiral flutes 20°
for nickel alloys

Group 4480
for blind holes



 $2x d_1$ 

Cutting Data



■ available – intermediate size on request

■ available – intermediate size on request

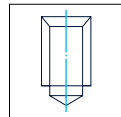
5.18 UNC - Unified Coarse Thread ANSI B1.1

SCHUMACHER

Machine Taps Black Ring

DIN 371 HSS-E
RH spiral flutes 40°
for universal use

Group 3590
for blind holes

 $2x d_1$ 

Cutting Data



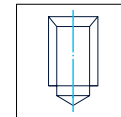
5.19 UNC - Unified Coarse Thread ANSI B1.1

SCHUMACHER

Machine Taps Black Ring

DIN 371 HSS-E
RH spiral flutes 40°
for universal use

Group 4590
for blind holes

 $3x d_1$ 

Cutting Data

[illegible]

■ available – intermediate size on request

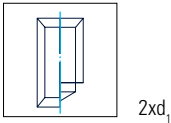
■ available – intermediate size on request

5.20 UNC - Unified Coarse Thread ANSI B1.1

Forming Taps

DIN 371 HSS-E
straight oil grooves for steel, non-ferrous steel
and heat treatable steel

Group 3560
for blind and through holes



High Speed Cutting
by Schumacher



Art.-No.										Art.-No.									
Technology Page 8.1										Technology Page 8.1									
Chamfer Length Page 8.4										Chamfer Length Page 8.4									
Surface Page 8.2										Surface Page 8.2									
Tolerance Page 8.5										Tolerance Page 8.5									
Cutting Data Page 8.6										Cutting Data Page 8.6									
35600/53 High Volume										35600/2553 High Volume									
C / 2-3 x P										C / 2-3 x P									
bright										TiN									
2 BX										2 BX									
P1 general construction steel										P2 high strength steel N3 copper alloys									

Ø d ₁	P	L ₁	L ₂	d ₂						Ø d ₁	P	L ₁	L ₂	d ₂					
Nr. 4	40	56	11	3.5	2.7	2.55	■		■	Nr. 4	40	40	12	3.5	2.7	2.3	■		■
Nr. 5	40	56	11	3.5	2.7	2.9	■		■	Nr. 5	40	40	12	3.5	2.7	2.6	■		■
Nr. 6	32	56	12	4	3	3.15	■		■	Nr. 6	32	45	14	4	3	2.8	■		■
Nr. 8	32	63	13	4.5	3.4	3.8	■		■	Nr. 8	32	45	14	4.5	3.4	3.5	■		■
Nr. 10	24	70	15	6	4.9	4.35	■		■	Nr. 10	24	50	16	6	4.9	3.9	■		■
Nr. 12	24	80	17	6	4.9	4.95				Nr. 12	24	50	16	6	4.9	4.5	■		■
1/4"	20	80	17	7	5.5	5.8	■		■	1/4"	20	50	18	6	4.9	5.2	■		■
5/16"	18	90	20	8	6.2	7.3	■		■	5/16"	18	56	18	6	4.9	6.6	■		■
3/8"	16	100	22	9	7	8.8	■		■	3/8"	16	70	23	7	5.5	8.0	■		■
										7/16"	14	70	25	8	6.2	9.4	■		■
										1/2"	13	75	28	9	7	10.8	■		■
										9/16"	12	80	30	11	9	12.2	■		■
										5/8"	11	80	30	12	9	13.6	■		■
										3/4"	10	95	35	14	11	16.5	■		■
										7/8"	9	110	38	18	14.5	19.5	■		■
										1"	8	110	38	20	16	22.3	■		■

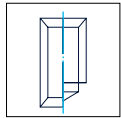
15100		15200		15300	
D / 3,5-5 x P		3-4 x P		C / 2-3 x P	
bright		bright		bright	
Nr. 1		Nr. 2		Nr. 3 = 2 B	
P1 general construction steel		K2+K3 spheroidal and malleable cast iron			

5.22 UNF - Unified Fine Thread ANSI B1.1

Machine Taps

DIN 371 HSS-E
straight flutes
for general construction steel

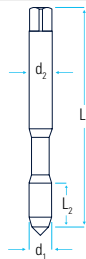
Group 3600
for blind and through holes

 $2x d_1$ 

Cutting Data



Art.-No.

Technology Page 8.1Champfer Length Page 8.4Surface Page 8.2Tolerance  Page 8.5Cutting Data Page 8.6

36000

C / 2-3 x P

bright

2 B

P1 general construction steel

■ available – intermediate size on request

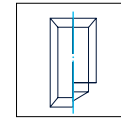
5.23 UNF - Unified Fine Thread ANSI B1.1

Machine Taps

DIN 374 HSS-E
straight flutes
for general construction steel

Group 4600
for blind and through holes

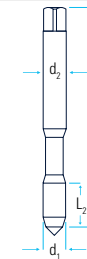
STEEL

 $2x d_1$ 

Cutting Data



Art.-No.

Technology Page 8.1Champfer Length Page 8.4Surface Page 8.2Tolerance  Page 8.5Cutting Data Page 8.6

46000

C / 2-3 x P

bright

2B

P1 general construction steel

■ available – intermediate size on request

5.24 UNF - Unified Fine Thread ANSI B1.1

SCHUMACHER

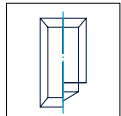
Machine Taps White Ring

DIN 371 HSS-E

straight flutes
for cast iron

Group 3630
for blind and through holes

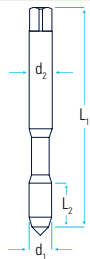
CAST
IRON

 $2x d_1$ 

Cutting Data



Art.-No.	
Technology	 Page 8.1
Chamfer Length	 Page 8.4
Surface	 Page 8.2
Tolerance	 Page 8.5
Cutting Data	 Page 8.6



36300/01			
White Ring			
C / 2-3 x P			
nitrided			
2 B			
K1 grey cast iron	N7 duroplastics		

■ available – intermediate size on request

5.25 UNF - Unified Fine Thread ANSI B1.1

SCHUMACHER

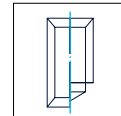
Machine Taps White Ring

DIN 374 HSS-E

straight flutes
for cast iron

Group 4630
for blind and through holes

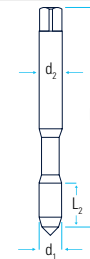
CAST
IRON

 $2x d_1$ 

Cutting Data



Art.-No.	
Technology	 Page 8.1
Chamfer Length	 Page 8.4
Surface	 Page 8.2
Tolerance	 Page 8.5
Cutting Data	 Page 8.6



46300/01			
White Ring			
C / 2-3 x P			
nitrided			
2 B			
K1 grey cast iron	N7 duroplastics		

■ available – intermediate size on request

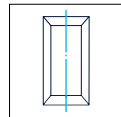
5.28 UNF - Unified Fine Thread ANSI B1.1

Machine Taps Blue Ring

DIN 371 HSS-E
Spiral point
for chemical resistant steel

Group 3660
for through holes

INOX
Stainless

 $2x d_1$ 

36600	36600/25
Blue Ring	Blue Ring
B / 3,5-5 x P	
bright	TiN
2 B	2 B
P2 high strength steel	M1 chemical resistant steel

[illegible]

■ available – intermediate size on request

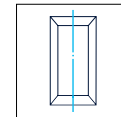
5.29 UNF - Unified Fine Thread ANSI B1.1

Machine Taps Blue Ring

DIN 374 HSS-E
Spiral point
for chemical resistant steel

Group 4660
for through holes

INOX
Stainless

 $2x d_1$ 

Art.-No.																
Technology	 Page 8.1															
Chamfer Length	 Page 8.4															
Surface	 Page 8.2															
Tolerance	 Page 8.5															
Cutting Data	 Page 8.6															
			<table> <tr> <td>46600</td><td>46600/25</td></tr> <tr> <td>Blue Ring</td><td>Blue Ring</td></tr> <tr> <td colspan="2">B / 3,5-5 x P</td></tr> <tr> <td>bright</td><td>TiN</td></tr> <tr> <td>2 B</td><td>2 B</td></tr> <tr> <td>P2 high strength steel</td><td>M1 chemical resistant steel</td></tr> </table>		46600	46600/25	Blue Ring	Blue Ring	B / 3,5-5 x P		bright	TiN	2 B	2 B	P2 high strength steel	M1 chemical resistant steel
46600	46600/25															
Blue Ring	Blue Ring															
B / 3,5-5 x P																
bright	TiN															
2 B	2 B															
P2 high strength steel	M1 chemical resistant steel															

[illegible]

■ available – intermediate size on request

■ available – intermediate size on request

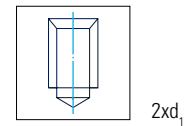
5.34 UNF - Unified Fine Thread ANSI B1.1

Machine Taps

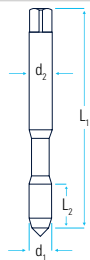
DIN 374 HSS-E
RH spiral flutes 40°
for general construction steel

Group 4720
for blind holes

STEEL



Art.-No.	
Technology	 Page 8.1
Chamfer Length	 Page 8.4
Surface	 Page 8.2
Tolerance	 Page 8.5
Cutting Data	 Page 8.6



47200	47200/25
C / 2-3 x P	
bright	TiN
2 B	2 B
P1 general construction steel	K2+K3 spheroidal and malleable cast iron

[illegible]

■ available – intermediate size on request

SCHUMACHER

Cutting Data



High Speed Cutting
by Schumacher

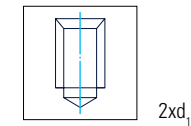
5.35 UNF - Unified Fine Thread ANSI B1.1

Machine Taps Blue Ring

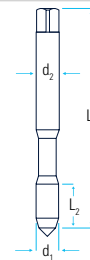
DIN 371 HSS-E
RH spiral flutes 40°
for chemical resistant steel

Group 3730
for blind holes

INOX
Stainless



Art.-No.	
Technology	 Page 8.1
Chamfer Length	 Page 8.4
Surface	 Page 8.2
Tolerance	 Page 8.5
Cutting Data	 Page 8.6



37300	37300/25
Blue Ring	Blue Ring
C / 2-3 x P	
bright	TiN
2 B	2 B
P2 high strength steel	M1 chemical resistant steel

[illegible]

■ available – intermediate size on request

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Cutting Data

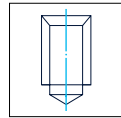
■ available – intermediate size on request

5.38 UNF - Unified Fine Thread ANSI B1.1

Machine Taps Black Ring

DIN 374 HSS-E
RH spiral flutes 40°
for universal use

Group 4790
for blind holes

 $2x d_1$ 

Cutting Data

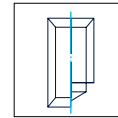


5.39 UNF - Unified Fine Thread ANSI B1.1

Set of Taps

DIN 2181 HSS-E
set of 2 pieces, straight flutes
for general construction steel

Group 1600
for blind and through holes

 $2x d_1$ 

Cutting Data



■ available – intermediate size on request

■ available – intermediate size on request

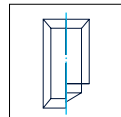
6.1 NPT - American Tapered Pipe Thread ANSI B 1.20.1

SCHUMACHER

Machine Taps

internal standard HSS-E
straight flutes
for general construction steel

Group 1730
for blind and through holes

 $2x d_1$ 

Cutting Data



6.2 NPT - American Tapered Pipe Thread ANSI B 1.20.1

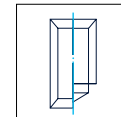
SCHUMACHER

Machine Taps Red Ring

internal standard HSS-E PM
RH spiral flutes 15°
for high strength steel

Group 1750
for blind and through holes



 $2x d_1$ 

Cutting Data



■ available – intermediate size on request

■ available – intermediate size on request

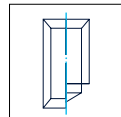
6.3 NPT - American Tapered Pipe Thread ANSI B 1.20.1

Set of Taps

DIN 2181 HSS-E

set of 2 pieces, straight flutes
for general construction steel

Group 1700
for blind and through holes

 $2x d_1$ [illegible]

■ available – intermediate size on request

6.4 PG - Steel Conduit Thread DIN 40430

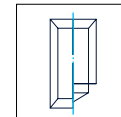
Machine Taps

DIN 40433 HSS-E

straight flutes
for general construction steel

Group 1830
for blind and through holes

STEEL

 $2x d_1$ [illegible]

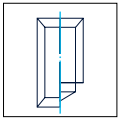
■ available – intermediate size on request

6.5 PG - Steel Conduit Thread DIN 40430

Set of Taps

DIN 40432 HSS-E
set of 2 pieces, straight flutes
for general construction steel

Group 1800
for blind and through holes

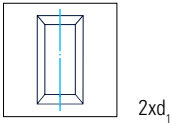


6.5 PG - Steel Conduit Thread DIN 40430										6.6 TR - ISO Metric Trapezoidal Thread DIN 103 1977													
Art.-No.		Technology Page 8.1		Chamfer Length Page 8.4		Surface Page 8.2		Tolerance Page 8.5		Cutting Data Page 8.6		Art.-No.		Technology Page 8.1		Chamfer Length Page 8.4		Surface Page 8.2		Tolerance Page 8.5		Cutting Data Page 8.6	
		18100		18200		D / 3,5-5 x P		C / 2-3 x P		bright		bright		bright		7H		7H		P1 general construction steel		K2+K3 spheroidal and malleable cast iron	
Nr.1		Nr.2																					
Ø d ₁	P	L ₁	L ₂	d ₂								Ø d ₁	P _{mm}	L ₁	L ₂	d ₂							
Pg 7	20	70	20	9	7	11.4	■					Tr 10	2	110	65	7	5.5	8.2	■				
Pg 9	18	70	20	12	9	14.0	■					Tr 12	3	160	110	8	6.2	9.25	■				
Pg 11	18	80	22	14	11	17.4	■					Tr 14	3	160	110	10	8	11.25	■				
Pg 13.5	18	80	22	16	12	19.2	■					Tr 16	4	200	130	11	9	12.3	■				
Pg 16	18	80	22	18	14.5	21.3	■					Tr 18	4	200	130	12	9	14.3	■				
Pg 21	16	90	22	22	18	27.0	■					Tr 20	4	200	130	15	12	16.3	■				
Pg 29	16	100	25	28	22	35.6	■					Tr 22	5	240	155	16	12	17.3	■				
Pg 36	16	140	25	36	29	45.6	■					Tr 24	5	240	155	18	14.5	19.3	■				
												Tr 26	5	260	165	20	16	21.3	■				
												Tr 28	5	270	170	22	18	23.3	■				
												Tr 30	6	290	190	22	18	24.3	■				
												Tr 32	6	300	190	25	20	26.3	■				
												Tr 36	6	320	200	28	22	30.3	■				
												Tr 40	7	390	250	32	24	33.5	■				

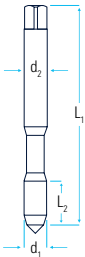
Set of Taps

internal standard HSS-E
set of 3 pieces, LH spiral flutes 6°
for general construction steel

Group 6800
for through holes



Art.-No.		68100		68200		68300	
Technology Page 8.1							
Chamfer Length Page 8.4							
Surface Page 8.2		bright		bright		bright	
Tolerance Page 8.5		Nr. 1		Nr. 2		Nr. 3 = 7H	
Cutting Data Page 8.6		P1 general construction steel		K2+K3 spheroidal and malleable cast iron			

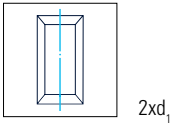


Ø d ₁	P _{mm}	L ₁	L ₂	d ₂								
Tr 10	2	90	35	7	5.5	8.2	■			■		
Tr 12	3	110	45	8	6.2	9.25	■			■		
Tr 14	3	130	45	10	8	11.25	■			■		
Tr 16	4	140	55	11	9	12.3	■			■		
Tr 18	4	150	55	12	9	14.3	■			■		
Tr 20	4	160	55	15	12	16.3	■			■		
Tr 22	5	180	70	16	12	17.3	■			■		
Tr 24	5	190	70	18	14.5	19.3	■			■		
Tr 26	5	210	70	20	16	21.3	■			■		
Tr 28	5	220	70	22	18	23.3	■			■		
Tr 30	6	240	85	22	18	24.3	■			■		
Tr 32	6	255	85	25	20	26.3	■			■		
Tr 36	6	280	85	28	22	30.3	■			■		
Tr 40	7	310	100	32	24	33.5	■			■		

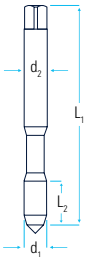
Set of Taps

internal standard HSS-E
set of 3 pieces, RH spiral flutes 6°
for general construction steel

Group 6800 LH
for through holes



Art.-No.		68105		68205		68305	
Technology Page 8.1		LH		LH		LH	
Chamfer Length Page 8.4							
Surface Page 8.2		bright		bright		bright	
Tolerance Page 8.5		Nr. 1		Nr. 2		Nr. 3 = 7H	
Cutting Data Page 8.6		P1 general construction steel		K2+K3 spheroidal and malleable cast iron			



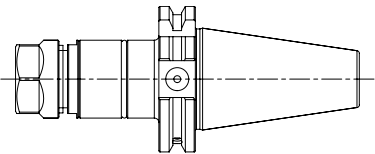
Ø d ₁	P _{mm}	L ₁	L ₂	d ₂								
Tr 10	2	90	35	7	5.5	8.2	■			■		
Tr 12	3	110	45	8	6.2	9.25	■			■		
Tr 14	3	130	45	10	8	11.25	■			■		
Tr 16	4	140	55	11	9	12.3	■			■		
Tr 18	4	150	55	12	9	14.3	■			■		
Tr 20	4	160	55	15	12	16.3	■			■		
Tr 22	5	180	70	16	12	17.3	■			■		
Tr 24	5	190	70	18	14.5	19.3	■			■		
Tr 26	5	210	70	20	16	21.3	■			■		
Tr 28	5	220	70	22	18	23.3	■			■		
Tr 30	6	240	85	22	18	24.3	■			■		
Tr 32	6	255	85	25	20	26.3	■			■		
Tr 36	6	280	85	28	22	30.3	■			■		
Tr 40	7	310	100	32	24	33.5	■			■		

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PRECISION TOOLS SINCE 1918

Developed by: **ToolDesign**
by Schumacher

CATALOGUE NO. 125 S - THREADING TECHNOLOGY



Edition
Tap Holder
New product development

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[illegible]

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Supporting Digital Production

Art.-No.						S2400		
Technology						NUMERIC		
Tool Adaptation						ER (GB) collet		
Shank Types						straight shank		
Cooling & Lubrication						internal coolant - lubricant supply		

Technical drawing of the S2400 tool. The drawing shows a vertical tool with a cylindrical body. Dimensions are indicated: D is the outer diameter of the upper section, D1 is the outer diameter of the lower section, L1 is the length of the lower section, and D2 is the diameter of the internal coolant/lubricant supply holes.

Zyl.-Size-D	Taps	Ø Range	Ø D ₁	L ₁	c _v T ₁ T ₂ T ₃ T ₄ T ₅ T ₆ T ₇ T ₈ T ₉ T ₁₀ T ₁₁ T ₁₂ T ₁₃ T ₁₄ T ₁₅ T ₁₆ T ₁₇ T ₁₈ T ₁₉ T ₂₀ T ₂₁ T ₂₂ T ₂₃ T ₂₄ T ₂₅ T ₂₆ T ₂₇ T ₂₈ T ₂₉ T ₃₀ T ₃₁ T ₃₂ T ₃₃ T ₃₄ T ₃₅ T ₃₆ T ₃₇ T ₃₈ T ₃₉ T ₄₀ T ₄₁ T ₄₂ T ₄₃ T ₄₄ T ₄₅ T ₄₆ T ₄₇ T ₄₈ T ₄₉ T ₅₀ T ₅₁ T ₅₂ T ₅₃ T ₅₄ T ₅₅ T ₅₆ T ₅₇ T ₅₈ T ₅₉ T ₆₀ T ₆₁ T ₆₂ T ₆₃ T ₆₄ T ₆₅ T ₆₆ T ₆₇ T ₆₈ T ₆₉ T ₇₀ T ₇₁ T ₇₂ T ₇₃ T ₇₄ T ₇₅ T ₇₆ T ₇₇ T ₇₈ T ₇₉ T ₈₀ T ₈₁ T ₈₂ T ₈₃ T ₈₄ T ₈₅ T ₈₆ T ₈₇ T ₈₈ T ₈₉ T ₉₀ T ₉₁ T ₉₂ T ₉₃ T ₉₄ T ₉₅ T ₉₆ T ₉₇ T ₉₈ T ₉₉ T ₁₀₀ T ₁₀₁ T ₁₀₂ T ₁₀₃ T ₁₀₄ T ₁₀₅ T ₁₀₆ T ₁₀₇ T ₁₀₈ T ₁₀₉ T ₁₁₀ T ₁₁₁ T ₁₁₂ T ₁₁₃ T ₁₁₄ T ₁₁₅ T ₁₁₆ T ₁₁₇ T ₁₁₈ T ₁₁₉ T ₁₂₀ T ₁₂₁ T ₁₂₂ T ₁₂₃ T ₁₂₄ T ₁₂₅ T ₁₂₆ T ₁₂₇ T ₁₂₈ T ₁₂₉ T ₁₃₀ T ₁₃₁ T ₁₃₂ T ₁₃₃ T ₁₃₄ T ₁₃₅ T ₁₃₆ T ₁₃₇ T ₁₃₈ T ₁₃₉ T ₁₄₀ T ₁₄₁ T ₁₄₂ T ₁₄₃ T ₁₄₄ T ₁₄₅ T ₁₄₆ T ₁₄₇ T ₁₄₈ T ₁₄₉ T ₁₅₀ T ₁₅₁ T ₁₅₂ T ₁₅₃ T ₁₅₄ T ₁₅₅ T ₁₅₆ T ₁₅₇ T ₁₅₈ T ₁₅₉ T ₁₆₀ T ₁₆₁ T ₁₆₂ T ₁₆₃ T ₁₆₄ T ₁₆₅ T ₁₆₆ T ₁₆₇ T ₁₆₈ T ₁₆₉ T ₁₇₀ T ₁₇₁ T ₁₇₂ T ₁₇₃ T ₁₇₄ T ₁₇₅ T ₁₇₆ T ₁₇₇ T ₁₇₈ T ₁₇₉ T ₁₈₀ T ₁₈₁ T ₁₈₂ T ₁₈₃ T ₁₈₄ T ₁₈₅ T ₁₈₆ T ₁₈₇ T ₁₈₈ T ₁₈₉ T ₁₉₀ T ₁₉₁ T ₁₉₂ T ₁₉₃ T ₁₉₄ T ₁₉₅ T ₁₉₆ T ₁₉₇ T ₁₉₈ T ₁₉₉ T ₂₀₀ T ₂₀₁ T ₂₀₂ T ₂₀₃ T ₂₀₄ T ₂₀₅ T ₂₀₆ T ₂₀₇ T ₂₀₈ T ₂₀₉ T ₂₁₀ T ₂₁₁ T ₂₁₂ T ₂₁₃ T ₂₁₄ T ₂₁₅ T ₂₁₆ T ₂₁₇ T ₂₁₈ T ₂₁₉ T ₂₂₀ T ₂₂₁ T ₂₂₂ T ₂₂₃ T ₂₂₄ T ₂₂₅ T ₂₂₆ T ₂₂₇ T ₂₂₈ T ₂₂₉ T ₂₃₀ T ₂₃₁ T ₂₃₂ T ₂₃₃ T ₂₃₄ T ₂₃₅ T ₂₃₆ T ₂₃₇ T ₂₃₈ T ₂₃₉ T ₂₄₀ T ₂₄₁ T ₂₄₂ T ₂₄₃ T ₂₄₄ T ₂₄₅ T ₂₄₆ T ₂₄₇ T ₂₄₈ T ₂₄₉ T ₂₅₀ T ₂₅₁ T ₂₅₂ T ₂₅₃ T ₂₅₄ T ₂₅₅ T ₂₅₆ T ₂₅₇ T ₂₅₈ T ₂₅₉ T ₂₆₀ T ₂₆₁ T ₂₆₂ T ₂₆₃ T ₂₆₄ T ₂₆₅ T ₂₆₆ T ₂₆₇ T ₂₆₈ T ₂₆₉ T ₂₇₀ T ₂₇₁ T ₂₇₂ T ₂₇₃ T ₂₇₄ T ₂₇₅ T ₂₇₆ T ₂₇₇ T ₂₇₈ T ₂₇₉ T ₂₈₀ T ₂₈₁ T ₂₈₂ T ₂₈₃ T ₂₈₄ T ₂₈₅ T ₂₈₆ T ₂₈₇ T ₂₈₈ T ₂₈₉ T ₂₉₀ T ₂₉₁ T ₂₉₂ T ₂₉₃ T ₂₉₄ T ₂₉₅ T ₂₉₆ T ₂₉₇ T ₂₉₈ T ₂₉₉ T ₃₀₀ T ₃₀₁ T ₃₀₂ T ₃₀₃ T ₃₀₄ T ₃₀₅ T ₃₀₆ T ₃₀₇ T ₃₀₈ T ₃₀₉ T ₃₁₀ T ₃₁₁ T ₃₁₂ T ₃₁₃ T ₃₁₄ T ₃₁₅ T ₃₁₆ T ₃₁₇ T ₃₁₈ T ₃₁₉ T ₃₂₀ T ₃₂₁ T ₃₂₂ T ₃₂₃ T ₃₂₄ T ₃₂₅ T ₃₂₆ T ₃₂₇ T ₃₂₈ T ₃₂₉ T ₃₃₀ T ₃₃₁ T ₃₃₂ T ₃₃₃ T ₃₃₄ T ₃₃₅ T ₃₃₆ T ₃₃₇ T ₃₃₈ T ₃₃₉ T ₃₄₀ T ₃₄₁ T ₃₄₂ T ₃₄₃ T ₃₄₄ T ₃₄₅ T ₃₄₆ T ₃₄₇ T ₃₄₈ T ₃₄₉ T ₃₅₀ T ₃₅₁ T ₃₅₂ T ₃₅₃ T ₃₅₄ T ₃₅₅ T ₃₅₆ T ₃₅₇ T ₃₅₈ T ₃₅₉ T ₃₆₀ T ₃₆₁ T ₃₆₂ T ₃₆₃ T ₃₆₄ T ₃₆₅ T ₃₆₆ T ₃₆₇ T ₃₆₈ T ₃₆₉ T ₃₇₀ T ₃₇₁ T ₃₇₂
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Supporting Digital Production

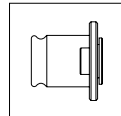
[illegible]

Tap Holder - NUMERIC

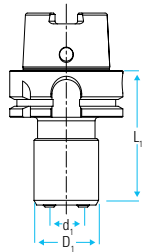
DIN 69893 HSK-A

Group S4200
for machines with synchronous spindle

minimum length compensation



NUMERIC
Supporting Digital Production



S4200			
NUMERIC			
Quick Change Adapter			
Hollow taper shanks			
—			

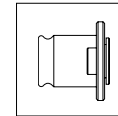
HSK-Size	Taps	Ø d ₁	Ø D ₁	L ₁		Size	Dimension	Availability
32	M 3 - M 12	19	36	75	0.4 0.2	1	75/36	
50	M 3 - M 12	19	36	72	0.4 0.2	1	72/36	
	M 8 - M 20	31	53	91	0.4 0.2	2	91/53	
63	M 3 - M 12	19	36	75	0.4 0.2	1	75/36	
	M 3 - M 12	19	36	80	0.4 0.2	1	80/36	
	M 3 - M 12	19	36	120	0.4 0.2	1	120/36	
	M 3 - M 12	19	36	152	0.4 0.2	1	152/36	
	M 3 - M 12	19	36	180	0.4 0.2	1	180/36	
	M 8 - M 20	31	53	89	0.4 0.2	2	89/53	
	M 14 - M 33	48	78	121	0.4 0.2	3	121/78	
100	M 3 - M 12	19	36	75	0.4 0.2	1	75/36	
	M 3 - M 12	19	36	160	0.4 0.2	1	160/36	
	M 8 - M 20	31	53	94	0.4 0.2	2	94/53	
	M 8 - M 20	31	53	160	0.4 0.2	2	160/53	
	M 14 - M 33	48	78	127	0.4 0.2	3	127/78	
	M 14 - M 33	48	78	160	0.4 0.2	3	160/78	

Tap Holder - NUMERIC

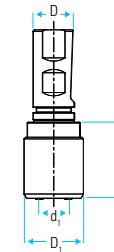
DIN 1835 B

Group S4400
for machines with synchronous spindle

minimum length compensation



NUMERIC
Supporting Digital Production



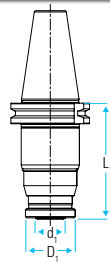
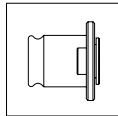
Art.-No.		S4400			
Technology		NUMERIC			
Tool Adaptation		Quick Change Adapter			
Shank Types		straight shank			
Cooling & Lubrication		—			

[illegible]

Tap Holder

DIN 69871 AD/B

Group S1000
for CNC machining centers and
conventional machine tools



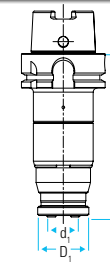
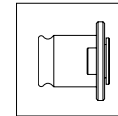
\$1000			
Quick Change Adapter			
ISO taper shanks			
—			

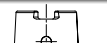
[illegible]

Tap Holder

DIN 69893 HSK-A

Group S1200
for CNC machining centers and
conventional machine tools



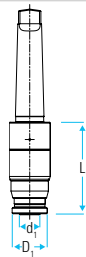
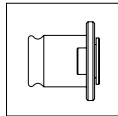
Art.-No.		S1200							
Technology									
Tool Adaptation									
Shank Types		Quick Change Adapter							
Cooling & Lubrication		Hollow taper shanks							
		—							

[illegible]

Tap Holder

DIN 228 B

Group S1400
for CNC machining centers and
conventional machine tools

[illegible]

Color Ring Series

The color ring line comprises machine taps from five different product groups which meet the requirements of highly sophisticated industries such as automotive, aerospace or chemicals. By their color marking, the appropriate use of these taps is facilitated. Selected hard material coatings increase the range of employment.



White Ring

Product line for grey cast iron



Red Ring

Product line for high strength heat treatable steel and nickel alloys



Blue Ring

Product line for use in INOX/stainless steel



Black Ring

Product line for general purpose »Black Power«



Yellow Ring

Product line for use in titanium alloys



Coatings

Technologies for hard material coatings of HSS and solid carbide tools are increasingly important since they bring about advantages such as:

- › an increase in tool life
- › a reduction of set-up times

and a substantial

- › increase of working speeds

These factors justify the extra expenditures compared to tools without hard material coatings.

TiN Coating
Allround coating designed to improve tool life and optimize cutting speed. With a surface hardness of 2600 HV 0.05 and a frictional coefficient of 0.40 this coating can be applied in working temperatures of up to 450°C. The thickness of the layer ranges between 2 - 4 µm. TiN coatings have a internal compressive stress of approx. 3.1 GPa.



TiCN Coating
Improved tribological characteristics compared to TiN. Micro hardness at 3000 HV 0.05; frictional coefficient reduced to 0.35 compared to steel. Temperature stability of TiCN layers (thickness of 2 - 4 µm) extends up to 350°C. Internal compressive stress is at 3.5 GPa.



TiAlN Coating
Optimized PVD layer system, for hard materials of up to 50 HRC. Enhanced range of employment due to temperature stability up to 800°C and micro hardness of 3000 HV 0,05. This layer system features an oxidizing protection layer which provides the tool with a 'renewal effect.' Internal compressive stress of 1.9 GPa. The coating system is applied with a layer thickness of 2-4 µm.



SG4 Coating
Special coating made of super hard coating layer and solid state lubrication layer. Sectors of use comprise dry cutting and minimum lubrication. Wide range of applications due to optimum friction results and reduced tendency of adhesion.



CrN Coating
PVD layer system for non-ferrous materials and thermoplastics. It can be applied in working temperatures up to 600°C and has a low frictional coefficient of 0.3 compared to steel. The layer system has a thickness of 6 µm and a micro hardness of 1750 HV 0.05.



DLC Coating
The diamond like carbon layer ist the best solution for non-ferrous materials. The high surface hardness of 5000 HV 0,05 is combined with a very low friction coefficient of 0.1 compared to steel. The characteristics are completed by the reduced layer thickness of 0.8-1.2 µm and a high temperature stability up to 500°C. Because of this the material adhesion is significantly reduced.



The SG6 coating
HiPIMS of the latest generation with outstanding layer smoothness and density. It can withstand a high thermal load of more than 1000°C and is therefore ideal for difficult thread forming processes.



The SG7 coating
Droplet-free HiPIMS process of the latest technology for reliable blind hole machining in steel. Improved chip removal and reduced friction between workpiece and tool ensure longer tool life.



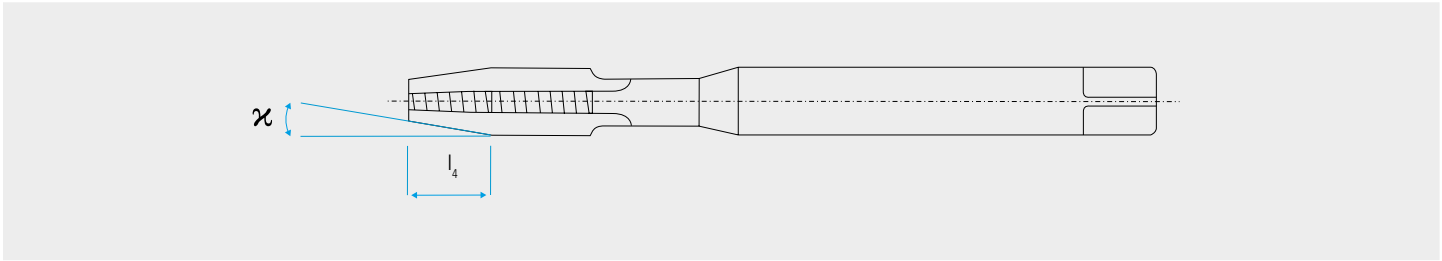
The SG8 coating
Innovative PVD coating system characterised by good oxidation resistance and high hardness. The coating is ideal for machining hard materials and for dry machining at very high application temperatures.



Chamfer Types

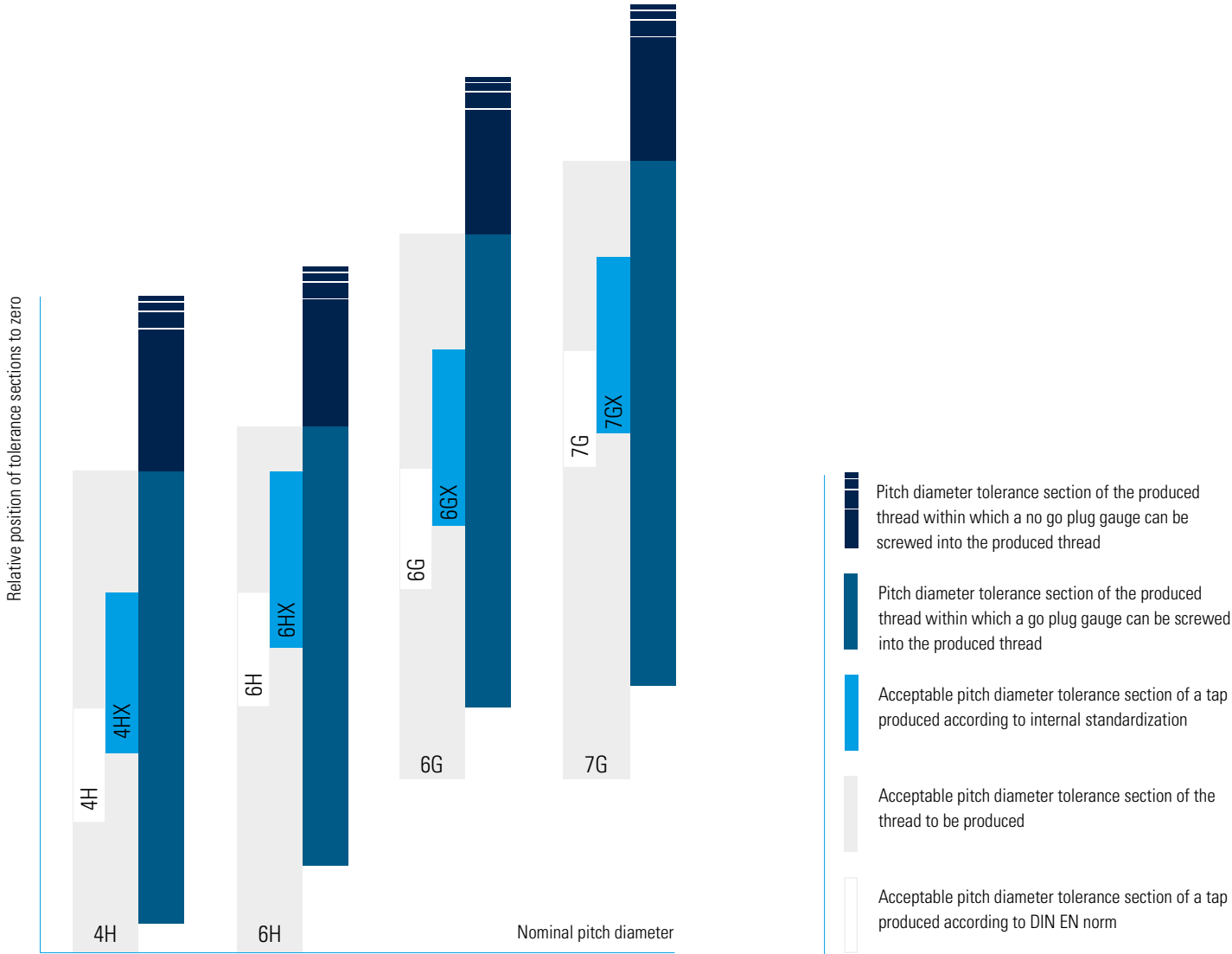
Form	Chamfer length $l_4^{1)}$ [x pitch]	Chamfer angle α [°]	Main field of application:	
A	6 to 8	5°	short through holes	
B	3.5 to 5	8°	through holes in mid and long chipping materials	
C	2 to 3	15°	blind holes and through holes in short chipping materials	
D	3.5 to 5	8°	blind holes with long thread run-out and through holes	
E	1.5 to 2	23°	blind holes with very short thread run-out	
F	1 to 1.5	> 28°	blind holes with very short thread run-out	

¹⁾ The number of pitches is a simple, practice-oriented criterion for defining the chamfer length of taps



Tolerance Levels

Schematic description of production tolerances applicable for metric internal thread – in addition please also find below the specific tolerance fields for tap production.



Cutting Data

Definition of rotation and cutting speeds for threading tools.

The table below contains the calculated values of rotation and cutting speeds for threading tools between M 3 and M 42. In most cases these calculations will serve for workshop use in practice. If interim values should be required, these can be calculated by drawing upon the formulas listed below.

nominal/diameter	round per minute [1/min]												
M3	425	530	635	850	1060	1270	1590	2120	2330	2650	2965	3180	3390
M4	319	398	480	635	795	955	1190	1590	1750	1990	2230	2390	2550
M5	255	318	382	510	635	765	955	1270	1400	1590	1785	1910	2040
M6	212	265	318	425	530	635	795	1060	1170	1325	1485	1590	1700
M8	159	198	238	318	398	478	598	795	875	995	1115	1195	1275
M10	127	159	191	255	318	382	478	636	700	795	892	955	1020
M12	106	133	159	212	265	318	398	531	584	664	744	795	850
M14	91	114	136	182	228	273	342	455	500	568	636	682	728
M16	80	100	119	159	199	239	299	398	438	497	557	597	637
M18	71	88	106	142	177	212	265	354	388	442	495	530	565
M20	64	80	95	127	159	192	239	318	350	398	446	478	510
M22	58	72	87	116	145	174	217	290	318	362	405	435	463
M24	53	66	80	106	133	159	200	266	292	332	372	398	425
M27	47	59	71	95	118	142	177	236	260	295	330	355	378
M30	42	53	64	85	106	127	159	212	234	265	297	318	340
M33	39	48	58	77	96	116	145	193	212	242	270	290	309
M36	35	44	53	71	88	106	133	177	195	221	248	265	283
M39	33	41	49	65	82	98	122	163	180	205	228	245	262
M42	30	38	45	61	76	91	114	152	167	190	212	228	243
	4	5	6	8	10	12	15	20	22	25	28	30	32
	Cutting speed v [m/min]												

legend:

v = Cutting speed [m/min]
d = Nominal tap diameter [m]
n = Tool spindle rotation [1/min]
π = 3.14

v = d x π x n

n = $\frac{v}{d \times \pi}$

8.7 Technology

SCHUMACHER

Work Piece Material Groups/Cutting Data

						Cutting Speed v _c [m/min]	
						v _c forming taps = v _c + 30-50%	
Material Groups	Description	DIN Description	DIN 17 007	Strength	HSS-E / VHM		
DIN ISO 513	Schumacher		Material-No.	[N/mm²]	bright	coated	
P	P1	Carbon steels	St 33	1.0035	290	10 - 15	15 - 25
	P1	Carbon steels	St 37	1.0120	340 - 370	10 - 15	15 - 25
	P1	Carbon steels	St 50	1.0531	470 - 610	10 - 15	15 - 25
	P1	Carbon steels	St 60 - 2	1.0060	570 - 710	10 - 15	15 - 25
	P1	Carbon steels	St 70 - 2	1.0070	670 - 830	10 - 15	15 - 25
	P1	Heat-treatable steels	C 45	1.0503	650 - 800	10 - 15	15 - 25
	P1	Tool steels	21 MnCr 5	1.2162	720	8 - 10	10 - 15
	P1	Free-cutting steels	9 S 20 K	1.0711	360	10 - 15	15 - 25
	P1	Free-cutting steels	9 SMnPb 28	1.0718	380	10 - 15	15 - 25
	P1	Free-cutting steels	35 SMn 20	1.0726	490 - 610	10 - 15	15 - 25
	P1	Hot-Work steels	X 10 CrSi 13	1.4722	690	3 - 5	5 - 8
	P1	Cast Steels	GS 45	1.0443	440	10 - 15	15 - 25
	P1	Cast Steels	GS 60	1.0553	590	10 - 15	15 - 25
	P1	Cast Steels	GS 70	1.0554	685	10 - 15	15 - 25
	P1	Case-hardened steels	C 15	1.0401	600 - 800	10 - 15	15 - 25
	P1	Case-hardened steels	Ck 15	1.1141	500 - 800	10 - 15	15 - 25
	P2	Case-hardened steels	20 MnCr 5	1.7147	1000 - 1300	10 - 15	15 - 25
	P2	Case-hardened steels	17 CrNiMo 6	1.6587	1050 - 1350	2 - 5	5 - 10
	P2	Heat-treatable steels	C 60	1.0601	800 - 850	10 - 15	15 - 25
	P2	Heat-treatable steels	46 Cr 2	1.7003	700 - 850	2 - 5	5 - 10
	P2	Heat-treatable steels	25 CrMo 4	1.7218	800 - 950	2 - 5	5 - 10
	P2	Tool steels	105 WCr 6	1.2419		8 - 10	10 - 15
	P2	Tool steels	X 45 NiCrMo 4	1.2767	850	8 - 10	10 - 15
	P2	Tool steels	55 Ni Cr Mo V 6	1.2713	810	8 - 10	10 - 15
	P2	Nitriding Steels	31 CrMo 12	1.8515	1000 - 1200	3 - 5	5 - 8
	P2	Nitriding Steels	34 CrAlMo 5	1.8505	800 - 950	3 - 5	5 - 8
	P2	Nitriding Steels	34 CrAlNi 7	1.8550	850 - 1050	3 - 5	5 - 8

Work Piece Material Groups/Cutting Data

Material Groups		Description	DIN Description	DIN 17 007	Strength	Cutting Speed v _c [m/min]	
						v _c forming taps = v _c + 30-50% HSS-E / VHM	
DIN ISO 513	I Schumacher			Material-No.	[N/mm2]	bright	I coated
M	M1	Stainless steels ferritic	X 6 Cr 13	1.4000	400 - 600	3 - 5	5 - 8
	M1	Stainless steels ferritic	X 4 CrMoS 18	1.4105	450 - 650	3 - 5	5 - 8
	M1	Stainless steels martensitic	X 30Cr 13	1.4028	800 - 1000	3 - 5	5 - 8
	M1	Stainless steels martensitic	X 12 CrMoS 17	1.4104	600 - 840	3 - 5	5 - 8
	M1	Stainless steels austenitic	X 5 CrNi 18 10	1.4301	500 - 700	3 - 5	5 - 8
	M1	Stainless steels austenitic	X 6 CrNiMoTi 17 12 2	1.4571	500 - 730	3 - 5	5 - 8
	M1	Stainless steels austenitic	X 2 CrNiMo 18 14 3	1.4435	490 - 690	3 - 5	5 - 8
	M1	Cast Steels	G X 6 CrNiMo 18 10	1.4408	440 - 640	3 - 5	5 - 8
	M1	Cast Steels	G X 2 CrNiMoN 17 13 5	1.4439	490 - 690	3 - 5	5 - 8
	M2	Duplex steels	X 2 CrNiMoN22-5-3	1.4462	880	3 - 5	5 - 8
K	K1	Grey cast iron	EN-GJL-100 (GG 10)	0.6010	88	8 - 12 25 - 30	12 - 20
	K1	Grey cast iron	EN-GJL-200 (GG 20)	0.6020	195	8 - 12 25 - 30	12 - 20
	K1	Grey cast iron	EN-GJL-300 (GG 30)	0.6030	295	8 - 12 25 - 30	12 - 20
	K1	Grey cast iron	EN-GJL-400 (GG 40)	0.6040	390	8 - 12 25 - 30	12 - 20
	K2	Nodular cast iron	EN-GJS-400-15 (GGG 40)	0.7040	400	5 - 8	10 - 20
	K2	Nodular cast iron	EN-GJS-500-7 (GGG 50)	0.7045	500	5 - 8	10 - 20
	K2	Nodular cast iron	EN-GJS-600-3 (GGG 60)	0.7060	600	5 - 8	10 - 20
	K3	Malleable cast iron	EN-GJMW-400-5 (GTW-40)	0.8040	400	10 - 15	15 - 20
	K3	Malleable cast iron	EN-GJMW-450-7 (GTW-45)	0.8045	450	10 - 15	15 - 20
	K3	Malleable cast iron	EN-GJMW-550-4 (GTW-55)	0.8055	550	10 - 15	15 - 20
	K3	Malleable cast iron	EN-GJMB-350-10 (GTS-35)	0.8135	350	10 - 15	15 - 20
	K3	Malleable cast iron	EN-GJMB-450-6 (GTS-45)	0.8145	450	10 - 15	15 - 20
	K3	Malleable cast iron	EN-GJMB-550-4 (GTS-55)	0.8155	550	10 - 15	15 - 20
N	N1	Aluminium wrought alloys	AlMn 1	3.0515	150 - 200	20 - 25	25 - 35
	N1	Aluminium wrought alloys	AlMg 3	3.3535	200 - 300	20 - 25	25 - 35
	N1	Aluminium wrought alloys	AlMgSiPb	3.0615	200 - 270	20 - 25	25 - 35
	N1	Aluminium wrought alloys	AlZn 4.5 Mg 1	3.4335		20 - 25	25 - 35
	N2	Aluminium cast alloys	G-Al Mg 3	3.3541	140 - 200	20 - 30	30 - 40
	N2	Aluminium cast alloys	G-Al Cu 4	3.1841	280 - 400	20 - 30	30 - 40
	N2	Aluminium cast alloys	G-Al Si 10 Mg	3.2381	250 - 320	20 - 30	30 - 40
	N3	Copper alloys	E-Cu	2.0060	250	10 - 15	15 - 20
	N3	Copper alloys	SE-Cu	2.0070	300	10 - 15	15 - 20
	N3	Special copper alloys	Ampco 18		159 - 183	2 - 4	4 - 6
	N3	Special copper alloys	Ampco 21		285 - 311	2 - 4	4 - 6
	N3	Special copper alloys	Ampco 25		356 - 394	2 - 4	4 - 6

Work Piece Material Groups/Cutting Data

						Cutting Speed v _c [m/min] v _c forming taps = v _c + 30-50%	
Material Groups		Description	DIN Description	DIN 17 007 Material-No.	Strength [N/mm2]	HSS-E / VHM	
DIN ISO 513	I Schumacher					bright	I coated
N	N4	Brass long chipping	Cu Zn 30 (Ms 70)	2.0265		20 - 25 30 - 50	25 - 35
	N4	Brass short chipping	CuZn 39 Pb 2 (Ms 58)	2.0380		20 - 25 30 - 50	25 - 35
	N4	Brass short chipping	Cu Zn 40 Al 2	2.0550		20 - 25 30 - 50	25 - 35
	N5	Bronze short chipping	CuPb 5 Sn 5	2.1170	250	10 - 15	15 - 20
	N5	Bronze long chipping	Cu Sn 6	2.1030	400 - 550	10 - 15	15 - 20
	N5	Bronze	G-CuPb 10 Sn	2.1176	230	10 - 15	15 - 20
	N6	Thermoplastics long chipping	Hostalen			20 - 30	30 - 40
	N6	Thermoplastics long chipping	Makrolon			20 - 30	30 - 40
	N6	Thermoplastics long chipping	PS Polystyrol			20 - 30	30 - 40
	N6	Thermoplastics long chipping	POM Polymethylen			20 - 30	30 - 40
	N6	Thermoplastics long chipping	PVC Ployvinylchlorid			20 - 30	30 - 40
	N6	Thermoplastics long chipping	PA Polyamid			20 - 30	30 - 40
	N7	Duroplastics short chipping	Bakelit			3 - 5	5 - 8
	N7	Duroplastics short chipping	Pertinax			3 - 5	5 - 8
	N7	Duroplastics short chipping	Ferrozell			3 - 5	5 - 8
	N7	Duroplastics short chipping	Resopal			3 - 5	5 - 8
		N8	Magnesium alloys	AZ 91			-
S	S1	Pure titanium	Ti 99.5	3.7024.1	290 - 410	2 - 4	4 - 6
	S1	Pure titanium	Ti 99.4	3.7055	450 - 550	2 - 4	4 - 6
	S1	Titanium alloys	TiAl 5 Sn 2	3.7114	840 - 990	2 - 4	4 - 6
	S1	Titanium alloys	Ti Al 6V4	3.7165	910 - 1100	2 - 4	4 - 6
	S2	Pure nickel	Ni 99.6	2.4060	370 - 590	2 - 4	4 - 6
	S2	Pure nickel	Ni 99.2	2.4068	340 - 540	2 - 4	4 - 6
	S2	Nickel alloys	Monel 400	2.4360	800	2 - 4	4 - 6
	S2	Nickel alloys	Hastelloy C	2.4812	900	2 - 4	4 - 6
	S2	Nickel alloys	Inconel 600	2.4816	700	2 - 4	4 - 6
	S2	Nickel alloys	Nimonic 90	2.4632	1200	2 - 4	4 - 6
H	H1	Hardened steels	up to 50 HRC			6 - 8	2 - 4
	H2	Hardened steels	up to 55 HRC			1 - 3	1 - 3
	H2	Hardened steels	up to 60 HRC			1 - 3	-

item code		catalog page	item code		catalog page	item code		catalog page
10100		2.85	30300/25		2.6	31700/48		2.32
10105		2.87	30300/2540		2.6	31800		2.34
10200		2.85	30500/4853		2.74	31900/25		2.36
10205		2.87	30510/0253		2.76	31900/26		2.36
10300		2.85	30510/2453		2.76	31900/5760		2.39
10305		2.87	30530/4853		2.78	32000		2.41
12100		3.16	30550/5367		2.80	32000/25		2.41
12200		3.16	30600/2553		2.82	32000/2540		2.41
13100		4.12	30600/53		2.82	32400		2.43
13200		4.12	30600 B/2553		2.82	32400/48		2.43
13500		4.10	30800/54		2.8	32600		2.46
13600/01		4.11	30810/4064		2.10	32800		2.48
15100		5.21	30810/64		2.10	33000		2.50
15200		5.21	30900/4060		2.12	33000/25		2.53
15300		5.21	31000/02		2.13	33000/42		2.53
16100		5.39	31000/24		2.13	33000 B		2.50
16200		5.39	31100		2.15	33000 E		2.50
17100		6.3	31100/25		2.18	33005		2.53
17200		6.3	31100/42		2.18	33010/6368		2.55
17300		6.1	31100 B		2.15	33030/4048		2.57
17500		6.2	31100 E		2.15	33030/48		2.57
18100		6.5	31105		2.18	33300/25		2.59
18200		6.5	31130/48		2.20	33300/26		2.59
18300		6.4	31200/25		2.22	33300/5760		2.62
20100		2.89	31200/26		2.22	33400/48		2.64
20200		2.89	31210/48		2.24	33500/25		2.66
20300		2.89	31300/48		2.26	33500/26		2.66
30000		2.2	31400		2.28	33510/48		2.68
30200		2.5	31600		2.30	33600/02		2.70
30300/01		2.6	31700		2.32	33600/24		2.70

item code		catalog page	item code		catalog page	item code		catalog page
33800		2.72	40000		2.4	41800		2.35
33800/48		2.72	40300/01		2.7	41900/25		2.38
34000		5.1	40300/25		2.7	41900/26		2.38
34300/01		5.3	40300/2540		2.7	41900/5760		2.40
34500		5.5	40500/4853		2.75	42000		2.42
34500/25		5.5	40510/0253		2.77	42000/25		2.42
34600/25		5.7	40510/2453		2.77	42000/2540		2.42
34600/26		5.7	40530/4853		2.79	42400		2.44
34800		5.12	40550/5367		2.81	42400/48		2.44
34900/26		5.9	40600/2553		2.84	42410/4048		2.45
35200		5.14	40600/53		2.84	42600		2.47
35200/25		5.14	40800/54		2.9	42800		2.49
35300/25		5.16	40810/4064		2.11	43000		2.52
35300/26		5.16	40810/64		2.11	43000/25		2.54
35600/2553		5.20	41000/02		2.14	43000/42		2.54
35600/53		5.20	41000/24		2.14	43000 B		2.52
35900/26		5.18	41100		2.17	43005		2.52
36000		5.22	41100/25		2.19	43010/63		2.56
36300/01		5.24	41100/42		2.19	43030/48		2.58
36500		5.26	41100 B		2.17	43300/25		2.61
36500/25		5.26	41105		2.17	43300/26		2.61
36600		5.28	41130/48		2.21	43300/5760		2.63
36600/25		5.28	41200/25		2.23	43400/48		2.65
36800		5.32	41200/26		2.23	43500/25		2.67
36900/26		5.30	41210/48		2.25	43500/26		2.67
37200		5.33	41300/48		2.27	43510/48		2.69
37200/25		5.33	41400		2.29	43600/02		2.71
37300		5.35	41600		2.31	43600/24		2.71
37300/25		5.35	41700		2.33	43800		2.73
37900/26		5.37	41700/48		2.33	43800/48		2.73

item code	catalog page	item code	catalog page	item code	catalog page
44000	5.2	51200	3.10	G0100/41	2.90
44300/01	5.4	51200/25	3.10	G0600/5360	2.93
44500	5.6	51900/26	3.11	G0700/5360	2.93
44500/25	5.6	52000	3.12	G0800/40	2.91
44600/25	5.8	53000	3.13	G0800	2.91
44600/26	5.8	53000/25	3.13	G2600/40	2.92
44710/4048	5.11	53300/26	3.14	G5800/40	3.19
44800	5.13	53500	3.15	S1000	7.8
44900/26	5.10	53500/25	3.15	S1200	7.9
45200	5.15	55000	4.1	S1400	7.10
45200/25	5.15	55300/01	4.2	S2000	7.2
45300/25	5.17	56000	4.3	S2200	7.3
45300/26	5.17	56000/25	4.3	S2400	7.4
45900/26	5.19	56200	4.4	S4000	7.5
46000	5.23	56200/25	4.4	S4200	7.6
46300/01	5.25	56900/26	4.5	S4400	7.7
46500	5.27	57000	4.6		
46500/25	5.27	58000	4.7		
46600	5.29	58000/25	4.7		
46600/26	5.29	58300/26	4.8		
46900/26	5.31	58500	4.9		
47200	5.34	58500/25	4.9		
47200/25	5.34	68100	6.7		
47300	5.36	68105	6.8		
47300/25	5.36	68200	6.7		
47900/26	5.38	68205	6.8		
50000	3.1	68300	6.7		
50300/01	3.5	68305	6.8		
51000	3.6	68500	6.6		
51000/25	3.6	68505	6.6		

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