



**150!** 



## Full steam. Since 1865!

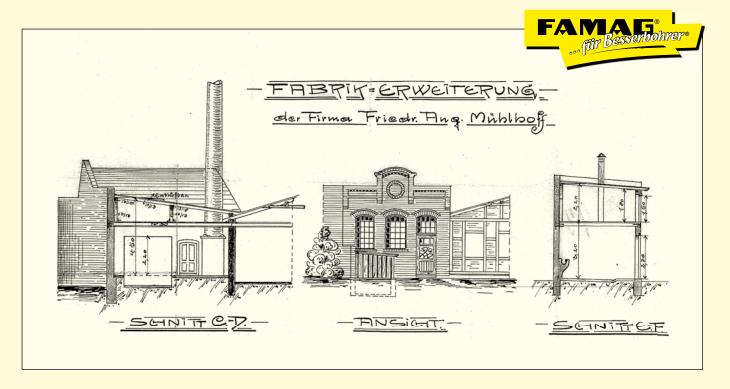
At our premises there is a historic photograph on the wall, showing 60 employees sitting in front of an old factory "Remscheider Bohrer Fabrik Friedr. Aug. Mühlhoff". This photograph dates from 1912. By then, the FAMAG manufactory of tools was already almost 50 years old. According to our records, the Remscheider drillsmith Friedrich August Mühlhoff founded the "Remscheider Bohrer-Fabrik Fried. Aug. Mühlhoff" in 1865. Even his father, a drillsmith himself, had his own drilling manufactory since 1837. As the picture clearly shows, auger bits, gimlet and spoon auger bits for carpenters, joiners and wheelwrights were produced. In those days a factory-owned steam engine powered the machines, grinding stones and drop hammers. At peak periods six drop hammers driven by transmission belts were forging drills. During the difficult post-war period it was good that the steam engine had not been disposed of by the time the factory was converted to electricity, because in case of electrical power outage, production could go on literally "under full steam".

Over the years, the production range expanded to include drills for wood, metal, stone as well as soil augers and several specialized tools. Further former records reveal that back then, it was already very important to the workpeople to produce tools characterised especially by a long operating lifetime: **quality tools!** 



Do you know the meaning behind the name FAMAG? A long time ago, the company was structured as a German AG (PLC). For that reason, the initials of Friedrich August Mühlhoff (F.A.M.), its founder, were combined with the company's corporate form and so the name FAMAG was born. At the end of the last century the company was officially called "FAMAG-Werkzeugfabrik Friedrich-August- Mühlhoff". With the beginning of the new millennium the last member of the Mühlhoff family left, so we dropped the addition "Friedrich-August-Mühlhoff" and today we trade under the name FAMAG-Werkzeugfabrik.

Our production facility is situated in the centre of the country of Berg, a territory of the Duchy of Berg who gave the region its name. This area is also known as the cradle of the German tool industry because tools have been traditionally manufactured here for many centuries.



However this industrial landscape has drastically changed especially over the last decade. Those, who still have an "iron in the fire" today, continuously have adjusted the production according to market changes over the years. On the one hand this requires in-depth knowledge of market needs along with customer demands and on the other hand a consistent modernisation of the production process.

Today FAMAG has the most modern CNC machines and the latest robotic technology in use. Our highly qualified professionals apply themselves to the setting up and operating of machinery and pursuing quality assurance on a daily basis.

### Benchmark. Set!

The production and development of our tools is in line with the needs and requirements of the professional craftsman. We aim to understand the applications of the professional in order to produce tools that fulfil the exact requirements and leave the craftsman with a smile on his face. With our 150 years of experience we produce high-quality tools for the demanding end-user and so forming a friendly relationship. He is not only convinced by the quality "Made in Germany" but also and especially by the excellent price-performanceratio of our products.

Our philosophy distinguishes us from the competition and clearly from those who sell cheap Chinese imports. For more than 100 years we stand by the consistant quality of our woodworking tools that are produced at our factory in Remscheid.

## Offer. Optimal!

The current delivery program contains a broad range of drilling and milling tools for all areas of woodworking and plastics processing as well as for metal, stone, concrete and other materials. Our tools are used by professional craftsmen, industry and also many do-it-your-self-amateurs. Our manufacturing program focuses on wood drills with over 3,500 products in this particular area. Hence we surely provide one of the widest product ranges for craftsmen there is.

Many of our products have unique characteristics and are protected through patents – some even worldwide. For example: carbide Bormax³, the all-rounder for all-rounder, Bormax® Forstner Bit, traditional Forstner bits and modern carbide-tipped boring bits as well as wood twist drills with special twists, etc.

We are a little bit proud of an incident that took place a few years ago: We received an e-mail from the U.S.A., congratulating us for winning the first prize!? Quickly we found out, that the magazine "Fine Woodworking" carried out a worldwide test comparing Forstner bits





of all common brands. FAMAG "SUPER-Fostnerbohrer Classic", series 1630 received the award "Best overall". So the characteristic for superb quality "Made in Germany" is still valid today! Our homepage www. famag.com provides you with further details concerning the test and its results.

As an experienced manufacturer and specialist with a long tradition and a philosophy that is committed to customer needs and high quality demands, we complete our product range with the production of custom-made tools manufactured to meet individual needs.

# Trade. Fair!



Our products are distributed under the registered trademark "FAMAG für Besserbohrer" (FAMAG for a better drilling) and solely sold by specialized dealers in Germany and abroad. In Germany our dealers are attended by 13 sales representatives. In 2007 we were awarded second prize as "Partner des Fachhandels 2007" (partner of specialized trade 2007) from the "Zentralverband des Hartwarenhandels e.V.", the central association of hard goods trade. In other European countries we further developed and expanded successfully the FAMAG network of representatives over the past years. In some countries our products are even sold exclusively to specialized dealers, e.g. in Denmark, Belgium, the Netherlands, Switzerland and Italy. Additional sales representations are either in preparation or wanted.

## Knowledge. Shared!



We know how to produce a dependable, high-quality standard product as well as to manufacture an excellent custom- made product, but what trade and consumers really appreciate even more, is our friendly and competent customer service. As a FAMAG-customer, you know that we are always ready to listen to you! We are immediately available on the phone ready to take

care of your questions, whether you need information on availability or price of products, on a specific product application or the current delivery status of your order. Usually orders leave our premises the next day – often even the same day – to be available as soon as possible.

"Laughing against all odds" that's what you call a sense of humour. And know-how means that you know how to do it right. You are facing a special application task, yet hesitating which tool you can be successful with? Our experts know what softwood is, are familiar with the most important European as well as exotic hard wood and have a profound knowledge of the appropriate tools to work with. Due to this thorough expertise, they can help you to make the right decision concerning your specific task leading to a desired result. Although our specialists are not 146 years old yet, you can rely on their professional knowledge which is always at your disposal!

We pass this know-how on to our apprentices. We feel obliged to young people to give them a professional education for their future. To start an apprenticeship at the FAMAG- Werkzeugfabrik means to take over tasks independently and under personal responsibility – from the very first day! So please do not be surprised, when every now and then a really young person answers the phone.

If you are looking for a certain FAMAG tool, you will find it in good specialized trade outlets. We are very pleased to recommend a local dealer to you!

Kind regards

Ralf Hunke

Thomas Pomp



Drills a	nd countersinks for wood	5
	Router bits	71
	Hole saws	97

Twist drills and countersinks for metal Hammer drills and soil auger 1251

**Hand tools** 

Info's 135

129

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Brand-new: FAMAG offer PAROLI!



#### **Abbreviations**

OØ

PU

ΙØ inner diameter SØ shank diameter L length of shaft/ shank length OAL overall length MC/HS main cutters EL effective length SL spiral length W weight Т teeth R radius degrees Cutting I. cutting length

outer diameter

max.r.p.m. maximum acceptable r.p.m.

L1 length of first stepL2 length of second stepD1 core diameterLead/1" no. of threads

packing unit

#### Info-blocks



The description of the tool design



Tool material



Recommended r.p.m. and specific example for the most common diameters in the according field of application



Description of application



Practical advice and specialty of the tool



Packaging unit and information on individual packaging

### **Quality classification**

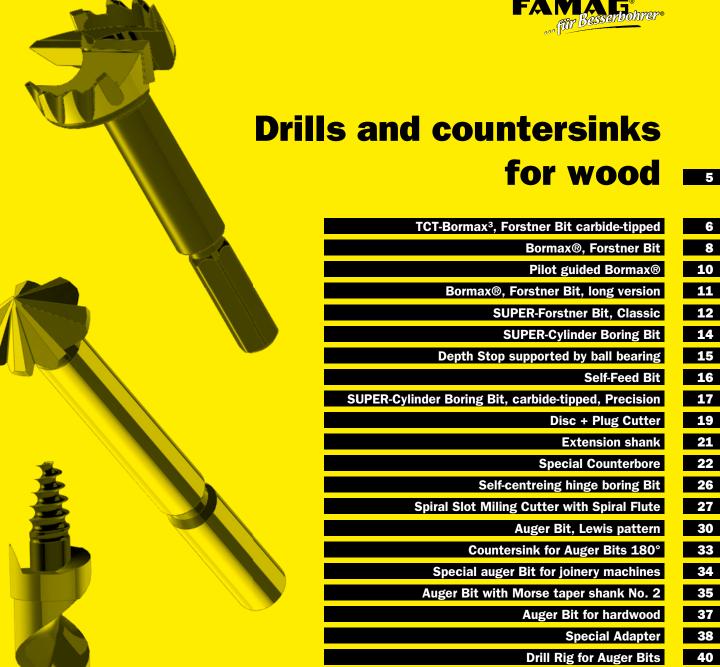
 quality level hobby: reasonable quality tools for the amateur segment

OO quality level classic: for the quality-conscious user

OOO quality level profi: professional tools for the craftsman with high demanding requirements concerning tool and application

OOOO quality level premium: wear-resistant tools of the highest quality level, even for extreme conditions of use





**Accessories for Drill Rigs** 41 43

44

46

54

57

60

62

69

70

L-Shaped Driver PR075

Machine Drill with brad point, cutting lips and Bit shank

Machine Drill with brad point and cutting lips, HSS

Stepped machine Drill

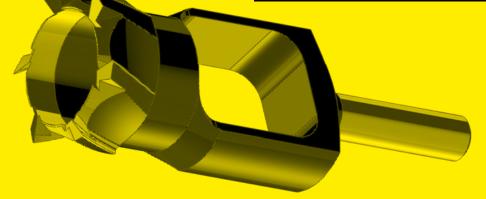
**Boarding and Plumbing Auger** 

**Machine Countersink** 

**Shell Drill Countersink** 

**Expansive Bit for machine** 

**Machine centre Bit** 

















	0-Ø	S-Ø	OAL	Cutting I.		
Order No.	[mm]	[mm]	[mm]	[mm]	MC	€
1663.015	15	8	90	57	1	57,60
1663.016	16	8	90	57	1	59,15
1663.018	18	8	90	57	1	59,15
1663.019	19	8	90	57	1	59,15
1663.020	20	8	90	57	1	59,15
1663.022	22	10	90	57	1	60,75
1663.023	23	10	90	57	1	60,75
1663.024	24	10	90	57	1	60,75
1663.025	25	10	90	57	2	60,75
1663.026	26	10	90	57	2	60,75
1663.028	28	10	90	57	2	62,35
1663.030	30	10	90	57	2	62,35
1663.032	32	10	90	57	2	62,35
1663.035	35	10	90	57	2	65,25
1663.038	38	10	90	57	2	77,45
1663.040	40	10	90	57	2	77,45
1663.044	44	10	90	57	2	106,45
1663.045	45	10	90	57	2	99,95
1663.050	50	10	90	57	2	114,55
1663.054	54	10	90	57	2	150,05
1663.060	60	13	90	57	2	159,95

Sets		
Order No.	Description	€
1663.505	5 pcs. Set in wooden case. Ø 15, 20, 25, 30 and 35 mm	274,50
1663.606	6 pcs. Set in wooden case. Ø 15, 20, 25, 30, 35 and 40 mm	344,20
1663.570	7 pcs. Set in wooden case. Ø 15, 20, 25, 30, 35, 40 and 50 mm	447,25
1663.508	8 pcs. Set in wooden case. Ø 15, 20, 25, 30, 35, 40, 45 and 50 mm	536,90
1663.504	4 pcs. Set in wooden case: Ø 35, 40, 45, 50 mm	321.30

	The first carbide tipped Forstner Bit with brad point, carbide- tipped main cutting edge and carbide-tipped wave-form cutting teeth. Hexagonal shank	State of the state	Freehand drilling to all types of wood: soft and hard wood, European and exotic (also bongossi), MDF, panel materials, also laminated materials and many plastics
团	High quality carbide tipping of the main cutting edge and roughing tap		Really the first universal carbide tipped drill for freehand drilling and of course also for stationary use
UPM	1800 - 5000 min-1. e.g. Ø 35 mm 3000 min-1 in euro. hardwood. Also find details at the speed-diagrams		Packing unit = 1, Blister. EAN

TCT-Bormax<sup>3</sup>, Forstner bit carbide-tipped





1663.2











	0-Ø	AØ	S-Ø	OAL	Cutting I.		
Order No.	[mm]	[Inch]	[mm]	[mm]	[mm]	MC	€
1663.219	15,88	5/8	8	90	57	1	59,50
1663.221	19,05	3/4	8	90	57	1	59,15
1663.223	22,23	7/8	10	90	57	1	60,75
1663.225	25,4	1	10	90	57	2	62,35
1663.227	28,58	<b>1 1</b> /8	10	90	57	2	65,25
1663.229	31,75	<b>1 1/4</b>	10	90	57	2	62,35
1663.231	34,93	13/8	10	90	57	2	65,20
1663.233	38,1	1 1/2	10	90	57	2	77,45
1663.237	44,45	13/4	10	90	57	2	114,55
1663.241	50,8	2	10	90	57	2	126,00
1663.243	53,98	2 1/8	10	90	57	2	150,05

							•
		ed Forstner Bit with bra edge and carbide-tippe		S. Chin	Freehand drilling to all types of European and exotic (also bong also laminated materials and m	ossi), MDF, panel m	,
	High quality carbide roughing tap	tipping of the main cut	ting edge and		Really the first universal carbide drilling and of course also for st	• •	hand
UPM		e.g. Ø 1 inch 3500 min details at the speed-dia			Packing unit = 1, Blister. EAN		

Bormax®, Forstner bit



181,55









	0-ø	S-Ø	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1622.010	10	8	90	57	21,10
1622.012	12	8	90	57	21,10
1622.013	13	8	90	57	21,10
1622.014	14	8	90	57	21,75
1622.015	15	8	90	57	21,30
1622.016	16	8	90	57	21,30
1622.017	17	8	90	57	23,15
1622.018	18	8	90	57	23,15
1622.019	19	8	90	57	27,80
1622.020	20	8	90	57	23,15
1622.021	21	8	90	57	27,80
1622.022	22	10	90	57	25,05
1622.023	23	10	90	57	25,85
1622.024	24	10	90	57	25,85
1622.025	25	10	90	57	26,75
1622.026	26	10	90	57	26,75
1622.027	27	10	90	57	34,50
1622.028	28	10	90	57	30,95
1622.029	29	10	90	57	37,55
1622.030	30	10	90	57	30,95
1622.032	32	10	90	57	30,95
1622.033	33	10	90	57	37,55
1622.034	34	10	90	57	37,55
1622.035	35	10	90	57	37,55
1622.036	36	10	90	57	43,65
1622.038	38	10	90	57	43,65
1622.040	40	10	90	57	43,65
1622.042	42	10	90	57	57, <b>1</b> 5
1622.043	43	10	90	57	57, <b>1</b> 5
1622.044	44	10	90	57	57,15
1622.045	45	10	90	57	57, <b>1</b> 5
1622.046	46	10	90	57	63,40
1622.048	48	10	90	57	63,40
1622.049	49	10	90	57	92,95
1622.050	50	10	90	57	63,40
1622.054	54	10	90	57	102,20
1622.055	55	13	90	57	92,95
1622.058	58	13	90	57	95,35
1622.060	60	13	90	57	96,00
	00	10	30	O1	30,00
Sets	B				•
Order No.	Description		05 00 105		€
1622.505	5 pcs. Set in woode				125,65
1622.606	6 pcs. Set in woode				164,90
1622.570	7 pcs. Set in woode				221,95
1622.508	8 pcs. Set in woode				273,35
1622.515	15 pcs. Set in wood 35, 40, 45 and 50 r		, 15, 16, 18, 20, 2	2, 25, 26, 28, 30,	425,65

	Forstner Bit with wave-form cutting teeth, two main cutting edges and brad point. Hexagonal shank. Even after regrinding still a Bormax	Sept.	Rapid drilling in softwood, European hardwood, chipboard, MDF etc. Rapid material removal of solid wood and chipping boards. Clearly less effort is needed and boring is more rapid than with the usual forstner bit
倒	Alloyed tool steel		Top for freehand drilling and stationary use. Low heat development and therefore unbelievable endurance
UPM	900 - 3200 min-1. e.g. Ø 35 mm 1500 min-1 in construction wood. Also find details at the speed-diagrams		Packing unit = 1, Blister. EAN

1622.504 4 pcs. Set in wooden case: Ø 35, 40, 45, 50 mm

€ 156,05

9

1622.2

COC Profi

Bormax®, Forstner Bit





Order No.

1622.605

Description

5 pcs. Set in wooden case. Ø 5/8, 3/4, 1, 1 1/8, 1 3/8 INCH







	0-Ø	AØ	S-Ø	OAL	Cutting I.	
Order No.	[mm]	[Inch]	[mm]	[mm]	[mm]	€
1622.215	9,53	3/8	8	90	57	23,45
1622.217	12,7	1/2	8	90	57	23,45
1622.219	15,88	5/8	8	90	57	23,45
1622.220	17,46	<b>11/16</b>	8	90	57	25,45
1622.221	19,05	3/4	8	90	57	25,45
1622.222	20,64	13/16	8	90	57	30,60
1622.223	22,23	7/8	10	90	57	27,60
1622.224	23,81	<b>15/16</b>	10	90	57	28,35
1622.225	25,4	1	10	90	57	29,50
1622.226	26,99	<b>1 1/16</b>	10	90	57	34,50
1622.227	28,58	1 1/8	10	90	57	41,25
1622.228	30,16	1 3/16	10	90	57	34,05
1622.229	31,75	1 1/4	10	90	57	34,05
1622.230	33,34	1 5/16	10	90	57	41,25
1622.231	34,93	13/8	10	90	57	37,55
1622.233	38,1	1 1/2	10	90	57	48,05
1622.235	41,28	15/8	10	90	57	62,90
1622.237	44,45	13/4	10	90	57	62,90
1622.239	47,63	17/8	10	90	57	69,75
1622.241	50,8	2	10	90	57	69,75
1622.243	53,98	2 1/8	10	90	57	102,20
1622.245	57,15	2 1/4	13	90	57	105,60
Sets						

	pcs. Set in wooden case, y 5/8, 5/4, 1, 1 1/8, 1 5/8 inch					
1622.607 7 pcs. Set in wooden case. Ø 1/4, 3/8, 1/2, 5/8, 3/4, 7/8, 1 INCH 1622.616 16 pcs. Set in wooden case. Ø 1/4, 3/8, 1/2, 5/8, 3/4, 7/8, 1, 1 1/8, 1 1/4, 1 3/8, 1 7/8, 2, 2 1/8 INCH						
	Forstner Bit with wave-form cutting teeth, two main cutting edges and brad point. Even after regrinding still a Bormax	S. Filtre	Rapid drilling in softwood, European hardwood, chipbo MDF etc. Rapid material removal of solid wood and chipping boards. Clearly less effort is needed and bori more rapid than with the usual forstner bit	,		
	Alloyed tool steel		Top for freehand drilling and stationary use. Low heat development and therefore unbelievable endurance			
(UPM)	900 - 3200 min-1. e.g. Ø 1 inch 2200 min-1 in construction wood. Also find details at the speed-diagrams		Packing unit = 1, Blister. EAN			

OOO Profi

Pilot guided Bormax®











	O-Ø	S-Ø	OAL		Cutting I.		
Order No.	[mm]	[mm]	[mm]		[mm]	HS	€
1624.015	15	10	90		57	1	29,95
1624.016	16	10	90		57	1	29,95
1624.018	18	10	90		57	1	31,95
1624.020	20	10	90		57	1	31,95
1624.022	22	10	90		57	1	33,95
1624.025	25	10	90		57	2	35,55
1624.030	30	10	90		57	2	39,75
1624.035	35	10	90		57	2	46,35
1624.040	40	10	90		57	2	52,50
1624.045	45	10	90		57	2	66,95
1624.050	50	10	90		57	2	72,25
Accessory		o-ø	S-Ø	OAL	Cutting I.		
Order No.	Description	[mm]	[mm]	[mm]	[mm]	HS	€
1624.004	pre-drill bit	4	4	45	30	2	3,45
Sets	pro arm ore		·			_	٥, .٠
Order No.	Description						€
1624.505	5 pcs. Set in wooden cas	co: Ø 15 20 25 20 a	nd 25 mm				165,20
1624.506	6 pcs. Set in wooden cas			nank 1639 00	01		185,30
1624.507	7 pcs. Set in wooden cas			Ialik 1033.00	71		147,05
1624.606	6 pcs. Set in wooden cas	, , ,					212,45
1624.570	7 pcs. Set in wooden cas						277,50
1624.508	8 pcs. Set in wooden cas						337,75
1624.504	4 pcs. Set in wooden cas						214,25
1024.504	4 pcs. Set iii wooden ed.	36. Ø 33, 40, 43 ana 3	J IIIIII	- I			217,20

	Bormax with exchangeable brad point, also a pre-drill bit. Included in the delivery: Bormax with exchangeble brad point/pr-drill bit, center point, pre-drill Ø 4 mm and one MEX Key. Hexagonal shank	The pilot-drill bit is ideal for drilling at an angle which is not 90° in workpieces surface, which occures for example in the construction of staircase. Can be used with the centre point as traditional Bormax.
团	Alloyed tool steel, pre-drill bit HSS-G	Clean drilling at many angles in all softwoods, European hardwood, and MDF panels. Very good alternative to expansive the expensive machine drill for stairs building article 1575.
UPM	1500 - 3000 min-1. e.g. Ø 20 mm 2400 min-1 in softwood. Also find details at the speed-diagrams	Packing unit = 1. PE tube. EAN

Order No.

0-Ø

[mm]

S-Ø

[mm]

OAL

[mm]



Cutting I.

[mm]

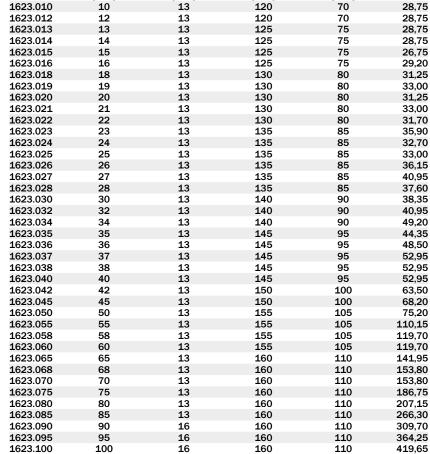
€



1623









	Long Forstner Bit with wave-form cutting teeth, two main cutting edges and brad point. Hexagonal shank. Even after regrinding still a Bormax	September 1	Rapid drilling in softwood, European hardwood, chipboard, MDF etc. Rapid material removel of solid wood and chipping boards. Clearly less effort is needed and boring is more rapid than with the usual forstner bit
	Alloyed tool steel		Top for freehand drilling and stationary use. Low heat development and therefore unbelievable endurance
UPM	900 - 3200 min-1. e.g. Ø 30 mm 1750 min-1 in softwood. Also find details at the speed-diagrams		Packing unit = 1. Yellow cardboard tube. EAN











	O-Ø	S-Ø	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1630.010	10	8	90	57	14,55
1630.012	12	8	90	57	15,00
1630.014	14	8	90	57	15,65
1630.015	15	8	90	57	16,25
1630.016	16	8	90	57	16,30
1630.018	18	8	90	57	17,35
1630.020	20	8	90	57	18,20
1630.022	22	10	90	57	19,60
1630.024	24	10	90	57	20,75
1630.025	25	10	90	57	22,00
1630.026	26	10	90	57	23,00
1630.028	28	10	90	57	25,45
1630.030	30	10	90	57	26,00
1630.032	32	10	90	57	29,00
1630.034	34	10	90	57	30,30
1630.035	35	10	90	57	31,45
1630.038	38	10	90	57	34,45
1630.040	40	10	90	57	37,70
1630.045	45	10	90	57	46,00
1630.050	50	10	90	57	49,75

1630.050	50	10	90	57	49,75
Sets					
Order No.	Description				€
1630.505	5 pcs. Set in wooden case. Ø 15,	20, 25, 30 and 35 mm			102,45
1630.508	8 pcs. Set in wooden case. Ø 15,	20, 25, 30, 35, 40, 45 and 50 r	mm		222,50
1630.510	10 pcs. Set in wooden case. Ø 10	0, 15, 18, 20, 22, 25, 26, 30, 35	and 40 mm		226,25
1630.515	15 pcs. Set in wooden case. Ø 10	0, <b>12</b> , <b>15</b> , <b>16</b> , <b>18</b> , <b>20</b> , <b>22</b> , <b>25</b> , <b>26</b>	5, 28, 30, 35, 40, 45 and 50 mi	n	340,45

Ì	1 1

Traditional forstner Bit with brad point, two main cutting edges and circumference cutter. Low friction due to the reduced perpheral cutting edge.



Tear free accurate holes in softwood, glued laminated timber etc. Specially suitable for freehand boring with a drilling machine



Alloyed tool steel



This bit obtained the first position in an important test of Forstner bits in the E.E.U.U. published in Fine Woodworking 04.2008. For hardwood we recommend the rapid forstner bit Bormax® of our product line 1622 or the TCT-Bormax³ of our product line 1663



700 - 2800 min-1. e.g. Ø 35 mm 1000 min-1 in softwood. Also find details at the speed-diagrams



Packing unit = 1. Rose-tube. EAN

1630.2

OO Classic

**SUPER-Forstner Bit, Classic** 











	0-Ø	AØ	S-Ø	OAL	Cutting I.	
Order No.	[mm]	[Inch]	[mm]	[mm]	[mm]	€
1630.213	6,35	1/4	8	90	57	16,50
1630.215	9,53	3/8	8	90	57	16,50
1630.217	12,70	1/2	8	90	57	17,30
1630.219	15,88	5/8	8	90	57	17,90
1630.221	19,05	3/4	8	90	57	20,10
1630.223	22,23	7/8	10	90	57	21,60
1630.225	25,40	1	10	90	57	24,30
1630.227	28,58	<b>1 1</b> /8	10	90	57	28,05
1630.229	31,75	1 1/4	10	90	57	31,85
1630.231	34,93	13/8	10	90	57	31,45
1630.233	38,10	1 1/2	10	90	57	34,40
1630.235	41,28	1 5/8	10	90	57	50,60
1630.237	44,45	1 3/4	10	90	57	50,60
1630.239	47,63	17/8	10	90	57	50,60
1630.241	50,80	2	10	90	57	54,70
1630.243	53,98	2 1/8	10	90	57	80,25
1630.245	57.15	2 1/4	10	90	57	82.85

 Sets
 Order No.
 Description
 €

 1630.607
 7 pcs. Set in wooden case. Ø 1/4, 3/8, 1/2, 5/8, 3/4, 7/8, 1"
 120,65

 1630.616
 16 pcs. Set in wooden case. Ø 1/4, 3/8, 1/2, 5/8, 3/4, 7/8, 1, 11/8, 11/4, 13/8, 11/2, 15/8, 13/4, 17/8, 2, 21/8"
 497,60

	Traditional forstner Bit with brad point, two main cutting edges and circumference cutter. Low friction due to the reduced perpheral cutting edge.	September 1	Tear free accurate holes in softwood, glued laminated timber etc. Specially suitable for freehand boring with a drilling machine
Ø	Alloyed tool steel		Can be lengthen with extension shank 1639. For hardwood we recommend our fast Forstner bit Bormax®, of our product line 1622 or the carbide tipped TCT-Bormax³ of our product line 1663
UPM	500 - 3800 min-1. e.g. Ø 7/8 inch 1400 min-1 in softwood. Also find details at the speed-diagrams		Packing unit = 1. Rose-tube. EAN



**SUPER-Cylinder Boring Bit** 











	o-ø	S-Ø	OAL	Cutting I.		
Order No.	[mm]	[mm]	[mm]	[mm]	€	
1633.010	10	8	90	57	14,55	
1633.012	12	8	90	57	15,00	
1633.014	14	8	90	57	15,65	
1633.015	15	8	90	57	16,25	
1633.016	16	8	90	57	16,30	
1633.018	18	8	90	57	17,35	
1633.020	20	8	90	57	18,20	
1633.022	22	10	90	57	19,60	
1633.023	23	10	90	57	20,75	
1633.024	24	10	90	57	20,75	
1633.025	25	10	90	57	22,00	
1633.026	26	10	90	57	23,00	
1633.028	28	10	90	57	25,45	
1633.030	30	10	90	57	26,00	
1633.032	32	10	90	57	29,00	
1633.034	34	10	90	57	30,30	
1633.035	35	10	90	57	31,45	
1633.040	40	10	90	57	37,70	
1633.045	45	10	90	57	46,00	
1633.050	50	10	90	57	49,75	
Sets						
Order No.	Description				€	
1633.505	·					
1633.510	10 pcs. Set in wooden case. Ø 10,	15, 18, 20, 22, 25, 26, 30, 3	5 and 40 mm		102,45 203,35	
1633.515	15 pcs. Set in wooden case. Ø 10,				340,45	

Order No.	Description			€
1633.505	5 pcs. Set in wooden case. Ø 15, 20, 25, 30 and 35 mm			102,45
1633.510	10 pcs. Set in wooden case. Ø 10, 15, 18, 20, 22, 25, 26, 30, 3	35 and 40 mm		203,35
1633.515	15 pcs. Set in wooden case. Ø 10, 12, 15, 16, 18, 20, 22, 25, 2	26, 28, 30, 35,	40, 45 and 50 mm	340,45
	Traditional SUPER-Cylinder Boring Bit with brad point, 2 main edges and 2 cutting lips. Exact grinding, right-hand cut, grey	The state of the s	Tear free accurate holes in softwood, can also be u European hardwood and veneered boards. Especial to resharpen because of the straight cutting lips. W extension shank 1639 stationary deep-hole drilling possible	ly easy ith the
	Alloyed tool steel		Cylinder Boring bit are only suitable for stationary o For freehand drilling we recommend our rapid forst Bormax 1622 or the TCT-Bormax³ 1663.	
UPM	700 - 3000 min-1. e.g. Ø 15 mm 2300 min-1 in softwood. Also find details at the speed-diagrams		Packing unit = 1. Rose-tube. EAN	

Depth Stop supported by ball bearing for FAMAG-Forstner bits 1622, 1630, 1663





see speed of Forstner Bit



Packing unit = 1 piece in Rose-box

	(1) 10 10 10 10 10 10 10 10 10 10 10 10 10			
Order No.	Description			€
1621.108	Depth Stop for 1622, 1630, 1663, Drills-Ø 10 - 21 mm			38,95
1621.110	Depth Stop for 1622, 1630, 1663, Drills-Ø 28 - 35 mm			38,95
1621.112	Depth Stop for 1622, 1630, 1663, Drills-Ø 28 - 35 mm			38,95
1621.114	Depth Stop for 1622, 1630, 1663, Drills-Ø 36 - 40 mm			38,95
1621.116	Depth Stop for 1622, 1630, 1663, Drills-Ø 42 - 48 mm			38,95
Sätze				
Order No.	Description			€
1621.200	Depth Stop Set for 1622,1630,1633, for drills-Ø 10 - 48 mm, in	ncl a nipper		99,95
Zubehör		• •		
Order No.	Description			€
1621.100	Depth Stop single for 1622, 1630, 1663			26.00
1621.001	Nipper for locking ring			16,95
1621.008	Guide bush I-Ø 8 mm for 1621.100			13,00
1621.010	Guide bush I-Ø 10 mm for 1621.100			13,00
1621.012	Guide bush I-Ø 12 mm for 1621.100			13,00
1621.014	Guide bush I-Ø 14 mm for 1621.100			13,00
1621.016	Guide bush I-Ø 16 mm for 1621.100			13,00
	Depth Stop supported by ball bearing for FAMAG-Forstner bits with exchangeable guide bushings	S. Film	The depth stop is mounted on the stalk and the drillin depth is adjusted. So it is possible to drill holes exactl always at the same depth. The bushings are rotatably supported by ball-bearings and thus produce no distur	y
M	Depth Stop of resistant ABS plastic, guide bushing of steel		For larger depths, it is possible to mount the guide buin reverse form. So you reach a larger adjustment of t depth stop.	







1	
	Drill bit with 1 main edge, roughly toothed circumference cutter and changeable dowel pin and brad point. Shank with three clamping surfaces. One rough and one fine screw threading centre point included.
S. Fifth	For roughly boring into wooden floor boards, the ceilings of old buildings, gypsum plaster boards etc. in freehand drilling. Using the dowel pin it is also possible to countersink plugs
$\square$	Tool steel
	The speed of the machine gives the speed of the feed. No feed force required, this is great for overhead work.
UPM	500 - 1100 min-1. e.g. Ø 68 mm 500 min-1 in softwood. Also find details at the speed-diagrams
	Packing unit = 1. Yellow cardboard tube. EAN

							-		
		0-Ø	AØ	S-Ø	I-Ø	IØ	OAL	Cutting I.	
	Order No.	[mm]	[Inch]	[mm]	[mm]	[Inch]	[mm]	[mm]	€
	1010.025	25,4	1	12,7	4,8	3/16	150	120	64,95
	1010.029	28,6	<b>1</b> 1/8	12,7	4,8	3/16	150	120	64,95
	1010.032	31,8	1 1/4	12,7	4,8	3/16	150	120	64,95
	1010.035	35,0	13/8	12,7	4,8	3/16	150	120	64,95
	1010.038	38,1	1 1/2	12,7	4,8	3/16	150	120	64,95
	1010.041	41,3	15/8	12,7	4,8	3/16	150	120	74,35
	1010.044	44,5	13/4	12,7	6,3	1/4	<b>1</b> 50	120	74,35
	1010.051	50,8	2	12,7	6,3	1/4	150	120	74,35
	1010.054	54,0	2 1/8	12,7	6,3	1/4	150	120	80,85
	1010.057	57,1	2 1/4	12,7	6,3	1/4	150	120	80,85
	1010.065	65,1	2 9/16	12,7	6,3	1/4	150	120	93,20
	1010.068	68,0	-	12,7	6,3	1/4	150	120	96,70
	1010.074	74,0	-	12,7	6,3	1/4	150	120	111,90
	Extensions								
		O-Ø	S-Ø	I-Ø		ΙØ	OAL	Cutting I.	
	Order No.	[mm]	[mm]	[mn	-	[Inch]	[mm]	[mm]	€
	1639.005	22	13	12,	7	1/2	125	100	25,75
	1639.006	22	13	12,		1/2	250	220	29,20
	1639.008	22	13	12,	7	1/2	400	360	42,10
	crest of threa	ad							
			0-Ø		ΑØ		S-	-Ø	
	Order No.	[1	mm]		[Inch]		[m	m]	€
	1010.803		4,8		3/16		4	,8	9,95
	1010.903		6,3		1/4		6	,3	9,95
	dowel pin wi	th shank di	a 4.8mm						
		0-Ø		S-Ø		OAL	Cı	utting I.	
	Order No.	[mm		[mm]		[mm]		[mm]	€
	1010.810	10	-	4,8		68		25	28,95
	1010.811	11		4,8		68		25	28,95
	1010.812	12		4,8		68		25	28,95
	1010.813	13		4,8		68		25	28,95
	1010.814	14		4,8		68		25	28,95
1	1010.815	15		4,8		68		25	28,95
	1010.816	16		4,8		68		25	28,95
	1010.818	18		4,8		68		25	28,95
	1010.820	20		4,8		68		25	28,95
	1010.822	22		4,8		68		25	28,95
	dowel pin wi								
		0-Ø		S-Ø		OAL	Cı	utting I.	
Į	Order No.	[mm	•	[mm]		[mm]		[mm]	€
	1010.910	10		6,3		68		25	28,95
	1010.911	11		6,3		68		25	28,95
	1010.912	12		6,3		68		25	28,95
	1010.913	13		6,3		68		25	28,95
	1010.914	14		6,3		68		25	28,95
	1010.915	15		6,3		68		25	28,95
١	1010.916	16		6,3		68		25	28,95
	1010.918	18		6,3		68		25	28,95
	1010.920	20		6,3		68		25	28,95
	1010.922	22		6,3		68		25	28,95
J	Sets								_
1	Order No.	Description							€
Į	1010.504	Set in wood	den case. Ø	35, 51, 68	s mm ar	na Extensior	1 UAL 250	mm	274,35
Į									
Į									
ı									

**Drills and countersinks for wood** 













	0-Ø	S-Ø	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1662.008	. 8	10	90	57	48,00
1662.010	10	10	90	57	48,00
1662.011	11	10	90	57	51,10
1662.012	12	10	90	57	51,10
1662.013	13	10	90	57	57,60
1662.014	14	10	90	57	57,60
1662.015	15	10	90	57	57,60
1662.016	16	10	90	57	59,15
1662.017	17	10	90	57 57	59,15 59,15
1662.018	18	10	90	57	59,15
1662.019	19	10	90	57 57	59,15 59,15
	20	10	90	57 57	
1662.020					59,15
1662.021	21	10	90	57	60,75
1662.022	22	10	90	57	60,75
1662.023	23	10	90	57	60,75
1662.024	24	10	90	57	60,75
1662.025	25	10	90	57	60,75
1662.026	26	10	90	57	60,75
1662.027	27	10	90	57	78,10
1662.028	28	10	90	57	62,35
1662.029	29	10	90	57	78,10
1662.030	30	10	90	57	62,35
1662.031	31	10	90	57	81,80
1662.032	32	10	90	57	65,25
1662.033	33	10	90	57	70,35
1662.034	34	10	90	57	65,25
1662.035	35	10	90	57	65,25
1662.036	36	10	90	57	65,25
1662.037	37	10	90	57	96,60
1662.038	38	10	90	57	77,45
1662.039	39	10	90	57	96,60
1662.040	40	10	90	57	77,45
1662.042	42	10	90	57	97,10
1662.044	44	10	90	57	106,45
1662.045	45	10	90	57	99,95
1662.046	46	10	90	57	116,00
1662.048	48	10	90	57	120,35
1662.050	50	10	90	57	114,55
1662.055	55	13	90	57	135,95
1662.058	58	13	90	57	154,60
1662.060	60	13	90	57	160,00
Sets					,
Order No.	Description				€
1662.505	5 pcs. Set in woode	n case. Ø 15. 20.	25. 30 and 35 mn	1	274,50
1662.606	6 pcs. Set in woode				344,20
1662.508	8 pcs. Set in woode				537,15
1662.510	10 pcs. Set in wood				603,05
1002.010	mm	o 0030. <b>D</b> 10, 10	, 10, 20, 22, 20, 2	5, 55, 55 una 40	000,00
1662.515	15 pcs. Set in wood	en case. Ø 10, 12	, 15, 16, 18, 20, 2	2, 25, 26, 30, 35,	898,10
	40, 45 and 50 mm				

	Carbide tipped with brad point, 2 main edges, 2 roughing taps. Precisely ground by diamond wheel on CNC machines. High quality carbide tipping and special waved grinding (> Ø 23 mm) on the main edges.	A PARTY	Tear free accurate holes in all types of hardwood, plastic coated chipboards and plastics. Very good material removal because of the waved ground main edges. For stationary use
	High quality carbide tipping		Boring with nearly no effort, also unbelievable endurance when used for hardwood and hard plastics. For freehand drilling we recommend the TCT-Bormax <sup>3</sup> of our product line 1663
UPM	1500 - 8000 min-1. e.g. Ø 35 mm 3000 min-1 in euro. hardwood. Also find details at the speed-diagrams		Packing unit = 1. Rose-tube (up to Ø 55 mm) . EAN

OOOO Premium 1661

**SUPER-Cylinder Boring Bit, carbide-tipped, long version,** Precision

0-Ø



Cutting I.









Order No.	[mm]	[mm]	[mm]	[mm]	€
1661.010	10	13	140	90	72,90
1661.012	12	13	140	90	72,90
1661.014	14	13	140	110	73,95
1661.015	15	13	140	110	73,95
1661.016	16	13	140	110	75,90
1661.018	18	13	140	110	76,75
1661.020	20	13	140	110	79,85
1661.022	22	13	140	110	81,85
1661.024	24	13	140	110	85,75
1661.025	25	13	140	110	87,70
1661.026	26	13	140	110	88,65
1661.028	28	13	140	110	93,65
1661.030	30	13	140	110	95,60
1661.032	32	13	140	110	100,80
1661.035	35	13	140	110	113,80
1661.036	36	13	140	110	120,60
1661.038	38	13	140	110	122,10
1661.040	40	13	140	110	127,70
1661.042	42	16	140	110	140,10
1661.045	45	16	140	110	144,55
1661.050	50	16	140	110	162,70
1661.055	55	16	140	110	188,30
1661.058	58	16	140	110	200,15
1661.060	60	16	140	120	207,25
1661.065	65	16	140	120	221,75
1661.068	68	16	140	120	293,50
1661.070	70	16	140	120	293,50
1661.075	75	16	140	120	343,30
1661.080	80	16	140	120	379,60
1661.085	85	16	140	120	444,75
1661.090	90	20	140	120	485,50
1661.100	100	20	140	120	563,50
1661.120	120	20	140	120	1.074,25
1661.130	130	20	140	120	1.305,50

S-Ø

OAL

	Long version, carbide tipped with brad point, 2 main edges, 2 roughing taps. Precisely ground by diamond wheel in CNC machines. High quality carbide tipping and special waved grinding (> Ø 23 mm) on the main edges	S. Chin	Tear free accurate holes in all types of hardwood, plastic coated chipboards and plastics. Only for stationary use
团	High quality carbide tipping		For freehand drilling of European hardwood we recommend the long version of Bormax® of our product line 1623
UPM	600 - 6000 min-1. e.g. Ø 68 mm 1300 min-1 in euro. hardwood. Also find details at the speed-diagrams		Packing unit = 1. Yellow cardboard tube (up to Ø 100 mm). EAN

Order No.

1616.505

1628.306

Description

5 pcs. Set in wooden case. Ø 15, 20, 25, 30 and 35 mm

6 pcs. Set in wooden case with Plug Cutters and Bormax Bits. Ø 15, 20 and 25 mm 8 pcs. Set in wooden case with Plug Cutters and HSS-G Bits. Ø 6, 8, 10 and 12 mm

€ 337,30

246,85 271,05



COC

Profi





	I-Ø	S-Ø	O-Ø		OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	AZ	[mm]	[mm]	€
1616.006	6	13	<b>1</b> 6	4	140	70	69,95
1616.008	8	13	18	4	140	70	69,95
1616.009	9	13	19	4	140	70	82,40
1616.010	10	13	20	4	140	70	57,20
1616.011	11	13	21	4	140	70	82,40
1616.012	12	13	22	4	140	70	61,95
1616.013	13	13	23	4	140	70	82,40
1616.014	14	13	24	4	140	70	61,95
1616.015	<b>1</b> 5	13	25	4	140	70	61,95
1616.016	<b>1</b> 6	13	26	4	140	70	66,50
1616.018	18	13	28	4	140	70	66,50
1616.020	20	13	30	4	140	70	66,50
1616.022	22	13	32	4	140	70	73,95
1616.024	24	13	36	5	140	70	97,50
1616.025	25	13	37	5	140	70	74,15
1616.026	26	13	38	5	140	70	107,95
1616.028	28	13	40	5	140	70	107,95
1616.030	30	13	42	5	140	70	80,95
1616.032	32	13	44	5	140	70	123,95
1616.034	34	13	48	6	140	70	123,95
1616.035	35	13	49	6	140	70	89,95
1616.036	36	16	50	6	140	70	133,95
1616.040	40	16	54	6	140	70	102,95
1616.045	45	16	59	6	140	70	114,50
1616.050	50	16	64	6	140	70	129,95
1616.055	55	16	69	6	140	70	196,50
1616.060	60	16	74	6	140	70	196,50
1616.065	65	16	79	6	140	70	295,50
1616.070	70	16	84	8	140	70	295,50
1616.080	80	16	94	9	140	70	381,80
Sets							

	Twofold by robots relief ground main edges and circumference cutters. Effective length of the plug max. 75 mm, if lateral ejection is required the effective length of the plug is max. 40 mm	Septime 1	For the production of plugs for filling knot holes or fixing partial damage of the wood in combination with Bormax®. For precise fitting use FAMAG borers
	Alloyed tool steel	) (	Place 1616 at the edge of the workpiece in a way that the annulus is opened sideways and good removal of the chips is possible
UPM	400 - 1500 min-1. e.g. Ø 15 mm 1000 min-1 in softwood		Packing unit = 1. Rose-box. EAN

1616.2

OOO Profi

Disc + Plug Cutter





	I-Ø	ΙØ	O-Ø		S-Ø	OAL	Cutting I.	
Order No.	[mm]	[Inch]	[mm]	ΑZ	[mm]	[mm]	[mm]	€
1616.215	9,53	3/8	19,53	4	13	140	70	88,56
1616.217	12,70	1/2	22,70	4	13	140	70	88,56
1616.219	15,88	5/8	25,88	4	13	140	70	88,56
1616.221	19,05	3/4	29,05	4	13	140	70	88,56
1616.223	22,23	7/8	32,23	4	13	140	70	93,51
1616.225	25,40	1	37,40	5	13	140	70	93,51
1616.231	34,93	13/8	48,93	6	13	140	70	114,00

	Twofold by robots relief ground main edges and circumference cutters. Effective length of the plug max. 2 inch, if lateral ejection is required the effective length of the plug is max. 1.5 inch	Sellin.	For the production of plugs for filling knot holes or fixing partial damage of the wood in combination with Bormax®. For precise fitting use FAMAG borers
倒	Alloyed tool steel		Place 1616 at the edge of the workpiece in a way that the annulus is opened sidewise and good removal of the chips is possible
UPM	400 - 1000 min-1. e.g. Ø 1/2 ich 1200 min-1 in softwood		Packing unit = 1. Rose-box. EAN

1616.1

OOOO Premium

Disc + Plug Cutter, Carbide-tipped





	I-Ø	S-Ø	O-Ø		OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	AZ	[mm]	[mm]	€
1616.115	15	13	25	4	140	70	167,50
1616.120	20	13	30	4	140	70	173,65
1616.125	25	13	37	5	140	70	179,25
1616.130	30	13	42	5	140	70	184,85
1616.135	35	13	49	6	140	70	189,35
1616.140	40	16	54	6	140	70	207,25
1616.150	50	16	64	6	140	70	268.85

	Twofold by robots relief ground main edges and circumference cutter. Total length 140 mm. Effective length of the plug max. 75 mm, if lateral ejection is required the effective length of the plug is max. 40 mm. Precisely ground by diamond wheel on CNC	For the production of plugs of European and exotic hardwood. Also applicable for some plastics. Long endurance
倒	High quality carbide tipping	Place 1616 at the edge of the work piece in a way that the outside of the cutter is overlapping the edge, allowing fast chip ejection
UPM	1500 - 2000 min-1. e.g. Ø 15 mm 1800 min-1 in euro. hardwood	Packing unit = 1. Rose-box. EAN







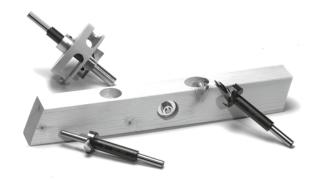
	I-Ø	0-Ø	S-Ø	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	[mm]	[mm]	€
1639.011	8	16	10	80	50	20,80
1639.003	8	16	10	125	100	23,25
1639.004	8	16	10	250	220	25,75
1639.010	10	16	10	80	50	20,80
1639.001	10	16	10	125	100	23,25
1639.002	10	<b>1</b> 6	10	250	220	25,75
1639.009	10	22	13	400	360	43,85
1639.007	12	22	13	400	360	42,10
1639.005	13	22	13	125	100	25,75
1639.006	13	22	13	250	220	29,20
1639.008	13	22	13	400	360	42,10
Sätze						
Order No.	Description					€
1639.583	3 pcs. Set in wooden case	: IØ 10mm, GL 80, 125, 2	250			62,85
1639.503	3 pcs. Set in wooden case					62.85

	Ø of the shank 10 mm, or 13 x 30 mm. With 4 attachment screws for fixing. Solid quality. The shank of Ø 13 mm has 3 clamping surfaces	Sellin.	For the extension of all cylinder boring bits or all tools with Ø of shank 8, 10, 12, 13 mm
	Tool steel		Perfect for drilling deep holes, also for turning. Only limited fit for drilling end grain (especially hardwood) because there is considerable strain on the drill chuck
UPM	in combination with extentions please use less speed		Packing unit = 1. Rose-tube. EAN

**Special Counterbore** 







	0-Ø	S-Ø	I-Ø	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	[mm]	[mm]	€
1617.020	20	13	8	140	110	75,55
1617.025	25	13	8	140	110	78,60
1617.030	30	13	8	140	110	87,00
1617.032	32	13	8	140	110	90,90
1617.035	35	13	8	145	<b>11</b> 5	90,90
1617.040	40	13	8	145	<b>11</b> 5	99,00
1617.045	45	13	10	150	120	112,00
1617.050	50	13	10	150	125	119,25
1617.055	55	13	10	150	125	130,60
1617.060	60	13	10	150	125	147,50
1617.065	65	13	10	155	130	168,30
1617.070	70	13	10	155	130	189,65
1617.075	75	13	10	155	130	221,00
1617.080	80	13	10	155	130	245,25
1617.085	85	13	10	155	130	315,35
1617.090	90	16	10	155	130	365,65
1617.095	95	16	10	155	130	496,60
1617.100	100	16	10	155	130	496,60
1617.110	110	16	10	155	130	665,35
1617.120	120	16	10	155	130	931,55

Sets

Order No.

€ Set in wooden case with adjustable stop and Counterbores: Ø 50, 60, 70 mm and 1619: Ø 14, 18, 22 mm and MK2-fix-adapter 503,80 1617.509 1617.510 Set in wooden case with Counterbores and auger bits. 1617 Ø 40, 50, 60 mm and 1410.3 and 1619: Ø 12, 14, 18 mm 428,60 1617.511 Set in wooden case with Counterbores and auger bits. 1617 Ø 40, 50, 60 mm and 1410.3 and 1619: Ø 12, 16, 20 mm 435,65

Cylinder boring bit with centre hole for exchangeable dowel pins or pilot drills. 2 main edges and 2 roughing taps for clean cut. Ø > 50 mm 3 clamping surfaces



For countersinking on a right-angled surface for taking in screws and plugs in wooden constructions. Guidance of the counterbore is granted by the dowel pin or the pilot drill. Please order separately



Alloyed tool steel



Boring and counterboring in a single operation. Ø 40-90 mm are suitable for bit stop 1619.100. With it you can exactly determine the drilling depth



300 - 1600 min-1. e.g. Ø 60 mm 500 min-1 in construction wood. Also find details at the speed-diagrams



Packing unit = 1. Yellow cardboard tube (up to Ø 100 mm).







	O-Ø	S-Ø	I-Ø	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	[mm]	[mm]	€
1618.020	20	13	8	140	110	198,00
1618.025	25	13	8	140	110	214,35
1618.030	30	13	8	140	110	230,50
1618.035	35	13	8	140	110	247,05
1618.040	40	13	8	140	110	295,95
1618.045	45	13	10	140	110	328,55
1618.050	50	13	10	140	110	345,10
1618.055	55	13	10	140	110	361,45
1618.060	60	13	10	140	110	394,10

	Carbide tipped cylinder boring bit with center hole for exchangeable dowel pins or pilot drills. 2 main edges and 2 roughing taps, ground by diamond wheels on CNC-machines for long endurance	Sellin.	For countersinking on a right-angled surface for taking in screws and plugs in wooden constructions. Guidance of the counterbore is reached by the dowel pin or a pilot drill. Please order seperately
	High quality carbide tipping		Please order dowel pin or pilot drill separately. Boring and counterboring in one workstep. Intermediate sizes on demand, delivery time approx. 4 weeks
UPM	1500 - 3000 min-1. e.g. Ø 35 mm 2800 min-1 in euro. hardwood. Also find details at the speed-diagrams		Packing unit = 1. Yellow cardboard tube (up to Ø 100 mm). EAN

1469/...

OOOO Premium

Pilot-Drill bit for series 1617 u. 1618





	0-ø	S-Ø	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1469.008	8	8	67	40	31,65
1469.010	10	8	67	40	34,60
1469.012	12	8	67	40	40,30
1471.010	10	10	70	40	31,55
1471.012	12	10	70	43	36,65

	Carbide tipped pilot drill for 1618/1617 with clamping surface so that the countersink can be securly clamped. Long endurance ensured by high quality carbide tipping and grinding by diamond wheels on CNC-machines	A STATE OF THE STA	As centring drill in counterbore. Boring and counterboring in a single operation if material is not too thick
	High quality carbide tipping		The 60 $^{\circ}$ rooflike tip ansures a tear free bore exit
UPM	See product line 1617/1618		Packing unit = 1. PE box. EAN







shank Dia 8mm					
	0-Ø	S-Ø	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1619.008	8	8	75	50	16,30
1619.110	10	8	75	50	16,30
1619.112	12	8	75	50	17,75
1619.113	13	8	75	50	17,90
1619.114	14	8	75	50	17,90
1619.116	16	8	75	50	19,00
1619.118	18	8	75	50	19,90
1619.120	20	8	75	50	20,75
1619.122	22	8	75	50	24,30
shank Dia 10mm					
	0-Ø	S-Ø	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1619.010	10	10	75	50	16,30
1619.012	12	10	75	50	17,75
1619.013	13	10	75	50	17,90
1619.014	14	10	75	50	17,90
1619.016	16	10	75	50	19,00
1619.018	18	10	75	50	19,90
1619.020	20	10	75	50	20,75
1619.022	22	10	75	50	24,30
1619.026	26	10	75	50	25,45
1619.032	32	10	75	50	27,55

	Stepped dowel pin with shank of 8 or 10 mm x 25 mm	S. Harry	For the use of counterbore 1617 or 1618. Ensures the good guidance of the counterbore tools
倒	Tool steel		Ground slightly undersized so that easy working is ensured. If you want to drill and countersink in a single operation we recommend our product line 1471/1469
UPM	please see Drill range 1617 and 1619		Packing unit = 1. Rose-tube. EAN

Adjustable stop for Countersink





1619.100



	0-Ø	I-Ø	OAL	
Order No.	[mm]	[mm]	[mm]	€
1619.100	95	20	40	111,45

	Bit stop of aluminium for FAMAG counterbores with stalk Ø 20mm (1617: Ø 40-90 mm). Coated version with ball bearings and 2 straining screws on the shank	Septim 1	Mounted as bit stop on counterbore 1617 and 1618 during drilling the countersink for washers. Movable on the shank
倒	Aluminium		Low construction depth enables deep countersinking (e.g. Ø 85 mm max. 70 mm). There remains space for a plug for closing the countersink
UPM	See product line 1617/1618		Packing unit = 1. EAN

1405.210

OOOO Premium

**Depth Guide** 





 Ø OAL Order No.
 Cutting I.

 D 1405.210
 90
 320
 170
 167,50

	Depth guide with two guide rods, retainer for drill machine Ø 43 mm with handle and guide ring (inner Ø 90 mm)	S. Filler	Bit stop which is independent of a tool suitable for boring countersinks for washers. Continously adjustable depth of sinking by adjusting ring on guide rods
倒	Tool holder of cast aluminium		Very easy to handle and precisely applicable. The second handle allows for good guidance
UPM	Power drill		Packing unit = 1. EAN



### Self-centreing hinge boring bit





	Ø		OAL	Cutting I.	
Order No.	[mm]	S	[mm]	[mm]	€
3582.020	2,0	E 6,3	84	14	16,50
3582.030	2,75	E 6,3	86	14	16,85
3582.035	3,5	E 6,3	95	15	18,05

	Self-centring hinge boring bit for power drill. Equipped with a guide bush containing a spring and core drill HSS with roof tip	S. Hills	The guide bush will be inserted in the screw hole of a fitting or a hinge. The guide bush will centre itself in the screw hole of the fitting or the hinge
团	Drill HSS		You can precisely locate the hinge screw using this countersink hole in this hinge
UPM	500 - 1000 min-1. e.g. Ø 2,0 mm 1000 min-1 in MDF		Packing unit = 1. Rose-tube. EAN



**Hinge Boring Bit** 











with Bormax head	
	0-Ø
Order No	[mm]

with Bormax	< nead					
	0-ø	S-Ø		OAL	Shank length	
Order No.	[mm]	[mm]		[mm]	[mm]	€
3514.026	26	10x20		60	40	15,90
3514.035	35	10x20		60	40	15,90
in tool-steel						
	O-Ø	S-Ø		OAL	Shank length	
Order No.	[mm]	[mm]		[mm]	[mm]	€
3515.026	26	8x20		60	40	10,45
3515.030	30	8x20		60	40	10,80
3515.035	35	8x20		60	40	10,90
tct version						
		0-Ø	S-Ø	OAL	Shank length	
Order No.	Description	[mm]	[mm]	[mm]	[mm]	€
3516.015		15	8x20	60	40	19,85
3516.020		20	8x20	60	40	19,85
3516.025		25	8x20	60	40	19,10
3516.026		26	8x20	60	40	19,10
3516.030		30	8x20	60	40	19,85
3516.035		35	8x20	60	40	19,10
3516.040	discontinved item	40	8x20	60	40	30,90

	Little brad point, roughing tap and two main edges. Improved geometry of the edges	A STATE OF THE STA	Tear free accurate hinge borings. The tool steel version for uncoated softwood. Bormax®-geometry for coated boards and limited for plastic coated chipboards or MDF. Carbide tipped version can be used without problems for plastic coated materials
#	Tool steel or carbide tipped		Only the BORMAX - Geometry tolls are suitable for freehand drilling. When using Bormax® at coated boards let running the power drill very slowly so that the teeth can tear open the coating and the drill will not be damaged by too much head
UPM	1000 min-1 for Tool steel-types. 2500 min-1 for TCT-types. Also find details at the speed-diagrams		Packing unit = 1. Rose-tube. EAN









version RH	with shank dia 13m	m			
	O-Ø	S-Ø	OAL	Spiral I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1607.106	6	13x50	120	40	23,30
1607.108	8	13x50	130	40	24,20
1607.110	10	13x50	140	45	26,40
1607.112	12	13x50	150	50	27,40
1607.114	14	13x50	160	55	28,75
1607.116	16	13x50	170	65	31,95
version RH	with shank dia 16m	m			
	0-Ø	S-Ø	OAL	Spiral I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1607.206	6	16x50	120	40	23,30
1607.208	8	16x50	130	40	24,20
1607.210	10	16x50	140	45	26,40
1607.212	12	16x50	150	50	27,40
1607.214	14	16x50	160	55	28,75
1607.216	16	16x50	170	65	31,95
Sets					
Order No.	Description				€
1607.606	6 pcs. Set in wood	en case RH version.	Ø 6, 8, 10, 12, 14	l and 16 mm	145,65

N Sapar	Two spiraled main edges with stepped parallel shank Ø 13 or 16 mm	Supp.	Milling of slots in softwood and limited in European hardwood with a slot boring machine. Higher cutting rate and ideal remove of chips because of the convoluted
	Alloyed tool steel	*	geometry of the main edges  Through the wound Spiral runs this drill particulary
进			smoothly and without incommodious chattering
UPM	2500 - 5000 min-1. e.g. Ø 16 mm 2500 min-1 in softwood. Also find details at the speed-diagrams		Packing unit = 1. Rose-tube. EAN

1601/03

OO Classic

**Slot Mortise Bit** 







version RH with	shank dia 13mm				
	O-Ø	S-Ø	OAL	Spiral I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1601.105	5	13x50	115	35	19,05
1601.106	6	13x50	120	35	17,50
1601.107	7	13x50	125	35	17,35
1601.108	8	13x50	130	40	17,35
1601.109	9	13x50	135	40	17,35
1601.110	10	13x50	140	45	16,55
1601.111	11	13x50	145	48	16,90
1601.112	12	13x50	150	50	16,15
1601.113	13	13x50	155	53	17,00
1601.114	14	13x50	160	55	17,35
1601.115	15	13x50	165	58	18,55
1601.116	16	13x50	170	60	19,75
1601.118	18	13x50	180	68	23,10
1601.120	20	13x50	185	70	29,30
1601.122	22	13x50	190	75	42,25
1601.124	24	13x50	195	77	47,95
version LH with	shank dia 13mm				
	O-Ø	S-Ø	OAL	Spiral I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1601.405	5	13x50	115	35	19.05
1601.406	6	13x50	120	35	17,50
1601.407	7	13x50	125	35	17,35
1601.408	8	13x50	130	40	17,35
1601.409	9	13x50	135	40	17,35
1601.410	10	13x50	140	45	16,55
1601.411	11	13x50	145	48	16,90
1601.412	12	13x50	150	50	16,15
1601.413	13	13x50	155	53	17,00
1601.414	14	13x50	160	55	17,35
1601.415	15	13x50	165	58	18,55
1601.416	16	13x50	170	60	19,75
1601.418	18	13x50	180	68	23,10
1601.420	20	13x50	185	70	29,30
1601.422	22	13x50	190	75	42,25
1601.424	24	13x50	195	77	47,95
	shank dia 16mm				,
version tur with	0-Ø	S-Ø	OAL	Spiral I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1601.205	5	16x50	115	35	19,05
1601.206	6	16x50	120	35	17,50
1601.207	7	16x50	125	35	17,35
1601.208	8	16x50	130	40	17,35
1601.209	9	16x50	135	40	17,35
1601.210	10	16x50	140	45	16,55
1601.211	11	16x50	145	48	16,90
1601.212	12	16x50	150	50	16,15
1601.212	13	16x50	155	53	17,00
1601.213	14	16x50	160	55	17,00
1601.214	15	16x50	165	58	18,55
1601.216	16	16x50	170	60	19,75
1601.218	18	16x50	180	68	23,10
1601.218	20	16x50	185	70	29,30
1601.222	20	16x50	190	75	42,25
1601.224	24	16x50 16x50	195	75 77	42,25 47,95
1001.224	24	TOYOU	190	11	41,95

		s. With			
	tH version. Ø 6, 8, 10, 12	2, 14 and 16 mm			€ 94,00
16	16x50		200	130	65,40
[mm]	[mm]		[mm]	[mm]	€
· ·	S-Ø		OAL	Cutting I.	
RH with long cutters					,
					47,95
				• •	42,25
					29,30
					19,75 23,10
			=		18,55
					17,35
_~					17,00
<del></del>					16,15
					16,90
					16,55
					17,35
			40		17,35
7	16x50	125	35	35	17,3
6	16x50	120	35	35	17,50
5	16x50	112	35	35	19,0
[mm]	[mm]	[mm]	[mm]	[mm]	€
0-Ø	S-Ø	OAL	Cutting I.	Spiral I.	
	5 6 7 8 9 10 11 12 13 14 15 16 18 20 22 24 RH with long cutters 0-Ø [mm] 16 escription pcs. Set in wooden case R	5 16x50 6 16x50 7 16x50 8 16x50 9 16x50 10 16x50 11 16x50 11 16x50 12 16x50 13 16x50 14 16x50 15 16x50 16 16x50 18 16x50 20 16x50 22 16x50 24 16x50 24 16x50 24 16x50 25 RH with long cutters 0-Ø S-Ø S-Ø [mm] [mm] 16 16x50 escription pcs. Set in wooden case RH version. Ø 6, 8, 10, 12 Two straight main edges with chip breaking flutes stepped shank Ø 13 or 16 mm	5 16x50 112 6 16x50 120 7 16x50 125 8 16x50 130 9 16x50 135 10 16x50 140 11 16x50 145 12 16x50 150 13 16x50 155 14 16x50 160 15 16x50 160 15 16x50 160 15 16x50 165 16 16x50 165 16 16x50 170 18 16x50 180 20 16x50 180 20 16x50 185 22 16x50 190 24 16x50 190 25 RH with long cutters 0-Ø S-Ø [mm] [mm] 16 16x50  Pescription pcs. Set in wooden case RH version. Ø 6, 8, 10, 12, 14 and 16 mm  Two straight main edges with chip breaking flutes. With stepped shank Ø 13 or 16 mm	5	5

	Two straight main edges with chip breaking flutes. With stepped shank Ø 13 or 16 mm	Sentre Control of the	Milling of slots in softwood with a slot boring machine. Due to the special geometry of the head piercing use is possible
	Alloyed tool steel		Not appropriate for hardwood. Limited fit for hardwood is our product line 1607
UPM	2200 - 4000 min-1. e.g. Ø 16 mm 2200 min-1 in softwood. Also find details at the speed-diagrams		Packing unit = 1. Rose-tube. EAN









OAL 235mm					
	0-Ø	S-Ø	OAL	Spiral I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1410.205	5	4,5	235	160	11,60
1410.206	6	5,5	235	160	11,60
1410.207	7	6,5	235	160	11,60
1410.208	8	7,8	235	160	11,60
1410.209	9	8	235	160	11,60
1410.210	10	9,8	235	160	11,60
1410.211	11	9,8	235	160	12,10
1410.212	12	11,8	235	160	12,10
1410.213	13	12,8	235	160	13,25
1410.214	14	13	235	160	13,25
1410.215	15	13	235	160	14,10
1410.216	16	13	235	160	14,10
1410.217	17	13	235	160	15,50
1410.217			235	160	
	18 19	13 13			15,50
1410.219			235	160	17,15
1410.220	20	13	235	160	17,15
1410.222	22	13	235	160	20,45
1410.224	24	13	235	160	22,15
1410.225	25	13	235	160	25,50
1410.226	26	13	235	160	25,50
1410.228	28	13	235	160	28,50
1410.230	30	13	235	160	31,30
1410.232	32	13	235	160	40,45
1410.234	34	13	235	160	58,95
1410.235	35	13	235	160	65,95
1410.236	36	13	235	160	64,50
1410.238	38	13	235	160	78,40
1410.240	40	13	235	160	87,75
1410.245	45	13	235	160	118,15
1410.250	50	13	235	160	155,70
0AL 320mm					
OAL SZOIIIII	0-Ø	S-Ø	OAL	Spiral I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1410.305	5	4,5	320	255	14,95
1410.306	6	5,5	320	255	14,95
1410.307	7		320	255	
		6,5			14,95
1410.308	8 9	7,8	320	255	14,95
1410.309		8	320	255	14,95
1410.310	10	9,8	320	255	14,95
1410.311	11	9,8	320	255	16,40
1410.312	12	11,8	320	255	16,40
1410.313	13	12,8	320	255	17,65
1410.314	14	13	320	255	17,65
1410.315	15	13	320	255	20,05
1410.316	16	13	320	255	20,05
1410.317	17	13	320	255	21,15
1410.318	18	13	320	255	21,15
1410.319	19	13	320	255	24,60
1410.320	20	13	320	255	24,60
1410.322	22	13	320	255	29,50
1410.324	24	13	320	255	30,30
1410.325	25	13	320	255	34,15
1410.326	26	13	320	255	34,15
1410.328	28	13	320	255	38,00
1410.330	30	13	320	255	40,95
1410.332	32	13	320	255	56,60

041 220					
0AL 320mm	0-Ø	S-Ø	OAL	Spiral I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1410.334	34	13	300	220	80,25
1410.335	35	13	300	220	89,45
1410.336	36	13	300	220	89,45
1410.338	38	13	300	220	118,15
1410.340	40	13	300	220	134,65
1410.345	45	13	300	220	176,80
1410.350	50	13	300	220	228,25
	30	10	300	220	220,20
0AL 460mm					
	O-Ø	S-Ø	OAL	Spiral I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1410.405	5	4,5	460	380	19,80
1410.406	6	5,5	460	380	19,80
1410.407	7	6,5	460	380	19,80
1410.408	8	7,8	460	380	19,80
1410.409	9	8	460	380	19,80
1410.410	10	9,8	460	380	19,80
1410.411	11	9,8	460	380	20,30
1410.412	12	<b>11</b> ,8	460	380	20,30
1410.413	13	12,8	460	380	23,95
1410.414	14	13	460	380	23,95
1410.415	15	13	460	380	26,95
1410.416	16	13	460	380	26,95
1410.417	17	13	460	380	28,65
1410.418	18	13	460	380	28,65
1410.419	19	13	460	380	31,30
1410.420	20	13	460	380	31,30
1410.421	21	13	460	380	39,10
1410.422	22	13	460	380	39,10
1410.423	23	13	460	380	41,70
1410.424	24	13	460	380	42,55
	25	13		380	
1410.425			460		48,20
1410.426	26	13	460	380	48,20
1410.427	27	13	460	380	53,55
1410.428	28	13	460	380	53,55
1410.430	30	13	460	380	54,80
1410.432	32	13	460	380	71,00
1410.434	34	13	450	380	108,60
1410.435	35	13	450	380	113,25
	36	13		380	
1410.436			450		111,25
1410.438	38	13	450	380	153,25
1410.440	40	13	450	380	176,80
1410.440 1410.445	45	13		380 380	232,80
			450	380	
1410.445 1410.450	45	13	450 450	380 380	232,80
1410.445	45 50	13 13	450 450 450	380 380 380	232,80
1410.445 1410.450 OAL 650mm	45 50 0-ø	13 13 S-Ø	450 450 450 OAL	380 380 380 Spiral I.	232,80 300,60
1410.445 1410.450 OAL 650mm Order No.	45 50 0-ø [mm]	13 13 S-Ø [mm]	450 450 450 OAL [mm]	380 380 380 Spiral I. [mm]	232,80 300,60 €
1410.445 1410.450 OAL 650mm Order No. 1410.608	45 50 0-ø [mm] 8	13 13 S-Ø [mm] 7,8	450 450 450 OAL [mm] 650	380 380 380 Spiral I. [mm] 535	232,80 300,60 € 27,05
1410.445 1410.450 OAL 650mm Order No.	45 50 0-ø [mm]	13 13 S-Ø [mm]	450 450 450 OAL [mm]	380 380 380 Spiral I. [mm]	232,80 300,60 €
1410.445 1410.450 OAL 650mm Order No. 1410.608	45 50 0-ø [mm] 8	13 13 S-Ø [mm] 7,8	450 450 450 OAL [mm] 650	380 380 380 Spiral I. [mm] 535	232,80 300,60 € 27,05 27,05 27,05
1410.445 1410.450 OAL 650mm Order No. 1410.608 1410.609 1410.610	45 50 0-ø [mm] 8 9	13 13 S-Ø [mm] 7,8 8 9,8	450 450 450 OAL [mm] 650 650 650	380 380 380 Spiral I. [mm] 535 535 535	232,80 300,60 € 27,05 27,05 27,05
1410.445 1410.450 OAL 650mm Order No. 1410.608 1410.609 1410.610 1410.611	45 50 0-Ø [mm] 8 9 10	13 13 S-Ø [mm] 7,8 8 9,8	450 450 450 OAL [mm] 650 650 650	380 380 380 Spiral I. [mm] 535 535 535 535	232,80 300,60 € 27,05 27,05 27,05 27,90
1410.445 1410.450 OAL 650mm Order No. 1410.608 1410.609 1410.610 1410.611 1410.612	45 50 0-Ø [mm] 8 9 10 11	13 13 S-Ø [mm] 7,8 8 9,8 9,8 11,8	450 450 450 OAL [mm] 650 650 650 650 650	380 380 380 Spiral I. [mm] 535 535 535 535 535	232,80 300,60 € 27,05 27,05 27,05 27,90 27,90
1410.445 1410.450 OAL 650mm Order No. 1410.608 1410.609 1410.610 1410.611 1410.612 1410.613	45 50 0-Ø [mm] 8 9 10 11 12	13 13 S-Ø [mm] 7,8 8 9,8 9,8 11,8	450 450 450 OAL [mm] 650 650 650 650 650	380 380 380 Spiral I. [mm] 535 535 535 535 535 535	232,80 300,60 € 27,05 27,05 27,05 27,90 27,90 33,85
1410.445 1410.450 OAL 650mm Order No. 1410.608 1410.609 1410.610 1410.611 1410.612 1410.613 1410.614	45 50 0-Ø [mm] 8 9 10 11 12 13	13 13 S-Ø [mm] 7,8 8 9,8 9,8 11,8 12,8	450 450 450 OAL [mm] 650 650 650 650 650 650	380 380 380 Spiral I. [mm] 535 535 535 535 535 535 535	232,80 300,60 € 27,05 27,05 27,05 27,90 27,90 33,85 33,85
1410.445 1410.450 OAL 650mm Order No. 1410.608 1410.609 1410.610 1410.611 1410.612 1410.613 1410.614 1410.615	45 50 0-Ø [mm] 8 9 10 11 12 13 14	13 13 S-Ø [mm] 7,8 8 9,8 11,8 12,8 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650	380 380 380 Spiral I. [mm] 535 535 535 535 535 535 535	232,80 300,60 € 27,05 27,05 27,90 27,90 33,85 33,85 37,95
1410.445 1410.450 OAL 650mm Order No. 1410.608 1410.609 1410.610 1410.611 1410.612 1410.613 1410.614 1410.615 1410.616	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15	13 13 S-Ø [mm] 7,8 8 9,8 9,8 11,8 12,8 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650	380 380 380 Spiral I. [mm] 535 535 535 535 535 535 535 535 535	232,80 300,60 € 27,05 27,05 27,95 27,90 33,85 33,85 37,95 37,95
1410.445 1410.450 OAL 650mm Order No. 1410.608 1410.609 1410.610 1410.611 1410.612 1410.613 1410.614 1410.615 1410.616 1410.616	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16	13 13 S-Ø [mm] 7,8 8 9,8 9,8 11,8 12,8 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650	380 380 380 Spiral I. [mm] 535 535 535 535 535 535 535 535 535	232,80 300,60 € 27,05 27,05 27,05 27,90 27,90 33,85 33,85 37,95 40,55
1410.445 1410.450 OAL 650mm Order No. 1410.608 1410.609 1410.610 1410.611 1410.612 1410.613 1410.614 1410.615 1410.616 1410.616	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17	13 13 5-Ø [mm] 7,8 8 9,8 9,8 11,8 12,8 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650	380 380 380 Spiral I. [mm] 535 535 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,95 27,90 27,90 33,85 33,85 37,95 40,55 40,55
1410.445 1410.450 OAL 650mm Order No. 1410.608 1410.609 1410.610 1410.611 1410.612 1410.613 1410.614 1410.615 1410.616 1410.616	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18	13 13 13 5-Ø [mm] 7,8 8 9,8 9,8 11,8 12,8 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650	380 380 380 Spiral I. [mm] 535 535 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,95 27,90 27,90 33,85 33,85 37,95 40,55 40,55 46,25
1410.445 1410.450 OAL 650mm Order No. 1410.608 1410.609 1410.610 1410.611 1410.612 1410.613 1410.614 1410.615 1410.616 1410.616	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17	13 13 5-Ø [mm] 7,8 8 9,8 9,8 11,8 12,8 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650	380 380 380 Spiral I. [mm] 535 535 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,95 27,90 27,90 33,85 33,85 37,95 40,55 40,55 46,25
1410.445 1410.450 OAL 650mm  Order No. 1410.608 1410.610 1410.611 1410.612 1410.613 1410.614 1410.615 1410.616 1410.617 1410.618 1410.619	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18	13 13 S-Ø [mm] 7,8 8 9,8 9,8 11,8 12,8 13 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650	380 380 380 Spiral I. [mm] 535 535 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 33,85 33,85 37,95 40,55 40,55 46,25 46,25
1410.445 1410.450 OAL 650mm  Order No. 1410.608 1410.609 1410.610 1410.611 1410.612 1410.613 1410.614 1410.615 1410.616 1410.617 1410.618 1410.619 1410.620 1410.620	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21	13 13 S-Ø [mm] 7,8 8 9,8 9,8 11,8 12,8 13 13 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650 650 650	380 380 380 380 Spiral I. [mm] 535 535 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,95 27,90 33,85 33,85 37,95 40,55 40,55 46,25 46,25 54,60
1410.445 1410.450 OAL 650mm  Order No. 1410.608 1410.609 1410.611 1410.612 1410.613 1410.614 1410.615 1410.616 1410.617 1410.618 1410.619 1410.620 1410.621	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21	13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 11,8 12,8 13 13 13 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650 650 650	380 380 380 380 Spiral I. [mm] 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 33,85 33,85 37,95 40,55 40,55 46,25 54,60 54,60
1410.445 1410.450 OAL 650mm  Order No. 1410.608 1410.609 1410.611 1410.612 1410.613 1410.614 1410.615 1410.616 1410.617 1410.618 1410.619 1410.620 1410.621 1410.622 1410.624	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24	13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650 650 650	380 380 380 380 Spiral I. [mm] 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,95 27,90 33,85 33,85 37,95 40,55 40,55 46,25 46,25 54,60 54,60 57,90
1410.445 1410.450 OAL 650mm  Order No. 1410.608 1410.609 1410.611 1410.612 1410.613 1410.614 1410.615 1410.616 1410.617 1410.618 1410.619 1410.620 1410.620 1410.621 1410.622 1410.624	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24	13 13 13 5-Ø [mm] 7,8 8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650	380 380 380 Spiral I. [mm] 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,95 27,90 33,85 33,85 37,95 40,55 40,55 46,25 54,60 54,60 57,90 65,20
1410.445 1410.450 OAL 650mm  Order No. 1410.608 1410.609 1410.611 1410.612 1410.613 1410.614 1410.615 1410.616 1410.617 1410.618 1410.619 1410.620 1410.621 1410.622 1410.624 1410.625 1410.626	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25 26	13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13 13 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650	380 380 380 380 Spiral I. [mm] 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 33,85 33,85 37,95 40,55 40,55 46,25 46,25 54,60 57,90 65,20 65,20
1410.445 1410.450 OAL 650mm  Order No. 1410.608 1410.609 1410.610 1410.611 1410.612 1410.613 1410.614 1410.615 1410.616 1410.617 1410.618 1410.619 1410.620 1410.621 1410.622 1410.624 1410.625 1410.626	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25 26 28	13 13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13 13 13 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650 650 650	380 380 380 380 Spiral I. [mm] 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 33,85 33,85 37,95 40,55 40,55 46,25 46,25 54,60 54,60 57,90 65,20 65,20 72,45
1410.445 1410.450 OAL 650mm  Order No. 1410.608 1410.609 1410.611 1410.612 1410.613 1410.614 1410.615 1410.616 1410.617 1410.618 1410.619 1410.620 1410.621 1410.622 1410.624 1410.625 1410.626	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25 26 28 30	13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13 13 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650	380 380 380 380 Spiral I. [mm] 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 33,85 37,95 40,55 40,55 46,25 54,60 54,60 57,90 65,20 72,45 80,30
1410.445 1410.450 OAL 650mm  Order No. 1410.608 1410.609 1410.610 1410.611 1410.612 1410.613 1410.614 1410.615 1410.616 1410.617 1410.618 1410.619 1410.620 1410.621 1410.622 1410.624 1410.625 1410.626	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25 26 28	13 13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13 13 13 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650 650 650	380 380 380 380 Spiral I. [mm] 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 33,85 33,85 37,95 40,55 40,55 46,25 46,25 54,60 54,60 57,90 65,20 65,20 72,45
1410.445 1410.450 OAL 650mm  Order No. 1410.608 1410.609 1410.610 1410.611 1410.612 1410.613 1410.614 1410.615 1410.616 1410.617 1410.618 1410.619 1410.620 1410.621 1410.622 1410.624 1410.625 1410.626 1410.628 1410.630	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25 26 28 30 32	13 13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13 13 13 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650 650 650	380 380 380 380 Spiral I. [mm] 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 33,85 33,85 37,95 40,55 40,55 46,25 54,60 57,90 65,20 65,20 65,20 65,20 72,45 80,30 99,40
1410.445 1410.450 OAL 650mm  Order No. 1410.608 1410.609 1410.611 1410.612 1410.613 1410.615 1410.616 1410.617 1410.618 1410.620 1410.621 1410.622 1410.625 1410.626 1410.628 1410.630 1410.632 1410.632	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25 26 28 30 32 34	13 13 13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13 13 13 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650 650 650	380 380 380 380 Spiral I. [mm] 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 33,85 33,85 37,95 40,55 46,25 54,60 57,90 65,20 65,20 72,45 80,30 99,40 139,60
1410.445 1410.450 OAL 650mm  Order No. 1410.608 1410.609 1410.611 1410.612 1410.613 1410.614 1410.615 1410.616 1410.619 1410.620 1410.620 1410.622 1410.625 1410.626 1410.628 1410.630 1410.632 1410.632 1410.634 1410.635	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25 26 28 30 32 34 35	13 13 13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13 13 13 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650 650 650	380 380 380 380 Spiral I. [mm] 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 33,85 33,85 37,95 40,55 40,55 46,25 54,60 57,90 65,20 65,20 72,45 80,30 99,40 139,60 146,55
1410.445 1410.450 OAL 650mm Order No. 1410.608 1410.609 1410.610 1410.611 1410.612 1410.613 1410.616 1410.617 1410.618 1410.619 1410.620 1410.621 1410.622 1410.624 1410.625 1410.628 1410.630 1410.630 1410.631	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25 26 28 30 32 34 35 36	13 13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13 13 13 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650 650 650	380 380 380 380 Spiral I. [mm] 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 33,85 33,85 37,95 40,55 40,55 46,25 46,25 54,60 57,90 65,20 72,45 80,30 99,40 139,60 146,55 144,00
1410.445 1410.450 OAL 650mm  Order No. 1410.608 1410.609 1410.610 1410.611 1410.612 1410.613 1410.616 1410.617 1410.618 1410.619 1410.620 1410.621 1410.622 1410.624 1410.625 1410.628 1410.628 1410.630 1410.632 1410.632 1410.635 1410.635 1410.636	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25 26 28 30 32 34 35 36 38	13 13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13 13 13 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650 650 650	380 380 380 380 Spiral I. [mm] 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 33,85 33,95 37,95 40,55 46,25 46,25 54,60 57,90 65,20 65,20 72,45 80,30 99,40 139,60 146,55 144,00 197,70
1410.445 1410.450 OAL 650mm  Order No. 1410.608 1410.609 1410.611 1410.612 1410.613 1410.615 1410.616 1410.617 1410.618 1410.620 1410.620 1410.621 1410.622 1410.624 1410.625 1410.628 1410.628 1410.630 1410.632 1410.634 1410.638 1410.638 1410.638	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25 26 28 30 32 34 35 36 38 40	13 13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13 13 13 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650 650 650	380 380 380 380 Spiral I. [mm] 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 33,85 37,95 40,55 46,25 54,60 54,60 57,90 65,20 72,45 80,30 99,40 139,60 146,55 144,00 197,70 228,25
1410.445 1410.450 OAL 650mm Order No. 1410.608 1410.609 1410.611 1410.612 1410.613 1410.615 1410.616 1410.617 1410.618 1410.620 1410.621 1410.622 1410.624 1410.625 1410.625 1410.626 1410.636 1410.630 1410.635 1410.636 1410.638 1410.638 1410.638 1410.640	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25 26 28 30 32 34 35 36 38 40 45	13 13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13 13 13 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650 650 650	380 380 380 380 380 380  Spiral I. [mm] 535 535 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 33,85 33,85 37,95 40,55 40,55 46,25 54,60 57,90 65,20 65,20 65,20 65,20 65,20 65,20 139,60 146,55 144,00 197,70 228,25 300,60
1410.445 1410.450 OAL 650mm  Order No. 1410.608 1410.609 1410.611 1410.612 1410.613 1410.615 1410.616 1410.617 1410.618 1410.620 1410.620 1410.621 1410.622 1410.624 1410.625 1410.628 1410.628 1410.630 1410.632 1410.634 1410.638 1410.638 1410.638	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25 26 28 30 32 34 35 36 38 40	13 13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13 13 13 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650 650 650	380 380 380 380 Spiral I. [mm] 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 33,85 37,95 40,55 46,25 54,60 54,60 57,90 65,20 72,45 80,30 99,40 139,60 146,55 144,00 197,70 228,25
1410.445 1410.450 OAL 650mm Order No. 1410.608 1410.609 1410.611 1410.612 1410.613 1410.615 1410.616 1410.617 1410.618 1410.620 1410.621 1410.622 1410.624 1410.625 1410.625 1410.626 1410.636 1410.630 1410.632 1410.635 1410.638 1410.638 1410.638 1410.638 1410.645 1410.645	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25 26 28 30 32 34 35 36 38 40 45 50	13 13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13 13 13 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650 650 650	380 380 380 380 380 380  Spiral I. [mm] 535 535 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 33,85 33,85 37,95 40,55 40,55 46,25 54,60 57,90 65,20 65,20 65,20 65,20 65,20 65,20 139,60 146,55 144,00 197,70 228,25 300,60
1410.445 1410.450 OAL 650mm Order No. 1410.608 1410.609 1410.611 1410.612 1410.613 1410.615 1410.616 1410.617 1410.618 1410.620 1410.621 1410.622 1410.624 1410.625 1410.625 1410.626 1410.636 1410.630 1410.632 1410.635 1410.638 1410.638 1410.638 1410.638 1410.645 1410.645	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25 26 28 30 32 34 35 36 38 40 45 50 0 mm, Spirallänge 1010 m	13 13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13 13 13 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650 650 650	380 380 380 380 380  Spiral I. [mm] 535 535 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 33,85 33,85 37,95 40,55 40,55 46,25 54,60 57,90 65,20 65,20 65,20 65,20 65,20 65,20 139,60 146,55 144,00 197,70 228,25 300,60
1410.445 1410.450 OAL 650mm Order No. 1410.608 1410.609 1410.610 1410.611 1410.612 1410.613 1410.615 1410.616 1410.617 1410.618 1410.620 1410.621 1410.622 1410.624 1410.625 1410.628 1410.630 1410.638 1410.638 1410.638 1410.638 1410.638 1410.640 1410.650 Gesamtlänge 1080	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25 26 28 30 32 34 35 36 38 40 45 50 0 mm, Spirallänge 1010 m	13 13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13 13 13 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650 650 650	380 380 380 380 380  Spiral I. [mm] 535 535 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 27,90 33,85 33,85 37,95 40,55 46,25 46,25 46,25 54,60 57,90 65,20 72,45 80,30 99,40 139,60 146,55 144,00 197,70 228,25 300,60 387,20
1410.445 1410.450 OAL 650mm  Order No. 1410.608 1410.609 1410.610 1410.611 1410.612 1410.613 1410.615 1410.616 1410.617 1410.618 1410.620 1410.621 1410.622 1410.624 1410.625 1410.628 1410.630 1410.632 1410.638 1410.638 1410.638 1410.638 1410.636 1410.638 1410.640 1410.650 Gesamtlänge 1080 Order No.	45 50  O-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25 26 28 30 32 34 35 36 38 40 45 50 0 mm, Spirallänge 1010 m O-Ø [mm]	13 13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13 13 13 13 13 13	450 450 450 450  OAL [mm] 650 650 650 650 650 650 650 650 650 650	380 380 380 380 380  Spiral I. [mm] 535 535 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 33,85 33,95 37,95 40,55 46,25 46,25 54,60 54,60 57,90 65,20 72,45 80,30 99,40 139,60 146,55 144,00 197,70 228,25 300,60 387,20
1410.445 1410.450 OAL 650mm Order No. 1410.608 1410.609 1410.610 1410.611 1410.612 1410.613 1410.616 1410.617 1410.618 1410.619 1410.620 1410.621 1410.622 1410.624 1410.625 1410.628 1410.630 1410.632 1410.632 1410.638 1410.638 1410.638 1410.636 1410.636 1410.636 1410.650 Gesamtlänge 1080 Order No. 1410.014	45 50  O-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25 26 28 30 32 34 35 36 38 40 45 50 0 mm, Spirallänge 1010 n O-Ø [mm] 14	13 13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13 13 13 13 13 13	450 450 450 450  OAL [mm] 650 650 650 650 650 650 650 650 650 650	380 380 380 380 380  Spiral I. [mm] 535 535 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 33,85 33,85 37,95 40,55 46,25 54,60 54,60 57,90 65,20 72,45 80,30 99,40 139,60 146,55 144,00 197,70 228,25 300,60 387,20
1410.445 1410.450 OAL 650mm  Order No. 1410.608 1410.609 1410.610 1410.611 1410.612 1410.613 1410.615 1410.616 1410.617 1410.618 1410.620 1410.621 1410.622 1410.624 1410.625 1410.628 1410.630 1410.632 1410.638 1410.638 1410.638 1410.638 1410.636 1410.638 1410.640 1410.650 Gesamtlänge 1080 Order No.	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25 26 28 30 32 34 35 36 38 40 45 50 0 mm, Spirallänge 1010 n 0-Ø [mm] 14 15	13 13 13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13 13 13 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650 650 650	380 380 380 380 380 380  Spiral I. [mm] 535 535 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 33,85 33,85 37,95 40,55 40,55 46,25 54,60 54,60 57,90 65,20 65,20 72,45 80,30 99,40 139,60 146,55 144,00 197,70 228,25 300,60 387,20
1410.445 1410.450 OAL 650mm Order No. 1410.608 1410.609 1410.610 1410.611 1410.612 1410.613 1410.616 1410.617 1410.618 1410.619 1410.620 1410.621 1410.622 1410.624 1410.625 1410.628 1410.630 1410.632 1410.632 1410.638 1410.638 1410.638 1410.636 1410.636 1410.636 1410.636 1410.650 Gesamtlänge 1080 Order No. 1410.014	45 50  O-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25 26 28 30 32 34 35 36 38 40 45 50 0 mm, Spirallänge 1010 n O-Ø [mm] 14	13 13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13 13 13 13 13 13	450 450 450 450  OAL [mm] 650 650 650 650 650 650 650 650 650 650	380 380 380 380 380 380  Spiral I. [mm] 535 535 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 33,85 33,85 37,95 40,55 40,55 46,25 54,60 54,60 57,90 65,20 65,20 72,45 80,30 99,40 139,60 146,55 144,00 197,70 228,25 300,60 387,20
1410.445 1410.450 OAL 650mm Order No. 1410.608 1410.609 1410.611 1410.612 1410.613 1410.615 1410.616 1410.617 1410.618 1410.620 1410.621 1410.622 1410.624 1410.625 1410.625 1410.628 1410.630 1410.632 1410.632 1410.638 1410.638 1410.638 1410.638 1410.640 1410.650 Gesamtlänge 1080 Order No. 1410.014 1410.016	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25 26 28 30 32 34 35 36 38 40 45 50 0 mm, Spirallänge 1010 m 0-Ø [mm] 14 16 18	13 13 13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13 13 13 13 13 13	450 450 450 450 450  OAL [mm] 650 650 650 650 650 650 650 650 650 650	380 380 380 380 380  Spiral I. [mm] 535 535 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 33,85 33,85 37,95 40,55 40,55 46,25 54,60 57,90 65,20 60,20 60,
1410.445 1410.450 OAL 650mm Order No. 1410.608 1410.609 1410.611 1410.612 1410.613 1410.615 1410.616 1410.617 1410.618 1410.620 1410.621 1410.622 1410.624 1410.625 1410.626 1410.630 1410.630 1410.632 1410.638 1410.638 1410.638 1410.638 1410.640 1410.645 1410.650 Gesamtlänge 1080 Order No. 1410.014 1410.016 1410.018	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25 26 28 30 32 34 35 36 38 40 45 50 0 mm, Spirallänge 1010 m 0-Ø [mm] 14 16 18 18 19 20 21 22 24 25 26 28 30 31 31 31 31 32 33 34 35 36 38 40 40 40 40 40 40 40 40 40 40	13 13 13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13 13 13 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650 650 650	380 380 380 380 380 380  Spiral I. [mm] 535 535 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 33,85 33,85 37,95 40,55 40,55 46,25 46,25 54,60 57,90 65,20 72,45 80,30 99,40 139,60 146,55 144,00 197,70 228,25 300,60 387,20
1410.445 1410.450 OAL 650mm Order No. 1410.608 1410.609 1410.610 1410.611 1410.612 1410.615 1410.616 1410.617 1410.618 1410.620 1410.620 1410.621 1410.622 1410.624 1410.625 1410.628 1410.630 1410.630 1410.630 1410.635 1410.638 1410.636 1410.636 1410.636 1410.636 1410.650 Gesamtlänge 1080 Order No. 1410.014 1410.016 1410.018 1410.020 1410.020	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25 26 28 30 32 34 35 36 38 40 45 50 0 mm, Spirallänge 1010 n 0-Ø [mm] 14 16 18 19 20 21 22 24 25 26 28 30 32 34 35 36 38 40 45 50 60 60 60 60 60 60 60 60 60 6	13 13 13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13 13 13 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650 650 650	380 380 380 380 380 380  Spiral I. [mm] 535 535 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 27,90 33,85 33,85 37,95 40,55 46,25 46,25 46,25 54,60 57,90 65,20 72,45 80,30 99,40 139,60 146,55 144,00 197,70 228,25 300,60 387,20 € 109,50 119,90 131,90 140,25 158,50
1410.445 1410.450 OAL 650mm Order No. 1410.608 1410.609 1410.611 1410.612 1410.613 1410.615 1410.616 1410.617 1410.618 1410.620 1410.621 1410.622 1410.624 1410.625 1410.626 1410.630 1410.630 1410.632 1410.638 1410.638 1410.638 1410.638 1410.640 1410.645 1410.650 Gesamtlänge 1080 Order No. 1410.014 1410.016 1410.018	45 50 0-Ø [mm] 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 24 25 26 28 30 32 34 35 36 38 40 45 50 0 mm, Spirallänge 1010 m 0-Ø [mm] 14 16 18 18 19 20 21 22 24 25 26 28 30 31 31 31 31 32 33 34 35 36 38 40 40 40 40 40 40 40 40 40 40	13 13 13 13 13 S-Ø [mm] 7,8 8 9,8 9,8 9,8 11,8 12,8 13 13 13 13 13 13 13 13 13 13 13 13 13	450 450 450 OAL [mm] 650 650 650 650 650 650 650 650 650 650	380 380 380 380 380 380  Spiral I. [mm] 535 535 535 535 535 535 535 535 535 53	232,80 300,60 € 27,05 27,05 27,90 27,90 33,85 33,85 37,95 40,55 40,55 46,25 46,25 54,60 57,90 65,20 72,45 80,30 99,40 139,60 146,55 144,00 197,70 228,25 300,60 387,20

Cocomtlängo 10	90 mm. Enirallänga 1010 m	m.			
desaminange 10	80 mm, Spirallänge 1010 m 0-Ø	SØ	OAL	Spiral I.	
Order No.	ان -0 [mm]		[mm]	[mm]	€
1410.026	26	[mm] 13	1080	1010	191.85
	28	13		1010	205.90
1410.028			1080		- ,
1410.030	30	13	1080	1010	232,00
1410.032	32	13	1080	1010	248,15
OAL 1.000mm					
	O-Ø	S-Ø	OAL	Spiral I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1410.112	12	12	1000	380	84,20
1410.114	14	13	1000	380	84,20
1410.116	16	13	1000	380	87.00
1410.118	18	13	1000	380	88,50
1410.120	20	13	1000	380	91.15
	22	13		380	- ,
1410.122			1000		97,20
1410.124	24	13	1000	380	100,30
1410.125	25	13	1000	380	109,55
1410.126	26	13	1000	380	109,40
1410.128	28	13	1000	380	115,75
1410.130	30	13	1000	380	115,75
1410.132	32	13	1000	380	129,65
1410.134	34	13	1000	535	154,25
1410.135	35	13	1000	535	161,25
1410.136	36	13	1000	535	161.25
1410.138	38	13	1000	535	220.75
1410.140	40	13	1000	535	255.75
1410.145	45	13	1000	535	336,40
1410.150	50	13	1000	535	437,85
	30	13	1000	333	437,63
Sets					€
	cription		40.40 - 100		
•		AL 235 mm. Ø 6, 8, 10, 12, 14			96,10
		AL 235 mm. Ø 10, 12, 14, 16,			75,25
		AL 320 mm. Ø 10, 12, 14, 16,			103,25
		AL 460 mm. Ø 10, 12, 14, 16,			135,75
		AL 650 mm. Ø 10, 12, 14, 16,			192,35
1410.303 8 pc	cs. Set in wooden case with 0	AL 320 mm. Ø 10, 12, 14, 16,	18, 20, 22 und 24 mm		156,70
1410.403 8 pc	cs. Set in wooden case with 0	AL 460 mm. Ø 10, 12, 14, 16,	18, 20, 22 and 24 mm		209,25
sc Sc	ewis" pattern, milled version rew threading centre point, n emium quality. HEX shank fr	nain edge and cutting lips of		oles in softwood and European nd joinery machine. < Ø 24 m less screw driver	
All	loyed tool steel		used for boring ex	duction of the auger bits they act holes for stud bolts. For ha rofi product line 1493	
	00 - 2800 min-1. e.g. Ø 12 m so find details at the speed-d			Rose-tube up to Ø 36 mm and AN	l whole



Auger Bit, Lewis pattern





	0-Ø	S-Ø	OAL	Spiral I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1410.461	11,5	11,5	460	400	25,55
1410.463	13,5	12	460	400	32,75
1410.465	15,5	12	460	400	35,35
1410.467	17,5	12	460	400	40,75
1410.469	19,5	12	460	400	45,55
1410.471	21,5	12	460	400	53,95
1410.473	23,5	12	460	400	62,30

	"Lewis" pattern, milled version relief ground by robots, screw threading centre point, main edge and cutting lips of premium quality. Shank with 3 clamping surfaces	S. Filler	For boring perfectly fitting holes which are slightly smaller than the nominal diameter. Thus tight fit of the stud bolt in the wood is guaranteed
	Alloyed tool steel		When an especially tight fit is required
UPM	1500 - 2500 min-1. e.g. Ø 13,5 mm 2000 min-1 in softwood. Also find details at the speed-diagrams		Packing unit = 1. Rose-tube. EAN

1411

OOO Profi

Countersink for Auger Bits 180°







Standard					
	0-Ø	ΙØ	OAL		
Order No.	[mm]	[Inch]	[mm]	NL	€
1411.040	40	13	30	30	90,85
1411.050	50	13	30	30	102,75
1411.060	60	13	30	30	131,75
1411.070	70	13	30	30	168,30
Sets					
Order No.	Description				€
1411.200		ugerbit/ countersin nks Ø 40-50-60 mr	ոk, OAL 235mm, Aւ n	gerbits 14-16-18	411,30
1411.300		ugerbit/ countersii nks Ø 40-50-60 mi	ոk, OAL 320mm, Aւ n	gerbits 14-16-18	422,10
1411.400		ugerbit/ countersii nks Ø 40-50-60 mi	ոk, OAL 460mm, Aւ ո	gerbits 14-16-18	427,75

	Versions with 2 roughing taps and 2 main edges and center hole Ø 13 mm. With lateral attachment screw for fixing on the shanks of FAMAG auger bits	Reput.	To fit on FAMAG auger bits with shank Ø 13 mm. Boring and counterboring in a single operation. Recommended for softwood
<b>F</b>	Alloyed tool steel		Can be used universally on all FAMAG auger bits with shank Ø 13 mm
UPM	500 - 800 min-1. e.g. Ø 40 mm 800 min-1 in softwood. Also find details at the speed-diagrams		Packing unit = 1. Rose-box. EAN

Special auger bit for joinery machines









	O-Ø	S-Ø	OAL	Spiral I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1420.412	12	12	460	400	29,55
1420.413	13	13	460	400	35,05
1420.414	14	13	460	400	35,05
1420.415	15	13	460	400	38,80
1420.416	16	13	460	400	38,80
1420.417	17	13	460	400	40,60
1420.418	18	13	460	400	40,60
1420.419	19	13	460	400	44,35
1420.420	20	13	460	400	44,35
1420.421	21	13	460	400	56,25
1420.422	22	13	460	400	56,25
1420.424	24	13	460	400	59,90
1420.425	25	13	460	400	68,15
1420.426	26	13	460	400	68,15
1420.428	28	13	460	400	73,75
1420.430	30	13	460	400	75,60
1420.432	32	13	460	400	95,90

Sets

Order No. Description

1420.400 6 pcs. set in wooden case. Ø 12,14,16,18, 20 and 22 mm

€ 220,00



Premium one edged auger bit with special ground bevelled tip and very dimensionally stable spirals. Premium coating to grant minimal friction



For boring into all softwoods at joinery machines. Because of the special stable geometry of the spiral it is also possible to bore exactly to thick joists. Tight fit of stud bolts by permissible minimum dimension of the Ø of the auger bit



Alloyed tool steel



Due to the special geometry of the head it is especially applicable for boring in planed or finished glued laminated timber. Entry and exit of the borer are considerably cleaner than with an usual auger bit



2800 - 3600 min-1. e.g. Ø 18 mm 2800 min-1 in construction wood



Packing unit = 1. Rose-tube. EAN

0AL 480 mm

**Drills and countersinks for wood** 





	0-Ø	Shank type		OAL	Spiral I.	
Order No.	[mm]	[mm]		[mm]	[mm]	€
1492.410	10	MK 2		480	380	58,65
1492.412	12	MK 2		480	380	58,65
1492.414	14	MK 2		480	380	65,45
1492.416	16	MK 2		480	380	67,15
1492.418	18	MK 2		480	380	67,15
1492.420	20	MK 2		480	380	67,15
1492.422	22	MK 2		480	380	76,30
1492.424	24	MK 2		480	380	84,70
OAL 680 mm						
	0-ø	Shank type		OAL	Spiral I.	
Order No.	[mm]	[mm]		[mm]	[mm]	€
1492.610	10	MK 2		680	550	85,60
1492.612	12	MK 2		680	550	85,60
1492.614	14	MK 2		680	550	89,40
1492.616	16	MK 2		680	550	98,70
1492.618	18	MK 2		680	550	98,70
1492.620	20	MK 2		680	550	105,20
1492.622	22	MK 2		680	550	110,35
1492.624	24	MK 2		680	550	118,40
1492.626	26	MK 2		680	550	131,15
"Lewis" pattern with brad point, main edge and roughing tap, morse taper shank no. 2					cisely fitting holes into all European nery machines taking up MK 2	solid
	Alloyed tool steel			recommend th line. Greater d	and exotic hard wood like Bongossi ne auger bit with knife 1493 of our p iameters can be combined with our MK2-fix adapter (type 1488)	roduct
UPM	1250 - 2500 min-1. e.g. Ø 22 Also find details at the speed	2 mm 1500 min-1 in softwood. I-diagrams		Packing unit =	1. Rose-tube. EAN	

1494 OOOO Premium

Auger Bit carbide tipped





	O-Ø	S-Ø	OAL	Spiral I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1494.412	12	12	460	400	49,25
1494.414	14	12	460	400	57,10
1494.416	16	12	460	400	64,60
1494.418	18	12	460	400	68,35
1494.419	19	12	460	400	74,50
1494.420	20	12	460	400	74,50
1494.424	24	12	460	400	101,45
1494.425	25	12	460	400	101,45

Spare part: crest of thread or triangular

Spare part.	crest of tiffead of trialigular		
		0-Ø	
Order No.	Description	[mm]	€
1494.903	crest of thread fits at auger bits Ø 7 - 14 mm	3	6,40
1494.901	crest of thread fits at auger bits Ø 16 - 18 mm	4	6,40
1494.902	crest of thread fits at auger bits Ø 20 - 24 mm	5	6,40
1494.906	Triangual fits at auger bits Ø 7 - 14 mm	3	6,40
1494.905	Triangual fits at auger bits Ø 16 - 18 mm	4	6,40
1494.904	Triangual fits at auger bits Ø 20 - 24 mm	5	6,40



	Specially formed channel for removing chips, teflon-coated, changeable loadscrew HSS, two carbide tipped main edges, protruding cutting edges and parallel shank with 3 clamping surfaces. Ground by diamond wheels on CNC-machines	A STATE OF THE STA	For boring precisely fitting holes to hardwood. For exotic hardwood like Bongossi we recommend auger bit 1493. Also applicable with a powerful joinery machine for boring cross-grained hardwood
团	High quality carbide tipping, changeable crest of thread HSS		Unbelievable endurance to hardwood. For boring to cross- grained hardwood (Ø 20 mm) the machine should have a turning moment of 50 NM
UPM	1750 - 3000 min-1. e.g. Ø 18 mm 2250 min-1 in Europe hardwood. Also find details at the speed-diagrams		Packing unit = 1. Rose-tube. EAN







			_		
	O-Ø	S-Ø	OAL	Spiral I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1493.408	8	8	460	380	31,60
1493.410	10	10	460	380	31,60
1493.412	12	12	460	380	32,50
1493.414	14	13	460	380	38,30
1493.416	16	13	460	380	43,25
1493.418	18	13	460	380	45,85
1493.420	20	13	460	380	50,10
1493.422	22	13	460	380	62,40
1493.424	24	13	460	380	68,10
1493.426	26	13	460	380	77,15
1493.428	28	13	460	380	85,60
1493.430	30	13	460	380	87,60
Sets					
Order No.	Description				€
1493.400	6 pcs. in wooden c	ase. Ø 10, 12, 14, 1	16, 18 and 20 mn	า	217,30





	"Lewis" pattern with rough brad point, main edge and bottom blade	For boring deep holes into all hardwoods and also into Bongossi
	Alloyed tool steel	Low heat development and therefore long endurance because of the special knife. For boring into softwood we recommend the version 1410
UPM	700 - 2250 min-1. e.g. Ø 12 mm 1500 min-1 in Europe hardwood. Also find details at the speed-diagrams	Packing unit = 1. Rose-tube. EAN

1488/89

OOO Profi

**Special Adapter** 





Kombifix version					
	I-Ø	Shank type	OAL	UL	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1489.001	MK 1	10	110	90	54,05
1489.002	MK 2	13	130	100	57,10
ZB-fix version					
	I-Ø	Shank type	OAL	UL	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1489.613	13	ZB	120	60	58,85
MK 2-fix version					
	I-Ø	Shank type	OAL	UL	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1488.210	10	MK 2	120	40	41,45
1488.212	12	MK 2	120	40	41,45
1488.213	13	MK 2	120	40	41,45



Adapter, external MK2 or Mafell-ZB (inside cylindrical) with two attachment screws. Kombi-Fix inside MK, external cylindrical hexagon



For joinery machines taking up MK2/Mafell-ZB so that cylindrical borers can be held. For all FAMAG cylinder boring bits and auger bits, etc.



Mark the second second



With this adapter it is possible to use low-price borers with parallel shank for machines using MK2/Mafell-ZB  $\,$ 



find recommended r.p.m. at the corresponding tools

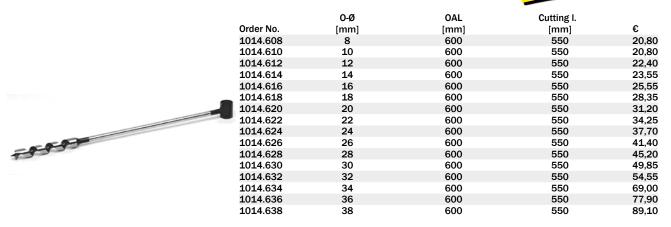


Packing unit = 1. Rose-tube. EAN

Alloyed tool steel

Screw Auger, Lewis pattern





"Lewis" pattern, with threaded point, one main edge and one roughing tap. With lug for wooden handle		For boring deep holes in softwood and depending on the diameter also limited to European hardwood
Alloyed tool steel		Use beech handles.
show what you can	S	Packing unit = 1. Yellow cardboard tube. EAN





OOOO Premium







rigidly	coup	led '	version
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0 , .						~ Fask	F		
					•	g Foot measure			
		Drill bushing	for drill length	Drilling depth	width	outside	inside	OAL	
Order No.	Fixture	plate	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	€
D 1403.320	=	inkl.	320	190	-	200 x 150	155 x 100	~490	278,90
D 1403.322	inkl.	inkl.	320	190	0 - 90	200 x 150	155 x 100	~490	349,65
D 1403.460	=	inkl.	460	310	-	200 x 150	155 x 100	~630	278,90
D 1403.462	inkl.	inkl.	460	310	0 - 90	200 x 150	155 x 100	~630	349,65
D 1403.650	=	inkl.	650	460	-	200 x 150	155 x 100	~810	278,90
D 1403.652	inkl.	inkl.	650	460	0 - 90	200 x 150	155 x 100	~810	349,65
pivoting version									
proting relaion					max. clampin	g Foot measure	Foot measure		
		Drill hushing	for drill length	Drilling depth	width	outside	inside	OAL	
Order No.	Fixture	plate	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	€
D 1404.320	-	inkl.	320	160	-	200 x 150	155 x 100	~490	437,85
D 1404.322	inkl.	inkl.	320	160	0 - 90	200 x 150	155 x 100	~490	507,90
D 1404.460	-	inkl.	460	250	0-30	200 x 150	155 x 100	~630	437,85
D 1404.462	inkl.	inkl.	460	250	0 - 90	200 x 150	155 x 100	~630	507,90
D 1404.650	-	inkl.	650	430	0-30	200 x 150	155 x 100	~810	437,85
D 1404.652	inkl.	inkl.	650	430	0 - 90	200 x 150	155 x 100	~810	507,90
		IIIKI.	030	430	0-30	200 X 130	100 X 100	010	301,30
rigidly coupled sn	nall version					_	_		
						g Foot measure	Foot measure		
		Drill bushing	for drill length	Drilling depth	width	outside	inside	OAL	
Order No.	Fixture	plate	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	€
D 1405.210	-	-	max. 240	210	-	Ø 150	Ø 90	~330	167,50
D 1405.320	-	-	max. 350	320	_	200 x 150	155 x 100	~490	217.25

D 1405.320	m	nax. 350 320	-	200 X 150	155 X 100	~490	217,25
	With additional handle, two continously stops, two spiral springs for drawing bac and with adjustable plate for the drill bu boring is possible	ck the power drill	C HIT	Precise drilling in se version can pivot thr drill bushing plates. spiral springs	ough to 45°. Ad	ditional guida	nce by
倒	Tool holder of aluminium cast			For power drills 43 n 20, 22, 24, 26 mm.		, , ,	
UPM				Packing unit = 1. Ca	rdboard. EAN		

Accessories for Drill Rigs









Accessory				
			max. clamping width	
Order No.	Description		[mm]	€
D 1402.000	· ····		0 - 90	73,75
D 1402.901	Tails for broadening		200	38,70
Bohrbuchsent	teller			
Order No.	Description			€
D 1400.903	with 10 bores, Ø 8, 10, 12, 14, 16, 18, 20, 22, 24 and 26 mr	n		41,10
D 1400.904	with 10 bores, Ø 6, 7, 8, 9, 10, 11, 13, 15, 17, 19 mm			41,10
	Fixture (1402.000): composed of 4 clamping devices, browned, stable version. broadening rails (1402.901): aluminium. Drill bushing plate (1400.904): with 10 boreholes for auger bits 6, 7, 8, 9, 10, 11, 13, 15, 17, 19 mm. Drill bushing plate.	S. Finn	1402.000: mountable to all FAMAG drill rigs with squ foot. 1402.901: mountable to all FAMAG drill rigs with square foot, with and without fixture. 1400.904: espe for boring holes for rafter nails and intermediate sizes 1400.903: adjustable drill	n cially
	1402.000: steel. 1402.901: aluminium. 1400.904: steel. 1400.903: steel		1402.901: particular beamy workpieces can be gripp well. 1400.904: Easy mounting alleviates swapping o plates	
UPM	~		Packing unit = 1. Cardboard. EAN	



# **Drill Rig for stairs building**





				max.	root	root		
		for drill	Drilling	clamping	measure	measure		
		length	depth	width	outside	inside	OAL	
Order No.	Fixture	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	€
D 1406.320		max. 350	320		200 x	155 x	~490	278,90
					<b>1</b> 50	100		
D 1406.322	inkl.	max. 350	320	0 - 90	200 x	155 x	~490	349,65
					150	100		

	With additional handle, continously adjustable bit stop and pivoting range up to 45°. Easy locking by clamping lever	S. Filler	Precise drilling in set angle 90° - 45° especially for the construction of stairs. Accurate holes through stable guidance of the drill
倒	Tool holder of cast aluminium		By pivoting fixture also for curved cheeks aplicable. For staircase > 45° please put a shim.
UPM			Packing unit = 1. Cardboard. EAN

1575



**Machine Drill for construction of stairs** 





	0-ø	S-Ø	OAL	Spiral I.	CPL	
Order No.	[mm]	[mm]	[mm]	[mm]	[mm]	€
1575.010	10	13×50	160	85	11	56,65
1575.012	12	13×50	170	100	12	56,65
1575.013	13	13×50	180	110	13	59,40
1575.014	14	13×50	180	105	13	59,40
1575.015	15	13×50	190	120	14	65,60
1575.016	16	13×50	190	120	14	65,60
1575.018	18	13×50	200	130	15	71,70
1575.020	20	13×50	210	135	16	81,30
1575.022	22	13×50	220	140	18	111,50
1575.024	24	13×50	240	160	19	138,90
1575.025	25	13×50	240	170	19	156,10
1575.026	26	13×50	240	160	20	172,50
1575.028	28	13×50	250	180	21	184,80
1575.030	30	13×50	250	180	23	202,75

	Drill bit with extra long brad point (ground three-edged), two main edges, two roughing taps, four spiral grooves	S. Chin	For boring paling fences into stringers or handrails of staircases. Only limitedly recommended for hardwood
	Tool steel		Better results by the three-edged brad point than by the four-edged. For hardwood we recommend the TCT-Bormax <sup>3</sup> 1663 combined with a drill rig
UPM	800 - 2500 min-1. e.g. Ø 16 mm 2000 min-1 in softwood		Packing unit = 1. Rose-tube. EAN

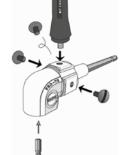
OOO Profi 1597.750

L-Shaped Driver PR075











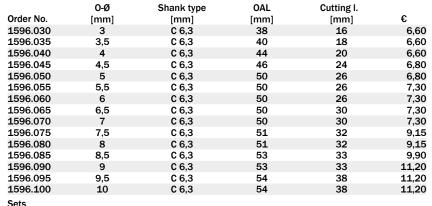


	Bit	Angle	Height	
Order No.	[mm]	[°]	[mm]	€
1597.750	6,3	90°	40	89,10
Sets				
Order No.	Description			€
1597.757	Pro75 set in wooden case countersink, chuck and b		ng. 1596 Ø 3, 4, 5, 6 mm,	113,70
1597.758	Pro75 set in wooden case countersink, cuck and bit		ng. 2596 Ø 3, 4, 5, 6 mm,	113,70
1597.612	13 pcs. set in bag. Type 1	.596 Ø 3, 4, 5, 6, 8, 10 r	nm, 3532 and cuck	137,40
1597.613	13 pcs. set in bag. Type 1	.597 Ø 3, 4, 5, 6, 8, <b>1</b> 0 r	nm, 3532 and cuck	140,40

	Stable L-shaped driver with casing made of aluminium and bevel toothed metal gear wheels (ideal transmission). Take up for all $1/4^\circ$ bits and boring tools (e.g. 1596) with hex shank. Angle of screwing 90°, exchangeable plastic handle	Septim 1	Professional screwing and drilling also in deep angles with cordless screwdriver
	Casing made of aluminium	) (	It's ideal for making screwed connections with a cordless screwdriver even when there is little space. Fine in combination with 1596/2596
UPM	Rotational speed of cordless screwdriver max 2000 min-1		Packing unit = 1, Blister. EAN









0010		
Order No.	Description	€
1596.508	9 pcs. set in wooden case. Ø 3, 4, 5, 6, 7, 8, 9 and 10 mm and bitholder	62,65
1596.805	5 pcs. packed in blister. Ø 3, 4, 5, 6 and 8 mm	32,70



	Bit (C6,3) with brad point, two main edges, two cutting lips and hex shank for bit holder (1/4"; C 6,3)	S. C. Line	For predrilling, boring all wooden materials and many plastics
<b>A</b>	HSS-G		Good handling with cordless screwdriver. The specially smooth chip flutes result in good chip removing. Also deliverable as twist drill version 2596
UPM	Maximum rotational speed of the cordless screwdriver: recommended 3000 min-1		Packing unit = 1. Rose-tube. EAN

Machine Drill with brad point, cutting lips and bit shank







	0-ø	Shank type	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1597.030	3	C 6,3	70	45	7,80
1597.035	3,5	C 6,3	70	45	7,80
1597.040	4	C 6,3	75	50	7,65
1597.045	4,5	C 6,3	80	55	7,65
1597.050	5	C 6,3	86	61	7,55
1597.055	5,5	C 6,3	93	68	7,35
1597.060	6	C 6,3	93	68	7,35
1597.065	6,5	C 6,3	101	76	7,30
1597.070	7	C 6,3	109	84	7,85
1597.075	7,5	C 6,3	109	84	9,15
1597.080	8	C 6,3	117	92	9,15
1597.085	8,5	C 6,3	117	92	9,90
1597.090	9	C 6,3	125	100	11,20
1597.100	10	C 6,3	133	108	11,20
1597.110	11	C 6,3	142	117	14,15
1597.120	12	C 6,3	151	126	15,50
1597.130	13	C 6,3	151	126	16,65
Sets					
Order No.	Description				€
1597.805	5 pcs. packed in blister. Ø 3, 4, 5	. 6 and 8 mm			35,45
1597.507	7 pcs. set in wooden case: Ø 3, 4	,			54,95
1597.511	11 pcs. set in wooden case: Ø 3,		nm		104,15
	,	., ., ., ., ., .,,	****		_5 .,_5

	Bit (E 6,3) with brad point, two main edges, two cutting lips and hex shank for bit holder (1/4"; E 6,3)	Sent Sent Sent Sent Sent Sent Sent Sent	For fast predrilling and countersinking of screw connections with flat head. Boring and countersinking in all wooden materials and many plastics
	HSS-G		Good handling with cordless screwdriver. Also available as twist drill version 2596
UPM	Maximum rotational speed fo the cordless screwdriver: recommended 3000 min-1		Packing unit = 1. Rose-tube. EAN













Order No.         Description         [mm]         [mm]         [mm]         [mm]         C           1594.020         2,0         2,0         49         22         6,70           1594.025         2,5         2,5         57         25         6,70           1594.030         3,0         3,0         60         33         5,35           1594.035         3,5         3,5         70         39         5,80           1594.040         4,0         4,0         4,0         75         43         5,80           1594.045         4,5         4,5         8,5         80         47         6,10           1594.055         5,5         5,5         5,9         2         57         6,40           1594.060         6,0         6,0         92         57         6,40           1594.070         7,0         7,0         7,0         108         69         7,80           1594.080         8,0         8,0         115         75         9,6           1594.085         8,5         8,5         115         75         9,6           1594.090         9,0         9,0         125         81         10,50 <th></th> <th></th> <th>0-Ø</th> <th>S-Ø</th> <th>OAL</th> <th>Cutting I.</th> <th></th>			0-Ø	S-Ø	OAL	Cutting I.	
1594.025		Description					€
1594.030					49		
1594.035	1594.025		2,5	2,5			
1594.040	1594.030		3,0	3,0			5,35
1594.045	1594.035		3,5	3,5			5,80
1594.050	1594.040			4,0			5,80
1594.055	1594.045						
1594.060 6,0 6,0 92 57 6,55 1594.065 6,5 6,5 100 63 7,50 1594.070 7,0 7,0 108 69 7,80 1594.075 7,5 7,5 108 69 8,95 1594.080 8,0 8,0 115 75 8,65 1594.085 8,5 8,5 115 75 9,60 1594.090 9,0 9,0 125 81 10,50 1594.100 10,0 10,0 130 87 11,95 1594.105 10,5 10,5 130 87 16,95 1594.110 11,0 11,0 140 94 15,50 1594.120 12,0 12,0 150 101 18,50 1594.125 12,5 12,5 150 101 19,95 1594.130 13,0 13,0 150 101 19,95 1594.140 14,0 13,0 160 108 27,45 1594.150 15,0 13,0 160 108 27,45 1594.165 16,5 13,0 180 120 44,95 1594.160 16,0 13,0 176 120 34,30 1594.165 16,5 13,0 180 120 44,95 1594.180 18,0 13,0 190 130 42,20 1594.180 18,0 13,0 190 130 42,20 1594.200 now avaible in 20,0 13,0 200 140 49,20 racy  Sets Order No. Description € 1594.805 5 pcs. in an blister. Ø 3, 4, 5, 6 and 8 mm 32,35 3575.504 6 pcs. ln wooden case. Type 1594 Ø 3, 4, 5, 6, 8 mm and VARIO Countersink 2204 (180°) 1594.507 7 pcs. in wooden case: Ø 3, 4, 5, 6, 8 10, 12 mm	1594.050		5,0	5,0	85	52	6,10
1594.065 6,5 6,5 100 63 7,50 1594.070 7,0 7,0 108 69 7,80 1594.075 7,5 7,5 108 69 8,95 1594.080 8,0 8,0 115 75 8,65 1594.085 8,5 8,5 115 75 9,60 1594.090 9,0 9,0 125 81 10,50 1594.095 9,5 9,5 125 81 11,75 1594.100 10,0 10,0 130 87 11,95 1594.105 10,5 10,5 130 87 16,95 1594.110 11,0 11,0 140 94 15,50 1594.125 11,5 11,5 140 94 19,95 1594.120 12,0 12,0 150 101 18,50 1594.125 12,5 12,5 150 101 19,95 1594.130 13,0 13,0 150 101 19,95 1594.140 14,0 13,0 160 108 27,45 1594.150 15,0 13,0 168 114 31,15 1594.160 16,0 13,0 168 114 31,15 1594.160 16,0 13,0 176 120 34,30 1594.165 16,5 13,0 180 120 44,95 1594.180 18,0 13,0 190 130 42,20 1594.200 now avaible in 20,0 13,0 200 140 49,20 racy  Sets Order No. Description	1594.055		5,5	5,5			
1594.070 7,0 7,0 108 69 7,80 1594.075 7,5 7,5 108 69 8,95 1594.080 8,0 8,0 115 75 8,65 1594.085 8,5 8,5 115 75 9,60 1594.090 9,0 9,0 125 81 10,50 1594.095 9,5 9,5 125 81 11,75 1594.100 10,0 10,0 130 87 11,95 1594.105 10,5 10,5 130 87 16,95 1594.115 11,5 11,5 140 94 15,50 1594.120 12,0 12,0 150 101 18,50 1594.125 12,5 150 101 18,50 1594.130 13,0 13,0 150 101 19,95 1594.140 14,0 13,0 160 108 27,45 1594.140 14,0 13,0 168 114 31,15 1594.150 15,0 13,0 168 114 31,15 1594.160 16,0 13,0 176 120 34,30 1594.165 16,5 13,0 180 120 44,95 1594.180 18,0 13,0 190 130 42,20 1594.200 now avaible in 20,0 13,0 200 140 49,20 racy  Sets Order No. Description € 1594.805 5 pcs. in an blister. Ø 3, 4, 5, 6 and 8 mm 32,35 3575.504 6 pcs. In wooden case: Ø 3, 4, 5, 6, 8 mm and VARIO Countersink 2204 (180°) 1594.507 7 pcs. in wooden case: Ø 3, 4, 5, 6, 8, 10, 12 mm 65,50	1594.060		6,0	6,0			
1594.075	1594.065		6,5	6,5	100		7,50
1594.080	1594.070						
1594.085	1594.075		7,5	7,5			8,95
1594.090 9,0 9,0 125 81 10,50 1594.095 9,5 9,5 125 81 11,75 1594.100 10,0 10,0 130 87 11,95 1594.105 10,5 10,5 130 87 16,95 1594.110 11,0 11,0 140 94 15,50 1594.115 11,5 11,5 140 94 19,95 1594.120 12,0 12,0 150 101 18,50 1594.125 12,5 12,5 150 101 22,50 1594.130 13,0 13,0 150 101 19,95 1594.140 14,0 13,0 160 108 27,45 1594.150 15,0 13,0 168 114 31,15 1594.160 16,0 13,0 168 114 31,15 1594.160 16,0 13,0 176 120 34,30 1594.165 16,5 13,0 180 120 44,95 1594.180 18,0 13,0 190 130 42,20 1594.200 now avaible in 20,0 13,0 200 140 49,20 racy Sets Order No. Description  € 1594.805 5 pcs. in an blister. Ø 3, 4, 5, 6 and 8 mm 32,35 3575.504 6 pcs. In wooden case. Type 1594 Ø 3, 4, 5, 6, 8 mm and VARIO Countersink 2204 (180°) 1594.507 7 pcs. in wooden case: Ø 3, 4, 5, 6, 8, 10, 12 mm 65,50	1594.080		8,0	8,0	115	75	8,65
1594.095 9,5 9,5 125 81 11,75 1594.100 10,0 10,0 130 87 11,95 1594.105 10,5 10,5 130 87 16,95 1594.110 11,0 11,0 140 94 15,50 1594.115 11,5 11,5 140 94 19,95 1594.120 12,0 150 101 18,50 1594.125 12,5 12,5 150 101 22,50 1594.130 13,0 13,0 150 101 19,95 1594.140 14,0 13,0 160 108 27,45 1594.150 15,0 13,0 168 114 31,15 1594.160 16,0 13,0 168 114 31,15 1594.165 16,5 13,0 180 120 34,30 1594.165 16,5 13,0 180 120 44,95 1594.180 18,0 13,0 190 130 42,20 1594.200 now avaible in 20,0 13,0 200 140 49,20 racy  Sets Order No. Description	1594.085		8,5	8,5			9,60
1594.100	1594.090			9,0			
1594.105	1594.095		9,5	9,5	125		11,75
1594.110	1594.100		10,0	10,0	130	87	11,95
1594.115	1594.105		10,5	10,5	130	87	16,95
1594.120	1594.110		11,0	11,0	140	94	15,50
1594.125	1594.115		11,5	11,5	140	94	19,95
1594.130	1594.120		12,0	12,0	150	101	18,50
1594.140	1594.125		12,5	12,5	150	101	22,50
1594.150	1594.130		13,0	13,0	150	101	19,95
1594.160	1594.140		14,0	13,0	160	108	27,45
1594.165	1594.150		15,0	13,0	168	114	31,15
1594.180	1594.160		16,0	13,0	176	120	34,30
1594.180	1594.165		16,5	13,0	180	120	44,95
1594.200 now avaible in 20,0 13,0 200 140 49,20 racy  Sets  Order No. Description € 1594.805 5 pcs. in an blister. Ø 3, 4, 5, 6 and 8 mm 32,35 3575.504 6 pcs. In wooden case.Type 1594 Ø 3, 4, 5, 6, 8 mm and VARIO 59,15 Countersink 2204 (180°) 1594.507 7 pcs. in wooden case: Ø 3, 4, 5, 6, 8, 10, 12 mm 65,50			18,0	13,0	190	130	42,20
Order No.         Description         €           1594.805         5 pcs. in an blister. Ø 3, 4, 5, 6 and 8 mm         32,35           3575.504         6 pcs. In wooden case.Type 1594 Ø 3, 4, 5, 6, 8 mm and VARIO Countersink 2204 (180°)         59,15           1594.507         7 pcs. in wooden case: Ø 3, 4, 5, 6, 8, 10, 12 mm         65,50	1594.200		20,0	13,0	200	140	
Order No.         Description         €           1594.805         5 pcs. in an blister. Ø 3, 4, 5, 6 and 8 mm         32,35           3575.504         6 pcs. In wooden case.Type 1594 Ø 3, 4, 5, 6, 8 mm and VARIO Countersink 2204 (180°)         59,15           1594.507         7 pcs. in wooden case: Ø 3, 4, 5, 6, 8, 10, 12 mm         65,50	Sets	-					
1594.805 5 pcs. in an blister. Ø 3, 4, 5, 6 and 8 mm 32,35 3575.504 6 pcs. In wooden case.Type 1594 Ø 3, 4, 5, 6, 8 mm and VARIO 59,15 Countersink 2204 (180°) 1594.507 7 pcs. in wooden case: Ø 3, 4, 5, 6, 8, 10, 12 mm 65,50		Description					€
3575.504 6 pcs. In wooden case.Type 1594 Ø 3, 4, 5, 6, 8 mm and VARIO 59,15 Countersink 2204 (180°) 7 pcs. in wooden case: Ø 3, 4, 5, 6, 8, 10, 12 mm 65,50			r Ø 3 4 5	6 and 8 mm			
1594.507 7 pcs. in wooden case: Ø 3, 4, 5, 6, 8, 10, 12 mm 65,50		6 pcs. In wooden case.Type 1594 Ø 3, 4, 5, 6, 8 mm and VARIO 5					
	1594.507		` '	. 5. 6. 8. 10. 12	mm		65.50
						16 mm	
1594.819 19 pcs. in Rose plastic box. Ø 1 - 10 mm, 0,5 mm steps 123,65							

	Premium version of fully ground quality with two main edges and two cutting lips. Special internally ground spiral for very good chip removal. Ground by robots on CNC-machines	Septime 1	For exact drilling into all wooden materials, hardwood and laminated boards. Shank constructed for drill chuck Ø 13 mm
Ø,	HSS-G		Premium quality and a fair price. Specially designed chip flutes guarantees good chip removal
UPM	2400 - 8000 min-1. e.g. Ø 4 mm 5000 min-1 in Europe hardwood. Also find details at the speed-diagrams		Packing unit = 1. Rose-tube. EAN



# Machine Drill with brad point and cutting lips, left direction





	0-Ø	S-Ø	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1595.020	2,0	2,0	49	22	12,05
1595.025	2,5	2,5	57	25	12,05
1595.030	3,0	3,0	60	33	10,15
1595.035	3,5	3,5	70	39	10,80
1595.040	4,0	4,0	75	43	10,80
1595.045	4,5	4,5	80	47	11,55
1595.050	5,0	5,0	85	52	11,55
1595.060	6,0	6,0	92	57	12,25
1595.070	7,0	7,0	108	69	14,00
1595.080	8,0	8,0	115	75	15,10
1595.090	9,0	9,0	125	81	18,85
1595.100	10,0	10,0	130	87	20,30



	First class version left hand cut, fully ground quality with two main edges and two cutting lips. Internally ground special spiral for very good chip removal, ground by robots on CNC-machines	For exact drilling into all wooden materials, hardwood and laminated boards. Shank constructed for drill chuck Ø 13 mm. Left hand cut
	HSS-G	Premium quality and a fair price. Specially designed chip flutes guarantees good chip removal
UPM	3000 - 8000 min-1. e.g. Ø 5 mm 4500 min-1 in Europe hardwood. Also find details at the speed-diagrams	Packing unit = 1. Rose-tube. EAN

**OAL 315 mm** 

Order No.

1599.303

1599.304

1599.305

1599.306

1599.307

1599.308

1599.309

1599.310

1599.311

1599.312

0-Ø

[mm]

3

5

6

7

8

9

10

11

12



€

10,50

11,60 12,25

13,00

16,90

16,90

17,90

19,60

22,20

14,15

16,70

19,05

21,35

27,55

27,55

30,75

33,45

38,55

42,45

45,05

48,80

56,00

61,70

18,45 21,75

24,80

27,75

35,80

35,80

39,95

43,50

50,05

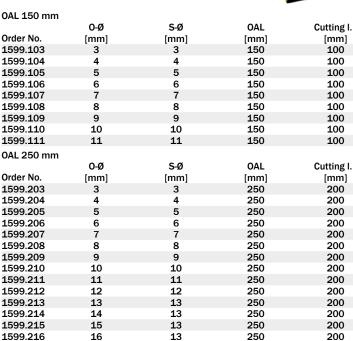
55.25

140.55

€







S-Ø

[mm]

3

5

6

7

8

9

10

11

12

OAL

[mm]

315

315

315

315

315

315

315

315

315

315

Cutting I.

[mm]

250

250

250

250

250

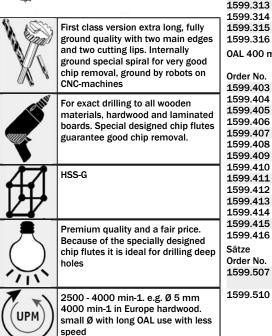
250

250

250

250

250



Packing unit = 1. Rose-tube. EAN

<b></b>			0_0	_00	00,20
1599.313	13	13	315	250	58,55
1599.314	14	13	315	250	64,50
1599.315	15	13	315	250	75,05
1599.316	16	13	315	250	87,45
0AL 400 mr	m				
	0-ø	S-Ø	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1599.403	3	3	400	300	23,95
1599.404	4	4	400	300	28,30
1599.405	5	5	400	300	32,25
1599.406	6	6	400	300	36,10
1599.407	7	7	400	300	46,50
1599.408	8	8	400	300	46,50
1599.409	9	9	400	300	51,95
1599.410	10	10	400	300	56,55
1599.411	11	11	400	300	65,00
1599.412	12	12	400	300	71,80
1599.413	13	13	400	300	76,15
1599.414	14	13	400	300	83,80
1599.415	15	13	400	300	97,55
1599.416	16	13	400	300	113,60
Sätze					
Order No.	Description				€
1599.507	7 pcs. Set in woode 10, 11, 12 mm	en case: GL 250 mr	n, NL 200 mm. Ø	3, 4, 5, 6, 7, 8, 9,	157,10

10 pcs. Set in wooden case: GL 150 mm, NL 100 mm. Ø 3, 4, 5, 6, 8, 10,



### Special drill for wood and metal, HSS-G





	Ø	S-Ø	OAL	Spiral I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
2470.308	8	8	300	240	86,50
2470.310	10	10	300	240	92,05
2470.312	12	12	300	240	121,80
2470.316	16	13	340	280	148,85
2470.320	20	13	340	280	189,40

Spiral drill for wood and metal, fully ground and with special brad point. Special ground spiral for the very good chip removal and high rigidity. Ground by CNC-machines.	S. Filtre	For extremely dimensionally accurate holes in metal-wood connections. Through the specially designed spiral it is possible to receive a good chip removal and the best results in deep holes.
HSS-G		For best results, use the recommended speed. Please do not work at low speeds because the spiral form can cause a forward spin, which can easily reach to break
1000 - 1500 min-1, e.g. Ø 8 mm, 2000 min-1		Packing unit = 1. PE tube. EAN

1590



Machine Drill with brad point and cutting lips





	0-Ø	S-Ø	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1590.030	3	3	61	33	3,55
1590.040	4	4	75	43	3,60
1590.050	5	5	86	52	3,80
1590.060	6	6	93	57	3,80
1590.070	7	7	109	69	4,45
1590.080	8	8	117	75	4,45
1590.090	9	9	120	80	4,75
1590.100	10	10	129	87	5,45
1590.110	11	10	142	89	6,55
1590.120	12	10	151	96	7,30
1590.130	13	10	151	96	8,45
1590.140	14	10	151	96	9,05
1590.150	15	10	160	100	10,70
1590.160	<b>1</b> 6	10	160	100	13,00
1590.180	18	10	180	130	23,60
1590.200	20	10	200	135	24,95
Sätze					
Order No.	Description				€
1590.805	5 pcs. In an blister. Ø 3, 4, 5, 6 and 8 mm				
1590.507	5 pcs. In an blister. Ø 3, 4, 5, 6 and 8 mm 7 pcs. In wooden case: Ø 3, 4, 5, 6, 8, 10, 12 mm				
1590.511	11 pcs. In wooden	case: Ø 3, 4, 5, 6,	7, 8, 9, 10, 11, 12	, 13 mm	54,95

	With brad point, two main edges and two cutting lips. Up to Ø 10 mm cylindric, > Ø 10 mm Ø of shank 10 mm	Septime 1	For exact drilling into softwood and some European hardwood. Recommened e.g for cordless screwdriver and softwood
	Chrome vanadium steel		The low-cost machine drill with cutting lips. For higher demands we recommend our product line 1594 HSS-G with cutting lips
UPM	1400 - 5000 min-1. e.g. Ø 5 mm 5000 min-1 in softwood. Also find details at the speed-diagrams		Packing unit = 1. Rose-tube. EAN

Machine Drill with brad point





O Hobby





	0-Ø	S-Ø	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
3500.030	3	3	61	33	2,30
3500.040	4	4	75	43	2,60
3500.050	5	5	86	52	2,85
3500.060	6	6	93	57	2,95
3500.070	7	7	109	69	3,05
3500.080	8	8	117	75	3,35
3500.090	9	9	120	80	3,90
3500.100	10	10	129	87	4,05
3500.110	11	10	142	89	5,10
3500.120	12	10	151	96	5,45
3500.130	13	10	151	96	6,40
3500.140	14	10	151	96	6,80
3500.150	15	10	160	100	7,50
3500.160	16	10	160	100	7,95
3500.180	18	10	180	130	14,10
3500.200	20	10	200	140	18,75
3500.220	22	13	210	140	20,60
3500.240	24	13	215	140	22,70
3500.250	25	13	215	140	24,80
3500.260	26	13	215	145	24,80
3500.280	28	13	220	145	26,55
3500.300	30	13	220	145	28,95
Sets					
Order No.	Description				€
3501.505	5 pcs. Set in plastic box. Ø 4, 5, 6,	8 and 10 mm			10,95
3501.508	8 pcs. Set in plastic box. Ø 3, 4, 5,				15,95
	- ,	-, , -,			,

	With brad point, two main edges and protruding cutting edges	Septime 1	For exact drilling into softwood and some European hardwood
团	Chrome vanadium steel		The low-cost machine drill . For higher demands we recommend our product line 1594 HSS-G
UPM	1000 - 5000 min-1. e.g. Ø 5 mm 5000 min-1 in softwood. Also find details at the speed-diagrams		Packing unit = 1. PE bag. EAN

3491 O Hobby

**Machine Drill long** 





	0-Ø	S-Ø	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
3491.006	6	6	250	190	7,95
3491.008	8	8	250	190	8,50
3491.010	10	10	250	190	10,25
3491.012	12	10	250	190	12,15
3491.014	14	10	250	190	14,70
3491.016	16	10	250	190	17,50
3491.018	18	10	250	190	19,95
3491.020	20	10	250	190	21,50

	With brad point, two main edges and protruding cutting edges	For exact drilling into softwood and some European hardwood
	Chrome vanadium steel	The low-cost long machine drill . For high demands we recommend our product line 1594 HSS-G
UPM	1500 - 4000 min-1. e.g. Ø 5 mm 4000 min-1 in softwood. Also find details at the speed-diagrams	Packing unit = 1. Rose-tube. EAN

Machine Drill with brad point and cutting lips carbide









	O-Ø	SØ	OAL	NL	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1593.030	3	3	58	30	16,55
1593.040	4	4	72	40	16,55
1593.050	5	5	83	49	16,70
1593.060	6	6	90	54	18,80
1593.080	8	8	106	66	20,60
1593.070	7	7	114	72	16,55
1593.090	9	9	122	78	16,55
1593.100	10	10	130	84	26,10
1593.110	11	11	139	91	16,55
1593.120	12	12	148	98	29,20
Sets					
Order No.	Description				€
1593.805	5 pcs. Set in an blister: Ø 3, 4, 5	, 6, 8 mm			81,15
1593.507	7 pcs. Set in wooden case: Ø 3,	4, 5, 6, 8, 10, 12 mm			130,85
1593.510	10 pcs. Set in wooden case: Ø 3	, 4, 5, 6, 7, 8, 9, 10, 11, 12 mm			199,10
					, -

	Cylindrical carbide tipped machine drill with brad point, two main edges, two cutting lips	The state of the s	For exact drilling into hardwood (European and exotic), laminated chipboards and plastics
团	High quality carbide tipping		Professional tool for a fair price with an unbelievable endurance. Top for freehand drilling and also stationary use. Boring and countersinking can be used in combination with countersink VARIO 2202.
UPM	4.000 - 10.000 min-1. e.g. Ø 5 mm 8.000 min-1 in europ. hardwood. Also find details at the speed-diagrams		Packing unit = 1. Rose-tube. EAN







	I-Ø		0-Ø	
Order No.	υμ- [mm]		ان-0 [mm]	€
2108.003	3		7	14,80
2108.003	4		8	14,80
2108.005	5		10	14,05
2108.006	6		12	14,05
2108.007	7		12	14,05
2108.008	8		16	14,80
2108.009	9		18	16,30
2108.010	10		20	16,90
2108.011	11		20	18,35
2108.012	12		22	19,10
Sets				
Order No.	Description			€
2108.505	5 pcs. Set in plastic tube. Ø 4, 5, 6, 8 and 10 mm			6,75
	7 pcs. Set in plastic tube. Ø 3, 4, 5, 6, 8, 10 and 12 mm			9,75
*denth adiu	ister single for countersinks with Ø 16mm outside			
Order No.	Description			€
2108.216	depth adjuster for countersinks type 2100 Ø 3 - 7 mm			5,15
6				-,
	Clamp ring to put on twist drills with lateral attachment screw	S. Hill	For fixing on drill bits to adjust the drilling depth	
	Tool steel		If you don't need 10 pcs. in one size we recommend	1 2108.2
UPM	Ø 3 and 4 mm bits with depth ring mounted; it must work with few rpm than the indicated ones for the free bits		Packing unit = 10. Rose-tube. EAN	







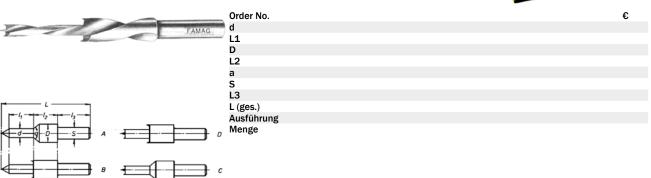
Order No.	Description	Ø1 [mm]	L 1 [mm]	Ø2 [mm]	L 2 [mm]	Ø3 [mm]	L 3 [mm]	S-Ø [mm]	Shank length [mm]	€
1886.050	with depth adjusting collars	5	36	7	20	10	20	8	25	47,75
1886.150	without depth adjusting collars	5	36	7	20	10	20	8	25	46,10

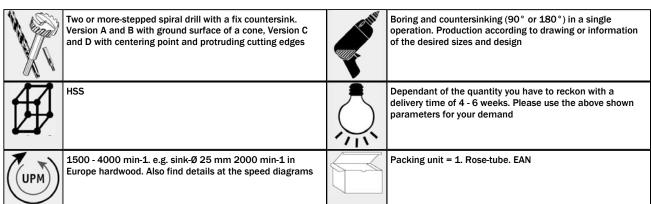
	Three-stepped machine drill with brad point and protruding cutting edges	Septim 1	For pre-drilling and countersinking the holes in a single operation
团	HSS		Of course the clamp ring can be used with this drill
UPM	Ø 5 mm 5000 min-1 in chipboard. Less speed at laminated plates		Packing unit = 1. Rose-tube. EAN

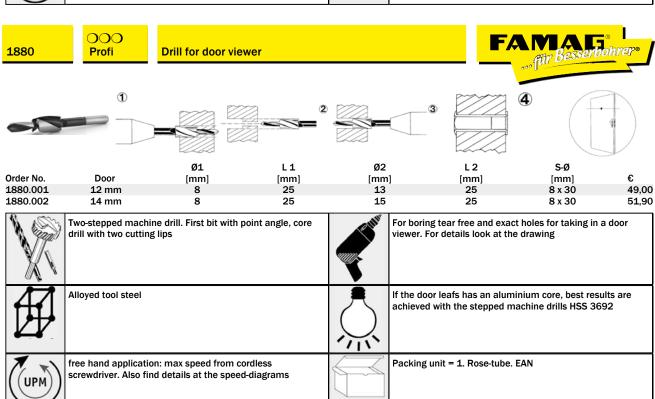
1887 Profi

Stepped machine Drill, custom made













		Ø1	Ø2	S-Ø	
Order No.	Nr.	[mm]	[mm]	[mm]	€
1892.085	8,5	3,4	4,7	4,7	5,60
1892.095	9,5	3,8	5,2	5,2	6,25
1892.110	11,0	4,3	5,7	5,7	6,80
1892.130	13,0	5,3	6,7	6,7	7,35
1892.145	14,5	5,8	7,2	7,2	7,90
1892.160	16,0	6,1	7,7	7,7	8,45
1892.200	20,0	8,1	9,7	9,7	11,50

	Premium step drill fully ground with two main edges and point angle, cylindrical shank	Septime 1	For boring the holes for concealed hinges of ANUBA, ONI, FIX, QUICK etc.
倒	HSS-G		Robust version HSS-G again available for a good price
UPM	3000 - 5000 min-1. e.g. Gr. 14,5 4500 min-1 in softwood. Also find details at the speed-diagrams		Packing unit = 1. New Rose-tube. EAN





	OAL 400 mm					
		O-Ø	S-Ø	OAL	Cutting I.	
	Order No.	[mm]	[mm]	[mm]	[mm]	€
	1001.408	8	6	400	370	9.75
	1001.410	10	8	400	370	11,40
	1001.412	12	8	400	370	14,25
	1001.414	14	8	400	370	16,35
	1001.416	16	10	400	370	18,75
	1001.418	18	10	400	370	22,55
	1001.420	20	10	400	370	29,90
	1001.422	22	12	400	370	39,20
	1001.424	24	12	400	370	45,70
	1001.425	25	12	400	370	48,80
	1001.426	26	12	400	370	50,20
	1001.428	28	12	400	370	54,60
	1001.420	30	12	400	370	57,75
	1001.432	32	12	400	370	59,95
	1001.435	35	12	400	370	66,05
	1001.439	39	12	400	370	86,55
		39	12	400	370	80,55
	0AL 600 mm					
		O-Ø	S-Ø	OAL	Cutting I.	_
	Order No.	[mm]	[mm]	[mm]	[mm]	€
	1001.608	8	6	600	570	10,35
	1001.610	10	8	600	570	12,00
	1001.612	12	8	600	570	14,95
	1001.614	14	8	600	570	17,00
	1001.616	16	10	600	570	19,75
	1001.618	18	10	600	570	23,70
	1001.620	20	10	600	570	30,90
	1001.622	22	12	600	570	41,60
	1001.624	24	12	600	570	48,05
	1001.625	25	12	600	570	51,80
	1001.626	26	12	600	570	52,60
	1001.628	28	12	600	570	57,10
	1001.630	30	12	600	570	60,40
	1001.632	32	12	600	570	62,10
	1001.635	35	12	600	570	67,90
	1001.639	39	12	600	570	90,55
	0AL 800 mm					
		0-Ø	S-Ø	OAL	Cutting I.	
	Order No.	[mm]	[mm]	[mm]	[mm]	€
	1001.808	8	6	800	770	12,40
	1001.810	10	8	800	770	14,10
_	1001.812	12	8	800	770	17,05
ı	1001.814	14	8	800	770	19,95
ı	1001.816	16	10	800	770	23,25
ı	1001.818	18	10	800	770	27,65
ı	1001.820	20	10	800	770	34,95
ı	1001.822	22	10	800	770	45,60
ı	OAL 1.000 mm			-		,
٦	OAL 1.000 MM	0.0	c ø	041	Cutting	
ı	Oudou No	0-Ø	S-Ø	OAL	Cutting I.	6
	Order No.	[mm]	[mm]	[mm]	[mm]	€ 12.10
I	1001.108	8	6	1000	970	13,10
I	1001.110	10 12	8	1000	970	14,65
I	1001.112		8	1000	970	17,65
4	1001.114	14	8	1000	970	20,70
	1001.116	16	10	1000	970	23,95
I	1001.118	18	10	1000	970	29,35
I	1001.120	20	10 12	1000	970 970	36,65 47.45
	しいいき エフン	,,	17	10000	9/0	4/45

	Twist drill with long shank and specially ground roof-like tip which can easily be reground. Construction according to DIN 7490 and the applicable safety regulations
S. Pitter	For boring external and internal form boards in a single operation and boring of wooden ceilings and floors of old buildings
倒	Chrome vanadium steel
	For boring into metal we recommend our version 1002 HSS
(UPM)	800 - 2500 min-1. e.g. Ø 10 mm 2500 min-1 in formwork panel

Packing unit = 1. PE bag. EAN OAL 1000mm in tube

1001.122

22

12

1000

970

47,45

**Boarding and Plumbing Auger HSS** 





OOO Profi

OAL 400 mm					
	O-Ø	S-Ø	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1002.406	6	5	400	370	11,25
1002.408	8	6	400	370	10,55
1002.410	10	8	400	370	12,50
1002.412	12	8	400	370	15,65
1002.414	14	8	400	370	19,10
1002.416	16	10	400	370	23,65
1002.418	18	10	400	370	27,90
1002.420	20	10	400	370	31,70
1002.422	22	10	400	370	46,25
OAL 600 mm					
	O-Ø	S-Ø	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1002.608	8	8	600	570	11,55
1002.610	10	8	600	570	13,40
1002.612	12	8	600	570	16,65
1002.614	14	8	600	570	20,05
1002.616	16	10	600	570	25,15
1002.618	18	10	600	570	29,55
1002.620	20	10	600	570	33,25

	Twist drill with long shank and specially ground roof-like tip which can easily be reground. Construction according to DIN 7490 and the applicable safety regulations	For boring external and internal form boards in a single operation and boring of wooden ceilings and floors of old buildings
倒	HSS	For the hardest application or for boring into metal
UPM	1600 - 3000 min-1. e.g. Ø 14 mm 2200 min-1 in formwork panel	Packing unit = 1. PE bag. EAN

# **Boarding and Plumbing Auger, SDS-plus shank**





0AL 400mm					
	0-Ø	Shank type	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1005.410	10	SDS	400	370	21,55
1005.412	12	SDS	400	370	24,20
1005.414	14	SDS	400	370	26,00
1005.416	16	SDS	400	370	29,55
1005.418	18	SDS	400	370	39,60
1005.420	20	SDS	400	370	43,15
1005.422	22	SDS	400	370	53,30
1005.424	24	SDS	400	370	60,70
1005.425	25	SDS	400	370	72,00
OAL 600mm					
	0-Ø	Shank type	OAL	Cutting I.	
Order No.	0-Ø [mm]	Shank type [mm]	OAL [mm]	Cutting I. [mm]	€
Order No. 1005.610				-	€ 22,45
	[mm]	[mm]	[mm]	[mm]	
1005.610	[mm] 10	[mm] SDS	[mm] 600	[mm] 570	22,45
1005.610 1005.612	[mm] 10 12	[mm] SDS SDS	[mm] 600 600	[mm] 570 570	22,45 25,25
1005.610 1005.612 1005.614	[mm] 10 12 14	[mm] SDS SDS SDS	[mm] 600 600	[mm] 570 570 570	22,45 25,25 27,85
1005.610 1005.612 1005.614 1005.616	[mm] 10 12 14 16	[mm] SDS SDS SDS SDS	[mm] 600 600 600	[mm] 570 570 570 570	22,45 25,25 27,85 30,90
1005.610 1005.612 1005.614 1005.616 1005.618	[mm] 10 12 14 16 18	[mm] SDS SDS SDS SDS SDS	[mm] 600 600 600 600	[mm] 570 570 570 570 570	22,45 25,25 27,85 30,90 40,95
1005.610 1005.612 1005.614 1005.616 1005.618 1005.620	[mm] 10 12 14 16 18 20	[mm] SDS SDS SDS SDS SDS SDS	[mm] 600 600 600 600 600	[mm] 570 570 570 570 570 570	22,45 25,25 27,85 30,90 40,95 44,40
1005.610 1005.612 1005.614 1005.616 1005.618 1005.620 1005.622	[mm] 10 12 14 16 18 20 22	[mm] SDS SDS SDS SDS SDS SDS SDS	[mm] 600 600 600 600 600 600	[mm] 570 570 570 570 570 570 570	22,45 25,25 27,85 30,90 40,95 44,40 55,10
1005.610 1005.612 1005.614 1005.616 1005.618 1005.620 1005.622 1005.624	[mm] 10 12 14 16 18 20 22 24	[mm] SDS SDS SDS SDS SDS SDS SDS SDS SDS SD	[mm] 600 600 600 600 600 600 600	[mm] 570 570 570 570 570 570 570 570	22,45 25,25 27,85 30,90 40,95 44,40 55,10 64,50
1005.610 1005.612 1005.614 1005.616 1005.618 1005.620 1005.622 1005.624 1005.625	[mm] 10 12 14 16 18 20 22 24 25	[mm] SDS SDS SDS SDS SDS SDS SDS SDS SDS SD	[mm] 600 600 600 600 600 600 600 600 600	[mm] 570 570 570 570 570 570 570 570 570	22,45 25,25 27,85 30,90 40,95 44,40 55,10 64,50 77,30

	Twist drill with long shank (SDS-plus) and specially ground roof-like tip which can easily be reground. Construction according to DIN 7490 and the applicable safety regulations	S. Filtre	For boring external and internal form boards in a single operation and boring of wooden ceilings and floors of old buildings
倒	Chrome vanadium steel		These drills are not allowed to used by a hammer or impact drill
UPM	1200 - 2500 min-1. e.g. Ø 22 mm 1200 min-1 in formwork panel		Packing unit = 1. PE clip. EAN



# **Machine Countersink**





	0-Ø	S-Ø	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
1775.010	10	8	90	60	17,50
1775.013	13	8	90	60	18,00
1775.016	16	8	90	60	21,00
1775.020	20	8	90	60	24,00
1775.025	25	8	90	60	29,95
1775.030	30	8	90	60	36,90
Sets					
Order No.	Description				€
1775.505	5 pcs. Set in woode	en case. Ø 10, 13, 1	L6, 20 and 25 mn	n	98,80





	1 1 1		
	Countersink with 7 edges and acute angle 90°, irregular pitch and parallel shank. Now with fully ground tool head	S. Pitter	Countersinking into all sorts of wood, for veneered, laminated panels and many plastics
	Alloyed tool steel		Because of the specially desined pitch it is possible to countersink without chattering in softwood. For all non-ferrous metals, hard plastics etc. we recommend the carbide tipped adjustable countersink VARIO 2202 or the countersinks version 3540
UPM	1000 - 2500 min-1. e.g. Ø 16 mm 1800 min-1 in softwood. Also find details at the speed-diagrams		Packing unit = 1. Rose-tube. EAN



	0-Ø	S-Ø	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
2115.013	13	8x30	80	50	19,05
2115.016	16	8x30	90	60	21,85
2115.020	20	8x30	90	60	25.60

	Machine countersink with bored hole with one edge and countersinking angle of 90°	Septime 1	Countersinking into all sorts of wood, for veneered, laminated panels (for plastic laminated panels we recommend VARIO 2202)
倒	Alloyed tool steel		Because of the geometry of the tool head good guidance and countersinking without chattering is possible
UPM	600 - 1000 min-1. e.g. Ø 16 mm 800 min-1 in softwood		Packing unit = 1. Rose-tube. EAN

O Hobby

Countersink





0-Ø	S-Ø	OAL	
[mm]	[mm]	[mm]	€
10	E 6,3	50	3,85
12	E 6,3	50	4,05
14	E 6,3	50	4,15
16	E 6,3	50	4,20
20	E 6,3	50	4,65
	[mm] 10 12 14 16	[mm] [mm] 10 E 6,3 12 E 6,3 14 E 6,3 16 E 6,3	[mm] [mm] [mm] 10 E 6,3 50 12 E 6,3 50 14 E 6,3 50 16 E 6,3 50



	Countersink with 5 edges and point angle 90° and bit shank E 6,3	S. Filtre	Countersinking into softwood and veneered panels (for plastic laminated panels we recommend VARIO 2202). The low-price countersink for do-it-yourself people
<b>F</b>	Alloyed tool steel		For hard plastics etc. we recommend the carbide tipped VARIO 2202 or the version 3540
UPM	500 - 2500 min-1. e.g. Ø 12 mm 2000 min-1 in softwood. Also find details at the speed-diagrams		Packing unit = 1. Rose-tube. EAN









	I-Ø	0-Ø	OAL	
Order No.	[mm]	[mm]	[mm]	€
2100.030	3,0	16	25	12,20
2100.035	3,5	16	25	12,20
2100.040	4,0	16	25	12,20
2100.045	4,5	16	25	12,20
2100.050	5,0	16	25	12,20
2100.055	5,5	16	25	12,20
2100.060	6,0	16	25	12,20
2100.065	6,5	16	25	15,20
2100.070	7,0	16	25	15,20
2100.080	8,0	20	25	15,20
2100.100	10,0	20	25	15,20
Accessory				
Order No.	Description			€

 Order No.
 Description

 2108.216
 depth adjusting collar for countersinks 3 - 7 mm
 5,15

	Shell drill countersink with 5 edges and point angle 90° to clip on machine drills incl. fixed spanner without drill	Septim 1	Boring and countersinking in a single operation. For clipping on machine drills with the appropriate Ø. Very good for softwood, veneered panels and limited for European hardwood
团	Tool steel		Countersinking screw heads and boring in a single operation to softwood. We recommend drills of version 3500 or 1590. For higher demands we recommend 1594 (HSS-G) with VARIO 2202
UPM	1500 - 2200 min-1. e.g. all countersinks with A-Ø 16 mm 1500 min-1 in softwood		Packing unit = 1. Rose-tube. EAN

# Shell Drill-Countersink Hobby, Economy





	I-Ø	O-Ø	OAL	
Order No.	[mm]	[mm]	[mm]	€
3537.003	3	12	20	6,35
3537.004	4	12	20	6,35
3537.005	5	12	20	6,35
3537.006	6	12	20	6,35

	Shell drill countersink with 5 edges and point angle 90° to clip on machine drills. For do-it-yourself people. Without fixed spanner	S. S	Boring and countersinking in a single operation. For fitting to machine drills with the appropriate Ø. Very good for softwood
	Tool steel		Countersinking screw heads and boring in a single operation into softwood. We recommend drills of version 3500 or 1590. For higher demands we recommend 2100 with VARIO 2202
UPM	2000 - 2200 min-1. e.g. all counter sinks with A-Ø 12 mm 2000 min-1 in softwood. Also find details at the speed- diagrams		Packing unit = 1. Rose-tube. EAN

# Adjustable Countersink carbide tipping







	I-Ø	0-Ø	OAL	>	
Order No.	[mm]	[mm]	[mm]	[°]	€
2202.000	3-8	10,5 - 14,5	34	90	33,40
2204.000	3-8	10,5 - 14,5	35	180	33,40
Sets					
Order No.	Description				€
3575.505	6 pcs. Set in wooden case. Drill bits 1594 Ø 3, 4, 5, 6, 8 mm & 59,1 countersink 2202 (90°)			59,15	
3575.507	7 pcs. Set in woo countersink 90°	den case 1593 Ø 3, 4	, 5, 6, 8 mm + 22	02 VARIO	103,10
3575.504	6 pcs. In wooden case.Type 1594 Ø 3, 4, 5, 6, 8 mm and VARIO Countersink 2204 (180°)			59,15	









	Professional carbide tipped adjustable countersink, countersinking angle 90° or 180°, two-part version. Can be clipped on all machine drills Ø 3-8 mm	Septime 1	Boring and countersinking in a single operation by fitting to machine drills (also intermediate sizes e.g. 5.5 mm). Fit for all sorts of wood, laminated panels and many plastics
团	High quality carbide tipping		For simultanously boring and countersinking screw heads. Combined with machine drill 1594 (HSS-G) it's ideal for hard wood working (e.g. exotic wood for patios) You get the following dimensions by using: (Ødrill/ countersink size): 3/ 10,5, 4/ 11,5, 5/ 12,5, 6/ 13,5, 8/ 14,5 mm
UPM	3000 - 5000 min-1. e.g. Drill-Ø 4 mm 4000 min-1 in euro. hardwood, also possible with less speed in cordless screwdrivers		Packing unit = 1. Rose-tube. EAN









Order No.	Description			€
3577.040	Drill-Countersink-Set 4 mm with depth stop			29,95
3577.050	Drill-Countersink-Set 5 mm with depth stop			29,95
3577.060	Drill-Countersink-Set 6 mm with depth stop			29,95
Sets				
Order No.	Description			€
3577.504	Drill-Countersink-Set of 4 pcs. Ø 4, 5 and 6 mm + Depth Stop in	n wooden case	•	70,70
Accessory				
Order No.	Description			€
3577.104	Countersink single Ø 4 mm			14,75
3577.105	Countersink single Ø 5 mm			14,75
3577.106	Countersink single Ø 6 mm			14,75
3577.140	Pre-drill Ø 4 mm			4,20
3577.150	Pre-drill Ø 5 mm			4,60
3577.160	Pre-drill Ø 6 mm			5,40
3577.212	Depth stop single, rotationally supported			16,85
	High quality drill-countersink-set with rotating depth stop of brass. Pre-drill in the depth ajustable. Countersink angle 60°		This set is particularly well suited for screw holes in the terraces boards which we have to drill, sink clean and accurate. The depth stop is rotatably mounted and stimpact with the workpiece, it prevents that the depth leaving imprints on the terrace boards.	d ops at
	Countersink/Pre-drill: alloyed tool steel. Depth Stop: brass	Ĭ,	Adjust the depth so that floor board is just transpiero (Board thickness). Thus, the self-tapping terrace screperfect fit.	
UPM	1500 - 2200 min-1 e.g. recommended value aprox. 1800 min-1 in hardwood		Packing unit = 1 Rose-tube. EAN	



# **Drill-Countersink-Sets**







	I-Ø	0-Ø	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
3573.030	3	16	60	15	13,05
3573.040	4	16	75	30	13,05
3573.050	5	16	85	40	13,05
3573.060	6	16	95	50	13,05
3573.080	8	20	115	70	14,10
3573.100	10	20	130	85	14,70
Accessory					
Order No.	Description				€
2108.216	depth adjusting co	llar for countersink	s 3 - 7 mm		5,15
Sets					
Order No.	Description				€
3574.504	*** • ***			49,95	



	Machine drills version 3500 (CV) with clipped on countersinks 2100 (tool steel) and hexagon socket wrench	S. Filtre	Boring and countersinking in a single operation. Very good for soft wood and limited fit for European hardwood. For simultanously boring and countersinking screw heads
<b>M</b>	Tool steel		Just for softwood. For hardwood we recommend machine drills 1594 (HSS-G) and adjustable countersink 2202 Put on the depth adjusting collar 2108.216 directly on the countersink and set lowering depth
UPM	1500 - 2200 min-1. e.g. standard value ca. 1800 min-1 in softwood		Packing unit = 1. Rose-tube. EAN







	O-Ø	Shank type	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
3572.030	3	C 6,3	75	25	14,07
3572.040	4	C 6,3	75	25	14,23
3572.050	5	C 6,3	86	36	14,86
3572.060	6	C 6,3	93	43	15,32
3572.080	8	C 6,4	117	67	20,38
3572.100	10	C 6,5	133	83	22,57
Accessory					
Order No.	Description				€
2108.216	depth adjusting collar for countersinks 3 - 7 mm				5,15
Sets					
Order No.	Description				€
3572.503	5 pcs. Set in wooden case. Drill bits type 3500 Ø 3, 4, 6 mm with countersinks type 2100 and bitholder				58,00
3572.504	5 pcs. Set in wooden case. Drill bits type 3500 Ø 3, 4, 5, 6 mm with countersinks type 2100 with			75,75	



and h	6,3) with brad point, two main edges, two cutting lips ex shank for bit holder ( $1/4$ "; E 6,3). With clipped on ersink 2100 (tool steel)	Chin	Fast change of the tools in the bit holders. Boring into all wooden materials and many plastics
HSS			Boring and countersinking in a single operation. For predrilling without countersinking we recommend version 1596 (HSS-G)
1500 softwee	- 2200 min-1. e.g. standard value ca. 1800 min-1 in ood		Packing unit = 1. Rose-tube. EAN

OOO Profi

### Shell Drill-Countersink HSS 90°





	I-Ø	0-Ø	OAL	
Order No.	[mm]	[mm]	[mm]	€
2101.030	3,0	16	16	39,00
2101.035	3,5	16	16	39,00
2101.040	4,0	16	16	39,00
2101.045	4,5	16	16	39,00
2101.050	5,0	16	16	39,00
2101.060	6,0	16	16	39,00
2101.070	7,0	16	16	39,00
2101.080	8,0	18	16	42,00
2101.100	10,0	20	16	42,90



	Shell drill countersink with 2 edges and point angle 90° to clip on machine drills	A CHILD	Boring and countersinking in a single operation. For fitting on machine drills. Very good for softwood, European hardwood, veneered panels and plastics
倒	HSS		Countersinking screw heads and boring in a single operation. Long endurance because of HSS. We recommend the drills 1594 and 1599 HSS-G of our product range. Unsuitable for depth adjusting collar 2106.216
UPM	2000 - 3500 min-1. e.g. standard value ca. 3000 min-1 in euro. hardwood, also possible with less speed in cordless screwdrivers		Packing unit = 1. Rose-tube. EAN

2106

OOO Profi

Shell Drill-Countersink rectangular 180°





	I-Ø	0-Ø	OAL	
Order No.	[mm]	[mm]	[mm]	€
2106.050	5	15	23	39,50
2106.060	6	16	23	40,70
2106.061	6	15	25	41,15
2106.180	8	20	25	47,15
2106.280	8	25	25	49,55
2106.290	9	25	25	51,65
2106.110	10	20	25	45,35
2106.210	10	25	25	49,50
2106.211	11	25	25	65,80
2106.310	10	30	25	75,40
2106.212	12	25	25	63,10
2106.312	12	30	25	75,40

	Shell drill countersink for right-angled countersinks with two main edges and two roughing taps to clip on machine drills	Septim 1	Boring and countersinking in a single operation. For fitting on machine drills. Very good for softwood, European hardwood, veneered panels and plastics
	HSS		For countersinking washers/screw nuts and boring in a single operation. We recommend the machine drill 1594 and 1599 HSS-G
UPM	1700 - 3000 min-1. e.g. Ø 12 mm 2000 min-1 in euro. hardwood, also possible with less speed in cordless screwdrivers		Packing unit = 1. Rose-tube. EAN



### **Expansive Bit for machine**





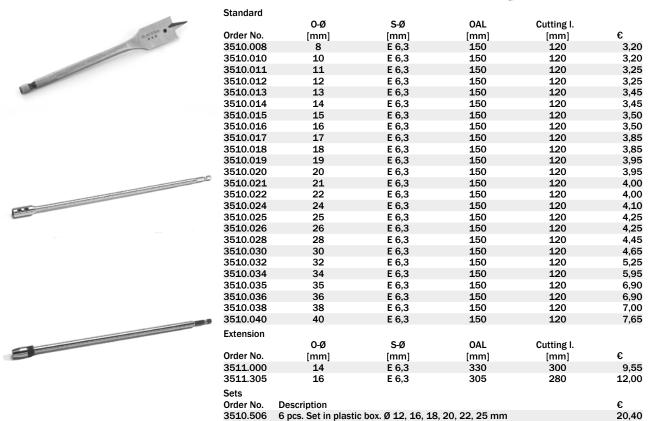
	U-Ø	5-9	UAL	
Order No.	[mm]	[mm]	[mm]	€
1540.001	15 - 45	12	150	44,80
1540.002	22 - 76	13	150	56,00
1540.003	22 - 100	13	150	122,15
spare blades		O-Ø		
Order No.		[mm]		€
1540.101		15 - 25		12,95
1540.102		25 - 45		13,45
1540.201		22 - 40		13,45
1540.202		40 - 76		16,80
1540 203		70 - 100		61.70

	Version with brad point, one fixed main edge and adjustable knife with roughing tap. Expansive bit with stable hexagonal shank 13 x 50 mm	S. Filtre	For boring into softwood, universal for all diameters and intermediate sizes
	Tool steel		Only for stationary use. This tool is a compromise, for professional use we recommend our cylinder boring bits
UPM	300 - 1500 min-1. e.g. for Ø 50 mm 600 min-1 in softwood stationary		Packing unit = 1. Rose-tube. EAN

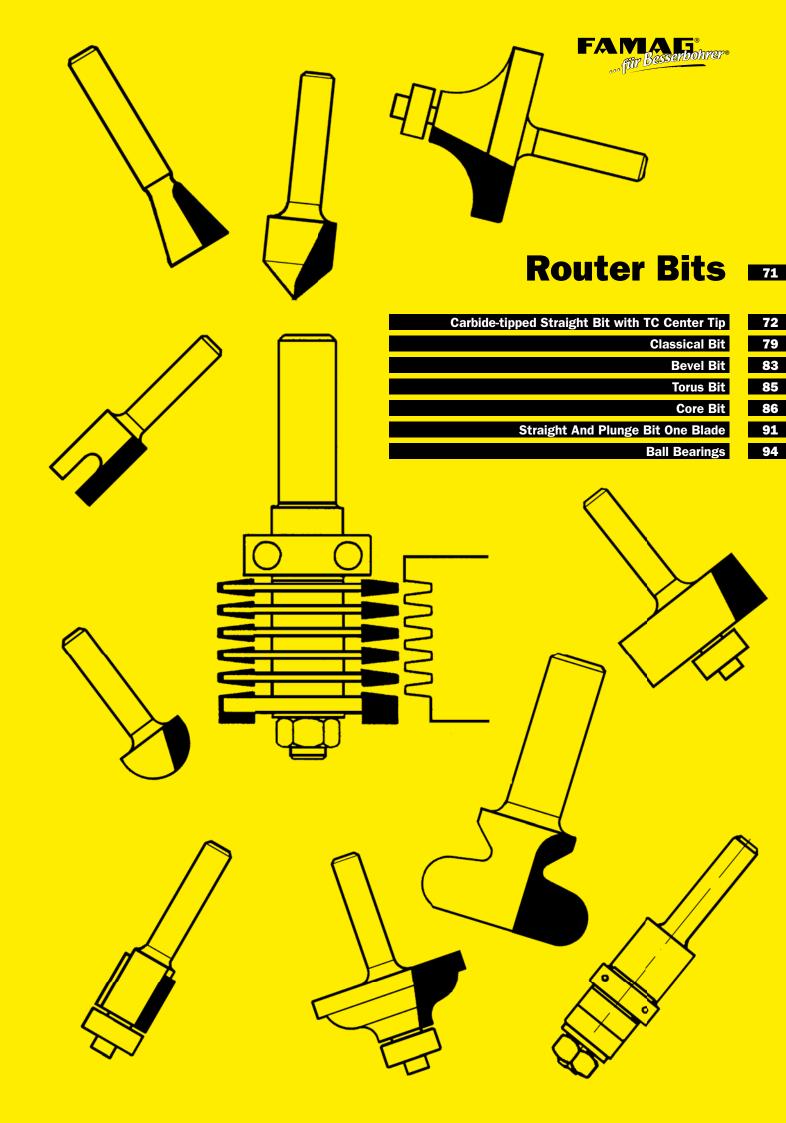
O Hobby

**Machine centre Bit** 





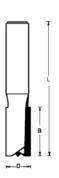
	Classical centre bit with brad point. Polished face with two roughing taps and bit shank E 6,3. The extension shank 3511.305 has a chuck which permits fast exchange	For boring into softwood without precision and quality. Because of the roughing taps results are clearly better than with the usual versions
倒	Tool steel	In our opinion flat centre bits are in principle no tools for professional use and are not fit for hardwood. It is better to use FAMAG cylinder boring bits, especially Bormax®
UPM	800 - 3000 min-1. e.g. Ø 18 mm 1600 min-1 in softwood. Also find details at the speed-diagrams	Packing unit = 1. On Rose-card. EAN







max

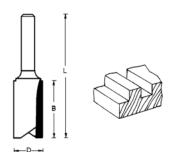




	D	Cutting I.	L	<	R1	R2	S-Ø	r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[ <b>1</b> /min]	€
3167.808	8	19	57				8	26.000	36,20
3167.810	10	19	51				8	24.000	37,20
3167.812	12	19	51				8	22.000	39,05
3167.842	12	32	63				8	22.000	47,15
3167.814	14	19	51				8	22.000	40,75
3167.844	14	25	57				8	22.000	43,50
3167.816	16	19	51				8	21.000	42,55
3167.846	16	25	57				8	21.000	45,30
3167.818	18	19	51				8	21.000	45,00
3167.820	20	19	51				8	20.000	47,30
3167.908	8	19	63				12	26.000	38,40
3167.910	10	19	63				12	24.000	39,35
3167.912	12	19	61				12	22.000	41,10
3167.942	12	32	73				12	22.000	47,15
3167.944	14	25	67				12	22.000	45,90
3167.916	16	25	67				12	21.000	47,75
3167.946	16	32	73				12	21.000	49,60
3167.848	18	25	57				12	21.000	47,60
3167.918	18	25	67				12	21.000	50,40
3167.920	20	25	67				12	20.000	53,25
3167.922	22	32	73				12	20.000	60,20

	Two carbide tipped edges, side cutting and plunging. With ground carbide tipped center tip	Septim 1	For grooving, producing finger jointers, tongue and groove joints. Can be plunged without restrictions because of the carbide tipped center tip. Suitable for all kinds of solid wood, wooden and laminated materials and some plastics. Manual and mechanical feed is allowed
	High quality carbide tipping		Because of the carbide tipped centre tip it is ideal for boring slots and continious countersinkings up to a depth of 32 mm. Also very good for cutting the cut-outs of worktops in kitchens (e.g. hob and sink)
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN



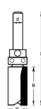


								max	
	D	Cutting I.	L	<	R1	R2	S-Ø	r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[1/min]	€
3107.603	3	11	51				6	26.000	23,55
3107.604	4	11	51				6	25.000	23,70
3107.605	5	11	51				6	24.000	23,90
3107.606	6	19	51				6	23.000	24,20
3107.608	8	20	51				6	22.000	29,30
3107.610	10	20	51				6	22.000	30,05
3107.651	10	32	63				6	22.000	35,20
3107.612	12	20	51				6	20.000	31,65
3107.661	12	32	63				6	20.000	36,55
3107.614	14	20	51				6	20.000	32,45
3107.616	16	20	51				6	19.000	34,40
3107.618	18	20	51				6	19.000	36,55
3107.620	20	20	51				6	18.000	39,00
3107.803	3	11	51				8	26.000	23,55
3107.804	4	11	51				8	25.000	23,70
3107.805	5	11	51				8	24.000	23,90
3107.806	6	19	51				8	23.000	24,20
3107.808	8	20	51				8	22.000	29,30
3107.810	10	20	51				8	22.000	30,05
3107.851	10	32	63				8	22.000	35,20
3107.812	12	20	51				8	20.000	31,65
3107.861	12	32	63				8	20.000	36,55
3107.814	14	20	51				8	20.000	32,45
3107.816	16	20	51				8	19.000	34,40
3107.818	18	20	51				8	19.000	36,55
3107.820	20	20	51				8	18.000	39,00
3107.822	22	20	51				8	18.000	39,70
3107.825	25	20	51				8	17.000	42,50
3107.908	8	25	70				12	26.000	35,75
3107.910	10	32	76				12	24.000	38,15
3107.912	12	32	73				12	22.000	39,05
3107.962	12	50	108				12	22.000	56,80
3107.914	14	25	73				12	22.000	39,65
3107.916	16	32	73				12	21.000	40,35
3107.918	18	32	73				12	21.000	44,05
3107.920	20	32	73				12	20.000	46,35
3107.922	22	25	67				12	20.000	46,85
3107.925	25	32	73				12	19.000	56,25
3107.930	30	25	67				12	18.000	71,75
3107.935	35	25	67				12	18.000	77,35
3107.940	40	32	73				12	17.000	108,05
3107.950	51	32	73				12	17.000	129,40

	Two carbide tipped edges parallel to the axis, side cutting and plunging. With ground (non carbide tipped) center tip	Septim 1	For grooving, producing finger jointers, tongue and groove joints. Suitable for all kinds of solid wood, wooden and laminated materials and some plastics. Manual and mechanical feed is allowed
	High quality carbide tipping		For professional plunging we recommend our product line 3167 with carbide tipped centre tip
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN

## Straight Bit - Template Profile



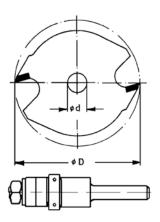


OOOO Premium

> max < [°] r.p.m [1/min] D Cutting I. L R1 R2 S-Ø Order No. [mm] 15,9 [mm] 63 [mm] 6 € [mm] [mm] [mm] 3157.625 25,4 19.000 44,55

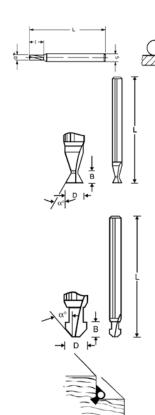
	<b>→</b> -0- <b>→</b> -		
	Two carbide tipped edges parallel to the axis, circumferential cutting construction. With ball bearing guide (Ø 15.9 mm) at the shank	September 1	For grooving any profile with a template. Suitable for all kinds of solid wood, wooden and laminated materials and some plastics. Manual and mechanical feed is allowed
倒	High quality carbide tipping		After producing a template you can groove with the straight bit the same profile to any workpiece
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN





										max	
	D	Cuttir	ıg I.	d.	<	R1	R2	: :	S-Ø	r.p.m	
Order No.	[mm]	[mr	n] [n	nm]	[°]	[mm	] [mn	n] [r	nm]	[1/min]	€
3108.015	40	1,5	5 6	,35						16.000	22,60
3108.020	40	2,0	) 6	,35						16.000	22,60
3108.025	40	2,5	5 6	,35						16.000	23,30
3108.030	40	3,0	) 6	,35						16.000	24,90
3108.035	40	3,5	5 6	,35						16.000	25,35
3108.040	40	4,0	) 6	,35						16.000	25,35
3108.050	40	5,0	) 6	,35						16.000	25,35
3108.060	40	6,0	) 6	,35						16.000	25,35
shank with b	all beari	ng									
		•								max	
	Kurz-		Cutting				n max.			r.p.m	
	Nr.	D	I.	L	<	S-Ø	[~U/	R1	R2	[1/	
Order No.	[mm]	[mm]	[mm]	[mm]	[°]	[mm]	min]	[mm]	[mm]	min]	€
3108.690		15,9	58			6	16.000				22,35
3108.890		15,9	58			8	16.000				22,35
shank withou	ut ball be	earing									
										max	
			Cutting				n max.			r.p.m	
	Kurz-	D	ı. Ŭ	L	S-Ø	<	[~U/	R1	R2	[1/	
Order No.	Nr.	[mm]	[mm]	[mm]	[mm]	[°]	min]	[mm]	[mm]		€
3108.691		13	58	6.35	6		16.000				12,20
3108.891		13	58	6,35	8		16.000				12,20

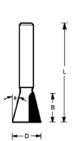
			· · · · · · · · · · · · · · · · · · ·
Two carbide tipped straight edge construction	s, circumferential cutting	S. Hills	For cutting grooves and slots. Suitable for all kinds of solid wood, wooden and laminated materials and some plastics Manual and mechanical feed is allowed
High quality carbide tipping			Specially for tongue and groove joints, production of plugs, cutting slots in general and special slots for the application of Lamello joints (B = 4,0 mm). When slots need to be of constant depth we recommend the version with ball bearinguide
Individual for every router bit, see	e parameters of product		packing unit = 1. Self service. EAN



One-sided									
								max	
	D	Cutting I.	L	<	R1	R2	S-Ø	r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[1/min]	€
3107.663	3	11	60				6	30.000	29,30
3107.763	3	11	60				6,35	30.000	29,30
Double-sided	I								
2000.00.000								max	
	D	Cutting I.	L	<	R1	R2	S-Ø	r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[1/min]	€
3107.673	3	8	70	• • •	•		6	30.000	48,50
3107.773	3	8	65				6,35	30.000	48,50
Dovetailed p	rofile								
								max	
	D	Cutting I.	L	<	R1	R2	S-Ø	r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[1/min]	€
3104.665	5,1	8	60	18	•		6	30.000	51,65
3104.765	5,1	8	60	18			6,35	30.000	51,65
Studded and	hor profi	le							
								max	
	D	Cutting I.	L	<	R1	R2	S-Ø	r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[1/min]	€
3104.685	5,1	8	60	38			6	30.000	60,55
3104.785	5.5	8	65	38			6.35	30.000	60.55

	Two-edged, fully ground, side cutting and plunging	S. Chin	For milling straight or molded lining grooves at windows or doors. Suitable for all kinds of solid wood, wooden and laminated materials and some plastics. Manual and mechanical feed is allowed
	Solid carbide, 3104 with head of solid carbide		By using fine grained carbide the straight bits of FAMAG have a very high endurance. With appropiate feed it is possible to make the lining groove in a single operation
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN







								IIIax	
	D	Cutting I.	L	<	R1	R2	S-Ø	r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[1/min]	€
3104.612	12,7	12,7	44,5	14			6	21.000	29,75
3104.812	12,7	12,7	44,5	14			8	21.000	29,75

Two carbide tipped edges, side cutting and plunging	A STATE	For milling groove joints, e.g. teeth for corner joints or edges and grooves for longitudinal joints. Suitable for all kinds of solid wood, wooden and laminated materials and some plastics. Manual and mechanical feed is allowed
High quality carbide tipping		To elongate tool life we recommend to begin with a straight bit (e.g. 3107), for producing tear free corner joints we recommend to clamp a piece of wood under the workpiece. Before unclamping your workpiece be sure that all teeth are exactly milled out
Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN

OOOO Premium

V Groove Bit



max





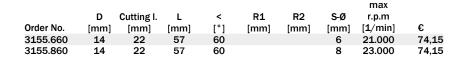
	D	Cutting I.	L	<	R1	R2	S-Ø	r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[1/min]	€
3105.660	12,7	16	44,5	60			6	21.000	29,75
3105.690	12,7	12,7	51	90			6	21.000	29,75
3105.860	12,7	16	44,5	60			8	21.000	29,75
3105.890	12,7	12,7	51	90			8	21.000	29,75

	Two carbide tipped edges, side cutting and plunging. Available with edges with an angle of 60° or 90°	Septim 1	For milling v-shaped grooves, ornamental grooves or for chamfering edges. Suitable for all kinds of solid wood, wooden and laminated materials and some plastics.  Manual and mechanical feed is allowed
	High quality carbide tipping		The perfect router bit for exact and scharp ornamental grooves at doors and fronts of drawers
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN











	Head with three edges of solid carbide. Angle of edges $60^{\circ},$ plunging version	Selling.	For engraving letters of different width and milling of v-shaped grooves at an angle of 60°
倒	Head of solid carbide		Cutting depth up to 13 mm max and groove width up to 14 mm
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN

OOOO Premium

**Keyhole Slot Cutter - Single Fluted** 



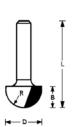




								max	
	D	Cutting I.	L	<	R1	R2	S-Ø	r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[1/min]	€
3154.609	9,8	9,8	38				6	22.000	23,20
2154 900	0.0	0.0	20				Q	24 000	23.20

	One carbide tipped edge parallel to the axis, side cutting and plunging		For cutting slots for hanging up pictures, mirrors, shelves, etc. Suitable for all kinds of solid wood, wooden and laminated materials and some plastics. Manual and mechanical feed is allowed
倒	High quality carbide tipping		If you want to fix an object only at one point, cut the slot vertically so that you can exactly balance the object
(LIDA)	Individual for every router bit, see parameters of product	K K	packing unit = 1. Self service. EAN







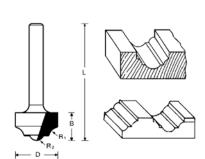
Order No.	D (*****)	Cutting I.	L	<	R1	R2	S-Ø	max r.p.m	€
	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[1/min]	
3106.609	9,5	6,4	38		4,8		6	22.000	35,20
3106.612	12,7	9,5	38		6,4		6	21.000	37,80
3106.615	15,9	9,5	40		7,9		6	19.000	39,80
3106.809	9,5	6,4	38		4,8		8	22.000	35,20
3106.812	12,7	9,5	38		6,4		8	21.000	37,80
3106.815	15,9	9,5	40		7,9		8	19.000	39,80
3106.819	19,1	12,7	40		9,5		8	18.000	46,10
3106.825	25,4	16	46,5		12,7		8	17.000	50,20

Two carbide tipped edges, side cutting and plunging	Sent Sent Sent Sent Sent Sent Sent Sent	For milling chamfers, ornamental grooves and inner radii at the front of drawers and other surfaces. Suitable for all kinds of solid wood, wooden and laminated materials and some plastics. Manual feed is allowed
High quality carbide tipping		For exact and tear free chamfers we recommend a first flat run and a second run to finish the chamfer tear free
Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN

OOOO Premium

**Classical Bit** 





								max	
	D	Cutting I.	L	<	R1	R2	S-Ø	r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[1/min]	€
3131.612	12,7	10,5	51		2,5	3,5	6	20.000	64,80
3131.812	12,7	10,5	51		2,5	3,5	8	20.000	64,80

	Two carbide tipped edges, with inner radius. Side cutting and plunging	Septim 1	For milling moulded grooves and edges. Suitable for all kinds of solid wood, wooden and laminated materials and some plastics. Manual feed is allowed
倒	High quality carbide tipping		Very fine for ornamenting the fronts of wardrobes and drawers. Because of the detailed configuration of the bit a specially delicate moulding is possible
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN





max r.p.m [1/min] D Cutting I. L R1 R2 S-Ø Order No. € [mm] [mm] [mm] [mm] [mm] [mm] 3137.827 27 11,2 51 17.000 68,80



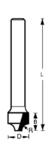
Two carbide tipped edges. Side cutting and plunging	S. Shirt	For milling moulded grooves. Suitable for all kinds of solid wood, wooden and laminated materials and some plastics. Manual feed is allowed
High quality carbide tipping		Very fine for ornamenting the fronts of wardrobes and drawers. Because of the two radii without edges it is possible to cut specially pleasant curves without grooves
Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN

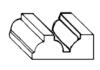
2427

OOOO Premium

**Beading Bit** 



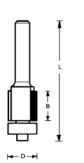




	D	Cutting I.	L	<	R1	R2	S-Ø	max r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[1/min]	€
3127.609	9,5	7	51		2,5		6	24.000	41,25
3127.809	9,5	7	51		2,5		8	24.000	41,25

	Two carbide tipped edges, with inner radius. Side cutting and plunging	S. China	For milling moulded grooves. Suitable for all kinds of solid wood, wooden and laminated materials and some plastics. Manual feed is allowed
	High quality carbide tipping		Very fine for ornamenting the fronts of wardrobes and drawers. Because of the small inner radius special filigree curves can be milled
(UPM)	Individual for every router bit, see parameters of product	A	packing unit = 1. Self service. EAN







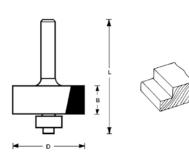
								max	
	D	Cutting I.	L	<	R1	R2	S-Ø	r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[ <b>1</b> /min]	€
3101.612	12,7	12,7	60				6	21.000	24,90
3101.625	12,7	25,4	70				6	21.000	30,95
3101.812	12,7	12,7	60				8	21.000	24,90
3101.825	12,7	25,4	70				8	21.000	30,95

Two carbide tipped edges parallel to the axis, only side cutting. With ball bearing (Ø 12.7 mm) guide at the head	September 1	For copying with template and trimming flush edges and formating. Suitable for all kinds of solid wood, laminated materials and some plastics. Manual feed is allowed
High quality carbide tipping		Optimal for cutting continous holes in thicker boards. Mill underneath the board the desired outline with a plunging router bit. Bore through the board (min Ø 14 mm) and trim the outline at the upper surface flush
Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN



Rabbeting Bit



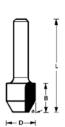


	D	Cutting I.	L	<	R1	R2	S-Ø	max r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[1/min]	€
3114.631	31,7	12,7	51				6	16.000	56,00
3114.831	31,7	12,7	51				8	18.000	56,00

	Two side cutting carbide tipped edges. Changeable ball bearing guide (Ø 12.7 mm). Depth of rabbets 9.5 mm	Septim 1	For producing rabbetted joints of frames, fitting of frames and drawers and rabbetting of old wooden windows for embedding insulated glass. Suitable for all kinds of solid wood, laminated materials and some plastics. Manual feed is allowed
	High quality carbide tipping		Because of the ground front side of the edge very good surfaces of the rabbets are achieved. A depth of 11.1 mm of the rabbet can be achieved by mounting the ball bearing guide 3119.004 (please order seperately)
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN









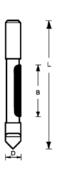
Order No.	D [mm]	Cutting I.	L [mm]	ا°ا ا	R1 [mm]	R2 [mm]	S-Ø [mm]	max r.p.m [1/min]	€
3110.612	12.7	12.7	41	30	[IIIIII]	[IIIIII]	6	20.000	28.00
3110.812	12,7	12,7	41	30			8	22.000	28,00

	Two carbide tipped side cutting egdes. Angle of chamfering $30^\circ$	S. Chin	For separating, trimming flush and chamfering with a router bit: separating and trimming flush wiht the edge which is parallel to the shank and then chamfering in an angle of 30° by adjusting the milling depth. Suitable for all kinds of solid wood, laminated materials and some plastics. Manual feed is allowed
$\square$	High quality carbide tipping		By a combination of several worksteps you can save time
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN

OOOO Premium

Panel Pilot Bit





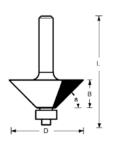


O otla a Na	D	Cutting I.	L	<	R1	R2	S-Ø	max r.p.m	•
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[ <b>1</b> /min]	€
3115.606	6,4	19	63,5				6	28.000	26,85
3115.806	6.4	19	63.5				8	30.000	26.85

	With a carbide tipped circumferential edge and a non carbide tipped drilling edge	Sun's	For trimming flush veneers and laminations of edges of a workpiece. Suitable for all kinds of solid wood, laminated materials and some plastics. Manual and mechanical feed is allowed
	High quality carbide tipping		With a simple template you can easily produce openings for e.g. wall sockets, switches and lamps in wooden ceilings and panels
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN









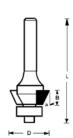
								IIIax	
	D	Cutting I.	L	<	R1	R2	S-Ø	r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[1/min]	€
3118.645	31,8	12,7	53	45			6	15.000	43,50
3118.845	31,8	12,7	53	45			8	16.000	43,50

	Two axially carbide tipped side cutting in circomferention execution. Angle of cutting 45°. Changeable ball bearing guide (Ø 9.5 mm) at the head	Sellin.	For chamfering and milling edges in different strenghts. Suitable for all kinds of solid wood, laminated materials and some plastics. Manual feed is allowed
	High quality carbide tipping		For cutting bevels of an angle of 15° we recommend bevel bit 3102
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN



**Bevel Bit** 



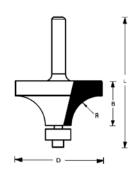




	D	Cutting I.			R1	R2	S-Ø	max r.p.m	
Order No.	[mm]	[mm]	L [mm]	۱۰۱	[mm]	r∠ [mm]	ש-כ mml]	[1/min]	€
3102.615	15,9	6,4	52,4	15	ţ,	,,	6	19.000	25,55
3102.815	15,9	6.4	52,4	15			8	19.000	25,55

	Two axially carbide tipped side cutting edges only circumferential execution. Changeable ball bearing guide (Ø 12.7 mm) at the head	Septim 1	For professional chamfering and milling edges. Suitable for all kinds of solid wood, laminated materials and some plastics. Manual feed is allowed
	High quality carbide tipping		Provide edges which easily show abrasions (e.g. table and chair legs) with an exact and inured bevel
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN







								max	
	D	Cutting I.	L	<	R1	R2	S-Ø	r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[1/min]	€
3109.618	18,7	9,5	49		3		6	19.000	53,85
3109.625	25,4	12,7	51		6,4		6	17.000	55,75
3109.628	28,6	12,7	51		8		6	17.000	57,15
3109.631	31,8	15,9	55,5		9,5		6	16.000	62,30
3109.818	18,7	9,5	49		3		8	19.000	53,85
3109.819	20,7	9,5	49		4		8	18.000	53,85
3109.825	25,4	12,7	51		6,4		8	17.000	55,75
3109.828	28,6	12,7	51		8		8	17.000	57,15
3109.831	31,8	15,9	55,5		9,5		8	16.000	62,30
3109.838	38,1	19,1	57		12,7		8	16.000	66,75

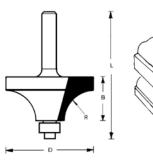
	Two carbide tipped circumferential execution cutting edges. Changeable ball bearing guide (Ø 12.7 mm) at the head	S. Filler	For milling outer radii at edges of workpieces. Suitable for all kinds of solid wood, wooden and laminated materials and some plastics. Manual feed is allowed
倒	High quality carbide tipping		For milling covings we recommend our product line 3119
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN

OOOO Premium

Ovolo Bit



max



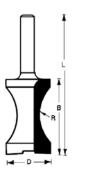


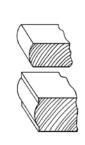
	D	Cutting I.	L	<	R1	R2	S-Ø	r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[1/min]	€
3119.625	25,4	12,7	51		6,4		6	17.000	55,75
3119.628	28,6	12,7	51		7,9		6	16.000	57,15
3119.631	31,8	15,9	55,5		9,5		6	16.000	62,30
3119.819	19,1	9,5	47,5		4		8	18.000	53,85
3119.825	25,4	12,7	51		6,4		8	17.000	55,75
3119.828	28,6	12,7	51		7,9		8	16.000	57,15
3119.831	31,8	15,9	55,5		9,5		8	16.000	62,30
3119.838	38,1	19,1	57		12,7		8	15.000	66,75

	Two carbide tipped side cutting edges with inner radius in circumferential execution. Changeable ball bearing guide (Ø 9.5 mm) at the head	S. Chin	For milling covings or profiles with a small rabbet. Suitable for all kinds of solid wood, wooden and laminated materials and some plastics. Manual feed is allowed
团	High quality carbide tipping		If you want to mill a coving without rabbet we recommend the router bit 3109. Furthermore you can change the ball bearing guide from Ø 9.5 mm to 12.7 mm
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN









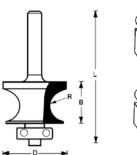
								IIIax	
	D	Cutting I.	L	<	R1	R2	S-Ø	r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[1/min]	€
3125.820	20,2	32	62,6		18		8	18.000	95,50

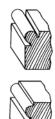
Two axially carbide tipped side cutting edges in circumferential execution		For milling flat curves at mouldings, edges and front of boards. Suitable for all kinds of solid wood, laminated materials and some plastics. Manual feed is allowed
High quality carbide tipping		With boards thinner than 20 mm will havet curves without rabbets. If the boards are thicker than 20 mm (max. 30 mm) a rabbet is formed at the bottom and at the top. By boards under 20mm creates a curve without rabbets
Individual for every router bit, see parameters of p	product	packing unit = 1. Self service. EAN

OOOO Premium

**Torus Bit** 



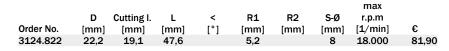


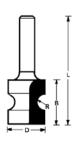


								max	
	D	Cutting I.	L	<	R1	R2	S-Ø	r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[ <b>1</b> /min]	€
3123.828	28,2	16	57		4,8		8	17.000	66,15

	Two carbide tipped side cutting edges with an inner radius of 4,8 mm in circumferential execution. Changeable ball bearing guide (Ø 16 mm) at the head	September 1	For milling corners and edges. Suitable for all kinds of solid wood, laminated materials and some plastics. Manual feed is allowed
	High quality carbide tipping		In two worksteps you can produce a whole handle strip
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN









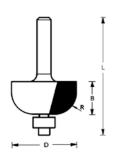
	Two carbide tipped side cutting edges parallel to the shank with an inner radius of 5.2 mm in circumferential execution	For milling rounded edges at sills, frames and stairrails. Suitable for all kinds of solid wood, wooden and laminated materials and some plastics. Manual feed is allowed
团	High quality carbide tipping	Beads should be at least 10.4 mm thick. If you want to mill an edge with two rabbets you should use ledges up to 19 mm thick
UPM	Individual for every router bit, see parameters of product	packing unit = 1. Self service. EAN



Core Bit



max



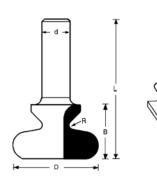


	D	Cutting I.	L	<	R1	R2	S-Ø	r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[1/min]	€
3112.625	25,4	14,3	55		6,4		6	17.000	57,15
3112.822	22,2	14,3	55		8		8	18.000	55,75
3112.825	25,5	14,4	55		8		8	17.000	57,15
3112.834	34,9	16	54		12,7		8	16.000	66,70

	Two axially carbide tipped side cutting edges in circumferential executions. Changeable ball bearing guide (Ø 9.5 mm) at the head	Septim 1	For milling end strips, fronts of drawers, cabinet doors and all ornamental strips with an inner radius. Suitable for all kinds of solid wood, laminated materials and some plastics. Manual feed is allowed
倒	High quality carbide tipping		Can be combined with rounding over bit 3109 with respective radii 6, 4, 8 and 12.7 mm
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN







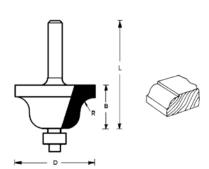
								IIIax	
	D	Cutting I.	L	<	R1	R2	S-Ø	r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[1/min]	€
3148.819	19,1	19	55,6		4,8		8	19.000	84,10

	Two carbide tipped side cutting edges in circumferential execution	Septity.	For milling profiles, grooves and handle strips
	High quality carbide tipping		For all standard routers with chuck. Manual feed is allowed
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN

OOOO Premium

Roman Ogee Bit

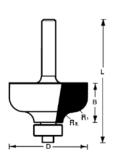




	D	Cutting I.	L	<	R1	R2	S-Ø	max r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[ <b>1</b> /min]	€
3113.625	25,4	16	54		4		6	17.000	59,05
3113.634	34,9	20	57		6,4		6	16.000	65,35
3113.825	25,4	16	54		4		8	17.000	59,05
3113.834	34,9	20	57		6,4		8	16.000	65,30

	Two carbide tipped side cutting edges in circumferential execution. Changeable ball bearing guide (Ø 9.5 mm) at the head	September 1	For milling ornamental strips at picture frames, table edges, fronts of wardrobes, drawers, baseboards etc. Suitable for all kinds of solid wood, laminated materials and some plastics. Manual feed is allowed
	High quality carbide tipping		For getting good results we recommend milling in repeated worksteps
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN







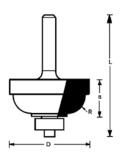
								IIIGA	
	D	Cutting I.	L	<	R1	R2	S-Ø	r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[1/min]	€
3138.834	34,9	17,5	55,6		6	5	8	16.000	84,85

	Two carbide tipped side cutting edges in circumferential execution. Changeable ball bearing guide (Ø 12.7 mm) at the head	Septime 1	For milling ornamental strips at picture frames, table edges, fronts of wardrobes, drawers, baseboards etc. Suitable for all kinds of solid wood, laminated materials and some plastics. Manual feed is allowed
<b>A</b>	High quality carbide tipping		Specially for ornamenting the fronts of wardrobes and drawers. Because of the two ground radii without edges you can produce curves without rabbets
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN

OOOO Premium

Classic Cove Bit



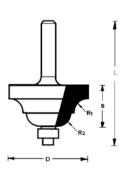




	D	Cutting I.	L	<	R1	R2	S-Ø	max r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[1/min]	€
3139.628	28,6	12,7	51		4,8		6	16.000	73,10
3139.828	28,6	12,7	51		4,8		8	16.000	73,10

	Two carbide tipped side cutting edges in circumferential execution. Changeable ball bearing guide (Ø 12.7 mm) at the head	Septime 1	For milling ornamental strips at picture frames, table edges, fronts of wardrobes, drawers, baseboards etc. Suitable for all kinds of solid wood, laminated materials and some plastics. Manual feed is allowed
倒	High quality carbide tipping		If you want to cut a chamfer without rabbets we recommend the core bit 3112
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN







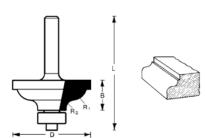
	D	Cutting I.	L	<	R1	R2	S-Ø	max r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[ <b>1</b> /min]	€
3134.625	25,4	16	54		4		6	17.000	65,40
3134.634	34,9	20	57		6,35		6	16.000	66,75
3134.825	25,4	16	54		4		8	17.000	65,40
3134.834	34,9	20	57		6,35		8	16.000	66,75

	Two carbide tipped side cutting edges in circumferential execution. Changeable ball bearing guide (Ø 9.5 mm) at the head	Septime 1	For milling ornamental strips at picture frames, table edges, fronts of wardrobes, drawers, baseboards etc. Suitable for all kinds of solid wood, laminated materials and some plastics. Manual feed is allowed
倒	High quality carbide tipping		For getting good results we recommend milling in repeated worksteps
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN

OOOO Premium

**Ogee Fillet Bit** 



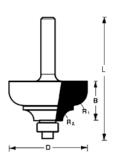


								max		
	D	Cutting I.	L	<	R1	R2	S-Ø	r.p.m		
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[1/min]	€	
3121.634	34,9	13,5	52,4		4	4	6	16.000	95,60	
2121 924	2/0	125	E2 /		1	1	Q	17 000	95.60	

	Two carbide tipped side cutting edges with two radii and circumferential execution Changeable ball bearing guide (Ø 12.7 mm) at the head	September 1	For milling decorative profiles at ornaments, fronts of furniture and drawers and tabletops. Suitable for all kinds of solid wood laminated materials and some plastics.  Manual feed is allowed
	High quality carbide tipping		To get smooth surfaces we recommend to mill in repeated worksteps
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN









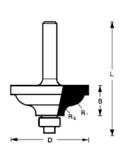
								max	
	D	Cutting I.	L	<	R1	R2	S-Ø	r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[ <b>1</b> /min]	€
3135.834	34,9	17,5	56		6.4	5	8	16.000	95,75

	Two carbide tipped side cutting edges in circumferential execution. Changeable ball bearing guide (Ø 9.5 mm) at the head	S. C. Line	For milling ornamental strips at picture frames, table edges, fronts of wardrobes, drawers, baseboards etc. Suitable for all kinds of solid wood, laminated materials and some plastics. Manual feed is allowed
倒	High quality carbide tipping		For getting good results we recommend milling in repeated worksteps
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN

OOOO Premium

**Ogee Fillet Bit** 







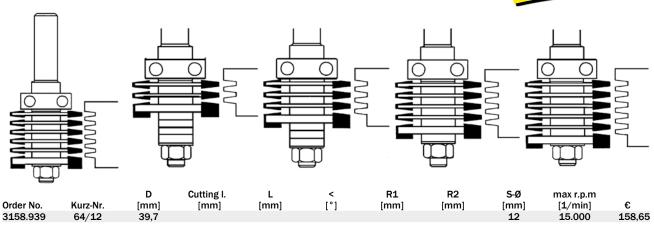
	D	Cutting I.	L	<	R1	R2	S-Ø	max r.p.m	
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	[mm]	[mm]	[1/min]	€
3122.634	34,9	13,5	52,4		4	4	6	16.000	95,60
3122.834	34,9	13,5	52,4		4	4	8	17.000	95,60

	Two carbide tipped side cutting edges with two radii in circumferential execution Changeable ball bearing guide (Ø 9.5 mm) at the head	Septime 1	For milling decorative profiles with rabbets at ornaments, fronts of furniture and drawers and tabletops. Manual feed is allowed
倒	High quality carbide tipping		To get smooth surfaces we recommend milling in repeated worksteps.If you want to cut a profile without rabbet we recommend the ogee fillet bit 3121 with ball bearing guide Ø 12.7 mm
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN

Router Bits



Finger Jointer Set



	Composed of shank with ball bearing guide (Ø 28 mm), spacers, washer, mounting nut and 6 slotting cutters, carbide tipped for plunging	Septim 1	Produce a geometry of slots with this router bit at the frontsurface of the connecting workpiece. The milled matching part can be glued firmly. Manual feed is allowed. Suitable for wood 11 - 36 mm thick
倒	High quality carbide tipping		The produced connections are specially stable and nearly invisible because of the greater glue line
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN

3217



Straight And Plunge Bit One Blade



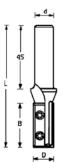
Reversing blade

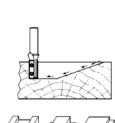
45	

	D	Cutting I.	OAL	S-Ø	carbide	max r.p.m	
Order No.	[mm]	[mm]	[mm]	[mm]	[Order no. ]	[1/min]	€
3217.932	12	30	77	12	3290.930	22.000	88,20
3217.934	14	30	77	12	3290.930	20.000	88,85
3217.936	16	30	88	12	3290.130	18.000	89,65
3217.956	16	50	107	12	3290.050	18.000	105,55
3217.938	18	30	88	12	3290.130	18.000	91,85
3217.958	18	50	107	12	3290.050	18.000	108,55
3217.940	20	30	88	12	3290.130	16.000	94,55
3217.960	20	50	107	12	3290.050	16.000	112,55
3217.942	22	30	88	12	3290.130	16.000	96,60

	A carbide tipped changeable blade parallel to the shank, side and end cutting. The blade can be used as cutting bit	Septime 1	For grooving, cutting finger joints and matched joints. Because of the carbide tipped head of the blade plunging is possible without restrictions. Suitable for all kinds of solid wood, laminated materials and some plastics. Manual and mechanical feed is allowed
倒	High quality carbide reversing blade		Long endurance and little downtime, because the blades are quickly changed and regrinding is not necessary. If you don't want to use the bit for plunging we recommend version 3227
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN







OOOO Premium

		D	Cutting I.	OAL	S-Ø	Reversing blade carbide	max r.p.m	
	Order No.	[mm]	[mm]	[mm]	[mm]	[Order no. ]	[ <b>1</b> /min]	€
	3227.934	14	30	86	12	3290.930	20.000	107,70
	3227.936	16	30	88	12	3290.930	20.000	109,10
	3227.956	16	50	107	12	3290.930	18.000	128,40
1	3227.938	18	30	88	12	3290.130	18.000	111,55
	3227.958	18	50	107	12	3290.130	18.000	132,25
	3227.960	20	50	107	12	3290.130	16.000	137,20
	3227.942	22	30	88	12	3290.130	16.000	117,90
	3227.962	22	50	107	12	3290.130	16.000	141,55

	Two carbide tipped, changeable side cutting blades parallel to the shank	S. Hill	For grooving, cutting finger joints and matched joints. Suitable for all kinds of solid wood, laminated materials and some plastics. Manual and mechanical feed is allowed
倒	High quality carbide reversing blade		Long endurance and little downtime, because the blades are quickly changed and regrinding is not necessary. If you want to use the bit for plunging we recommend version 3217
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN

2207

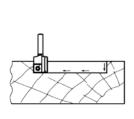


Staggered Straight And Plunge Bit Two Blade



Reversing blade





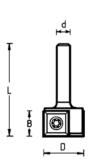
	D	Cutting I.	OAL	S-Ø	carbide	max r.p.m	
Order No.	[mm]	[mm]	[mm]	[mm]	[Order no. ]	[1/min]	€
3207.618	18	20	52	6	3290.012	22.000	96,50
3207.620	20	20	52	6	3290.012	22.000	102,05
3207.622	22	20	52	6	3290.012	20.000	104,75
3207.818	18	20	52	8	3290.012	24.000	96,50
3207.820	20	20	52	8	3290.012	22.000	102,05
3207.822	22	20	52	8	3290.012	22.000	104,75



	Two carbide tipped, changeable side and end cutting blades parallel to the shank. The blades are constructed in an angle of $90^{\circ}$ and one blade can be used as cutting bit	S. Hard	For grooving, cutting finger joints and matched joints. Because of the carbide tipped head of the blade plunging is possible without restrictions. Suitable for all kinds of solid wood, laminated materials and some plastics. Manual and mechanical feed is allowed
倒	High quality carbide reversing blade		Long endurance and little downtime, because the blades are quickly changed and regrinding is not necessary. If you don't want to use the bit for plunging we recommend version 3203
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN







Order No.	D [mm]	Cutting I.	OAL [mm]	S-Ø	Reversing blade carbide	max r.p.m	€
Order No.	[mm]	[mm]	[mm]	[mm]	[Order no. ]	[ <b>1</b> /min]	ŧ
3203.620	20	12	44	6	3290.012	22.000	83,95
3203.622	22	12	44	6	3290.012	20.000	88,65
3203.818	18	12	44	8	3290.012	24.000	81,65
3203.820	20	12	44	8	3290.012	24.000	83,95



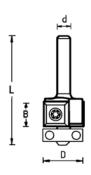
Two axially carbide tipped, changeable side cutting blades parallel to the shank, circumferential execution	S. Harris	For grooving, cutting finger joints and matched joints. Suitable for all kinds of solid wood, laminated materials and some plastics. Manual and mechanical feed is allowed
High quality carbide reversing blade		Long endurance and little downtime, because the blades are quickly changed and regrinding is not necessary. If you want to use the bit for plunging we recommend version 3207
Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN



Flush Trimming Bit



Reversing

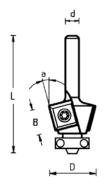




					blade		
	D	Cutting I.	OAL	S-Ø	carbide	max r.p.m	
Order No.	[mm]	[mm]	[mm]	[mm]	[Order no. ]	[1/min]	€
3201.612	19	12	52	6	3290.012	22.000	88,65
3201.630	19	30	70	6	3290.030	22.000	104,75
3201.812	19	12	54	8	3290.012	24.000	88,65
3201.830	19	30	72	8	3290.030	24.000	104.75

	Two axially carbide tipped, changeable side cutting blades parallel to the shank in circumferential execution.  Changeable ball bearing guide (Ø 19 mm) at the head	September 1	For chamfering and milling edges at all kinds of solid wood, laminated materials and some plastics. Manual feed is allowed
倒	High quality carbide reversing blade		Long endurance and little downtime, because the blades are quickly changed and regrinding is not necessary
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN





OOOO Premium



						Reversing blade carbide	
	D	Cutting I.	OAL	<	S-Ø	[Order max r.p	o.m
Order No.	[mm]	[mm]	[mm]	[°]	[mm]	no. ] [1/mi	n] €
3202.615	20	12	55	15	6	3290.012 22.00	97,80
3202.630	26	12	54	30	6	3290.012 18.00	0 109,45
3202.645	27	12	57	45	6	3290.012 16.00	0 111,05
3202.815	20	12	55	15	8	3290.012 24.00	97,80
3202.830	26	12	54	30	8	3290.012 20.00	0 109,45
3202.845	27	12	57	45	8	3290.012 18.00	0 111,05

	Two carbide tipped, changeable side cutting blades parallel to the shank only circumferential execution. Changeable ball bearing guide (Ø 15.9 mm) at the head	S. Fifth	For milling profiles, grooves and chamfers at nearly all kinds of solid wood, laminated materials and plastics also CORIAN etc.	
倒	High quality carbide reversing blade		Long endurance and little downtime, because the blades are quickly changed and regrinding is not necessary	
UPM	Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN	

3	1	a	1	
J	-	J	-	

## OOOO Premium

## **Ball Bearings**



Ouder No	Description	0-Ø	AØ	I-Ø	IØ	Height	€
Order No.	Description	[mm]	[Inch]	[mm]	[Inch]	[mm]	
3191.001	To item Number: 3112, 3113, 3118, 3134	9,5	3/8	3,2	1/8		11,70
3191.004	To item Number: 3119, 3122, 3135	9,5	3/8	4,8	3/16		12,95
3191.005	To item Number: 3157, 3202.615/630/815 /830	15,9	5/8	6,4	1/4	5,0	12,95
3191.007	To item Number: 3101, 3102, 3109, 3114, 3121, 3138, 3139	12,7	1/2	4,8	3/16		12,95
3191.010	To item Number: 3123	16,0		5,0			12,95
3191.114	Zu ArtNr. 3202.645/845	12,7	1/2	6,4	1/4	4,8	15,05

Premium ball bearing with attachment screw and spacer (not for bevel trimming bits)	S. Filtre	Applicable to all FAMAG router bits and bevel trimming bits with ball bearing guide. Please pay attention whether you order for a router bit or for a bevel trimming bit
		Only use FAMAG ball bearings for the FAMAG router bits
Individual for every router bit, see parameters of product		packing unit = 1. Self service. EAN





		sw	Wrench size	
Order No.	Description	[Inch]	[mm]	€
3195.064	appropriate for item number: 3191.001	5/64"	1,98	4,45
3195.332	appropriate for item number: 3191.004, 3191.007	3/32"	2,38	5,25
		SW	Wrench size	
Order No.	Description	[Inch]	[mm]	€
3295.015	appropriate for al mentioned item numbers		T15	7,05
	SW		Wrench size	
Order No.	[Inch]		[mm]	€
3291.035	• •		M 3,5	3,65
3291.040			M 4	2,75
No.	Wrenches	Appli Appli	cable to all FAMAG ball bearings 3191	

	Wrenches	S. Filler	Applicable to all FAMAG ball bearings 3191
	Chrome vanadium steel		Only the wrench 3195.332 fits to the hexagon socket (5/64")
UPM	Dependig on the skills		packing unit = 1. Self service. EAN

329	0	

cccPremium

Reversing blade carbide



	Cutting I.	Height	thickness		
Order No.	[mm]	[mm]	[mm]	Torx-Schr.	€
3290.012	12	12	1,5	3291.040	5,25
3290.030	12	30	1,5	3291.040	6,80
3290.050	12	50	1,5	3291.035	13,05
3290.130	12	30	1,5	3291.035	12,80
3290.930	9	30	1,5	3291.035	6,70
	High quality reversing blades o FAMAG insert cutters	f carbide for the exchange of		ne orginal inserts for the FAMAG ve your time and trouble.	insert cutters, so

	High quality reversing blades of carbide		These reversing blades are specifically designed for the FAMAG cutters with indexable inserts and simply the best fit
UPM	Individual for every router bit, see parameters of product	F	packing unit = 1. Self service. EAN











50

50

50

€

16,20

16,20

16,80

21,05

21,05

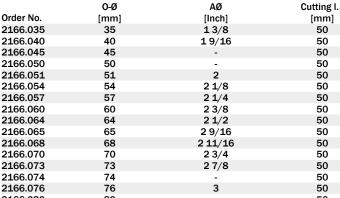
21,50

21,70

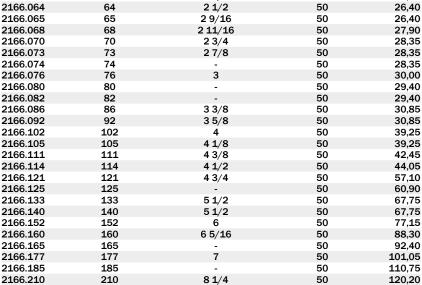
23,00













Ejector-sha	Ejector-shank system					
Order No.	Description	€				
2166.309	Ejector-shank incl. HSS centre drill for PAROLI 50	24,95				
2166.313	Ejector-shank incl. HM centre drill for PAROLI 50	27,45				
2166.319	single HSS centre drill for PAROLI 50	3,95				
2166.323	single HM centre drill for PAROLI 50	6,45				



		,
Edge counte	ersink cap	
Order No.	Description	€
2166.468	Edge countersink cap Ø 68mm for PAROLI 50	26,05
Sets		
Order No.	Description	€
2166.805	7 pcs. Set: Ø 35, 45, 50, 60, 68, 80 + Ejector-shank	143,50
2166.807	8 pcs. Set: Ø 35, 50, 57, 60, 68, 80 + Edge countersink cap 68mm + Ejector-shank	171,50

	Carbide tipped hole saw, the saw body is made of steel, cutting depth 50 mm	S. F.	Drilling in all kinds of woods and boards, MDF, aerated concrete, plaster board, plastics and tile
	Carbide tipped		By using the utmost clever ejector-shank system, you can easily remove the core and saves a lot of time and trouble
UPM	A great torque is required at big diameters. Speed accroding to the diagram		packing unit: 1 at Rose Clip. EAN











	O-Ø	Cutting I.	
Order No.	[mm]	[mm]	€
2169.051	51	165	65,65
2169.060	60	165	73,80
2169.070	70	165	87,05
2169.080	80	165	97,95
2169.102	102	165	110,50
2169.111	111	165	123,55
2169.121	121	165	143,65
2169.130	133	165	166,30
2169.152	152	165	190,75
2169.160	160	165	242,40
Ejector shank system			
Order No. Description			€
2169 309 Fiector-shank	for PAROLI 165		25 40

Ejector shank system					
Order No.	Description	€			
2169.309	Ejector-shank for PAROLI 165	25,40			
2169.310	Ejector-shank incl. guiding spike for PAROLI 165	32,90			
2169.320	single guiding spike for PAROLI 165	7,60			

	Carbide tipped hole saw, the saw body is made of steel, cutting depth 165 mm	Sellin.	Drilling in all kinds of woods and boards (also solid wood), MDF, aerated concrete, plaster board and plastics. The large length is ideal for drilling through holes in solid wood for ventilation, drainage and flue pipes
	Carbide tipped		By using the utmost clever ejector-shank system, you can easily remove the core and saves a lot of time and trouble
UPM	A great torque is required at big diameters. Speed accroding to the diagram		packing unit: 1 at Rose Clip. EAN











Standard			
	0-Ø	Cutting I.	
Order No.	[mm]	[mm]	€
2155.035	35	105	59,95
2155.065	65	105	83,30
2155.068	68	105	93,80
2155.074	74	105	104,20
2155.106	106,5	105	155,30
2155.121	121	105	166,75
Ejector shank system			
Order No. Description			€
2155 300 Fiector-chank	for PAROLLIAN		

2100.000	133.309 Ejector-stratik für FAROLI 100						
	First hole saw with serrated edge for really all insulation materials such as: Wood insulation boards, polystyrene, mineral wool, PU-foam etc. Very clean cuts	S. Chin	Fast, very clean and circular cuts in mineral wool, polyurethane foam, polystyrene foam, deather, rubber, paper, carpet and especially in wood fiber insulation boards				
倒	Alloyed tool steel		The drill core is removed by the ejector in a breath. Due to the thin-walled cutting, the core can to be used again				
UPM	According to corresponding diagrams		packing unit = 1. in Yellow cardboard tube. Ø 106 + 121 in Carton. EAN				

0-Ø

24,95

3,95

101

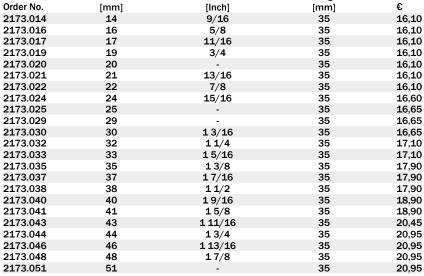




Cutting I.







ΑØ



	Yellow painted bimetal hole saw with HSS teeth, variable pitch; weld on a cylindrical tool head of steel. Cutting depth 38 mm
The state of the s	For boring at steel and nonferrous metal as copper, bronze and aluminium, plasterboards such wooden and laminated materials with column drilling machine or power drill. Due to the high quality of cobalt alloy and the special polished section you obtain a better cutting performance and a longer life
倒	Bimetal HSS M42, 8% Co
	When cutting metal it is recommended to cool the hole saw with cutting oil
UPM	According to corresponding diagrams
	packing unit = 1. Folded box EAN

2173.017	17	<b>11/16</b>	35	16,10
2173.019	19	3/4	35	16,10
2173.020	20	-	35	16,10
2173.021	21	13/16	35	16,10
2173.022	22	7/8	35	16,10
2173.024	24	15/16	35	16,60
2173.025	25	-	35	16,65
2173.029	29	-	35	16,65
2173.030	30	1 3/16	35	16,65
2173.032	32	1 1/4	35	17,10
2173.033	33	15/16	35	17,10
2173.035	35	13/8	35	17,90
2173.037	37	17/16	35	17,90
2173.038	38	1 1/2	35	17,90
2173.040	40	19/16	35	18,90
2173.041	41	15/8	35	18,90
2173.041	43	1 11/16	35	20,45
2173.043	44	13/4	35	20,45
2173.044	46		35	
	48	1 13/16		20,95
2173.048		17/8	35	20,95
2173.051	51	-	35	20,95
2173.052	52	2 1/16	35	22,05
2173.054	54	2 1/8	35	22,05
2173.056	56	-	35	23,25
2173.057	57	2 1/4	35	23,25
2173.059	59	2 5/16	35	24,20
2173.060	60	2 3/8	35	24,20
2173.064	64	2 1/2	35	25,35
2173.065	65	2 9/16	35	25,35
2173.067	67	2 5/8	35	25,75
2173.068	68	2 11/16	35	25,75
2173.070	70	2 3/4	35	26,45
2173.073	73	2 7/8	35	26,45
2173.076	76	-	35	27,65
2173.083	83	3 1/4	35	28,15
2173.086	86	3 3/8	35	28,15
2173.089	89	3 1/2	35	28,15
2173.092	92	3 5/8	35	31,95
2173.095	95	3 3/4	35	33,50
2173.098	98	3 7/8	35	35,05
2173.102	102	ŕ	35	36,00
2173.105	105	4 1/8	35	39,75
2173.108	108	4 1/4	35	44,90
2173.111	111	4 3/8	35	47,80
2173.114	114	4 1/2	35	53,10
2173.121	121	4 3/4	35	55,80
2173.127	127	-7	35	57,55
2173.133	133	5 1/2	35	61,25
2173.140	140	5 1/2	35	65,50
2173.146	146	- 4 -	35	67,55
2173.152	152		35	72,60
2173.160	160	6 5/16	35	103,50
2173.168	168	6 5/8	35	107,40
2173.177	177	0 0/ 0	35	111,50
2173.185	185		35	120,80
2173.200	200		35	124,95
2173.200	210	8 1/4	35	131,15
		8 1/4	33	131,13
Ejector shar Order No.	nk system Description			€
2173.901	Adaptor 14 - 30 mm SW	9,5 mm		9,55
2173.905	Adaptor 32-210 mm SW			15,05
2173.907	Adaptor 14 - 30 mm mit			17,85
2173.908	Adaptor 32-210 mm mit			17,85
2166.309	Ejector-shank incl. HSS ce	entre drill for PAROLI 50		24,95

2166.309

2166.319

single HSS centre drill for PAROLI 50

Ejector-shank incl. HSS centre drill for PAROLI 50













	0-Ø				Cutting I.	
Order No.	[mm]		AZ		[mm]	€
2160.030	30		3		60	44,10
2160.040	40		3		60	53,65
2160.050	50		3		60	63,25
2160.055	55		3		60	64,30
2160.060	60		5		60	65,20
2160.065	65		5		60	72,95
2160.068	68		5		60	71,80
2160.080	80		5		60	110,35
2160.090	90		5		60	120,65
2160.105	105		6		60	150,35
Edge countersink	o	-Ø				
Order No.		ım]			AZ	€
2160.468		, 68			3	45,95
Shanks						
	0-Ø	I-Ø		OAL	S-Ø	
Order No.	[mm]	[mm]		[mm]	[mm]	€
2160.201	M16	8		70	13	24,95
2160.203	M16	8		90	SDS	29,95
Centre drill						
	O-Ø	Mat.		OAL	S-Ø	
Order No.	[mm]	[mm]		[mm]	[mm]	€
2160.307	10	НМ		133	8	8,90
2160.308	8	HSS		105	8	9.35

2100.308	8	пээ		105	8	9,35
	Carbide tipped hole saw; the s steel; internal thread M16 to depth 60 mm	saw body is made of tempered nold the shank. Max. cutting	Septim 1		oards, aerated concrete, plastics, wood. Please order shanks and ce	ntre
<b>F</b>	Carbide tipped			With the edge coun able to countersink	tersink and hole saw 2160.068 yo a flush box.	ou are
UPM	A great torque is required at g details at the speed diameter			packing unit = 1. Pl	astic sleeve. EAN	





Holesaw incl. shank and pre-drill:						
	0-Ø	S-Ø		OAL	Cutting I.	
Order No.	[mm]	[mm]		[mm]	[mm]	€
2174.017	17	12		220	100	62,40
2174.022	22	12		220	100	62,40
2174.025	25	12		220	100	62,40
Holesaw wit	thout shank and pre-drill:					
	0-Ø		OAL		Cutting I.	
Order No.	[mm]		[mm]		[mm]	€
2174.117	17		140		100	41,65
2174.122	22		140		100	41,65
2174.125	25		140		100	41,65
Accesory						
Order No.	Description					€
2174.301	Hex shank complete with pre-drill Ø 7 mm					20,80
2174.307	Pre-drill Ø 7 mm for holesaw ref. 2174					5,75

	v to install roller blinds on window frames. and pre-drill bit to place the hole saw in	S. Filler	During the installation of the roller blinds you have to drilling holes in the window frames for the cords. This was so far always a present problem, but now with this hole saw the problem finish
HSS Bi-metal			Remove after the first cut the pre-drill bit from the hole saw. This reduces the cutting forces and it can work much more easily
500 - 750 min-1			packing unit = 1. PE tube. EAN





 Order No.
 Description
 Sägen
 [mm]
 €

 2175.000
 Ø = 19, 22, 28, 36, 44, 51, 60, 9
 9
 6,5/10
 25
 31,25

 68 and 82 mm
 68 mm

	9 roughly toothed caps, centre drill, hexagon key, small and big arbor made of steel, cutting depth ca. 25 mm	Easy cutting of plasterboard, wood, plastics and other building materials because of the rough toothing
Ø	Tungston steel	This set contains two arbors, one for the small hole saws and the other one for the big sizes of diameters
UPM	Power drill, depending on the material and Ø. E.g. Ø 51 mm drilling to plasterboard ~ 1000 min-1	packing unit = 5. Welded on cardboard. EAN









	0-Ø		OAL	Cutting I.		
Order No.	[mm]	S	[mm]	[mm]	€	
2170.086	86	SW12	420	300	212,50	
2170.111	111	SW12	420	300	267,00	
2170.130	130	SW12	420	300	315,60	
2170.152	152	SW12	420	300	394,45	
2170.170	170	SW12	420	300	436,95	
2170.200	200	SW12	420	300	515,80	
Guiding spike and	drill head.					
	O-Ø		OAL	Cutting I.		
Order No.	[mm]	S	[mm]	[mm]	€	
2170.030	19,5	12	460	410	72,85	
Guiding spike sing	(le					
	O-Ø		OAL	Cutting I.		
Order No.	[mm]	S	[mm]	[mm]	€	
2170.010	19,5	12	430	380	52,20	
Drill head single						
· ·	O-Ø		OAL	Cutting I.		
Order No.	[mm]	S	[mm]	[mm]	€	
3690.002	8 - 20	8	70	44	27,55	

	Special holesaw bi-metal with variable pitch of teeth. The teeth HSS are welded on the cylindrical carrier which has a usable length of 300 mm. Incl. Exchangeable hexagon shank (SW 12). Please order separately guiding spike and drill head	S. Filtre	For drilling holes with great diameters in one work step e.g. the lead through of flue and air inlet pipes in roof construction. The high quality hole saw cuts all sorts of insulating materials (fibreglass, rockwool, styrofoam etc.) wood and chipboards and gypsum plaster boards
	Bimetal HSS M42, 8% Co		Cutting of solid wood thicker than 30 mm, and stone and metal is not possible. The hole saw for carpentry can be used freehand with a strong power drill
(UPM)	great diameters ca. 500 min-1		packing unit = 1. Yellow cardboard tube. EAN





# **Twist drills and countersinks for metal**













	O-Ø	Shank type	OAL	Spiral I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
2596.030	3	C 6,3	38	16	6,60
2596.033	3,3	C 6,3	40	18	6,60
2596.035	3,5	C 6,3	40	18	6,60
2596.040	4	C 6,3	44	20	6,60
2596.042	4,2	C 6,3	46	24	6,80
2596.045	4,5	C 6,3	46	24	6,80
2596.050	5	C 6,3	50	26	6,80
2596.055	5,5	C 6,3	50	26	7,30
2596.060	6	C 6,3	50	26	7,30
2596.065	6,5	C 6,3	50	30	7,30
2596.068	6,8	C 6,3	50	30	7,30
2596.070	7	C 6,3	50	30	7,30
2596.075	7,5	C 6,3	51	32	9,15
2596.080	8	C 6,3	51	32	9,15
2596.085	8,5	C 6,3	53	33	9,90
2596.090	9	C 6,3	53	33	11,20
2596.100	10	C 6,3	54	38	11,20

Sets		
Order No.	Description	€
2596.805	Set of 5 pieces in plastic box. Ø 3, 4, 5, 6, 8 mm	32,70
2506 508	Set of 9 pieces in wooden case 0/3 4/5 6/7 8/9 10 mm and hitholder	62.65

	Twist drill ground from the solid, short version with hexagon drive (1/4"; E 6,3), polished section of the envelope of cone 118°, bright	S. C. L.	For boring to alloyed and non alloyed steel and cast steel up to 900 N/mm², grey and malleable iron, etc. with a cordless srewdriver. The ground chip flutes guarantee good chip removal
	HSS-G		It is recommended to use lockeable bit holder to avoid the drill bit getting jammed in the drill hole
UPM	Corresponding diagrams or cordless screwdriver		packing unit = 1. PE tube. EAN







	0-Ø	SØ	OAL	Spiral I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
2597.030	3	E 6,3	70	35	6,60
2597.033	3,3	E 6,3	70	35	6,60
2597.035	3,5	E 6,3	70	35	6,60
2597.040	4	E 6,3	75	40	6,60
2597.042	4,2	E 6,3	80	45	6,80
2597.045	4,5	E 6,3	80	45	6,80
2597.050	5	E 6,3	86	51	6,80
2597.055	5,5	E 6,3	93	57	7,30
2597.060	6	E 6,3	93	57	7,30
2597.065	6,5	E 6,3	101	63	7,30
2597.068	6,8	E 6,3	101	63	7,30
2597.070	7	E 6,3	109	69	7,30
2597.075	7,5	E 6,3	109	69	9,15
2597.080	8	E 6,3	117	75	9,15
2597.085	8,5	E 6,3	117	75	9,90
2597.090	9	E 6,3	125	81	11,20
2597.100	10	E 6,3	133	87	11,20
2597.110	11	E 6,3	142	94	14,15
2597.120	12	E 6,3	151	101	15,50
2597.130	13	E 6,3	151	101	16,65
Sets					
Order No.	Description				€
2597.805	Set of 5 pieces in plastic box. Ø 3	, 4, 5, 6, 8 mm			32,70
					- , -

Twist drill ground from the solid, long version with hexagon drive (1/4"; E 6,3), polished section of the envelope of cone 118°	S. Ellin	For boring to alloyed and non alloyed steel and cast steel up to 900 N/mm², grey and malleable iron, etc. with a cordless srewdriver
HSS-G		It is recommended to use lockeable bit holder to avoid the drill bit getting jammed in the drill hole
Corresponding diagrams or cordless screwdriver		packing unit = 1. PE tube. EAN







	Bit	Angle	Height	
Order No.	[mm]	[°]	[mm]	€
1597.750	6,3	90°	40	89,10
Sets				
Order No.	Description			€
1597.757	Pro75 set in wooden case countersink, chuck and b	· · · · · · · · · · · · · · · · · · ·	g. 1596 Ø 3, 4, 5, 6 mm,	113,70
1597.758	Pro75 set in wooden case countersink, cuck and bit		ng. 2596 Ø 3, 4, 5, 6 mm,	113,70
2597.612	Set 13 pcs. in bag. Type 2	L596 Ø 3, 4, 5, 6, 8, 10 n	nm, coutersink and cuck	137,40
2597.613	Set 13 pcs. in bag. Type 2	1597 Ø 3, 4, 5, 6, 8, 10 n	nm, coutersink and cuck	140,40





	Stable L-shaped driver with casing made of aluminium and aslant toothed metal gear wheels (ideal transmission). Take up for all $1/4^\circ$ bits and boring tools (e.g. 1596) with hex shank. Angle of screwing 90°, exchangeable plastic handle	State of the state	Professional screwing and drilling also in deep angles with cordless screwdriver
倒	Casing made of aluminium		It's ideal for making screwed connections with a cordless screwdriver even when there is little space. Fine in combination with 1596/2596
UPM	Rotational speed of cordless screwdriver max 2000 min-1		Packing unit = 1, Blister. EAN







		0-ø	OAL	Cutting I.	
	Order No.	[mm]	[mm]	[mm]	€
	2410.010	1,0	34	12	1,15
	2410.011	1,1	36	14	1,15
	2410.012	1,2	38	16	1,15
	2410.013 2410.014	1,3 1.4	38 40	16 18	1,15 1,15
	2410.014	1,5	40	18	1,15
	2410.016	1,6	43	20	1,15
	2410.017	1,7	43	20	1,15
	2410.018	1,8	46	22	1,15
109	2410.019	1,9	46	22	1,15
	2410.020	2,0	49	24	1,15
	2410.021 2410.022	2,1 2,2	49 53	24 27	1,15 1,15
	2410.022	2,3	53	27	1,15
	2410.024	2,4	57	30	1,15
	2410.025	2,5	57	30	1,15
	2410.026	2,6	57	30	1,20
	2410.027	2,7	61	33	1,20
	2410.028	2,8	61 61	33 33	1,20 1,20
	2410.029 2410.030	2,9 3,0	61	33	1,20
	2410.031	3,1	65	36	1,20
	2410.032	3,2	65	36	1,20
	2410.033	3,3	65	36	1,20
	2410.034	3,4	70	39	1,20
	2410.035	3,5	70	39	1,20
	2410.036	3,6	70	39	1,30
	2410.037 2410.038	3,7 3,8	70 75	39 43	1,35 1,40
	2410.038	3,9	75 75	43	1,40
	2410.040	4,0	75	43	1,40
	2410.041	4,1	75	43	1,50
	2410.042	4,2	75	43	1,50
	2410.043	4,3	80	47	1,50
	2410.044	4,4	80	47	1,50
	2410.045 2410.046	4,5 4,6	80 80	47 47	1,55 1,55
	2410.047	4,7	80	47	1,55 1,55
	2410.048	4,8	86	52	1,55
	2410.049	4,9	86	52	1,60
	2410.050	5,0	86	52	1,60
	2410.051	5,1	86	52	1,65
	2410.052	5,2	86	52	1,65
	2410.053 2410.054	5,3 5,4	86 93	52 57	1,95 1,95
	2410.055	5,5	93	57	1,95
	2410.056	5,6	93	57	1,95
	2410.057	5,7	93	57	1,95
	2410.058	5,8	93	57	2,05
	2410.059	5,9	93	57	2,05
	2410.060 2410.061	6,0 6,1	93 101	57 63	1,95 2,20
	2410.061	6,2	101	63	2,20
	2410.063	6,3	101	63	2,25
	2410.064	6,4	101	63	2,25
	2410.065	6,5	101	63	2,25
	2410.066	6,6	101	63	2,60
	2410.067	6,7	101	63 69	2,60
	2410.068 2410.069	6,8 6,9	109 109	69	2,55 2,90
	2410.009	7,0	109	69	2,70
	2410.071	7,1	109	69	3,05
	2410.072	7,2	109	69	3,05
	2410.073	7,3	109	69	3,05
	2410.074	7,4	109	69	3,05
	2410.075	7,5	109	69	2,95
	2410.076	7,6	117	75 75	3,35
	2410.077 2410.078	7,7 7,8	117 117	75 75	3,35 3,35
	2410.078	7,9	117	75 75	3,35
	2410.080	8,0	117	75	3,35
	2410.081	8,1	117	75	3,60
	2410.082	8,2	117	75	3,60
	2410.083	8,3	117	75 75	3,95
	2410.084	8,4	117	75 75	3,95
	2410.085 2410.086	8,5 8,6	117 125	75 81	3,80 4,35
	2410.086	8,6 8,7	125	81 81	4,35 4,35
	2410.088	8,8	125	81	4,35
		- / -			.,= -

	0-Ø	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	€
2410.089	8,9	125	81	4,35
2410.090	9,0	125	81	4,15
2410.091	9,1	125	81	4,60
2410.092	9,2	125	81	4,60
2410.093	9,3	125	81	4,60
2410.094	9,4	125	81	4,60
2410.095	9,5	125	81	4,70
2410.096	9,6	133	87	5,30
2410.097	9,7	133	87	5,30
2410.098	9,8	133	87	5,30
2410.099	9,9	133	87	5,30
2410.100	10,0	133	87	5,10
2410.102	10,2	133	87	6,45
2410.105	10,5	133	87	6,45
2410.110	11,0	142	94	7,25
2410.115	11,5	142	94	7,95
2410.120	12,0	151	101	8,90
2410.125	12,5	151	101	9,95
2410.130	13,0	151	101	10,95

2410.125	12,5	TOT	101 9,95
2410.130	13,0	151	101 10,95
	Twist drill HSS-G DIN 338, ground from the solid, short, cylindrical, right-hand cutting, spiral type N, tolerance of diameter h 8. Polished section of the envelope of cone 118°, bright	S. Hard	Suitable for highest demands of industry and craft. For boring to alloyed and non alloyed steel and cast steel up to 900 N/mm², grey, ductile, sintered and malleable iron, nickel silver and graphite, etc.
<b>A</b>	HSS-G		Professional quality for high demands. For highest demands e.g. high-grade steel V2A we recommend our version 2420 of cobalt alloyed HSS, with a special spiral and crosswise grinding
UPM	Corresponding diagrams		packing unit = 10 pcs in PE box., from Ø 8,5 mm packing unit = 5. EAN. Price for each drill in a packing unit

Order No.

0-Ø

[mm]

13,0

Description

11,60

10,80

€





€

Cutting I.

[mm]

101





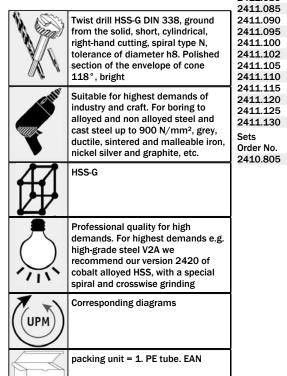
•	[]	[ [ ]	[]	•
2411.010	1,0	34	12	1,90
2411.015	1,5	40	18	1,70
2411.020	2,0	49	24	1,60
2411.025	2,5	57	30	1,65
2411.030	3,0	61	33	1,60
2411.031	3,1	65	36	1,80
2411.032	3,2	65	36	1,80
2411.033	3,3	65	36	1,80
2411.035	3,5	70	39	1,75
2411.040	4,0	75	43	1,80
2411.041	4,1	75	43	2,10
2411.042	4,2	75	43	2,10
2411.045	4,5	80	47	2,05
2411.048	4,8	86	52	2,15
2411.050	5,0	86	52	1,95
2411.051	5,1	86	52	2,25
2411.052	5,2	86	52	2,25
2411.055	5,5	93	57	2,45
2411.060	6,0	93	57	2,45
2411.065	6,5	101	63	2,85
2411.068	6,8	109	69	3,55
2411.070	7,0	109	69	3,30
2411.075	7,5	109	69	3,55
2411.080	8,0	117	75	3,95
2411.085	8,5	117	75	4,45
2411.090	9,0	125	81	4,80
2411.095	9,5	125	81	5,40
2411.100	10,0	133	87	5,90
2411.102	10,2	133	87	7,05
2411.105	10,5	133	87	7,05
2411.110	11,0	142	94	7,90
2411.115	11,5	142	94	8,65
2411.120	12,0	151	101	9,60
2411.125	12,5	151	101	10,70
0444400	40.0	4-4	404	44.00

151

Set of 5 pieces, HSS-G. Ø 3, 4, 5, 6, 8 mm DIN 338

OAL

[mm]











		0-Ø		utting I.	
		[mm]	[mm]	[mm]	€
	2420.015 2420.016	1,5 1,6	40 43	18 20	2,00 2,05
	2420.017	1,7	43	20	2,05
	2420.018	1,8	46	22	2,05
	2420.019	1,9	46	22	2,05
	2420.020	2,0	49	24	2,10
	2420.021	2,1	49	24	2,10
	2420.022	2,2	53	27	2,10
	2420.023	2,3	53	27	2,10
_	2420.024	2,4	57	30	2,10
	2420.025 2420.026	2,5	57	30	2,10
	2420.026	2,6 2,7	57 61	30 33	2,25 2,25
	2420.027	2,8	61	33	2,25
	2420.029	2,9	61	33	2,25
	2420.030	3,0	61	33	2,25
	2420.031	3,1	65	36	2,55
	2420.032	3,2	65	36	2,55
	2420.033	3,3	65	36	2,55
	2420.034	3,4	70	39	2,55
	2420.035	3,5	70	39	2,70
	2420.036	3,6	70	39	2,70
	2420.037 2420.038	3,7 3,8	70 75	39 43	2,70 2,70
	2420.038	3,9	75 75	43	2,70
	2420.040	4,0	75	43	3,00
	2420.041	4,1	75	43	3.00
	2420.042	4,2	75	43	3,00
	2420.043	4,3	80	47	3,00
	2420.044	4,4	80	47	3,00
	2420.045	4,5	80	47	3,35
	2420.046	4,6	80	47	3,45
	2420.047	4,7	80	47	3,45
	2420.048	4,8	86	52 52	3,45
	2420.049 2420.050	4,9 5,0	86 86	52 52	3,45 3,65
	2420.050	5,1	86	52	3,90
	2420.052	5,2	86	52	3,90
	2420.053	5,3	86	52	3,90
	2420.054	5,4	93	57	3,90
	2420.055	5,5	93	57	3,95
	2420.056	5,6	93	57	4,45
	2420.057	5,7	93	57	4,45
	2420.058	5,8	93	57	4,45
	2420.059	5,9	93	57	4,45
	2420.060 2420.061	6,0	93 101	57 63	4,60
	2420.062	6,1 6,2	101	63	4,85 4,85
	2420.063	6,3	101	63	4,85
	2420.064	6,4	101	63	4,85
	2420.065	6,5	101	63	4,85
	2420.066	6,6	101	63	5,80
	2420.067	6,7	101	63	5,80
	2420.068	6,8	109	69	5,80
	2420.069	6,9	109	69	5,80
	2420.070	7,0	109	69	5,80
	2420.071 2420.072	7,1	109	69	6,10
	2420.072	7,2 7,3	109 109	69 69	6,10 6,10
	2420.074	7,4	109	69	6,10
	2420.075	7,5	109	69	6,10
	2420.076	7,6	117	75	6,90
	2420.077	7,7	117	75	6,90
	2420.078	7,8	117	75	6,90
	2420.079	7,9	117	75	6,90
	2420.080	8,0	117	75 	7,10
	2420.081	8,1	117	75	7,85
	2420.082	8,2	117	75 75	7,85
	2420.083 2420.084	8,3	117 117	75 75	7,85 7,85
	2420.084	8,4 8,5	117	75 75	7,85
	2420.086	8,6	125	81	8,50
	2420.087	8,7	125	81	8,50
	2420.088	8,8	125	81	8,50
	2420.089	8,9	125	81	8,50
	2420.090	9,0	125	81	8,50
	2420.091	9,1	125	81	9,55
	2420.092	9,2	125	81	9,55
	2420.093	9,3	125	81	9,55

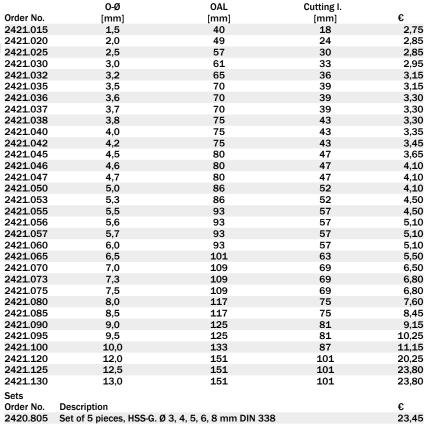
	o-ø	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	€
2420.094	9,4	125	81	9,55
2420.095	9,5	125	81	9,55
2420.096	9,6	133	87	10,50
2420.097	9,7	133	87	10,50
2420.098	9,8	133	87	10,50
2420.099	9,9	133	87	10,50
2420.100	10,0	133	87	10,50
2420.102	10,2	133	87	16,50
2420.105	10,5	133	87	16,50
2420.110	11,0	142	94	16,50
2420.115	<b>11</b> ,5	142	94	19,50
2420.120	12,0	151	101	19,50
2420.125	12,5	151	101	23,00
2420.130	13,0	151	101	23,00

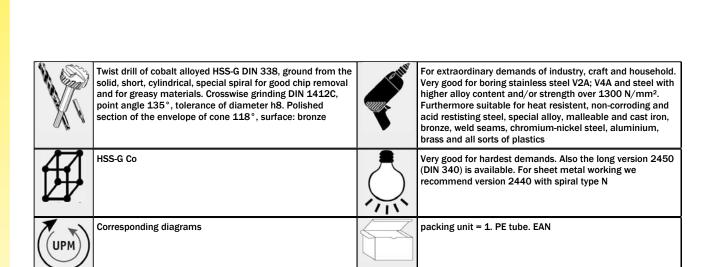
2420.130	13,0	151	101	23,00
	Twist drill of cobalt alloyed HSS-G DIN 338, ground from the solid, short, cylindrical, special spiral for good chip removal and for greasy materials. Crosswise grinding DIN 1412C, point angle 135°, tolerance of diameter h8. Polished section of the envelope of cone 118°, surface: bronze	S. Charles	For extraordinary demands of industry, craft and ho Very good for boring stainless steel V2A; V4A and st higher alloy content and/or strength over 1300 N/n Furthermore suitable for heat resistent, non-corrodi acid resisting steel, special alloy, malleable and cas bronze, weld seams, chromium-nickel steel, alumin brass and all sorts of plastics	teel with mm². ing and st iron,
	HSS-G Co		Very good for hardest demands. Also the long version (DIN 340) is available. For sheet metal working we recommend version 2440 with spiral type N	
UPM	Corresponding diagrams		packing unit = 10 pcs in PE box., from Ø 8,5 mm pa unit = 5. EAN. Price for each drill in a packing unit	acking













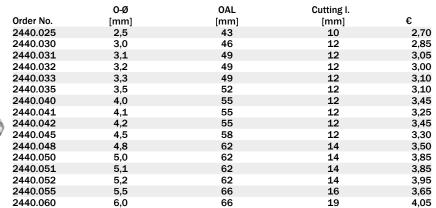


		O-Ø	OAL	Cutting I.	
	Order No.	[mm]	[mm]	[mm]	€
	2430.010	1,0	34	12	3,65
	2430.015	1,5	40	18	3,65
	2430.020	2,0	49	24	3,65
	2430.025	2,5	57	30	3,50
	2430.030	3,0	61	33	3,80
	2430.031	3,1	65	36	4,20
	2430.032	3,2	65	36	4,20
	2430.033	3,3	65	36	4,20
The Mindle	2430.035	3,5	70	39	4,15
Martin Willer Willer Live	2430.040	4,0	75	43	4,65
	2430.041	4,1	75	43	5,50
	2430.042	4,2	75	43	5,50
	2430.045	4,5	80	47	5,50
	2430.048	4,8	86	52	5,55
	2430.050	5,0	86	52	5,80
	2430.051	5,1	86	52	5,95
	2430.052	5,2	86	52	5,95
	2430.055	5,5	93	57	6,80
	2430.060	6,0	93	57	7,25
	2430.065	6,5	101	63	7,95
	2430.068	6,8	109	69	8,25
	2430.070	7,0	109	69	8,95
	2430.075	7,5	109	69	9,90
	2430.080	8,0	117	75	10,40
	2430.085	8,5	117	75	12,00
	2430.090	9,0	125	81	12,80
	2430.095	9,5	125	81	14,05
	2430.100	10,0	133	87	15,00
	2430.105	10,5	133	87	15,90
	2430.110	11,0	142	94	17,40
	2430.115	11,5	142	94	18,10
	2430.120	12,0	151	101	19,15
	2430.125	12,5	151	101	21,05
	2430.130	13,0	151	101	21,65

	2430.130	13,0	151	101	21,65
	Titanium nitride twist drill with parallel shank, short, righthand cutting, with spiral type N. Crosswise grinding DIN 1412C (from 3,0 mm) 118° for good centering and fast drilling, tolerance of diameter h8. Professional hardwearing coating which guarantees long endurance	Sentry .	Suitable for highest demand boring to alloyed and non all 1000 N/mm², grey, ductile, aluminium, copper, bronze	loyed steel and cast	steel up to
	HSS-G titanium nitrided		Unbelievable endurance bed a fair price. Also regrinding of the tool		
UPM	Corresponding diagrams		packing unit = 1. PE tube. EA	AN	









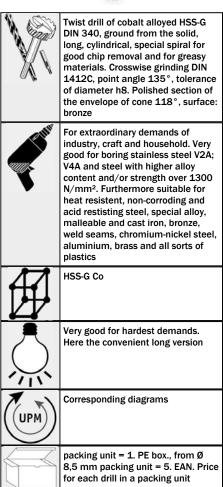
	Special twist drill HSS-G corresponding to works standard, ground from the solid, extra short, cylindrical, right-hand cutting, spiral type N, tolerance of diameter h8. Polished section of the envelope of cone 118°, bright	Double ended twist drill for boring to thin sheet. Solid construction for power drill. For drilling to thin work pieces like sheet steel, sheet brass, sheet zinc, copper sheet, aluminium sheet and plastic sheet
<b>M</b>	HSS-G	Specially suited for roofers and their sheet metal forming
UPM	ca. 2500 min-1, power drill	packing unit = 1. PE tube. EAN







			_	
Standard				
	0-Ø	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	€
2450.020	2,0	85	56	3,20
2450.025	2,5	95	62	3,55
2450.030	3,0	100	66	3,75
2450.031	3,1	106	69	4,35
2450.032	3,2	106	69	4,35
2450.033	3,3	112	73	4,35
2450.035	3,5	112	73	4,35
2450.040	4,0	119	78	4,65
2450.041	4,1	119	78	6,00
2450.042	4,2	119	78	6,00
2450.045	4,5	126	82	6,00
2450.048	4,8	132	87	7,05
2450.050	5,0	132	87	7,05
2450.051	5,1	132	87	7,05
2450.052	5,2	132	87	8,10
2450.053	5,3	132	87	8,10
2450.055	5,5	139	91	8,10
2450.057	5,7	139	91	9,15
2450.058	5,8	139	91	9,15
2450.060	6,0	139	91	9,15
2450.065	6,5	148	97	11,25
2450.068	6,8	156	102	13,05
2450.070	7,0	156	102	13,05
2450.075	7,5	156	102	14,35
2450.080	8,0	165	109	14,35
2450.085	8,5	165	109	16,95
2450.090	9,0	175	115	17,70
2450.095	9,5	175	115	18,80
2450.100	10,0	184	121	21,35
2450.102	10,2	184	121	28,75
2450.105	10,5	184	121	28,75
2450.110	11,0	195	128	28,75
2450.115	11,5	195	128	33,70
2450.120	12,0	205	134	33,70
2450.125	12,5	205	134	41,35
2450.130	13,0	205	134	41,35



Twist Drills, Co 5%, DIN 340, fully ground with split point, packaged				
	0-Ø	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	€
2451.020	2,0	85	56	3,45
2451.025	2,5	95	62	3,95
2451.030	3,0	100	66	4,05
2451.031	3,1	106	69	4,60
2451.032	3,2	106	69	4,60
2451.033	3,3	112	73	4,65
2451.035	3,5	112	73	4,65
2451.040	4,0	119	78	5,00
2451.041	4,1	119	78	6,30
2451.042	4,2	119	78	6,30
2451.045	4,5	126	82	6,30
2451.048	4,8	132	87	10,95
2451.050	5,0	132	87	7,50
2451.051	5,1	132	87	7,50
2451.052	5,2	132	87	8,30
2451.053	5,3	132	87	8,30
2451.055	5,5	139	91	8,30
2451.057	5,7	139	91	9,35
2451.058	5,8	139	91	9,35
2451.060	6,0	139	91	9,35
2451.065	6,5	148	97	11,35
2451.068	6,8	156	102	13,10
2451.070	7,0	<b>1</b> 56	102	13,10
2451.075	7,5	156	102	14,35
2451.080	8,0	165	109	16,05
2451.085	8,5	165	109	17,10
2451.090	9,0	175	115	18,00
2451.095	9,5	175	115	19,25
2451.100	10,0	184	121	21,65
2451.102	10,2	184	121	29,20
2451.105	10,5	184	121	29,20
2451.110	11,0	195	128	29,20
2451.115	11,5	195	128	34,15
2451.120	12,0	205	134	34,15
2451.125	12,5	205	134	41,85
2451.130	13.0	205	134	41.85



Corresponding diagrams





Serial 1				
	0-Ø	OAL	Cutting I.	
Order No.	[mm]	[mm]	[mm]	€
2461.020	2,0	125	85	11,15
2461.025	2,5	140	95	11,15
2461.030	3,0	150	100	13,70
2461.035	3,5	165	115	15,15
2461.040	4,0	175	120	15,40
2461.045	4,5	185	125	17,90
2461.050	5,0	195	135	20,20
2461.055	5,5	205	140	21,10
2461.060	6,0	205	140	24,15
2461.065	6,5	215	150	28,60
2461.070	7,0	225	155	29,80
2461.075	7,5	225	155	32,70
2461.080	8,0	240	165	36,15
2461.085	8,5	240	165	40,80
2461.090	9,0	250	175	43,80
2461.095	9,5	250	175	46,30
2461.100	10,0	265	185	50,25
2461.105	10,5	265	185	51,40
2461.110	11,0	280	195	56,05
2461.115	11,5	280	195	62,80
2461.120	12,0	295	205	68,80
2461.125	12,5	295	205	72,65
2461.130	13,0	295	205	76,10
	Special twist drill HSS-G DIN 1869, extra long, cylinder shank, right-hand cutting. Plunge and crosswise grinding 135°	September 1	Solid special drill for boring extremly deep holes unde difficult conditions, e.g. bad chip removal. Suitable fo drilling cast iron and steel up to 1300 N/mm <sup>2</sup>	
	HSS-G		Very good for hardest demands.This is the convenient version. For longer version see also series 2599	t long

packing unit = 1. PE tube. EAN







			_		
0AL 150 mm	0.0	S-Ø	OAL	NL	
Order No.	0-Ø [mm]	ש-s [mm]	[mm]	ML [mm]	€
2599.103	3	3	150	100	10,50
2599.104	4	4	150	100	11,60
2599.105	5	5	150	100	12,25
2599.106	6	6	150	100	13.00
2599.107	7	7	150	100	16,90
2599.108	8	8	150	100	16,90
2599.109	9	9	150	100	17,90
2599.110	10	10	150	100	19,60
2599.111	11	11	150	100	22,20
0AL 250 mm					,
OAL 230 IIIII	0-Ø	S-Ø	OAL	NL	
Order No.	[mm]	[mm]	[mm]	[mm]	€
2599.203	3	3	250	180	14,15
2599.204	4	4	250	180	16,70
2599.205	5	5	250	180	19,05
2599.206	6	6	250	180	21,35
2599.207	7	7	250	180	27,55
2599.208	8	8	250	180	27,55
2599.209	9	9	250	180	30,75
2599.210	10	10	250	180	33,45
2599.211	11	11	250	180	38,55
2599.212	12	12	250	180	42,45
2599.213	13	13	250	180	45,05
2599.214	14	13	250	180	48,80
2599.215	15	13	250	180	56,00
2599.216	16	13	250	180	61,70
OAL 315 mm					
	0-Ø	S-Ø	OAL	NL	
Order No.	[mm]	[mm]	[mm]	[mm]	€
2599.303	3	` 3 `	315	250	18,45
2599.304	4	4	315	250	21,75
2599.305	5	5	315	250	24,80
2599.306	6	6	315	250	27,75
2599.307	7	7	315	250	35,80
2599.308	8	8	315	250	35,80
2599.309	9	9	315	250	39,95
2599.310	10	10	315	250	43,50
2599.311	11	11	315	250	50,05
2599.312	12	12	315	250	55,25
2599.313	13	13	315	250	58,55
2599.314	14	13	315	250	64,50
2599.315	15	13	315	250	75,05
2599.316	16	13	315	250	87,45
0AL 400 mm					
	O-Ø	S-Ø	OAL	NL	
Order No.	[mm]	[mm]	[mm]	[mm]	€
2599.403	3	3	400	300	23,95
2599.404	4	4	400	300	28,30
2599.405	5	5	400	300	32,25
2599.406	6	6	400	300	36,10
2599.407	7	7	400	300	46,50
2599.408	8	8	400	300	46,50
2599.409	9	9	400	300	51,95
2599.410	10	10	400	300	56,55
2599.411	11	11 12	400	300	65,00
2599.412 2599.413	12 13	12	400 400	300 300	71,80 76.15
2599.413	14	13	400	300	76, <b>1</b> 5 83,80
2599.414 2599.415	15	13	400	300	97,55
2599.416	16	13	400	300	113,60
			.50	200	0,00

		2000.000
		2599.304
-	<u> </u>	2599.305
Singa A	Twist drill HSS-G, ground from the	2599.306
( Qual	solid, long, cylindrical, special spiral	2599.307
W//~	for good chip removal and for	2599.308
<b>A</b> //	greasy materials. Crosswise	2599.309
/A N	grinding DIN 1412C, point angle	2599.310
@ #2	135°, tolerance of diameter h8.	2599.311
	Polished section of the envelope of	2599.312
	cone 118°, surface: bronze	2599.313
AN	Cuitable for highest descende of	2599.314
O III	Suitable for highest demands of	2599.315
	industry and craft. For boring to	2599.316
	alloyed and non alloyed steel and cast steel up to 900 N/mm², grey,	OAL 400 m
	ductile, sintered and malleable iron,	Order No.
	nickel silver and graphite, etc.	2599.403
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	HSS-G, long	2599.404
446	, , , , , , , , , , , , , , , , , , ,	2599.405
1 41 4		2599.406
VV		2599.407
		2599.408
<b>=</b>	Very good for hardest demands.	2599.409
	Here in different length for very fair	2599.410
( )	price.	2599.411
		2599.412
1111		2599.413
		2599.414
/ ×1	Corresponding diagrams	2599.415
(UPM)		2599.416
	packing unit = 1. PE tube. EAN	
	5	

	0-Ø	S-Ø	OAL	
Order No.	[mm]	[mm]	[mm]	€
3535.006	6	6	90	13,05
3535.008	8	8	90	19,05



	Milling cutter with twist drill head (ground point angle 118°) and chip flutes with rough teeth	The state of the s	For drilling and milling outlines with one tool. Suitable for wood, plasterboard, plastics and limited for nonferrous metals
倒	HSS		Especially for use in hand drill, unsuitable for boring in steel
UPM	ca. 2500 min-1, wood		packing unit = 1. PE tube. EAN



**Countersink for machine** 





	O-Ø	S-Ø	OAL	
Order No.	[mm]	[mm]	[mm]	€
3540.012	12	8	46	13,00
3540.016	16	8	47	16,35
3540.020	20	8	47	24,15

	Countersink three edged, countersinking angle of 90°	Sellin.	Countersinking and deburring in all metals
倒	HSS		Can easily be reground
UPM	ca. 500 min-1		packing unit = 1. PE tube. EAN



#### **Special Countersink**





	0-Ø	S-Ø	OAL	
Order No.	[mm]	[mm]	[mm]	€
3541.001	2-5	6	45	15,50
3541.002	5-10	8	48	18,05
3541.003	10-15	10	65	31,70
3541.004	15-20	12	85	55,50

Countersink with bored hole with one edge and countersinking angle of 90°	Countersinking in all metals, specially good results with nonferrous metals and hardwood
HSS	Easy handling because of great contact surface
ca. 500 min-1	packing unit = 1. PE tube. EAN

3690



Hole enlarger





	O-Ø	S-Ø	OAL	
Order No.	[mm]	[mm]	[mm]	€
3690.001	3 - 14	6	62	24,15
3690.002	6 - 20	8	70	27,55
3690.003	16 - 30	10	75	49.95

Two edged hole cutter	S. Pitter	Continous drilling of big holes and boring up holes of thinwalled materials
HSS		Suitable for sheet steel 0,1 - 2 mm, V2A sheet 0,1 - 1 mm, non-ferrous metals 0,1 - 5 mm, plastics up to 10 mm
ca. 1000 min-1, non-ferrous metal		packing unit = 1. PE tube. EAN



	0-Ø	S-Ø	OAL	
Order No.	[mm]	[mm]	[mm]	€
3692.012	4 - 12	6	69	42,20
3692.020	6 - 20	8	73	54,95
3692.030	6 - 30	10	95	80,50

	Two edged hole cutter, cylindrical gradation and scale of diameter	S. C. Line	The hole cutter drills and simultaneously deburrs with the following step
倒	HSS		Continous drilling to thinnest sheets without pre-drilling
UPM	ca. 1000 min-1, non-ferrous metal		packing unit = 1. PE tube. EAN







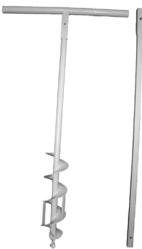




			-		
OAL 110 mm					
	0-ø	S-Ø	OAL	Spiral I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
2188.104	4	SDS plus	110	50	6.80
2188.105	5	SDS plus	110	50	5,40
2188.106	6	SDS plus	110	50	5,40
2188.108	8	SDS plus	110	50	6,30
2188.110	10	SDS plus	110	50	6,75
	10	SDS plus	110	30	0,73
0AL 160 mm	~ ~	~ ~			
	,0-Ø	.s-ø	OAL	Spiral I.	_
Order No.	[mm]	[mm]	[mm]	[mm]	€
2188.405	5	SDS plus	160	100	6,10
2188.406	6	SDS plus	160	100	5,85
2188.408	8	SDS plus	160	100	6,30
2188.410	10	SDS plus	160	100	6,90
2188.412	12	SDS plus	160	100	9,30
2188.414	14	SDS plus	160	100	12,95
2188.515	15	SDS plus	160	100	16,20
OAL 210 mm					
	O-Ø	S-Ø	OAL	Spiral I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
2188.505	5	SDS plus	210	150	6,75
2188.506	6	SDS plus	210	150	6,95
2188.508	8	SDS plus	210	150	8,30
2188.510	10	SDS plus	210	150	9,80
2188.512	12	SDS plus	210	150	10,80
2188.514	14	SDS plus	210	150	15,65
2188.516	16	SDS plus	210	150	19,50
		ODO piuo		200	20,00
0AL 260 mm	0.0	c a	041	Calasti	
Oudou No	0-Ø	S-Ø	OAL	Spiral I.	•
Order No.	[mm]	[mm]	[mm]	[mm]	€
2188.606	6	SDS plus	260	200	11,60
2188.608	8	SDS plus	260	200	11,70
2188.610	10	SDS plus	260	200	9,95
2188.612	12	SDS plus	260	200	13,20
2188.614	14	SDS plus	260	200	16,50
2188.615	15	SDS plus	260	200	17,80
0AL 310 mm					
	O-Ø	S-Ø	OAL	Spiral I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
2188.710	10	SDS plus	310	250	11,75
2188.712	12	SDS plus	310	250	16,65
2188.714	14	SDS plus	310	250	16,90
2188.716	16	SDS plus	310	250	26,65
OAL 460 mm					
	0-Ø	S-Ø	OAL	Spiral I.	
Order No.	[mm]	[mm]	[mm]	[mm]	€
2188.908	8	SDS plus	460	400	22,30
2188.910	10	SDS plus	450	400	32,15
2188.912	12	SDS plus	460	400	28,85
2188.914	14	SDS plus	460	400	29,25
2188.915	15	SDS plus	450	400	31,30
2188.916	16	SDS plus	450	400	34,10
		ODO pius	.50	.00	5-,-5

	High quality, robust masonry drill with four grooves, apt for hammer drills with SDS chuck. Fast drilling by the lank and chisel formed drill head. High stability is ensured	For all hammer drills with SDS-Plus and HILTI chunk. High quality for the professional
田田	Carbide tipped	Specially suited for drilling dowels holes in fastening technology with SDS-plus hammer
UPM	Hammer Drill	packing unit = 1. PE bag. EAN





	O-Ø	OAL	
Order No.	[mm]	[mm]	€
4191.070	70	1100	95,15
4191.090	90	1100	97,00
4191.110	110	1100	105,95
4191.130	130	1100	117,45
4191.150	150	1100	119,25
4191.200	200	1100	135,40
4191.250	250	1100	148,80
Extension			
		OAL	
Order No.	Description	[mm]	€
4191.001	fit for reference 4191, Ø 70 - 250mm	1100	25,60

Soil Auger with forged welded spiral. The drill has a Thandle made of metal and with the aid of a plug extending indefinitely prolongable	For drilling holes for garden fence, plants, frames, telephone poles, tree irrigation, etc.
steel	Before you start working you should have a good breakfast and with a pair of gloves the work will be child's play
So fast the arms make it	packing unit = 1 piece bulk













# **Hand tools**

Pricker/ Reaming Awl, square/ Pricker and Awl, sharpened

Countersink with handle

Cutting Tool for wood threads + screws

Dowel pointer

Dowel markers

Gimlet

133

129

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130

131

132

132



FAMAL

Piercer with con	Piercer with continious blade						
	Ø	OAL	Cutting I.				
Order No.	[mm]	[mm]	[mm]	€			
2000.100	6	190	90	8,70			
Piercer with rou	Piercer with round blade						
	Ø	OAL	Cutting I.				
Order No.	[mm]	[mm]	[mm]	€			
2001.100	6	190	90	9,75			
Piercer with sha	Piercer with sharpened chamfer						
	Ø	OAL	Cutting I.				
Order No.	[mm]	[mm]	[mm]	€			
2006.100	6	190	90	10,15			

	Piercer with continous blade, lacquered wooden handle and percussion plate. Piercer with round blade, reamer with a blade of 6 mm, square edged, piercer with sharpened chamfer	Septim 1	For piercing to all European solid wood, all boards laminated and uncoated
团	tool steel		The groove of the piercer allows a special growing simple and convenient operation
UPM			packing unit = 1. in quadropack. EAN



**Countersink with handle** 







#### Countersink with plastic handle

Order No.	[mm]	€
3533.012	12	5,85
3533.016	16	6,05
Countersink with wooden handle		
	Ø	
Order No.	[mm]	€
3533.112	12	6,00
3533.116	16	6,30

Ø

	Countersink with 5 edges 90° countersink and either with wooden or plastic handle	September 1	For fast countersinking by hand.
<b>M</b>	tool steel		The wooden handle is specially hand friendly
UPM	By hand		packing unit = 1. Welded on cardboard. EAN

	Ø	Ø	Core	lead/1"	
Order No.	[mm]	[Inch]	[mm]	[mm]	€
1894.013	13	1/2	11	8	364,05
1894.016	16	5/8	14	7	364,05
1894.019	19	3/4	16	6	380,35
1894.022	22	7/8	18	5,5	415,50

	Quadripartite set with die stock, screw tap, tap wrench and a core hole drill in high quality wood case	September 1	For cutting internal and external threads at wooden workpieces like chair legs, nutcrackers etc.
	tool steel		In a stable wooden box with all necessary tools
UPM	By hand		packing unit = 1. Wooden box. EAN

OOO Profi

Cutting Tool for wood threads + screws





	Ø	Ø	Core	lead/1"	
Order No.	[mm]	[Inch]	[mm]	[mm]	€
1895.013	13	1/2	11	8	310,90
1895.016	16	5/8	14	7	313,65
1895.019	19	3/4	16	6	326,60
1895.022	22	7/8	18	5,5	364,05
1895.025	25	1	21	5	459,25
1895.028	28	1 1/8	23	4,5	526,45
1895.032	32	1 1/4	26	4	599,25



Set of two parts with die stock and screw tap	S. Shirt	For cutting internal and external threads at wooden workpieces like chair legs, nutcrackers etc.
Tool steel		Suitable for all kinds of solid wood
By hand		packing unit = 1. Cardboard. EAN



	Ø	OAL	S-Ø	
Order No.	[mm]	[mm]	[mm]	€
2009.020	20	80	8	47,65
2009.030	30	100	10	73,05

	Dowel sharpener with one edge and parallel shank. Inner angle ca. 55°	For sharpening all dowels so that they can easily put into the drill holes
倒	Tool steel	Dowels must not be lead by hand to the drilliing machine
UPM	500 - 1000 min-1, beech wood	packing unit = 1. Welded on cardboard. EAN

Hand tools

132



**Dowel markers** 



	Ø	
Order No.	[mm]	€
3685.006	6	5,80
3685.008	8	5,90
3685 010	10	6.65







	Conventional dowel marker with centre point and exact fitting	For exact marking of blind dowel holes to all kinds of wood and uncoated boards
倒	Steel	Good dimensioned point guarantees perfect working
UPM		packing unit = 10 pcs. in one PE tube. EAN





	O-Ø	OAL	
Order No.	[mm]	[mm]	€
2152.002	2	115	3,05
2152.003	3	125	3,05
2152.004	4	140	3,40
2152.005	5	145	3,85
2152.006	6	155	5,90
Sets on care	d boards		
Order No.	Description		€
2152.503	3 pcs. Set on Rose plastic board. Ø 3,	4, 5 mm	9,20
2152.505	5 pcs. Set on Rose plastic board. Ø 2,	3, 4, 5, 6 mm	16,25

Classical black painted gimlet with lug Classical gimlet in solid design. With cylintrical shank and crest of thread	S. Filtr	For manually predrilling holes into all sorts of wood
Tool steel		For hardwood we recommend to pierce with a pricker 2006.100
show me what you can!		Packing unit = 10. On Rose-card. EAN







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Quality products presented in an optimal way

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Custom-made tools

Speed diagram

Quality classification

Article index

General terms and conditions

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## **Quality products presented in an optimal way**

FAYA Besserbonrer

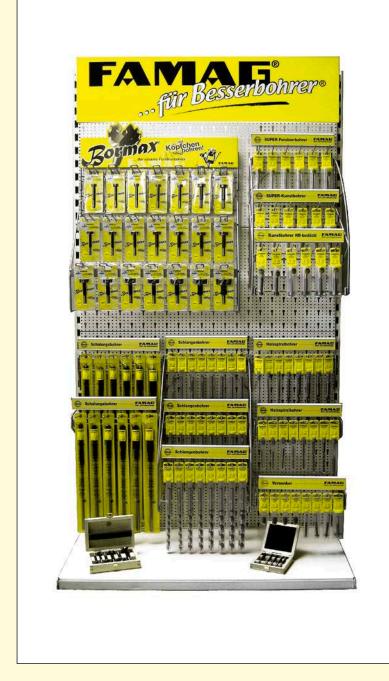
At FAMAG there are no rigidly specified assortments that do not fit to your business. The existence of different target groups alone forbids standardized systems. Tell us about your wishes and target groups and together we

will find the ideal POS sales presentation according to your needs. At your disposal there are different flexible presentation systems that can be arranged clearly and promotionally effective.





Even presentations on a minimal space are possible thanks to the counter carousel and other modules.





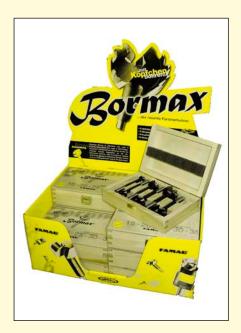


## **Quality products presented in an optimal way**

FA VIA GONTER®

Do not forget the Bormax-displays as a counter-top presentation. These are often the start for the professional user - your customer - into the FAMAG product world.

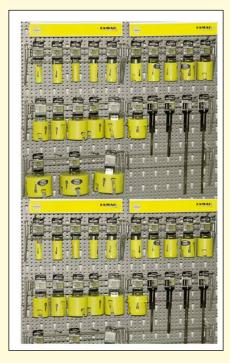
 $\dots$  and if you find out, that an article doesn´t sell – no problem. We will replace it without any ifs or buts!













### **Service and Contact**



FAMAG works on an international level and today we sale our "Made in Germany" quality in many European countries. Of course our sales staff speaks English, Spanish and German. Call or write us an email:

#### **Germany:**

#### Virginia Vázquez-Capilla

**Tel** + 49 (2191) 9284 15 **email** vvc@famag.com

#### **Germany:**

#### Jéssica Vázquez-Capilla

**Tel** + 49 (2191) 9284 11 **email** jvc@famag.com

For orders or questions from United Kingdom, you can also contact our representative in U.K.:

#### **United Kingdom:**

#### **Andy Vaughan**

Mobile + 44 (0) 771 890 5674 Office + 44 (0) 148 771 1505 Web www.credence.biz email andy@credence.biz

#### Delivery service and shipping costs to U.K.

Usually orders leave our premises the next day – often even the same day – to be available as soon as possible. Please count with a delivery time of 2-3 days. In order to calculate the shipping costs, we offer you the following delivery service:

#### For orders with a value of goods:

until € 250,- we calculate € 10,over € 250,- delivery free of charge!

Try us, you will be pleasantly surprised!







Custom-made products, special requests, extraordinary requirements or particular, individual tasks? We are at your service!

As an experienced manufacturer and specialist with a long tradition and a philosophy that is committed to customer needs and high quality demands, we offer you a competent and expert support in all application questions that arise.

So if you do not find the appropriate tool among our product range, please contact us!

Go ahead and describe the exact application – together we will come to a solution. This may be either a combination of standard tools or a special custom-made tool, which will be designed according to your individual requirements.

If it is possible to fulfil your task by one of our standard tools, quick help can be provided because most of our 4,500 quality tools are available on stock. If not, we dedicate ourselves with all our competence to the realization of custom-made products, special requests and extraordinary requirements. In this case the delivery will take a little bit longer depending on the extent and effort. A sketch, a pattern or a drawing always leads to a better understanding and facilitates the production process.

An important parameter that determines the price is the quantity. This also applies to the realization of changes in shaft, special shafts and measurements concerning our standard tools.

By the way, augers can be produced up to a diameter of 80 mm on our CNC-machines. With our latest machine a spiral length up to 2,500 mm is even possible.

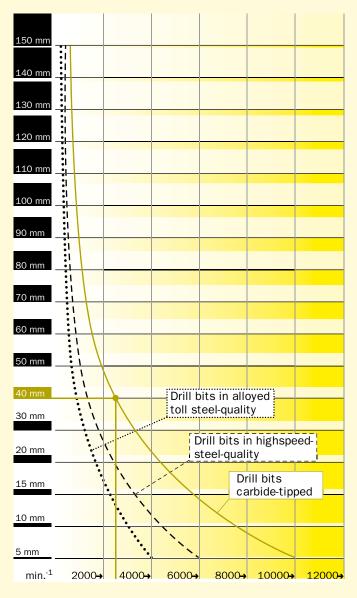
For step drill bits we prepared an enquiry form concerning the series of articles No. 1887 on page 55. Please do not forget to state the desired quantity here as well!

Our specialists support you with regard to all technical questions. Just call us, we will be glad to advise you!

FAMAG-Werkzeugfabrik GmbH & Co. KG Rather Straße 29 42855 Remscheid, Germany

Telefon: +49 (2191) 9284-0 Telefax: +49 (2191) 9284-20 email: info@famag.com

www.famag.com



We recommend selecting the use of the tools according to the material being worked with. Here are some tips:

#### Drill bits in alloyed tool steel-quality: .....

Best application in softwoods like spruce, pine and poplar. An exception is the TS-Bormax® drill bit; it can not only be used for softwood but also for European hardwood and board materials. Good results can also be achieved in soft and medium-hard plastics.

#### Drill bits in high-speed-steel-quality: \_\_\_\_\_

Good application in all softwoods and many hardwoods as well as MDF.

#### Drill bits carbide-tipped: \_\_\_\_

Less suitable for softwoods (exception CT-Bormax³) but ideal for hardwoods and exotic hardwoods. Very good results in board materials as well as veneer- and plastic-coated panels. Furthermore suitable for drilling in hard plastics.

Please choose the tool material from the three characteristics. The intersection of the graph with the corresponding diameter of the drill bit shows the recommended rpm. Please do not exceed the recommended rpm, because this will have a negative impact on the drilling quality and the lifetime of the tools.

#### **Example:**

A TCT-cylindric boring bit drill (e.g. Series 1662), Ø 40 mm, equals a recommended rpm of 2.500 min<sup>-1</sup>.

4.40



Different applications require different qualities. In order to make it easier for you, we divide our tools into four main quality categories. An amateur with the task to drill three holes in poplar wood certainly needs a different tool than for example the furniture industry with its mass production, where thousands of holes have to be drilled in beech wood. Our aim is to meet both requirements with our product range. Therefore the amateur should be very satisfied with the result of a 30-mm-drill a Forstner bit of the quality level "classic" achieves in softwood.

Please be guided by our quality classification or call us: We will be glad to advise you!

#### O quality level hobby:

reasonable quality tools for the amateur segment

#### OO quality level classic:

for the quality-conscious user

#### OOO quality level profi:

professional tools for the craftsman with high demanding requirements concerning tool and application

#### OOOO quality level premium:

wear-resistant tools of the highest quality level, even for extreme conditions of use

#### Info-blocks



The description of the tool design



Tool material



Recommended r.p.m. and specific example for the most common diameters in the according field of application



Description of application



Practical advice and specialty of the tool



Packaging unit and information on individual packaging

### **Abbreviations**

OØouter diameterIØinner diameterSØshank diameter

L length of shaft/shank

length

OAL overall length
 MC/HS main cutters
 EL effective length
 SL spiral length
 W weight
 T teeth
 R radius

 $\angle$  degrees **Cutting I.** cutting length

max.r.p.m. maximum acceptable

r.p.m.

L1 length of first stepL2 length of second step

D1 core diameterLead/1" no. of threadsPU packing unit



Accessories for Drill Rigs	44	Machine Drill for construction of stairs	
Adjustable Countersink carbide tipping		Machine Drill long	
Adjustable stop for Countersink		Machine Drill with brad point	
Auger Bit carbide tipped		Machine Drill with brad point and cutting lips	
Auger bit for hardwood		Machine Drill with brad point and cutting lips carbide tipped	
Auger Bit with Morse taper shank No. 2		Machine Drill with brad point and cutting lips, extra long	
Auger Bit, Lewis pattern		Machine Drill with brad point and cutting lips, HSS	
Auger Bit, Lewis pattern		Machine Drill with brad point and cutting lips, left direction  Ovolo Bit	
Beading Bit		Panel Pilot Bit	
Bevel Bit		PAROLI 100 insolation-hole saw	
Bevel Bit		PAROLI all-round 165, TCT-hole saw	
Bevel Trimming Bit		PAROLI all-round 50, TCT-hole saw	
Bi-Metal HoleSaw HSS rollershutter		PAROLI Bi-Metal-hole saw HSS-Co	
Boarding and Plumbing Auger		Pilot bit for series 1617 a. 1618	
Boarding and Plumbing Auger HSS	62	Pilot guided Bormax®	12
Boarding and Plumbing Auger, SDS-plus shank		Pilot-Drill bit for series 1617 u. 1618	25
Bormax®, Forstner bit	10	Plunge For Round & Ogee Bit	84
Bormax®, Forstner Bit	11	Pricker/ Reaming Awl, square/ Pricker and Awl, sharpened	134
Bormax®, Forstner Bit, long version	13	Rabbeting Bit	85
Bull Nose Bit		Reversing blade carbide	99
Carbide-tipped Straight Bit with TC Center Tip		Roman Ogee Bit	
Classic Cove Bit		Rounding-Over Bit	
Classic Hole Saw		Screw Auger, Lewis pattern	
Classical Bit		Self-centreing hinge boring bit	
Classical Bit		Self-Feed bit	
Combi Trimmer Bit - Flush & Bevel		Shell Drill Countersink	
Core Bit		Shell Drill-Countersink Hobby, Economy	
Countersink		Shell Drill-Countersink rectangular 180°	
Countersink for Auger Bits 180°		Slot Mortise Bit	
Countersink for machine		Slotting Cutter	
Countersink with handle		Soil Auger	
		<u> </u>	
Cutting Tool for wood threads + screws	135	Special Adapter	
Cutting Tool for wood threads + screws		Special AdapterSpecial auger bit for joinery machines	
<u> </u>	135	Special Adapter	37
Cutting Tool for wood threads + screws	135 <b>57</b>	Special auger bit for joinery machines	37 24
Cutting Tool for wood threads + screws  Depth adjusting collars	135 <b>57</b>	Special auger bit for joinery machines	37 24 25
Cutting Tool for wood threads + screws	135 57 27	Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G	37 24 25 127
Cutting Tool for wood threads + screws	135 27 17 17	Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute	37 24 25 127 52
Cutting Tool for wood threads + screws	135 27 17 17 21	Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade	37 24 25 52 52
Cutting Tool for wood threads + screws	135 27 17 21 22 22	Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade	3724251275296
Cutting Tool for wood threads + screws.  Depth adjusting collars	135271721222281	Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Step drill HSS	37242552309696
Cutting Tool for wood threads + screws.  Depth adjusting collars	135271721222236	Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Step drill HSS  Stepped machine Drill	37245252969696
Cutting Tool for wood threads + screws.  Depth adjusting collars  Depth Guide  Depth Stop supported by ball bearing for  FAMAG-Forstner bits 1622, 1630, 1663.  Disc + Plug Cutter  Disc + Plug Cutter  Disc + Plug Cutter, Carbide-tipped.  Dovetail Bit  Dowel markers  Dowel pointer	135 27 27 17 21 22 22 81 136	Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Step drill HSS  Stepped machine Drill  Stepped machine Drill	37 24 25 30 96 96 96 58
Cutting Tool for wood threads + screws.  Depth adjusting collars.  Depth Guide  Depth Stop supported by ball bearing for  FAMAG-Forstner bits 1622, 1630, 1663  Disc + Plug Cutter  Disc + Plug Cutter  Disc + Plug Cutter  Dovetail Bit  Dowel markers  Dowel pointer  Drill and milling cutter HSS	135	Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Step drill HSS  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill, custom made	37 24 25 30 96 96 96 96 96
Cutting Tool for wood threads + screws.  Depth adjusting collars.  Depth Guide  Depth Stop supported by ball bearing for  FAMAG-Forstner bits 1622, 1630, 1663  Disc + Plug Cutter  Disc + Plug Cutter  Disc + Plug Cutter  Dovetail Bit  Dowel markers  Dowel pointer  Drill and milling cutter HSS  Drill for door viewer	13527	Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Step drill HSS  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill, custom made  Straight And Plunge Bit One Blade	37 24 25 30 96 96 96 96 96 96
Cutting Tool for wood threads + screws  Depth adjusting collars  Depth Guide  Depth Stop supported by ball bearing for  FAMAG-Forstner bits 1622, 1630, 1663  Disc + Plug Cutter  Disc + Plug Cutter  Disc + Plug Cutter  Dovetail Bit  Dowel markers  Dowel pointer  Drill and milling cutter HSS  Drill Rig for Auger Bits	135	Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Step drill HSS  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill, custom made  Straight And Plunge Bit One Blade  Straight Bit	37 24 25 52 30 96 96 96 96 96 99 99 99
Cutting Tool for wood threads + screws.  Depth adjusting collars		Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Step drill HSS  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill, custom made  Straight And Plunge Bit One Blade  Straight Bit  Straight Bit	37 24 25 25 30 96 96 128 58 59 77 80
Cutting Tool for wood threads + screws  Depth adjusting collars  Depth Guide  Depth Stop supported by ball bearing for  FAMAG-Forstner bits 1622, 1630, 1663  Disc + Plug Cutter  Disc + Plug Cutter  Disc + Plug Cutter  Dovetail Bit  Dowel markers  Dowel markers  Dowel pointer  Drill and milling cutter HSS  Drill Rig for Auger Bits  Drill Rig for stairs building  Drill-Countersink-Set with bit shank		Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Step drill HSS  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill, custom made  Straight And Plunge Bit One Blade  Straight Bit  Straight Bit  Straight Bit  Straight Bit - Template Profile	37 24 25 30 96 96 96 58 58 59 59 59
Cutting Tool for wood threads + screws.  Depth adjusting collars		Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Step drill HSS  Stepped machine Drill  Stepped machine Drill, custom made  Straight And Plunge Bit One Blade  Straight Bit  Straight Bit  Straight Bit  Straight Bit - Template Profile  SUPER-Cylinder Boring Bit	37 24 25 30 96 96 58 60 95 95 
Cutting Tool for wood threads + screws  Depth adjusting collars  Depth Guide  Depth Stop supported by ball bearing for  FAMAG-Forstner bits 1622, 1630, 1663  Disc + Plug Cutter  Disc + Plug Cutter  Disc + Plug Cutter  Dovetail Bit  Dowel markers  Dowel markers  Dowel pointer  Drill and milling cutter HSS  Drill Rig for Auger Bits  Drill Rig for stairs building  Drill-Countersink-Set with bit shank		Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Step drill HSS  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill, custom made  Straight And Plunge Bit One Blade  Straight Bit  Straight Bit  Straight Bit  Straight Bit - Template Profile  SUPER-Cylinder Boring Bit, carbide-tipped, long version, Precision	37 24 25 30 96 96 96 59 58 60 95 95 95 95 96 
Cutting Tool for wood threads + screws.  Depth adjusting collars		Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Step drill HSS  Stepped machine Drill  Stepped machine Drill, custom made  Straight And Plunge Bit One Blade  Straight Bit  Straight Bit  Straight Bit  Straight Bit - Template Profile  SUPER-Cylinder Boring Bit	
Cutting Tool for wood threads + screws.  Depth adjusting collars  Depth Guide  Depth Stop supported by ball bearing for  FAMAG-Forstner bits 1622, 1630, 1663.  Disc + Plug Cutter  Disc + Plug Cutter  Disc + Plug Cutter, Carbide-tipped.  Dovetail Bit  Dowel markers  Drill and milling cutter HSS  Drill for door viewer  Drill Rig for Auger Bits  Drill-Countersink-Set with bit shank  Drill-Countersink-Sets  Expansive Bit for machine		Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Step drill HSS  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill, custom made  Straight And Plunge Bit One Blade  Straight Bit  Straight Bit  Straight Bit  Straight Bit - Template Profile  SUPER-Cylinder Boring Bit, carbide-tipped, long version, Precision  SUPER-Cylinder Boring Bit, carbide-tipped, Precision	
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Cutting Tool for wood threads + screws.  Depth adjusting collars		Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Step drill HSS  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill  Straight And Plunge Bit One Blade  Straight Bit  Straight Bit  Straight Bit  Straight Bit  Straight Bit, Carbide-tipped, long version, Precision  SUPER-Cylinder Boring Bit, carbide-tipped, Precision  SUPER-Forstner Bit, Classic  SUPER-Forstner Bit, Classic	37 24 25 25 30 96 96 128 58 60 77 80 20 14 15
Cutting Tool for wood threads + screws.  Depth adjusting collars		Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Step drill HSS  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill  Straight And Plunge Bit One Blade  Straight Bit  Straight Bit  Straight Bit - Template Profile  SUPER-Cylinder Boring Bit, carbide-tipped, long version, Precision  SUPER-Cylinder Boring Bit, carbide-tipped, Precision  SUPER-Forstner Bit, Classic  TCT-Bormax³, Forstner bit carbide-tipped  TCT-Bormax³, Forstner bit carbide-tipped  Torus Bit	37 24 25 30 26 30 96 96 128 58 59 77 80 78 16 16 19 19 19 89
Cutting Tool for wood threads + screws.  Depth adjusting collars  Depth Guide  Depth Stop supported by ball bearing for  FAMAG-Forstner bits 1622, 1630, 1663  Disc + Plug Cutter  Disc + Plug Cutter  Disc + Plug Cutter, Carbide-tipped  Dovetail Bit  Dowel markers  Dowel markers  Drill for door viewer  Drill Rig for Auger Bits  Drill Rig for stairs building  Drill-Countersink-Set with bit shank  Drill-Countersink-Sets  Expansive Bit for machine  Extension shank  Finger Grip Bit  Flush Trimmer Bit  Flush Trimmer Bit  Flush Trimmer Bit  Flush Trimmer Bit  Frush Trimmer Bit		Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Step drill HSS  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill  Straight And Plunge Bit One Blade  Straight Bit  Straight Bit  Straight Bit - Template Profile  SUPER-Cylinder Boring Bit, carbide-tipped, long version, Precision  SUPER-Cylinder Boring Bit, carbide-tipped, Precision  SUPER-Forstner Bit, Classic  TCT-Bormax³, Forstner bit carbide-tipped  TCT-Bormax³, Forstner bit carbide-tipped  Torus Bit  Twist Drill long version HSS-G	37 24 25 30 26 30 96 96 128 58 60 77 80 78 40 14 15 89
Cutting Tool for wood threads + screws.  Depth adjusting collars		Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Step drill HSS  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill  Straight And Plunge Bit One Blade  Straight Bit  Straight Bit  Straight Bit - Template Profile  SUPER-Cylinder Boring Bit, carbide-tipped, long version, Precision  SUPER-Cylinder Boring Bit, carbide-tipped, Precision  SUPER-Forstner Bit, Classic  SUPER-Forstner Bit, Classic  TCT-Bormax³, Forstner bit carbide-tipped  TCT-Bormax³, Forstner bit carbide-tipped  Torus Bit  Twist Drill long version with 1/4" Hexagon Drive (Bit)	37 24 25 30 30 96 96 128 58 59 77 78 20 30 96 97 180 98 98 99 111
Cutting Tool for wood threads + screws.  Depth adjusting collars.  Depth Guide		Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Step drill HSS  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill  Straight And Plunge Bit One Blade  Straight Bit  Straight Bit  Straight Bit - Template Profile  SUPER-Cylinder Boring Bit, carbide-tipped, long version, Precision  SUPER-Cylinder Boring Bit, carbide-tipped, Precision  SUPER-Forstner Bit, Classic  SUPER-Forstner Bit, Classic  TCT-Bormax³, Forstner bit carbide-tipped  TCT-Bormax³, Forstner bit carbide-tipped  Torus Bit  Twist Drill long version with 1/4" Hexagon Drive (Bit)  Twist Drill long version with 1/4" Hexagon Drive (Bit)	
Cutting Tool for wood threads + screws.  Depth adjusting collars.  Depth Guide  Depth Stop supported by ball bearing for FAMAG-Forstner bits 1622, 1630, 1663  Disc + Plug Cutter  Disc + Plug Cutter  Disc + Plug Cutter, Carbide-tipped  Dowel ail Bit  Dowel markers  Dowel markers  Dorill for door viewer  Drill Rig for Auger Bits  Drill Rig for stairs building  Drill-Countersink-Set with bit shank  Drill-Countersink-Sets with rotating depth stop  Drill-Countersink-Sets  Expansive Bit for machine  Extension shank  Finger Grip Bit  Flush Trimmer Bit  Flush Trimming Bit - No Plunge Two Blade  Gimlet  Hammer Drills carbide-tipped, SDS-plus shank		Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Step drill HSS  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill, custom made  Straight And Plunge Bit One Blade  Straight Bit  Straight Bit  Straight Bit - Template Profile  SUPER-Cylinder Boring Bit, carbide-tipped, long version, Precision  SUPER-Cylinder Boring Bit, carbide-tipped, Precision  SUPER-Forstner Bit, Classic  SUPER-Forstner Bit, Classic  TCT-Bormax³, Forstner bit carbide-tipped  TCT-Bormax³, Forstner bit carbide-tipped  Torus Bit  Twist Drill long version with 1/4" Hexagon Drive (Bit)  Twist Drill short version with 1/4" Hexagon Drive (Bit)  Twist Drills DIN 338, fully ground	37 24 25 30 26 30 96 96 128 58 59 59 77 80 20 14 15 89 89 121 113
Cutting Tool for wood threads + screws.  Depth adjusting collars.  Depth Guide		Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Step drill HSS  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill  Straight And Plunge Bit One Blade  Straight Bit  Straight Bit  Straight Bit - Template Profile  SUPER-Cylinder Boring Bit, carbide-tipped, long version, Precision  SUPER-Cylinder Boring Bit, carbide-tipped, Precision  SUPER-Forstner Bit, Classic  SUPER-Forstner Bit, Classic  TCT-Bormax³, Forstner bit carbide-tipped  TCT-Bormax³, Forstner bit carbide-tipped  Torus Bit  Twist Drill long version with 1/4" Hexagon Drive (Bit)  Twist Drill short version with 1/4" Hexagon Drive (Bit)  Twist Drills DIN 338, fully ground  Twist Drills DIN 338, fully ground packaged	37 24 25 30 26 30 96 96 128 60 59 95 77 80 16 20 19 113 1113 1112
Cutting Tool for wood threads + screws.  Depth adjusting collars  Depth Guide  Depth Stop supported by ball bearing for  FAMAG-Forstner bits 1622, 1630, 1663.  Disc + Plug Cutter  Disc + Plug Cutter  Disc + Plug Cutter  Dovetail Bit  Dowel markers  Dowel markers  Drill and milling cutter HSS  Drill for door viewer  Drill Rig for Auger Bits  Drill-Countersink-Set with bit shank  Drill-Countersink-Sets with rotating depth stop  Drill-Countersink-Sets  Expansive Bit for machine  Extension shank  Finger Grip Bit  Filush Trimmer Bit  Flush Trimmer Bit  Flush Trimming Bit - No Plunge Two Blade  Gimlet  Hammer Drills carbide-tipped, SDS-plus shank  Hammer Drills carbide-tipped, SDS-plus shank  Hammer Drills carbide-tipped, SDS-plus shank  Hole enlarger		Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill  Straight And Plunge Bit One Blade  Straight Bit  Straight Bit  Straight Bit - Template Profile  SUPER-Cylinder Boring Bit, carbide-tipped, long version, Precision  SUPER-Cylinder Boring Bit, carbide-tipped, Precision  SUPER-Forstner Bit, Classic  SUPER-Forstner Bit, Classic  TCT-Bormax³, Forstner bit carbide-tipped  TCT-Bormax³, Forstner bit carbide-tipped  Torus Bit  Twist Drill long version with 1/4" Hexagon Drive (Bit)  Twist Drills blN 338, fully ground  Twist Drills DIN 338, fully ground	37 24 25 30 26 30 96 96 128 60 59 95 77 80 16 20 19 113 112 115 117
Cutting Tool for wood threads + screws.  Depth adjusting collars  Depth Guide  Depth Stop supported by ball bearing for FAMAG-Forstner bits 1622, 1630, 1663.  Disc + Plug Cutter  Disc + Plug Cutter  Disc + Plug Cutter, Carbide-tipped.  Dovetail Bit  Dowel markers  Dowel markers  Dowel more result of the start building cutter HSS  Drill and milling cutter HSS  Drill Rig for Auger Bits  Drill-Countersink-Set with bit shank  Drill-Countersink-Sets with rotating depth stop  Drill-Countersink-Sets  Expansive Bit for machine  Extension shank  Finger Jointer Set  Flush Trimming Bit  Flush Trimming Bit  Flush Trimming Bit  Hammer Drills carbide-tipped, SDS-plus shank  Hinge Boring Bit  Hole enlarger.  Hole saw for carpentry.		Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Staggered Straight Bit Two Blade  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill, custom made  Straight And Plunge Bit One Blade  Straight Bit  Straight Bit  Straight Bit  Straight Bit - Template Profile  SUPER-Cylinder Boring Bit, carbide-tipped, long version, Precision  SUPER-Cylinder Boring Bit, carbide-tipped, Precision  SUPER-Forstner Bit, Classic  SUPER-Forstner Bit, Classic  SUPER-Forstner Bit carbide-tipped  TCT-Bormax³, Forstner bit carbide-tipped  TCT-Bormax³, Forstner bit carbide-tipped  Torus Bit  Twist Drill long version HSS-G  Twist Drill long version with 1/4" Hexagon Drive (Bit)  Twist Drills DIN 338, fully ground  Twist Drills DIN 338, fully ground titanium coated.	37 24 25 30 26 30 96 96 128 60 59 95 77 80 16 20 19 113 112 115 117 122 121
Cutting Tool for wood threads + screws.  Depth adjusting collars  Depth Guide  Depth Stop supported by ball bearing for FAMAG-Forstner bits 1622, 1630, 1663.  Disc + Plug Cutter  Disc + Plug Cutter.  Disc + Plug Cutter, Carbide-tipped.  Dovetail Bit  Dowel markers  Dowel markers  Dorill and milling cutter HSS  Drill Rig for door viewer  Drill Rig for Auger Bits  Drill-Countersink-Set with bit shank.  Drill-Countersink-Sets with rotating depth stop  Drill-Countersink-Sets  Expansive Bit for machine  Extension shank  Finger Grip Bit  Flush Trimming Bit  Flush Trimming Bit  Flush Trimming Bit  Hole saw for carpentry  Hole Saw, Carbide-tipped.		Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Staggered Machine Drill  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill  Straight Bit  Straight Bit  Straight Bit  Straight Bit  Straight Bit, carbide-tipped, long version, Precision SUPER-Cylinder Boring Bit, carbide-tipped, Precision  SUPER-Forstner Bit, Classic  SUPER-Forstner Bit, Classic  SUPER-Forstner Bit, Classic  TCT-Bormax³, Forstner bit carbide-tipped  TCT-Bormax³, Forstner bit carbide-tipped  TCT-Bormax³, Forstner bit carbide-tipped  Torus Bit  Twist Drill long version HSS-G  Twist Drill long version with 1/4" Hexagon Drive (Bit)  Twist Drills DIN 338, fully ground  Twist Drills DIN 338, fully ground  Twist Drills double end, fully ground titanium coated  Twist Drills HSS-TiN DIN 338, fully ground titanium coated  Twist Drills, Co 5%, DIN 1669, fully ground, packaged	
Cutting Tool for wood threads + screws.  Depth adjusting collars  Depth Guide  Depth Stop supported by ball bearing for  FAMAG-Forstner bits 1622, 1630, 1663.  Disc + Plug Cutter  Disc + Plug Cutter  Disc + Plug Cutter, Carbide-tipped.  Dovetail Bit  Dowel markers  Dowel pointer  Drill for door viewer  Drill Rig for Auger Bits  Drill-Countersink-Set with bit shank  Drill-Countersink-Sets with rotating depth stop  Drill-Countersink-Sets  Expansive Bit for machine  Extension shank  Finger Grip Bit  Flush Trimmer Bit  Flush Trimmer Bit  Flush Trimming Bit  Hammer Drills carbide-tipped, SDS-plus shank  Hinge Boring Bit  Hole enlarger.  Hole Saw, Carbide-tipped  Keyhole Slot Cutter - Single Fluted  Keyhole Slot Cutter - Single Fluted		Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Staggered Machine Drill  Stepped machine Drill  Stepped machine Drill, custom made  Straight And Plunge Bit One Blade  Straight Bit  Straight Bit  Straight Bit  Straight Bit - Template Profile  SUPER-Cylinder Boring Bit, carbide-tipped, long version, Precision  SUPER-Cylinder Boring Bit, carbide-tipped, Precision  SUPER-Forstner Bit, Classic  SUPER-Forstner Bit, Classic  SUPER-Forstner Bit carbide-tipped  TCT-Bormax³, Forstner bit carbide-tipped  TCT-Bormax³, Forstner bit carbide-tipped  Torus Bit  Twist Drill long version with 1/4" Hexagon Drive (Bit)  Twist Drills DIN 338, fully ground  Twist Drills DIN 338, fully ground machine point in the spiral point  Twist Drills HSS-TiN DIN 338, fully ground titanium coated  Twist Drills, Co 5%, DIN 1669, fully ground with split point	
Cutting Tool for wood threads + screws.  Depth adjusting collars  Depth Guide  Depth Stop supported by ball bearing for FAMAG-Forstner bits 1622, 1630, 1663.  Disc + Plug Cutter  Disc + Plug Cutter  Disc + Plug Cutter, Carbide-tipped.  Dovetail Bit  Dowel markers  Dowle markers  Drill for door viewer  Drill Rig for Auger Bits  Drill-Countersink-Set with bit shank.  Drill-Countersink-Sets  Expansive Bit for machine  Extension shank  Finger Grip Bit  Flush Trimming Bit  Flush Trimming Bit  Hammer Drills carbide-tipped, SDS-plus shank  Hinge Boring Bit  Hole saw, Carbide-tipped  Keyhole Slot Cutter - Single Fluted  Keyhole Slot Cutter - Single Fluted  Keyhole Slot Cutter - Single Fluted  L-Shaped Driver PRO75		Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Staggered Machine Drill  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill  Straight Bit  Straight Bit  Straight Bit  Straight Bit  Straight Bit, carbide-tipped, long version, Precision SUPER-Cylinder Boring Bit, carbide-tipped, Precision  SUPER-Cylinder Boring Bit, carbide-tipped, Precision  SUPER-Forstner Bit, Classic  SUPER-Forstner Bit, Classic  SUPER-Forstner Bit carbide-tipped  TCT-Bormax³, Forstner bit carbide-tipped  TCT-Bormax³, Forstner bit carbide-tipped  Torus Bit  Twist Drill long version With 1/4" Hexagon Drive (Bit)  Twist Drills DIN 338, fully ground  Twist Drills DIN 338, fully ground titanium coated  Twist Drills HSS-TiN DIN 338, fully ground with split point, packaged  Twist Drills, Co 5%, DIN 338, fully ground with split point, packaged  Twist Drills, Co 5%, DIN 338, fully ground with split point, packaged	
Cutting Tool for wood threads + screws.  Depth adjusting collars  Depth Guide		Special auger bit for joinery machines.  Special Counterbore	
Cutting Tool for wood threads + screws.  Depth adjusting collars  Depth Guide  Depth Stop supported by ball bearing for FAMAG-Forstner bits 1622, 1630, 1663.  Disc + Plug Cutter  Disc + Plug Cutter  Disc + Plug Cutter, Carbide-tipped.  Dovetail Bit  Dowel markers  Dowle markers  Drill for door viewer  Drill Rig for Auger Bits  Drill-Countersink-Set with bit shank.  Drill-Countersink-Sets  Expansive Bit for machine  Extension shank  Finger Grip Bit  Flush Trimming Bit  Flush Trimming Bit  Hammer Drills carbide-tipped, SDS-plus shank  Hinge Boring Bit  Hole saw, Carbide-tipped  Keyhole Slot Cutter - Single Fluted  Keyhole Slot Cutter - Single Fluted  Keyhole Slot Cutter - Single Fluted  L-Shaped Driver PRO75		Special auger bit for joinery machines  Special Counterbore  Special Counterbore Carbide-tipped  Special Countersink  Special drill for wood and metal, HSS-G  Spiral Slot Miling Cutter with Spiral Flute  Staggered Straight And Plunge Bit Two Blade  Staggered Straight Bit Two Blade  Staggered Machine Drill  Stepped machine Drill  Stepped machine Drill  Stepped machine Drill  Straight Bit  Straight Bit  Straight Bit  Straight Bit  Straight Bit, carbide-tipped, long version, Precision SUPER-Cylinder Boring Bit, carbide-tipped, Precision  SUPER-Cylinder Boring Bit, carbide-tipped, Precision  SUPER-Forstner Bit, Classic  SUPER-Forstner Bit, Classic  SUPER-Forstner Bit carbide-tipped  TCT-Bormax³, Forstner bit carbide-tipped  TCT-Bormax³, Forstner bit carbide-tipped  Torus Bit  Twist Drill long version With 1/4" Hexagon Drive (Bit)  Twist Drills DIN 338, fully ground  Twist Drills DIN 338, fully ground titanium coated  Twist Drills HSS-TiN DIN 338, fully ground with split point, packaged  Twist Drills, Co 5%, DIN 338, fully ground with split point, packaged  Twist Drills, Co 5%, DIN 338, fully ground with split point, packaged	



1001	<b>57</b>	1662	17	3115	82
1002	58	1663	6	3118	83
1005	59	1663.2	7	3119	84
1010	16	1775	60	3121	89
1014	39	1880	55	3122	90
1402	41	1886	54	3123	85
1403	40	1887	55	3124	86
1405.210	25	1892	56	3125	85
1406	42	1894	131	3127	80
1410	30	1895	131	3131	79
1410.4	33	2000	130	3134	89
1411	33	2009	132	3135	90
1420	34	2100	62	3137	80
1469	23	2101	68	3138	88
1488.89	38	2106	68	3139	88
1492	35	2108	53	3148	87
1493	37	2115	61	3154	78
1494	36	2152	133	3155	78
1540	69	2155	100	3157	74
1575	42	2160	102	3158	91
1590	49	2166	98	3167	72
1593	52	2169	99	3191	94
1594	46	2170	105	3195	95
1595	47	2173	101	3201	93
1596	44	2174	103	3202	94
1597	45	2175	104	3203	93
1597.750	43	2188	126	3207	92
1597.750	.110	2202	64	3217	91
1599	48	2410	111	3227	92
1601	28	2411	113	3290	95
1607	27	2420	114	3491	51
1616	19	2421	116	3500	50
1616.1	20	2430	117	3510	70
1616.2	20	2440	118	3514	26
1617	22	2599	121	3532	61
1618	23	3101		3533	130
1619	24	3102	83	3535	122
1619.100	25	3104	77	3537	63
1621	15	3105	77	3540	122
1622	8	3106	79	3541	123
1622.2	9	3107	73	3572	67
1623	11	3107	76	3573	66
1624	10	3108	75	3577	65
1630	12	3109	84	3582	26
1630.2	13	3110		3685	132
1633	14	3112	86	3690	123
1639	21	3113	87	3692	124
1661	18	3114	81	4190	127



We only make regular deliveries to resellers and/or commercial consumers. The following General Terms and Conditions therefore apply to this group of persons (entrepreneurs) and legal persons under public law or special public assets within the meaning of § 310 (1) of the German Civil Code (BGB). All our offers and purchase and delivery contracts concluded with us are based solely on our General Terms and Conditions. Any deviations from these General Terms and Conditions require our express written approval.

## I. Scope of supply

The scope of supply shall be based on our written order confirmation. A deviation from the scope of supply (especially for custom-made articles) shall be permitted as long as there is no major difference from the agreed scope of supply and the deviations are reasonable for the customer. Partial deliveries shall be permitted if they do not lead to any disadvantages regarding use of the goods. During the delivery period, we shall reserve the right to make design and shape changes, which are due to an improvement in the state of the art or to legal requirements, provided the changes in the delivery item are minor and they are reasonable for the customer.

#### II. Delivery terms/Passing of risk in the case of shipment

- (1) When the net value of the goods is less than € 250,- we shall deliver ex works, excluding freight, postage and packing. In the case of small orders with a net goods value less than € 50,- we shall reserve the right to calculate a minimum quantity surcharge. When the net value of the goods exceeds € 250,- we shall deliver from Germany free destination (receiving station) or free German frontier, including freight, postage, packing (excluding carriage and local delivery charges, as well as costs for incidental charges such as couriers, express delivery, cash on delivery, etc., which shall be calculated separately). This shall not include drill rigs, soil augers and accessories, which shall always be delivered ex works, excluding freight, postage and packing. This provision shall also apply to other goods with a heavier weight and larger dimensions, which do not form part of our normal drill and tool product range. When the net value of the goods is more than € 1,500,we shall deliver FOB German airport or port.
- (2) In the case of deliveries from our depots, we shall levy a reasonable surcharge for prior carriage charges and warehouse service (maximum 5% of the net goods value). Packaging shall become the property of the customer and shall be charged by our company. Postage and packing costs shall be invoiced separately.
- (3) The dispatch method shall be chosen at our best discretion. When the goods are sent to the customer, but at the latest when they leave the factory/warehouse, risk of accidental loss or accidental deterioration of

the goods shall pass to the customer, irrespective of whether delivery is effected by our company or a third party commissioned by us, and irrespective of who pays the freight costs. Transport insurance shall only be provided at the express request of the customer and in return for payment. Transport damage shall be reported immediately to the carrier.

### III. Prices and price changes

- (1) All prices shall be shown in Euro per unit (piece, set, etc.) plus statutory VAT.
- (2) Price changes after conclusion of the contract shall be permitted if a period of more than three months has elapsed between the date of conclusion of the contract and the agreed delivery date. If wages, material costs, sales costs or market cost prices then rise before completion of the delivery, we shall be entitled to increase the price by a reason-able amount based on the cost increases.

### IV. Payment terms

Our invoices shall become due for payment within 10 days less 2% discount or in 30 days after delivery without any deductions. Invoices under  $\in$  50,– shall become due for payment immediately without any deductions. If the customer fails to pay on time, default interest amounting to 8% above the basic interest rate shall become due in accordance with § 247 of the German Civil Code (BGB). We shall expressly reserve the right to enforce a claim for further damage. Payments made by cheque or bill of exchange shall only be considered as made when honoured.

#### V. Reservation of title

- (1) We shall reserve title to the supplied goods until all claims from the delivery contract have been paid in full. If the customer infringes the contract, in particular by delays in payment, we shall be entitled to recover the goods after issuing a warning. The customer shall be obliged to return the goods in this case. Assertion of the reservation of title and recovery of the delivery items by us shall not be regarded as withdrawal from the contract.
- (2) The customer shall be entitled to resell the delivery items in the ordinary course of business. However, the customer shall now assign to us all claims amounting to the purchase price (including VAT) agreed between our company and the customer, which accrue to the customer through resale of the goods, i.e. irrespective of whether the delivery items are resold without processing or after processing. The customer shall be empowered to collect this claim after its assignment. Our authority to personally collect the claims shall not be affected as long as the customer duly complies with his payment obligations and is not in default of payment.



If this is the case, however, we may request the customer to stipulate the assigned claims and their debtors, provide all the information required for collection, hand over the related documents and inform the debtors (third parties) about assignment.

(3) We shall reserve the right to withdraw from the contract or terminate our obligation to perform if we become aware of a currently existing or future poor financial situation of the customer.

# VI. Warranty

- (1) Warranty claims by the customer shall presuppose that he has duly complied with his obligation to inspect the goods and notify defects in accordance with § 377 of the German Commercial Code (HGB).
- (2) Defect claims by the customer shall become statutebarred in 12 months after acceptance of the delivery item. The above provisions shall not apply if longer periods are legally prescribed in § 438 (1) No. 2, § 479 (1) and § 634a (1) of the German Civil Code (BGB). Our permission shall be obtained before goods are returned at any time.
- (3) If, despite all care being taken by our company, the delivered goods contain a defect which already existed at the time that risk was passed, we shall have the choice of either reworking the goods or delivering replacement goods subject to receiving notification of the defect in good time. We shall always be given the opportunity to effect supplementary performance within a reasonable period of time. Recourse claims shall remain unaffected by the above provision without restriction.
- (4) If we are unable to rectify a defect covered by our warranty obligation or if additional rework attempts are unreasonable for the customer, the customer may request irrespective of any compensation claims withdrawal from the contract or a reduction in the purchase price instead of rework.
- (5) Defect claims shall not arise if there is only a slight deviation from the agreed state of the goods or if their usability is only slightly impaired. Defect claims shall also not arise in the case of natural wear or tear and with damage which occurs after passing of risk due to incorrect or negligent handling, excessive force or special external influences which are not covered by the contract.
- (6) Claims by the customer in connection with expenses required for the purpose of supplementary performance, especially transport costs, travelling expenses, labour costs or material costs, shall be excluded if the expenses increase because the goods supplied by our company were brought later to a place other than the customer's branch, unless the movement of the goods corresponds to their intended use.
- (7) Recourse claims by the customer against our company shall only arise if the customer has not concluded

any agreements over and beyond legally compelling defect claims with his customer. Subparagraph 6 shall apply analogously to the amount of the customer's recourse claim.

**(8)** Unless the claims relate to death, physical injury or damage to health, our liability shall only extend to cases of intent and gross negligence. This provision shall also apply to compensation claims for damages in tort and to actions by our subcontractors and vicarious agents.

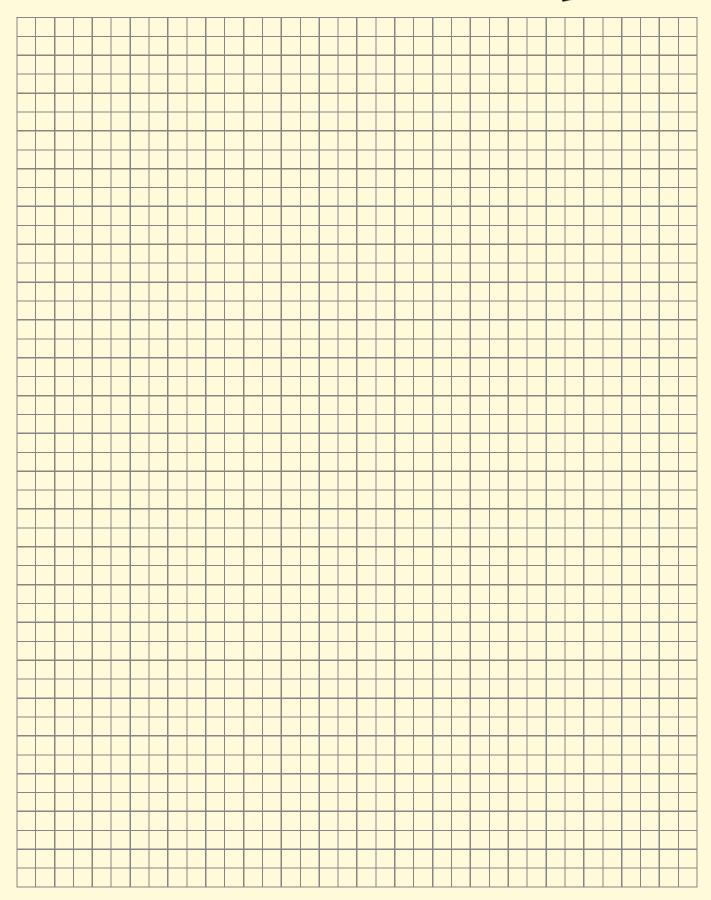
# VII. Place of performance and place of jurisdiction

The place of performance and place of jurisdiction for all participating contracting parties shall be Remscheid. Ger-man law shall apply to the exclusion of the UN Convention on the International Sale of Goods, even if the customer's head office is outside Germany.

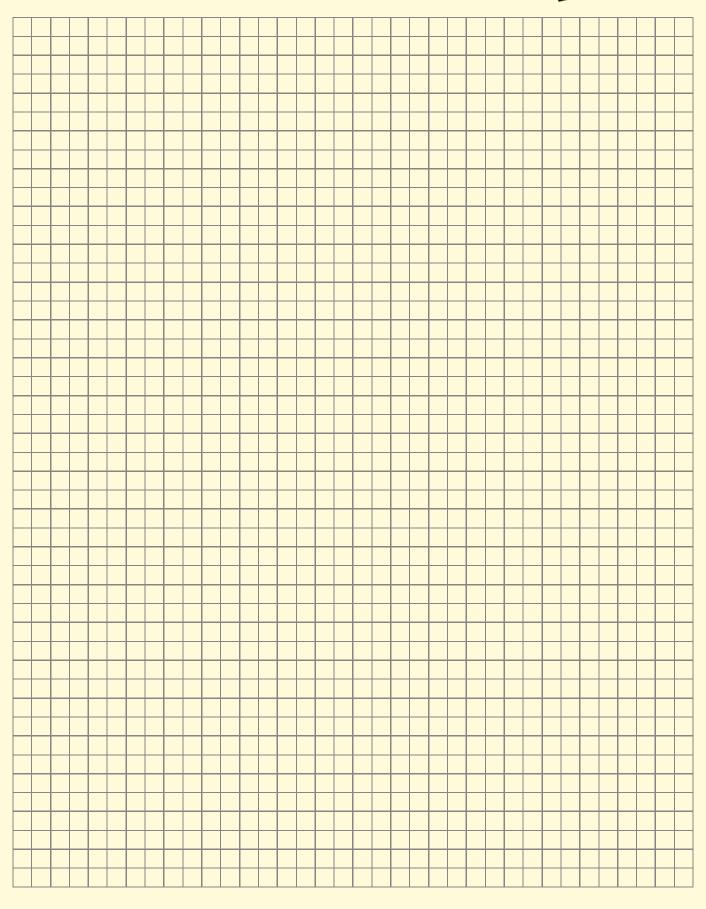
#### VIII. Miscellaneous

If individual clauses of these General Terms and Conditions are or become invalid, or if they contain a loophole, the validity of the other clauses shall not be affected.

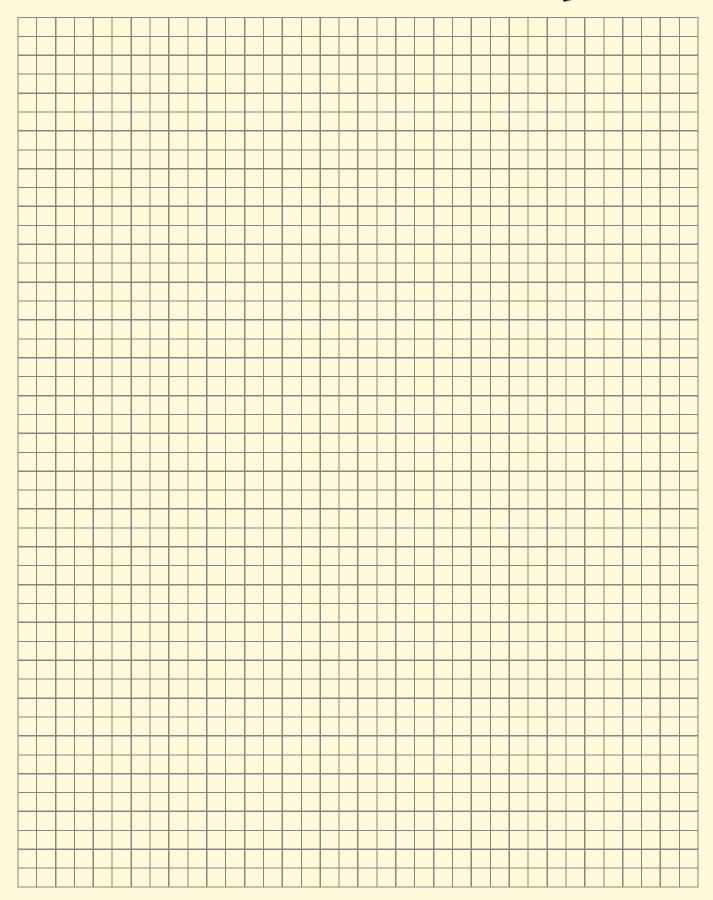




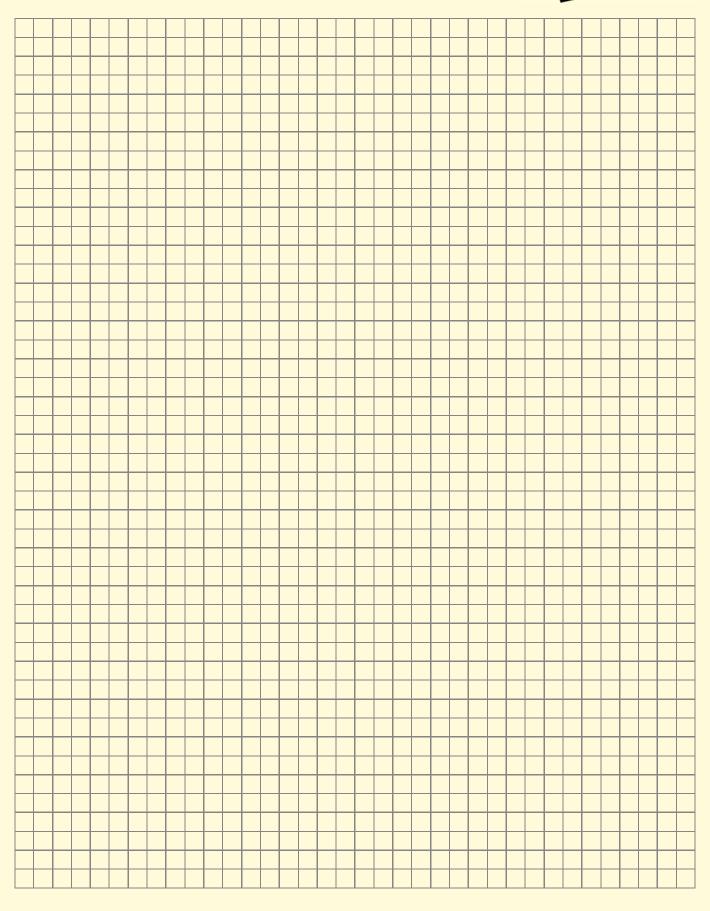






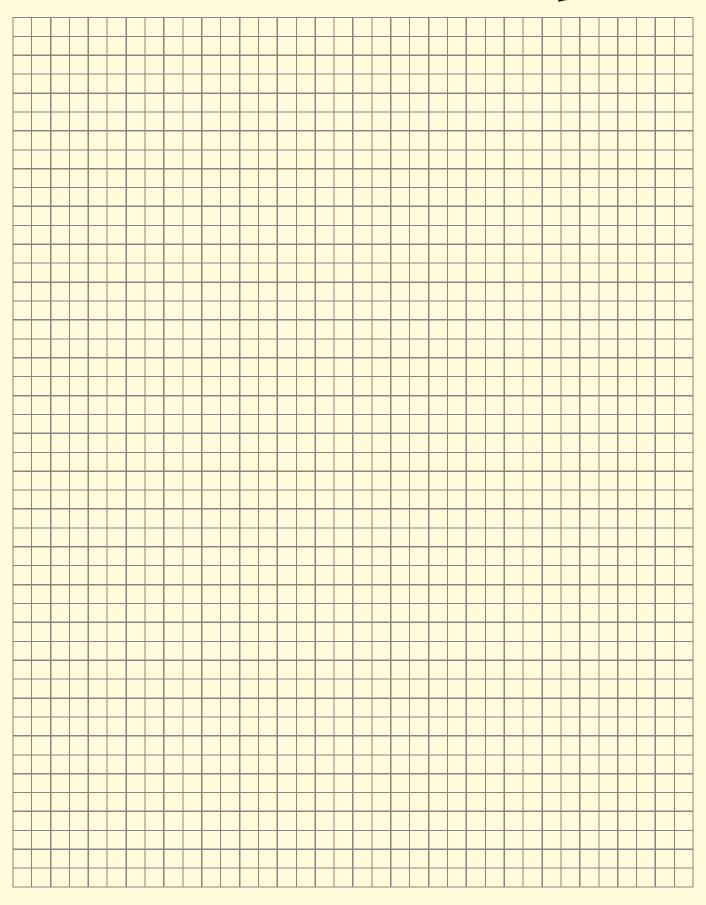
















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