

edition 01/2017

NUTEX tools

slotting, cutting-off, sawing, milling



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Grüezi and welcome!

An innovative family company since 80 years

Within the manufacturing unit in Switzerland, ALES A employs highly motivated, well trained staff, sharing a wealth of experience and knowledge gained within the cutting tool industry. We are proud that we are one of the few remaining family owned businesses within our sector.

At all times we supply market leading products, offer the highest possible technical support, deliver on time at competitive prices. This is achieved via a network of some 60 global distributors ensuring continuity of supply of both products and services.

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Production plant and administration building of ALES A Ltd

Precision tool factory

Precision.

We specialise in the manufacture of highly positive, sharply ground, precision cutting tools produced from HSS and carbide.

These offer the highest possible performance figures particularly on difficult materials and extraordinary applications.

We can offer engineering solutions to the most demanding machining problems reducing cycle times, vibration and tooling costs whilst improving surface finishes and chip formation.

Call us now and realise the potential of ALES A!

Metal cutting with creativity.

Milling: The ALES A TWIST helical indexable insert which was developed and patented by us in 1996 is distinguished by a high-tech cutting geometry and is being used to great success all over the world.

The extensive range of ISO standard indexable inserts is of course also equipped with our highly positive, extremely sharp ground cutting edge. ALES A indexable inserts are available in HSS-E and finest grain metal carbide. Various hard material coatings ensure a long tool life.

It goes without saying that almost all our toolholders are prepared for internal coolant supply.

Turning/parting: In this area, too, we have an extensive range of toolholders for external and internal turning with the matching indexable inserts in HSS-E to ISO standard.

Our ALES A GOLD high-precision ISO toolbits and cutting tools are also world-renowned. Similarly, the Minicut and Duocut parting inserts and cutting-

off tools in HSS-E are a byword in the trade.

Sawing: The ALES A metal-cutting circular saws in HSS and carbide give top performance all around. Our circular saws with steam-tempered surface or hard-material coating achieve even better life expectancy.

Nutex: The extraordinary combination of circular saw blade and holder in one tool indicates the system Nutex, Nutex Mini and Nutex Plus. With this tool it is possible to machine on CNC centres without fixings protruding out of the tool face.

Custom-made products: If you have any processing problems, we consider it our duty to be able to offer a solution. Our development department welcomes the challenge of producing special tools to individual requirements or customer drawings.

With you as partner we aim to develop visions and pursue new methods.

Our general delivery and sales conditions apply, see www.alesa.ch

Notes

Nutex tools

Nutex Mini



Nutex Mini HSS

Ø 15 – 32

No 6042

p. 8



Nutex Mini carbide

Ø 15 – 32

No 6342

p. 9



Nutex Mini HSS

Ø 15 – 32

No 6041

p. 10



Nutex Mini carbide

Ø 15 – 32

No 6341

p. 11



Holders

Type A1, B1

No 6044

p. 12

Nutex



Nutex HSS

Ø 40 – 125

No 6046

p. 14



Nutex carbide

Ø 25 – 125

No 6346

p. 15



Nutex HSS

Ø 25 – 200

No 6045

p. 16



Nutex carbide

Ø 25 – 125

No 6345

p. 18



Holders

Type A2, A3, B2, C1

No 6048

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Nutex Plus Mono



Nutex Plus Mono

Ø 25 – 50

No 6336

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Nutex Plus



Nutex Plus HSS

Ø 50 – 200

No 6055

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Nutex Plus TiAlN

Ø 50 – 125

No 6155

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Nutex Plus carbide

Ø 50 – 125

No 6355

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Nutex Plus AlCrN

Ø 50 – 125

No 6356

p. 28



Holders

Type A4, B3, C2, C3

No 6058

p. 29

Nutex Plan



Nutex Plan

Ø 50 – 63

No 6365

p. 32



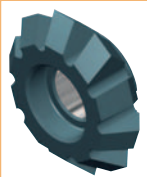
Holders

Type A4, B3, C2

No 6058

p. 33

Nutex Faset



Nutex Faset

Ø 16

No 6343

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Holders

Type A1, B1

No 6044

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Nutex circular saw blade system

The extraordinary combination of circular saw blade and holder in one tool indicates the system Nutex, Nutex Mini and Nutex Plus. With this tool it is possible to machine on CNC centres without fixings protruding out of the tool face.

Nutex / Nutex Mini:

If no standard widths or standard toothings can be applied, the number of teeth and the width can be adapted to your requirements by means of the "Data sheet."

The saws are available in HSS and carbide starting from a width of 0.2 mm.

The following holders are available: cylindrical shaft, threaded shaft or standard tool holder.

All the Nutex holders can be mounted on standard holders. The holders are equipped with holes for internal lubrication.

On customer request the tool is available with a hard material coating (PVD) which allows to achieve longer tool life.

Nutex Plus:

Nutex Plus, with its 3 cutting edges, combines the advantages of a side milling cutter and the features of the Nutex saw blade-system.

Thanks to its 3 cutting edges, Nutex Plus is the ideal tool for making deep slots.

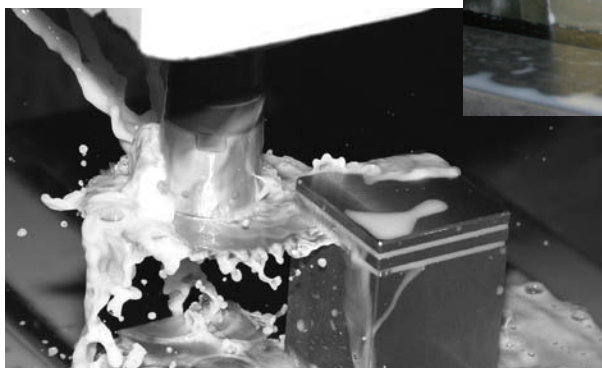
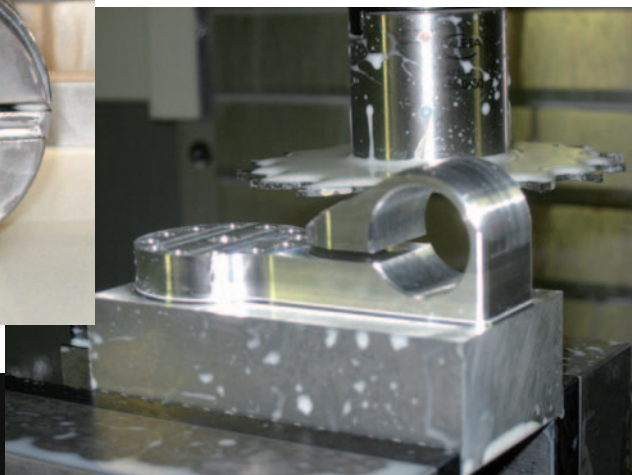
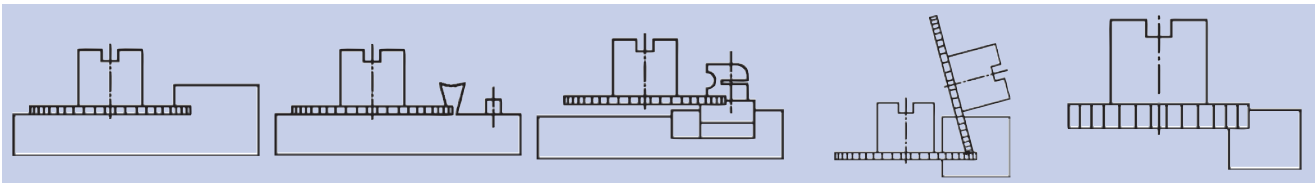
The proven curved tooth form guarantees a good chip flow.

The driving pin ensures a perfect torque transfer.

All the holders allow internal cooling.

If necessary the saw can be admitted from both sides with lubricant by means of the coolant spreading ring.

Application examples



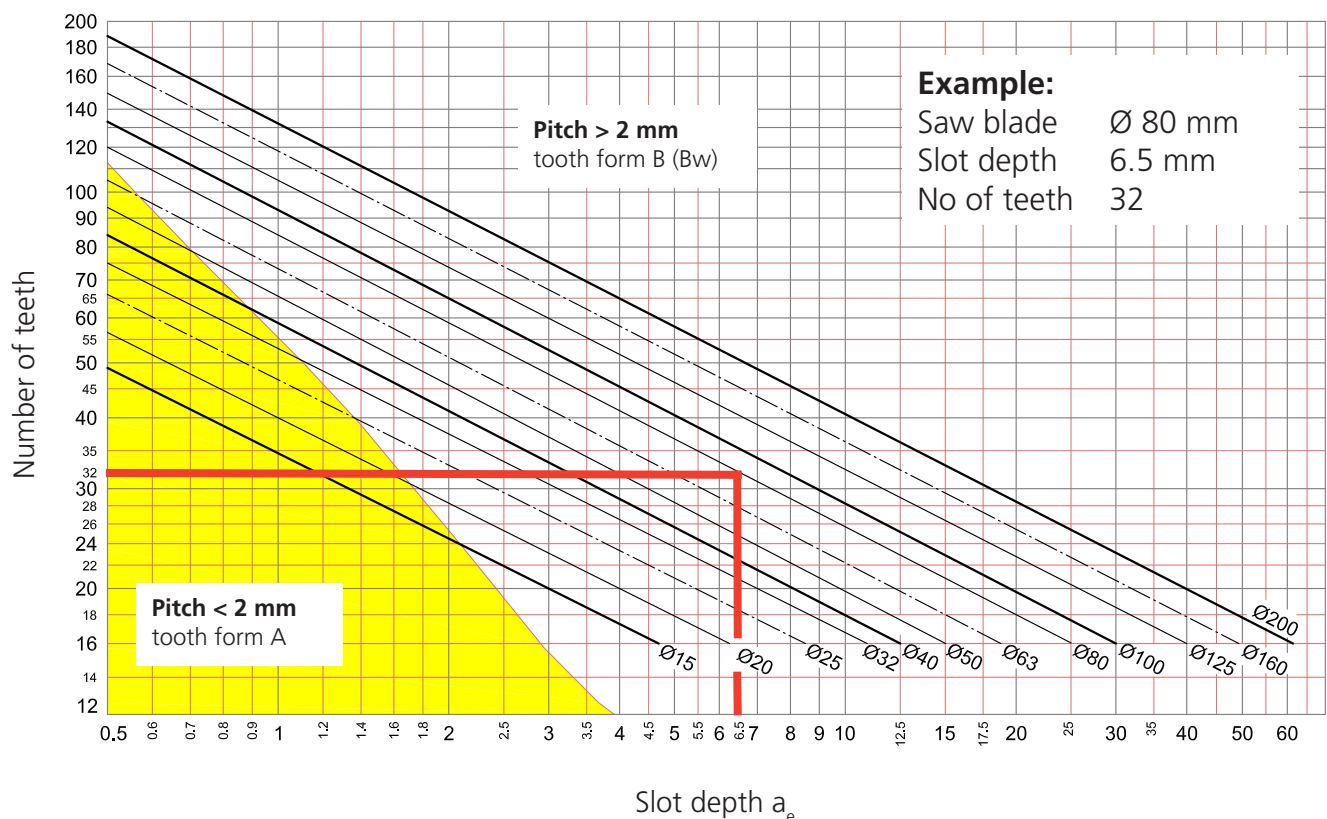
Instruction for an ideal operation of the Nutex saw system

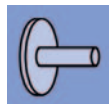
The diagram shows our recommendation of three (3 ± 0.5) teeth engaged into the sawing process. In addition follow the additional remarks please.

- The concentricity of the tool holder should be < 0.01 mm, especially at extension of $> 3 \times D$
- Use tool holder with internal coolant supply
- Emulsion $> 8\%$ especially for stainless alloys (material classification 2 & 5)
- Feed rate based on h_m - table and calculated with f_z - formula (feet per tooth)
- For tooth form A, B & BS use every tooth for the feed rate calculation
- For tooth form Bw & C apply the half amount of teeth for the feed rate calculation
- For saws < 1 mm width; Bw - type of teeth can not be ground
- If the pitch must be smaller than < 2 mm; A - type of tooth form must be used
- By vibration, as first reaction we recommend to reduce the cutting speed V_c to the V_c min.
- For application in stainless steel (material classification 2 & 5); saws must be coated (HSS with TiAlN, carbide with AlCrN)
- The cutting edge geometry on the standard tools is perfect for material tensile strength up to $800 - 1000$ N/mm², by tensile strength > 1200 N/mm² the cutting edge geometry must be adjusted
- Carbide Nutex & DIN saws must be polished for application in soft or not aged Aluminum alloys. The surface of those alloys easy sticks on unpolished saws and results in bad surface quality
- For ALU - cast ($> 6\%$ Si) we recommend the coating 'DLC-H'

Diagram to determine the number of teeth for slot sawing

3 teeth in contact



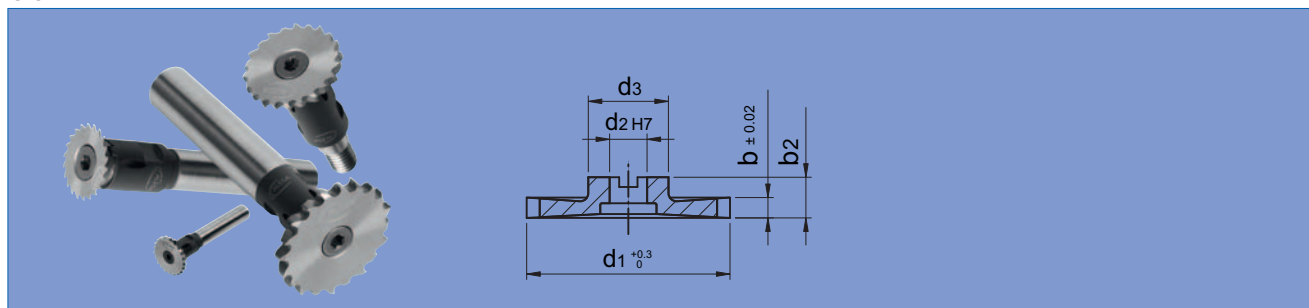



Nutex Mini HSS, standard toothing

TiAlN-coated

6042

Nutex Mini



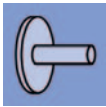
Part No	d1 mm	b mm	b2 mm		Slot depth max. mm	d2 mm	d3 mm	Holder 6044. _ _ _ _
6042.0136	15	0.50	5	20 B	2	5	9.85	.0410, .0420, .0500
6042.0141	15	1.00	5	20 Bw	2	5	9.85	.0410, .0420, .0500
6042.0146	15	1.50	5	20 Bw	2	5	9.85	.0410, .0420, .0500
6042.0149	15	2.00	5	20 Bw	2	5	9.85	.0410, .0420, .0500
6042.0196	20	0.50	5	18 B	4	5	9.85	.0410, .0420, .0500
6042.0201	20	1.00	5	18 Bw	4	5	9.85	.0410, .0420, .0500
6042.0206	20	1.50	5	18 Bw	4	5	9.85	.0410, .0420, .0500
6042.0209	20	2.00	5	18 Bw	4	5	9.85	.0410, .0420, .0500
6042.0211	20	2.50	5	18 Bw	4	5	9.85	.0410, .0420, .0500
6042.0316	25	0.50	5	16 B	6.5	5	9.85	.0410, .0420, .0500
6042.0321	25	1.00	5	16 Bw	6.5	5	9.85	.0410, .0420, .0500
6042.0326	25	1.50	5	16 Bw	6.5	5	9.85	.0410, .0420, .0500
6042.0329	25	2.00	5	16 Bw	6.5	5	9.85	.0410, .0420, .0500
6042.0331	25	2.50	5	16 Bw	6.5	5	9.85	.0410, .0420, .0500
6042.0376	32	0.50	5	14 B	10	5	9.85	.0410, .0420, .0500
6042.0381	32	1.00	5	14 Bw	10	5	9.85	.0410, .0420, .0500
6042.0386	32	1.50	5	14 Bw	10	5	9.85	.0410, .0420, .0500
6042.0389	32	2.00	5	14 Bw	10	5	9.85	.0410, .0420, .0500
6042.0391	32	2.50	5	14 Bw	10	5	9.85	.0410, .0420, .0500
6042.0393	32	3.00	5	14 Bw	10	5	9.85	.0410, .0420, .0500



All the Nutex Mini saws with standard toothing are available from stock!

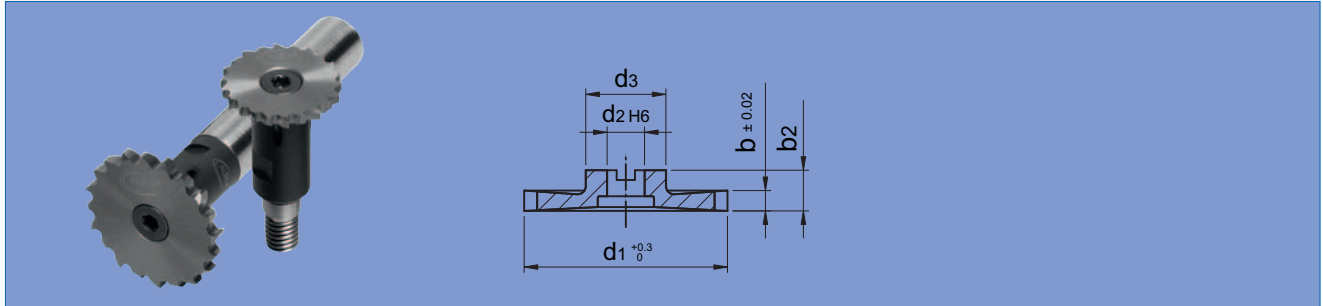


Attention: New tolerance type 'k' on diameter of saw blades!



Nutex Mini carbide, standard toothing AlCrN-coated

6342



Nutex Mini

Part No	d1 mm	b mm	b2 mm	☸	Slot depth max. mm	d2 mm	d3 mm	Holder 6044. _ _ _ _
6342.0136	15	0.50	5	20 B	2	5	9.85	.0410, .0420, .0500
6342.0141	15	1.00	5	20 Bw	2	5	9.85	.0410, .0420, .0500
6342.0146	15	1.50	5	20 Bw	2	5	9.85	.0410, .0420, .0500
6342.0149	15	2.00	5	20 Bw	2	5	9.85	.0410, .0420, .0500
6342.0196	20	0.50	5	18 B	4	5	9.85	.0410, .0420, .0500
6342.0201	20	1.00	5	18 Bw	4	5	9.85	.0410, .0420, .0500
6342.0206	20	1.50	5	18 Bw	4	5	9.85	.0410, .0420, .0500
6342.0209	20	2.00	5	18 Bw	4	5	9.85	.0410, .0420, .0500
6342.0211	20	2.50	5	18 Bw	4	5	9.85	.0410, .0420, .0500
6342.0316	25	0.50	5	16 B	6.5	5	9.85	.0410, .0420, .0500
6342.0321	25	1.00	5	16 Bw	6.5	5	9.85	.0410, .0420, .0500
6342.0326	25	1.50	5	16 Bw	6.5	5	9.85	.0410, .0420, .0500
6342.0329 *)	25	2.00	5	16 Bw	6.5	5	9.85	.0410, .0420, .0500
6342.0331 *)	25	2.50	5	16 Bw	6.5	5	9.85	.0410, .0420, .0500
6342.0376	32	0.50	5	14 B	10	5	9.85	.0410, .0420, .0500
6342.0381	32	1.00	5	14 Bw	10	5	9.85	.0410, .0420, .0500
6342.0386	32	1.50	5	14 Bw	10	5	9.85	.0410, .0420, .0500
6342.0389 *)	32	2.00	5	14 Bw	10	5	9.85	.0410, .0420, .0500
6342.0391 *)	32	2.50	5	14 Bw	10	5	9.85	.0410, .0420, .0500
6342.0393 *)	32	3.00	5	14 Bw	10	5	9.85	.0410, .0420, .0500

*) This Nutex Mini saw is only suitable for material up to 700 N/mm².
For material above 700 N/mm² please use our Nutex product.



All the Nutex Mini saws with standard toothing are available from stock!



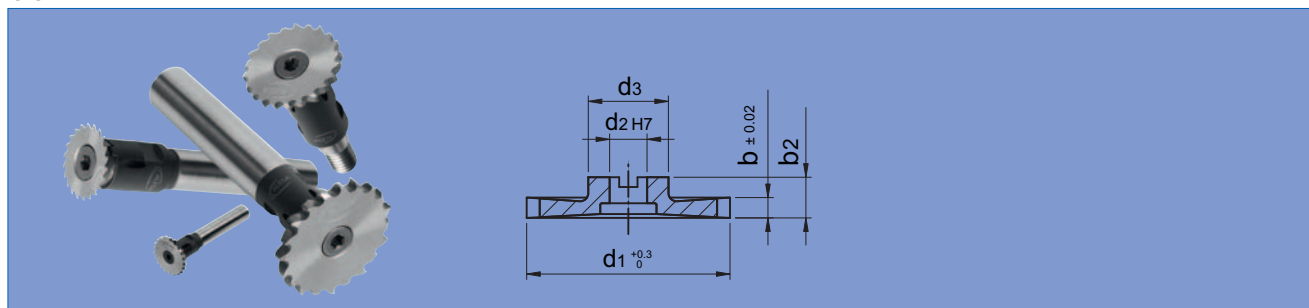
Attention: New tolerance type 'k' on diameter of saw blades!



Nutex Mini HSS, individual tothing uncoated

6041

Nutex Mini



Part No	d1 mm	b mm	b2 mm	Slot depth max. mm	d2 mm	d3 mm	Holder 6044. _ _ _ _
6041.0132	15	0.25	5	2	5	9.85	.0410, .0420, .0500
6041.0136	15	0.50	5	2	5	9.85	.0410, .0420, .0500
6041.0140 °)	15	0.20 – 0.99	5	2	5	9.85	.0410, .0420, .0500
6041.0141	15	1.00	5	2	5	9.85	.0410, .0420, .0500
6041.0146	15	1.50	5	2	5	9.85	.0410, .0420, .0500
6041.0148 °)	15	1.01 – 1.99	5	2	5	9.85	.0410, .0420, .0500
6041.0149	15	2.00	5	2	5	9.85	.0410, .0420, .0500
6041.0192	20	0.25	5	4	5	9.85	.0410, .0420, .0500
6041.0196	20	0.50	5	4	5	9.85	.0410, .0420, .0500
6041.0200 °)	20	0.20 – 0.99	5	4	5	9.85	.0410, .0420, .0500
6041.0201	20	1.00	5	4	5	9.85	.0410, .0420, .0500
6041.0206	20	1.50	5	4	5	9.85	.0410, .0420, .0500
6041.0209	20	2.00	5	4	5	9.85	.0410, .0420, .0500
6041.0210 °)	20	1.01 – 2.49	5	4	5	9.85	.0410, .0420, .0500
6041.0211	20	2.50	5	4	5	9.85	.0410, .0420, .0500
6041.0312	25	0.25	5	6.5	5	9.85	.0410, .0420, .0500
6041.0316	25	0.50	5	6.5	5	9.85	.0410, .0420, .0500
6041.0320 °)	25	0.25 – 0.99	5	6.5	5	9.85	.0410, .0420, .0500
6041.0321	25	1.00	5	6.5	5	9.85	.0410, .0420, .0500
6041.0326	25	1.50	5	6.5	5	9.85	.0410, .0420, .0500
6041.0329	25	2.00	5	6.5	5	9.85	.0410, .0420, .0500
6041.0330 °)	25	1.01 – 2.49	5	6.5	5	9.85	.0410, .0420, .0500
6041.0331	25	2.50	5	6.5	5	9.85	.0410, .0420, .0500
6041.0376	32	0.50	5	10	5	9.85	.0410, .0420, .0500
6041.0380 °)	32	0.30 – 0.99	5	10	5	9.85	.0410, .0420, .0500
6041.0381	32	1.00	5	10	5	9.85	.0410, .0420, .0500
6041.0386	32	1.50	5	10	5	9.85	.0410, .0420, .0500
6041.0388 °)	32	1.01 – 1.99	5	10	5	9.85	.0410, .0420, .0500
6041.0389	32	2.00	5	10	5	9.85	.0410, .0420, .0500
6041.0391	32	2.50	5	10	5	9.85	.0410, .0420, .0500
6041.0392 °)	32	2.01 – 2.99	5	10	5	9.85	.0410, .0420, .0500
6041.0393	32	3.00	5	10	5	9.85	.0410, .0420, .0500

°) Tools with widths beyond standard widths as well as special width tolerances can be produced. Please ask for a specific quotation.



Minimum order quantity saw blades: 2 pcs of the same dimension.



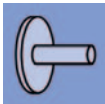
All Nutex and Nutex Mini saws are available with TiN- or TiAlN-coating too.



Number, form, type and geometry of teeth have to be chosen by you.

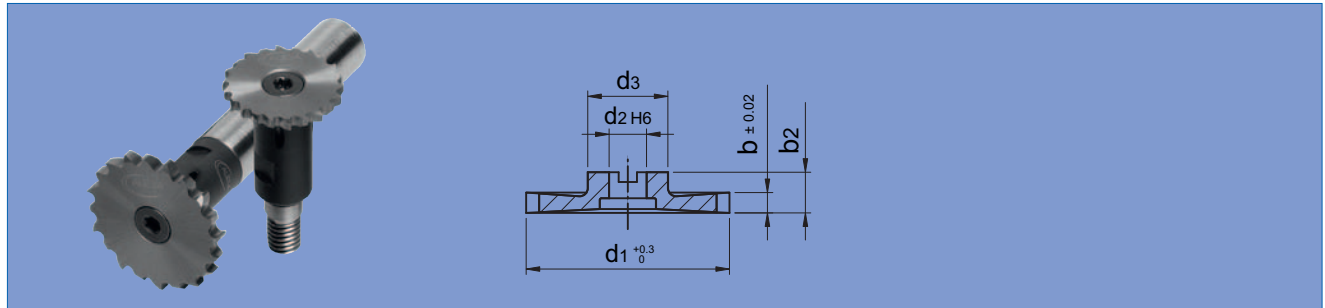


For individual toothed saws always fill in enclosed datasheet. Thank you.



Nutex Mini carbide, individual toothing uncoated

6341



Part No	d1 mm	b mm	b2 mm	Slot depth max. mm	d2 mm	d3 mm	Holder 6044. _ _ _ _
6341.0135 °)	15	0.20 – 0.49	5	2	5	9.85	.0410, .0420, .0500
6341.0136	15	0.50	5	2	5	9.85	.0410, .0420, .0500
6341.0140 °)	15	0.51 – 0.99	5	2	5	9.85	.0410, .0420, .0500
6341.0141	15	1.00	5	2	5	9.85	.0410, .0420, .0500
6341.0145 °)	15	1.01 – 1.49	5	2	5	9.85	.0410, .0420, .0500
6341.0146	15	1.50	5	2	5	9.85	.0410, .0420, .0500
6341.0148 °)	15	1.51 – 1.99	5	2	5	9.85	.0410, .0420, .0500
6341.0149	15	2.00	5	2	5	9.85	.0410, .0420, .0500
6341.0195 °)	20	0.20 – 0.49	5	4	5	9.85	.0410, .0420, .0500
6341.0196	20	0.50	5	4	5	9.85	.0410, .0420, .0500
6341.0200 °)	20	0.51 – 0.99	5	4	5	9.85	.0410, .0420, .0500
6341.0201	20	1.00	5	4	5	9.85	.0410, .0420, .0500
6341.0205 °)	20	1.01 – 1.49	5	4	5	9.85	.0410, .0420, .0500
6341.0206	20	1.50	5	4	5	9.85	.0410, .0420, .0500
6341.0208 °)	20	1.51 – 1.99	5	4	5	9.85	.0410, .0420, .0500
6341.0209	20	2.00	5	4	5	9.85	.0410, .0420, .0500
6341.0210 °)	20	2.01 – 2.49	5	4	5	9.85	.0410, .0420, .0500
6341.0211	20	2.50	5	4	5	9.85	.0410, .0420, .0500
6341.0315 °)	25	0.25 – 0.49	5	6.5	5	9.85	.0410, .0420, .0500
6341.0316	25	0.50	5	6.5	5	9.85	.0410, .0420, .0500
6341.0320 °)	25	0.51 – 0.99	5	6.5	5	9.85	.0410, .0420, .0500
6341.0321	25	1.00	5	6.5	5	9.85	.0410, .0420, .0500
6341.0325 °)	25	1.01 – 1.49	5	6.5	5	9.85	.0410, .0420, .0500
6341.0326	25	1.50	5	6.5	5	9.85	.0410, .0420, .0500
6341.0328 °) *)	25	1.51 – 1.99	5	6.5	5	9.85	.0410, .0420, .0500
6341.0329 *)	25	2.00	5	6.5	5	9.85	.0410, .0420, .0500
6341.0330 °) *)	25	2.01 – 2.49	5	6.5	5	9.85	.0410, .0420, .0500
6341.0331 *)	25	2.50	5	6.5	5	9.85	.0410, .0420, .0500
6341.0375 °)	32	0.30 – 0.49	5	10	5	9.85	.0410, .0420, .0500
6341.0376	32	0.50	5	10	5	9.85	.0410, .0420, .0500
6341.0380 °)	32	0.51 – 0.99	5	10	5	9.85	.0410, .0420, .0500
6341.0381	32	1.00	5	10	5	9.85	.0410, .0420, .0500
6341.0385 °)	32	1.01 – 1.49	5	10	5	9.85	.0410, .0420, .0500
6341.0386	32	1.50	5	10	5	9.85	.0410, .0420, .0500
6341.0388 °) *)	32	1.51 – 1.99	5	10	5	9.85	.0410, .0420, .0500
6341.0389 *)	32	2.00	5	10	5	9.85	.0410, .0420, .0500
6341.0390 °) *)	32	2.01 – 2.49	5	10	5	9.85	.0410, .0420, .0500
6341.0391 *)	32	2.50	5	10	5	9.85	.0410, .0420, .0500
6341.0392 °) *)	32	2.51 – 2.99	5	10	5	9.85	.0410, .0420, .0500
6341.0393 *)	32	3.00	5	10	5	9.85	.0410, .0420, .0500

°) Tools with widths beyond standard widths as well as special width tolerances can be produced. Please ask for a specific quotation.

*) This Nutex Mini saw is only suitable for material up to 700 N/mm².
For material above 700 N/mm² please use our Nutex product.



Minimum order quantity saw blades: 2 pcs of the same dimension.



Various coatings can be chosen for the carbide Nutex and Nutex Mini saws. Please contact us for further information.



Number, form, type and geometry of teeth have to be chosen by you.



For individual toothing saws always fill in enclosed datasheet. Thank you.




Holder for Nutex Mini and accessories / spare parts

6044

Nutex Mini



Part No	Type	d1 mm	d2 mm	d3 mm	G	l1 mm	L mm		Assembly screw	Type	Torx Screw-driver	Type
6044.0400	A1	7	5	9.85		15.2	54	✓	6044.0800	M4 / Ø6.5x16 / 4.5Nm	1492.0500	T 15
6044.0410	A1	8	5	9.85		15.2	54	✓	6044.0800	M4 / Ø6.5x16 / 4.5Nm	1492.0500	T 15
6044.0420	A1	10	5	9.85		15.2	58	✓	6044.0800	M4 / Ø6.5x16 / 4.5Nm	1492.0500	T 15
6044.0500	B1		5	9.85	M6	18	32	✓	6044.0800	M4 / Ø6.5x16 / 4.5Nm	1492.0500	T 15

Tool will be delivered with: holder with screw and screw-driver

Torx screw 6044.0800



Nutex Mini order form

For a quick technical solution, please fill in this form and mail it to info@alesa.ch or fax it to +41 62 767 62 82

Inquiry

Order

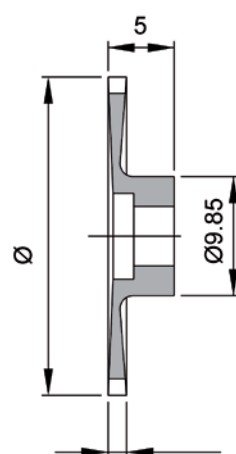
Customer _____	Name _____
_____	First name _____
Address _____	Tel/Fax _____
ZIP / Place _____	Email _____

Workpiece

Material _____ Tensile strength _____ N/mm²
 slot length _____ slot depth _____

Sketch

Circular saw Nutex Mini



N° of teeth _____

Tooth type _____

Cutting material HSS
 Carbide

Coating _____

Sense of rotation clockwise
 counter-cw

Standard tolerances

Diameter 0 / +0.3 Width ± 0.02
 For special form tools the tolerances need to be specified.

Amount ____ pcs (minimum 2 pcs)

Date

Signature

Holder

with shank



part no	Ø d1	pcs
6044.0400	Ø 7 mm	____ pcs
6044.0410	Ø 8 mm	____ pcs
6044.0420	Ø 10 mm	____ pcs

threaded type



part no	G	pcs
6044.0500	M6	____ pcs

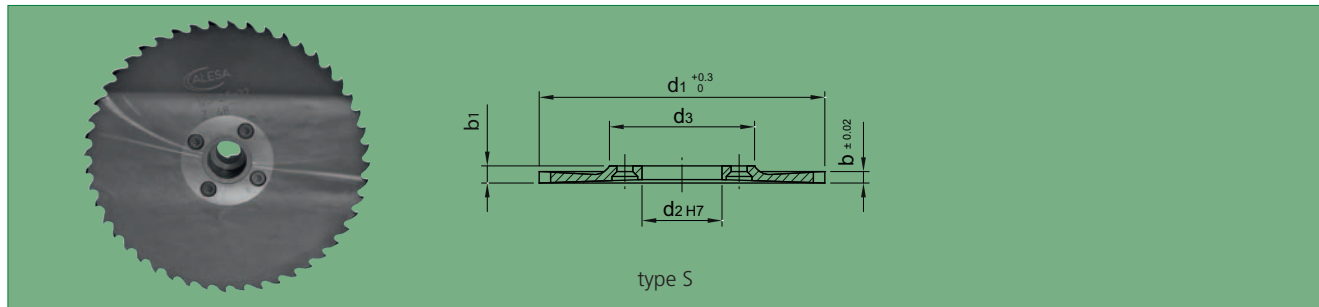



Nutex HSS, standard toothing

TiAlN-coated

6046

Nutex



Part No	d1 mm	Type	b mm	b1 mm		Slot depth max. mm	d2 mm	d3 mm	Holder 6048. _ _ _ _
6046.0355	40	S	1.00	2.55	36 Bw	6 (3*)	8	24	.0430, .0530
6046.0356	40	S	1.00	2.55	24 Bw	6	8	24	.0430, .0530
6046.0361	40	S	1.50	2.55	36 Bw	6 (3*)	8	24	.0430, .0530
6046.0362	40	S	1.50	2.55	24 Bw	6	8	24	.0430, .0530
6046.0367	40	S	2.00	2.55	36 Bw	6 (3*)	8	24	.0430, .0530
6046.0368	40	S	2.00	2.55	24 Bw	6	8	24	.0430, .0530
6046.0415	50	S	1.00	2.55	32 Bw	11 (5*)	8	24	.0430, .0530
6046.0416	50	S	1.00	2.55	22 Bw	11	8	24	.0430, .0530
6046.0421	50	S	1.50	2.55	32 Bw	11 (5*)	8	24	.0430, .0530
6046.0422	50	S	1.50	2.55	22 Bw	11	8	24	.0430, .0530
6046.0427	50	S	2.00	2.55	32 Bw	11 (5*)	8	24	.0430, .0530
6046.0428	50	S	2.00	2.55	22 Bw	11	8	24	.0430, .0530
6046.0535	63	S	1.00	2.55	30 Bw	13 (6*)	16	32	.0440, .0540, .0640
6046.0536	63	S	1.00	2.55	20 Bw	13	16	32	.0440, .0540, .0640
6046.0541	63	S	1.50	2.55	30 Bw	13 (6*)	16	32	.0440, .0540, .0640
6046.0542	63	S	1.50	2.55	20 Bw	13	16	32	.0440, .0540, .0640
6046.0547	63	S	2.00	2.55	30 Bw	13 (6*)	16	32	.0440, .0540, .0640
6046.0548	63	S	2.00	2.55	20 Bw	13	16	32	.0440, .0540, .0640
6046.0595	80	S	1.00	2.55	30 Bw	21 (9*)	16	32	.0440, .0540, .0640
6046.0596	80	S	1.00	2.55	20 Bw	21	16	32	.0440, .0540, .0640
6046.0601	80	S	1.50	2.55	30 Bw	21 (9*)	16	32	.0440, .0540, .0640
6046.0602	80	S	1.50	2.55	20 Bw	21	16	32	.0440, .0540, .0640
6046.0607	80	S	2.00	2.55	30 Bw	21 (9*)	16	32	.0440, .0540, .0640
6046.0608	80	S	2.00	2.55	20 Bw	21	16	32	.0440, .0540, .0640
6046.0613	80	S	2.50	2.55	30 Bw	21 (9*)	16	32	.0440, .0540, .0640
6046.0614	80	S	2.50	2.55	20 Bw	21	16	32	.0440, .0540, .0640
6046.0619	80	S	3.00	3.05	30 Bw	21 (9*)	16	32	.0440, .0540, .0640
6046.0620	80	S	3.00	3.05	20 Bw	21	16	32	.0440, .0540, .0640
6046.0715	100	S	1.00	2.55	28 Bw	27 (12*)	22	40	.0650
6046.0716	100	S	1.00	2.55	18 Bw	27	22	40	.0650
6046.0721	100	S	1.50	2.55	28 Bw	27 (12*)	22	40	.0650
6046.0722	100	S	1.50	2.55	18 Bw	27	22	40	.0650
6046.0727	100	S	2.00	2.55	28 Bw	27 (12*)	22	40	.0650
6046.0728	100	S	2.00	2.55	18 Bw	27	22	40	.0650
6046.0733	100	S	2.50	2.55	28 Bw	27 (12*)	22	40	.0650
6046.0734	100	S	2.50	2.55	18 Bw	27	22	40	.0650
6046.0739	100	S	3.00	3.05	28 Bw	27 (12*)	22	40	.0650
6046.0740	100	S	3.00	3.05	18 Bw	27	22	40	.0650
6046.0775	125	S	1.00	2.55	28 Bw	38 (15*)	22	40	.0650
6046.0776	125	S	1.00	2.55	18 Bw	38	22	40	.0650
6046.0781	125	S	1.50	2.55	28 Bw	38 (15*)	22	40	.0650
6046.0782	125	S	1.50	2.55	18 Bw	38	22	40	.0650
6046.0787	125	S	2.00	2.55	28 Bw	38 (15*)	22	40	.0650
6046.0788	125	S	2.00	2.55	18 Bw	38	22	40	.0650
6046.0793	125	S	2.50	2.55	28 Bw	38 (15*)	22	40	.0650
6046.0794	125	S	2.50	2.55	18 Bw	38	22	40	.0650
6046.0799	125	S	3.00	3.05	28 Bw	38 (15*)	22	40	.0650
6046.0800	125	S	3.00	3.05	18 Bw	38	22	40	.0650

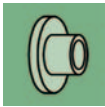
* Maximal recommended depth of cut with saw blades with a large amount of teeth.



All the Nutex saws with standard toothing are available from stock!

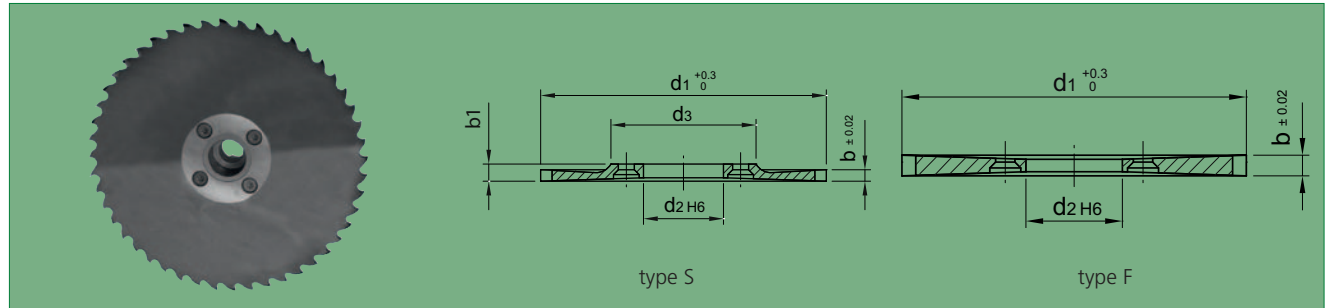



Attention: New tolerance type 'k' on diameter of saw blades!



Nutex carbide, standard toothing AlCrN-coated

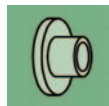
6346



Part No	d1 mm	Type	b mm	b1 mm		Slot depth max. mm	d2 mm	d3 mm	Holder 6048. _ _ _ _
6346.0175	25	S	1.00	1.55	38 Bw	3 (1.5*)	5	16	.0400, .0410, .0420, .0520
6346.0176	25	S	1.00	1.55	28 Bw	3	5	16	.0400, .0410, .0420, .0520
6346.0181	25	F	1.50		38 Bw	3 (1.5*)	5		.0400, .0410, .0420, .0520
6346.0182	25	F	1.50		28 Bw	3	5		.0400, .0410, .0420, .0520
6346.0235	32	S	1.00	1.55	32 Bw	6 (3*)	5	16	.0400, .0410, .0420, .0520
6346.0236	32	S	1.00	1.55	22 Bw	6	5	16	.0400, .0410, .0420, .0520
6346.0241	32	F	1.50		32 Bw	6 (3*)	5		.0400, .0410, .0420, .0520
6346.0242	32	F	1.50		22 Bw	6	5		.0400, .0410, .0420, .0520
6346.0355	40	S	1.00	2.55	36 Bw	6 (3*)	8	24	.0430, .0530
6346.0356	40	S	1.00	2.55	24 Bw	6	8	24	.0430, .0530
6346.0361	40	S	1.50	2.55	36 Bw	6 (3*)	8	24	.0430, .0530
6346.0362	40	S	1.50	2.55	24 Bw	6	8	24	.0430, .0530
6346.0367	40	S	2.00	2.55	36 Bw	6 (3*)	8	24	.0430, .0530
6346.0368	40	S	2.00	2.55	24 Bw	6	8	24	.0430, .0530
6346.0373	40	F	2.50		36 Bw	6 (3*)	8		.0430, .0530
6346.0374	40	F	2.50		24 Bw	6	8		.0430, .0530
6346.0415	50	S	1.00	2.55	32 Bw	11 (5*)	8	24	.0430, .0530
6346.0416	50	S	1.00	2.55	22 Bw	11	8	24	.0430, .0530
6346.0421	50	S	1.50	2.55	32 Bw	11 (5*)	8	24	.0430, .0530
6346.0422	50	S	1.50	2.55	22 Bw	11	8	24	.0430, .0530
6346.0427	50	S	2.00	2.55	32 Bw	11 (5*)	8	24	.0430, .0530
6346.0428	50	S	2.00	2.55	22 Bw	11	8	24	.0430, .0530
6346.0433	50	F	2.50		32 Bw	11 (5*)	8		.0430, .0530
6346.0434	50	F	2.50		22 Bw	11	8		.0430, .0530
6346.0535	63	S	1.00	2.55	30 Bw	13 (6*)	16	32	.0440, .0540, .0640
6346.0536	63	S	1.00	2.55	20 Bw	13	16	32	.0440, .0540, .0640
6346.0541	63	S	1.50	2.55	30 Bw	13 (6*)	16	32	.0440, .0540, .0640
6346.0542	63	S	1.50	2.55	20 Bw	13	16	32	.0440, .0540, .0640
6346.0547	63	S	2.00	2.55	30 Bw	13 (6*)	16	32	.0440, .0540, .0640
6346.0548	63	S	2.00	2.55	20 Bw	13	16	32	.0440, .0540, .0640
6346.0553	63	F	2.50		30 Bw	13 (6*)	16		.0440, .0540, .0640
6346.0554	63	F	2.50		20 Bw	13	16		.0440, .0540, .0640
6346.0578	63	F	6.00		20 Bw	13	16		.0440, .0540, .0640
6346.0595	80	S	1.00	2.55	30 Bw	21 (9*)	16	32	.0440, .0540, .0640
6346.0596	80	S	1.00	2.55	20 Bw	21	16	32	.0440, .0540, .0640
6346.0601	80	S	1.50	2.55	30 Bw	21 (9*)	16	32	.0440, .0540, .0640
6346.0602	80	S	1.50	2.55	20 Bw	21	16	32	.0440, .0540, .0640
6346.0607	80	S	2.00	2.55	30 Bw	21 (9*)	16	32	.0440, .0540, .0640
6346.0608	80	S	2.00	2.55	20 Bw	21	16	32	.0440, .0540, .0640
6346.0613	80	F	2.50		30 Bw	21 (9*)	16		.0440, .0540, .0640
6346.0614	80	F	2.50		20 Bw	21	16		.0440, .0540, .0640
6346.0727	100	S	2.00	2.55	28 Bw	27 (12*)	22	40	.0650
6346.0728	100	S	2.00	2.55	18 Bw	27	22	40	.0650
6346.0733	100	F	2.50		28 Bw	27 (12*)	22		.0650
6346.0734	100	F	2.50		18 Bw	27	22		.0650
6346.0787	125	S	2.00	2.55	28 Bw	38 (15*)	22	40	.0650
6346.0788	125	S	2.00	2.55	18 Bw	38	22	40	.0650
6346.0793	125	F	2.50		28 Bw	38 (15*)	22		.0650
6346.0794	125	F	2.50		18 Bw	38	22		.0650

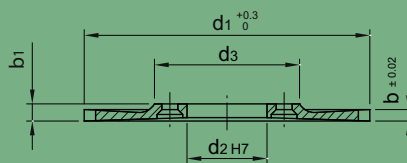
* Maximal recommended depth of cut with saw blades with a large amount of teeth.

Info All the Nutex saws with standard toothing are available from stock! **Info** Attention: New tolerance type 'k' on diameter of saw blades!



Nutex HSS, individual toothing uncoated

6045



type S

Nutex

Part No	d1 mm	Type	b mm	b1 mm	Slot depth max. mm	d2 mm	d3 mm	Holder 6048. _ _ _ _
6045.0312	25	S	0.25	1.55	3	5	16	.0400, .0410, .0420, .0520
6045.0316	25	S	0.50	1.55	3	5	16	.0400, .0410, .0420, .0520
6045.0321	25	S	1.00	1.55	3	5	16	.0400, .0410, .0420, .0520
6045.0326 °)	25	S	0.20 – 1.49	1.55	3	5	16	.0400, .0410, .0420, .0520
6045.0328	25	S	1.50	1.55	3	5	16	.0400, .0410, .0420, .0520
6045.0329 °)	25	S	1.51 – 1.99	2.05	3	5	16	.0400, .0410, .0420, .0520
6045.0330	25	S	2.00	2.05	3	5	16	.0400, .0410, .0420, .0520
6045.0331 °)	25	S	2.01 – 2.49	2.55	3	5	16	.0400, .0410, .0420, .0520
6045.0332	25	S	2.50	2.55	3	5	16	.0400, .0410, .0420, .0520
6045.0376	32	S	0.50	1.55	6	5	16	.0400, .0410, .0420, .0520
6045.0381	32	S	1.00	1.55	6	5	16	.0400, .0410, .0420, .0520
6045.0386 °)	32	S	0.25 – 1.49	1.55	6	5	16	.0400, .0410, .0420, .0520
6045.0388	32	S	1.50	1.55	6	5	16	.0400, .0410, .0420, .0520
6045.0389 °)	32	S	1.51 – 1.99	2.05	6	5	16	.0400, .0410, .0420, .0520
6045.0390	32	S	2.00	2.05	6	5	16	.0400, .0410, .0420, .0520
6045.0391 °)	32	S	2.01 – 2.49	2.55	6	5	16	.0400, .0410, .0420, .0520
6045.0392	32	S	2.50	2.55	6	5	16	.0400, .0410, .0420, .0520
6045.0393 °)	32	S	2.51 – 2.99	3.05	6	5	16	.0400, .0410, .0420, .0520
6045.0394	32	S	3.00	3.05	6	5	16	.0400, .0410, .0420, .0520
6045.0466	40	S	0.50	2.55	6	8	24	.0430, .0530
6045.0471	40	S	1.00	2.55	6	8	24	.0430, .0530
6045.0478	40	S	1.50	2.55	6	8	24	.0430, .0530
6045.0480	40	S	2.00	2.55	6	8	24	.0430, .0530
6045.0481 °)	40	S	0.30 – 2.49	2.55	6	8	24	.0430, .0530
6045.0482	40	S	2.50	2.55	6	8	24	.0430, .0530
6045.0483 °)	40	S	2.51 – 2.99	3.05	6	8	24	.0430, .0530
6045.0484	40	S	3.00	3.05	6	8	24	.0430, .0530
6045.0485 °)	40	S	3.01 – 3.99	4.05	6	8	24	.0430, .0530
6045.0486	40	S	4.00	4.05	6	8	24	.0430, .0530
6045.0487 °)	40	S	4.01 – 4.99	5.05	6	8	24	.0430, .0530
6045.0489	40	S	5.00	5.05	6	8	24	.0430, .0530
6045.0526	50	S	0.50	2.55	11	8	24	.0430, .0530
6045.0531	50	S	1.00	2.55	11	8	24	.0430, .0530
6045.0538	50	S	1.50	2.55	11	8	24	.0430, .0530
6045.0540	50	S	2.00	2.55	11	8	24	.0430, .0530
6045.0541 °)	50	S	0.40 – 2.49	2.55	11	8	24	.0430, .0530
6045.0542	50	S	2.50	2.55	11	8	24	.0430, .0530
6045.0543 °)	50	S	2.51 – 2.99	3.05	11	8	24	.0430, .0530
6045.0544	50	S	3.00	3.05	11	8	24	.0430, .0530
6045.0545 °)	50	S	3.01 – 3.99	4.05	11	8	24	.0430, .0530
6045.0546	50	S	4.00	4.05	11	8	24	.0430, .0530
6045.0547 °)	50	S	4.01 – 4.99	5.05	11	8	24	.0430, .0530
6045.0549	50	S	5.00	5.05	11	8	24	.0430, .0530
6045.0621	63	S	1.00	2.55	13	16	32	.0440, .0540, .0640
6045.0628	63	S	1.50	2.55	13	16	32	.0440, .0540, .0640
6045.0630	63	S	2.00	2.55	13	16	32	.0440, .0540, .0640
6045.0631 °)	63	S	0.50 – 2.49	2.55	13	16	32	.0440, .0540, .0640
6045.0632	63	S	2.50	2.55	13	16	32	.0440, .0540, .0640
6045.0633 °)	63	S	2.51 – 2.99	3.05	13	16	32	.0440, .0540, .0640
6045.0634	63	S	3.00	3.05	13	16	32	.0440, .0540, .0640
6045.0635 °)	63	S	3.01 – 3.99	4.05	13	16	32	.0440, .0540, .0640
6045.0636	63	S	4.00	4.05	13	16	32	.0440, .0540, .0640



Minimum order quantity saw blades: 2 pcs of the same dimension.



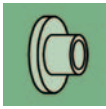
All Nutex and Nutex Mini saws are available with TiN- or TiAlN-coating too.



Number, form, type and geometry of teeth have to be chosen by you.



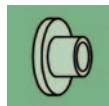
For individual toothed saws always fill in enclosed datasheet. Thank you.



Nutex HSS, individual toothing uncoated

Part No	d1 mm	Type	b mm	b1 mm	Slot depth max. mm	d2 mm	d3 mm	Holder 6048. _ _ _ _
6045.0637 °)	63	S	4.01 – 4.99	5.05	13	16	32	.0440, .0540, .0640
6045.0639	63	S	5.00	5.05	13	16	32	.0440, .0540, .0640
6045.0651	80	S	1.00	2.55	21	16	32	.0440, .0540, .0640
6045.0658	80	S	1.50	2.55	21	16	32	.0440, .0540, .0640
6045.0660	80	S	2.00	2.55	21	16	32	.0440, .0540, .0640
6045.0661 °)	80	S	0.70 – 2.49	2.55	21	16	32	.0440, .0540, .0640
6045.0662	80	S	2.50	2.55	21	16	32	.0440, .0540, .0640
6045.0663 °)	80	S	2.51 – 2.99	3.05	21	16	32	.0440, .0540, .0640
6045.0664	80	S	3.00	3.05	21	16	32	.0440, .0540, .0640
6045.0665 °)	80	S	3.01 – 3.99	4.05	21	16	32	.0440, .0540, .0640
6045.0666	80	S	4.00	4.05	21	16	32	.0440, .0540, .0640
6045.0667 °)	80	S	4.01 – 4.99	5.05	21	16	32	.0440, .0540, .0640
6045.0669	80	S	5.00	5.05	21	16	32	.0440, .0540, .0640
6045.0711	100	S	1.00	2.55	27	22	40	.0650
6045.0718	100	S	1.50	2.55	27	22	40	.0650
6045.0720	100	S	2.00	2.55	27	22	40	.0650
6045.0721 °)	100	S	0.80 – 2.49	2.55	27	22	40	.0650
6045.0722	100	S	2.50	2.55	27	22	40	.0650
6045.0723 °)	100	S	2.51 – 2.99	3.05	27	22	40	.0650
6045.0724	100	S	3.00	3.05	27	22	40	.0650
6045.0725 °)	100	S	3.01 – 3.99	4.05	27	22	40	.0650
6045.0726	100	S	4.00	4.05	27	22	40	.0650
6045.0727 °)	100	S	4.01 – 4.99	5.05	27	22	40	.0650
6045.0729	100	S	5.00	5.05	27	22	40	.0650
6045.0741	125	S	1.00	2.55	38	22	40	.0650
6045.0748	125	S	1.50	2.55	38	22	40	.0650
6045.0750	125	S	2.00	2.55	38	22	40	.0650
6045.0751 °)	125	S	1.01 – 2.49	2.55	38	22	40	.0650
6045.0752	125	S	2.50	2.55	38	22	40	.0650
6045.0753 °)	125	S	2.51 – 2.99	3.05	38	22	40	.0650
6045.0754	125	S	3.00	3.05	38	22	40	.0650
6045.0755 °)	125	S	3.01 – 3.99	4.05	38	22	40	.0650
6045.0756	125	S	4.00	4.05	38	22	40	.0650
6045.0757 °)	125	S	4.01 – 4.99	5.05	38	22	40	.0650
6045.0759	125	S	5.00	5.05	38	22	40	.0650
6045.0781 °)	160	S	1.50 – 2.49	2.6	51	32	48	6058.0660
6045.0782	160	S	2.50	2.6	51	32	48	6058.0660
6045.0783 °)	160	S	2.51 – 2.99	3.1	51	32	48	6058.0660
6045.0784	160	S	3.00	3.1	51	32	48	6058.0660
6045.0843 °)	200	S	1.40 – 2.99	3.1	71	32	48	6058.0660
6045.0844	200	S	3.00	3.1	71	32	48	6058.0660
6045.0845 °)	200	S	3.01 – 3.99	4.1	71	32	48	6058.0660
6045.0846	200	S	4.00	4.1	71	32	48	6058.0660

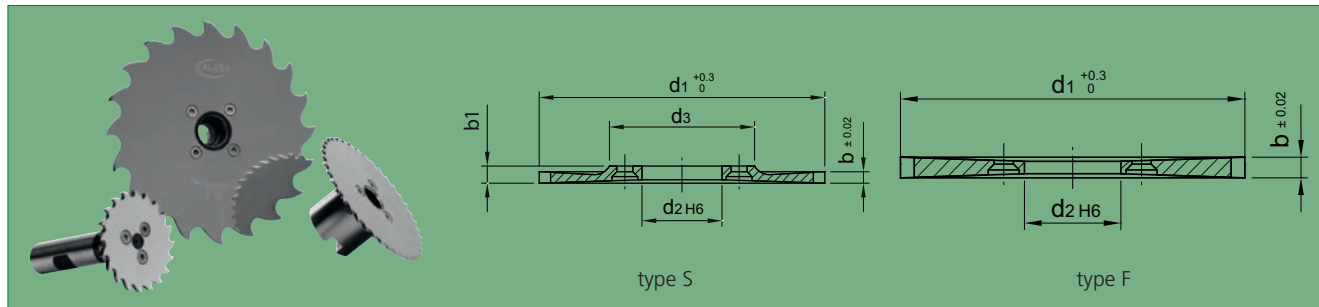
°) Tools with widths beyond standard widths as well as special width tolerances can be produced. Please ask for a specific quotation.



Nutex carbide, individual toothing uncoated

6345

Nutex



Part No	d1 mm	Type	b mm	b1 mm	Slot depth max. mm	d2 mm	d3 mm	Holder 6048. _ _ _ _
6345.0320 °)	25	S	0.20 – 0.99	1.55	3	5	16	.0400, .0410, .0420, .0520
6345.0321	25	S	1.00	1.55	3	5	16	.0400, .0410, .0420, .0520
6345.0325 °)	25	S	1.01 – 1.49	1.55	3	5	16	.0400, .0410, .0420, .0520
6345.0326	25	F	1.50		3	5		.0400, .0410, .0420, .0520
6345.0328 °)	25	F	1.51 – 1.99		3	5		.0400, .0410, .0420, .0520
6345.0329	25	F	2.00		3	5		.0400, .0410, .0420, .0520
6345.0330 °)	25	F	2.01 – 2.49		3	5		.0400, .0410, .0420, .0520
6345.0331	25	F	2.50		3	5		.0400, .0410, .0420, .0520
6345.0380 °)	32	S	0.20 – 0.99	1.55	6	5	16	.0400, .0410, .0420, .0520
6345.0381	32	S	1.00	1.55	6	5	16	.0400, .0410, .0420, .0520
6345.0385 °)	32	S	1.01 – 1.49	1.55	6	5	16	.0400, .0410, .0420, .0520
6345.0386	32	F	1.50		6	5		.0400, .0410, .0420, .0520
6345.0388 °)	32	F	1.51 – 1.99		6	5		.0400, .0410, .0420, .0520
6345.0389	32	F	2.00		6	5		.0400, .0410, .0420, .0520
6345.0390 °)	32	F	2.01 – 2.49		6	5		.0400, .0410, .0420, .0520
6345.0391	32	F	2.50		6	5		.0400, .0410, .0420, .0520
6345.0392 °)	32	F	2.51 – 2.99		6	5		.0400, .0410, .0420, .0520
6345.0393	32	F	3.00		6	5		.0400, .0410, .0420, .0520
6345.0470 °)	40	S	0.25 – 0.99	2.55	6	8	24	.0430, .0530
6345.0471	40	S	1.00	2.55	6	8	24	.0430, .0530
6345.0475 °)	40	S	1.01 – 1.49	2.55	6	8	24	.0430, .0530
6345.0476	40	S	1.50	2.55	6	8	24	.0430, .0530
6345.0478 °)	40	S	1.51 – 1.99	2.55	6	8	24	.0430, .0530
6345.0479	40	S	2.00	2.55	6	8	24	.0430, .0530
6345.0480 °)	40	S	2.01 – 2.49	2.55	6	8	24	.0430, .0530
6345.0481	40	F	2.50		6	8		.0430, .0530
6345.0482 °)	40	F	2.51 – 2.99		6	8		.0430, .0530
6345.0483	40	F	3.00		6	8		.0430, .0530
6345.0484 °)	40	F	3.01 – 3.99		6	8		.0430, .0530
6345.0485	40	F	4.00		6	8		.0430, .0530
6345.0486 °)	40	F	4.01 – 4.99		6	8		.0430, .0530
6345.0487	40	F	5.00		6	8		.0430, .0530
6345.0530 °)	50	S	0.30 – 0.99	2.55	11	8	24	.0430, .0530
6345.0531	50	S	1.00	2.55	11	8	24	.0430, .0530
6345.0535 °)	50	S	1.01 – 1.49	2.55	11	8	24	.0430, .0530
6345.0536	50	S	1.50	2.55	11	8	24	.0430, .0530
6345.0538 °)	50	S	1.51 – 1.99	2.55	11	8	24	.0430, .0530
6345.0539	50	S	2.00	2.55	11	8	24	.0430, .0530
6345.0540 °)	50	S	2.01 – 2.49	2.55	11	8	24	.0430, .0530
6345.0541	50	F	2.50		11	8		.0430, .0530
6345.0542 °)	50	F	2.51 – 2.99		11	8		.0430, .0530
6345.0543	50	F	3.00		11	8		.0430, .0530
6345.0544 °)	50	F	3.01 – 3.99		11	8		.0430, .0530
6345.0545	50	F	4.00		11	8		.0430, .0530
6345.0546 °)	50	F	4.01 – 4.99		11	8		.0430, .0530
6345.0547	50	F	5.00		11	8		.0430, .0530
6345.0620 °)	63	S	0.40 – 0.99	2.55	13	16	32	.0440, .0540, .0640
6345.0621	63	S	1.00	2.55	13	16	32	.0440, .0540, .0640
6345.0625 °)	63	S	1.01 – 1.49	2.55	13	16	32	.0440, .0540, .0640
6345.0626	63	S	1.50	2.55	13	16	32	.0440, .0540, .0640
6345.0628 °)	63	S	1.51 – 1.99	2.55	13	16	32	.0440, .0540, .0640



Minimum order quantity saw blades: 2 pcs of the same dimension.



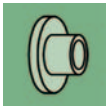
The type „dimensioned for aluminium“ offers in addition to an adapted cutting geometry also a high-polished hollow grinding (with price surcharge).



Number, form, type and geometry of teeth have to be chosen by you.



For individual toothed saws always fill in enclosed datasheet. Thank you.



Nutex carbide, individual toothing uncoated

Part No	d1 mm	Type	b mm	b1 mm	Slot depth max. mm	d2 mm	d3 mm	Holder 6048. _ _ _ _
6345.0629	63	S	2.00	2.55	13	16	32	.0440, .0540, .0640
6345.0630 °)	63	S	2.01 – 2.49	2.55	13	16	32	.0440, .0540, .0640
6345.0631	63	F	2.50		13	16		.0440, .0540, .0640
6345.0632 °)	63	F	2.51 – 2.99		13	16		.0440, .0540, .0640
6345.0633	63	F	3.00		13	16		.0440, .0540, .0640
6345.0634 °)	63	F	3.01 – 3.99		13	16		.0440, .0540, .0640
6345.0635	63	F	4.00		13	16		.0440, .0540, .0640
6345.0636 °)	63	F	4.01 – 4.99		13	16		.0440, .0540, .0640
6345.0637	63	F	5.00		13	16		.0440, .0540, .0640
6345.0650 °)	80	S	0.50 – 0.99	2.55	21	16	32	.0440, .0540, .0640
6345.0651	80	S	1.00	2.55	21	16	32	.0440, .0540, .0640
6345.0655 °)	80	S	1.01 – 1.49	2.55	21	16	32	.0440, .0540, .0640
6345.0656	80	S	1.50	2.55	21	16	32	.0440, .0540, .0640
6345.0658 °)	80	S	1.51 – 1.99	2.55	21	16	32	.0440, .0540, .0640
6345.0659	80	S	2.00	2.55	21	16	32	.0440, .0540, .0640
6345.0660 °)	80	S	2.01 – 2.49	2.55	21	16	32	.0440, .0540, .0640
6345.0661	80	F	2.50		21	16		.0440, .0540, .0640
6345.0662 °)	80	F	2.51 – 2.99		21	16		.0440, .0540, .0640
6345.0663	80	F	3.00		21	16		.0440, .0540, .0640
6345.0664 °)	80	F	3.01 – 3.99		21	16		.0440, .0540, .0640
6345.0665	80	F	4.00		21	16		.0440, .0540, .0640
6345.0666 °)	80	F	4.01 – 4.99		21	16		.0440, .0540, .0640
6345.0667	80	F	5.00		21	16		.0440, .0540, .0640
6345.0710 °)	100	S	0.60 – 0.99	2.55	27	22	40	.0650
6345.0711	100	S	1.00	2.55	27	22	40	.0650
6345.0715 °)	100	S	1.00 – 1.49	2.55	27	22	40	.0650
6345.0716	100	S	1.50	2.55	27	22	40	.0650
6345.0718 °)	100	S	1.51 – 1.99	2.55	27	22	40	.0650
6345.0719	100	S	2.00	2.55	27	22	40	.0650
6345.0720 °)	100	S	2.01 – 2.49	2.55	27	22	40	.0650
6345.0721	100	F	2.50		27	22		.0650
6345.0722 °)	100	F	2.51 – 2.99		27	22		.0650
6345.0723	100	F	3.00		27	22		.0650
6345.0724 °)	100	F	3.01 – 3.99		27	22		.0650
6345.0725	100	F	4.00		27	22		.0650
6345.0726 °)	100	F	4.01 – 4.99		27	22		.0650
6345.0727	100	F	5.00		27	22		.0650
6345.0745 °)	125	S	0.80 – 1.49	2.55	38	22	40	.0650
6345.0746	125	S	1.50	2.55	38	22	40	.0650
6345.0748 °)	125	S	1.51 – 1.99	2.55	38	22	40	.0650
6345.0749	125	S	2.00	2.55	38	22	40	.0650
6345.0750 °)	125	S	2.01 – 2.49	2.55	38	22	40	.0650
6345.0751	125	F	2.50		38	22		.0650
6345.0752 °)	125	F	2.51 – 2.99		38	22		.0650
6345.0753	125	F	3.00		38	22		.0650
6345.0754 °)	125	F	3.01 – 3.99		38	22		.0650
6345.0755	125	F	4.00		38	22		.0650
6345.0756 °)	125	F	4.01 – 4.99		38	22		.0650
6345.0757	125	F	5.00		38	22		.0650

°) Tools with widths beyond standard widths as well as special width tolerances can be produced. Please ask for a specific quotation.



Holder for Nutex and accessories / spare parts

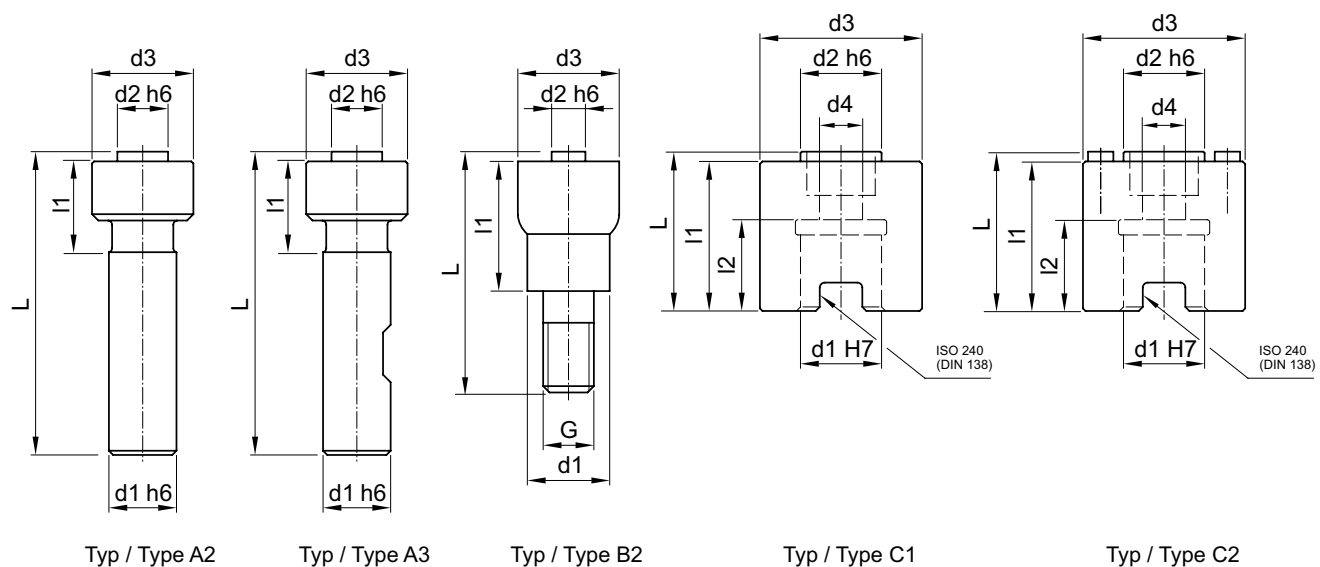
6048

Nutex



Part No	Type	for saws Ø	d1 mm	d2 mm	d3 mm	d4 mm	G	l1 mm	l2 mm	L mm	
6048.0400	A2	Ø 25 / 32 mm	7	5	16			12.6		51.9	✓
6048.0410	A2	Ø 25 / 32 mm	8	5	16			12.6		51.9	✓
6048.0420	A2	Ø 25 / 32 mm	10	5	16			12.6		55.9	✓
6048.0430	A3	Ø 40 / 50 mm	16	8	24			19.6		71.8	✓
6048.0440	A3	Ø 63 / 80 mm	16	16	32			23.6		75.8	✓
6048.0520	B2	Ø 25 / 32 mm	13	5	16		M8	20.7		38.0	✓
6048.0530	B2	Ø 40 / 50 mm	21	8	24		M12	25.8		48.0	✓
6048.0540	B2	Ø 63 / 80 mm	29	16	32		M16	30.8		55.0	✓
6048.0640	C1	Ø 63 / 80 mm	16	16	32	9		29.7	18	31.9	✓
6048.0650	C1	Ø 100 / 125 mm	22	22	40	11		37.7	20	39.9	✓
6058.0660	C2	Ø 160 / 200 mm	27	32	48	14		47.7	22	49.9	✓

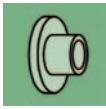
Tool will be delivered with: holder with screw and screw-driver



Accessories / spare parts

Part No	Type	Assembly screw	Allen screw	Washer	Counter sunk screw	Dowel pin
6048.0400	A2	1490.0530 (3x)				
6048.0410	A2	1490.0530 (3x)				
6048.0420	A2	1490.0530 (3x)				
6048.0430	A3	1490.0600 (3x)				
6048.0440	A3	1490.0600 (3x)				
6048.0520	B2	1490.0530 (3x)				
6048.0530	B2	1490.0600 (3x)				
6048.0540	B2	1490.0600 (3x)				
6048.0640	C1	1490.0600 (3x)	1490.0759	6058.0840	6058.0915	
6048.0650	C1	1490.0600 (4x)	1490.0770	6058.0850	6058.0920	
6058.0660	C2	1490.0600 (4x)	1490.0781	6058.0860	6058.0925	6058.0950 (2x)

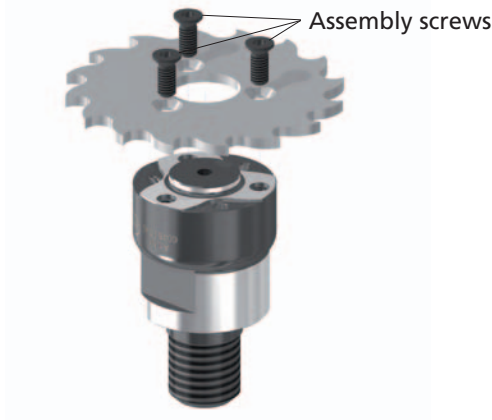
Nutex holders are not suited for being used with a Nutex Plus saw.



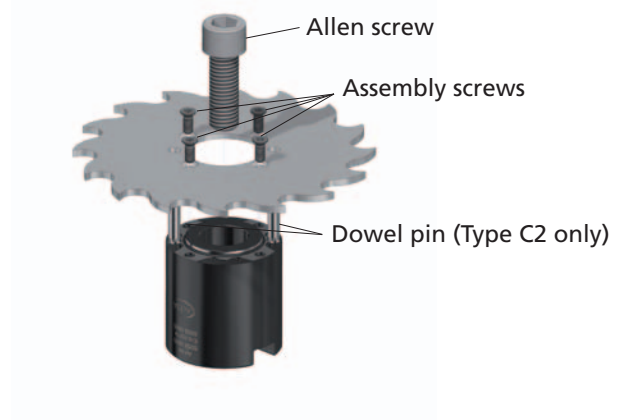
Holder for Nutex

Assembly variations and spare parts

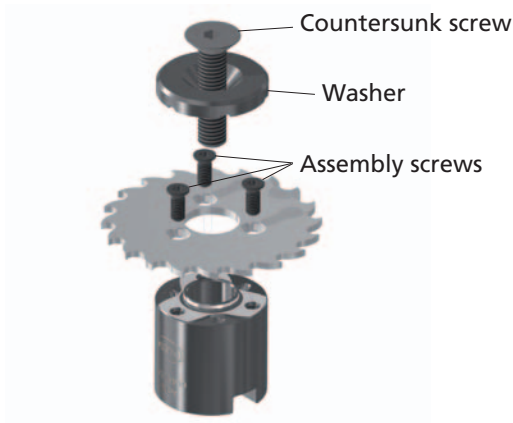
Type A2, A3, B2



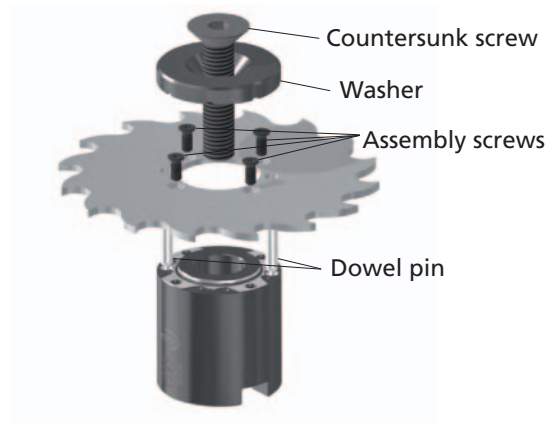
Type C1, C2 without washer



Type C1 with washer



Type C2 with washer



Spare parts (relations see left page)

Assembly screws (Torx)

Part No	Dimension	Torx	Torque
1490.0530	M3.5 x 7	T9	2.55 Nm
1490.0600	M4 x 10	T15	3.85 Nm

Allen screws

Part No	Dimension	hex-socket	Torque
1490.0759	M8 x 20	sw 6	50 Nm
1490.0770	M10 x 25	sw 8	50 Nm
1490.0781	M12 x 35	sw 10	90 Nm

Washers

Part No	Dimension	Countersunk screw
6058.0840	Ø32 x 10 x 9 mm	6058.0915
6058.0850	Ø40 x 11 x 11 mm	6058.0920
6058.0860	Ø48 x 12 x 13 mm	6058.0925

Countersunk screws

Part No	Dimension	hex-socket	Torque
6058.0910	M8 x 20	sw 5	30 Nm
6058.0915	M8 x 35	sw 5	30 Nm
6058.0920	M10 x 45	sw 6	50 Nm
6058.0925	M12 x 55	sw 8	90 Nm

Plug screws

Part No	Dimension	hex-socket	Torque

Dowel pins

Part No	Dimension		
6058.0950	Ø5 x 20 mm		

Screw drivers Torx

Part No	Torx		
1492.0400	T9		
1492.0500	T15		

Screw drivers hex-socket

Part No	hex-socket		
6058.0980	sw 5		
6058.0985	sw 6		
n.a.	sw 8		
n.a.	sw 10		

Nutex order form

For a quick technical solution, please fill in this form and mail it to info@alesa.ch or fax it to +41 62 767 62 82

Inquiry

Order

Customer _____

Name _____

First name _____

Address _____

Tel/Fax _____

ZIP / Place _____

Email _____

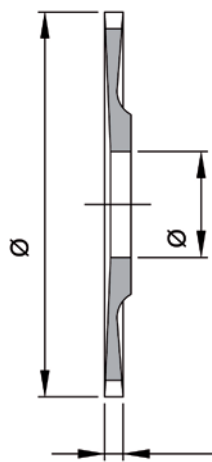
Workpiece

Material _____ Tensile strength _____ N/mm²

slot length _____ slot depth _____

Sketch

Circular saw Nutex



N° of teeth _____

Tooth type _____

Cutting material HSS
 Carbide

Coating _____

Sense of rotation clockwise
 counter-cw

Standard tolerances

Diameter 0 / +0.3 Width ± 0.02
For special form tools the tolerances need to be specified.

Amount ____ pcs (minimum 2 pcs)

Date

Signature

Holder

with shank



for saw ød2 / ød1 Amt.

ø25 / ø32	ø5 / ø7	____ pcs
ø25 / ø32	ø5 / ø8	____ pcs
ø25 / ø32	ø5 / ø10	____ pcs
ø40 / ø50	ø8 / ø16	____ pcs
ø63 / ø80	ø16 / ø16	____ pcs

threaded type



for saw ød2 / G Amt.

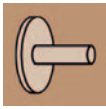
ø25 / ø32	ø5 / M8	____ pcs
ø40 / ø50	ø8 / M12	____ pcs
ø63 / ø80	ø16 / M16	____ pcs

shell type



for saw ød2 / ød1 Amt.

ø63 / ø80	ø16 / ø16	____ pcs
ø100 / ø125	ø22 / ø22	____ pcs
ø160 / ø200	ø32 / ø27	____ pcs



Nutex Plus Mono carbide, standard toothing AlCrN-coated

6336



Nutex Plus Mono

Part No	d1 mm	b mm	d2 mm	d3 mm	l1 mm	l2 mm			Slot depth max. mm
6336.0329	25	2.00	10	8.8	62	17.0	✓	16	6.5
6336.0331	25	2.50	10	8.8	62	16.5	✓	16	6.5
6336.0389	32	2.00	10	9.8	62	18.0	✓	14	10
6336.0391	32	2.50	10	9.8	62	17.5	✓	14	10
6336.0393	32	3.00	10	9.8	62	17.0	✓	14	10
6336.0479	40	2.00	12	10.8	74	24.0	✓	14	13
6336.0481	40	2.50	12	10.8	74	23.5	✓	14	13
6336.0483	40	3.00	12	10.8	74	23.0	✓	14	13
6336.0485	40	4.00	12	10.8	74	22.0	✓	14	13
6336.0569	50	2.00	16	13.8	90	36.5	✓	14	16
6336.0571	50	2.50	16	13.8	90	36.0	✓	14	16
6336.0573	50	3.00	16	13.8	90	35.5	✓	14	16
6336.0575	50	4.00	16	13.8	90	34.5	✓	14	16



All the Nutex Plus saws are available from stock!



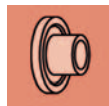
All the Nutex Plus saws are provided with curved teeth and chip splitting. This
way all the teeth can be counted for the calculation of the cutting data.



The cutting geometry is suited for the machining of steel and stainless materials.



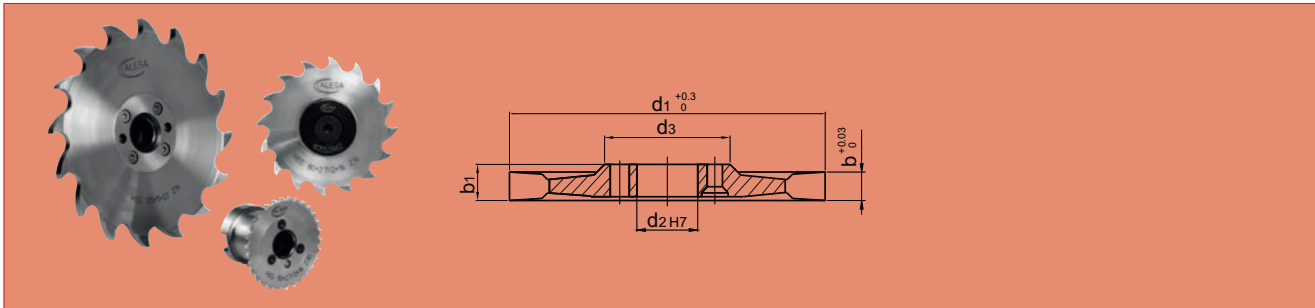
Tool- assembly/disassembly; Please check the available space condition in your assembly device.



Nutex Plus HSS, standard toothing uncoated

6055

Nutex Plus



Part No	d1 mm	b mm	b1 mm	☼	Slot depth max. mm	d2 mm	d3 mm	Holder 6058. _ _ _ _
6055.0568	50	2.00	2.73	30	10 (5*)	16	28	.0430, .0530, .0630
6055.0569	50	2.00	2.73	20	10	16	28	.0430, .0530, .0630
6055.0570	50	2.50	2.73	30	10 (5*)	16	28	0.430, .0530, .0630
6055.0571	50	2.50	2.73	20	10	16	28	0.430, .0530, .0630
6055.0572	50	3.00	3.08	30	10 (5*)	16	28	.0430, .0530, .0630
6055.0573	50	3.00	3.08	20	10	16	28	.0430, .0530, .0630
6055.0574	50	4.00	4.08	30	10 (5*)	16	28	.0430, .0530, .0630
6055.0575	50	4.00	4.08	20	10	16	28	.0430, .0530, .0630
6055.0576	50	5.00	5.08	30	10 (5*)	16	28	.0430, .0530, .0630
6055.0577	50	5.00	5.08	20	10	16	28	.0430, .0530, .0630
6055.0579	50	6.00	6.08	20	10	16	28	.0430, .0530, .0630
6055.0628	63	2.00	2.73	26	14 (7*)	16	32	.0440, .0540, .0640
6055.0629	63	2.00	2.73	18	14	16	32	.0440, .0540, .0640
6055.0630	63	2.50	2.73	26	14 (7*)	16	32	.0440, .0540, .0640
6055.0631	63	2.50	2.73	18	14	16	32	.0440, .0540, .0640
6055.0632	63	3.00	3.08	26	14 (7*)	16	32	.0440, .0540, .0640
6055.0633	63	3.00	3.08	18	14	16	32	.0440, .0540, .0640
6055.0634	63	4.00	4.08	26	14 (7*)	16	32	.0440, .0540, .0640
6055.0635	63	4.00	4.08	18	14	16	32	.0440, .0540, .0640
6055.0636	63	5.00	5.08	26	14 (7*)	16	32	.0440, .0540, .0640
6055.0637	63	5.00	5.08	18	14	16	32	.0440, .0540, .0640
6055.0639	63	6.00	6.08	18	14	16	32	.0440, .0540, .0640
6055.0658	80	2.00	2.73	24	22 (11*)	16	32	.0440, .0540, .0640
6055.0659	80	2.00	2.73	16	22	16	32	.0440, .0540, .0640
6055.0660	80	2.50	2.73	24	22 (11*)	16	32	.0440, .0540, .0640
6055.0661	80	2.50	2.73	16	22	16	32	.0440, .0540, .0640
6055.0662	80	3.00	3.08	24	22 (11*)	16	32	.0440, .0540, .0640
6055.0663	80	3.00	3.08	16	22	16	32	.0440, .0540, .0640
6055.0664	80	4.00	4.08	24	22 (11*)	16	32	.0440, .0540, .0640
6055.0665	80	4.00	4.08	16	22	16	32	.0440, .0540, .0640
6055.0666	80	5.00	5.08	24	22 (11*)	16	32	.0440, .0540, .0640
6055.0667	80	5.00	5.08	16	22	16	32	.0440, .0540, .0640
6055.0669	80	6.00	6.08	16	22	16	32	.0440, .0540, .0640
6055.0718	100	2.00	2.73	24	28 (14*)	22	40	.0650
6055.0719	100	2.00	2.73	16	28	22	40	.0650
6055.0720	100	2.50	2.73	24	28 (14*)	22	40	.0650
6055.0721	100	2.50	2.73	16	28	22	40	.0650
6055.0722	100	3.00	3.08	24	28 (14*)	22	40	.0650
6055.0723	100	3.00	3.08	16	28	22	40	.0650
6055.0724	100	4.00	4.08	24	28 (14*)	22	40	.0650
6055.0725	100	4.00	4.08	16	28	22	40	.0650
6055.0726	100	5.00	5.08	24	28 (14*)	22	40	.0650
6055.0727	100	5.00	5.08	16	28	22	40	.0650
6055.0729	100	6.00	6.08	16	28	22	40	.0650
6055.0748	125	2.00	2.73	24	40 (20*)	22	40	.0650
6055.0749	125	2.00	2.73	16	40	22	40	.0650
6055.0750	125	2.50	2.73	24	40 (20*)	22	40	.0650
6055.0751	125	2.50	2.73	16	40	22	40	.0650
6055.0752	125	3.00	3.08	24	40 (20*)	22	40	.0650
6055.0753	125	3.00	3.08	16	40	22	40	.0650
6055.0754	125	4.00	4.08	24	40 (20*)	22	40	.0650
6055.0755	125	4.00	4.08	16	40	22	40	.0650



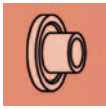
All Nutex Plus saws are available with TiN- or TiAlN-coating too.




All the Nutex Plus saws are provided with curved teeth and chip splitting. This way all the teeth can be counted for the calculation of the cutting data.



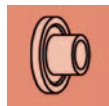
All the Nutex Plus saws are available from stock!



Nutex Plus HSS, standard toothing uncoated

Part No	d1 mm	b mm	b1 mm		Slot depth max. mm	d2 mm	d3 mm	Holder 6058. _ _ _ _
6055.0756	125	5.00	5.08	24	40 (20*)	22	40	.0650
6055.0757	125	5.00	5.08	16	40	22	40	.0650
6055.0759	125	6.00	6.08	16	40	22	40	.0650
6055.0783	160	3.00	3.18	16	53	32	48	.0660
6055.0785	160	4.00	4.18	16	53	32	48	.0660
6055.0845	200	4.00	4.18	16	73	32	48	.0660

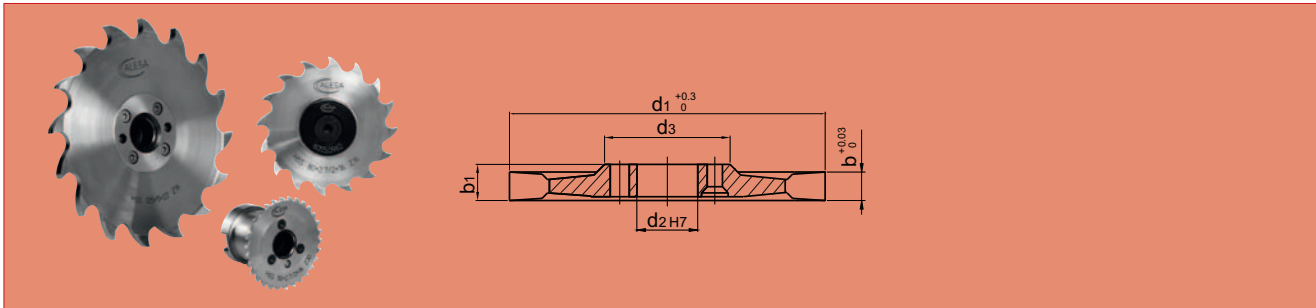
* Maximal recommended depth of cut with saw blades with a large amount of teeth.



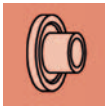
Nutex Plus HSS, standard toothing TiAlN-coated

6155

Nutex Plus

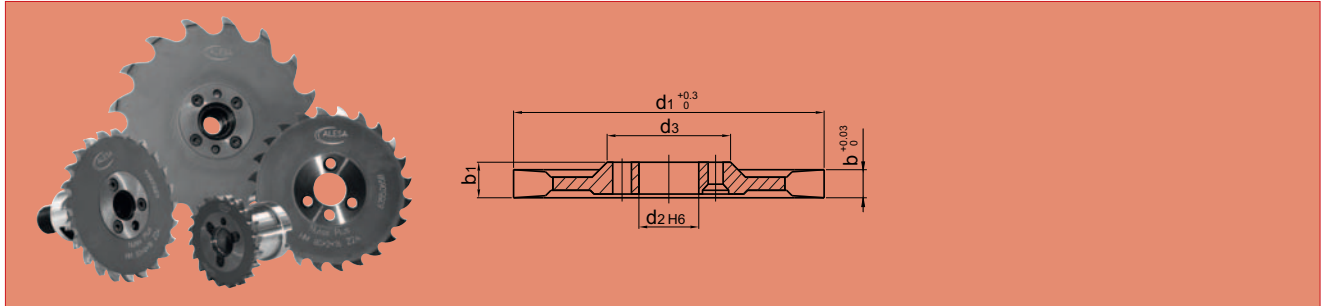


Part No	d1 mm	b mm	b1 mm	☼	Slot depth max. mm	d2 mm	d3 mm	Holder 6058. _ _ _ _
6155.0568	50	2.00	2.73	30	10 (5*)	16	28	.0430, .0530, .0630
6155.0569	50	2.00	2.73	20	10	16	28	.0430, .0530, .0630
6155.0570	50	2.50	2.73	30	10 (5*)	16	28	.0430, .0530, .0630
6155.0571	50	2.50	2.73	20	10	16	28	.0430, .0530, .0630
6155.0572	50	3.00	3.08	30	10 (5*)	16	28	.0430, .0530, .0630
6155.0573	50	3.00	3.08	20	10	16	28	.0430, .0530, .0630
6155.0574	50	4.00	4.08	30	10 (5*)	16	28	.0430, .0530, .0630
6155.0575	50	4.00	4.08	20	10	16	28	.0430, .0530, .0630
6155.0576	50	5.00	5.08	30	10 (5*)	16	28	.0430, .0530, .0630
6155.0577	50	5.00	5.08	20	10	16	28	.0430, .0530, .0630
6155.0579	50	6.00	6.08	20	10	16	28	.0430, .0530, .0630
6155.0628	63	2.00	2.73	26	14 (7*)	16	32	.0440, .0540, .0640
6155.0629	63	2.00	2.73	18	14	16	32	.0440, .0540, .0640
6155.0630	63	2.50	2.73	26	14 (7*)	16	32	.0440, .0540, .0640
6155.0631	63	2.50	2.73	18	14	16	32	.0440, .0540, .0640
6155.0632	63	3.00	3.08	26	14 (7*)	16	32	.0440, .0540, .0640
6155.0633	63	3.00	3.08	18	14	16	32	.0440, .0540, .0640
6155.0634	63	4.00	4.08	26	14 (7*)	16	32	.0440, .0540, .0640
6155.0635	63	4.00	4.08	18	14	16	32	.0440, .0540, .0640
6155.0636	63	5.00	5.08	26	14 (7*)	16	32	.0440, .0540, .0640
6155.0637	63	5.00	5.08	18	14	16	32	.0440, .0540, .0640
6155.0639	63	6.00	6.08	18	14	16	32	.0440, .0540, .0640
6155.0658	80	2.00	2.73	24	22 (11*)	16	32	.0440, .0540, .0640
6155.0659	80	2.00	2.73	16	22	16	32	.0440, .0540, .0640
6155.0660	80	2.50	2.73	24	22 (11*)	16	32	.0440, .0540, .0640
6155.0661	80	2.50	2.73	16	22	16	32	.0440, .0540, .0640
6155.0662	80	3.00	3.08	24	22 (11*)	16	32	.0440, .0540, .0640
6155.0663	80	3.00	3.08	16	22	16	32	.0440, .0540, .0640
6155.0664	80	4.00	4.08	24	22 (11*)	16	32	.0440, .0540, .0640
6155.0665	80	4.00	4.08	16	22	16	32	.0440, .0540, .0640
6155.0666	80	5.00	5.08	24	22 (11*)	16	32	.0440, .0540, .0640
6155.0667	80	5.00	5.08	16	22	16	32	.0440, .0540, .0640
6155.0669	80	6.00	6.08	16	22	16	32	.0440, .0540, .0640
6155.0718	100	2.00	2.73	24	28 (14*)	22	40	.0650
6155.0719	100	2.00	2.73	16	28	22	40	.0650
6155.0720	100	2.50	2.73	24	28 (14*)	22	40	.0650
6155.0721	100	2.50	2.73	16	28	22	40	.0650
6155.0722	100	3.00	3.08	24	28 (14*)	22	40	.0650
6155.0723	100	3.00	3.08	16	28	22	40	.0650
6155.0724	100	4.00	4.08	24	28 (14*)	22	40	.0650
6155.0725	100	4.00	4.08	16	28	22	40	.0650
6155.0726	100	5.00	5.08	24	28 (14*)	22	40	.0650
6155.0727	100	5.00	5.08	16	28	22	40	.0650
6155.0729	100	6.00	6.08	16	28	22	40	.0650
6155.0748	125	2.00	2.73	24	40 (20*)	22	40	.0650
6155.0749	125	2.00	2.73	16	40	22	40	.0650
6155.0750	125	2.50	2.73	24	40 (20*)	22	40	.0650
6155.0751	125	2.50	2.73	16	40	22	40	.0650
6155.0752	125	3.00	3.08	24	40 (20*)	22	40	.0650
6155.0753	125	3.00	3.08	16	40	22	40	.0650
6155.0754	125	4.00	4.08	24	40 (20*)	22	40	.0650
6155.0755	125	4.00	4.08	16	40	22	40	.0650
6155.0756	125	5.00	5.08	24	40 (20*)	22	40	.0650
6155.0757	125	5.00	5.08	16	40	22	40	.0650
6155.0759	125	6.00	6.08	16	40	22	40	.0650



Nutex Plus carbide, standard toothing uncoated

6355



Nutex Plus

Part No	d1 mm	b mm	b1 mm	☸	Slot depth max. mm	d2 mm	d3 mm	Holder 6058. _ _ _ _
6355.0568	50	2.00	2.73	30	10 (5*)	16	28	.0430, .0530, .0630
6355.0569	50	2.00	2.73	20	10	16	28	.0430, .0530, .0630
6355.0570	50	2.50	2.73	30	10 (5*)	16	28	.0430, .0530, .0630
6355.0571	50	2.50	2.73	20	10	16	28	.0430, .0530, .0630
6355.0572	50	3.00	3.08	30	10 (5*)	16	28	.0430, .0530, .0630
6355.0573	50	3.00	3.08	20	10	16	28	.0430, .0530, .0630
6355.0574	50	4.00	4.08	30	10 (5*)	16	28	.0430, .0530, .0630
6355.0575	50	4.00	4.08	20	10	16	28	.0430, .0530, .0630
6355.0628	63	2.00	2.73	26	14 (7*)	16	32	.0440, .0540, .0640
6355.0629	63	2.00	2.73	18	14	16	32	.0440, .0540, .0640
6355.0630	63	2.50	2.73	26	14 (7*)	16	32	.0440, .0540, .0640
6355.0631	63	2.50	2.73	18	14	16	32	.0440, .0540, .0640
6355.0632	63	3.00	3.08	26	14 (7*)	16	32	.0440, .0540, .0640
6355.0633	63	3.00	3.08	18	14	16	32	.0440, .0540, .0640
6355.0634	63	4.00	4.08	26	14 (7*)	16	32	.0440, .0540, .0640
6355.0635	63	4.00	4.08	18	14	16	32	.0440, .0540, .0640
6355.0658	80	2.00	2.73	24	22 (11*)	16	32	.0440, .0540, .0640
6355.0659	80	2.00	2.73	16	22	16	32	.0440, .0540, .0640
6355.0660	80	2.50	2.73	24	22 (11*)	16	32	.0440, .0540, .0640
6355.0661	80	2.50	2.73	16	22	16	32	.0440, .0540, .0640
6355.0662	80	3.00	3.08	24	22 (11*)	16	32	.0440, .0540, .0640
6355.0663	80	3.00	3.08	16	22	16	32	.0440, .0540, .0640
6355.0664	80	4.00	4.08	24	22 (11*)	16	32	.0440, .0540, .0640
6355.0665	80	4.00	4.08	16	22	16	32	.0440, .0540, .0640
6355.0718	100	2.00	2.73	24	28 (14*)	22	40	.0650
6355.0719	100	2.00	2.73	16	28	22	40	.0650
6355.0720	100	2.50	2.73	24	28 (14*)	22	40	.0650
6355.0721	100	2.50	2.73	16	28	22	40	.0650
6355.0722	100	3.00	3.08	24	28 (14*)	22	40	.0650
6355.0723	100	3.00	3.08	16	28	22	40	.0650
6355.0724	100	4.00	4.08	24	28 (14*)	22	40	.0650
6355.0725	100	4.00	4.08	16	28	22	40	.0650
6355.0726	100	5.00	5.08	24	28 (14*)	22	40	.0650
6355.0727	100	5.00	5.08	16	28	22	40	.0650
6355.0750	125	2.50	2.73	24	40 (20*)	22	40	.0650
6355.0751	125	2.50	2.73	16	40	22	40	.0650
6355.0752	125	3.00	3.08	24	40 (20*)	22	40	.0650
6355.0753	125	3.00	3.08	16	40	22	40	.0650
6355.0754	125	4.00	4.08	24	40 (20*)	22	40	.0650
6355.0755	125	4.00	4.08	16	40	22	40	.0650
6355.0756	125	5.00	5.08	24	40 (20*)	22	40	.0650
6355.0757	125	5.00	5.08	16	40	22	40	.0650

* Maximal recommended depth of cut with saw blades with a large amount of teeth.

Info All the Nutex Plus saws are available from stock!

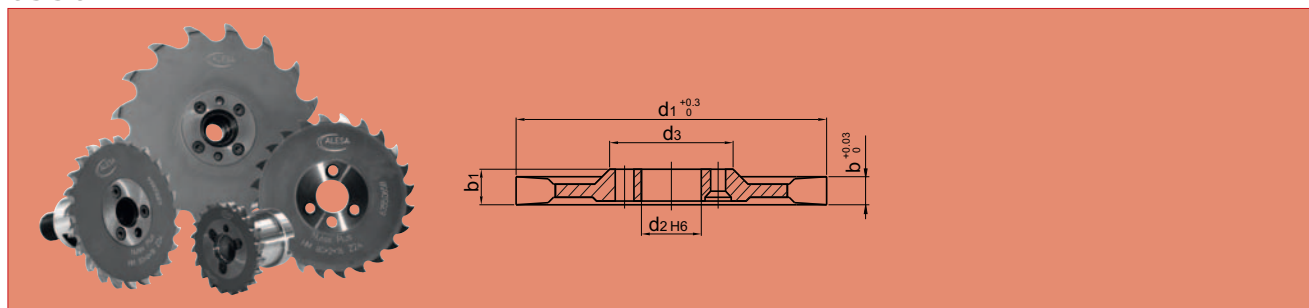
Info All the Nutex Plus saws are provided with curved teeth and chip splitting. This way all the teeth can be counted for the calculation of the cutting data.



Nutex Plus carbide, standard toothing AlCrN-coated

6356

Nutex Plus



Part No	d1 mm	b mm	b1 mm		Slot depth max. mm	d2 mm	d3 mm	Holder 6058. _ _ _ _
6356.0568	50	2.00	2.73	30	10 (5*)	16	28	.0430, .0530, .0630
6356.0569	50	2.00	2.73	20	10	16	28	.0430, .0530, .0630
6356.0570	50	2.50	2.73	30	10 (5*)	16	28	.0430, .0530, .0630
6356.0571	50	2.50	2.73	20	10	16	28	.0430, .0530, .0630
6356.0572	50	3.00	3.08	30	10 (5*)	16	28	.0430, .0530, .0630
6356.0573	50	3.00	3.08	20	10	16	28	.0430, .0530, .0630
6356.0574	50	4.00	4.08	30	10 (5*)	16	28	.0430, .0530, .0630
6356.0575	50	4.00	4.08	20	10	16	28	.0430, .0530, .0630
6356.0628	63	2.00	2.73	26	14 (7*)	16	32	.0440, .0540, .0640
6356.0629	63	2.00	2.73	18	14	16	32	.0440, .0540, .0640
6356.0630	63	2.50	2.73	26	14 (7*)	16	32	.0440, .0540, .0640
6356.0631	63	2.50	2.73	18	14	16	32	.0440, .0540, .0640
6356.0632	63	3.00	3.08	26	14 (7*)	16	32	.0440, .0540, .0640
6356.0633	63	3.00	3.08	18	14	16	32	.0440, .0540, .0640
6356.0634	63	4.00	4.08	26	14 (7*)	16	32	.0440, .0540, .0640
6356.0635	63	4.00	4.08	18	14	16	32	.0440, .0540, .0640
6356.0658	80	2.00	2.73	24	22 (11*)	16	32	.0440, .0540, .0640
6356.0659	80	2.00	2.73	16	22	16	32	.0440, .0540, .0640
6356.0660	80	2.50	2.73	24	22 (11*)	16	32	.0440, .0540, .0640
6356.0661	80	2.50	2.73	16	22	16	32	.0440, .0540, .0640
6356.0662	80	3.00	3.08	24	22 (11*)	16	32	.0440, .0540, .0640
6356.0663	80	3.00	3.08	16	22	16	32	.0440, .0540, .0640
6356.0664	80	4.00	4.08	24	22 (11*)	16	32	.0440, .0540, .0640
6356.0665	80	4.00	4.08	16	22	16	32	.0440, .0540, .0640
6356.0718	100	2.00	2.73	24	28 (14*)	22	40	.0650
6356.0719	100	2.00	2.73	16	28	22	40	.0650
6356.0720	100	2.50	2.73	24	28 (14*)	22	40	.0650
6356.0721	100	2.50	2.73	16	28	22	40	.0650
6356.0722	100	3.00	3.08	24	28 (14*)	22	40	.0650
6356.0723	100	3.00	3.08	16	28	22	40	.0650
6356.0724	100	4.00	4.08	24	28 (14*)	22	40	.0650
6356.0725	100	4.00	4.08	16	28	22	40	.0650
6356.0726	100	5.00	5.08	24	28 (14*)	22	40	.0650
6356.0727	100	5.00	5.08	16	28	22	40	.0650
6356.0750	125	2.50	2.73	24	40 (20*)	22	40	.0650
6356.0751	125	2.50	2.73	16	40	22	40	.0650
6356.0752	125	3.00	3.08	24	40 (20*)	22	40	.0650
6356.0753	125	3.00	3.08	16	40	22	40	.0650
6356.0754	125	4.00	4.08	24	40 (20*)	22	40	.0650
6356.0755	125	4.00	4.08	16	40	22	40	.0650
6356.0756	125	5.00	5.08	24	40 (20*)	22	40	.0650
6356.0757	125	5.00	5.08	16	40	22	40	.0650



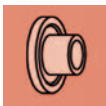
All the Nutex Plus saws are available from stock!



All the Nutex Plus saws are provided with curved teeth and chip splitting. This way all the teeth can be counted for the calculation of the cutting data.



The cutting geometry is suited for the machining of steel and stainless materials.



Holder for Nutex Plus and accessories / spare parts

6058



Type B3 / Type A4

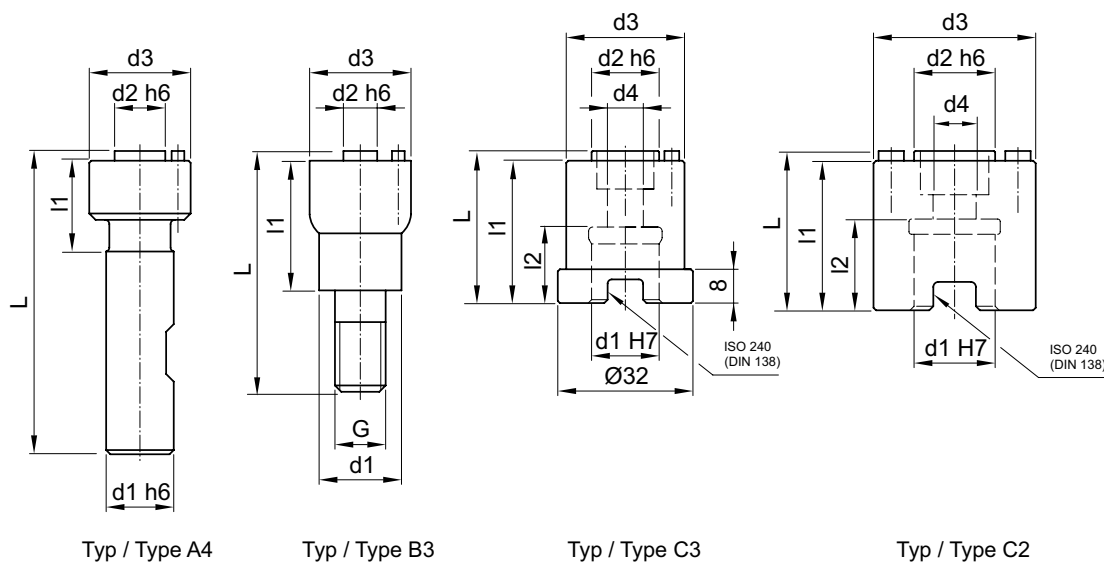
Type C2 / Type C3

Washer

Nutex Plus

Part No	Type	for saws Ø	d1 mm	d2 mm	d3 mm	d4 mm	G	l1 mm	l2 mm	L mm	
6058.0430	A4	Ø 50 mm	16	16	28			23.6		75.8	✓
6058.0440	A4	Ø 63 / 80 mm	16	16	32			23.6		75.8	✓
6058.0530	B3	Ø 50 mm	21	16	28		M12	32.8		55.0	✓
6058.0540	B3	Ø 63 / 80 mm	29	16	32		M16	39.8		64.0	✓
6058.0630	C3	Ø 50 mm	16	16	28	9		33.7	18	35.9	✓
6058.0640	C2	Ø 63 / 80 mm	16	16	32	9		29.7	18	31.9	✓
6058.0650	C2	Ø 100 / 125 mm	22	22	40	11		37.7	20	39.9	✓
6058.0660	C2	Ø 160 / 200 mm	27	32	48	14		47.7	22	49.9	✓

Tool will be delivered with: holder with assembly screws and screw-driver (Torx), allen screw, washer with countersunk screw and fitting screw-driver.



Typ / Type A4

Typ / Type B3

Typ / Type C3

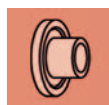
Typ / Type C2

Accessories / spare parts

Part No	Type	Assembly screw	Allen screw	Washer	Counter sunk screw	Plug screw	Dowel pin	Spare holder
6058.0430	A4	1490.0530 (3x)		6058.0830	6058.0910	6058.0930	6058.0940 (1x)	6058.0435
6058.0440	A4	1490.0600 (3x)		6058.0840	6058.0910	6058.0930	6058.0950 (1x)	6058.0445
6058.0530	B3	1490.0530 (3x)		6058.0830	6058.0910	6058.0930	6058.0940 (1x)	6058.0535
6058.0540	B3	1490.0600 (3x)		6058.0840	6058.0910	6058.0930	6058.0950 (1x)	6058.0545
6058.0630	C3	1490.0530 (3x)	1490.0759	6058.0830	6058.0915		6058.0940 (1x)	6058.0635
6058.0640	C2	1490.0600 (3x)	1490.0759	6058.0840	6058.0915		6058.0950 (1x)	6058.0645
6058.0650	C2	1490.0600 (4x)	1490.0770	6058.0850	6058.0920		6058.0950 (2x)	6058.0655
6058.0660	C2	1490.0600 (4x)	1490.0781	6058.0860	6058.0925		6058.0950 (2x)	6058.0665



The Nutex Plus holder will be delivered in a very practical protection box.

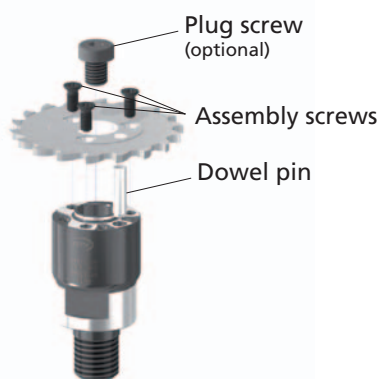


Holder for Nutex Plus

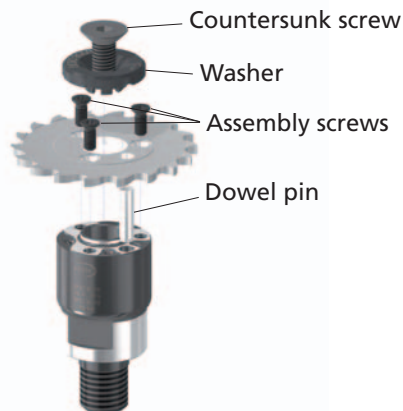
Assembly variations and spare parts

Nutex Plus

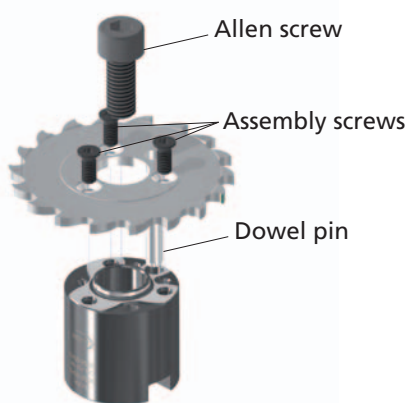
Type A4, B3 without washer



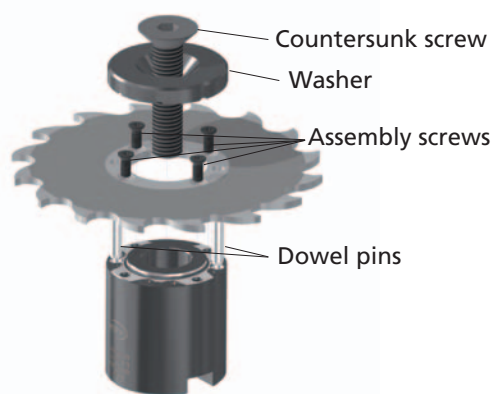
Type A4, B3 with washer



Type C2, C3 without washer



Type C2, C3 with washer



Spare parts (relations see left page)

Assembly screws (Torx)

Part No	Dimension	Torx	Torque
1490.0530	M3.5 x 7	T9	2.55 Nm
1490.0600	M4 x 10	T15	3.85 Nm

Allen screws

Part No	Dimension	hex-socket	Torque
1490.0759	M10 x 20	sw 8	50 Nm
1490.0770	M10 x 25	sw 8	50 Nm
1490.0781	M12 x 35	sw 10	90 Nm

Washers

Part No	Dimension	Countersunk screw
6058.0830	Ø28 x 9.5 x 9 mm	6058.0910
6058.0840	Ø32 x 10 x 9 mm	6058.0915
6058.0850	Ø40 x 11 x 11 mm	6058.0920
6058.0860	Ø48 x 12 x 13 mm	6058.0925

Countersunk screw

Part No	Dimension	hex-socket	Torque
6058.0910	M8 x 20	sw 5	30 Nm
6058.0915	M8 x 35	sw 5	30 Nm
6058.0920	M10 x 45	sw 6	50 Nm
6058.0925	M12 x 55	sw 8	90 Nm

Plug screws

Part No	Dimension	hex-socket	Torque
6058.0930	M8 x 10	sw 5	15 Nm

Dowel pins

Part No	Dimension
6058.0940	Ø4 x 16 mm
6058.0950	Ø5 x 20 mm

Screw drivers Torx

Part No	Torx
1492.0400	T9
1492.0500	T15

Screw drivers hex-socket

Part No	hex-socket
6058.0980	sw 5
6058.0985	sw 6
n.a.	sw 8
n.a.	sw 10

Nutex Plus order form

For a quick technical solution, please fill in this form and mail it to info@alesa.ch or fax it to +41 62 767 62 82

Inquiry

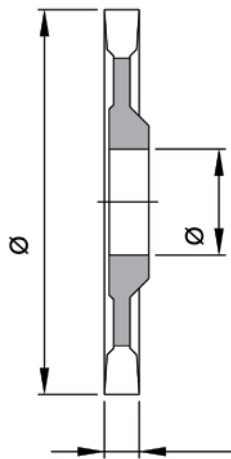
Order

Customer _____	Name _____
_____	First name _____
Address _____	Tel/Fax _____
ZIP / Place _____	Email _____

Workpiece
 Material _____ Tensile strength _____ N/mm²
 slot length _____ slot depth _____

Sketch

Circular saw Nutex Plus



N° of teeth _____
 Tooth type _____

Cutting material HSS Carbide

Coating _____

Sense of rotation clockwise counter-cw

Standard tolerances
 Diameter 0 / +0.3 Width 0 / +0.03
 For special form tools the tolerances need to be specified.

Amount ____ **pcs** (minimum 2 pcs)

Date _____ **Signature** _____

Holder

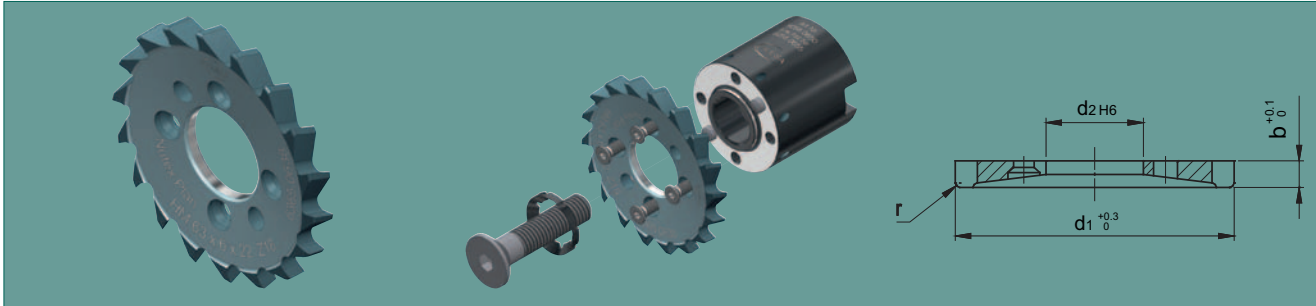
with shank			threaded type			shell type		
for saw	Ød2 / Ød1	Amt.	for saw	Ød2 / G	Amt.	for saw	Ød2 / Ød1	Amt.
Ø50	Ø16 / Ø16	____ pcs	Ø50	Ø16 / M12	____ pcs	Ø50	Ø16 / Ø16	____ pcs
Ø63 / Ø80	Ø16 / Ø16	____ pcs	Ø63 / Ø80	Ø16 / M16	____ pcs	Ø63 / Ø80	Ø16 / Ø16	____ pcs
						Ø100 / Ø125	Ø22 / Ø22	____ pcs
						Ø160 / Ø200	Ø32 / Ø27	____ pcs



Nutex Plan carbide AlCrN-coated

6365

Nutex Plan



Part No	d1 mm	b mm		r mm	d2 mm	Holder 6058. _ _ _ _
6365.0548	50	6.00	16	0.4	16	.0440, .0540, .0640
6365.0638	63	6.00	18	0.8	22	.0650

Tool will be delivered with: Nutex Plan and coolant spreading ring



Holder for Nutex Plan and accessories / spare parts

6058



6058.0440 – Type A4

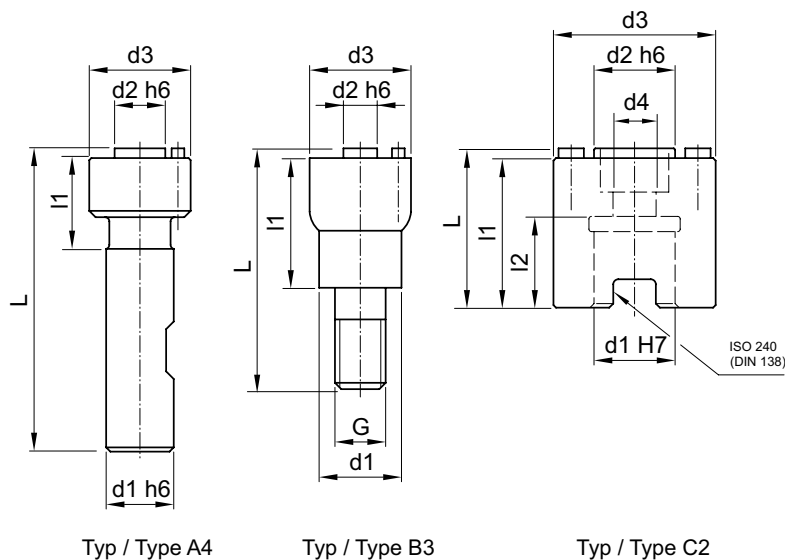
6058.0540 – Type B3

6058.0650 – Type C2

Part No	Type	for Nutex Plan	d1 mm	d2 mm	d3 mm	d4 mm	G	l1 mm	l2 mm	L mm	
6058.0440	A4	Ø 50 mm	16	16	32			23.6		75.8	✓
6058.0540	B3	Ø 50 mm	29	16	32		M16	39.8		64.0	✓
6058.0640	C2	Ø 50 mm	16	16	32	9		29.7	18	31.9	✓
6058.0650	C2	Ø 63 mm	22	22	40	11		37.7	20	39.9	✓

Tool will be delivered with:

holder with Torx screws, screw-driver (Torx), coolant spreading ring (Nutex Plus), countersunk screw and fitting screw-driver.



Typ / Type A4

Typ / Type B3

Typ / Type C2

Accessories / spare parts

Part No	Type	Assembly screw	Coolant spreading ring	Counter sunk screw	Dowel pin	Spare holder
6058.0440	A4	1490.0600 (3x)	6058.0845 – Ø15.8x2.6x10.3 mm	6058.0910	6058.0950 (1x)	6058.0445
6058.0540	B3	1490.0600 (3x)	6058.0845 – Ø15.8x2.6x10.3 mm	6058.0910	6058.0950 (1x)	6058.0545
6058.0640	C2	1490.0600 (3x)	6058.0845 – Ø15.8x2.6x10.3 mm	6058.0915	6058.0950 (1x)	6058.0645
6058.0650	C2	1490.0600 (4x)	6058.0855 – Ø21.8x3x15.5 mm	6058.0920	6058.0950 (2x)	6058.0655

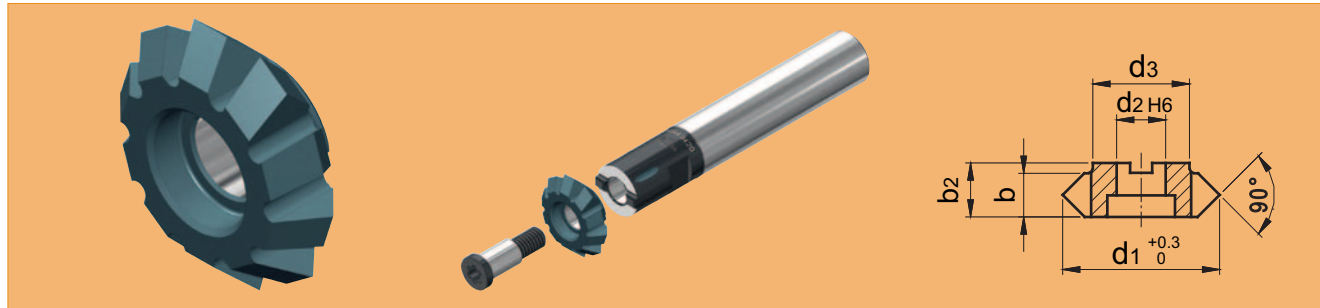


Nutex Faset carbide

AlCrN-coated

6343

Nutex Faset



Part No	d1 mm	b2 mm	b mm	d2 mm	d3 mm		chamfer max.	Holder 6044.
6343.0156	16	5.5	4.5	5	9.85	10	2 x 45°	.0410, .0420, .0500



Holder for Nutex Faset and accessories / spare parts

6044



6044.0420 – Type A1

6044.0500 – Type B1

Nutex Faset

Part No	Type	d1 mm	d2 mm	d3 mm	G	l1 mm	L mm		Assembly screw	Type	Torx Screw-driver	Type
6044.0400	A1	7	5	9.85		15.2	54	✓	6044.0800	M4 / Ø6.5x16 / 4.5Nm	1492.0500	T 15
6044.0410	A1	8	5	9.85		15.2	54	✓	6044.0800	M4 / Ø6.5x16 / 4.5Nm	1492.0500	T 15
6044.0420	A1	10	5	9.85		15.2	58	✓	6044.0800	M4 / Ø6.5x16 / 4.5Nm	1492.0500	T 15
6044.0500	B1		5	9.85	M6	18	32	✓	6044.0800	M4 / Ø6.5x16 / 4.5Nm	1492.0500	T 15

Tool will be delivered with: holder with screw and screw-driver

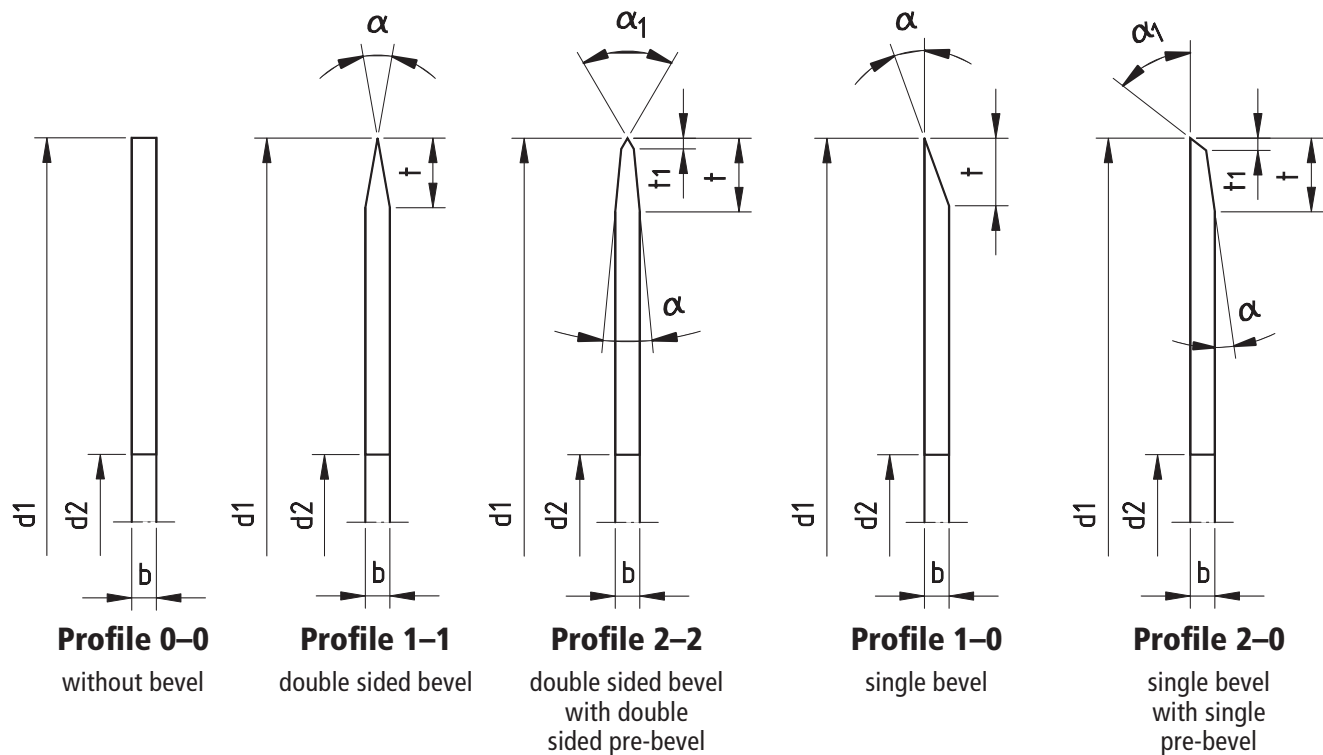
Torx screw 6044.0800



Circular knives

There are almost innumerable possible profiles of circular knives. We configure every circular knife according to your individual requirements. We therefore kindly ask you to copy the opposite page, fill it in and fax it to +41 62 7676 282.

Bevel profiles for circular knives



Legend

- d1 = Knife diameter [mm] / ± 0.5 mm
- d2 = Bore diameter [mm] / H7
- b = Knife width [mm] / ± 0.05 mm
- α = Bevel angle [°]
- α_1 = Pre-bevel angle [°]
- t = Bevel length [mm]
- t_1 = Pre-bevel length [mm]

Materials

ALESA circular knives are available in various HSS qualities, high-grade steel or carbide.

Coatings

ALESA offers various coatings for a wide range of applications. We look forward to advice you with the appropriate coating for maximum performance.

Tooth shapes

Almost all tooth profiles are available. Just ask us.

Samples



Circular knives Fax order

Please fill in a copy of this page and fax it to +41 62 7676 282.

Enquiry

Order

Date _____

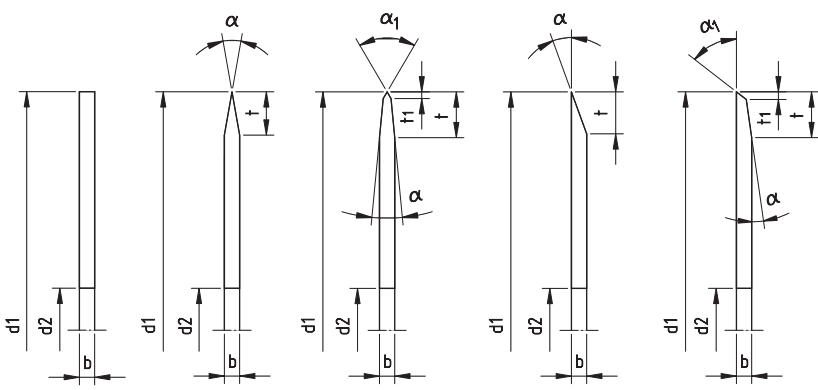
Customer _____	Last name _____
_____	First name _____
Address _____	Phone/fax _____
Place _____	Email _____

Required bevel profile

Profile 0-0
 Profile 1-1
 Profile 2-2
 Profile 1-0
 Profile 2-0
 Profile X*

Dimensions

d1 = _____ mm
 d2 = _____ mm
 b = _____ mm
 α = _____ °
 α₁ = _____ °
 t = _____ mm
 t₁ = _____ mm



Profile 0-0	Profile 1-1	Profile 2-2	Profile 1-0	Profile 2-0
without bevel	double sided bevel	double sided bevel with double sided pre-bevel	single bevel	single bevel with single pre-bevel

Material _____

Coating _____

Quantity (min 2) _____

Delivery date _____

*** Sketch of your bevel profile**

Notes

Circular knives

Special tools

Your partner for complete engineering solutions!

Special tools

ALESA Ltd. specialise in the production of circular saw blades from High Speed Steel and Micrograin Carbide. These are precision ground to produce highly positive geometries with extremely sharp cutting edges that are specifically designed to offer engineering solutions when machining difficult materials or

when operating in unfavourable conditions.

Special dimensions

Standard tools can be modified to suit customers specific requirements.

Carbide-circular saw blades

DIN1837/38 are available with diameters of 20 mm to 200 mm and with widths from 0.2 mm to 3 mm.



Special application

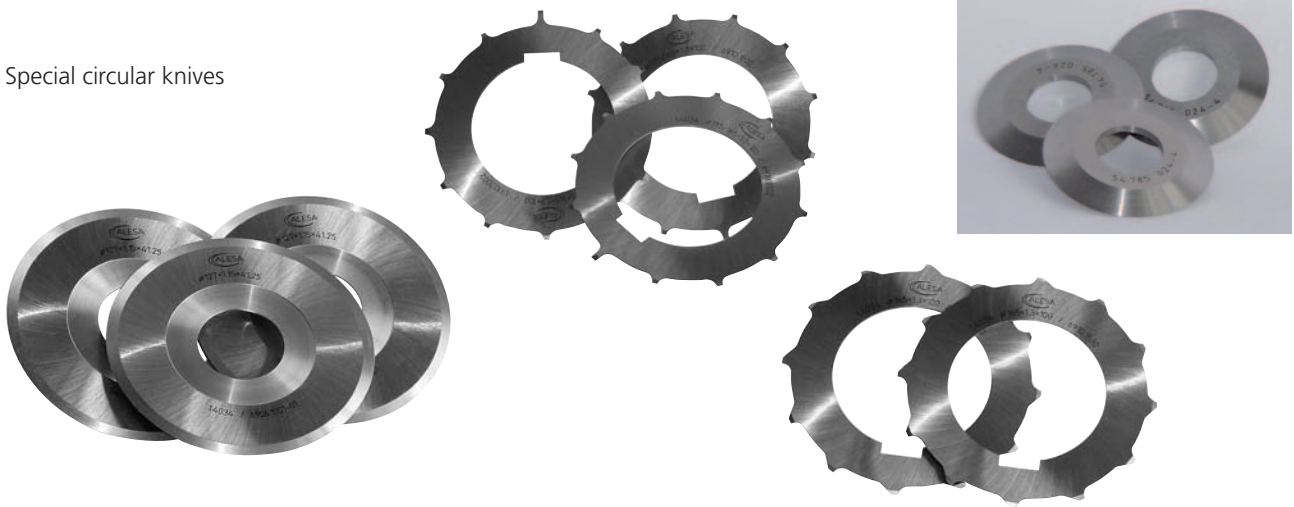
Perforating knives or circular knives:

Circular knives can be used for a variety of different applications: e.g. synthetic ribbons, paper, textiles, and so forth. If you have any processing problems, we consider it our duty to be able to offer a solution. Our development department welcomes the challenge of producing special tools to individual requirements or customer drawings.

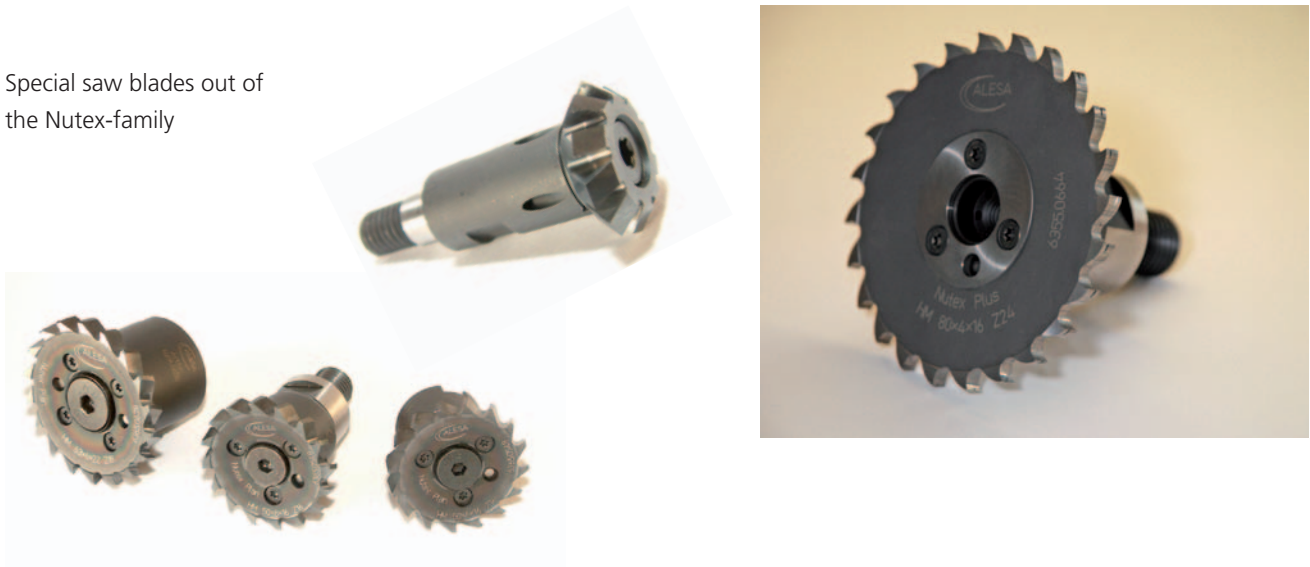


Special tools – examples

Special circular knives



Special saw blades out of the Nutex-family



Special milling tools



Special tools

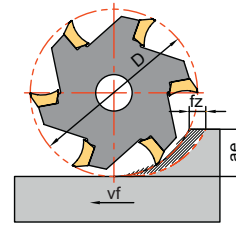
Average chip thickness h_m for saw blades

The average chip thickness h_m

The average chip thickness h_m must be calculated (see formula to the right) and stays in direct relation of tool diameter (D), radial engagement (a_e) and feed per tooth (f_z).

$$h_m \approx f_z \cdot \sqrt{\frac{a_e}{D}}$$

$$f_z \approx h_m \cdot \sqrt{\frac{D}{a_e}}$$



ALESA h_m sheet for saw blades and side milling cutters

Material	Alu. (< 6%Si) & Copper	400–650 N/mm ²	650–800 N/mm ²	800–1200 N/mm ²	over 1200 N/mm ²	Nickel based & Titanium alloys
HSS tools						
Side milling cutter	0.020 – 0.040	0.015 – 0.035	0.015 – 0.030	0.010 – 0.020	–	0.010 – 0.020
DIN saw blade	0.020 – 0.035	0.015 – 0.030	0.015 – 0.025	0.010 – 0.020	–	0.010 – 0.020
Nutex Mini	0.020 – 0.030	0.015 – 0.020	0.010 – 0.018	0.010 – 0.015	–	0.010 – 0.015
Nutex	0.020 – 0.035	0.015 – 0.030	0.015 – 0.025	0.010 – 0.020	–	0.010 – 0.020
Nutex Plus	0.020 – 0.030	0.015 – 0.020	0.010 – 0.018	0.010 – 0.015	–	0.010 – 0.015
Carbide tools						
DIN saw blade	0.015 – 0.035	0.010 – 0.025	0.010 – 0.020	0.010 – 0.016	0.010 – 0.014	0.010 – 0.018
Nutex Mini	0.015 – 0.030	0.010 – 0.020	0.010 – 0.015	0.010 – 0.012	0.008 – 0.012	0.008 – 0.012
Nutex	0.015 – 0.035	0.010 – 0.025	0.010 – 0.020	0.010 – 0.016	0.010 – 0.014	0.010 – 0.018
Nutex Plus	0.015 – 0.030	0.010 – 0.020	0.010 – 0.015	0.010 – 0.012	0.008 – 0.012	0.008 – 0.012
Tool width (a_p) < 1 mm						
$h_m = h_{m(max)} \cdot a_p \cdot x$	$x = 0.40$	$x = 0.45$	$x = 0.55$	$x = 0.65$	$x = 0.70$	$x = 0.60$

The above mentioned h_m values are only valid while using ALESA tools and the ALESA «cutting calculation» programme.

Teeth and cutting angles



A (DIN 1837) toothforms are normally used in **fine machining operations** and jewellery. This type of teeth is normally used on thin blades with **pitch range from 0.8 to 3.0 mm**. These blades have sharp cutting edges. The chip clearance is reduced.

B and Bw (DIN 1838) toothforms are the most common used on cut-off machines saws to cut **ferrous materials**. They have a **larger chip clearance** and allow to cut **thicker materials**. With Bw teeth (alternatively bevelled teeth) the chip is in one part 2/3 of the blade thickness. We suggest using this tooth-form **to cut tubes and profiles** with section up to 3–4 mm.

The C tooth-form differ significant from the tooth form B. Every second tooth, also known as trapezoidal tooth, is **0.1 - 0.3mm higher** than the following flat tooth. This “C” tooth-form has the characteristic of **splitting the chip into three parts**. Each chip fragment is about 1/3 of the blade thickness.

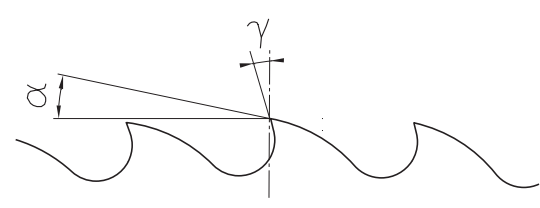
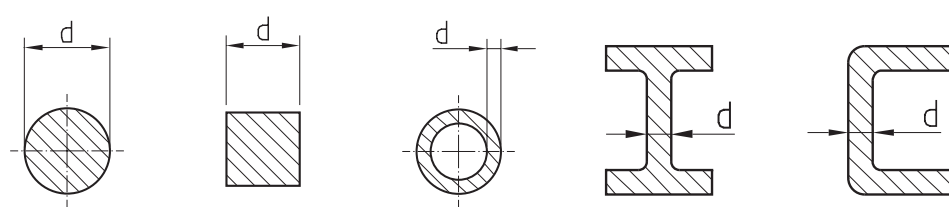
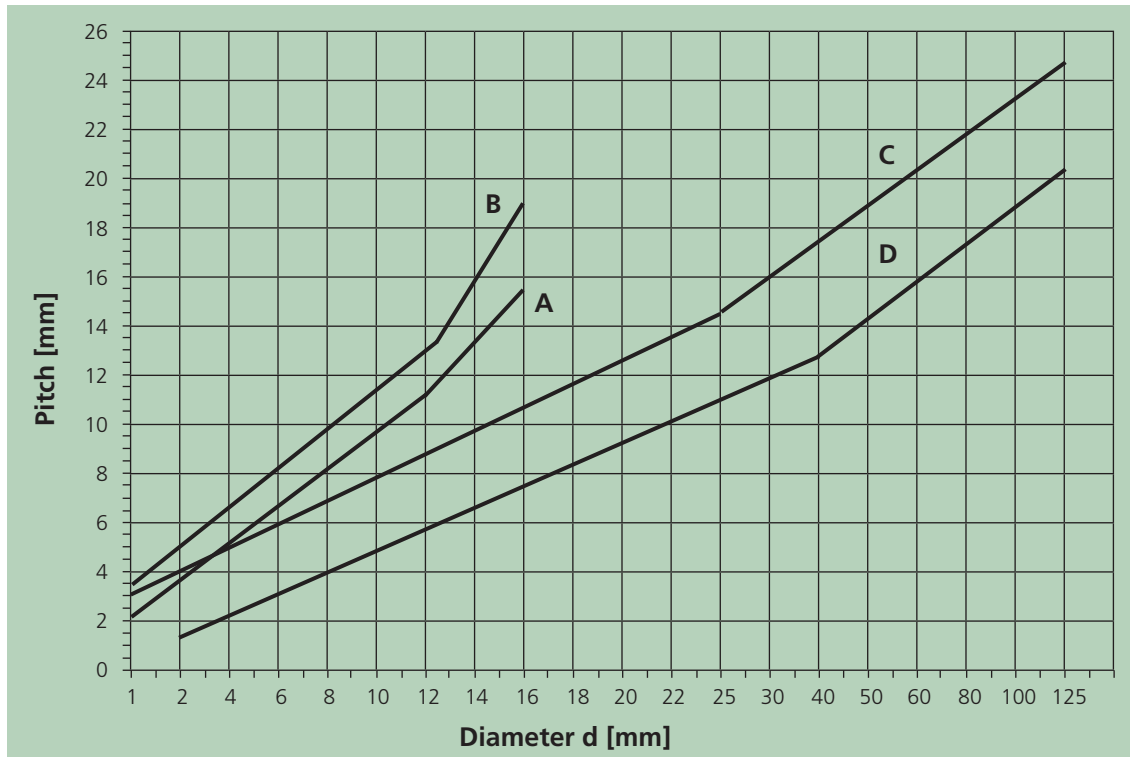
We recommend this tooth form to cut **large cross sections**. One positive function of the trapezoidal tooth is the leading groove to achieve more straight cuts with very large saws.

The smaller chip fragments have an additional effect on the easy chip removal and they are clogging the teeth less.

Tooth pitch selector and cutting geometries

Cutting-off with HSS-circular saw blades

Technical information



Slotting (cutting-off)

To remain above an average chip thickness of **hm = 0.01 mm**, the feed rate should remain above the following values:

$a_e/D:$	0.01	0.02	0.04	0.06	0.10	0.30
Min.- $f_z:$	0.10	0.07	0.05	0.04	0.03	0.02

Material classification		Cutting geometries		Pitch see diagram	
		Rake angle γ	Clearance angle α	Profiles/tubes	Full material
1, 2	Steel < 800 N/mm ²	16°–20°	8°–10°	B	D
3	Steel 800 N/mm ² –1200 N/mm ²	12°–16°	6°–8°	C	D
3, 4	Grey cast iron	10°–14°	6°–8°		D
7	Copper	20°–25°	10°–12°	B	C
8	Bronze	6°–10°	5°–7°	B	C
7	Brass, zinc alloy	12°–16°	6°–8°	A	D
9÷11	Aluminium alloy	22°–28°	10°–12°	B	C

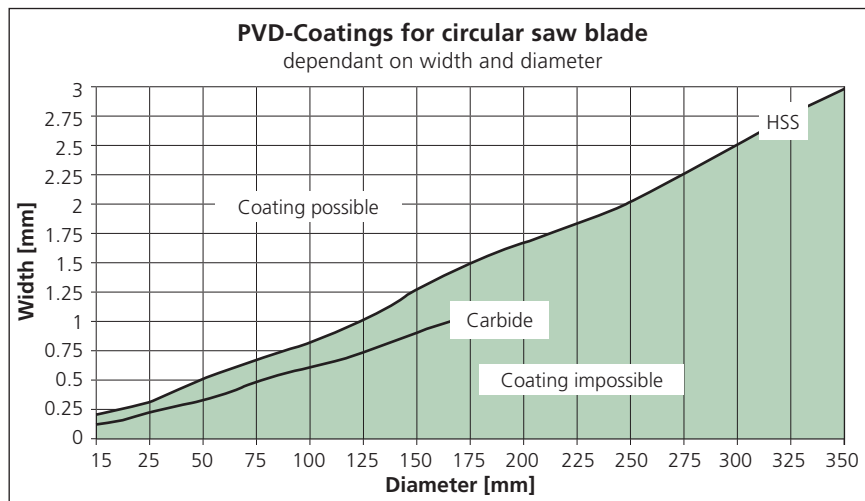


When selecting the appropriate circular saw blade, the correct tooth pitch is an important factor for achieving good results. (General rule: 2–3 teeth in contact)

Hard coatings: range and information

ALESA coatings are designed to offer maximum protection against thermal and mechanical stresses. The PVD hard coatings offer longer tool life and reduced cycle times leading to increased profitability.

Selecting the correct coating increases tool life and metal removal rates considerably.



Possible coatings and surface treatments

Steam tempering is the most common method of surface treatment for circular saws. This is not a PVD-coating, but a controlled surface oxidation, by vaporizing the tool in a chamber with a temperature of more than 500°C. The result of this method is an iron oxide coating (Fe₃O₄) on the surface of the saw blade, which improves the sliding characteristics.

With the **TiN coating** saws achieve a surface hardness of more than 2300 HV. Increased cutting speeds with constant feed rate per tooth give an important reduction of the machining time. As a result of this a cost reduction can be achieved.

The PVD-coating **TiAlN** on HSS with a surface hardness of 3000 HV is the ideal coating for cutting tough materials such as stainless steels, brass and copper. This coating is suitable for cutting-off even when cooling is insufficient.

For carbide tools: PVD-coatings based on **AlCrN** showed best results. Besides the surface hardness of approx. 3200 HV AlCrN-coatings have an improved application temperature and a good ply adhesion. AlCrN is perfect for material classification 1, 2 & 3.

We recommend **AlCrN-VAT** for Duplex-materials, Material classification 5 and Cobalt-based alloys.

The **DLC-H** coating is very hard with more than 5000 HV. It is a very smooth coating with a low sticking effect of the chips. It has a very low friction coefficient.

As a thin layer coating it maintains the sharp ground cutting edges.

IMPORTANT: This coating is for NON – FERRITIC alloys ONLY as

- Copper, Tin, Lead, Silver, Gold, Platinum
 - Alum-alloys and -cast with up to 12% Silicon
 - GFK and CFK and organic materials as wood and paper
- Recommended for application with characteristic abrasion und adhesion behaviour.

Range of coatings for circular saw blades

Material classification		HSS		Carbide				special coating
		TiN	TiAlN	TiAlN	AlCrN	AlCrN-VAT	DLC-H	
1a	Steels < 650 N/mm² - Construction steels - Fine grain steels - Case hardening steels - Steel castings	●	●	●	●			
1b	Steels < 800 N/mm² - Construction steels - Fine grain steels - Case hardening steels - Free-cutting steels - Heat-treatable steels - High-temperature constructional steels - Tough at subzero steels - Nitriding steels - Tool steels	●	●	●	●			
1c	Steels 800 - 1200 Nmm² - Heat-treatable steels - High-temperature constructional steels - Tough at subzero steels - Nitriding steels - Tool steels - High speed steels - Heat-resisting steels		○	●	●			
1d	Steels > 1200 N/mm² - Heat-treatable steels - Nitriding steels - Tool steels - High speed steels			○	●			
2a	Stainless steels < 800 N/mm²	●	●	●	●	●		
2b	Stainless steels > 800 N/mm²		●	○	●	●		
3a	Castings 1 - Grey cast iron < 150 HB - Cast iron with spheroidal graphite < 200 HB - Malleable cast iron < 200 HB - Magnesium cast alloy		○	●	●			
3b	Castings 2 - Grey cast iron tempered > 150 HB - Cast iron with spheroidal graphite temp. > 200 HB - Malleable cast iron tempered > 200 HB			●	●			
3c	Castings 3: Steel castings < 800 N/mm ²		○	●	●			
3d	Castings 4: Steel castings 800 - 1200 N/mm ²		○	○	●	●		
3e	Aluminium cast material > 6% Si			●	●		●	
4a	Non-ferrous metal: Copper and copper-tin alloys	●	○	●	○		●	
4b	Non-ferrous metal - Copper-forging alloys - Copper-tin alloys (bronze)	●	●	●	●		●	
4c	Non-ferrous metal - Pure aluminium - Non hardened aluminium	●	●	●	●		●	
4d	Non-ferrous metal: Hardened aluminium	●	●	●	●		●	
4e	Aluminium cast material < 6% Si	●	●	●	●		●	
5a	Non-alloyed Ni / Ti < 650 N/mm²		●	○	●	●		●
5b	Ni-/Ti-based alloys < 900 N/mm², Duplex		●	○	●	●		●
5c	Ni-/Ti-based alloys 900 - 1200 N/mm²			○	●	●		●
6a	Synthetic material - Thermoplast	●	●	●	●		●	
6b	Synthetic material - Duroplast - Duroplast non laminated - Duroplast laminated	●	●	●	●		●	

Cutting speed v_c [m/min] - HSS and Carbide

Circular saws DIN / Side milling cutters / Nutex-tools

Technical information

Material classification		HSS uncoated	HSS coated	Carbide uncoated	Carbide coated
		v_c [m/min]	v_c [m/min]	v_c [mm]	v_c [mm]
1a	Steels < 650 N/mm² - Construction steels - Fine grain steels - Case hardening steels - Steel castings	40 - 60	60 - 95	120 - 200	160 - 250
1b	Steels < 800 N/mm² - Construction steels - Fine grain steels - Case hardening steels - Free-cutting steels - Heat-treatable steels - High-temperature constructional steels - Tough at subzero steels - Nitriding steels - Tool steels	30 - 45	50 - 75	100 - 160	120 - 200
1c	Steels 800 - 1200 N/mm² - Heat-treatable steels - High-temperature constructional steels - Tough at subzero steels - Nitriding steels - Tool steels - High speed steels - Heat-resisting steels	20 - 35	30 - 55	80 - 130	95 - 160
1d	Steels > 1200 N/mm² - Heat-treatable steels - Nitriding steels - Tool steels - High speed steels	15 - 25	20 - 40	60 - 100	70 - 120
2a	Stainless steels < 800 N/mm²	20 - 35	30 - 55	80 - 130	95 - 160
2b	Stainless steels > 800 N/mm²	15 - 25	20 - 40	60 - 100	70 - 120
3a	Castings 1 - Grey cast iron < 150 HB - Cast iron with spheroidal graphite < 200 HB - Malleable cast iron < 200 HB - Magnesium cast alloy	30 - 45	50 - 75	100 - 160	120 - 200
3b	Castings 2 - Grey cast iron tempered > 150 HB - Cast iron with spheroidal graphite temp. > 200 HB - Malleable cast iron tempered > 200 HB	20 - 35	30 - 55	80 - 130	95 - 160
3c	Castings 3: Steel castings < 800 N/mm ²	20 - 35	30 - 55	100 - 160	120 - 200
3d	Castings 4: Steel castings 800 - 1200 N/mm ²	15 - 25	30 - 55	80 - 130	95 - 160
3e	Aluminium cast material > 6% Si	120 - 200	200 - 320	150 - 300	200 - 500
4a	Non-ferrous metal: Copper and copper-tin alloys	120 - 250	190 - 400	200 - 400	1000-1800
4b	Non-ferrous metal - Copper-forging alloys - Copper-tin alloys (bronze)	40 - 120	65 - 195	150 - 400	180 - 480
4c	Non-ferrous metal - Pure aluminium - Non hardened aluminium	800 - 1400	1200 - 2000	800 - 1600	1000 - 2000
4d	Non-ferrous metal: Hardened aluminium	400 - 600	600 - 950	600 - 1000	1000 - 1500
4e	Aluminium cast material < 6% Si	400 - 600	600 - 950	400 - 600	600 - 1000
5a	Non-alloyed Ni / Ti < 650 N/mm²	30 - 45	50 - 75	60 - 100	70 - 120
5b	Ni-/Ti-based alloys < 900 N/mm², Duplex	15 - 25	20 - 40	25 - 60	30 - 75
5c	Ni-/Ti-based alloys 900 - 1200 N/mm²	10 - 15	15 - 25	20 - 40	25 - 50
6a	Synthetic material - Thermoplast	100 - 150	160 - 250	150 - 300	200 - 500
6b	Synthetic material - Duroplast - Duroplast non laminated - Duroplast laminated	60 - 100	95 - 160	80 - 250	100 - 500

Allocation of the materials

Material	Tensile strength	DIN-No.	DIN-Code	Euronorm EN	AFNOR	B.S.	AISI SAE	Material classification
Construction steels	< 650 N/mm ²	1.0032 1.0035 1.0037 1.0044 1.0570	St34-2 St33 St37-2 St44-2 St52-3	S25GT S185 S 235 JR S 275 JR S 355 J2 G3	A 33 E 24-2 E 28-2	Fe 310-0 Fe 360 B Fe 430 B FN	A283 Gr.A A283 Gr.C, 1015 A570 Gr.40, 1020	1a
	< 800 N/mm ²	1.0050 1.0060	St50-2 St60-2	E 295 E 335	A 50-2 A 60-2	Fe 490-2, 50C Fe 590-2 FN	A570 Gr.50 A572 Gr.65	1b
Fine grain steels	< 650 N/mm ²	1.0970 1.0974 1.0978 1.0980	QStE 260 N QStE 340 TM QStE 380 TM QStE 420 TM	S 260 MC S 340 MC S 380 MC S 420 MC				1a
	< 800 N/mm ²	1.0982 1.0984 1.0986	QStE 460 TM QStE 500 TM QStE 550 TM	S 460 MC S 500 MC S 550 MC				1b
Free-cutting steels	< 800 N/mm ²	1.0711 1.0715 1.0718 1.0722 1.0726 1.0737	9S20 9SMn28 9SMnPb28 10SPb20 35S20 9SMnPb36	10S20 9SMn28 11SMnPb30 10SPb20 35S20 11SMnPb37	S 250 S 250 Pb 10 Pbf 2 35 MF 6 S 300 Pb	220M07 230M07 212M36	1112 1213 12L13 11L08 1140 12L14	1b
Case hardening steels	< 650 N/mm ²	1.0301 1.0302 1.0401 1.1121 1.1141 1.1731	C10 C10Pb C15 Ck10 Ck15 16MnCr5	C10 C10 S15R 2C10 E C15E, 32C EN 10084:2008-06	C 10; XC 10 AF34C10 XC18, AF37C12 XC10 XC12 16MC4; 16MnCr5	045M10 045M10 080M15 040A10 080M15 527M20	1010 1010 1015 1010 1015 5115	1a
	< 800 N/mm ²	1.5752 1.5919 1.5920 1.6587	14NCr14 15CrNi6 18CrNi8 17CrNiMo6	ECN 35, 36A 15CrNi6 18CrNi8 18CrNiMo7-6	12NC15; 14NC12 16NC6 20NC6 18NCD6	655M13,655A12	3415; 3310 3115	1b
Heat-treatable steels	< 800 N/mm ²	1.1151 1.1181 1.1191 1.1221 1.7218 1.7220 1.7225 1.7228	Ck22 Ck35 Ck45 Ck60 25CrMo4 34CrMo4 42CrMo4 50CrMo4	C22E C35E C45E C60E, 43D 25CrMo4 19B, 34CrMo4 19A, 42CrMo4 50CrMo4	XC25 XC38H2 XC42H1, XC45 C60; XC60 25CD4 35CD4 42CD4 50CrMo4	055M15 080A35 080M46 060A62 708A25 708A37 709M40 708A47	1023 C1034 1045 1060 4130 4137; 4135 4140, 4142 4150	1b
	800-1200 N/mm ²	1.0601 1.0966 1.7218 1.7220 1.7225 1.7228 1.5864 1.6580 1.6582 1.7361 1.7707 1.8161	C 60 QStE 690 TM 25CrMo4 34CrMo4 42CrMo4 50CrMo4 35NiCr8 30CrNiMo8 34CrNiMo6 32CrMo12 30CrMoV9 58CrV4	C60 S 700 MC 25CrMo4 19B, 34CrMo4 19A, 42CrMo4 50CrMo4 35NiCr18 30CrNiMo8 EN24T, 34CrNiMo6 40B 30CrMoV9 58CrV4	CC55	080A62	1060	1060
Heat-treatable steels	> 1200 N/mm ²	1.7218 1.7220 1.7225 1.7228 1.5864 1.6580 1.6582 1.7361 1.7707 1.8161	25CrMo4 34CrMo4 42CrMo4 50CrMo4 35NiCr8 30CrNiMo8 34CrNiMo6 32CrMo12 30CrMoV9 58CrV4	25CrMo4 19B, 34CrMo4 19A, 42CrMo4 50CrMo4 35NiCr18 30CrNiMo8 EN24T, 34CrNiMo6 40B 30CrMoV9 58CrV4	25CD4 35CD4 42CD4 50 CrMo 4 40NC17 30CND8 35NCD6 30CD12	708A25 708A37 709M40 708A47	4130 4135; 4137 4140, 4142 4150	1d
	> 1200 N/mm ²	1.6580 1.6582 1.7361 1.7707 1.8161	30CrNiMo8 34CrNiMo6 32CrMo12 30CrMoV9 58CrV4	30CrNiMo8 EN24T, 34CrNiMo6 40B 30CrMoV9 58CrV4	30CND8 35NCD6 30CD12	823M30 816M40; 817M40 722M24	4340, 4337	1d
High-temperature constructional steels	< 800 N/mm ²	1.0482 1.4922 1.5406 1.6513 1.8070	19Mn5 X20CrMoV12-1 17MoV8 4 28NiCrMo4 21CrMoV5 11	P 310 GH SEW310 17MoV8-4 110 21CrMoV5-11		762 816M40	416C 9840	1b
	> 800 N/mm ²	1.0482 1.4922 1.5406 1.6513 1.8070	19Mn5 X20CrMoV12-1 17MoV8 4 28NiCrMo4 21CrMoV5 11	P 310 GH SEW310 17MoV8-4 110 21CrMoV5-11	40NCD3	816M40	9840	1c
Tough at subzero steels	< 800 N/mm ²	1.6900 1.7219	X12CrNi189 26CrMo4	26CrMo4			4130, 4130H	1b
	> 800 N/mm ²	1.6900 1.7219	X12CrNi189 26CrMo4	26CrMo4			4130, 4130H	1c
Nitriding steels	< 800 N/mm ²	1.8504 1.8506	34CrAl6 31CrAlSi5					1b
	800-1200 N/mm ²	1.8507 1.8515 1.8519 1.8523 1.8550	34CrAlMo5 31CrMo12 31CrMoV9 39CrMoV13-9 34CrAlNi7	34CrAlMo5-10 31CrMo12 31CrMoV9 39CrMoV13-9 34CrAlNi7	30CAD6-12 30CD12 40CDV12	722M24 897M39, 3S132	A355Cl-D	1c
Tool steels	> 1200 N/mm ²	1.8523 1.8550	39CrMoV139 34CrAlNi7	39CrMoV13-9 34CrAlNi7	40CDV12	897M39, 3S132		1d
	< 800 N/mm ²	1.2056 1.2162 1.2363 1.2519 1.2823	90Cr3 21MnCr5 X100CrMoV5-1 110WCrV5 70Si7	90Cr3 21MnCr5 X100CrMoV5-1 110WCrV5 70Si7	Z100CDV5	BA2	A2	1b
Tool steels	800-1200 N/mm ²	1.2080 1.2311 1.2312 1.2344	X210Cr12 40CrMnMo7 40CrMnMoS86 X40CrMoV5-1	X210Cr12 40CrMnNiMo8-6 40CrMnNiMoS8-6-4 X40CrMoV5-1	Z200C12 40CMD8 40CMD8S Z40CDV5	BD3	D3	1c

Technical information

Allocation of the materials

Material	Tensile strength	DIN-No.	DIN-Code	Euronorm EN	AFNOR	B.S.	AISI SAE	Material classification				
	> 1200 N/mm ²	1.2379	X155CrVMo12-1	X155CrVMo12-1	32CDV12-28	BD2	D2 D6	1c				
		1.2436	X210CrW12	X210CrW12	X210CW12-01							
		1.2567	X30WCrV5 3	X30WCrV5-3	X32WCRV5							
		1.2678	X45CoCrWV555	X45CoCrWV5-5-5								
		1.2713	55NiCrMoV6	55NiCrMoV6	55NCD7							
		1.2714	56NiCrMoV7	55NiCrMoV7								
		1.2743	60NiCrMo124	60NiCrMoV12-4								
		1.2766	35NiCrMo16	35NiCrMo16	35NCD16							
		1.2080	X210Cr12	X210Cr12	Z200C12				BP30	BD3	D3	
	1.2311	40CrMnMo7	40CrMnNiMo8-6	40CMD8	BH13 BD2	H13 D2 D6	1d					
	1.2312	40CrMnMoS86	40CrMnNiMoS8-6-4	40CMD8S								
	1.2344	X40CrMoV5-1	X40CrMoV5-1	Z40CDV5								
	1.2379	X155CrVMo12-1	X155CrVMo12-1	32CDV12-28								
	1.2436	X210CrW12	X210CrW12	Z210CW12-01								
	1.2567	X30WCrV5 3	X30WCrV5-3	X32WCRV5								
	1.2678	X45CoCrWV555	X45CoCrWV5-5-5									
	1.2713	55NiCrMoV6	55NiCrMoV6	55NCDV7;								
	1.2714	56NiCrMoV7	55NiCrMoV7									
1.2743	60NiCrMo124	60NiCrMoV12-4										
1.2766	35NiCrMo16	35NiCrMo16	35NCD16	BP30								
High speed steels	800-1200 N/mm ²	1.3207	S10-4-3-10	HS 10-4-3-10	Z130WKCDV	BT42 BM35 BM42 BM2	M42 M2 CLASS 1	1c				
		1.3243	S6-5-2-5	HS 6-5-2-5	Z85WDKCV							
		1.3247	S2-10-1-8	HS 2-10-1-8	Z110DKCWV							
		1.3343	S6-5-2	HS 6-5-2	Z85WDCV							
	> 1200 N/mm ²	1.3207	S10-4-3-10	HS 10-4-3-10	Z130WKCDV	BT42 BM35 BM42 BM2	M42 M2 CLASS 1	1d				
		1.3243	S6-5-2-5	HS 6-5-2-5	Z85WDKCV							
Steel castings	< 700 N/mm ²	1.0416	GS-38	EN 10016-2:1995-04	Z30-400 M	A1 A2		1a				
		1.0446	GS-45	GE 240	E23-45 M							
		1.0552	GS-52	S355 JRC								
	< 800 N/mm ²	1.5919	GS-15CrNi6	15CrNi6	16NC6	708A25 708A37 622	3115 4130 4137; 4135	3c				
		1.7218	GS-25CrMo4	25CrMo4	25CD4							
		1.7220	GS-34CrMo4	19B, 34CrMo4	35CD4							
	800-1200 N/mm ²	1.0416	GS-38	EN 10016-2:1995-04	Z30-400 M	A1 A2	3115 4130 4137; 4135	3d				
		1.0446	GS-45	GE 240	E23-45M							
		1.0552	GS-52	S355 JRC								
		1.5919	GS-15CrNi6	15CrNi6	16NC6							
		1.7218	GS-25CrMo4	25CrMo4	25CD4							
		1.7220	GS-34CrMo4	19B, 34CrMo4	35CD4							
Grey cast iron	< 150 HB	0.6015	GG-15	EN-GJL-150	Ft 15 D	Grade 150 Grade 220 Grade 260 Grade 300	No 25B No 30B No 35B No 45B	3a				
		0.6020	GG-20	EN-GJL-200	Ft 20 D							
		0.6025	GG-25	EN-GJL-250	Ft 25 D							
		0.6030	GG-30	EN-GJL-300	Ft 30 D							
		0.6015	GG-15	EN-GJL-150	Ft 15 D				Grade 150 Grade 220 Grade 260 Grade 300	No 25B No 30B No 35B No 45B	3b	
0.6020	GG-20	EN-GJL-200	Ft 20 D									
0.6025	GG-25	EN-GJL-250	Ft 25 D									
0.6030	GG-30	EN-GJL-300	Ft 30 D									
0.7040	GGG-40	EN-GJS-400-15	FCS 400-12	SNG 420/12 SNG 500/7 SNG 600/3	60-40-18 65-54-12 80-55-06	3a						
0.7050	GGG-50	EN-GJS-500-7	FGS 500-7									
0.7060	GGG-60	EN-GJS-600-3	FGS 600-3									
Malleable cast iron	< 200 HB	0.8035	GTW-35-04	EN-GJS-800-2	MN 35-10 MN 450 MP 50-5 MP 60-3	B 340/12 P 440/7 P 510/4 P 570/3	32510 40010 50005 70003	3a				
		0.8040	GTW-40-05	EN-GJS-800-2								
		0.8045	GTW-45-07	EN-GJS-800-2								
		0.8135	GTS-35-10	EN-JM1010								
		0.8145	GTS-45-06	EN-JM1040								
		0.8155	GTS-55-04	EN-JM1050								
0.8165	GTS-65-02	GJMB 650-2										
Cast iron with spheroidal graphite tempered	> 200 HB	0.7040	GGG-40	EN-GJS-400-15	FCS 400-12	SNG 420/12 SNG 500/7 SNG 600/3 SNG 700/2	60-40-18 65-54-12 80-55-06 100-70-03	3b				
		0.7050	GGG-50	EN-GJS-500-7	FGS 500-7							
		0.7060	GGG-60	EN-GJS-600-3	FGS 600-3							
		0.7070	GGG-70	EN-GJS-700-2	FGS 700-2							
		0.7080	GGG-80	EN-GJS-800-2								
		0.8035	GTW-35-04	EN-GJS-800-2	MN 35-10 MN 450 MP 50-5 MP 60-3				B 340/12 P 440/7 P 510/4 P 570/3	32510 40010 50005 70003	3b	
0.8040	GTW-40-05	EN-GJS-800-2										
0.8045	GTW-45-07	EN-GJS-800-2										
0.8135	GTS-35-10	EN-JM1010										
0.8145	GTS-45-06	EN-JM1040										
0.8155	GTS-55-04	EN-JM1050										
0.8165	GTS-65-02	GJMB 650-2										
Stainless steels	< 850 N/mm ²	1.4104	X14CrMoS17	X14CrMoS17-2	Z3CF17	441S29 434S17 304S15 303S21 304S12 316S16 316S12 316S16 316S11 316S33 904S13 321S31 320S33	430F 434 304 303 304L 316 316L 316LN 316L 316 904L, N08904 321 316Ti	2a				
		1.4113	X 6 CrMo 17	X6CrMo17-1	Z8CD17.01							
		1.4301	X5CrNi1810	58E, X5CrNi18-10	Z4CN18-10FF							
		1.4305	X8CrNiS18-9	58M; X10CrNiS18-9	Z8CNF18-09							
		1.4306	X2CrNi19-11	X2CrNi19-11	Z2CN18-10							
		1.4401	X5CrNiMo17 12 2	G-X6CrNiMo17-12-2	Z6CND17-17-11							
		1.4404	X2CrNiMo17-12-2	X3CrNiMo17122	Z3CND18-12-02							
		1.4406	X2CrNiMoN17-11-2	X2CrNiMoN17-12-2	Z2CND17-12-Az							
		1.4435	X2CrNiMo18-14-3	X2CrNiMo18-14-3	Z2CND18-14-03							
		1.4436	X3CrNiMo17-13-3	X3CrNiMo17-13-3	Z7CND18-12-03;							
		1.4539	X1NiCrMoCuN25-20-5	X1NiCrMoCu25-20-5	Z2NCNDU25-20-5							
		1.4541	X6CrNiTi18-10	58B; X6CrNiTi18-10	Z6CNT18-10							
		1.4573	X10CrNiMoTi18-12	X6CrNiMoTi18-12								
		< 1000 N/mm ²	1.4002	X6CrAl13	X6CrAl13				Z6CA13	405S17 410S21 430S17 420S37 420S45 420S45 431S29	405 410, AMS 5613 430/1 420 420F 420C/4 431	2b
			1.4006	X10Cr13	56A; X12Cr13				Z10C14			
	1.4016		X6Cr17	60; X6Cr17	Z8C17							

Allocation of the materials

Material	Tensile strength	DIN-No.	DIN-Code	Euronorm EN	AFNOR	B.S.	AISI SAE	Material classification	
		1.4112 1.4116 1.4125 1.4460 1.4510 1.4512 1.4582	X90CrMoV18 X45CrMoV15 X105CrMo17 X3CrNiMoN27-5-2 X3CrTi17 X6CrTi12 X4CrNiMoNb257	X90CrMoV18 X50CrMoV15 X105CrMo17 X3CrNiMoN27-5-2 X6CrTi17 X5CrTi12 X4CrNiMoNb25-7	A35-572 Z100CD17 Z3CND27-07 AZ Z4CT17, X3CrTi17 Z3CT12, Z6CT12	X105CrMo17 X3CrNiMoN27-5-2 X3CrTi17 409S19	440B UNE 36016-1 440C 329 430Ti 409	2b	
Stainless steel castings	< 850 N/mm ²	1.4308 1.4340	GX6CrNi18 9 G-X40CrNi274	G-X6CrNi18-9 GX40CrNi27-4	Z6CN18-10M	304C15	304H,CF-8 J92615, A781-05	2a	
	< 1000 N/mm ²	1.4086 1.4106 1.4138	G-X120Cr29 G-X10CrMo13 G-X120CrMo292	57; X17CrNi16-2 X2CrMoSiS18-2-1	15CN16-02 X2CrMoSiS18-2-1	431S29	431	2b	
Heat-resisting steels	< 1000 N/mm ²	1.4722	X10CrSi13					1c	
		1.4724	X10CrAl13; X10CrAlSi13	X10CrAl11-3	Z13C13	403S17	405		
		1.4741	X10CrSi18						
		1.4742	X10CrAl18	60; X10CrAl(Si)18	Z10CAS18 Z210CAS24	430S15 X10CrAlSi25	430 446		
		1.4762	X10CrAl24	X10CrAlSi25					
1.4821	X20CrNiSi254	Z20CNS25-4							
Duplex steels	< 900 N/mm ²	1.3964	X 2 CrNiMnMoNnb 21 16 5 3		NF 05-159		XM-19	5b	
		1.4429	X 2 CrNiMoN 17 13 3	X2CrNiMoN17-13-3	Z2CND17-13-Az	316S63	316LN		
		1.4462	X 2 CrNiMoN 22 5 3	X2CrNiMoN22-5-3	Z2CNDU21-08-Az	318S13	329A, UNS31803		
		1.4529	X 1 NiCrMoCuN 25 20 7	10088-3	X1CrNiMoCuN25-20-7	X1CrNiMoCuN25-20-7	B649, N08926		
		1.4547	X 1 CrNiMoCuN 20 18 7	10088-3	X1CrNiMoCuN20-18-7	X1CrNiMoCuN20-18-7	S31254		
Non-alloyed titanium	< 650 N/mm ²	3.7024	Ti 99.5					5a	
		3.7034	Ti 99.7						
		3.7055	Ti 99.4						
		3.7064	Ti 99.2						
Titanium alloys soft-annealed	< 900 N/mm ²	3.7164	TiAl6V4					5b	
		3.7114	TiAl5Sn2						
		3.7124	TiCu2						
		3.7174	TiAl6V6Sn2						
Titanium alloys hardened	900-1250 N/mm ²	3.7164	TiAl6V4					5c	
		3.7124	TiCu2						
		3.7144	TiAl6Sn2Zr4Mo2						
		3.7154	TiAl6Zr5						
		3.7174	TiAl6V6Sn2						
		3.7184	TiAl4Mo4Sn2						
Pure nickel	< 500 N/mm ²	2.4060	Nickel 200					5a	
High temperature nickel-based alloys	< 900 N/mm ²	2.4360	Monel 400					5b	
		2.4375	Monel K 500	Alloy K500					
		2.4812	Hastelloy C		Ni-Mo28	3072 3076 (NA18) ANC15 HR208	N05500		
		2.4816	Inconel 600						
		2.4617	Hastelloy B-2				N10665		
		2.4665	Hastelloy X			HR204			
		2.4983	Udimet 500						
	1.4876	Incoloy 800		Z8NC32-21	3076NA15H	B163, N08800			
	900-1200 N/mm ²	2.4631	Nimonic 80A						5c
		2.4632	Nimonic 90			2HR201 2HR2	NC20TA, HEV5 HEV6		
		2.4634	Nimonic 105						
		2.4662	Nimonic 901		Z8NCDT42	HR 53 HR 8	5660, 5661 N07718, 5662, 5663		
		2.4668	Inconel 718		NC19FeNb				
		2.4670	Nimocast 713						
2.4674		Nimocast PK24							
2.4856	Inconel 625	499		NA21	B564/446, 5599, 5666				
2.6554	Waspaloy								
Pure copper	< 350 N/mm ²	2.0060	E-Cu57					4a	
		2.0070	SE-Cu						
		2.0090	SF-Cu						
		2.1356	CuMn3	CW107C			C19400		
Copper-zinc alloys (brass)	< 700 N/mm ²	2.0250	CuZn20					4a	
		2.0265	CuZn30						
		2.0321	CuZn37						
		2.0360	CuZn40						
		2.0380	CuZn39Pb2						
		2.0410	CuZn44Pb2						
		2.0561	CuZn40Al1	CW713R		CZ135, CZ114	C67400		
		2.0580	CuZn40Mn1Pb	CW713R		CZ135, CZ114	C67400		
		2.0771	CuNi7Zn39Mn5Pb3						
Copper-forging alloys hardenable	< 800 N/mm ²	2.1245	CuBe1.7					4b	
		2.1247	CuBe2						
		2.1293	CuCrZr						
		2.1525	CuSi3Mn	CW107C			C19400		
Copper-forging alloys non hardenable	< 600 N/mm ²	2.1201	CuAgo.03	CC491K		CuSn5Pb5Zn5	LG2	C83600	
		2.1366	CuMn5	CW107C				C19400	
		2.1522	CuSi2Mn	CW107C				C19400	
		2.1525	CuSi3Mn	CW107C				C19400	
		2.1016	CuSn4	CW450K		CuSn4P	PB101	C51100	
Copper-tin alloys (bronze)	< 700 N/mm ²	2.1020	CuSn6	CW452K		CuSn6P	PB103	C51900	
		2.1030	CuSn8	CW453K		CuSn8P, CuSn9	PB104	C52100	
		2.1050	G-CuSn10-C	CC480K		CuSn10P	CT1/PB4	C90700	
		2.1052	G-CuSn12-C	CC483K		CuSn12P / UE12P	PB2	C90800	
		2.1060	G-CuSn12Ni2-C	CC484K		CuSn12Ni2	CT2	C91700	
		2.1061	G-CuSn11Pb2-C	CC482K		CuSn12Pb	PB4	C92500	
		2.1076	CuSn4Pb4Zn4	CW456K		CuSn4Pb4Zn4		C54400	
		2.1080	CuSn6Zn6	CW456K		CuSn4Pb4Zn4		C54400	
		2.1086	G-CuSn10Zn	CW456K		CuSn4Pb4Zn4		C54400	
		2.1090	G-CuSn7Zn4Pb7-C	CC493K		CuSn7Pb6Zn4		C93200	
		2.1093	G-CuSn6ZnNi	CC492K		CuSn7Zn2Pb3	LG4	C91410	
		2.1096	G-CuSn5ZnPb	CC491K		CuSn5Pb5Zn5	LG2	C83600	

Allocation of the materials

Technical information

Material	Tensile strength	DIN-No.	DIN-Code	Euronorm EN	AFNOR	B.S.	AISI SAE	Material classification			
Pure aluminium Non hardened aluminium	< 150 N/mm ² < 400 N/mm ²	3.0255	Al99.5	EN AW-1050A	A-5	1B	1050A	4c			
		3.0515	AlMn1	EN AW-3003/3103	A-M1/-	N3					
		3.2315	AlMgSi1	EN AW-6082	A-SGM0.7	H30	6082				
		3.3315	AlMg1	EN AW-5005A	A-G0,6	N41	5005A				
		3.3535	AlMg3	EN AW-5754	A-G3M		5754				
		3.3547	AlMg4.5Mn	EN AW-5083	A-G4,5MC	N8	5083				
		3.4365	AlZnMgCu1.5	EN AW-7075	A-Z5GU	2L95/96	7075				
Hardened aluminium	< 650 N/mm ²	3.0615	AlMgSiPb	EN AW-6012	A-SGPb		6012	4d			
		3.1325	AlCuMg1	EN AW-2017A	A-U4G	H14	2017A				
		3.1355	AlCuMg2	EN AW-2024	A-U4G1	2L97/98	2024				
		3.1655	AlCuBiPb	EN AW-2011	A-U5PbBi	FC1	2011				
		3.4335	AlZn4.5Mg1	EN AW-7020	A-Z5G	H17	7020				
		3.4345	AlZnMgCu5.0	EN AW-7022	A-Z4GU		7022				
		3.4365	AlZnMgCu1.5	EN AW-7075	A-Z5GU	2L95/96	7075				
		Aluminium cast material < 6% Si	< 400 N/mm ²	3.1841	G-AlCu4Ti	EN AC-AlCu4Ti					4e
				3.2134	G-AlSi5Cu1Mg	EN AC-AlCu4Ti					
3.3241	G-AlMg3Si			EN AW-6061	A-GSUC	H20	6061				
3.3292	GD-AlMg9										
Aluminium cast material > 6% Si	< 400 N/mm ²	3.2152	GD-AlSi6Cu4	EN AC-AlSi6Cu4				3e			
		3.2162	GD-AlSi8Cu3	EN AC-AlSi6Cu4							
		3.2373	G-AlSi9Mg	EN AC-AlSi9Mg							
		3.2381	G-AlSi10Mg	EN AC-AlSi10Mg							
		3.2383	G-AlSi10Mg (Cu)								
		3.2581	G-AlSi12	EN AC-AlSi12(a)							
		3.2583	G-AlSi12 (12)	EN AC-AlSi12(Cu)							
3.2982	GD-AlSi12 (Cu)	EN AC-AlSi12Cu1(Fe)									
Magnesium cast alloy	< 400 N/mm ²	3.5106	G-MgAg3SE2Zr1					3e			
		3.5662	G-MgAl6								
		3.5812	G-MgAl8Zn1								
		3.5912	G-MgAl9Zn1								
Thermoplast		PTFE	Teflon, Hostaflon, Lubriflon					6a			
		PVDF	Kynar, Solef								
		PA	Ertalon, Ultramid, Nylon								
		POM	Delrin, Hostaform								
		PETP	Arnite, Ertalyte								
		PVC-hart	Hostalit, Vinoflex, Trovidur								
		PETP	Hostalen, Ertalene, Lupolen								
		PP	Hostalen, Ertalen								
PC	Makralon, Lexan										
Duroplast non laminated		PF	Bakelit, Resalit, Luphen					6b			
		MF	Albarnit, Keramin, Resopal								
		UF	Resopal, Basapor								
Duroplast laminated		PF	Ferrozell, Resofil, Canevasit					6b			
		MF	Resopal, Resamin, Textolit								
		UF	Resamin, Basapor								

Please contact us, if the DIN standard no. you're searching for, is not mentioned above.