

NOW
OFFERING
HYDROMAT
SAW BLADES!
(See page 1.35)



CONTROX-NEUHAUSER
Precision Cutting Tools

SAW BLADE CATALOG



NEUHAUSER
CONTROX-Präzisionswerkzeuge

Controx Inc.
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USA

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solutions@controx.com
www.controx.com







The Controx-Neuhäuser Story

Gustav Neuhäuser founded our parent company in 1906 for the production of tiny circular saws and precision tools for the precious metal industry. The company was based on the premise of "Precision by Tradition". Gustav passed this tradition on to Hans, his son.

In the early 1960's Hans opened our manufacturing facility in Prüm, Germany. Extensive R&D led to the development of aggressive geometries, refined metallurgy, unique heat treating processes and grinding techniques. These advancements led to the production of the highest quality saws, milling cutters, and axially staggered and profile relieved roughers and rougher/finishers in the world. In addition, Hans developed a method to effectively **control oxidation** known as the "**controx**" process.

In 1985 Hans and his son Klaus realized the opportunities that existed in the United States. They opened marketing and warehousing operations in Springfield, Ohio under the name Controx, Inc. Springfield was selected because of the centrality of the location to the metal working market and the availability of quality associates.

Our aggressive geometries, unique metallurgy and heat treating processes produce dramatic results and achieve reductions in machining cycle times and cost per manufactured part while increasing tool life. While still being known for our end mills, we focus most of our efforts today on the production of cobalt and carbide saws and milling cutters, both catalog items and specials made to customer specifications.

Our founder established the tradition of precision, quality, service and value in 1906. Now in the third generation of Neuhäuser ownership, that belief and commitment to continuous improvement are as alive in **CONTROX-NEUHÄUSER** today as when Gustav founded the company.



Klaus-Dieter Neuhäuser
Managing Director

A handwritten signature in black ink, which appears to read "Neuhäuser".

That's us



1

Administration and Sales



2



**Research & Development,
Mechanical Engineering
and Training**



3

Production 1



4



Heat treatment



5

Production 2



In summer 2002 we moved into our new office building in Prüm, Germany. With our qualified employees - modern and efficiently organized - and the latest technology we are able to communicate fast with our customers and partners - worldwide.

The research & development department with laboratory is the core to specific customer-oriented production solutions. The internal mechanical engineering optimizes the production. By permanent training and education of our workers and engineers we assure the competitiveness of our production also in future.

A large inventory of raw material, only from quality suppliers, is the basis to fulfill the multiple customer needs. The tools will be semi-finished on state of the art turning and milling centers. The following heat treatment is exactly adjusted to the type of steel and the demands through which an optimal cutting performance and tool life is guaranteed.

In 2007 we started our new heat treatment facility. Our state of the art vacuum furnaces for hardening and tempering operations are all designed for a product- and material-specific heat treatment to further optimize the outstanding quality of our products.

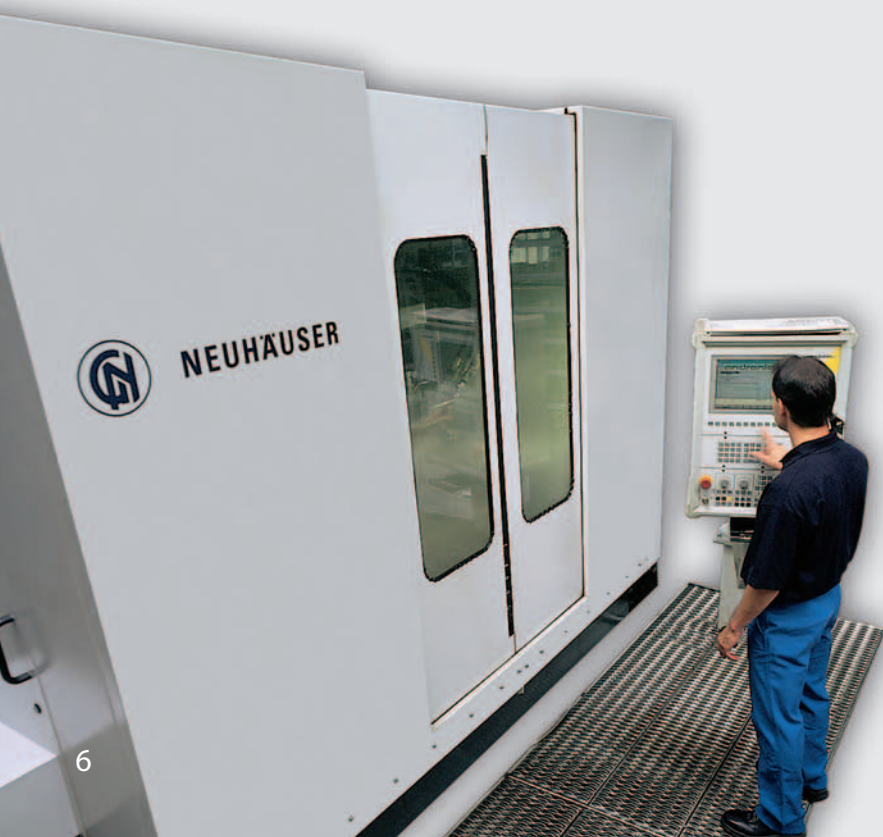
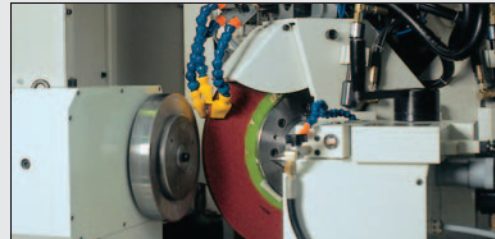
In the grinding department the hardened parts will be ground and toothed to finished tools. After the final inspection and marking the tools will be delivered to our customers.

High Precision Production

It is the perfect interplay of man and machine that leads to results far beyond the average.

In our plant in Prüm, Germany, we employ only experienced and skilled workers and engineers. They are all specialists and know the demand required on high-performance tools.

Internal and external training seminars ensure the high level of knowledge now and in the future. Our employees know how to operate our modern production machines which we develop and build in house - if required - to offer our customers premium tooling with an excellent price-performance ratio.



.....

Special flute grinding machine

developed by Neuhäuser for Neuhäuser.
For tooling of tools larger than 20 mm / 3/4".



- **State-of-the-art five-axis grinding centers** for the production of complicated tools in one set-up.



.....
Flexible turning/milling center
for the manufacturing of special tools.

Special Tools



.....

Catalog Metal Slitting Saws

made of HSS / HSSCo and Solid Carbide for the metal- and plastic industries.



.....

Special Slitting Saws

made of HSS / HSSCo and Solid Carbide for the metal-, plastic- and wood cutting industries.

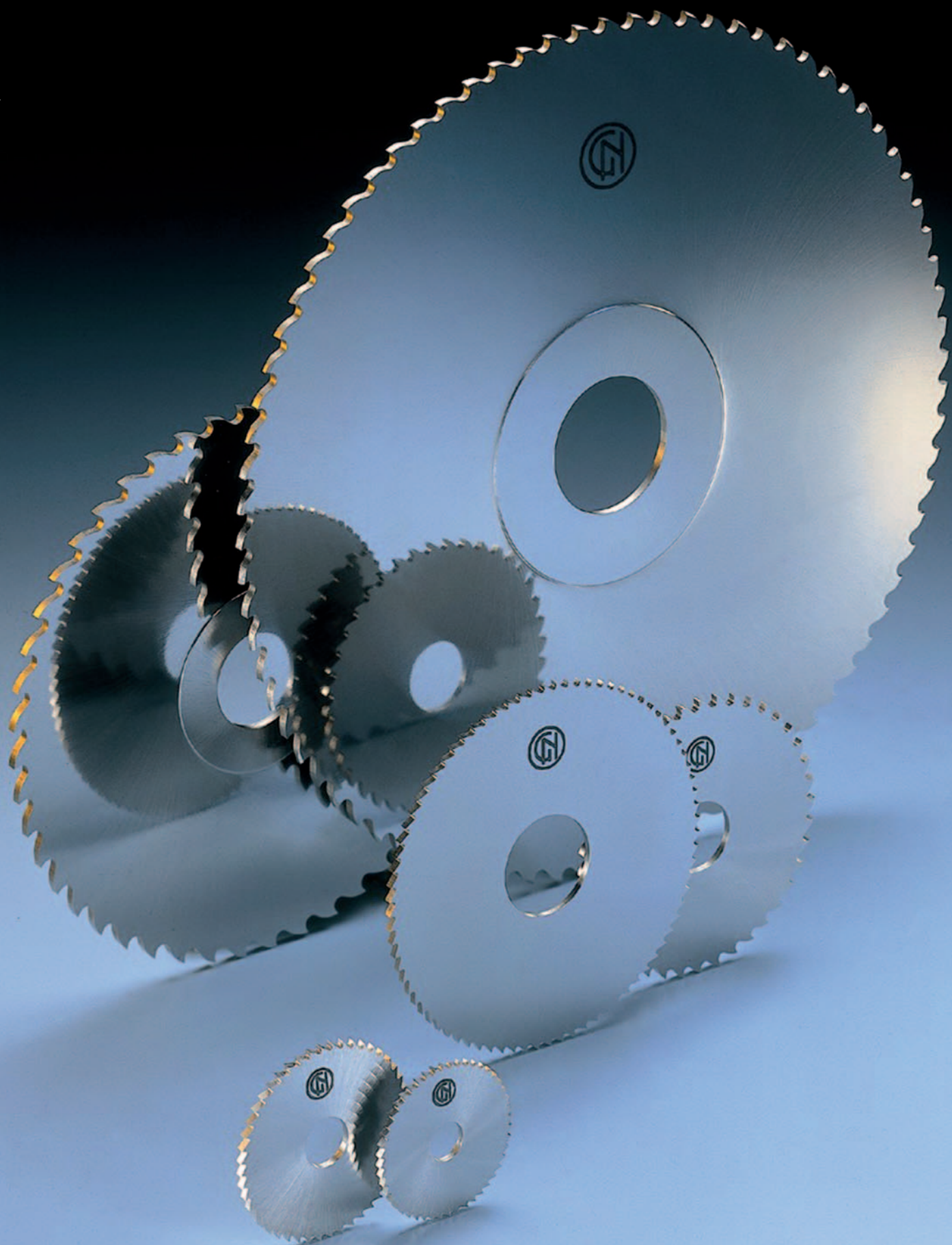


.....

Special Circular Knives

made of HSS / HSSCo and Solid Carbide for the metal-, plastic-, paper- and food industries.

.....



Special Tools

.....

Special Form Milling Cutters

made of HSS / HSSCo and Solid Carbide
for the metal- and plastic industries.

- **Special Side Milling Cutters**
- made of HSS / HSSCo and Solid Carbide
- for the metal- and plastic industries.





.....

Special Plain Milling Cutters

made of HSS / HSSCo for the textile- and plastic industries.



.....

Special Cold Forming and Rolling Tools

made of HSS / HSSCo and Solid Carbide for the production of tubes and similar parts.



Special Tools



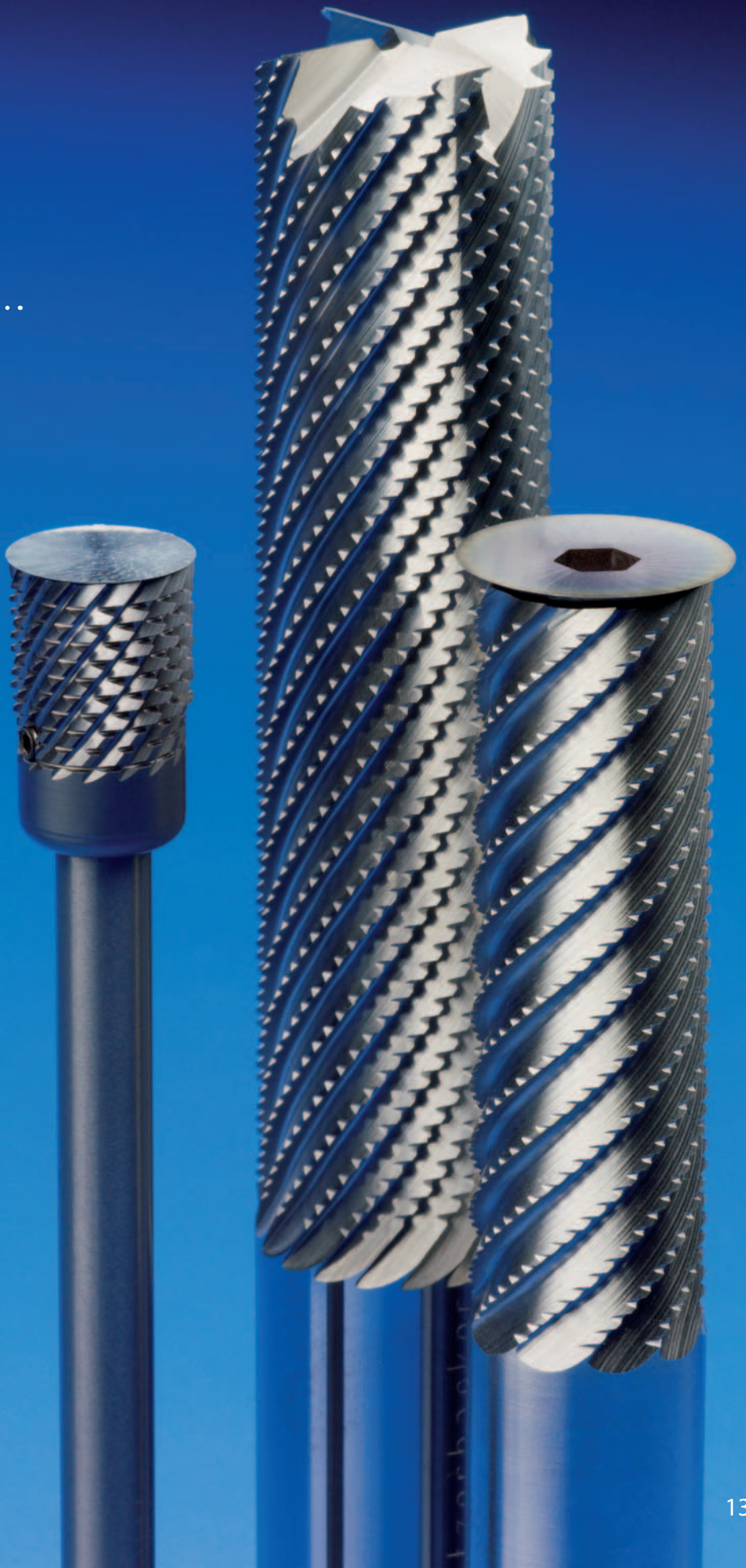
.....
• **Special Tooling Systems**

• for the machining of composite materials.

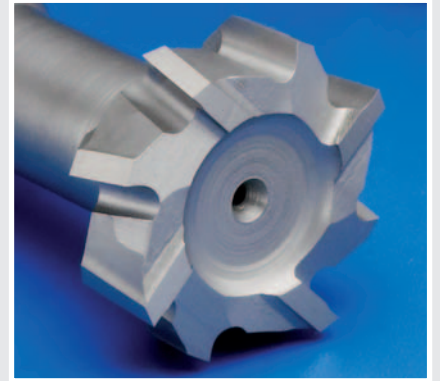
.....

Special End Milling Cutters

made of HSS / HSSCo and
Solid Carbide for the machining
of composite materials.



Special Tools



Special End Mills

made of HSS / HSSCo and Solid Carbide for the metal-, plastic- and composite industries.





.....

Medical Implants and Boring Heads

made of special steels and titanium.



Characteristics of GN-CONTROX® cutting tools

Selected, high quality grades of High Speed Steel and Solid Carbide

To assist you in the machining of a wide variety of materials, we use various grades of high alloyed High Speed Steel and Solid Carbide.

EMo5Co5 - M35

Is a 5 % Cobalt alloyed High Speed Steel, which can be brought through optimized heat treatment to high hardness and toughness. Its main characteristic is high wear resistance.

DMo5 - M2

Is a universal High Speed Steel, which is very tough due to its balanced content of alloys. It is primarily suitable for thin tools.

K10

Is a special grade of Solid Carbide which offers an extremely homogeneous structure, high hardness and therefore a very high degree of wear resistance.

FK.HM

Offers similar characteristics to K10, but provides increased toughness and therefore less tendency to breakage.

Sophisticated, computer-controlled heat treatments

Strictly controlled heat treatments guarantee an optimum hardness within very close tolerances.

Completely uniform conductive heat transfer and fast quenching cycles provide an exceptionally even and fine grain structure. Internal stress is relieved and supreme toughness of the tool is obtained by several temperings.

Radial profile relief

A vast variety of GN-Controx® tools is furnished with our radial profile relief. This geometry offers important advantages to the users of CNC-production-centers and for the machining of tough alloys. The strong cutting edges especially support interrupted cuts and climb milling. The radial profile relief and our special cutting edge preparation eliminate the need for early control adjustments due to cutting edge set-backs during initial machining cycles. Top quality is obtained from the start.

CNC-ground cutting edges

We develop and build our CNC-tool grinding centers by ourselves to satisfy the growing demand of the manufacturing industry to develop new tool geometries for higher cutting performances. Our state-of-the-art

grinding centers provide consistency in quality and precision of each Controx® tool. This makes your production accuracy fully predictable and supports unattended machining operations.

Close cutting diameter tolerances

All GN-Controx® cutting tools are manufactured according to the latest DIN and ISO standards. Their close tolerances make them perfectly suitable for the use on CNC-milling-centers.

Aggressive radial rake angles

The development of our profile relief, the use of premium Cobalt tool steel and our great experience in heat treatment allows us to furnish our tools with high radial rake angles.

Each degree of an increase in the rake angle significantly reduces the cutting force. The result is less friction and heat, smoother cutting action and lower power consumption. High rake angles also support climb milling and improve the benefits of hard coatings.

Various options of hard coatings

The thin, but extraordinary hard layers of modern PVD tool coatings provide several advantages for increased cutting performances of our cutting tools:

- the high hardness protects from wear
- the low coefficient of friction facilitates chip flow and resists galling and build-up edge
- the coating acts as a chemical and thermal barrier between tool and chips

For further explanations please see our technical part.

Advice:

By the publication of this catalog, all former editions become invalid. Reprint of this catalog – also extracts only – is allowed only with our explicit permission. Considering the continual technical improvements of our tools, we reserve the right to modify the selection in our catalog. If a required tool is not available for this reason, we will quote you a substitute of equal or better technological standard.

If you have any questions, please contact our sales department.

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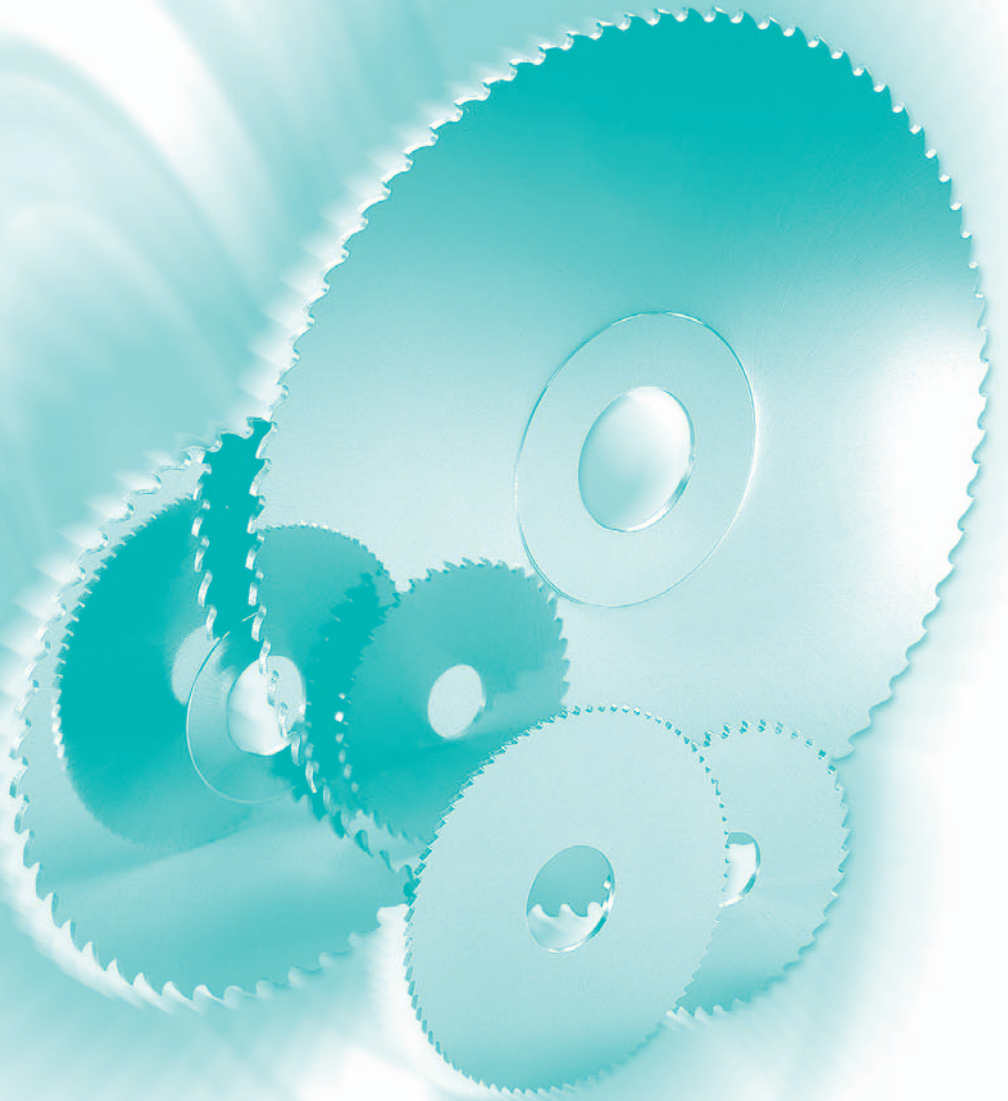
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Metal Slitting Saws



Advice

Before ordering tools, please examine which type of tool is suitable for your work.

If there is no referring information, tools will be delivered in type A/N or catalog type.

Please specify in order:

- 1. Catalog number, dimensions, quantity
- or
- 2. Art.-No., quantity
- or
- 3. EDP No., quantity

Material quality for tools in catalog:

specification

HSS	= DMo5	- M2
HSSCo	= EMo5Co5	- M35
SC	= K10	

Special tools:

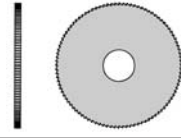
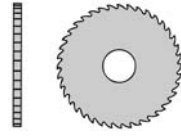
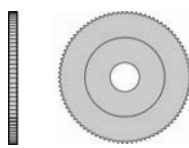

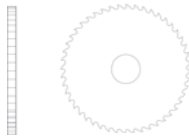
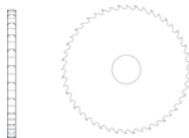

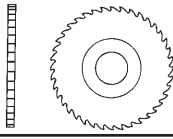

- Metal slitting saws, differing from the standard in
- diameter
 - width
 - hole
 - number of teeth
 - tolerances
 - material quality
 - pin holes
 - keyway
 - surface treatment
 - geometry
- are special tools.

Please ask for our best net prices.

We also manufacture:

- single and double chamfer knives
- rolling shear blades
- ribbed tube rolling discs and milling cutters for collectors of all suitable steel and Solid Carbide qualities.

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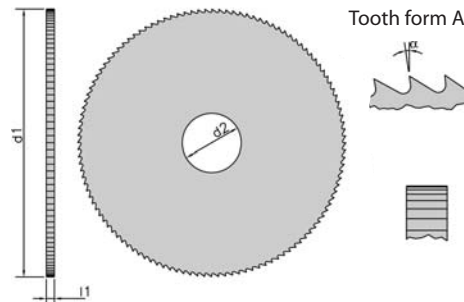
Solid Carbide Slitting Saws

GN-Standard

Fine Tooth Pitch

Radial Rake
3°-5°

No Keyway



Tolerances

Diameter		Width	Arbor Hole
1"-2"	+/- .004"	+/- .0002"	+ .0002" + .0008
2 1/4"-4"	+/- .006"		
5"	+/- .008"		

Discount-Class 105

Also available with PVD coating

Execution			Fine Tooth Pitch			
Material			Solid Carbide K10			
d ₁ inch	l ₁ inch	d ₂ inch	Teeth	Cat.-No.	EDP No.	Art.-No.
1"	0.0080"	3/8"	40	1350	253002	13500250200001
1"	0.0100"	3/8"	40	1350	253003	13500250250001
1"	0.0120"	3/8"	40	1350	253004	13500250300001
1"	0.0140"	3/8"	40	1350	253006	13500250350001
1"	0.0156"	3/8"	40	1350	253007	13500250390001
1"	0.0180"	3/8"	40	1350	253009	13500250450001
1"	0.0200"	3/8"	40	1350	253011	13500250500001
1"	0.0250"	3/8"	40	1350	253013	13500250630001
1"	0.0313"	3/8"	40	1350	253015	13500250790001
1"	0.0400"	3/8"	40	1350	253020	13500251010001
1"	0.0469"	3/8"	40	1350	253022	13500251190001
1"	0.0625"	3/8"	40	1350	253026	13500251580001
1"	0.0781"	3/8"	40	1350	253029	13500251980001
1 1/4"	0.0100"	1/2"	48	1350	253069	13500310250001
1 1/4"	0.0120"	1/2"	48	1350	253070	13500310300001
1 1/4"	0.0140"	1/2"	48	1350	253072	13500310350001
1 1/4"	0.0156"	1/2"	48	1350	253073	13500310390001
1 1/4"	0.0180"	1/2"	48	1350	253075	13500310450001
1 1/4"	0.0200"	1/2"	48	1350	253077	13500310500001
1 1/4"	0.0250"	1/2"	48	1350	253079	13500310630001
1 1/4"	0.0313"	1/2"	48	1350	253081	13500310790001
1 1/4"	0.0400"	1/2"	48	1350	253086	13500311010001
1 1/4"	0.0469"	1/2"	48	1350	253088	13500311190001
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1 1/4"	0.0938"	1/2"	48	1350	253100	13500312380001
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1 1/2"	0.0140"	1/2"	60	1350	253138	13500380350001
1 1/2"	0.0156"	1/2"	60	1350	253139	13500380390001
1 1/2"	0.0180"	1/2"	60	1350	253141	13500380450001
1 1/2"	0.0200"	1/2"	60	1350	253143	13500380500001
1 1/2"	0.0250"	1/2"	60	1350	253145	13500380630001
1 1/2"	0.0313"	1/2"	60	1350	253147	13500380790001
1 1/2"	0.0400"	1/2"	60	1350	253152	13500381010001
1 1/2"	0.0469"	1/2"	60	1350	253154	13500381190001
1 1/2"	0.0625"	1/2"	60	1350	253158	13500381580001
1 1/2"	0.0781"	1/2"	60	1350	253161	13500381980001
1 1/2"	0.0938"	1/2"	60	1350	253166	13500382380001
1 1/2"	0.1250"	1/2"	60	1350	253173	13500383170001

Solid Carbide Slitting Saws

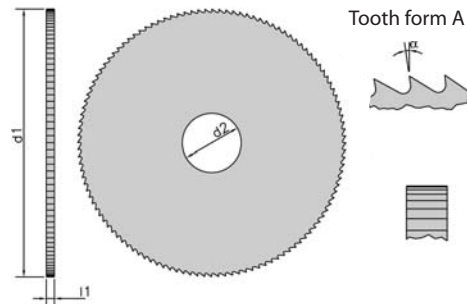
GN-Standard

Fine Tooth Pitch

Radial Rake

3°-5°

No Keyway



Tolerances

Diameter

1"-2" +/- .004"

2 1/4"-4" +/- .006"

5" +/- .008"

Width

+/- .0002"

Arbor Hole

+ .0002" + .0008

Discount-Class 105

Also available with PVD coating

Execution			Fine Tooth Pitch			
Material			Solid Carbide K10			
d ₁ inch	l ₁ inch	d ₂ inch	Teeth	Cat.-No.	EDP No.	Art.-No.
1 3/4"	0.0100"	1/2"	72	1350	253201	13500440250001
1 3/4"	0.0120"	1/2"	72	1350	253202	13500440300001
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1 3/4"	0.0156"	1/2"	72	1350	253205	13500440390001
1 3/4"	0.0180"	1/2"	72	1350	253207	13500440450001
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1 3/4"	0.0313"	1/2"	72	1350	253213	13500440790001
1 3/4"	0.0400"	1/2"	72	1350	253218	13500441010001
1 3/4"	0.0469"	1/2"	72	1350	253220	13500441190001
1 3/4"	0.0625"	1/2"	72	1350	253224	13500441580001
1 3/4"	0.0781"	1/2"	72	1350	253227	13500441980001
1 3/4"	0.0938"	1/2"	72	1350	253232	13500442380001
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2"	0.0100"	1/2"	80	1350	253267	13500500250001
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2 1/4"	0.0140"	5/8"	80	1350	253732	13500570350001
2 1/4"	0.0156"	5/8"	80	1350	253733	13500570390001
2 1/4"	0.0180"	5/8"	80	1350	253735	13500570450001
2 1/4"	0.0200"	5/8"	80	1350	253737	13500570500001
2 1/4"	0.0250"	5/8"	80	1350	253739	13500570630001
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2 1/4"	0.0469"	5/8"	80	1350	253748	13500571190001
2 1/4"	0.0625"	5/8"	80	1350	253752	13500571580001
2 1/4"	0.0781"	5/8"	80	1350	253755	13500571980001
2 1/4"	0.0938"	5/8"	80	1350	253760	13500572380001
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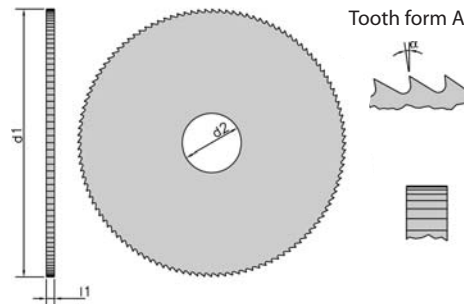
Solid Carbide Slitting Saws

GN-Standard

Fine Tooth Pitch

Radial Rake
3°-5°

No Keyway



Tolerances

Diameter	Width	Arbor Hole
1"-2" +/- .004"	+/- .0002"	+ .0002" + .0008
2 1/4"-4" +/- .006"		
5" +/- .008"		

Discount-Class 105

Also available with PVD coating

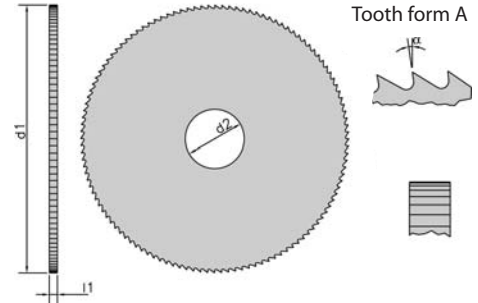
Execution			Fine Tooth Pitch			
Material			Solid Carbide K10			
d ₁ inch	l ₁ inch	d ₂ inch	Teeth	Cat.-No.	EDP No.	Art.-No.
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2 1/2"	0.0156"	1"	80	1350	253337	13500630390001
2 1/2"	0.0180"	1"	80	1350	253339	13500630450001
2 1/2"	0.0200"	1"	80	1350	253341	13500630500001
2 1/2"	0.0250"	1"	80	1350	253343	13500630630001
2 1/2"	0.0313"	1"	80	1350	253345	13500630790001
2 1/2"	0.0400"	1"	80	1350	253350	13500631010001
2 1/2"	0.0469"	1"	80	1350	253353	13500631190001
2 1/2"	0.0625"	1"	80	1350	253356	13500631580001
2 1/2"	0.0781"	1"	80	1350	253359	13500631980001
2 1/2"	0.0938"	1"	80	1350	253364	13500632380001
2 1/2"	0.1250"	1"	80	1350	253371	13500633170001
2 3/4"	0.0100"	1"	90	1350	253795	13500690250001
2 3/4"	0.0120"	1"	90	1350	253796	13500690300001
2 3/4"	0.0140"	1"	90	1350	253798	13500690350001
2 3/4"	0.0156"	1"	90	1350	253799	13500690390001
2 3/4"	0.0180"	1"	90	1350	253801	13500690450001
2 3/4"	0.0200"	1"	90	1350	253803	13500690500001
2 3/4"	0.0250"	1"	90	1350	253805	13500690630001
2 3/4"	0.0313"	1"	90	1350	253807	13500690790001
2 3/4"	0.0400"	1"	90	1350	253812	13500691010001
2 3/4"	0.0469"	1"	90	1350	253815	13500691190001
2 3/4"	0.0625"	1"	90	1350	253818	13500691580001
2 3/4"	0.0781"	1"	90	1350	253821	13500691980001
2 3/4"	0.0938"	1"	90	1350	253826	13500692380001
2 3/4"	0.1250"	1"	90	1350	253833	13500693170001
3"	0.0120"	1"	100	1350	253400	13500760300001
3"	0.0140"	1"	100	1350	253402	13500760350001
3"	0.0156"	1"	100	1350	253403	13500760390001
3"	0.0180"	1"	100	1350	253405	13500760450001
3"	0.0200"	1"	100	1350	253407	13500760500001
3"	0.0250"	1"	100	1350	253409	13500760630001
3"	0.0313"	1"	100	1350	253411	13500760790001
3"	0.0400"	1"	100	1350	253416	13500761010001
3"	0.0469"	1"	100	1350	253418	13500761190001
3"	0.0625"	1"	100	1350	253422	13500761580001
3"	0.0781"	1"	100	1350	253425	13500761980001
3"	0.0938"	1"	100	1350	253430	13500762380001
3"	0.1250"	1"	100	1350	253437	13500763170001

Solid Carbide Slitting Saws

GN-Standard
Fine Tooth Pitch

Radial Rake
3°-5°

No Keyway



Tolerances

Diameter		Width	Arbor Hole
1"-2"	+/- .004"	+/- .0002"	+ .0002" + .0008
2 1/4"-4"	+/- .006"		
5"	+/- .008"		

Discount-Class 105

Also available with PVD coating

Execution				Fine Tooth Pitch			
Material				Solid Carbide K10			
d ₁ inch	l ₁ inch	d ₂ inch	Teeth	Cat.-No.	EDP No.	Art.-No.	
4"	0.0156"	1"	120	1350	253469	13501010390001	
4"	0.0180"	1"	120	1350	253471	13501010450001	
4"	0.0200"	1"	120	1350	253473	13501010500001	
4"	0.0250"	1"	120	1350	253475	13501010630001	
4"	0.0313"	1"	120	1350	253477	13501010790001	
4"	0.0400"	1"	120	1350	253482	13501011010001	
4"	0.0469"	1"	120	1350	253484	13501011190001	
4"	0.0625"	1"	120	1350	253488	13501011580001	
4"	0.0781"	1"	120	1350	253491	13501011980001	
4"	0.0938"	1"	120	1350	253496	13501012380001	
4"	0.1250"	1"	120	1350	253503	13501013170001	
5"	0.0313"	1"	140	1350	253543	13501270790001	
5"	0.0400"	1"	140	1350	253548	13501271010001	
5"	0.0469"	1"	140	1350	253550	13501271190001	
5"	0.0625"	1"	140	1350	253554	13501271580001	
5"	0.0781"	1"	140	1350	253557	13501271980001	
5"	0.0938"	1"	140	1350	253562	13501272380001	

Application:

Fine Tooth Saws are recommended for fine slitting and slotting operations, cutting thin sections, thin profiles, thin wall tubing and wire. Ideal for slotting small screws.

Special dimensions and materials can be delivered as well. Price on request.

Work Material:

Fine Tooth Saws perform well in medium to high tensile strength steels, extremely abrasive materials, hard non-ferrous materials and precious metals.



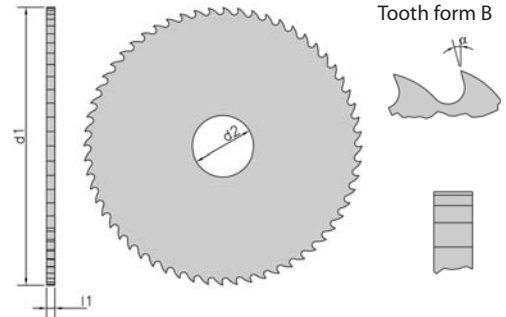
Solid Carbide Slitting Saws

GN-Standard

Coarse Tooth Pitch

Radial Rake
15°

No Keyway



Tolerances

Diameter	Width	Arbor Hole
1"-2"	+/- .004"	+ .0002" + .0008
2 1/4"-4"	+/- .006"	
5"	+/- .008"	

Discount-Class 105

Also available with PVD coating

Execution			Coarse Tooth Pitch			
Material			Solid Carbide K10			
d ₁ inch	l ₁ inch	d ₂ inch	Teeth	Cat.-No.	EDP No.	Art.-No.
1"	0.0080"	3/8"	20	1250	252002	12500250200001
1"	0.0100"	3/8"	20	1250	252003	12500250250001
1"	0.0120"	3/8"	20	1250	252004	12500250300001
1"	0.0140"	3/8"	20	1250	252006	12500250350001
1"	0.0156"	3/8"	20	1250	252007	12500250390001
1"	0.0180"	3/8"	20	1250	252009	12500250450001
1"	0.0200"	3/8"	20	1250	252011	12500250500001
1"	0.0250"	3/8"	20	1250	252013	12500250630001
1"	0.0313"	3/8"	20	1250	252015	12500250790001
1"	0.0400"	3/8"	20	1250	252020	12500251010001
1"	0.0469"	3/8"	20	1250	252022	12500251190001
1"	0.0625"	3/8"	20	1250	252026	12500251580001
1"	0.0781"	3/8"	20	1250	252029	12500251980001
1 1/4"	0.0100"	1/2"	24	1250	252069	12500310250001
1 1/4"	0.0120"	1/2"	24	1250	252070	12500310300001
1 1/4"	0.0140"	1/2"	24	1250	252072	12500310350001
1 1/4"	0.0156"	1/2"	24	1250	252073	12500310390001
1 1/4"	0.0180"	1/2"	24	1250	252075	12500310450001
1 1/4"	0.0200"	1/2"	24	1250	252077	12500310500001
1 1/4"	0.0250"	1/2"	24	1250	252079	12500310630001
1 1/4"	0.0313"	1/2"	24	1250	252081	12500310790001
1 1/4"	0.0400"	1/2"	24	1250	252086	12500311010001
1 1/4"	0.0469"	1/2"	24	1250	252088	12500311190001
1 1/4"	0.0625"	1/2"	24	1250	252092	12500311580001
1 1/4"	0.0781"	1/2"	24	1250	252095	12500311980001
1 1/4"	0.0938"	1/2"	24	1250	252100	12500312380001
1 1/2"	0.0100"	1/2"	30	1250	252135	12500380250001
1 1/2"	0.0120"	1/2"	30	1250	252136	12500380300001
1 1/2"	0.0140"	1/2"	30	1250	252138	12500380350001
1 1/2"	0.0156"	1/2"	30	1250	252139	12500380390001
1 1/2"	0.0180"	1/2"	30	1250	252141	12500380450001
1 1/2"	0.0200"	1/2"	30	1250	252143	12500380500001
1 1/2"	0.0250"	1/2"	30	1250	252145	12500380630001
1 1/2"	0.0313"	1/2"	30	1250	252147	12500380790001
1 1/2"	0.0400"	1/2"	30	1250	252152	12500381010001
1 1/2"	0.0469"	1/2"	30	1250	252154	12500381190001
1 1/2"	0.0625"	1/2"	30	1250	252158	12500381580001
1 1/2"	0.0781"	1/2"	30	1250	252161	12500381980001
1 1/2"	0.0938"	1/2"	30	1250	252166	12500382380001
1 1/2"	0.1250"	1/2"	30	1250	252173	12500383170001

Solid Carbide Slitting Saws

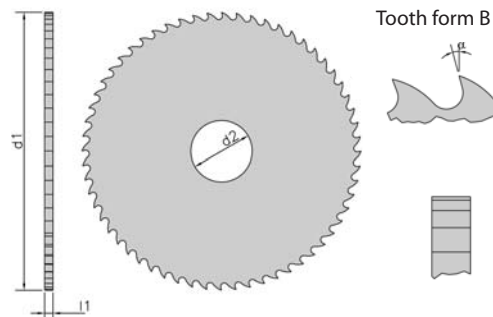
GN-Standard

Coarse Tooth Pitch

Radial Rake

15°

No Keyway



Tolerances

Diameter

1"-2" +/- .004"

2 1/4"-4" +/- .006"

5" +/- .008"

Width

+/- .0002"

Arbor Hole

+ .0002" + .0008

Discount-Class 105

Also available with PVD coating

Execution				Coarse Tooth Pitch		
Material				Solid Carbide K10		
d ₁ inch	l ₁ inch	d ₂ inch	Teeth	Cat.-No.	EDP No.	Art.-No.
1 3/4"	0.0100"	1/2"	36	1250	252201	12500440250001
1 3/4"	0.0120"	1/2"	36	1250	252202	12500440300001
1 3/4"	0.0140"	1/2"	36	1250	252204	12500440350001
1 3/4"	0.0156"	1/2"	36	1250	252205	12500440390001
1 3/4"	0.0180"	1/2"	36	1250	252207	12500440450001
1 3/4"	0.0200"	1/2"	36	1250	252209	12500440500001
1 3/4"	0.0250"	1/2"	36	1250	252211	12500440630001
1 3/4"	0.0313"	1/2"	36	1250	252213	12500440790001
1 3/4"	0.0400"	1/2"	36	1250	252218	12500441010001
1 3/4"	0.0469"	1/2"	36	1250	252220	12500441190001
1 3/4"	0.0625"	1/2"	36	1250	252224	12500441580001
1 3/4"	0.0781"	1/2"	36	1250	252227	12500441980001
1 3/4"	0.0938"	1/2"	36	1250	252232	12500442380001
1 3/4"	0.1250"	1/2"	36	1250	252239	12500443170001
2"	0.0100"	1/2"	40	1250	252267	12500500250001
2"	0.0120"	1/2"	40	1250	252268	12500500300001
2"	0.0140"	1/2"	40	1250	252270	12500500350001
2"	0.0156"	1/2"	40	1250	252271	12500500390001
2"	0.0180"	1/2"	40	1250	252273	12500500450001
2"	0.0200"	1/2"	40	1250	252275	12500500500001
2"	0.0250"	1/2"	40	1250	252277	12500500630001
2"	0.0313"	1/2"	40	1250	252279	12500500790001
2"	0.0400"	1/2"	40	1250	252284	12500501010001
2"	0.0469"	1/2"	40	1250	252286	12500501190001
2"	0.0625"	1/2"	40	1250	252290	12500501580001
2"	0.0781"	1/2"	40	1250	252293	12500501980001
2"	0.0938"	1/2"	40	1250	252298	12500502380001
2"	0.1250"	1/2"	40	1250	252305	12500503170001
2 1/4"	0.0100"	5/8"	40	1250	252729	12500570250001
2 1/4"	0.0120"	5/8"	40	1250	252730	12500570300001
2 1/4"	0.0140"	5/8"	40	1250	252732	12500570350001
2 1/4"	0.0156"	5/8"	40	1250	252733	12500570390001
2 1/4"	0.0180"	5/8"	40	1250	252735	12500570450001
2 1/4"	0.0200"	5/8"	40	1250	252737	12500570500001
2 1/4"	0.0250"	5/8"	40	1250	252739	12500570630001
2 1/4"	0.0313"	5/8"	40	1250	252741	12500570790001
2 1/4"	0.0400"	5/8"	40	1250	252746	12500571010001
2 1/4"	0.0469"	5/8"	40	1250	252748	12500571190001
2 1/4"	0.0625"	5/8"	40	1250	252752	12500571580001
2 1/4"	0.0781"	5/8"	40	1250	252755	12500571980001
2 1/4"	0.0938"	5/8"	40	1250	252760	12500572380001
2 1/4"	0.1250"	5/8"	40	1250	252767	12500573170001

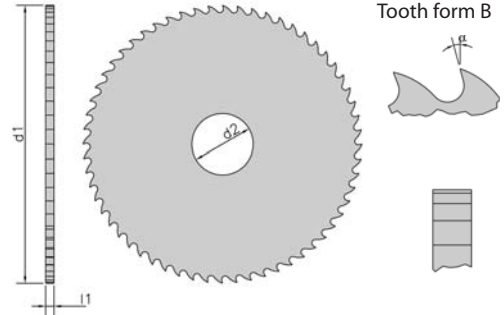
Solid Carbide Slitting Saws

GN-Standard

Coarse Tooth Pitch

Radial Rake
15°

No Keyway



Tolerances

Diameter	Width	Arbor Hole
1"-2" +/- .004"	+/- .0002"	+ .0002" + .0008
2 1/4"-4" +/- .006"		
5" +/- .008"		

Discount-Class 105

Also available with PVD coating

Execution				Coarse Tooth Pitch		
Material				Solid Carbide K10		
d ₁ inch	l ₁ inch	d ₂ inch	Teeth	Cat.-No.	EDP No.	Art.-No.
2 1/2"	0.0100"	1"	40	1250	252333	12500630250001
2 1/2"	0.0120"	1"	40	1250	252334	12500630300001
2 1/2"	0.0140"	1"	40	1250	252336	12500630350001
2 1/2"	0.0156"	1"	40	1250	252337	12500630390001
2 1/2"	0.0180"	1"	40	1250	252339	12500630450001
2 1/2"	0.0200"	1"	40	1250	252341	12500630500001
2 1/2"	0.0250"	1"	40	1250	252343	12500630630001
2 1/2"	0.0313"	1"	40	1250	252345	12500630790001
2 1/2"	0.0400"	1"	40	1250	252350	12500631010001
2 1/2"	0.0469"	1"	40	1250	252353	12500631190001
2 1/2"	0.0625"	1"	40	1250	252356	12500631580001
2 1/2"	0.0781"	1"	40	1250	252359	12500631980001
2 1/2"	0.0938"	1"	40	1250	252364	12500632380001
2 1/2"	0.1250"	1"	40	1250	252371	12500633170001
2 3/4"	0.0100"	1"	44	1250	252795	12500690250001
2 3/4"	0.0120"	1"	44	1250	252796	12500690300001
2 3/4"	0.0140"	1"	44	1250	252798	12500690350001
2 3/4"	0.0156"	1"	44	1250	252799	12500690390001
2 3/4"	0.0180"	1"	44	1250	252801	12500690450001
2 3/4"	0.0200"	1"	44	1250	252803	12500690500001
2 3/4"	0.0250"	1"	44	1250	252805	12500690630001
2 3/4"	0.0313"	1"	44	1250	252807	12500690790001
2 3/4"	0.0400"	1"	44	1250	252812	12500691010001
2 3/4"	0.0469"	1"	44	1250	252815	12500691190001
2 3/4"	0.0625"	1"	44	1250	252818	12500691580001
2 3/4"	0.0781"	1"	44	1250	252821	12500691980001
2 3/4"	0.0938"	1"	44	1250	252826	12500692380001
2 3/4"	0.1250"	1"	44	1250	252833	12500693170001
3"	0.0120"	1"	48	1250	252400	12500760300001
3"	0.0140"	1"	48	1250	252402	12500760350001
3"	0.0156"	1"	48	1250	252403	12500760390001
3"	0.0180"	1"	48	1250	252405	12500760450001
3"	0.0200"	1"	48	1250	252407	12500760500001
3"	0.0250"	1"	48	1250	252409	12500760630001
3"	0.0313"	1"	48	1250	252411	12500760790001
3"	0.0400"	1"	48	1250	252416	12500761010001
3"	0.0469"	1"	48	1250	252418	12500761190001
3"	0.0625"	1"	48	1250	252422	12500761580001
3"	0.0781"	1"	48	1250	252425	12500761980001
3"	0.0938"	1"	48	1250	252430	12500762380001
3"	0.1250"	1"	48	1250	252437	12500763170001

Solid Carbide Slitting Saws

GN-Standard

Coarse Tooth Pitch

Radial Rake

15°

No Keyway

Tolerances

Diameter

1"-2" +/- .004"

2 1/4"-4" +/- .006"

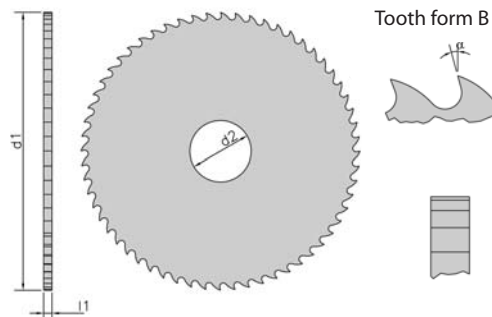
5" +/- .008"

Width

+/- .0002"

Arbor Hole

+ .0002" + .0008



Discount-Class 105

Also available with PVD coating

Execution				Coarse Tooth Pitch			
Material				Solid Carbide K10			
d ₁ inch	l ₁ inch	d ₂ inch	Teeth	Cat.-No.	EDP No.	Art.-No.	
4"	0.0156"	1"	60	1250	252469	12501010390001	
4"	0.0180"	1"	60	1250	252471	12501010450001	
4"	0.0200"	1"	60	1250	252473	12501010500001	
4"	0.0250"	1"	60	1250	252475	12501010630001	
4"	0.0313"	1"	60	1250	252477	12501010790001	
4"	0.0400"	1"	60	1250	252482	12501011010001	
4"	0.0469"	1"	60	1250	252484	12501011190001	
4"	0.0625"	1"	60	1250	252488	12501011580001	
4"	0.0781"	1"	60	1250	252491	12501011980001	
4"	0.0938"	1"	60	1250	252496	12501012380001	
4"	0.1250"	1"	60	1250	252503	12501013170001	
5"	0.0313"	1"	70	1250	252543	12501270790001	
5"	0.0400"	1"	70	1250	252548	12501271010001	
5"	0.0469"	1"	70	1250	252550	12501271190001	
5"	0.0625"	1"	70	1250	252554	12501271580001	
5"	0.0781"	1"	70	1250	252557	12501271980001	
5"	0.0938"	1"	70	1250	252562	12501272380001	

Application:

Coarse Tooth Saws are recommended for medium depth slitting and slotting operations, cutting thick sections, profiles, extrusions and heavy wall tubing.

Special dimensions and materials can be delivered as well. Price on request.

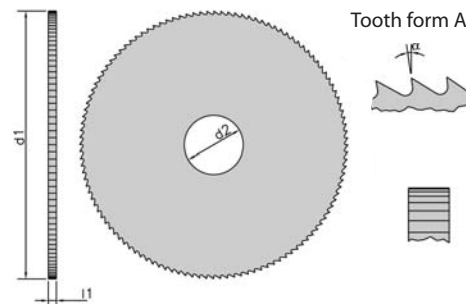
Work Material:

Coarse Tooth Saws perform well in free machining of medium tensile strength steels, cast irons, hard and abrasive plastics, aluminum, brass, bronze and other non-ferrous materials and precious metals.

Solid Carbide Slitting Saws

GN-Standard

Fine Tooth Pitch similar to DIN 1837



Discount-Class 100

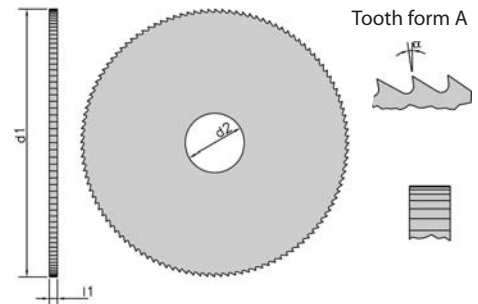
Also available with PVD coating

Execution				Fine Tooth Pitch		
Material				Solid Carbide K10		
d ₁	l ₁	d ₂	Teeth	Cat.-No.	EDP No.	Art.-No.
mm / js 15	mm / js 11	mm / H 7				
20	0,2	5	40	5110	150332	51100200200001
20	0,25	5	40	5110	150333	51100200250001
20	0,3	5	40	5110	150334	51100200300001
20	0,4	5	40	5110	150335	51100200400001
20	0,5	5	40	5110	150336	51100200500001
20	0,6	5	40	5110	150337	51100200600001
20	0,8	5	40	5110	150338	51100200800001
20	1	5	40	5110	150339	51100201000001
20	1,2	5	40	5110	150340	51100201200001
20	1,6	5	40	5110	150341	51100201600001
20	2	5	40	5110	150343	51100202000001
25	0,2	8	48	5110	150344	51100250200001
25	0,25	8	48	5110	150345	51100250250001
25	0,3	8	48	5110	150346	51100250300001
25	0,4	8	48	5110	150347	51100250400001
25	0,5	8	48	5110	150348	51100250500001
25	0,6	8	48	5110	150349	51100250600001
25	0,8	8	48	5110	150350	51100250800001
25	1	8	48	5110	150351	51100251000001
25	1,2	8	48	5110	150352	51100251200001
25	1,6	8	48	5110	150353	51100251600001
25	2	8	48	5110	150355	51100252000001
32	0,25	8	60	5110	150356	51100320250001
32	0,3	8	60	5110	150357	51100320300001
32	0,4	8	60	5110	150358	51100320400001
32	0,5	8	60	5110	150359	51100320500001
32	0,6	8	60	5110	150360	51100320600001
32	0,8	8	60	5110	150361	51100320800001
32	1	8	60	5110	150362	51100321000001
32	1,2	8	60	5110	150363	51100321200001
32	1,6	8	60	5110	150364	51100321600001
32	2	8	60	5110	150366	51100322000001
32	2,5	8	60	5110	150367	51100322500001
40	0,25	10	72	5110	150368	51100400250001
40	0,3	10	72	5110	150369	51100400300001
40	0,4	10	72	5110	150370	51100400400001
40	0,5	10	72	5110	150371	51100400500001
40	0,6	10	72	5110	150372	51100400600001
40	0,8	10	72	5110	150373	51100400800001
40	1	10	72	5110	150374	51100401000001
40	1,2	10	72	5110	150375	51100401200001
40	1,6	10	72	5110	150376	51100401600001
40	2	10	72	5110	150378	51100402000001
40	2,5	10	72	5110	150379	51100402500001
40	3	10	72	5110	150380	51100403000001

Solid Carbide Slitting Saws

GN-Standard

Fine Tooth Pitch similar to DIN 1837



Discount-Class 100

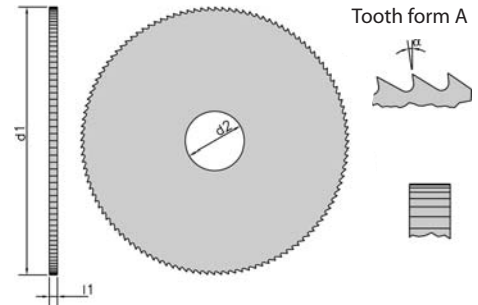
Also available with PVD coating

Execution				Fine Tooth Pitch		
Material				Solid Carbide K10		
d ₁ mm / js 15	l ₁ mm / js 11	d ₂ mm / H 7	Teeth	Cat.-No.	EDP No.	Art.-No.
50	0,25	13	80	5110	150381	51100500250001
50	0,3	13	80	5110	150382	51100500300001
50	0,4	13	80	5110	150383	51100500400001
50	0,5	13	80	5110	150384	51100500500001
50	0,6	13	80	5110	150385	51100500600001
50	0,8	13	80	5110	150386	51100500800001
50	1	13	80	5110	150387	51100501000001
50	1,2	13	80	5110	150388	51100501200001
50	1,6	13	80	5110	150389	51100501600001
50	2	13	80	5110	150391	51100502000001
50	2,5	13	80	5110	150392	51100502500001
50	3	13	80	5110	150393	51100503000001
63	0,25	16	80	5110	150394	51100630250001
63	0,3	16	80	5110	150395	51100630300001
63	0,4	16	80	5110	150396	51100630400001
63	0,5	16	80	5110	150397	51100630500001
63	0,6	16	80	5110	150398	51100630600001
63	0,8	16	80	5110	150399	51100630800001
63	1	16	80	5110	150400	51100631000001
63	1,2	16	80	5110	150401	51100631200001
63	1,6	16	80	5110	150402	51100631600001
63	2	16	80	5110	150404	51100632000001
63	2,5	16	80	5110	150405	51100632500001
63	3	16	80	5110	150406	51100633000001
80	0,3	22	100	5110	150407	51100800300001
80	0,4	22	100	5110	150408	51100800400001
80	0,5	22	100	5110	150409	51100800500001
80	0,6	22	100	5110	150410	51100800600001
80	0,8	22	100	5110	150411	51100800800001
80	1	22	100	5110	150412	51100801000001
80	1,2	22	100	5110	150413	51100801200001
80	1,6	22	100	5110	150414	51100801600001
80	2	22	100	5110	150416	51100802000001
80	2,5	22	100	5110	150417	51100802500001
80	3	22	100	5110	150418	51100803000001
100	0,4	22	120	5110	150419	51101000400001
100	0,5	22	120	5110	150420	51101000500001
100	0,6	22	120	5110	150421	51101000600001
100	0,8	22	120	5110	150422	51101000800001
100	1	22	120	5110	150423	51101001000001
100	1,2	22	120	5110	150424	51101001200001
100	1,6	22	120	5110	150425	51101001600001
100	2	22	120	5110	150427	51101002000001
100	2,5	22	120	5110	150428	51101002500001
100	3	22	120	5110	150429	51101003000001

Solid Carbide Slitting Saws

GN-Standard

Fine Tooth Pitch similar to DIN 1837



Discount-Class 100

Also available with PVD coating

Execution				Fine Tooth Pitch		
Material				Solid Carbide K10		
d_1 mm / js 15	l_1 mm / js 11	d_2 mm / H 7	Teeth	Cat.-No.	EDP No.	Art.-No.
125	0,6	22	140	5110	150430	51101250600001
125	0,8	22	140	5110	150431	51101250800001
125	1	22	140	5110	150432	51101251000001
125	1,2	22	140	5110	150433	51101251200001
125	1,6	22	140	5110	150434	51101251600001
125	2	22	140	5110	150436	51101252000001
125	2,5	22	140	5110	150437	51101252500001
125	3	22	140	5110	150438	51101253000001
160	1	32	160	5110	150446	51101601000001
160	1,2	32	160	5110	150447	51101601200001
160	1,6	32	160	5110	150448	51101601600001
160	2	32	160	5110	150450	51101602000001
160	2,5	32	160	5110	150451	51101602500001
160	3	32	160	5110	150452	51101603000001

Application:

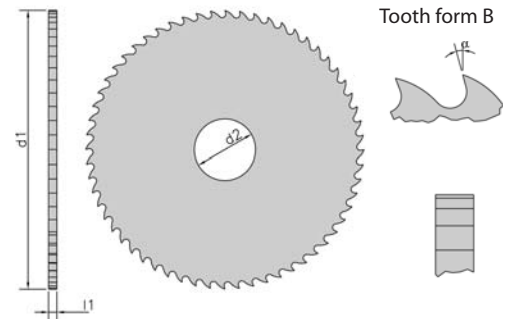
For slotting and cutting off operations of thin profiles and pipes in abrasive and high-tensile materials.

Special dimensions and materials can be delivered as well. Price on request.

Solid Carbide Slitting Saws

GN-Standard

Coarse Tooth Pitch similar to DIN 1838



Discount-Class 100

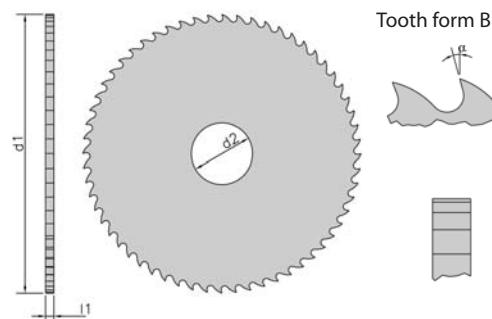
Also available with PVD coating

Execution				Coarse Tooth Pitch		
Material				Solid Carbide K10		
d ₁ mm / js 15	l ₁ mm / js 11	d ₂ mm / H 7	Teeth	Cat.-No.	EDP No.	Art.-No.
20	0,2	5	20	5120	150453	51200200200001
20	0,25	5	20	5120	150454	51200200250001
20	0,3	5	20	5120	150455	51200200300001
20	0,4	5	20	5120	150456	51200200400001
20	0,5	5	20	5120	150457	51200200500001
20	0,6	5	20	5120	150458	51200200600001
20	0,8	5	20	5120	150459	51200200800001
20	1	5	20	5120	150460	51200201000001
20	1,2	5	20	5120	150461	51200201200001
20	1,6	5	20	5120	150462	51200201600001
20	2	5	20	5120	150464	51200202000001
25	0,2	8	24	5120	150465	51200250200001
25	0,25	8	24	5120	150466	51200250250001
25	0,3	8	24	5120	150467	51200250300001
25	0,4	8	24	5120	150468	51200250400001
25	0,5	8	24	5120	150469	51200250500001
25	0,6	8	24	5120	150470	51200250600001
25	0,8	8	24	5120	150471	51200250800001
25	1	8	24	5120	150472	51200251000001
25	1,2	8	24	5120	150473	51200251200001
25	1,6	8	24	5120	150474	51200251600001
25	2	8	24	5120	150476	51200252000001
32	0,25	8	30	5120	150477	51200320250001
32	0,3	8	30	5120	150478	51200320300001
32	0,4	8	30	5120	150479	51200320400001
32	0,5	8	30	5120	150480	51200320500001
32	0,6	8	30	5120	150481	51200320600001
32	0,8	8	30	5120	150482	51200320800001
32	1	8	30	5120	150483	51200321000001
32	1,2	8	30	5120	150484	51200321200001
32	1,6	8	30	5120	150485	51200321600001
32	2	8	30	5120	150487	51200322000001
32	2,5	8	30	5120	150488	51200322500001
40	0,25	10	36	5120	150489	51200400250001
40	0,3	10	36	5120	150490	51200400300001
40	0,4	10	36	5120	150491	51200400400001
40	0,5	10	36	5120	150492	51200400500001
40	0,6	10	36	5120	150493	51200400600001
40	0,8	10	36	5120	150494	51200400800001
40	1	10	36	5120	150495	51200401000001
40	1,2	10	36	5120	150496	51200401200001
40	1,6	10	36	5120	150497	51200401600001
40	2	10	36	5120	150499	51200402000001
40	2,5	10	36	5120	150500	51200402500001
40	3	10	36	5120	150501	51200403000001

Solid Carbide Slitting Saws

GN-Standard

Coarse Tooth Pitch similar to DIN 1838



Discount-Class 100

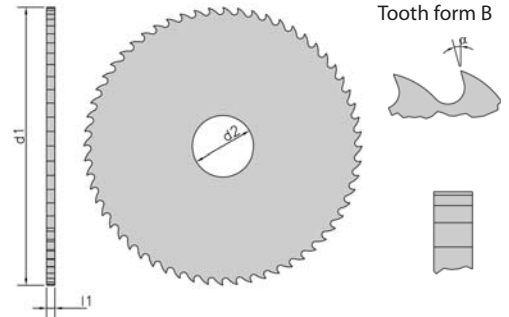
Also available with PVD coating

Execution				Coarse Tooth Pitch		
Material				Solid Carbide K10		
d ₁ mm / js 15	l ₁ mm / js 11	d ₂ mm / H 7	Teeth	Cat.-No.	EDP No.	Art.-No.
50	0,25	13	40	5120	150502	51200500250001
50	0,3	13	40	5120	150503	51200500300001
50	0,4	13	40	5120	150504	51200500400001
50	0,5	13	40	5120	150505	51200500500001
50	0,6	13	40	5120	150506	51200500600001
50	0,8	13	40	5120	150507	51200500800001
50	1	13	40	5120	150508	51200501000001
50	1,2	13	40	5120	150509	51200501200001
50	1,6	13	40	5120	150510	51200501600001
50	2	13	40	5120	150512	51200502000001
50	2,5	13	40	5120	150513	51200502500001
50	3	13	40	5120	150514	51200503000001
63	0,25	16	40	5120	150515	51200630250001
63	0,3	16	40	5120	150516	51200630300001
63	0,4	16	40	5120	150517	51200630400001
63	0,5	16	40	5120	150518	51200630500001
63	0,6	16	40	5120	150519	51200630600001
63	0,8	16	40	5120	150520	51200630800001
63	1	16	40	5120	150521	51200631000001
63	1,2	16	40	5120	150522	51200631200001
63	1,6	16	40	5120	150523	51200631600001
63	2	16	40	5120	150525	51200632000001
63	2,5	16	40	5120	150526	51200632500001
63	3	16	40	5120	150527	51200633000001
80	0,3	22	48	5120	150528	51200800300001
80	0,4	22	48	5120	150529	51200800400001
80	0,5	22	48	5120	150530	51200800500001
80	0,6	22	48	5120	150531	51200800600001
80	0,8	22	48	5120	150532	51200800800001
80	1	22	48	5120	150533	51200801000001
80	1,2	22	48	5120	150534	51200801200001
80	1,6	22	48	5120	150535	51200801600001
80	2	22	48	5120	150537	51200802000001
80	2,5	22	48	5120	150538	51200802500001
80	3	22	48	5120	150539	51200803000001
100	0,4	22	60	5120	150540	51201000400001
100	0,5	22	60	5120	150541	51201000500001
100	0,6	22	60	5120	150542	51201000600001
100	0,8	22	60	5120	150543	51201000800001
100	1	22	60	5120	150544	51201001000001
100	1,2	22	60	5120	150545	51201001200001
100	1,6	22	60	5120	150546	51201001600001
100	2	22	60	5120	150548	51201002000001
100	2,5	22	60	5120	150549	51201002500001
100	3	22	60	5120	150550	51201003000001

Solid Carbide Slitting Saws

GN-Standard

Coarse Tooth Pitch similar to DIN 1838



Discount-Class 100

Also available with PVD coating

Execution				Coarse Tooth Pitch		
Material				Solid Carbide K10		
d_1 mm / js 15	l_1 mm / js 11	d_2 mm / H 7	Teeth	Cat.-No.	EDP No.	Art.-No.
125	0,6	22	70	5120	150551	51201250600001
125	0,8	22	70	5120	150552	51201250800001
125	1	22	70	5120	150553	51201251000001
125	1,2	22	70	5120	150554	51201251200001
125	1,6	22	70	5120	150555	51201251600001
125	2	22	70	5120	150557	51201252000001
125	2,5	22	70	5120	150558	51201252500001
125	3	22	70	5120	150559	51201253000001
160	1	32	80	5120	150567	51201601000001
160	1,2	32	80	5120	150568	51201601200001
160	1,6	32	80	5120	150569	51201601600001
160	2	32	80	5120	150571	51201602000001
160	2,5	32	80	5120	150572	51201602500001
160	3	32	80	5120	150573	51201603000001

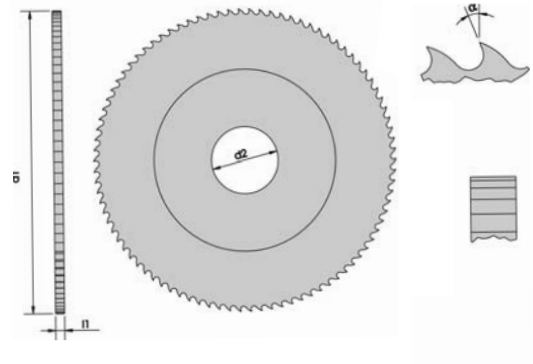
Application:

For slotting and cutting off operations of thick-walled pipes and profiles in abrasive and high-tensile materials.

Special dimensions and materials can be delivered as well.
Price on request.

**Solid Carbide Slitting Saws
GN-Standard**

for Rohbi-, Bimax-, Pressta Eisele-
and other machines



Also available with PVD coating

Material			Solid Carbide K10			
d ₁ mm / js 15	l ₁ mm / js 11	d ₂ mm / H 7	Teeth	Cat.-No.	EDP No.	Art.-No.
80	0,5	22		5130	151005	51300800500001
100	0,5	22		5130	151000	51301000500001
125	0,8	22		5130	151001	51301250800001
160	1	22	Toothing according to customer's demand	5130	151002	51301601000001
160	1	32		5130	151006	51301601000002
160	1,2	22		5130	151004	51301601200001
160	1,2	32		5130	151008	51301601200002
180	1,2	22		5130	151009	51301801200001
180	1,2	32		5130	151010	51301801200002
200	1,2	22		5130	151003	51302001200001
200	1,2	32		5130	151011	51302001200002

Application:

For special use on Rohbi-, Bimax-, Pressta-Eisele- and other machines in abrasive and high-tensile materials.
Toothing according to customer's demand.

For toothing two additional weeks delivery time.

Tools with bore ø 32 mm have two driving pin holes ø 8,5 mm on pitch circle 45 mm. The saws are polished and have an axial runout tolerance ≤ 0,05 mm.

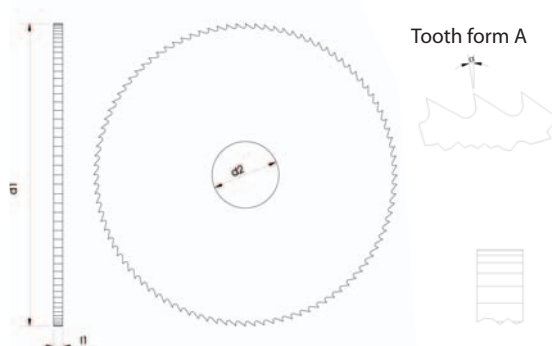
Special dimensions and materials can be delivered as well.
Price on request.

Slitting Saws HSS/HSSCo GN-Standard

Medium Tooth Pitch

Radial Rake
5°-7°

Standard Keyway
.025" widths and up



Tolerances

Diameter		Width		Arbor Hole
1"-2 1/4"	+/- .004"	Under .0400"	+/- .0008"	+ .0002" + .0008
2 1/4"-4"	+/- .006"	Over .0400"	+/- .0012"	
5"-6"	+/- .008"			
8"	+/- .012"			

Discount-Class 115

Also available with PVD coating

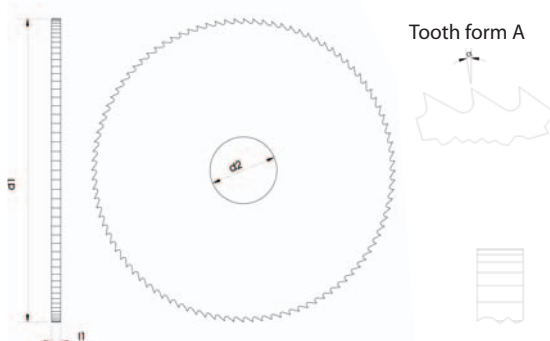
Execution				Medium Tooth Pitch		
Material				HSS, width .025" and up HSSCo		
d ₁ inch	l ₁ inch	d ₂ inch	Teeth	Cat.-No.	EDP No.	Art.-No.
1"	0.0080"	3/8"	80	1160	241002	11600250200001
1"	0.0100"	3/8"	80	1160	241003	11600250250001
1"	0.0120"	3/8"	80	1160	241004	11600250300001
1"	0.0140"	3/8"	64	1160	241006	11600250350001
1"	0.0156"	3/8"	64	1160	241007	11600250390001
1"	0.0180"	3/8"	64	1160	241009	11600250450001
1"	0.0200"	3/8"	64	1160	241011	11600250500001
1"	0.0250"	3/8"	64	1160	241013	11600250630001
1"	0.0313"	3/8"	64	1160	241015	11600250790001
1"	0.0400"	3/8"	64	1160	241020	11600251010001
1"	0.0469"	3/8"	40	1160	241022	11600251190001
1"	0.0625"	3/8"	40	1160	241026	11600251580001
1"	0.0781"	3/8"	40	1160	241029	11600251980001
1"	0.0938"	3/8"	40	1160	241034	11600252380001
1"	0.1250"	3/8"	40	1160	241041	11600253170001
1"	0.1563"	3/8"	40	1160	241045	11600253970001
1 1/4"	0.0080"	1/2"	100	1160	241068	11600310200001
1 1/4"	0.0100"	1/2"	100	1160	241069	11600310250001
1 1/4"	0.0120"	1/2"	100	1160	241070	11600310300001
1 1/4"	0.0140"	1/2"	80	1160	241072	11600310350001
1 1/4"	0.0156"	1/2"	80	1160	241073	11600310390001
1 1/4"	0.0180"	1/2"	80	1160	241075	11600310450001
1 1/4"	0.0200"	1/2"	80	1160	241077	11600310500001
1 1/4"	0.0250"	1/2"	80	1160	241079	11600310630001
1 1/4"	0.0313"	1/2"	80	1160	241081	11600310790001
1 1/4"	0.0400"	1/2"	48	1160	241086	11600311010001
1 1/4"	0.0469"	1/2"	48	1160	241088	11600311190001
1 1/4"	0.0625"	1/2"	48	1160	241092	11600311580001
1 1/4"	0.0781"	1/2"	48	1160	241095	11600311980001
1 1/4"	0.0938"	1/2"	48	1160	241100	11600312380001
1 1/4"	0.1250"	1/2"	48	1160	241107	11600313170001
1 1/2"	0.0080"	1/2"	110	1160	241134	11600380200001
1 1/2"	0.0100"	1/2"	110	1160	241135	11600380250001
1 1/2"	0.0120"	1/2"	110	1160	241136	11600380300001
1 1/2"	0.0140"	1/2"	80	1160	241138	11600380350001
1 1/2"	0.0156"	1/2"	80	1160	241139	11600380390001
1 1/2"	0.0180"	1/2"	80	1160	241141	11600380450001
1 1/2"	0.0200"	1/2"	80	1160	241143	11600380500001
1 1/2"	0.0250"	1/2"	80	1160	241145	11600380630001
1 1/2"	0.0313"	1/2"	80	1160	241147	11600380790001
1 1/2"	0.0400"	1/2"	48	1160	241152	11600381010001
1 1/2"	0.0469"	1/2"	48	1160	241154	11600381190001
1 1/2"	0.0625"	1/2"	48	1160	241158	11600381580001
1 1/2"	0.0781"	1/2"	48	1160	241161	11600381980001
1 1/2"	0.0938"	1/2"	48	1160	241166	11600382380001
1 1/2"	0.1250"	1/2"	48	1160	241173	11600383170001

Slitting Saws HSS/HSSCo GN-Standard

Medium Tooth Pitch

Radial Rake
5°-7°

Standard Keyway
.025" widths and up



Tolerances

Diameter		Width		Arbor Hole
1"-2 1/4"	+/- .004"	Under .0400"	+/- .0008"	+ .0002" + .0008"
2 1/4"-4"	+/- .006"	Over .0400"	+/- .0012"	
5"-6"	+/- .008"			
8"	+/- .012"			

Discount-Class 115

Also available with PVD coating

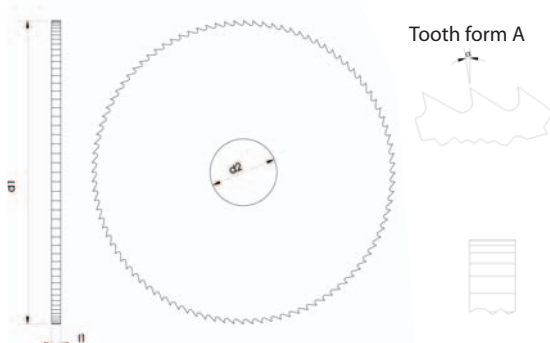
Execution				Medium Tooth Pitch		
Material				HSS, width .025" and up HSSCo		
d ₁ inch	l ₁ inch	d ₂ inch	Teeth	Cat.-No.	EDP No.	Art.-No.
1 3/4"	0.0080"	1/2"	120	1160	241200	11600440200001
1 3/4"	0.0100"	1/2"	120	1160	241201	11600440250001
1 3/4"	0.0120"	1/2"	120	1160	241202	11600440300001
1 3/4"	0.0140"	1/2"	120	1160	241204	11600440350001
1 3/4"	0.0156"	1/2"	120	1160	241205	11600440390001
1 3/4"	0.0180"	1/2"	90	1160	241207	11600440450001
1 3/4"	0.0200"	1/2"	90	1160	241209	11600440500001
1 3/4"	0.0250"	1/2"	90	1160	241211	11600440630001
1 3/4"	0.0313"	1/2"	90	1160	241213	11600440790001
1 3/4"	0.0400"	1/2"	90	1160	241218	11600441010001
1 3/4"	0.0469"	1/2"	56	1160	241220	11600441190001
1 3/4"	0.0625"	1/2"	56	1160	241224	11600441580001
1 3/4"	0.0781"	1/2"	56	1160	241227	11600441980001
1 3/4"	0.0938"	1/2"	56	1160	241232	11600442380001
1 3/4"	0.1250"	1/2"	56	1160	241239	11600443170001
1 3/4"	0.1563"	1/2"	56	1160	241243	11600443970001
2"	0.0080"	5/8"	132	1160	241266	11600500200001
2"	0.0100"	5/8"	132	1160	241267	11600500250001
2"	0.0120"	5/8"	132	1160	241268	11600500300001
2"	0.0140"	5/8"	132	1160	241270	11600500350001
2"	0.0156"	5/8"	132	1160	241271	11600500390001
2"	0.0180"	5/8"	100	1160	241273	11600500450001
2"	0.0200"	5/8"	100	1160	241275	11600500500001
2"	0.0250"	5/8"	100	1160	241277	11600500630001
2"	0.0313"	5/8"	100	1160	241279	11600500790001
2"	0.0400"	5/8"	100	1160	241284	11600501010001
2"	0.0469"	5/8"	64	1160	241286	11600501190001
2"	0.0625"	5/8"	64	1160	241290	11600501580001
2"	0.0781"	5/8"	64	1160	241293	11600501980001
2"	0.0938"	5/8"	64	1160	241298	11600502380001
2"	0.1250"	5/8"	64	1160	241305	11600503170001
2"	0.1563"	5/8"	64	1160	241309	11600503970001
2 1/4"	0.0080"	5/8"	60	1160	241728	11600570200001
2 1/4"	0.0100"	5/8"	60	1160	241729	11600570250001
2 1/4"	0.0130"	5/8"	60	1160	241731	11600570330001
2 1/4"	0.0140"	5/8"	60	1160	241732	11600570350001
2 1/4"	0.0180"	5/8"	60	1160	241735	11600570450001
2 1/4"	0.0200"	5/8"	60	1160	241737	11600570500001
2 1/4"	0.0230"	5/8"	60	1160	241738	11600570580001
2 1/4"	0.0320"	5/8"	60	1160	241741	11600570810001
2 1/4"	0.0360"	5/8"	60	1160	241744	11600570910001
2 1/4"	0.0450"	5/8"	60	1160	241747	11600571010002
2 1/4"	0.0510"	5/8"	60	1160	241749	11600571020001
2 1/4"	0.0570"	5/8"	60	1160	241750	11600571040001
2 1/4"	0.0720"	5/8"	60	1160	241754	11600571080001
2 1/4"	0.0810"	5/8"	60	1160	241757	11600572000001
2 1/4"	0.0910"	5/8"	60	1160	241759	11600572030001

Slitting Saws HSS/HSSCo GN-Standard

Medium Tooth Pitch

Radial Rake
5°-7°

Standard Keyway
.025" widths and up



Tolerances

Diameter		Width		Arbor Hole
1"-2 1/4"	+/- .004"	Under .0400"	+/- .0008"	+ .0002" + .0008"
2 1/4"-4"	+/- .006"	Over .0400"	+/- .0012"	
5"-6"	+/- .008"			
8"	+/- .012"			

Discount-Class up to d₁ 3" = 115, above d₁ 3" = 125

Also available with PVD coating

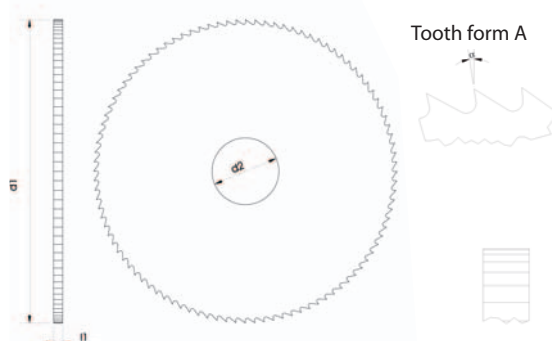
Execution				Medium Tooth Pitch			
Material				HSS, dia. 4" and up or width .025" and up HSSCo			
d ₁ inch	l ₁ inch	d ₂ inch	Teeth	Cat.-No.	EDP No.	Art.-No.	
2 1/2"	0.0100"	5/8"	160	1160	241333	11600630250001	
2 1/2"	0.0120"	5/8"	160	1160	241334	11600630300001	
2 1/2"	0.0140"	5/8"	160	1160	241336	11600630350001	
2 1/2"	0.0156"	5/8"	160	1160	241337	11600630390001	
2 1/2"	0.0180"	5/8"	160	1160	241339	11600630450001	
2 1/2"	0.0200"	5/8"	120	1160	241341	11600630500001	
2 1/2"	0.0250"	5/8"	120	1160	241343	11600630630001	
2 1/2"	0.0313"	5/8"	120	1160	241345	11600630790001	
2 1/2"	0.0400"	5/8"	120	1160	241350	11600631010001	
2 1/2"	0.0469"	5/8"	120	1160	241352	11600631190001	
2 1/2"	0.0625"	5/8"	72	1160	241356	11600631580001	
2 1/2"	0.0781"	5/8"	72	1160	241359	11600631980001	
2 1/2"	0.0938"	5/8"	72	1160	241364	11600632380001	
2 1/2"	0.1250"	5/8"	72	1160	241371	11600633170001	
2 1/2"	0.1563"	5/8"	72	1160	241375	11600633970001	
3"	0.0120"	1"	160	1160	241400	11600760300001	
3"	0.0140"	1"	160	1160	241402	11600760350001	
3"	0.0156"	1"	160	1160	241403	11600760390001	
3"	0.0180"	1"	160	1160	241405	11600760450001	
3"	0.0200"	1"	160	1160	241407	11600760500001	
3"	0.0250"	1"	128	1160	241409	11600760630001	
3"	0.0313"	1"	128	1160	241411	11600760790001	
3"	0.0400"	1"	128	1160	241416	11600761010001	
3"	0.0469"	1"	128	1160	241418	11600761190001	
3"	0.0625"	1"	80	1160	241422	11600761580001	
3"	0.0781"	1"	80	1160	241425	11600761980001	
3"	0.0938"	1"	80	1160	241430	11600762380001	
3"	0.1250"	1"	80	1160	241437	11600763170001	
3"	0.1563"	1"	80	1160	241441	11600763970001	
4"	0.0200"	1"	160	1160	241473	11601010500001	
4"	0.0250"	1"	160	1160	241475	11601010630001	
4"	0.0313"	1"	160	1160	241477	11601010790001	
4"	0.0400"	1"	128	1160	241482	11601011010001	
4"	0.0469"	1"	128	1160	241484	11601011190001	
4"	0.0625"	1"	128	1160	241488	11601011580001	
4"	0.0781"	1"	80	1160	241491	11601011980001	
4"	0.0938"	1"	80	1160	241496	11601012380001	
4"	0.1250"	1"	80	1160	241503	11601013170001	
4"	0.1563"	1"	80	1160	241507	11601013970001	

Slitting Saws HSS/HSSCo GN-Standard

Medium Tooth Pitch

Radial Rake
5°-7°

Standard Keyway
.025" widths and up



Tolerances

Diameter		Width		Arbor Hole
1"-2 1/4"	+/- .004"	Under .0400"	+/- .0008"	+ .0002" + .0008"
2 1/4"-4"	+/- .006"	Over .0400"	+/- .0012"	
5"-6"	+/- .008"			
8"	+/- .012"			

Discount-Class 125

Also available with PVD coating

Execution				Medium Tooth Pitch		
Material				HSSCo		
d ₁ inch	l ₁ inch	d ₂ inch	Teeth	Cat.-No.	EDP No.	Art.-No.
5"	0.0313"	1"	160	1160	241543	11601270790001
5"	0.0400"	1"	160	1160	241548	11601271010001
5"	0.0469"	1"	160	1160	241550	11601271190001
5"	0.0625"	1"	128	1160	241554	11601271580001
5"	0.0781"	1"	128	1160	241557	11601271980001
5"	0.0938"	1"	100	1160	241562	11601272380001
5"	0.1250"	1"	100	1160	241569	11601273170001
5"	0.1563"	1"	100	1160	241573	11601273970001
6"	0.0469"	1 1/4"	160	1160	241616	11601521190001
6"	0.0625"	1 1/4"	160	1160	241620	11601521580001
6"	0.0781"	1 1/4"	160	1160	241623	11601521980001
6"	0.0938"	1 1/4"	128	1160	241628	11601522380001
6"	0.1250"	1 1/4"	128	1160	241635	11601523170001
6"	0.1563"	1 1/4"	128	1160	241639	11601523970001
8"	0.0469"	1 1/4"	160	1160	241682	11602031190001
8"	0.0625"	1 1/4"	160	1160	241686	11602031580001
8"	0.0781"	1 1/4"	160	1160	241689	11602031980001
8"	0.0938"	1 1/4"	160	1160	241694	11602032380001
8"	0.1250"	1 1/4"	128	1160	241701	11602033170001

Application:

Medium Tooth Saws are recommended for shallow slitting and slotting operations, cutting medium heavy sections and profiles, slotting screws, bolts and nuts. Depth of cut is limited.

Special dimensions and materials can be delivered as well.
Price on request.

Work Material:

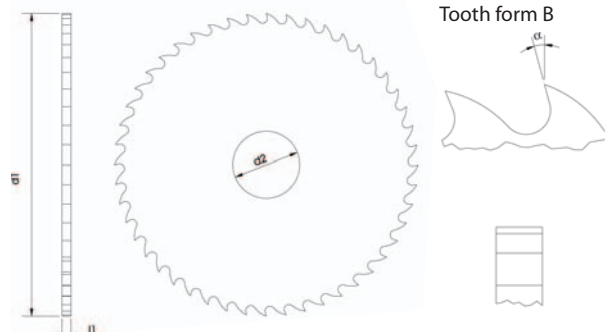
Medium Tooth Saws perform well in medium to high tensile strength steels, hard non-ferrous materials and hard and abrasive plastics.

Slitting Saws HSS/HSSCo GN-Standard

Coarse Tooth Pitch

Radial Rake
15°

Standard Keyway
.025" widths and up



Tolerances

Diameter		Width		Arbor Hole
1 3/4"-2"	+/- .004"	Under .0400"	+/- .0008"	+ .0002" + .0008"
2 1/2"-4"	+/- .006"	Over .0400"	+/- .0012"	
5"-6"	+/- .008"			
8"	+/- .012"			

Discount-Class 115

Also available with PVD coating

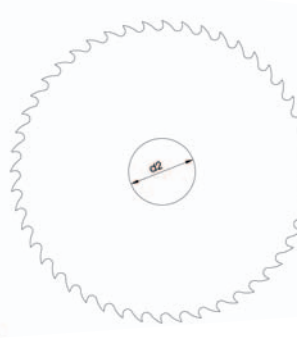
Execution				Coarse Tooth Pitch		
Material				HSS, width .025" and up HSSCo		
d ₁ inch	l ₁ inch	d ₂ inch	Teeth	Cat.-No.	EDP No.	Art.-No.
1 3/4"	0.0200"	1/2"	44	1260	240209	12600440500001
1 3/4"	0.0250"	1/2"	44	1260	240211	12600440630001
1 3/4"	0.0313"	1/2"	44	1260	240213	12600440790001
1 3/4"	0.0400"	1/2"	44	1260	240218	12600441010001
1 3/4"	0.0469"	1/2"	32	1260	240220	12600441190001
1 3/4"	0.0625"	1/2"	32	1260	240224	12600441580001
1 3/4"	0.0781"	1/2"	32	1260	240227	12600441980001
1 3/4"	0.0938"	1/2"	32	1260	240232	12600442380001
1 3/4"	0.1250"	1/2"	32	1260	240239	12600443170001
1 3/4"	0.1563"	1/2"	32	1260	240243	12600443970001
2"	0.0200"	5/8"	48	1260	240275	12600500500001
2"	0.0250"	5/8"	48	1260	240277	12600500630001
2"	0.0313"	5/8"	48	1260	240279	12600500790001
2"	0.0400"	5/8"	48	1260	240284	12600501010001
2"	0.0469"	5/8"	36	1260	240286	12600501190001
2"	0.0625"	5/8"	36	1260	240290	12600501580001
2"	0.0781"	5/8"	36	1260	240293	12600501980001
2"	0.0938"	5/8"	36	1260	240298	12600502380001
2"	0.1250"	5/8"	36	1260	240305	12600503170001
2"	0.1563"	5/8"	36	1260	240309	12600503970001
2 1/2"	0.0200"	5/8"	56	1260	240340	12600630500001
2 1/2"	0.0250"	5/8"	56	1260	240343	12600630630001
2 1/2"	0.0313"	5/8"	56	1260	240345	12600630790001
2 1/2"	0.0400"	5/8"	56	1260	240350	12600631010001
2 1/2"	0.0469"	5/8"	56	1260	240352	12600631190001
2 1/2"	0.0625"	5/8"	36	1260	240356	12600631580001
2 1/2"	0.0781"	5/8"	36	1260	240359	12600631980001
2 1/2"	0.0938"	5/8"	36	1260	240364	12600632380001
2 1/2"	0.1250"	5/8"	36	1260	240371	12600633170001
2 1/2"	0.1563"	5/8"	36	1260	240375	12600633970001
3"	0.0200"	1"	64	1260	240407	12600760500001
3"	0.0250"	1"	64	1260	240409	12600760630001
3"	0.0313"	1"	64	1260	240411	12600760790001
3"	0.0400"	1"	64	1260	240416	12600761010001
3"	0.0469"	1"	64	1260	240418	12600761190001
3"	0.0625"	1"	40	1260	240422	12600761580001
3"	0.0781"	1"	40	1260	240425	12600761980001
3"	0.0938"	1"	40	1260	240430	12600762380001
3"	0.1250"	1"	40	1260	240437	12600763170001
3"	0.1563"	1"	40	1260	240441	12600763970001

**Slitting Saws HSS/HSSCo
GN-Standard**

Coarse Tooth Pitch

Radial Rake
15°

Standard Keyway
.025" widths and up



Tolerances

Diameter	Width	Arbor Hole
1 3/4"-2" +/- .004"	Under .0400" +/- .0008"	+ .0002" + .0008"
2 1/2"-4" +/- .006"	Over .0400" +/- .0012"	
5"-6" +/- .008"		
8" +/- .012"		

Discount-Class 125

Also available with PVD coating

Execution			Coarse Tooth Pitch			
Material			HSSCo			
d ₁ inch	l ₁ inch	d ₂ inch	Teeth	Cat.-No.	EDP No.	Art.-No.
4"	0.0200"	1"	64	1260	240473	12601010500001
4"	0.0250"	1"	64	1260	240475	12601010630001
4"	0.0313"	1"	64	1260	240477	12601010790001
4"	0.0400"	1"	64	1260	240482	12601011010001
4"	0.0469"	1"	64	1260	240484	12601011190001
4"	0.0625"	1"	64	1260	240488	12601011580001
4"	0.0781"	1"	48	1260	240491	12601011980001
4"	0.0938"	1"	48	1260	240496	12601012380001
4"	0.1250"	1"	48	1260	240503	12601013170001
5"	0.0313"	1"	80	1260	240543	12601270790001
5"	0.0400"	1"	80	1260	240548	12601271010001
5"	0.0469"	1"	80	1260	240550	12601271190001
5"	0.0625"	1"	64	1260	240554	12601271580001
5"	0.0781"	1"	64	1260	240557	12601271980001
5"	0.0938"	1"	48	1260	240562	12601272380001
5"	0.1250"	1"	48	1260	240569	12601273170001
5"	0.1563"	1"	48	1260	240573	12601273970001
6"	0.0469"	1 1/4"	80	1260	240616	12601521190001
6"	0.0625"	1 1/4"	80	1260	240620	12601521580001
6"	0.0781"	1 1/4"	80	1260	240623	12601521980001
6"	0.0938"	1 1/4"	64	1260	240628	12601522380001
6"	0.1250"	1 1/4"	64	1260	240635	12601523170001
6"	0.1563"	1 1/4"	64	1260	240639	12601523970001
8"	0.0469"	1 1/4"	80	1260	240682	12602031190001
8"	0.0625"	1 1/4"	80	1260	240686	12602031580001
8"	0.0781"	1 1/4"	80	1260	240689	12602031980001
8"	0.0938"	1 1/4"	80	1260	240694	12602032380001
8"	0.1250"	1 1/4"	64	1260	240701	12602033170001

Application:

Coarse Tooth Saws are recommended for medium depth slitting and slotting operations, cutting thick sections, profiles, extrusions and heavy wall tubing.

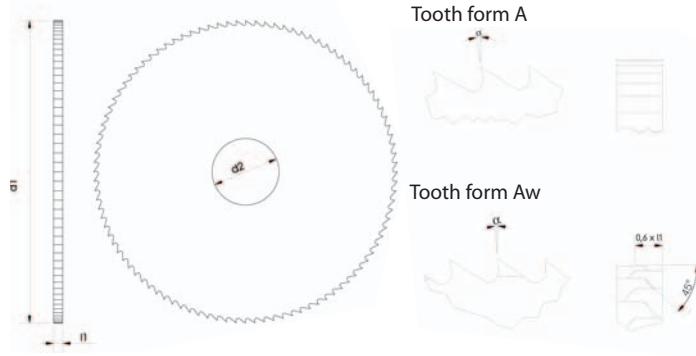
Work Material:

Coarse Tooth Saws perform well in free machining of medium tensile strength steels, cast irons, hard and abrasive plastics, aluminum, brass, bronze and other non-ferrous alloys.

Special dimensions and materials can be delivered as well. Price on request.

Slitting Saws HSS GN-Standard

Medium Tooth Pitch similar to DIN 1837



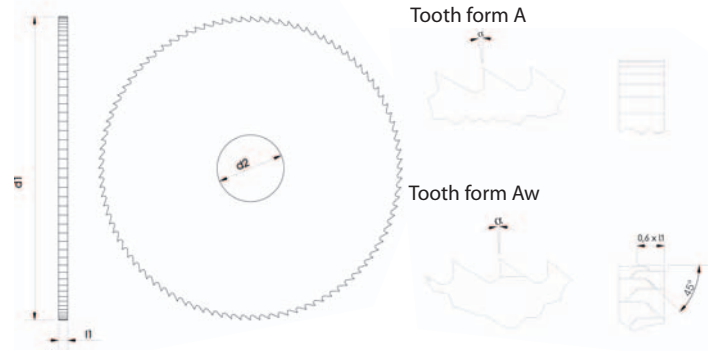
Also available with PVD coating

Discount-Class 110

Tooth form				A			Aw		
Material				HSS			HSS		
d ₁ mm / js 15	l ₁ mm / js 11	d ₂ mm / H 7	Teeth	Cat.-No.	EDP No.	Art.-No.	Cat.-No.	EDP No.	Art.-No.
20	0,2	5	80	1100	110001	11000200200001			
20	0,25	5	64	1100	110002	11000200250001			
20	0,3	5	64	1100	110003	11000200300001			
20	0,4	5	64	1100	110004	11000200400001			
20	0,5	5	48	1100	110005	11000200500001			
20	0,6	5	48	1100	110006	11000200600001			
20	0,8	5	48	1100	110008	11000200800001			
20	1	5	40	1100	110010	11000201000001			
20	1,2	5	40	1100	110011	11000201200001			
20	1,6	5	40	1100	110013	11000201600001			
20	2	5	32	1100	110014	11000202000001			
25	0,2	8	80	1100	110021	11000250200001			
25	0,25	8	80	1100	110022	11000250250001			
25	0,3	8	80	1100	110023	11000250300001			
25	0,4	8	64	1100	110024	11000250400001			
25	0,5	8	64	1100	110025	11000250500001			
25	0,6	8	64	1100	110026	11000250600001			
25	0,8	8	48	1100	110028	11000250800001			
25	1	8	48	1100	110030	11000251000001			
25	1,2	8	48	1100	110031	11000251200001			
25	1,6	8	40	1100	110033	11000251600001			
25	2	8	40	1100	110034	11000252000001			
25	2,5	8	40	1100	110035	11000252500001			
25	3	8	32	1100	110036	11000253000001			
32	0,2	8	100	1100	110041	11000320200001			
32	0,25	8	100	1100	110042	11000320250001			
32	0,3	8	80	1100	110043	11000320300001			
32	0,4	8	80	1100	110044	11000320400001			
32	0,5	8	80	1100	110045	11000320500001			
32	0,6	8	64	1100	110046	11000320600001			
32	0,8	8	64	1100	110048	11000320800001			
32	1	8	64	1100	110050	11000321000001			
32	1,2	8	48	1100	110051	11000321200001			
32	1,6	8	48	1100	110053	11000321600001			
32	2	8	48	1100	110054	11000322000001			
32	2,5	8	40	1100	110055	11000322500001			
32	3	8	40	1100	110056	11000323000001			
32	4	8	40	1100	110058	11000324000001			

Slitting Saws HSS GN-Standard

Medium Tooth Pitch similar to DIN 1837



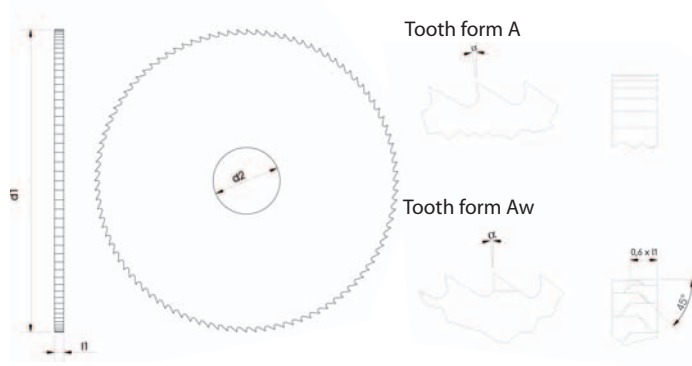
Also available with PVD coating

Discount-Class 110

Tooth form				A			Aw		
Material				HSS			HSS		
d_1 mm/js 15	l_1 mm/js 11	d_2 mm/H7	Teeth	Cat.-No.	EDP No.	Art.-No.	Cat.-No.	EDP No.	Art.-No.
40	0,2	10	128	1100	110061	11000400200001			
40	0,25	10	100	1100	110062	11000400250001			
40	0,3	10	100	1100	110063	11000400300001			
40	0,4	10	100	1100	110064	11000400400001			
40	0,5	10	80	1100	110065	11000400500001			
40	0,6	10	80	1100	110066	11000400600001			
40	0,8	10	80	1100	110068	11000400800001			
40	1	10	64	1100	110070	11000401000001			
40	1,2	10	64	1100	110071	11000401200001			
40	1,6	10	64	1100	110073	11000401600001			
40	2	10	48	1100	110074	11000402000001			
40	2,5	10	48	1100	110075	11000402500001			
40	3	10	48	1100	110076	11000403000001			
40	4	10	40	1100	110078	11000404000001			
50	0,2	13	128	1100	110081	11000500200001			
50	0,25	13	128	1100	110082	11000500250001			
50	0,3	13	128	1100	110083	11000500300001			
50	0,4	13	100	1100	110084	11000500400001			
50	0,5	13	100	1100	110085	11000500500001			
50	0,6	13	100	1100	110086	11000500600001			
50	0,8	13	80	1100	110088	11000500800001			
50	1	13	80	1100	110090	11000501000001	1110	110205	11100501000001
50	1,2	13	80	1100	110091	11000501200001	1110	110206	11100501200001
50	1,6	13	64	1100	110093	11000501600001	1110	110207	11100501600001
50	2	13	64	1100	110094	11000502000001	1110	110208	11100502000001
50	2,5	13	64	1100	110095	11000502500001	1110	110209	11100502500001
50	3	13	48	1100	110096	11000503000001	1110	110210	11100503000001
50	4	13	48	1100	110098	11000504000001	1110	110211	11100504000001
50	5	13	48	1100	110099	11000505000001			
63	0,25	16	160	1100	110101	11000630250001			
63	0,3	16	128	1100	110102	11000630300001			
63	0,4	16	128	1100	110103	11000630400001			
63	0,5	16	128	1100	110104	11000630500001			
63	0,6	16	100	1100	110105	11000630600001			
63	0,8	16	100	1100	110107	11000630800001			
63	1	16	100	1100	110109	11000631000001	1110	110214	11100631000001
63	1,2	16	80	1100	110110	11000631200001	1110	110215	11100631200001
63	1,6	16	80	1100	110112	11000631600001	1110	110216	11100631600001
63	2	16	80	1100	110113	11000632000001	1110	110217	11100632000001
63	2,5	16	64	1100	110114	11000632500001	1110	110218	11100632500001
63	3	16	64	1100	110115	11000633000001	1110	110219	11100633000001
63	4	16	64	1100	110117	11000634000001	1110	110220	11100634000001
63	5	16	48	1100	110118	11000635000001			
63	6	16	48	1100	110119	11000636000001			

Slitting Saws HSS GN-Standard

Medium Tooth Pitch similar to DIN 1837



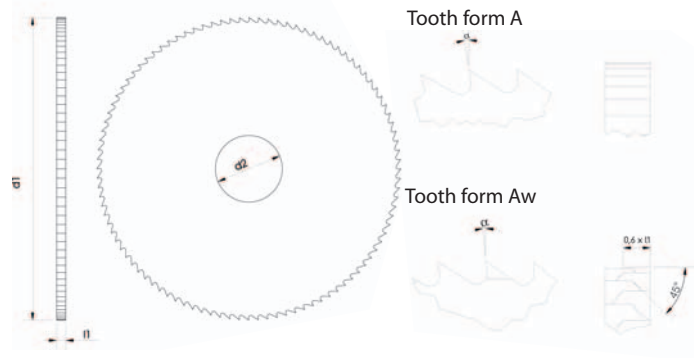
Also available with PVD coating

Discount-Class up to d₁ 100 = 110, above d₁ 100 = 120

Tooth form				A			Aw		
Material				HSS			HSS		
d ₁ mm / js 15	l ₁ mm / js 11	d ₂ mm / H 7	Teeth	Cat.-No.	EDP No.	Art.-No.	Cat.-No.	EDP No.	Art.-No.
80	0,3	22	160	1100	110120	11000800300001			
80	0,4	22	160	1100	110121	11000800400001			
80	0,5	22	128	1100	110122	11000800500001			
80	0,6	22	128	1100	110123	11000800600001			
80	0,8	22	128	1100	110125	11000800800001			
80	1	22	100	1100	110127	11000801000001	1110	110223	11100801000001
80	1,2	22	100	1100	110128	11000801200001	1110	110224	11100801200001
80	1,6	22	100	1100	110130	11000801600001	1110	110225	11100801600001
80	2	22	80	1100	110131	11000802000001	1110	110226	11100802000001
80	2,5	22	80	1100	110132	11000802500001	1110	110227	11100802500001
80	3	22	80	1100	110133	11000803000001	1110	110228	11100803000001
80	4	22	64	1100	110135	11000804000001	1110	110229	11100804000001
80	5	22	64	1100	110136	11000805000001			
80	6	22	64	1100	110137	11000806000001			
100	0,5	22	160	1100	110138	11001000500001			
100	0,6	22	160	1100	110139	11001000600001			
100	0,8	22	128	1100	110141	11001000800001			
100	1	22	128	1100	110143	11001001000001	1110	110232	11101001000001
100	1,2	22	128	1100	110144	11001001200001	1110	110233	11101001200001
100	1,6	22	100	1100	110146	11001001600001	1110	110234	11101001600001
100	2	22	100	1100	110147	11001002000001	1110	110235	11101002000001
100	2,5	22	100	1100	110148	11001002500001	1110	110236	11101002500001
100	3	22	80	1100	110149	11001003000001	1110	110237	11101003000001
100	4	22	80	1100	110151	11001004000001	1110	110238	11101004000001
100	5	22	80	1100	110152	11001005000001			
100	6	22	64	1100	110153	11001006000001			
125	0,6	22	160	1100	110154	11001250600001			
125	0,8	22	160	1100	110156	11001250800001			
125	1	22	160	1100	110158	11001251000001	1110	110241	11101251000001
125	1,2	22	128	1100	110159	11001251200001	1110	110242	11101251200001
125	1,6	22	128	1100	110161	11001251600001	1110	110243	11101251600001
125	2	22	128	1100	110162	11001252000001	1110	110244	11101252000001
125	2,5	22	100	1100	110163	11001252500001	1110	110245	11101252500001
125	3	22	100	1100	110164	11001253000001	1110	110246	11101253000001
125	4	22	100	1100	110166	11001254000001	1110	110247	11101254000001
125	5	22	80	1100	110167	11001255000001			
125	6	22	80	1100	110168	11001256000001			

**Slitting Saws HSS
GN-Standard**

Medium Tooth Pitch similar to DIN 1837



Also available with PVD coating

Discount-Class 120

Tooth form				A			Aw		
Material				HSS			HSS		
d ₁ mm/js 15	l ₁ mm/js 11	d ₂ mm/H 7	Teeth	Cat.-No.	EDP No.	Art.-No.	Cat.-No.	EDP No.	Art.-No.
160	1	32	160	1100	110169	11001601000001	1110	110250	11101601000001
160	1,2	32	160	1100	110170	11001601200001	1110	110251	11101601200001
160	1,6	32	160	1100	110172	11001601600001	1110	110252	11101601600001
160	2	32	128	1100	110173	11001602000001	1110	110253	11101602000001
160	2,5	32	128	1100	110174	11001602500001	1110	110254	11101602500001
160	3	32	128	1100	110175	11001603000001	1110	110255	11101603000001
160	4	32	100	1100	110177	11001604000001	1110	110256	11101604000001
200	1	32	200	1100	110180	11002001000001	1110	110259	11102001000001
200	1,2	32	200	1100	110181	11002001200001	1110	110260	11102001200001
200	1,6	32	160	1100	110183	11002001600001	1110	110261	11102001600001
200	2	32	160	1100	110184	11002002000001	1110	110262	11102002000001
200	2,5	32	160	1100	110185	11002002500001	1110	110263	11102002500001
200	3	32	128	1100	110186	11002003000001	1110	110264	11102003000001
250	1,6	32	200	1100	110191	11002501600001	1110	110268	11102501600001
250	2	32	200	1100	110192	11002502000001	1110	110269	11102502000001
250	2,5	32	160	1100	110193	11002502500001	1110	110270	11102502500001
250	3	32	160	1100	110194	11002503000001	1110	110271	11102503000001

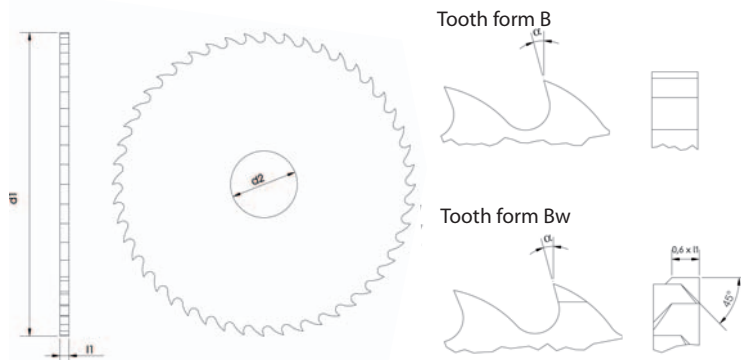
Application:

For slotting and cutting off operations of thin profiles and pipes.

Special dimensions and materials can be delivered as well.
Price on request.

Slitting Saws HSS GN-Standard

Coarse Tooth Pitch similar to DIN 1838



1

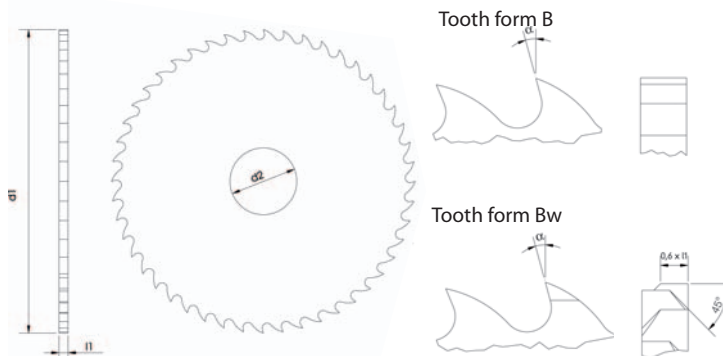
Discount-Class 110

Also available with PVD coating

Tooth form				B			Bw		
Material				HSS			HSS		
d ₁ mm/js 15	l ₁ mm/js 11	d ₂ mm/H 7	Teeth	Cat.-No.	EDP No.	Art.-No.	Cat.-No.	EDP No.	Art.-No.
50	0,5	13	48	1200	110324	12000500500001			
50	0,6	13	48	1200	110325	12000500600001			
50	0,8	13	40	1200	110327	12000500800001			
50	1	13	40	1200	110329	12000501000001	1210	110444	12100501000001
50	1,2	13	40	1200	110330	12000501200001	1210	110445	12100501200001
50	1,6	13	32	1200	110332	12000501600001	1210	110446	12100501600001
50	2	13	32	1200	110333	12000502000001	1210	110447	12100502000001
50	2,5	13	32	1200	110334	12000502500001	1210	110448	12100502500001
50	3	13	24	1200	110335	12000503000001	1210	110449	12100503000001
50	4	13	24	1200	110337	12000504000001	1210	110450	12100504000001
50	5	13	24	1200	110338	12000505000001			
63	0,5	16	64	1200	110343	12000630500001			
63	0,6	16	48	1200	110344	12000630600001			
63	0,8	16	48	1200	110346	12000630800001			
63	1	16	48	1200	110348	12000631000001	1210	110453	12100631000001
63	1,2	16	40	1200	110349	12000631200001	1210	110454	12100631200001
63	1,6	16	40	1200	110351	12000631600001	1210	110455	12100631600001
63	2	16	40	1200	110352	12000632000001	1210	110456	12100632000001
63	2,5	16	32	1200	110353	12000632500001	1210	110457	12100632500001
63	3	16	32	1200	110354	12000633000001	1210	110458	12100633000001
63	4	16	32	1200	110356	12000634000001	1210	110459	12100634000001
63	5	16	24	1200	110357	12000635000001			
63	6	16	24	1200	110358	12000636000001			
80	0,5	22	64	1200	110361	12000800500001			
80	0,6	22	64	1200	110362	12000800600001			
80	0,8	22	64	1200	110364	12000800800001			
80	1	22	48	1200	110366	12000801000001	1210	110462	12100801000001
80	1,2	22	48	1200	110367	12000801200001	1210	110463	12100801200001
80	1,6	22	48	1200	110369	12000801600001	1210	110464	12100801600001
80	2	22	40	1200	110370	12000802000001	1210	110465	12100802000001
80	2,5	22	40	1200	110371	12000802500001	1210	110466	12100802500001
80	3	22	40	1200	110372	12000803000001	1210	110467	12100803000001
80	4	22	32	1200	110374	12000804000001	1210	110468	12100804000001
80	5	22	32	1200	110375	12000805000001			
80	6	22	32	1200	110376	12000806000001			

Slitting Saws HSS GN-Standard

Coarse Tooth Pitch similar to DIN 1838



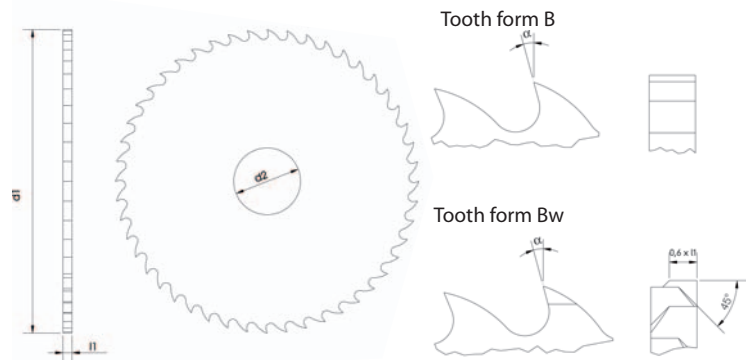
Discount-Class up to d_1 100 = 110, above d_1 100 = 120

Also available with PVD coating

Tooth form				B			Bw		
Material				HSS			HSS		
d_1 mm/js 15	l_1 mm/js 11	d_2 mm/H7	Teeth	Cat.-No.	EDP No.	Art.-No.	Cat.-No.	EDP No.	Art.-No.
100	0,5	22	80	1200	110377	12001000500001			
100	0,6	22	80	1200	110378	12001000600001			
100	0,8	22	64	1200	110380	12001000800001			
100	1	22	64	1200	110382	12001001000001	1210	110471	12101001000001
100	1,2	22	64	1200	110383	12001001200001	1210	110472	12101001200001
100	1,6	22	48	1200	110385	12001001600001	1210	110473	12101001600001
100	2	22	48	1200	110386	12001002000001	1210	110474	12101002000001
100	2,5	22	48	1200	110387	12001002500001	1210	110475	12101002500001
100	3	22	40	1200	110388	12001003000001	1210	110476	12101003000001
100	4	22	40	1200	110390	12001004000001	1210	110477	12101004000001
100	5	22	40	1200	110391	12001005000001			
100	6	22	32	1200	110392	12001006000001			
125	0,6	22	80	1200	110393	12001250600001			
125	0,8	22	80	1200	110395	12001250800001			
125	1	22	80	1200	110397	12001251000001	1210	110480	12101251000001
125	1,2	22	64	1200	110398	12001251200001	1210	110481	12101251200001
125	1,6	22	64	1200	110400	12001251600001	1210	110482	12101251600001
125	2	22	64	1200	110401	12001252000001	1210	110483	12101252000001
125	2,5	22	48	1200	110402	12001252500001	1210	110484	12101252500001
125	3	22	48	1200	110403	12001253000001	1210	110485	12101253000001
125	4	22	48	1200	110405	12001254000001	1210	110486	12101254000001
125	5	22	40	1200	110406	12001255000001			
125	6	22	40	1200	110407	12001256000001			
160	1	32	80	1200	110408	12001601000001	1210	110489	12101601000001
160	1,2	32	80	1200	110409	12001601200001	1210	110490	12101601200001
160	1,6	32	80	1200	110411	12001601600001	1210	110491	12101601600001
160	2	32	64	1200	110412	12001602000001	1210	110492	12101602000001
160	2,5	32	64	1200	110413	12001602500001	1210	110493	12101602500001
160	3	32	64	1200	110414	12001603000001	1210	110494	12101603000001
160	4	32	50	1200	110416	12001604000001	1210	110495	12101604000001

Slitting Saws HSS GN-Standard

Coarse Tooth Pitch similar to DIN 1838



Discount-Class 120

Also available with PVD coating

Tooth form				B			Bw		
Material				HSS			HSS		
d ₁ mm/js 15	l ₁ mm/js 11	d ₂ mm/H7	Teeth	Cat.-No.	EDP No.	Art.-No.	Cat.-No.	EDP No.	Art.-No.
200	1	32	100	1200	110419	12002001000001	1210	110498	12102001000001
200	1,2	32	100	1200	110420	12002001200001	1210	110499	12102001200001
200	1,6	32	80	1200	110422	12002001600001	1210	110500	12102001600001
200	2	32	80	1200	110423	12002002000001	1210	110501	12102002000001
200	2,5	32	80	1200	110424	12002002500001	1210	110502	12102002500001
200	3	32	64	1200	110425	12002003000001	1210	110503	12102003000001
250	1,6	32	100	1200	110430	12002501600001	1210	110507	12102501600001
250	2	32	100	1200	110431	12002502000001	1210	110508	12102502000001
250	2,5	32	80	1200	110432	12002502500001	1210	110509	12102502500001
250	3	32	80	1200	110433	12002503000001	1210	110510	12102503000001

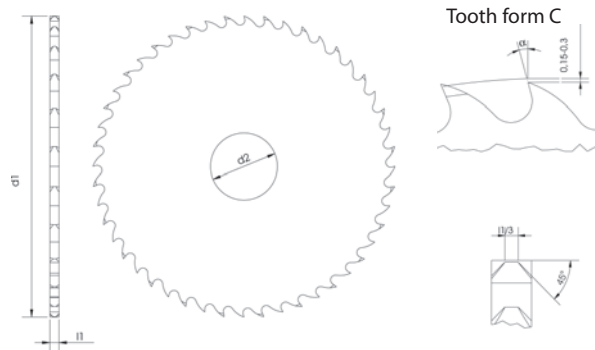
Application:

For slotting and cutting off operations of thick-walled profiles and pipes.

Special dimensions and materials can be delivered as well.
Price on request.

Slitting Saws HSS GN-Standard

Coarse Tooth Pitch similar to DIN 1838



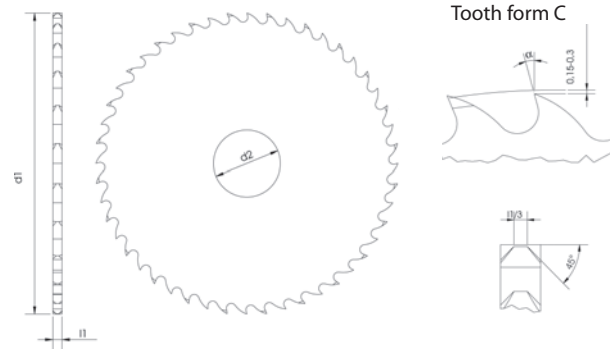
Also available with PVD coating

Discount-Class 110

Tooth form				C			
Material				HSS			
d ₁ mm / js 15	l ₁ mm / js 11	d ₂ mm / H 7	Teeth	Cat.-No.	EDP No.	Art.-No.	
50	1	13	40	1300	110524	13000501000001	
50	1,2	13	40	1300	110525	13000501200001	
50	1,6	13	32	1300	110527	13000501600001	
50	2	13	32	1300	110528	13000502000001	
50	2,5	13	32	1300	110529	13000502500001	
50	3	13	24	1300	110530	13000503000001	
50	4	13	24	1300	110532	13000504000001	
50	5	13	24	1300	110533	13000505000001	
63	1	16	48	1300	110540	13000631000001	
63	1,2	16	40	1300	110541	13000631200001	
63	1,6	16	40	1300	110543	13000631600001	
63	2	16	40	1300	110544	13000632000001	
63	2,5	16	32	1300	110545	13000632500001	
63	3	16	32	1300	110546	13000633000001	
63	4	16	32	1300	110548	13000634000001	
63	5	16	24	1300	110549	13000635000001	
63	6	16	24	1300	110550	13000636000001	
80	1	22	48	1300	110555	13000801000001	
80	1,2	22	48	1300	110556	13000801200001	
80	1,6	22	48	1300	110558	13000801600001	
80	2	22	40	1300	110559	13000802000001	
80	2,5	22	40	1300	110560	13000802500001	
80	3	22	40	1300	110561	13000803000001	
80	4	22	32	1300	110563	13000804000001	
80	5	22	32	1300	110564	13000805000001	
80	6	22	32	1300	110565	13000806000001	
100	1	22	64	1300	110570	13001001000001	
100	1,2	22	64	1300	110571	13001001200001	
100	1,6	22	48	1300	110573	13001001600001	
100	2	22	48	1300	110574	13001002000001	
100	2,5	22	48	1300	110575	13001002500001	
100	3	22	40	1300	110576	13001003000001	
100	4	22	40	1300	110578	13001004000001	
100	5	22	40	1300	110579	13001005000001	
100	6	22	32	1300	110580	13001006000001	

Slitting Saws HSS GN-Standard

Coarse Tooth Pitch similar to DIN 1838



Discount-Class 120

Also available with PVD coating

Tooth form			C				
Material			HSS				
d ₁ mm / js 15	l ₁ mm / js 11	d ₂ mm / H 7	Teeth	Cat.-No.	EDP No.	Art.-No.	
125	1	22	80	1300	110583	13001251000001	
125	1,2	22	64	1300	110584	13001251200001	
125	1,6	22	64	1300	110586	13001251600001	
125	2	22	64	1300	110587	13001252000001	
125	2,5	22	48	1300	110588	13001252500001	
125	3	22	48	1300	110589	13001253000001	
125	4	22	48	1300	110591	13001254000001	
125	5	22	40	1300	110592	13001255000001	
125	6	22	40	1300	110593	13001256000001	
160	1	32	80	1300	110594	13001601000001	
160	1,2	32	80	1300	110595	13001601200001	
160	1,6	32	80	1300	110597	13001601600001	
160	2	32	64	1300	110598	13001602000001	
160	2,5	32	64	1300	110599	13001602500001	
160	3	32	64	1300	110600	13001603000001	
160	4	32	50	1300	110602	13001604000001	
200	1	32	100	1300	110605	13002001000001	
200	1,2	32	100	1300	110606	13002001200001	
200	1,6	32	80	1300	110608	13002001600001	
200	2	32	80	1300	110609	13002002000001	
200	2,5	32	80	1300	110610	13002002500001	
200	3	32	64	1300	110611	13002003000001	
250	1,6	32	100	1300	110616	13002501600001	
250	2	32	100	1300	110617	13002502000001	
250	2,5	32	80	1300	110618	13002502500001	
250	3	32	80	1300	110619	13002503000001	

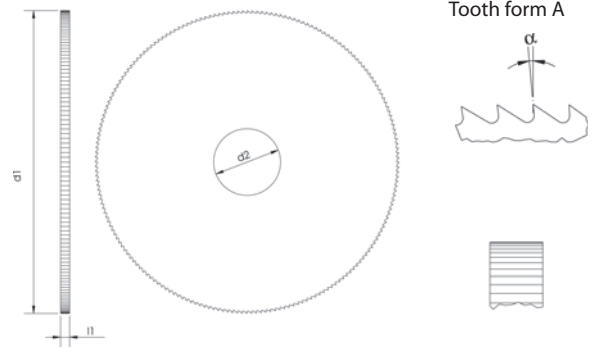
Application:

For cutting solid materials.

Special dimensions and materials can be delivered as well.
Price on request.

**Slitting Saws HSS
GN-Standard**

Fine Tooth Pitch for Jewelry



Also available with PVD coating

Discount-Class 110

Tooth form				A			
Material				HSS			
d_1 mm / js 15	l_1 mm / js 11	d_2 mm / H 7	Teeth	Cat.-No.	EDP No.	Art.-No.	
40	0,2	8	140	1620	110878	16200400200001	
40	0,25	8	140	1620	110879	16200400250001	
40	0,3	8	140	1620	110880	16200400300001	
40	0,4	8	140	1620	110881	16200400400001	
40	0,5	8	140	1620	110882	16200400500001	
40	0,6	8	140	1620	110883	16200400600001	
50	0,2	8	160	1620	110896	16200500200001	
50	0,25	8	160	1620	110897	16200500250001	
50	0,3	8	160	1620	110898	16200500300001	
50	0,4	8	160	1620	110899	16200500400001	
50	0,5	8	160	1620	110900	16200500500001	
50	0,6	8	160	1620	110901	16200500600001	
63	0,2	8	200	1620	110914	16200630200001	
63	0,25	8	200	1620	110915	16200630250001	
63	0,3	8	200	1620	110916	16200630300001	
63	0,4	8	200	1620	110917	16200630400001	
63	0,5	8	200	1620	110918	16200630500001	
63	0,6	8	180	1620	110919	16200630600001	
63	0,8	8	180	1620	110921	16200630800001	
63	1	8	180	1620	110923	16200631000001	

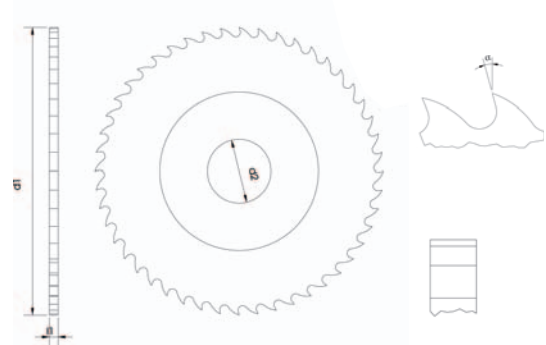
Application:

For cutting and slotting gold and silver materials.

Special dimensions and materials can be delivered as well.
Price on request.

Slitting Saws HSS and HSSCo GN-Standard

for Georg Fischer Machines (GF)



Also available with PVD coating

Material			Teeth	HSS			HSSCo		
d_1 mm / js 15	l_1 mm / js 11	d_2 mm / H 7		Cat.-No.	EDP No.	Art.-No.	Cat.-No.	EDP No.	Art.-No.
63	1,6	16	Toothing according to customer's demand	1480	111700	14800631600001	1480	111701	14800631600002
68	1,6	16		1480	111702	14800681600001	1480	111703	14800681600002
75	2	16		1480	111704	14800752000001	1480	111705	14800752000002

Application:

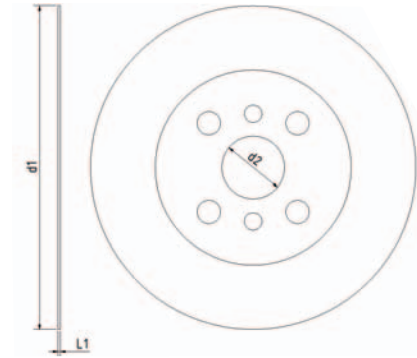
For special use on Georg Fischer tube cutters.
Toothing according to customer's demand.

For toothing two additional week delivery time.

Special dimensions and materials can be delivered as well.
Price on request.

**Slitting Saws HSSCo
GN-Standard**

for Hydromat Machines



See page 1.37 for toothing selection
Also available with PVD coating

Material			HSSCo						
d ₁ mm / js 15	l ₁ mm / js 11	d ₂ mm / H 7	Teeth	Hub dia.	Driving Pin Holes	Cat.-No.	EDP No.	Art.-No.	
166	1,2	32		100	1/9/50 + 1/9/60	1490	111800	14901661200001	
166	1,6	32	Toothings according to customer's demand	100	1/9/50 + 1/9/60	1490	111801	14901661600001	
250	1,6	40		140	2/9/55 + 4/12/64	1490	111802	14902501600001	
250	2	40		140	2/9/55 + 4/12/64	1490	111803	14902502000001	

Application:

For special use on Hydromat machines.
Toothings according to customer's demand.
See page 1.37 for toothing selection.

For toothing two additional weeks delivery time.

The saws have an axial runout tolerance ≤ 0,1 mm / 0.004".

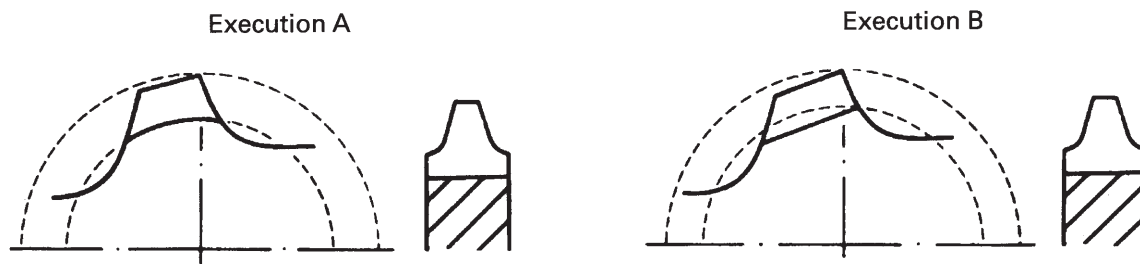
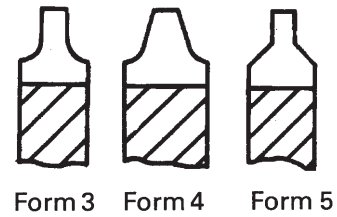
Special dimensions and materials can be delivered as well.
Price on request.

Form Milling Cutters for Collector GN-Standard

Application:

Especially designed for the production of collectors.

We manufacture such tools from Solid Carbide in a variety of forms, the most common ones being illustrated underneath. When inquiring, please state the required quantity and dimensions as well as, with reference to the illustrations, the required form and type. We shall be pleased to let you have our quotation by return. If possible, please attach a drawing to your inquiry.

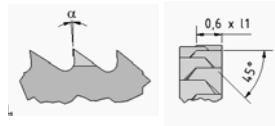


Metal Slitting Saws DIN 1840 Tooth Formations, Side Clearance, Accuracy of Manufacture

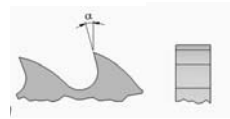
Angular Tooth A



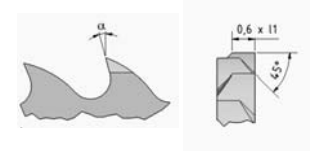
Angular Tooth with alternating edges Aw



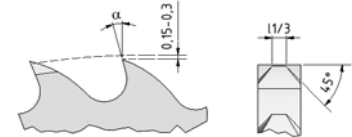
Rounded Tooth B



Rounded Tooth with alternating edges Bw

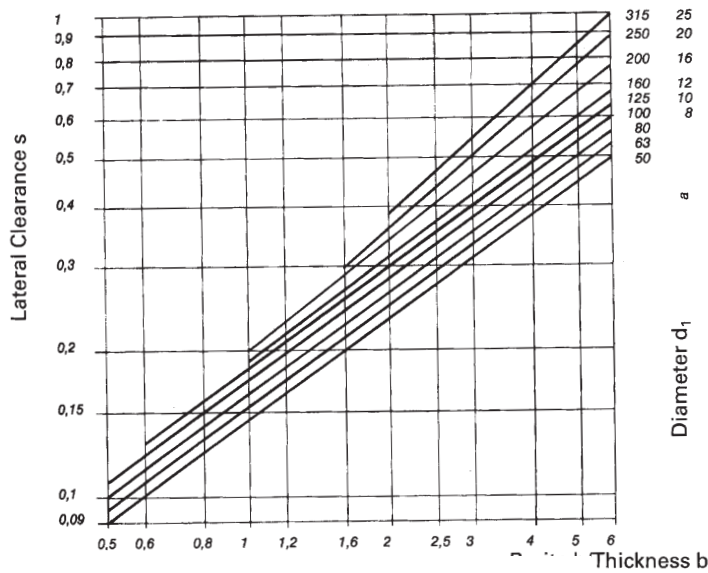


Rounded Tooth C

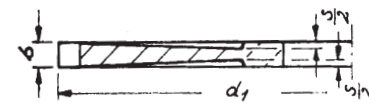


Tooth Form	Radial Rake Angle γ for Tool Type		
	$N \pm 2^\circ$	$H \pm 2^\circ$	$W \pm 2^\circ$
A + Aw	5°	0°	10°
B, Bw, C	15°	8°	25°

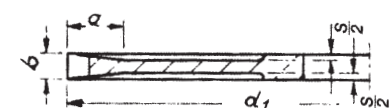
Lateral Clearance
Saws from 50 to 315 mm



Regular execution

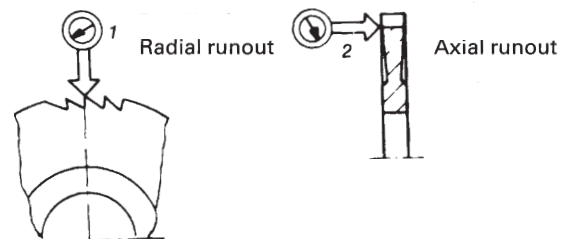


Special execution for increased lateral clearance



Accuracy of Manufacture

Outside Diameter d_1		Tolerance for	
up	to	Axial Runout	Radial Runout
	40	0,1	0,1
40	100	0,16	
100	200	0,25	0,16
200	250	0,4	



Measurements when clamped between standard diameter collars on test arbor running in 10 μ .

Side Milling Cutters



Advice

Before ordering tools, please examine which type of tool is suitable for your work.

If there is no referring information, tools will be delivered in type N or catalog type.

Please specify in order:

1. Catalog number, dimensions, quantity
or
2. Art.-No., quantity
or
3. EDP No., quantity

Material quality for tools in catalog:

specification

HSSCo = EMo5Co5 - M35

SC = K10











Special tools:

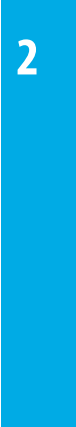
Side Milling Cutters differing from the standard type in

- dimensions
 - number of teeth
 - tolerances
 - geometry
 - surface treatment
 - and material
- are special tools.

Please ask for our best net prices.

Table of Contents Side Milling Cutters

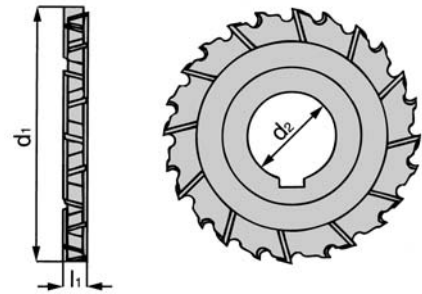
Type of Tool	Cat.-No. Imperial	Cat.-No. Metric		Page
Advice High Speed Steel Qualities				2.1
Side Milling Cutters Solid Carbide DIN 1834 A Staggered Teeth		5410	 	2.3
Side Milling Cutters Solid Carbide GN-Standard Staggered Teeth, coarse		5440	 	2.4
Side Milling Cutters HSSCo DIN 1834 A and GN-Standard Staggered Teeth	2470	2410 2411	 	2.5-2.6 2.9-2.11
Side Milling Cutters HSSCo GN-Standard Staggered Teeth, coarse		2440	 	2.12
Side Milling Cutters HSSCo DIN 1834 B and GN-Standard Straight Teeth	2480	2420 2421	 	2.7-2.8 2.13-2.14



Solid Carbide Side Milling Cutters

DIN 1834 A

Staggered Teeth



Discount-Class 240

Also available with PVD coating

Type				Staggered Teeth		
Material				Solid Carbide K10		
d_1 mm/js 16	l_1 mm/k 11	d_2 mm/H 7	Teeth	Cat.-No.	EDP No.	Art.-No.
63	2	22	28	5410	154000	54100630200001
63	2,5	22	28	5410	154001	54100630250001
63	3	22	28	5410	154002	54100630300001
63	4	22	28	5410	154003	54100630400001
63	5	22	28	5410	154004	54100630500001
63	6	22	28	5410	154005	54100630600001
80	2	27	32	5410	154006	54100800200001
80	2,5	27	32	5410	154007	54100800250001
80	3	27	32	5410	154008	54100800300001
80	4	27	32	5410	154009	54100800400001
80	5	27	32	5410	154010	54100800500001
80	6	27	32	5410	154011	54100800600001
100	2	32	36	5410	154012	54101000200001
100	2,5	32	36	5410	154013	54101000250001
100	3	32	36	5410	154014	54101000300001
100	4	32	36	5410	154015	54101000400001
100	5	32	36	5410	154016	54101000500001
100	6	32	36	5410	154017	54101000600001
125	2	32	40	5410	154018	54101250200001
125	2,5	32	40	5410	154019	54101250250001
125	3	32	40	5410	154020	54101250300001
125	4	32	40	5410	154021	54101250400001
125	5	32	40	5410	154022	54101250500001
125	6	32	40	5410	154023	54101250600001

Application:

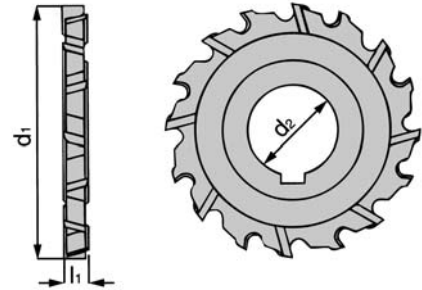
For deep cuts in high-tensile and abrasive materials. Staggered toothing and side teeth ensure a smooth cutting action and good surface finish on the workpiece.

Suitable for all kinds of materials up to 1600 N/mm².

Solid Carbide Side Milling Cutters

GN-Standard

Staggered Teeth, coarse



Discount-Class 240

Also available with PVD coating

Type				Staggered Teeth			
Material				Solid Carbide K10			
d_1 mm / js 16	l_1 mm / k 11	d_2 mm / H 7	Teeth	Cat.-No.	EDP No.	Art.-No.	
63	2	22	16	5440	154050	54400630200001	
63	2,5	22	16	5440	154051	54400630250001	
63	3	22	16	5440	154052	54400630300001	
63	4	22	16	5440	154053	54400630400001	
63	5	22	16	5440	154054	54400630500001	
63	6	22	16	5440	154055	54400630600001	
80	2	27	20	5440	154056	54400800200001	
80	2,5	27	20	5440	154057	54400800250001	
80	3	27	20	5440	154058	54400800300001	
80	4	27	20	5440	154059	54400800400001	
80	5	27	20	5440	154060	54400800500001	
80	6	27	20	5440	154061	54400800600001	
100	2	32	24	5440	154062	54401000200001	
100	2,5	32	24	5440	154063	54401000250001	
100	3	32	24	5440	154064	54401000300001	
100	4	32	24	5440	154065	54401000400001	
100	5	32	24	5440	154066	54401000500001	
100	6	32	24	5440	154067	54401000600001	
125	2	32	26	5440	154068	54401250200001	
125	2,5	32	26	5440	154069	54401250250001	
125	3	32	26	5440	154070	54401250300001	
125	4	32	26	5440	154071	54401250400001	
125	5	32	26	5440	154072	54401250500001	
125	6	32	26	5440	154073	54401250600001	

Application:

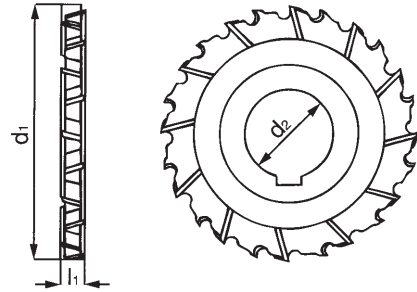
For deep cuts in stainless steels, high-tensile non-ferrous materials such as aluminum with a high content of Si and titanium as well as plastics. Staggered toothing and side teeth ensure a smooth cutting action and good surface finish on the workpiece.

Suitable for all kinds of materials up to 1600 N/mm².

Side Milling Cutters HSSCo GN-Standard

Staggered Teeth

Radial Rake
15°
With Standard Keyway



Tolerances

Diameter	Width	Arbor Hole
2"	+/- .004"	+ .0002" + .0008
2 1/2"-4"	+/- .006"	
5"-6"	+/- .008"	
8"	+/- .010"	

Discount-Class 205

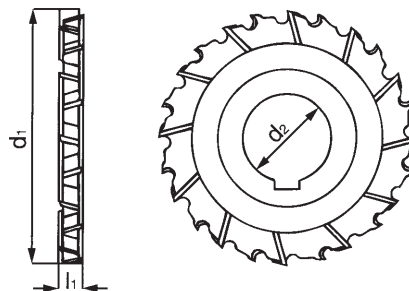
Also available with PVD coating

Type				Staggered Teeth			
Material				HSSCo			
d ₁ inch	l ₁ inch	d ₂ inch	Teeth	Cat.-No.	EDP No.	Art.-No.	
2"	0.0625"	5/8"	22	2470	244290	24700500150001	
2"	0.0781"	5/8"	22	2470	244293	24700500190001	
2"	0.0938"	5/8"	22	2470	244298	24700500230001	
2"	0.1250"	5/8"	22	2470	244305	24700500310001	
2"	0.1563"	5/8"	22	2470	244309	24700500390001	
2"	0.1875"	5/8"	12	2470	244314	24700500470001	
2"	0.2188"	5/8"	12	2470	244317	24700500550001	
2"	0.2500"	5/8"	12	2470	244319	24700500630001	
2"	0.3125"	5/8"	12	2470	244321	24700500790001	
2 1/2"	0.0625"	7/8"	28	2470	244356	24700630150001	
2 1/2"	0.0781"	7/8"	28	2470	244359	24700630190001	
2 1/2"	0.0938"	7/8"	28	2470	244364	24700630230001	
2 1/2"	0.1250"	7/8"	28	2470	244371	24700630310001	
2 1/2"	0.1563"	7/8"	28	2470	244375	24700630390001	
2 1/2"	0.1875"	7/8"	28	2470	244380	24700630470001	
2 1/2"	0.2188"	7/8"	28	2470	244383	24700630550001	
2 1/2"	0.2500"	7/8"	28	2470	244385	24700630630001	
2 1/2"	0.3125"	7/8"	16	2470	244387	24700630790001	
2 1/2"	0.3750"	7/8"	16	2470	244389	24700630950001	
2 1/2"	0.5000"	7/8"	16	2470	244395	24700631270001	
3"	0.0625"	1"	32	2470	244422	24700760150001	
3"	0.0781"	1"	32	2470	244425	24700760190001	
3"	0.0938"	1"	32	2470	244430	24700760230001	
3"	0.1250"	1"	32	2470	244437	24700760310001	
3"	0.1563"	1"	32	2470	244441	24700760390001	
3"	0.1875"	1"	32	2470	244446	24700760470001	
3"	0.2188"	1"	32	2470	244449	24700760550001	
3"	0.2500"	1"	32	2470	244451	24700760630001	
3"	0.3125"	1"	20	2470	244453	24700760790001	
3"	0.3750"	1"	20	2470	244455	24700760950001	
3"	0.5000"	1"	20	2470	244461	24700761270001	
4"	0.0625"	1"	36	2470	244488	24701010150001	
4"	0.0781"	1"	36	2470	244491	24701010190001	
4"	0.0938"	1"	36	2470	244496	24701010230001	
4"	0.1250"	1"	36	2470	244503	24701010310001	
4"	0.1563"	1"	36	2470	244507	24701010390001	
4"	0.1875"	1"	36	2470	244512	24701010470001	
4"	0.2188"	1"	36	2470	244515	24701010550001	
4"	0.2500"	1"	36	2470	244517	24701010630001	
4"	0.3125"	1"	24	2470	244519	24701010790001	
4"	0.3750"	1"	24	2470	244521	24701010950001	
4"	0.5000"	1"	24	2470	244527	24701011270001	

Side Milling Cutters HSSCo GN-Standard

Staggered Teeth

Radial Rake
15°
With Standard Keyway



Tolerances

Diameter	Width	Arbor Hole
2"	+/- .004"	+ .0002" + .0008
2 1/2"-4"	+/- .006"	
5"-6"	+/- .008"	
8"	+/- .010"	

Discount-Class 205

Also available with PVD coating

Type				Staggered Teeth		
Material				HSSCo		
d ₁ inch	l ₁ inch	d ₂ inch	Teeth	Cat.-No.	EDP No.	Art.-No.
5"	0.0625"	1"	40	2470	244554	24701270150001
5"	0.0781"	1"	40	2470	244557	24701270190001
5"	0.0938"	1"	40	2470	244562	24701270230001
5"	0.1250"	1"	40	2470	244569	24701270310001
5"	0.1563"	1"	40	2470	244573	24701270390001
5"	0.1875"	1"	40	2470	244578	24701270470001
5"	0.2188"	1"	40	2470	244581	24701270550001
5"	0.2500"	1"	40	2470	244583	24701270630001
5"	0.3125"	1"	28	2470	244585	24701270790001
5"	0.3750"	1"	28	2470	244587	24701270950001
5"	0.5000"	1"	28	2470	244593	24701271270001
6"	0.0781"	1 1/4"	44	2470	244623	24701520190001
6"	0.0938"	1 1/4"	44	2470	244628	24701520230001
6"	0.1250"	1 1/4"	44	2470	244635	24701520310001
6"	0.1563"	1 1/4"	44	2470	244639	24701520390001
6"	0.1875"	1 1/4"	44	2470	244644	24701520470001
6"	0.2188"	1 1/4"	44	2470	244647	24701520550001
6"	0.2500"	1 1/4"	44	2470	244649	24701520630001
6"	0.3125"	1 1/4"	32	2470	244651	24701520790001
6"	0.3750"	1 1/4"	32	2470	244653	24701520950001
6"	0.5000"	1 1/4"	32	2470	244659	24701521270001
8"	0.0938"	1 1/4"	48	2470	244693	24702030230001
8"	0.1250"	1 1/4"	48	2470	244701	24702030310001
8"	0.1563"	1 1/4"	48	2470	244705	24702030390001
8"	0.1875"	1 1/4"	48	2470	244710	24702030470001
8"	0.2188"	1 1/4"	48	2470	244713	24702030550001
8"	0.2500"	1 1/4"	48	2470	244715	24702030630001
8"	0.3125"	1 1/4"	36	2470	244717	24702030790001

Application:

Staggered Side Milling Cutters are recommended for wide and deep slotting and plunging. The design of alternating helical teeth with drag compensation allows for chatter-free operations and higher feed rates. Side Milling Cutters 1/4" and wider can be used for side milling.

Work Materials:

Staggered Side Milling Cutters perform well in all types of ferrous materials, high strength and heat resistant alloys, difficult to machine materials, hard and abrasive plastics.

2

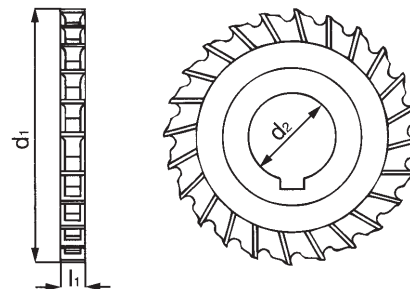
Side Milling Cutters HSSCo

GN-Standard

Straight Teeth

Radial Rake
12°

With Standard Keyway



Tolerances

Diameter	Width	Arbor Hole
2"	+/- .004"	+ .0002" + .0008
2 1/2"-4"	+/- .006"	
5"-6"	+/- .008"	
8"	+/- .010"	

Discount-Class 205

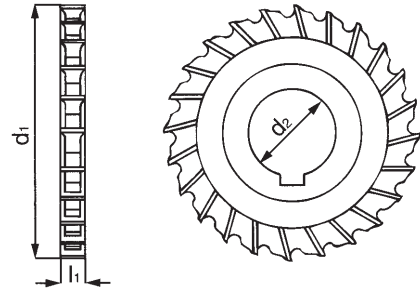
Also available with PVD coating

Type				Straight Teeth		
Material				HSSCo		
d ₁ inch	l ₁ inch	d ₂ inch	Teeth	Cat.-No.	EDP No.	Art.-No.
2"	0.0625"	5/8"	26	2480	243290	24800500150001
2"	0.0781"	5/8"	26	2480	243293	24800500190001
2"	0.0938"	5/8"	26	2480	243298	24800500230001
2"	0.1250"	5/8"	26	2480	243305	24800500310001
2"	0.1563"	5/8"	26	2480	243309	24800500390001
2"	0.1875"	5/8"	16	2480	243314	24800500470001
2"	0.2188"	5/8"	16	2480	243317	24800500550001
2"	0.2500"	5/8"	16	2480	243319	24800500630001
2"	0.3125"	5/8"	16	2480	243321	24800500790001
2"	0.3750"	5/8"	16	2480	243323	24800500950001
2 1/2"	0.0625"	7/8"	32	2480	243356	24800630150001
2 1/2"	0.0781"	7/8"	32	2480	243359	24800630190001
2 1/2"	0.0938"	7/8"	32	2480	243364	24800630230001
2 1/2"	0.1250"	7/8"	32	2480	243371	24800630310001
2 1/2"	0.1563"	7/8"	32	2480	243375	24800630390001
2 1/2"	0.1875"	7/8"	32	2480	243380	24800630470001
2 1/2"	0.2188"	7/8"	32	2480	243383	24800630550001
2 1/2"	0.2500"	7/8"	32	2480	243385	24800630630001
2 1/2"	0.3125"	7/8"	18	2480	243387	24800630790001
2 1/2"	0.3750"	7/8"	18	2480	243389	24800630950001
2 1/2"	0.5000"	7/8"	18	2480	243395	24800631270001
3"	0.0625"	1"	36	2480	243422	24800760150001
3"	0.0781"	1"	36	2480	243425	24800760190001
3"	0.0938"	1"	36	2480	243430	24800760230001
3"	0.1250"	1"	36	2480	243437	24800760310001
3"	0.1563"	1"	36	2480	243441	24800760390001
3"	0.1875"	1"	36	2480	243446	24800760470001
3"	0.2188"	1"	36	2480	243449	24800760550001
3"	0.2500"	1"	36	2480	243451	24800760630001
3"	0.3125"	1"	24	2480	243453	24800760790001
3"	0.3750"	1"	24	2480	243455	24800760950001
3"	0.5000"	1"	24	2480	243461	24800761270001
4"	0.0625"	1"	40	2480	243488	24801010150001
4"	0.0781"	1"	40	2480	243491	24801010190001
4"	0.0938"	1"	40	2480	243496	24801010230001
4"	0.1250"	1"	40	2480	243503	24801010310001
4"	0.1563"	1"	40	2480	243507	24801010390001
4"	0.1875"	1"	40	2480	243512	24801010470001
4"	0.2188"	1"	40	2480	243515	24801010550001
4"	0.2500"	1"	40	2480	243517	24801010630001
4"	0.3125"	1"	28	2480	243519	24801010790001
4"	0.3750"	1"	28	2480	243521	24801010950001
4"	0.5000"	1"	28	2480	243527	24801011270001

Side Milling Cutters HSSCo GN-Standard

Straight Teeth

Radial Rake
12°
With Standard Keyway



Tolerances		
Diameter	Width	Arbor Hole
2"	+/- .004"	+ .0002" + .0008
2 1/2"-4"	+/- .006"	
5"-6"	+/- .008"	
8"	+/- .010"	

Discount-Class 205

Also available with PVD coating

Type				Straight Teeth		
Material				HSSCo		
d ₁ inch	l ₁ inch	d ₂ inch	Teeth	Cat.-No.	EDP No.	Art.-No.
5"	0.0625"	1"	44	2480	243554	24801270150001
5"	0.0781"	1"	44	2480	243557	24801270190001
5"	0.0938"	1"	44	2480	243562	24801270230001
5"	0.1250"	1"	44	2480	243569	24801270310001
5"	0.1563"	1"	44	2480	243573	24801270390001
5"	0.1875"	1"	44	2480	243578	24801270470001
5"	0.2188"	1"	44	2480	243581	24801270550001
5"	0.2500"	1"	44	2480	243583	24801270630001
5"	0.3125"	1"	32	2480	243585	24801270790001
5"	0.3750"	1"	32	2480	243587	24801270950001
5"	0.5000"	1"	32	2480	243593	24801271270001
6"	0.0781"	1 1/4"	48	2480	243623	24801520190001
6"	0.0938"	1 1/4"	48	2480	243628	24801520230001
6"	0.1250"	1 1/4"	48	2480	243635	24801520310001
6"	0.1563"	1 1/4"	48	2480	243639	24801520390001
6"	0.1875"	1 1/4"	48	2480	243644	24801520470001
6"	0.2188"	1 1/4"	48	2480	243647	24801520550001
6"	0.2500"	1 1/4"	48	2480	243649	24801520630001
6"	0.3750"	1 1/4"	36	2480	243653	24801520950001
6"	0.5000"	1 1/4"	36	2480	243659	24801521270001
8"	0.0938"	1 1/4"	52	2480	243694	24802030230001
8"	0.1250"	1 1/4"	52	2480	243701	24802030310001
8"	0.1563"	1 1/4"	52	2480	243705	24802030390001
8"	0.1875"	1 1/4"	52	2480	243710	24802030470001
8"	0.2188"	1 1/4"	52	2480	243713	24802030550001
8"	0.2500"	1 1/4"	52	2480	243715	24802030630001
8"	0.3750"	1 1/4"	40	2480	243719	24802030950001

Application:

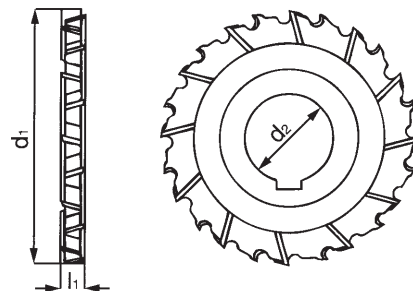
Straight Side Milling Cutters are recommended for wide and deep slotting and plunging. Side Milling Cutters 1/4" and wider can be used for side milling.

Work Materials:

Straight Side Milling Cutters perform well in all types of ferrous materials, high strength and heat resistant alloys.

Side Milling Cutters HSSCo DIN 1834 A and GN-Standard

Staggered Teeth



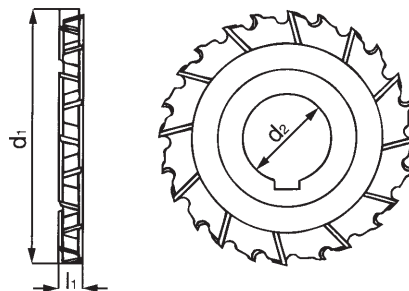
Discount-Class 200

Also available with PVD coating

Type				Staggered Teeth		
Material				HSSCo		
d_1 mm/js 16	l_1 mm/k 11	d_2 mm/H 7	Teeth	Cat.-No.	EDP No.	Art.-No.
50	1,6	16	22	2410	120616	24100500160001
50	2	16	22	2410	120617	24100500200001
50	2,5	16	22	2410	120618	24100500250001
50	3	16	22	2410	120619	24100500300001
50	3,5	16	22	2410	120620	24100500350001
50	4	16	22	2410	120621	24100500400001
63	1,6	22	28	2410	120232	24100630160001
63	2	22	28	2410	120233	24100630200001
63	2,5	22	28	2410	120234	24100630250001
63	3	22	28	2410	120235	24100630300001
63	3,5	22	28	2410	120236	24100630350001
63	4	22	28	2410	120237	24100630400001
63	4,5	22	28	2410	120238	24100630450001
63	5	22	28	2410	120239	24100630500001
63	6	22	28	2410	120240	24100630600001
63	1,6	16	28	2411	122299	24110630160001
63	2	16	28	2411	122300	24110630200001
63	2,5	16	28	2411	122301	24110630250001
63	3	16	28	2411	122302	24110630300001
63	4	16	28	2411	122303	24110630400001
63	5	16	28	2411	122304	24110630500001
63	6	16	28	2411	122305	24110630600001
80	1,6	27	32	2410	120241	24100800160001
80	2	27	32	2410	120242	24100800200001
80	2,5	27	32	2410	120243	24100800250001
80	3	27	32	2410	120244	24100800300001
80	3,5	27	32	2410	120245	24100800350001
80	4	27	32	2410	120246	24100800400001
80	4,5	27	32	2410	120247	24100800450001
80	5	27	32	2410	120248	24100800500001
80	6	27	32	2410	120249	24100800600001
80	1,6	22	32	2411	122306	24110800160001
80	2	22	32	2411	122307	24110800200001
80	2,5	22	32	2411	122308	24110800250001
80	3	22	32	2411	122309	24110800300001
80	4	22	32	2411	122310	24110800400001
80	5	22	32	2411	122311	24110800500001
80	6	22	32	2411	122312	24110800600001

**Side Milling Cutters HSSCo
DIN 1834 A and GN-Standard**

Staggered Teeth



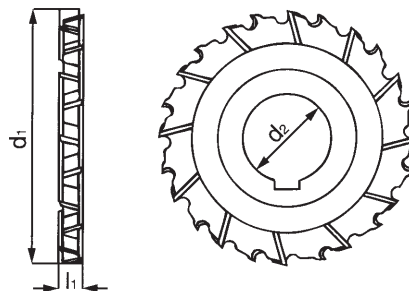
Discount-Class 200

Also available with PVD coating

Type				Staggered Teeth		
Material				HSSCo		
d_1 mm/js 16	l_1 mm/k 11	d_2 mm/H 7	Teeth	Cat.-No.	EDP No.	Art.-No.
100	1,6	32	36	2410	120250	24101000160001
100	2	32	36	2410	120251	24101000200001
100	2,5	32	36	2410	120252	24101000250001
100	3	32	36	2410	120253	24101000300001
100	3,5	32	36	2410	120254	24101000350001
100	4	32	36	2410	120255	24101000400001
100	4,5	32	36	2410	120256	24101000450001
100	5	32	36	2410	120257	24101000500001
100	6	32	36	2410	120258	24101000600001
100	8	32	36	2410	120259	24101000800001
100	1,6	22	36	2411	122313	24111000160001
100	2	22	36	2411	122314	24111000200001
100	2,5	22	36	2411	122315	24111000250001
100	3	22	36	2411	122316	24111000300001
100	4	22	36	2411	122317	24111000400001
100	5	22	36	2411	122318	24111000500001
100	6	22	36	2411	122319	24111000600001
125	1,6	32	40	2410	120260	24101250160001
125	2	32	40	2410	120261	24101250200001
125	2,5	32	40	2410	120262	24101250250001
125	3	32	40	2410	120263	24101250300001
125	3,5	32	40	2410	120264	24101250350001
125	4	32	40	2410	120265	24101250400001
125	4,5	32	40	2410	120266	24101250450001
125	5	32	40	2410	120267	24101250500001
125	6	32	40	2410	120268	24101250600001
125	8	32	32	2410	120269	24101250800001
125	10	32	32	2410	120270	24101251000001
125	2	22	40	2411	122320	24111250200001
125	2,5	22	40	2411	122321	24111250250001
125	3	22	40	2411	122322	24111250300001
125	4	22	40	2411	122323	24111250400001
125	5	22	40	2411	122324	24111250500001
125	6	22	40	2411	122325	24111250600001

**Side Milling Cutters HSSCo
DIN 1834 A and GN-Standard**

Staggered Teeth



Discount-Class 200

Also available with PVD coating

Type				Staggered Teeth			
Material				HSSCo			
d_1 mm/js 16	l_1 mm/k 11	d_2 mm/H 7	Teeth	Cat.-No.	EDP No.	Art.-No.	
160	2	40	48	2410	120271	24101600200001	
160	2,5	40	48	2410	120272	24101600250001	
160	3	40	48	2410	120273	24101600300001	
160	4	40	48	2410	120274	24101600400001	
160	5	40	48	2410	120275	24101600500001	
160	6	40	48	2410	120276	24101600600001	
160	8	40	36	2410	120277	24101600800001	
160	10	40	36	2410	120278	24101601000001	
160	3	32	48	2411	122326	24111600300001	
160	4	32	48	2411	122327	24111600400001	
160	5	32	48	2411	122328	24111600500001	
160	6	32	48	2411	122329	24111600600001	
200	3	40	56	2410	120282	24102000300001	
200	4	40	56	2410	120283	24102000400001	
200	5	40	56	2410	120284	24102000500001	
200	6	40	56	2410	120285	24102000600001	
200	8	40	40	2410	120286	24102000800001	
200	10	40	40	2410	120287	24102001000001	
200	3	32	56	2411	122330	24112000300001	
200	4	32	56	2411	122331	24112000400001	
200	5	32	56	2411	122332	24112000500001	
200	6	32	56	2411	122333	24112000600001	

Application:

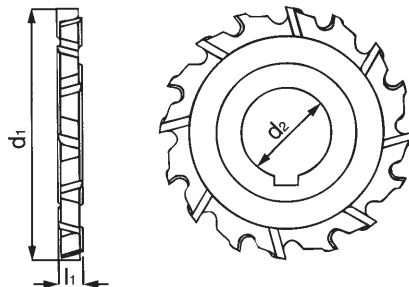
For deep cuts in structural- and tool steel as well as cast iron, where a fine surface finish on the side walls is required.

For materials up to 1200 N/mm².

Side Milling Cutters HSSCo

GN-Standard

Staggered Teeth, coarse



Discount-Class 200

Also available with PVD coating

Type				Staggered Teeth, coarse			
Material				HSSCo			
d_1 mm/js 16	l_1 mm/k 11	d_2 mm/H 7	Teeth	Cat.-No.	EDP No.	Art.-No.	
63	1,6	22	16	2440	121249	24400630160001	
63	2	22	16	2440	121250	24400630200001	
63	2,5	22	16	2440	121251	24400630250001	
63	3	22	16	2440	121252	24400630300001	
63	4	22	16	2440	121253	24400630400001	
63	5	22	16	2440	121254	24400630500001	
63	6	22	16	2440	121255	24400630600001	
80	1,6	27	20	2440	121256	24400800160001	
80	2	27	20	2440	121257	24400800200001	
80	2,5	27	20	2440	121258	24400800250001	
80	3	27	20	2440	121259	24400800300001	
80	4	27	20	2440	121260	24400800400001	
80	5	27	20	2440	121261	24400800500001	
80	6	27	20	2440	121262	24400800600001	
100	1,6	32	24	2440	121263	24401000160001	
100	2	32	24	2440	121264	24401000200001	
100	2,5	32	24	2440	121265	24401000250001	
100	3	32	24	2440	121266	24401000300001	
100	4	32	24	2440	121267	24401000400001	
100	5	32	24	2440	121268	24401000500001	
100	6	32	24	2440	121269	24401000600001	
100	8	32	16	2440	121270	24401000800001	
125	1,6	32	26	2440	121271	24401250160001	
125	2	32	26	2440	121272	24401250200001	
125	2,5	32	26	2440	121273	24401250250001	
125	3	32	26	2440	121274	24401250300001	
125	4	32	26	2440	121275	24401250400001	
125	5	32	26	2440	121276	24401250500001	
125	6	32	26	2440	121277	24401250600001	
125	8	32	18	2440	121278	24401250800001	
125	10	32	18	2440	121279	24401251000001	
160	2,5	40	30	2440	121281	24401600250001	
160	3	40	30	2440	121282	24401600300001	
160	4	40	30	2440	121283	24401600400001	
160	5	40	30	2440	121284	24401600500001	
160	6	40	30	2440	121285	24401600600001	
160	8	40	22	2440	121286	24401600800001	
160	10	40	22	2440	121287	24401601000001	

Application:

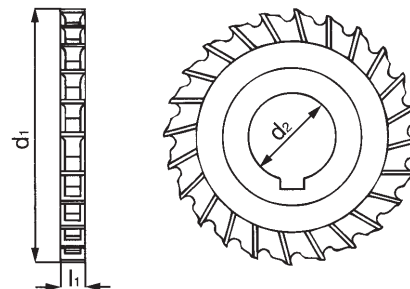
For deep cuts in stainless steels, high-tensile non-ferrous materials such as aluminum with a high percentage of Si and titanium.

For materials up to 1200 N/mm².

®Registered trademark.

Side Milling Cutters HSSCo DIN 1834 B and GN-Standard

Straight Teeth



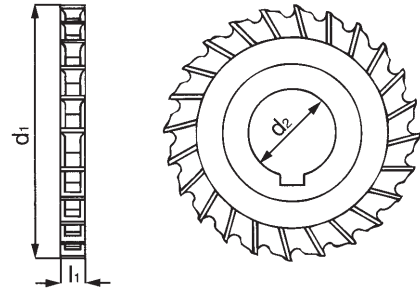
Discount-Class 200

Also available with PVD coating

Type				Straight Teeth			
Material				HSSCo			
d_1 mm/js 16	l_1 mm/k 11	d_2 mm/H 7	Teeth	Cat.-No.	EDP No.	Art.-No.	
63	1,6	22	32	2420	120637	24200630160001	
63	2	22	32	2420	120638	24200630200001	
63	2,5	22	32	2420	120639	24200630250001	
63	3	22	32	2420	120640	24200630300001	
63	4	22	32	2420	120642	24200630400001	
63	5	22	32	2420	120644	24200630500001	
63	6	22	32	2420	120646	24200630600001	
63	1,6	16	32	2421	122334	24210630160001	
63	2	16	32	2421	122335	24210630200001	
63	2,5	16	32	2421	122336	24210630250001	
63	3	16	32	2421	122337	24210630300001	
63	4	16	32	2421	122338	24210630400001	
63	5	16	32	2421	122339	24210630500001	
63	6	16	32	2421	122340	24210630600001	
80	1,6	27	36	2420	120647	24200800160001	
80	2	27	36	2420	120648	24200800200001	
80	2,5	27	36	2420	120649	24200800250001	
80	3	27	36	2420	120650	24200800300001	
80	4	27	36	2420	120652	24200800400001	
80	5	27	36	2420	120653	24200800500001	
80	6	27	36	2420	120654	24200800600001	
80	1,6	22	36	2421	122341	24210800160001	
80	2	22	36	2421	122342	24210800200001	
80	2,5	22	36	2421	122343	24210800250001	
80	3	22	36	2421	122344	24210800300001	
80	4	22	36	2421	122345	24210800400001	
80	5	22	36	2421	122346	24210800500001	
80	6	22	36	2421	122347	24210800600001	
100	1,6	32	40	2420	120656	24201000160001	
100	2	32	40	2420	120657	24201000200001	
100	2,5	32	40	2420	120658	24201000250001	
100	3	32	40	2420	120659	24201000300001	
100	4	32	40	2420	120661	24201000400001	
100	5	32	40	2420	120663	24201000500001	
100	6	32	40	2420	120664	24201000600001	
100	8	32	32	2420	120665	24201000800001	

**Side Milling Cutters HSSCo
DIN 1834 B and GN-Standard**

Straight Teeth



Discount-Class 200

Also available with PVD coating

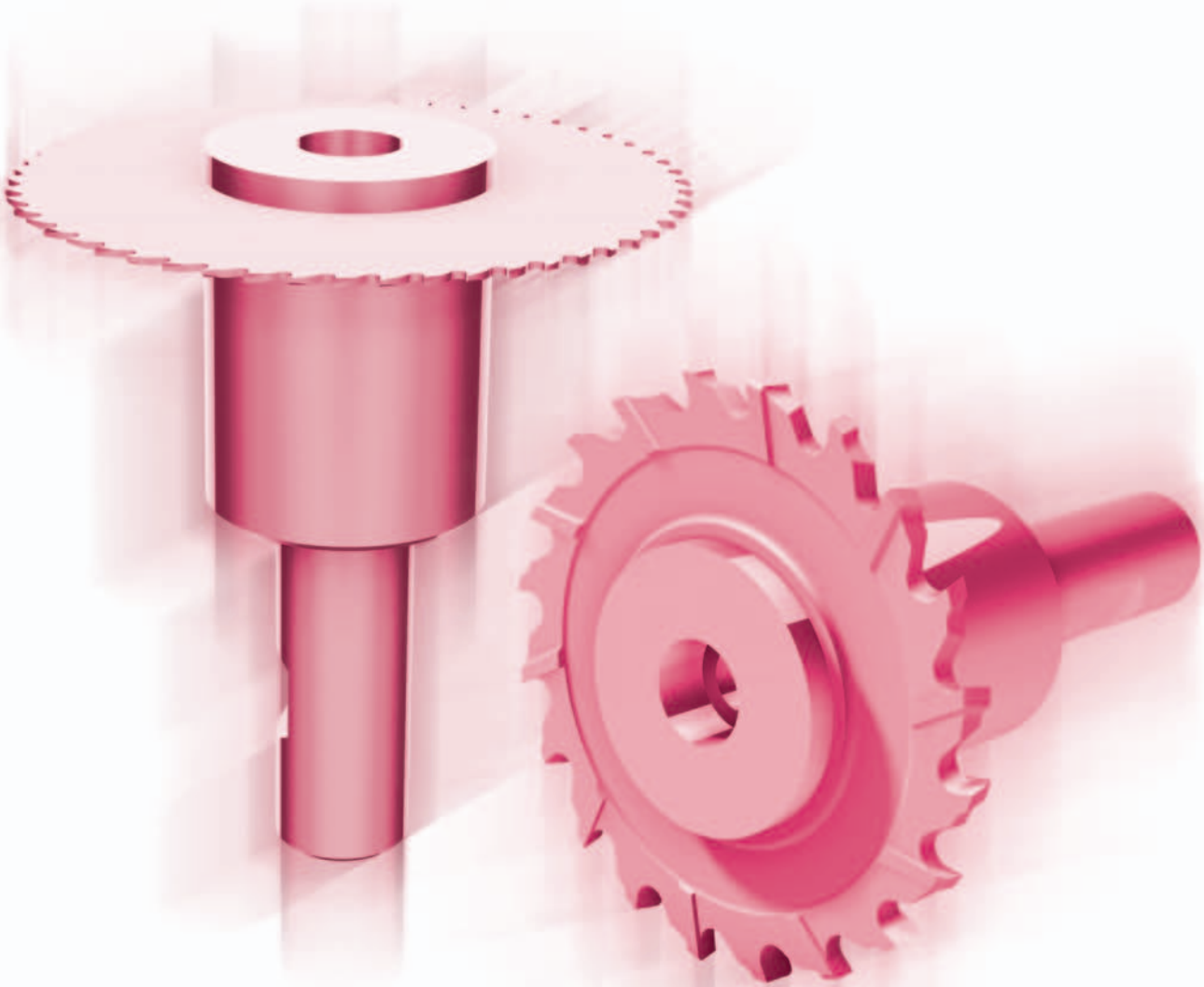
Type				Straight Teeth			
Material				HSSCo			
d_1 mm/js 16	l_1 mm/k 11	d_2 mm/H 7	Teeth	Cat.-No.	EDP No.	Art.-No.	
100	1,6	22	40	2421	122348	24211000160001	
100	2	22	40	2421	122349	24211000200001	
100	2,5	22	40	2421	122350	24211000250001	
100	3	22	40	2421	122351	24211000300001	
100	4	22	40	2421	122352	24211000400001	
100	5	22	40	2421	122353	24211000500001	
100	6	22	40	2421	122354	24211000600001	
125	1,6	32	44	2420	120666	24201250160001	
125	2	32	44	2420	120667	24201250200001	
125	2,5	32	44	2420	120668	24201250250001	
125	3	32	44	2420	120669	24201250300001	
125	4	32	44	2420	120671	24201250400001	
125	5	32	44	2420	120673	24201250500001	
125	6	32	44	2420	120674	24201250600001	
125	8	32	36	2420	120675	24201250800001	
125	10	32	36	2420	120676	24201251000001	
125	2	22	44	2421	122355	24211250200001	
125	2,5	22	44	2421	122356	24211250250001	
125	3	22	44	2421	122357	24211250300001	
125	4	22	44	2421	122358	24211250400001	
125	5	22	44	2421	122359	24211250500001	
125	6	22	44	2421	122360	24211250600001	
160	2	40	52	2420	120677	24201600200001	
160	2,5	40	52	2420	120678	24201600250001	
160	3	40	52	2420	120679	24201600300001	
160	4	40	52	2420	120680	24201600400001	
160	5	40	52	2420	121627	24201600500001	
160	6	40	52	2420	121628	24201600600001	
160	8	40	40	2420	121629	24201600800001	
160	10	40	40	2420	121630	24201601000001	
160	3	32	52	2421	122361	24211600300001	
160	4	32	52	2421	122362	24211600400001	
160	5	32	52	2421	122363	24211600500001	
160	6	32	52	2421	122364	24211600600001	

Application:

For deep cuts in structural- and tool steels as well as cast iron with high dimensional accuracy and surface finish.

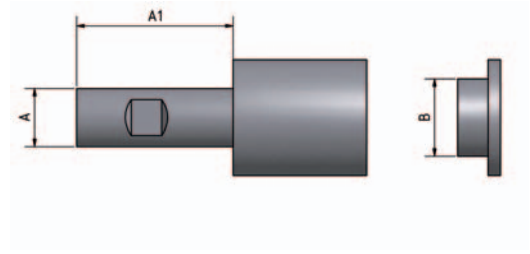
For materials up to 1200 N/mm².

Straight Shank Saw Holders



Straight Shank Saw Holders

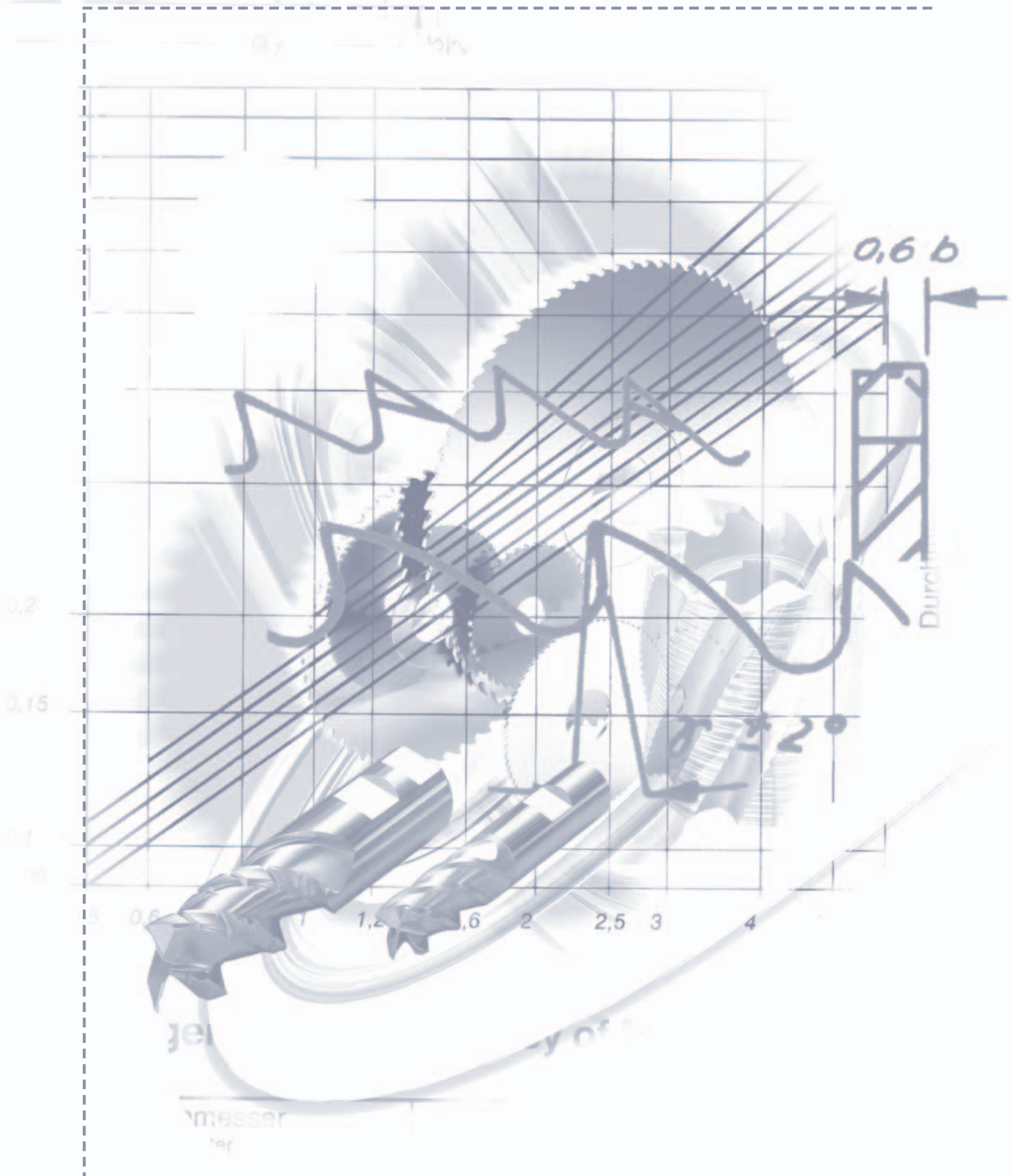
General Purpose



Discount-Class 905

Execution			General Purpose 0.002" T.I.R.		
Material			Tool Steel		
B inch	A inch	A ₁ inch	Cat.-No.	EDP No.	Art.-No.
0.2500"	1/2"	1.7031"	6500	440102	65000060430001
0.3750"	1/2"	1.7031"	6500	440302	65000090460001
0.5000"	1/2"	1.7031"	6500	440403	65000120520001
0.6250"	3/4"	2.0000"	6500	440503	65000150880001
1.0000"	3/4"	2.0000"	6500	440803	65000250950001

Technical Data



Speed & Feed Chart

Carbide Saw Blades / Carbide Side Milling Cutters

Material	Condition	Hardness		Speed (SFPM)	Feed Per Tooth (Inches)	
		"Bh"	"Rc"		Plain Side	Side Chip
ALUMINUM - CAST ALLOY, HARDENED						
Sand and Permanent Mold Castings	solution treated and aged	70 to 125		1100	.0002-.0005	.001-.002
Die Castings, Si < 12%, except 390.0 and 392.0	solution treated and aged	70 to 125		1100	.0002-.0005	.001-.002
Die Castings, Si > 12%, except 390.0 and 392.0	solution treated and aged	70 to 125		900	.0002-.0005	.001-.002
ALUMINUM ALLOY - AEROSPACE, HARDENED (Si < 0.8%)						
2014-T6, 2017-T4, 2024-T4, 6061-T6, 7050-T617, 7075-T6, 7079-T6, 7178-T6	solution treated and aged	75 to 150		1200	.0002-.0005	.001-.002
CAST IRON - DUCTILE (NODULAR)						
ASTM A536 Grade 80-55-06	as cast	190 to 260	(10) to 26	375	.0001-.0003	.0007-.0012
ASTM A538 Grade 100-70.03	heat treated	240 to 300	22 to 32	275	.0001-.0003	.0007-.0012
ASTM A535 Grade 120-90.02	quenched and tempered	270 to 330	28 to 35	175	.0001-.0003	.0007-.0012
	quenched and tempered	330 to 400	32 to 43	175	.0001-.0003	.0007-.0012
NI-Resist Ductile, ASTM A439 and A571	annealed	140 to 275	28	175	.0001-.0003	.0007-.0012
CAST IRON - GRAY						
ASTM A48 Class 20 and 25	as cast	120 to 200	(6) to (15)	500	.0001-.0003	.0007-.0012
ASTM A48 Class 30 to 50	as cast	190 to 260	(14) to 26	400	.0001-.0003	.0007-.0012
ASTM A48 Class 55 and 60	as cast, heat treated	250 to 320	25 to 34	350	.0001-.0003	.0007-.0012
NI-Resist, ASTM A436 Type 1 to 4	as cast	150 to 250	(7) to 25	250	.0001-.0003	.0007-.0012
CAST IRON - MALLEABLE						
Ferritic and Pearlitic, ASTM A47 and ASTM A220	malleablized and heat treated	160 to 240	22	275	.0001-.0003	.0007-.0012
Tempered Martensite, 53004, 6000314, 70002/3	malleablized and heat treated	200 to 260	(13) to 26	260	.0001-.0003	.0007-.0012
Tempered Martensite, A220 Grade 80002 and 90001	malleablized and heat treated	240 to 320	23 to 34	230	.0001-.0003	.0007-.0012
COPPER ALLOY						
Free Cutting Brasses and Bronzes, Leaded Brass and Bronze, Leaded Naval Brass	annealed, cold drawn, as cast	110 to 240	(5) to 23	750	.0001-.0003	.0007-.0012
Red Brass, Yellow Brass, Cartridge Brass, Muntz Metal, Silicon Bronze, Manganese Bronze, Aluminum Brass, Admiralty Brass	annealed, cold drawn, as cast	110 to 240	(11) to 23	600	.0001-.0003	.0007-.0012
Beryllium Copper, Phosphor Bronze Aluminum Bronze, Copper Nickel, Electrolytic Tough Copper, Oxygen Free Hard Copper	annealed, cold drawn, as cast	110 to 240	(11) to 23	500	.0001-.0003	.0007-.0012
MAGNESIUM ALLOY						
Wrought and Cast	annealed, solution treated and aged	50 to 90		1300	.0001-.0003	.0007-.0012
NICKEL ALLOY						
Nickel 200 to 230, Monel Alloys, Duranickel, Permanickel	annealed, cold drawn, as cast	115 to 240	22	250	.0001-.0003	.0007-.0012
	solution treated, aged	240 to 360	23 to 39	150	.0001-.0003	.0007-.0012
STAINLESS STEEL - HARDENABLE						
AISI 400 Series, Martensitic, 403,410, 414,416,420,422,431,440,501,502	annealed	135 to 225	20	360	.0001-.0003	.0007-.0012
	annealed	225 to 275	20 to 28	340	.0001-.0003	.0007-.0012
	quenched and tempered	275 to 350	28 to 38	320	.0001-.0003	.0007-.0012
	quenched and tempered	350 to 390	38 to 42	275	.0001-.0003	.0007-.0012
STAINLESS STEEL - NONHARDENABLE						
AISI 200 and 300 Series, Austenitic	annealed	135 to 185	(9)	450	.0001-.0003	.0007-.0012
AISI 400 Series, Ferritic	annealed	135 to 185	(9)	425	.0001-.0003	.0007-.0012
STAINLESS STEEL - PRECIPITATION HARDENING						
	annealed	150 to 250	24	360	.0001-.0003	.0007-.0012
SAE PH Series and AISI 600 Series, 15-5PH, 16-6PH, 17-4PH, 17-7PH, PH15-7Mo, AM-350, AM-355, AM 363, PH13-8Mo, PH14-8Mo	precipitation hardened	275 to 325	28 to 35	280	.0001-.0003	.0007-.0012
	precipitation hardened	325 to 375	35 to 40	220	.0001-.0003	.0007-.0012
	precipitation hardened	375 to 390	40 to 42	120	.0001-.0003	.0007-.0012
STEEL - ALLOY, LOW CARBON (< 0.3%)						
AISI 4012 to 4028, 4118, 4320, 4419 to 4427	hot rolled, normalized, cold drawn	125 to 225		425	.0001-.0003	.0007-.0012
4615 to 4626, 4718, 4720, 4815 to 4820, 5015	normalized, quenched and tempered	225 to 275		350	.0001-.0003	.0007-.0012
5115 to 5120, 6118, 8115, 8617 to 8627, 8720	quenched and tempered	275 to 325	28 to 35	325	.0001-.0003	.0007-.0012
8822, 94B15, 94B17	quenched and tempered	325 to 375	35 to 40	240	.0001-.0003	.0007-.0012
STEEL - ALLOY, MEDIUM AND HIGH CARBON (> 0.3%)						
AISI 1330 to 1345, 4032 to 4047, 4130 to 4161, 50B40 to 50B60, 5130 to 5160,	hot rolled, annealed, cold drawn	175 to 225	(8) to 20	400	.0001-.0003	.0007-.0012
51B60, 6150, 81B45, 8630 to 8660, 8740, 8742	normalized, quenched and tempered	225 to 275	20 to 28	320	.0001-.0003	.0007-.0012
9254 to 9262, 94B30,	normalized, quenched and tempered	275 to 325	28 to 35	250	.0001-.0003	.0007-.0012
50100, 51100, 52100, M-50	normalized, quenched and tempered	325 to 375	35 to 40	235	.0001-.0003	.0007-.0012
	quenched and tempered	375 to 390	40 to 42	200	.0001-.0003	.0007-.0012
STEEL - CAST ALLOY						
Low Carbon, AISI 1320, 2315, 2320	as cast, annealed, normalized	150 to 250	(6) to 24	360	.0001-.0003	.0007-.0012
4110, 4120, 4320, 8020, 8620	as cast, heat treated	250 to 300	24 to 32	275	.0001-.0003	.0007-.0012
Medium Carbon, AISI 1330, 1340, 2325, 2330, 4125, 4130, 4140, 4330, 4340, 8030, 80B30,	as cast, annealed, normalized	175 to 250	(8) to 24	350	.0001-.0003	.0007-.0012
8040, 8430, 8440, 8630, 8640, 9525, 9530, 9535	as cast, heat treated	250 to 300	25 to 32	280	.0001-.0003	.0007-.0012
	as cast, heat treated	300 to 350	32 to 38	220	.0001-.0003	.0007-.0012
	heat treated	350 to 390	38 to 42	180	.0001-.0003	.0007-.0012

Speed & Feed Chart

Carbide Saw Blades / Carbide Side Milling Cutters

Material	Condition	Hardness		Speed (SFPM)	Feed Per Tooth (Inches)	
		"Bh"	"Rc"		Plain Side	Side Chip
STEEL - CAST CARBON						
Low Carbon, AISI 1010, 1020	as cast, annealed, normalized	100 to 150		450	.0001-.0003	.0007-.0012
Medium Carbon, AISI 1030, 1040, 1050	as cast, annealed, normalized	125 to 225		425	.0001-.0003	.0007-.0012
	as cast, heat treated	225 to 300		300	.0001-.0003	.0007-.0012
STEEL - FREE MACHINING ALLOY						
AISI 4140, 4150 and 41LXX to 86LXX Grades	hot rolled, annealed, cold drawn	150 to 250	(7) to 24	475	.0001-.0003	.0007-.0012
	quenched and tempered	250 to 300	25 to 32	360	.0001-.0003	.0007-.0012
	quenched and tempered	300 to 375	32 to 40	250	.0001-.0003	.0007-.0012
	quenched and tempered	375 to 390	40 to 42	220	.0001-.0003	.0007-.0012
STEEL - MARAGING						
18 Ni Grades 200, 250, 300 and 350	annealed	275 to 325	28 to 35	300	.0001-.0003	.0007-.0012
STEEL - MOLD						
P2, P3, P4, P5, P6, P20, P21, P20	annealed	100 to 150	up to (7)	450	.0001-.0003	.0007-.0012
	annealed	150 to 200	(7) to (13)	350	.0001-.0003	.0007-.0012
	heat treated		28 to 35	280	.0001-.0003	.0007-.0012
STEEL - NITRIDING						
Nitralloy 125 to 230, EZ and N, Nitrex 1	annealed	200 to 250		350	.0001-.0003	.0007-.0012
	normalized, quenched and tempered	300 to 350	32 to 38	275	.0001-.0003	.0007-.0012
STEEL - PLAIN CARBON FREE MACHINING						
AISI 1108 to 1126 and 1211 to 1215	hot rolled, annealed	100 to 175		575	.0001-.0003	.0007-.0012
AISI 10LXX, 11LXX and 12LXX Grades	normalized, cold drawn	175 to 250	(8) to 25	520	.0001-.0003	.0007-.0012
AISI 1132 to 1151	hot rolled, annealed, cold drawn	175 to 225	(8) to 20	550	.0001-.0003	.0007-.0012
	quenched and tempered	275 to 325	28 to 35	360	.0001-.0003	.0007-.0012
	quenched and tempered	325 to 375	35 to 40	275	.0001-.0003	.0007-.0012
	quenched and tempered	375 to 390	40 to 42	220	.0001-.0003	.0007-.0012
STEEL - PLAIN CARBON, LOW CARBON (< 0.3%)						
AISI 1055 to 1026 and 1513 to 1522	hot rolled, annealed, cold drawn	100 to 175		530	.0001-.0003	.0007-.0012
	hot rolled, normalized, cold drawn	175 to 225		450	.0001-.0003	.0007-.0012
	cold drawn	225 to 275		425	.0001-.0003	.0007-.0012
STEEL - PLAIN CARBON, Medium & High Carbon (> 0.3%)						
AISI 1029 to 1053 and 1524 to 1552	hot rolled, annealed, cold drawn	125 to 225	(5) to 20	500	.0001-.0003	.0007-.0012
AISI 1055 to 1095 and 1561 to 1572	normalized, quenched and tempered	225 to 275	20 to 28	425	.0001-.0003	.0007-.0012
	quenched and tempered	275 to 325	28 to 35	330	.0001-.0003	.0007-.0012
	quenched and tempered	325 to 375	35 to 40	275	.0001-.0003	.0007-.0012
	quenched and tempered	375 to 390	40 to 42	240	.0001-.0003	.0007-.0012
STEEL - TOOL						
High Speed, Cold and Hot Work, Shock Resisting A2, D2, S6, S7, O-Series, L-Series, etc.	annealed	150 to 200	(7) to (13)	360	.0001-.0003	.0007-.0012
	annealed	200 to 250	(13) to 24	300	.0001-.0003	.0007-.0012
STEEL - ULTRA HIGH STRENGTH (Not AISI)						
AMS6421 (98B37 Mod.), AMS 6422 (98BV40), AMS6424, AMS6427, AMS6428, AMS6430, AMS6432, AMS6433, AMS6434, AMS6436, AMS6442, 300M, D6ac	annealed	220 to 300	(18) to 32	250	.0001-.0003	.0007-.0012
	normalized	300 to 350	32 to 38	180	.0001-.0003	.0007-.0012
	normalized	350 to 400	38 to 43	130	.0001-.0003	.0007-.0012
	quenched and tempered		43 to 48	100	.0001-.0003	.0007-.0012
	quenched and tempered		48 to 52	80	.0001-.0003	.0007-.0012
SUPER ALLOY - HIGH TEMPERATURE						
Nickel Base Alloys, Incoloy, Inconel, Nimonic, Hastelloy, Astroloy, Rene, Waspaloy	solution treated	200 to 300	(14) to 32	80	.0001-.0003	.0007-.0012
	solution treated and aged	300 to 400	32 to 43	50	.0001-.0003	.0007-.0012
Cobalt Base Alloys, Haynes, AiResist, S-816, J-1570, J-1650	solution treated	200 to 300	(14) to 32	60	.0001-.0003	.0007-.0012
	solution treated and aged	300 to 390	32 to 42	50	.0001-.0003	.0007-.0012
TITANIUM AND TITANIUM ALLOY						
Commercially Pure and Low Alloyed	annealed	110 to 180	(9)	410	.0001-.0003	.0007-.0012
	annealed	180 to 250	24	340	.0001-.0003	.0007-.0012
Alpha and Alpha-Beta Alloys, 6Al-4V, 5Al-2.5Sn, 6Al-6V-2Sn, 6Al-2Sn-4Zr-2Mo, 8Al-1Mo-1V, 4Al-2Sn-2Zr-4Mo-4Cr (Ti-17)	annealed	300 to 380	32 to 41	300	.0001-.0003	.0007-.0012
	solution treated and aged	320 to 380	34 to 41	230	.0001-.0003	.0007-.0012
	solution treated and aged	380 to 440	41 to 47	230	.0001-.0003	.0007-.0012
Beta Alloys, 13V-11Cr-3Al, 3Al-8V-6Cr-4Mo-4Zr	annealed, solution treated	275 to 350	28 to 38	150	.0001-.0003	.0007-.0012
	solution treated and aged	350 to 390	38 to 42	135	.0001-.0003	.0007-.0012

Speed & Feed Chart

Cobalt Saw Blades / Cobalt Side Milling Cutters

Material	Condition	Hardness		Speed (SFPM)	Feed Per Tooth (Inches)	
		"Bh"	"Rc"		Plain Side	Side Chip
ALUMINUM - CAST ALLOY, HARDENED						
Sand and Permanent Mold Castings	solution treated and aged	70 to 125		900	.0002-.0005	.001-.002
Die Castings, Si < 12%, except 390.0 and 392.0	solution treated and aged	70 to 125		300	.0002-.0005	.001-.002
Die Castings, Si > 12%, except 390.0 and 392.0	solution treated and aged	70 to 125		225	.0002-.0005	.001-.002
ALUMINUM ALLOY - AEROSPACE, HARDENED (Si < 0.8%)						
2014-T6, 2017-T4, 2024-T4, 6061-T6, 7050-T617, 7075-T6, 7079-T6, 7178-T6	solution treated and aged	75 to 150		700	.0002-.0005	.001-.002
CAST IRON - DUCTILE (NODULAR)						
ASTM A536 Grade 80-55-06	as cast	190 to 260	(10) to 26	60-100	.0001-.0003	.0007-.0012
ASTM A538 Grade 100-70.03	heat treated	240 to 300	22 to 32	50-80	.0001-.0003	.0007-.0012
ASTM A535 Grade 120-90.02	quenched and tempered	270 to 330	28 to 35	40-60	.0001-.0003	.0007-.0012
	quenched and tempered	330 to 400	32 to 43	30-40	.0001-.0003	.0007-.0012
NI-Resist Ductile, ASTM A439 and A571	annealed	140 to 275	28	20-40	.0001-.0003	.0007-.0012
CAST IRON - GRAY						
ASTM A48 Class 20 and 25	as cast	120 to 200	(6) to (15)	90-125	.0001-.0003	.0007-.0012
ASTM A48 Class 30 to 50	as cast	190 to 260	(14) to 26	60-125	.0001-.0003	.0007-.0012
ASTM A48 Class 55 and 60	as cast, heat treated	250 to 320	25 to 34	40-60	.0001-.0003	.0007-.0012
NI-Resist, ASTM A436 Type 1 to 4	as cast	150 to 250	(7) to 25	60-90	.0001-.0003	.0007-.0012
CAST IRON - MALLEABLE						
Ferritic and Pearlitic, ASTM A47 and ASTM A220	malleablized and heat treated	160 to 240	22	80-120	.0001-.0003	.0007-.0012
Tempered Martensite, 53004, 6000314, 70002/3	malleablized and heat treated	200 to 260	(13) to 26	70-110	.0001-.0003	.0007-.0012
Tempered Martensite, A220 Grade 80002 and 90001	malleablized and heat treated	240 to 320	23 to 34	40-80	.0001-.0003	.0007-.0012
COPPER ALLOY						
Free Cutting Brasses and Bronzes, Leaded Brass and Bronze, Leaded Naval Brass	annealed, cold drawn, as cast	110 to 240	(5) to 23	125-400	.0001-.0003	.0007-.0012
Red Brass, Yellow Brass, Cartridge Brass, Muntz Metal, Silicon Bronze, Manganese Bronze, Aluminum Brass, Admiralty Brass	annealed, cold drawn, as cast	110 to 240	(11) to 23	125-400	.0001-.0003	.0007-.0012
Beryllium Copper, Phosphor Bronze Aluminum Bronze, Copper Nickel, Electrolytic Tough Copper, Oxygen Free Hard Copper	annealed, cold drawn, as cast	110 to 240	(11) to 23	80-200	.0001-.0003	.0007-.0012
MAGNESIUM ALLOY						
Wrought and Cast	annealed, solution treated and aged	50 to 90		800-1000	.0001-.0003	.0007-.0012
NICKEL ALLOY						
Nickel 200 to 230, Monel Alloys, Duranickel, Permanickel	annealed, cold drawn, as cast solution treated, aged	115 to 240 240 to 360	22 23 to 39	60-90 20-60	.0001-.0003 .0001-.0003	.0007-.0012 .0007-.0012
STAINLESS STEEL - HARDENABLE						
AISI 400 Series, Martensitic, 403, 410, 414, 416, 420, 422, 431, 440, 501, 502	annealed annealed quenched and tempered quenched and tempered	135 to 225 225 to 275 275 to 350 350 to 390	20 20 to 28 28 to 38 38 to 42	100-150 60-130 50-80 40-70	.0001-.0003 .0001-.0003 .0001-.0003 .0001-.0003	.0007-.0012 .0007-.0012 .0007-.0012 .0007-.0012
STAINLESS STEEL - NONHARDENABLE						
AISI 200 and 300 Series, Austenitic	annealed	135 to 185	(9)	100-160	.0001-.0003	.0007-.0012
AISI 400 Series, Ferritic	annealed	135 to 185	(9)	90-160	.0001-.0003	.0007-.0012
STAINLESS STEEL - PRECIPITATION HARDENING						
SAE PH Series and AISI 600 Series, 15-5PH, 16-6PH, 17-4PH, 17-7PH, PH15-7Mo, AM-350, AM-355, AM 363, PH13-8Mo, PH14-8Mo	annealed precipitation hardened precipitation hardened precipitation hardened	150 to 250 275 to 325 325 to 375 375 to 390	24 28 to 35 35 to 40 40 to 42	80-120 60-90 50-80 40-70	.0001-.0003 .0001-.0003 .0001-.0003 .0001-.0003	.0007-.0012 .0007-.0012 .0007-.0012 .0007-.0012
STEEL - ALLOY, LOW CARBON (< 0.3%)						
AISI 4012 to 4028, 4118, 4320, 4419 to 4427 4615 to 4626, 4718, 4720, 4815 to 4820, 5015 5115 to 5120, 6118, 8115, 8617 to 8627, 8720 8822, 94B15, 94B17	hot rolled, normalized, cold drawn normalized, quenched and tempered quenched and tempered quenched and tempered	125 to 225 225 to 275 275 to 325 325 to 375	 28 to 35 35 to 40	100-150 85-125 65-100 50-80	.0001-.0003 .0001-.0003 .0001-.0003 .0001-.0003	.0007-.0012 .0007-.0012 .0007-.0012 .0007-.0012
STEEL - ALLOY, MEDIUM AND HIGH CARBON (> 0.3%)						
AISI 1330 to 1345, 4032 to 4047, 4130 to 4161, 50B40 to 50B60, 5130 to 5160, 51B60, 6150, 81B45, 8630 to 8660, 8740, 8742 9254 to 9262, 94B30, 50100, 51100, 52100, M-50	hot rolled, annealed, cold drawn normalized, quenched and tempered normalized, quenched and tempered normalized, quenched and tempered quenched and tempered	175 to 225 225 to 275 275 to 325 325 to 375 375 to 390	(8) to 20 20 to 28 28 to 35 35 to 40 40 to 42	80-140 80-120 60-100 50-80 40-70	.0001-.0003 .0001-.0003 .0001-.0003 .0001-.0003 .0001-.0003	.0007-.0012 .0007-.0012 .0007-.0012 .0007-.0012 .0007-.0012
STEEL - CAST ALLOY						
Low Carbon, AISI 1320, 2315, 2320 4110, 4120, 4320, 8020, 8620	as cast, annealed, normalized as cast, heat treated	150 to 250 250 to 300	(6) to 24 24 to 32	80-175 60-100	.0001-.0003 .0001-.0003	.0007-.0012 .0007-.0012
Medium Carbon, AISI 1330, 1340, 2325, 2330, 4125, 4130, 4140, 4330, 4340, 8030, 80B30, 8040, 8430, 8440, 8630, 8640, 9525, 9530, 9535	as cast, annealed, normalized as cast, heat treated as cast, heat treated heat treated	175 to 250 250 to 300 300 to 350 350 to 390	(8) to 24 25 to 32 32 to 38 38 to 42	80-175 60-100 60-90 40-60	.0001-.0003 .0001-.0003 .0001-.0003 .0001-.0003	.0007-.0012 .0007-.0012 .0007-.0012 .0007-.0012

Speed & Feed Chart

Cobalt Saw Blades / Cobalt Side Milling Cutters

Material	Condition	Hardness		Speed (SFPM)	Feed Per Tooth (Inches)	
		"Bh"	"Rc"		Plain Side	Side Chip
STEEL - CAST CARBON						
Low Carbon, AISI 1010, 1020	as cast, annealed, normalized	100 to 150		120-180	.0001-.0003	.0007-.0012
Medium Carbon, AISI 1030, 1040, 1050	as cast, annealed, normalized	125 to 225		100-150	.0001-.0003	.0007-.0012
	as cast, heat treated	225 to 300		80-120	.0001-.0003	.0007-.0012
STEEL - FREE MACHINING ALLOY						
AISI 4140, 4150 and 41LXX to 86LXX Grades	hot rolled, annealed, cold drawn	150 to 250	(7) to 24	110-200	.0001-.0003	.0007-.0012
	quenched and tempered	250 to 300	25 to 32	90-125	.0001-.0003	.0007-.0012
	quenched and tempered	300 to 375	32 to 40	80-110	.0001-.0003	.0007-.0012
	quenched and tempered	375 to 390	40 to 42	50-70	.0001-.0003	.0007-.0012
STEEL - MARAGING						
18 Ni Grades 200, 250, 300 and 350	annealed	275 to 325	28 to 35	70-110	.0001-.0003	.0007-.0012
STEEL - MOLD						
P2, P3, P4, P5, P6, P20, P21, P20	annealed	100 to 150	up to (7)	90-150	.0001-.0003	.0007-.0012
	annealed	150 to 200	(7) to (13)	80-120	.0001-.0003	.0007-.0012
	heat treated		28 to 35	60-90	.0001-.0003	.0007-.0012
STEEL - NITRIDING						
Nitralloy 125 to 230, EZ and N, Nitrex 1	annealed	200 to 250		80-130	.0001-.0003	.0007-.0012
	normalized, quenched and tempered	300 to 350	32 to 38	50-90	.0001-.0003	.0007-.0012
STEEL - PLAIN CARBON FREE MACHINING						
AISI 1108 to 1126 and 1211 to 1215	hot rolled, annealed	100 to 175		145-225	.0001-.0003	.0007-.0012
AISI 10LXX, 11LXX and 12LXX Grades	normalized, cold drawn	175 to 250	(8) to 25	100-200	.0001-.0003	.0007-.0012
AISI 1132 to 1151	hot rolled, annealed, cold drawn	175 to 225	(8) to 20	125-250	.0001-.0003	.0007-.0012
	quenched and tempered	275 to 325	28 to 35	100-200	.0001-.0003	.0007-.0012
	quenched and tempered	325 to 375	35 to 40	60-120	.0001-.0003	.0007-.0012
	quenched and tempered	375 to 390	40 to 42	50-80	.0001-.0003	.0007-.0012
STEEL - PLAIN CARBON, LOW CARBON (< 0.3%)						
AISI 1055 to 1026 and 1513 to 1522	hot rolled, annealed, cold drawn	100 to 175		150-220	.0001-.0003	.0007-.0012
	hot rolled, normalized, cold drawn	175 to 225		110-200	.0001-.0003	.0007-.0012
	cold drawn	225 to 275		80-100	.0001-.0003	.0007-.0012
STEEL - PLAIN CARBON, Medium & High Carbon (> 0.3%)						
AISI 1029 to 1053 and 1524 to 1552	hot rolled, annealed, cold drawn	125 to 225	(5) to 20	140-225	.0001-.0003	.0007-.0012
AISI 1055 to 1095 and 1561 to 1572	normalized, quenched and tempered	225 to 275	20 to 28	80-125	.0001-.0003	.0007-.0012
	quenched and tempered	275 to 325	28 to 35	60-100	.0001-.0003	.0007-.0012
	quenched and tempered	325 to 375	35 to 40	50-90	.0001-.0003	.0007-.0012
	quenched and tempered	375 to 390	40 to 42	40-60	.0001-.0003	.0007-.0012
STEEL - TOOL						
High Speed, Cold and Hot Work, Shock Resisting A2, D2, S6, S7, O-Series, L-Series, etc.	annealed	150 to 200	(7) to (13)	90-140	.0001-.0003	.0007-.0012
	annealed	200 to 250	(13) to 24	70-110	.0001-.0003	.0007-.0012
STEEL - ULTRA HIGH STRENGTH (Not AISA)						
AMS6421 (98B37 Mod.), AMS 6422 (98BV40), AMS6424, AMS6427, AMS6428, AMS6430, AMS6432, AMS6433, AMS6434, AMS6436, AMS6442, 300M, D6ac	annealed	220 to 300	(18) to 32	70-100	.0001-.0003	.0007-.0012
	normalized	300 to 350	32 to 38	50-90	.0001-.0003	.0007-.0012
	normalized	350 to 400	38 to 43	40-60	.0001-.0003	.0007-.0012
	quenched and tempered		43 to 48	20-40	.0001-.0003	.0007-.0012
	quenched and tempered		48 to 52	15-30	.0001-.0003	.0007-.0012
SUPER ALLOY - HIGH TEMPERATURE						
Nickel Base Alloys, Incoloy, Inconel, Nimonic, Hastelloy, Astroloy, Rene, Waspaloy	solution treated	200 to 300	(14) to 32	12-25	.0001-.0003	.0007-.0012
	solution treated and aged	300 to 400	32 to 43	10-20	.0001-.0003	.0007-.0012
Cobalt Base Alloys, Haynes, AiResist, S-816, J-1570, J-1650	solution treated	200 to 300	(14) to 32	10-20	.0001-.0003	.0007-.0012
	solution treated and aged	300 to 390	32 to 42	8-15	.0001-.0003	.0007-.0012
TITANIUM AND TITANIUM ALLOY						
Commercially Pure and Low Alloyed	annealed	110 to 180	(9)	100-180	.0001-.0003	.0007-.0012
	annealed	180 to 250	24	80-160	.0001-.0003	.0007-.0012
Alpha and Alpha-Beta Alloys, 6Al-4V, 5Al-2.5Sn, 6Al-6V-2Sn, 6Al-2Sn-4Zr-2Mo, 8Al-1Mo-1V, 4Al-2Sn-2Zr-4Mo-4Cr (Ti-17)	annealed	300 to 380	32 to 41	50-110	.0001-.0003	.0007-.0012
	solution treated and aged	320 to 380	34 to 41	50-100	.0001-.0003	.0007-.0012
	solution treated and aged	380 to 440	41 to 47	35-80	.0001-.0003	.0007-.0012
Beta Alloys, 13V-11Cr-3Al, 3Al-8V-6Cr-4Mo-4Zr	annealed, solution treated	275 to 350	28 to 38	25-60	.0001-.0003	.0007-.0012
	solution treated and aged	350 to 390	38 to 42	20-50	.0001-.0003	.0007-.0012

ISO-Tolerances
Values in $my = 1/1000$ mm

Tolerances	Nominal Sizes in mm from ... up to ...										
	1 3	3 6	6 10	10 18	18 30	30 50	50 80	80 120	120 180	180 250	250 315
d9	- 20 - 45	- 30 - 60	- 40 - 76	- 50 - 93	- 65 - 117	- 80 - 142	- 100 - 174	- 120 - 207	- 145 - 245	- 170 - 285	- 190 - 320
d11	- 20 - 80	- 30 - 105	- 40 - 130	- 50 - 160	- 65 - 195	- 80 - 240	- 100 - 290	- 120 - 340	- 145 - 395	- 170 - 460	- 190 - 510
e7	- 14 - 24	- 20 - 32	- 25 - 40	- 32 - 50	- 40 - 61	- 50 - 75	- 60 - 90	- 72 - 107	- 85 - 125	- 100 - 140	- 110 - 162
e8	- 14 - 28	- 20 - 38	- 25 - 47	- 32 - 59	- 40 - 73	- 50 - 89	- 60 - 106	- 72 - 126	- 85 - 148	- 100 - 172	- 110 - 191
h6	0 - 6	0 - 8	0 - 9	0 - 11	0 - 13	0 - 16	0 - 19	0 - 22	0 - 25	0 - 29	0 - 32
h7	0 - 10	0 - 12	0 - 15	0 - 18	0 - 21	0 - 25	0 - 30	0 - 35	0 - 40	0 - 46	0 - 52
h8	0 - 14	0 - 18	0 - 22	0 - 27	0 - 33	0 - 39	0 - 46	0 - 54	0 - 63	0 - 72	0 - 81
h10	0 - 40	0 - 48	0 - 58	0 - 70	0 - 84	0 - 100	0 - 120	0 - 140	0 - 160	0 - 185	0 - 210
h11	0 - 60	0 - 75	0 - 90	0 - 110	0 - 130	0 - 160	0 - 190	0 - 220	0 - 250	0 - 290	0 - 320
h12	0 - 100	0 - 120	0 - 150	0 - 180	0 - 210	0 - 250	0 - 300	0 - 350	0 - 400	0 - 460	0 - 520
js11	+ 30 - 30	+ 37,5 - 37,5	+ 45 - 45	+ 55 - 55	+ 65 - 65	+ 80 - 80	+ 95 - 95	+ 110 - 110	+ 125 - 125	+ 145 - 145	+ 160 - 160
js14	+ 125 - 125	+ 150 - 150	+ 180 - 180	+ 215 - 215	+ 260 - 260	+ 310 - 310	+ 370 - 370	+ 435 - 435	+ 500 - 500	+ 575 - 575	+ 650 - 650
js15	+ 200 - 200	+ 240 - 240	+ 290 - 290	+ 350 - 350	+ 420 - 420	+ 500 - 500	+ 600 - 600	+ 700 - 700	+ 800 - 800	+ 925 - 925	+ 1050 - 1050
js16	+ 300 - 300	+ 375 - 375	+ 450 - 450	+ 550 - 550	+ 650 - 650	+ 800 - 800	+ 950 - 950	+ 1100 - 1100	+ 1250 - 1250	+ 1450 - 1450	+ 1600 - 1600
k10	+ 40 0	+ 48 0	+ 58 0	+ 70 0	+ 84 0	+ 100 0	+ 120 0	+ 140 0	+ 160 0	+ 185 0	+ 210 0
k11	+ 60 0	+ 75 0	+ 90 0	+ 110 0	+ 130 0	+ 160 0	+ 190 0	+ 220 0	+ 250 0	+ 290 0	+ 320 0
k12	+ 100 0	+ 120 0	+ 150 0	+ 180 0	+ 210 0	+ 250 0	+ 300 0	+ 350 0	+ 400 0	+ 460 0	+ 520 0
k14	+ 250 0	+ 300 0	+ 360 0	+ 430 0	+ 520 0	+ 620 0	+ 740 0	+ 870 0	+ 1000 0	+ 1150 0	+ 1300 0
k16	+ 600 0	+ 750 0	+ 900 0	+ 1100 0	+ 1300 0	+ 1600 0	+ 1900 0	+ 2200 0	+ 2500 0	+ 2900 0	+ 3200 0
H6	+ 6 0	+ 8 0	+ 9 0	+ 11 0	+ 13 0	+ 16 0	+ 19 0	+ 22 0	+ 25 0	+ 29 0	+ 32 0
H7	+ 10 0	+ 12 0	+ 15 0	+ 18 0	+ 21 0	+ 25 0	+ 30 0	+ 35 0	+ 40 0	+ 46 0	+ 52 0
H11	+ 60 0	+ 75 0	+ 90 0	+ 110 0	+ 130 0	+ 160 0	+ 190 0	+ 220 0	+ 250 0	+ 290 0	+ 320 0

Limited Warranty

Controx-Neuhäuser warrants to original equipment manufacturers, distributors and industrial and commercial users of its products that each new product manufactured or supplied by Controx-Neuhäuser shall be free from defects in material and workmanship.

Controx-Neuhäuser's obligation under this warranty is limited to furnishing without additional charge a replacement or, at its option, repairing or issuing credit for any product which shall within one year from the date of sale be returned freight prepaid to the plant designated by a Controx-Neuhäuser representative and which upon inspection is determined by Controx-Neuhäuser to be defective in materials or workmanship. Complete information as to operating conditions, machine setup and application of cutting fluid should accompany any product returned for inspection. The provisions of this warranty shall not apply to any Controx-Neuhäuser product which has been subjected to misuse, improper operating conditions, machine setup or application of cutting fluid or which has been repaired or altered if such repair or alteration in the judgment of Controx-Neuhäuser would adversely affect performance of the product.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Controx-Neuhäuser shall have no liability or responsibility on any claim of any kind, whether in contract, tort or otherwise, for any loss or damage arising out of, connected with, or resulting from the manufacture, sale, delivery or use of any product sold hereunder, in excess of the cost of replacement or repair as provided herein.

IN NO EVENT SHALL CONTROX-NEUHÄUSER BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Controx-Neuhäuser makes no other warranty, express or implied, except as set forth above; and Controx-Neuhäuser neither assumes nor authorizes any other person or entity to assume for it any other obligation or liability in connection with any of its products.

NOTICE: Because we are constantly engaged in a program of product improvement, tool specifications are subject to change at any time.



WARNING

Any cutting tool may break or shatter under improper use. Government regulations require use of safety glasses and other appropriate safety equipment at all times in the vicinity of use. Do not touch cutting edges or chips with bare hands. Stop cutting when the tool becomes dull. Stop cutting operation immediately if you hear any strange sounds. Use correct tools for the operation.

Check dimensions to ensure proper selection. Do not modify tools. Wet or dry grinding of cutting tools produces potentially hazardous dusts or mists; to avoid adverse health effects, use adequate ventilation and read the Material Safety Data Sheet for further application tool material or grade before grinding.

Terms of delivery for repair of tools and other contract jobs

The costs for tool repair and contract grinding are charged on basis of real time consumption.

The price for tool repair and contract grinding depends mainly on quantities. If quantities mentioned in our quotation or order confirmation are not achieved we may charge a higher price for lower quantities.

All costs and risks for transports are chargeable to the buyer.

Risk for scrap on tool repairs, broaching or other contract jobs must be taken by the buyer.

If scrap is caused by ourselves costs for contract work will not be charged. Under no circumstance we will refund scrapped parts.

Apart from that our terms and conditions will apply.

Terms of Delivery

I. General Information

1. Any and all deliveries made and services provided are subject to the Terms of Delivery at hand as well as to separate contractual agreements possibly concluded. Any deviating terms of purchase of the Buyer shall not become a constituent element of the contract even in case of order acceptance.

A contract shall be established – for lack of specific agreement – with the written order confirmation of the Seller.

2. The Seller reserves property and copyrights for samples, cost estimates, drawings and similar information of physical and non-physical nature – also in electronic form; these may not be disclosed to third parties. The Seller undertakes not to disclose information and documents identified as confidential by the Buyer to third parties without his written consent.
3. Samples shall be supplied only against charges.
4. Verbal supplementary agreements do not exist. Modifications require written form in order to be effective.

II. Price and Payment

1. The prices – for lack of specific agreement – shall be ex works and do not include packaging. The quoted price of products does not include duty, tariffs, taxes or similar charges, which shall be borne by the Buyer, unless otherwise agreed upon in writing.
2. For lack of specific agreement, payment shall be effected immediately following delivery to the account of the Seller and without any deduction. The respective quantity delivered shall be charged.
3. The Buyer shall have the right to retain payments or to offset these against counterpayments only to the extent that his counterclaims are undisputed and determined legally binding.

III. Period of Delivery, Default in Delivery

1. The Period of Delivery results from the agreements entered into between the contracting parties. The prerequisite for compliance by the Seller is that any and all commercial and technical questions have been clarified between the contracting parties and that the Buyer has complied with any and all obligations under his responsibility, such as e.g. the procurement of the certificates or authorizations required by the authorities or performance of a down payment. Should this not be the case, the Period of Delivery will be extended appropriately. This shall not apply to the extent that the Seller is responsible for the delay.
2. Adherence to the Period of Delivery shall be subject to correct and on-time delivery to us on the part of our suppliers. The Seller shall inform the Buyer about emerging delays as soon as possible.
3. The Period of Delivery shall be deemed to have been complied with if the delivery item has left the factory of the Seller or if readiness for shipment has been announced.
4. In case that the shipment is delayed upon request of the Buyer, the Seller shall be entitled to otherwise dispose of the delivery item after fixing a reasonable deadline and its fruitless expiry and to supply the Buyer subject to a reasonably extended period. In case that the shipment is delayed on account of reasons for which the Buyer is responsible, the costs incurred as a result of such delay shall be charged to the Buyer, beginning one month after announcement of the readiness for shipment of the delivery item.
5. In case that non-compliance with the Period of Delivery is to be attributed to force majeure, labor disputes or other events beyond the sphere of influence of the Seller, the Period of Delivery shall reasonably be extended. The Seller shall inform the Buyer of the beginning and end of such circumstances as soon as possible.
6. In case that delivery is rendered entirely impossible or economically unreasonable for the Seller as a result of force majeure, labor disputes or other events beyond the sphere of influence of the Seller, the Seller shall have the right to either wholly or partially resign from the contract. Claims for damages of the Buyer on account of such resignation are excluded. If the Seller intends to make use of his right of resignation, he shall inform the Buyer immediately upon identification of the implications of such event. This shall also apply if an extension of the Period of Delivery has initially been agreed upon with the Buyer.
7. The Buyer may resign from the contract without fixing a time limit if complete performance is ultimately rendered impossible for the Seller prior to the transfer of risk. The Buyer may furthermore resign from the contract if execution of part of the delivery is rendered impossible for an order and if the Buyer has a legitimate interest to reject a part delivery. If this is not the case, the Buyer shall have to pay the contract price for the respective part delivery. The same shall apply in case of an inability of the Seller. In all other cases, Paragraph VII.2. "Liability" shall apply.

In case that the impossibility or inability occurs during the default in acceptance or if the Buyer is alone or predominantly responsible for the circumstances, he shall be obliged to the performance of quid pro quo.

8. In case that the Buyer fixes a reasonable deadline for performance after the due date – taking into consideration the statutory exceptions – and if this deadline is not complied with, the Buyer shall be entitled to resignation within the scope of statutory provisions.

Upon request of the Seller he undertakes to declare within a reasonable time whether he intends to make use of his right of resignation.

Further claims from Default in Delivery are exclusively governed by Paragraph VII.2. hereunder.

IV. Transfer of Risk, Acceptance

1. The risk shall be transferred to the Buyer whenever the delivery item has left the factory, namely also if part deliveries are performed or if the Seller has undertaken other services, such as e.g. the forwarding expenses or shipment.
2. In case that delivery is delayed or not undertaken as a result of circumstances not to be attributed to the Seller, the risk shall be transferred to the Buyer at the day the readiness for shipment is announced. The Seller undertakes to effect insurance as requested by the Buyer at the expense of the Buyer.
3. Part deliveries shall be permissible to the extent reasonable for the Buyer.

V. Reservation of Proprietary Rights

1. The Seller reserves the proprietary right for the delivery item until any and all claims of the Seller versus the Buyer arising from the business relations have been settled, including future claims, also arising from contracts concluded simultaneously or subsequently. This shall also apply if individual or all claims of the Seller were entered into a current account and the balance has been determined and acknowledged.

In case of behavior of the Buyer contrary to the terms of contract, particularly in case of default in payment, the Seller shall be entitled to withdrawal of the delivery item after overdue notification and the Buyer shall have the obligation to surrender the delivery item. The Buyer is obliged to immediately notify the Seller in case of seizure or other interventions of third parties.

2. The Buyer is entitled to resell the delivery item in ordinary course of business. He, however, already today cedes to the Seller any and all claims arising from the resale versus purchaser or third parties. The Buyer is entitled to collection of said claims also after cession. The authorization of the Seller for collection of the claims on his own is not affected by this.

The Seller, however, undertakes not to collect the claims as long as the Buyer properly complies with his payment obligations or the authorization to collect has not been revoked or no application for the opening of insolvency procedures has been filed.

The Seller may otherwise request for the Buyer to disclose the claims ceded and their debtor, providing all information required for collection, handing over all documents pertaining to this, and informing the debtors of the cession, unless already performed by the Seller. In case that the delivery item is resold together with merchandise that is not the property of the Seller, the claim of the Seller versus the purchaser shall be deemed to be ceded in the amount of the contract price agreed between Seller and Buyer.

3. The Buyer shall not be entitled to pledge or transfer as security the delivery item.
4. THE BUYER HEREBY GRANTS TO THE SELLER A SECURITY INTEREST IN THE PRODUCTS SOLD HEREUNDER TO SECURE PAYMENT OF THE PRICE OF SUCH PRODUCTS AND AGREES, AND APPOINTS THE SELLER, ITS AGENT, TO TAKE ALL SUCH ACTION AND TO EXECUTE ALL SUCH DOCUMENTS AND INSTRUMENTS AS MAY BE NECESSARY OR REASONABLY REQUESTED BY THE SELLER TO PERFECT AND CONTINUE PERFECTED THE SELLER'S SECURITY INTEREST HEREUNDER.
5. The Seller shall be entitled to insure the delivery item at the expense of the Buyer against theft, breakage, fire, water, and other damages, unless the Buyer has demonstrably obtained such insurance coverage on his own.
6. If, in connection with the payment of the contract price, a liability of the Seller is established for a bill-of-exchange the reservation of proprietary rights including its special forms agreed upon or other

Terms of Delivery

securities agreed upon to secure payment shall not expire before the bill-of-exchange has been honored by the Buyer as debtor.

7. The application for the opening of insolvency procedures shall entitle the Seller to resign from the contract and demand immediate return of the delivery item.

VI. Claims from Defects

The Seller shall warrant material defects and deficiencies in title of the delivery under exclusion of further claims – subject to Paragraph VII “Liability” – as follows:

Material Defects

1. All those parts are to be reworked or replaced by parts free of defects – which is at the discretion of the Seller – free of charge, which turn out to be defective on account of circumstances that have occurred prior to the transfer of risk. The Seller is to be informed in writing immediately whenever such defects are determined. Parts replaced shall become the property of the Seller.
2. Upon agreement with the Seller, the Buyer shall grant the Seller the time and opportunity required in order to perform any and all rework and substitute deliveries, which the Seller deems necessary, with the Seller otherwise exempted from liability for the resulting consequences. It is only in urgent cases where the operational safety is jeopardized and/or as defense against disproportionate damages – in which cases immediate notification of the Seller is mandatory – that the Buyer has the right to eliminate the defect himself or have the defect eliminated by third parties and demand compensation for expenditures incurred.
3. Regarding the direct costs resulting from rework and/or substitute delivery, the Seller shall bear the costs for the replacement part including shipment – to the extent that the complaint proves justified. In all other cases the Buyer shall bear the costs.
4. Within the scope of statutory provisions, the Buyer has the right to resign from the contract if the Seller – taking into account the statutory exceptions – has allowed a reasonable time fixed for rework or substitute delivery on account of material defect to expire fruitlessly. In case of only insubstantial defects, the Buyer only has the right for a reduction of the contract price. The right for a reduction of the contract price is otherwise excluded. Further claims are determined by Paragraph VII.2. hereunder.
5. No liability is assumed particularly in the following cases:
 Unsuitable or improper use, incorrect installation and/or commissioning by Buyer or third parties, natural wear, erroneous and negligent handling, improper maintenance, unsuitable operating materials, chemical, electro-chemical or electrical impact – to the extent that they are not the responsibility of the Seller.
 The Seller shall assume liability for defects of the material supplied by the Buyer only if the defects could have been identified, had professional diligence been applied.
 In case of manufacturing based on drawings of the Buyer, the Seller shall assume liability only for execution in accordance with the drawings.
- 5a. If special tools are ordered, the actual delivery quantity is allowed to either exceed or undershoot the order quantity by approx. 10 % or a minimum of 2 units, as required.
6. In case that the Buyer or third parties perform improper rework, the Seller shall not assume any liability for the consequences that result. The same shall apply for modifications of the delivery item made without prior consent of the Seller.

Deficiencies in Title

7. The Buyer shall assume the sole responsibility for documents such as drawings, gauges, samples or the like to be submitted by the Buyer. It is the Buyer’s responsibility to ensure that the workshop drawings submitted by the Buyer do not violate the copyrights of third parties. The Seller has no obligation vis-à-vis the Buyer to investigate if the submission of quotes on the basis of workshop drawings submitted to the Seller constitutes any violation of copyrights of third parties. Should a liability of the Seller nevertheless result from constitutive facts, the Buyer shall indemnify and hold harmless the Seller.

VII. Seller’s Liability, Disclaimer of Liability

1. In case that the delivery item cannot be used by the Buyer in accordance with its contractual purpose by fault of the Seller as a result of negligent or incorrect execution of proposals submitted and consultations performed prior to or following the conclusion of the contract or by violation of other secondary contractual obligations – particularly instructions for operation and maintenance of the delivery

item – the stipulations contained in Paragraphs VI and VII.2. shall apply under the exclusion of further claims of the Buyer.

2. The Seller shall assume liability for damages not established on the delivery item as such – on whatever legal grounds – only
 - a) in case of intent,
 - b) in case of gross negligence of the proprietor / institutions or senior executives,
 - c) in case of intentional or negligent violation of life, body and/or health,
 - d) in case of maliciously concealed defects,
 - e) in case of defects of the delivery item, to the extent that liability is assumed for personal injury or damage to property for privately used items in accordance with the German Product Liability Act (Produkthaftungsgesetz). In case of culpable breach of material contractual obligations, the Seller shall also assume liability in case of gross negligence of non-executive employees and minor negligence, in the latter case limited to reasonable, foreseeable typical contract damage.
 Further claims are excluded.
3. THE SELLER SHALL NOT BE SUBJECT TO ANY OTHER OBLIGATIONS OR LIABILITIES, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY), OR OTHER THEORIES OF LAW, WITH RESPECT TO PRODUCTS SOLD OR SERVICES RENDERED BY THE SELLER OR UNDERTAKINGS, ACTS OR OMISSIONS RELATING THERETO. UNDER NO CIRCUMSTANCES WILL THE SELLER BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR FOR ANY OTHER LOSS, DAMAGE OR EXPENSE OF ANY KIND, INCLUDING LOSS OF PROFITS, ARISING IN CONNECTION WITH THE CONTRACT OR WITH THE USE OR LIABILITY TO USE THE SELLER’S PRODUCTS FURNISHED UNDER THIS CONTRACT.

VIII. Statute of Limitations

Any and all claims of the Buyer – on whatever legal grounds – come under the statutes of limitation in 12 months. The statutory time limits shall apply for claims for damages in accordance with Paragraph VII.2.a – e.

IX. Special Conditions for Machining Contracts (completion, reprocessing, modification or restoration of tools)

The following shall apply for machining contracts as a supplement to/deviating from the Terms of Delivery:

1. The subcontractor shall not assume any liability for the behavior of material submitted. His claim for remuneration remains unaffected.
2. Should the material become unusable during the machining by fault of the subcontractor, his claim for remuneration for the service rendered shall lapse. The claim for damages of the Buyer shall be governed by Paragraph VII.2. hereunder.

X. Applicable Law, Place of Jurisdiction, Place of Performance

1. German Substantive Law under the exclusion of UN Purchasing Law shall apply for any and all legal relations between Seller and Buyer.
2. Should disputes arise from or in connection with the contract at hand, the parties shall first attempt to reach an out-of-court settlement. Should this not be possible, disputes shall be ultimately decided by a Court of Arbitration in accordance with the Arbitrary Court Regulation of the German Institution for Arbitration (DIS), excluding the regular legal process. The decision shall be taken by three arbitrators, with each of the two parties appointing one arbitrator and the third arbitrator selected by the two arbitrators appointed. Arbitration procedures shall be in German language and performed at the corporate seat of the exporter.
3. Place of Performance shall be Springfield, OH 45504, USA.

Any and all deliveries performed shall exclusively be based on our Terms of Delivery. We hereby object to any and all contrary terms of purchase.



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