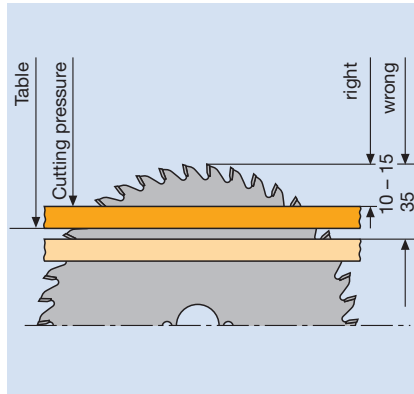


1. Sawing

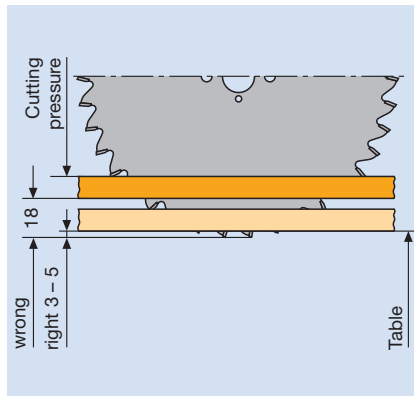
1.3 Cutting across grain

Application area	For trimming and cutting off, mitre cutting and sizing.
Workpiece material	Solid wood, with or without coating, plywood, glulam, solid surface materials.
Machine	Combined table, mitre, radial, underfloor and optimising saws.

Application



For sawblades with a positive cutting angle and the spindle below the workpiece. For sawblades with a negative cutting angle and the spindle above the workpiece. The cutting force presses the material onto the table.



For radial saws, the use of sawblades with a negative cutting angle cutting against the feed is obligatory (see EN 1870-17). The negative cutting angle presses the material onto the table.

Tooth shape



WZ (alternative top bevel teeth): Multi-purpose tooth shape, economical to purchase and maintain – especially suitable for solid wood and wood derived materials.



HZ (hollow tooth): Recommended for veneered wood derived materials and glulam; tear-free cutting edges and high cut quality.



WZ/FZ (alternative/square teeth): Tooth shape for solid wood, glulam and coated or veneered wood derived materials; tear-free cutting edges and high cut quality. Combinations of tooth forms (WZre, WZli, WZre, WZli, FZ).

1. Sawing

1.3 Cutting across grain

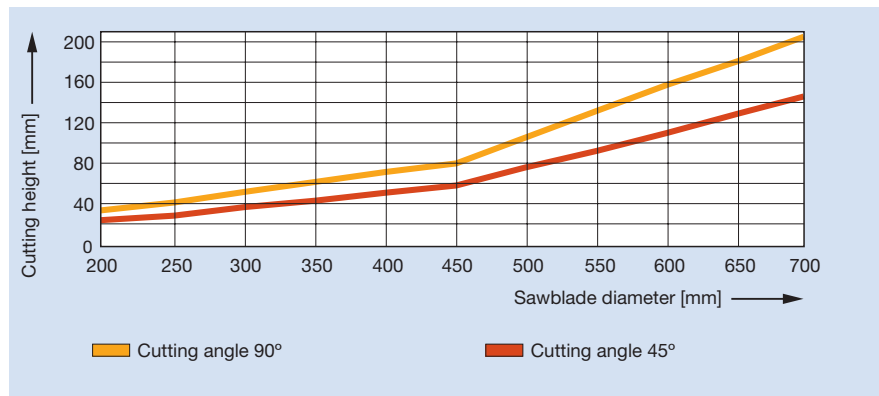
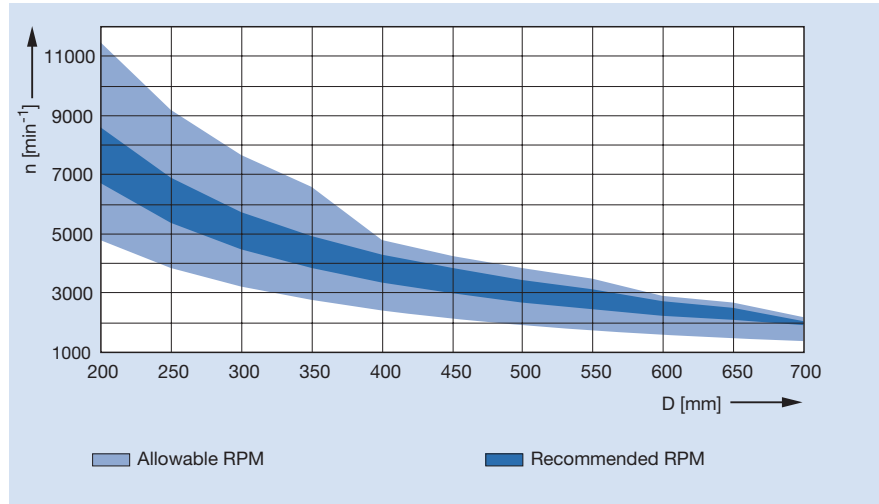
Recommended tooth feed rate
 f_z (in mm)

WZ: 0.17 – 0.15 mm
 HZ: 0.05 – 0.08 mm
 WZ/FZ: 0.02 – 0.05 mm

$$V_f = f_z \cdot n \cdot Z / 1000$$

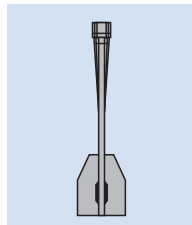
Application data

RPM diagram

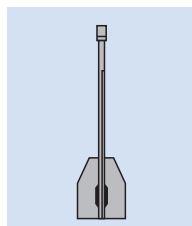


Cutting across grain – the cutting height a_e depends on the sawblade diameter D and the cutting angle.

Low-noise sawblades



Sawblade without noisedamping.

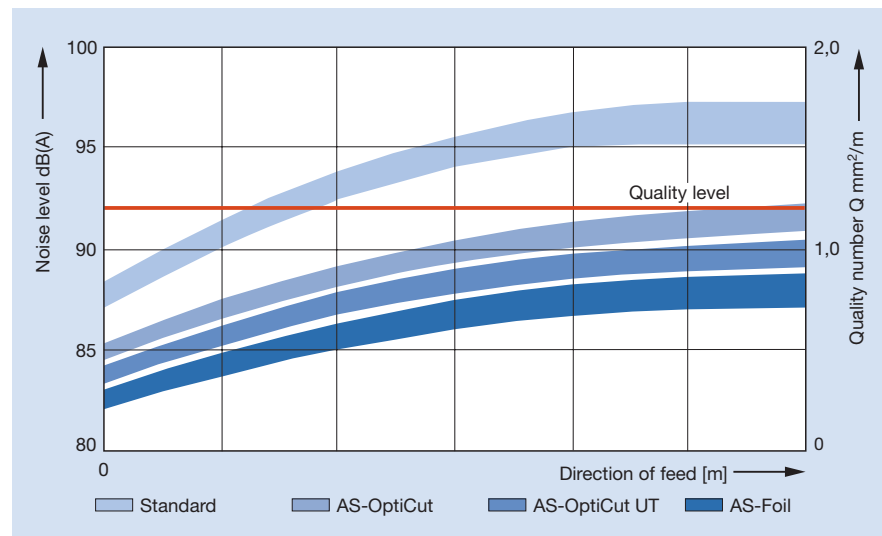


Sawblade with laminated noise damping.

1. Sawing

1.3 Cutting across grain

Comparison of the noise reduction of different designs of sawblades and edge quality Q depending on the performance.



Advantages of low-noise sawblades

- Optimum noise reduction.
- Longer performance time from vibration damping.
- High cut quality, less wear and down time.
- Quiet running because of the high stability of the tool body.
- Reduced noise level of up to 10 dB(A) – 50% noise reduction – compared to standard sawblades.
- Increase in noise level due to blunting is hardly noticeable.
- Better operator working conditions from lower noise exposure.
- Can be resharpened on all popular makes of automatic saw sharpening machines.

1. Sawing

1.3 Cutting across grain 1.3.1 Circular sawblades for trimming



Trimming cuts from the top

Application:

For trimming and cutting to length.

Machine:

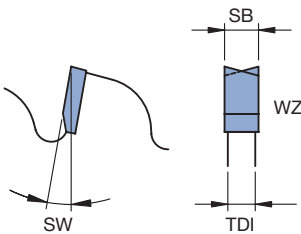
Length-cutting, trimming, radial, mitre and double length-cutting circular saws.

Workpiece material:

Softwood and hardwood, dry up to 160 mm cutting height.

Technical information:

With negative hook angle for kerfs with feed, recommended for manually operated machines.



Sawblade - cutting height 160 mm, with negative hook angle

WK 160-2-01

D mm	SB mm	TDI mm	BO mm	BO _{max.} mm	FLD mm	Z	ZF	SW Degree	ID
300	3,2	2,2	30	100	120	30	WZ	-5	057700 ●
350	3,2	2,2	30	100	120	36	WZ	-5	057701 ●
400	3,8	2,8	30	100	120	42	WZ	-5	057702 ●
450	3,8	2,8	30	120	140	48	WZ	-5	057703 ●
500	4,4	3,0	30	120	140	54	WZ	-5	057704 ●



Trimming cuts from the top

Application:

For trimming and cutting to length.

Machine:

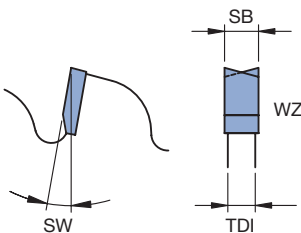
Length-cutting, trimming, radial, mitre and double length-cutting circular saws.

Workpiece material:

Softwood and hardwood dry up to 90 mm cutting height.

Technical information:

With negative cutting angle and medium number of teeth for cutting with feed, recommended for manually operated machines.



Sawblade - cutting height 90 mm, with negative hook angle

WK 160-2

D mm	SB mm	TDI mm	BO mm	BO _{max.} mm	FLD mm	Z	ZF	SW Degree	ID
255	2,8	2,0	30	60	100	60	WZ	-5	065874 ●
305	3,0	2,2	30	80	120	60	WZ	-5	065875 ●
355	3,2	2,4	30	80	120	72	WZ	-5	065876 ●
400	3,8	2,8	30	80	140	72	WZ	-5	065877 ●
450	4,0	2,8	30	80	140	72	WZ	-5	065878 ●
500	4,4	3,0	30	80	140	72	WZ	-5	065879 ●

1. Sawing

1.3 Cutting across grain 1.3.1 Circular sawblades for trimming



Trimming cuts from the top

Application:

For trimming and cutting to length for tear-free cuts e.g. for moulding production.

Machine:

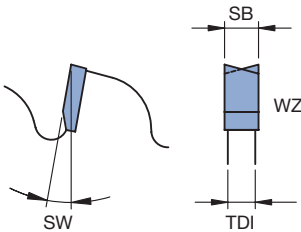
Length-cutting, trimming, radial, mitre and double length-cutting circular saws.

Workpiece material:

Softwood and hardwood dry up to 60 mm cutting height.

Technical information:

With negative cutting angle and high number of teeth for cutting with feed, recommended for manually operated machines.



Sawblade - cutting height 60 mm, with negative hook angle

WK 160-2-10

D mm	SB mm	TDI mm	BO mm	BO _{max.} mm	FLD mm	Z	ZF	SW Degree	ID
200	3,2	2,6	20	60	80	72	WZ	-5	065872 ●
250	3,2	2,6	30	80	100	80	WZ	-5	065873 ●
300	3,2	2,6	30	80	120	96	WZ	-6	065870 ●
350	3,5	2,8	30	80	120	108	WZ	-5	065880 ●
400	3,5	2,8	30	80	120	120	WZ	-5	065881 ●



Trimming cuts from the top - cutting height 140 mm

Application:

For noise-reduced trimming and cutting to length.

Machine:

Length-cutting, trimming, radial, mitre and double length-cutting circular saws.

Workpiece material:

Softwood and hardwood, wet or dry, up to 140 mm cutting height.

Technical information:

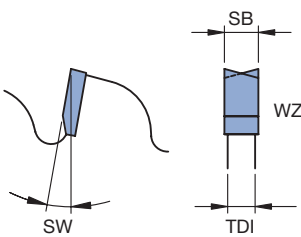
With negative cutting angle for cutting with feed, recommended for manually operated machines. **AS OptiCut UT** design - Noise reduction during no load operation by up to 8 dB(A). Tool body with vibration damping laser ornaments and irregular tooth pitch.



AS OptiCut UT sawblade with negative hook angle

WK 180-3-51

D	SB	TDI	BO	BO _{max.}	NLA	FLD	Z	ZF	SW	ID	
mm	mm	mm	mm	mm	mm	mm			Degree		
255	2,8	2,0	30	80	2/7/42 2/10/60	80	48	WZ	-5	069085	●
305	2,8	2,0	30	80	2/7/42 2/10/60	80	54	WZ	-5	069086	●
350	3,2	2,2	30	80	2/7/42 2/10/60	120	60	WZ	-5	069002	●
400	3,2	2,2	30	80	2/7/42 2/10/60	120	60	WZ	-5	069087	●
450	3,8	2,8	30	80	2/7/42 2/10/60	140	48	WZ	-5	069003	●
500	4,4	3,2	30	80	2/7/42 2/10/60	140	54	WZ	-5	069004	●



1. Sawing

1.3 Cutting across grain

1.3.2 Crosscut sawblades - noise-reduced



Trimming cuts from the top - cutting height 140 mm

Application:

For noise-reduced trimming and cutting to length.

Machine:

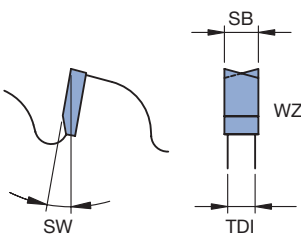
Length-cutting, trimming, radial, mitre and double length-cutting circular saws.

Workpiece material:

Softwood and hardwood, wet or dry, up to 140 mm cutting height.

Technical information:

With negative cutting angle for cutting with feed, recommended for manually operated machines. **AS LowNoise foil** design - Noise reduction during operation by up to 10 dB(A). Vibration damped tool body by steel foil.



AS LowNoise foil - sawblade with negative hook angle

WK 180-3-01

D	SB	TDI	BO	BO _{max.}	NLA	FLD	Dampfoil	Z	ZF	SW	ID
mm	mm	mm	mm	mm	mm	mm				Degree	
255	3,2	2,2	30	70		80	left	48	WZ	-5	065350 ●
305	3,2	2,2	30	70		80	left	54	WZ	-5	065351 ●
350	3,5	2,5	30	60		120	left	60	WZ	-5	065958 ●
350	3,5	2,5	30	60		120	right	60	WZ	-5	065959 ●
400	3,5	2,5	30	70		140	left	60	WZ	-5	065352 ●
450	4,0	2,8	30	70	2/10/60	140	left	48	WZ	-5	065945 ●
500	4,4	3,0	30	60		140	left	54	WZ	-5	065948 ●

1. Sawing

1.3 Cutting across grain 1.3.3 Sawblades for cutting across grain



Cutting across grain

Application:

For cross-cutting and sizing tear-free cuts with medium cutting heights.

Machine:

Length-cutting, mitre saws and circular saw benches.

Workpiece material:

Solid wood, dry, up to 80 mm cutting height as well as plastic- and paper-coated and veneered wood materials or laminated wood up to 40 mm cutting height.

Technical information:

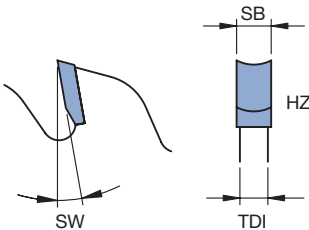
Teeth identical both sides with concave chip clearance.



Sawblade - cutting height 80 mm

WK 206-2

D mm	SB mm	TDI mm	BO mm	NLA mm	FLD mm	Z	ZF	SW Degree	ID
350	3,2	2,2	30	2/10/60	120	54	HZ	10	058805 ●
400	3,2	2,2	30	2/10/60	140	60	HZ	10	058806 ●



Cutting across grain

Application:

For cross-cutting and sizing tear-free cuts with low cutting heights.

Machine:

Length-cutting, mitre saws and circular saw benches.

Workpiece material:

Softwood and hardwood, wet or dry, up to 50 mm cutting height, as well as plastic- and paper-coated and veneered wood materials or laminated wood up to 35 mm cutting height.

Technical information:

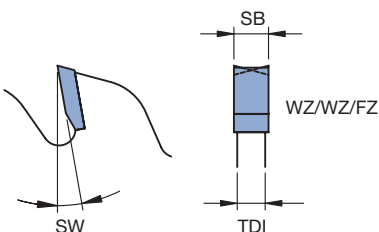
Special tooth shape for maximum cut quality. High number of teeth with alternate shear angle.



Sawblade - cutting height 50 mm

WK 159-2

D mm	SB mm	TDI mm	BO mm	NLA mm	FLD mm	Z	ZF	SW Degree	ID
255	2,8	2,0	30	2/10/60	120	80	WZ/FZ	10	065888 ●
305	3,0	2,2	30	2/10/60	120	100	WZ/FZ	10	065889 ●
355	3,0	2,2	30	2/10/60	120	120	WZ/FZ	10	065890 ●



1. Sawing

1.3 Cutting across grain 1.3.4 Sawblades - LowNoise design



Cutting across grain - cutting height 50 mm

Application:

For noise-reduced cross-cutting and sizing tear-free cuts with low cutting heights.

Machine:

Length-cutting, mitre saws and circular saw benches.

Workpiece material:

Softwood and hardwood, dry, up to 50 mm cutting height, as well as plastic- and paper-coated and veneered wood materials or laminated wood up to 35 mm cutting height.

Technical information:

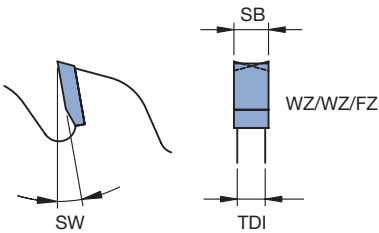
Special tooth shape for maximum cut quality. High number of teeth with alternate shear angle. **AS OptiCut** design - Noise reduction during no-load operation by up to 5 dB(A). Tool body with vibration damping laser ornaments.



Sawblade - AS OptiCut

WK 179-2-50

D	SB	TDI	BO	NLA	FLD	Z	ZF	SW	ID
mm	mm	mm	mm	mm	mm			Degree	
300	3,0	2,2	30	2/10/60	100	100	WZ/FZ	10	068550 ●





End trimming cuts - high feed speeds

Application:

For trimming and cutting to length even in wet wood. For high feed speeds at cycle times of e.g. 0.3 to 1.0 sec.

Machine:

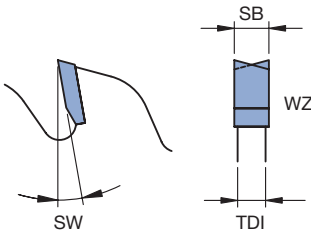
Length-cutting, trimming and optimising circular saw benches.

Workpiece material:

Softwood and hardwood, wet or dry.

Technical information:

With large lateral tooth overhang and high number of teeth.



Sawblade

WK 150-2, WK 150-2-11

D mm	SB mm	TDI mm	BO mm	NLA mm	Z	ZF	SW Degree	ID
400	3,5	2,8	30	2/15/63	120	WZ	10	057525 ●
450	5,0	3,2	30	2/15/63	108	WZ	20	057524 ●
500	5,2	3,2	30		120	WZ	20	057516 ●
550	5,2	3,2	30		120	WZ	20	057517 ●
600	6,0	4,0	30		120	WZ	20	057518 ●

1. Sawing

1.3 Cutting across grain

1.3.5 Crosscut sawblades - optimisation machines



End trimming cuts - high feed speeds - LowNoise design

Application:

For noise-reduced trimming and cutting to length even in wet wood. Cycle times of e.g. 0.3 to 1.0 sec.

Machine:

Length-cutting, trimming and optimising circular saw benches.

Workpiece material:

Softwood and hardwood, wet or dry.

Technical information:

With large lateral tooth overhang and high number of teeth.

AS OptiCut UT design - Noise reduction during no-load operation by up to 8 dB(A).

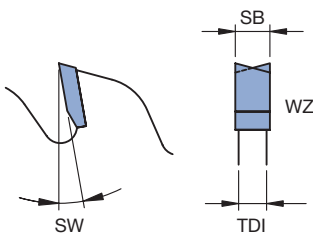
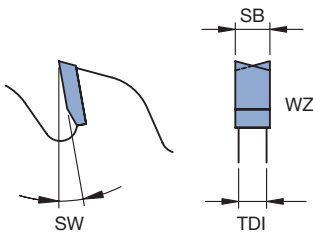
Tool body with vibration damping laser ornaments and irregular tooth pitch.



Sawblade - AS OptiCut UT

WK 150-2

D	SB	TDI	BO	NLA	Z	ZF	SW	ID
mm	mm	mm	mm	mm			Degree	
450	4,8	3,5	30	2/15/63	138	WZ	10	057526 ●
500	4,8	3,5	30	2/15/63	144	WZ	10	057528 ●
520	4,6	3,4	30	2/15/63	144	WZ	10	057529 ●
550	5,2	3,2	30	2/15/63	160	WZ	10	057530 ●
600	5,4	4,0	30	2/15/63	172	WZ	10	057531 ●



Application:

For noise-reduced trimming and cutting to length even in wet wood. Cycle times of e.g. 0.5 to 1.2 sec.

Technical information:

With large lateral tooth overhang and high number of teeth.

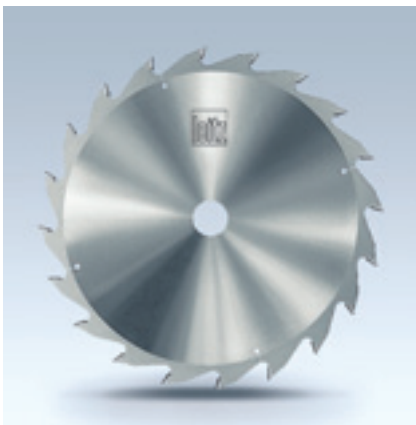
AS LowNoise UT design - Noise reduction during no-load operation by up to 6 dB(A).

Tool body with irregular tooth pitch.

Sawblade - LowNoise UT

WK 150-2

D	SB	TDI	BO	NLA	Z	ZF	SW	ID
mm	mm	mm	mm	mm			Degree	
500	5,0	3,2	30	2/15/63	96	WZ	10	057534 ●
550	5,0	3,2	30	2/15/63	96	WZ	10	057535 ●
600	5,8	4,0	30	2/15/63	96	WZ	10	057536 ●



End trimming cuts and across grain cuts

Application:

For trimming, cutting to length and angular cutting on 5-axis machining centres.

Machine:

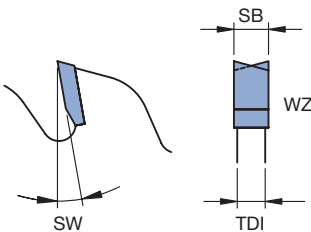
Length-cutting, trimming, joinery machines and CNC-controlled pre-cut joinery machine lines.

Workpiece material:

Softwood and hardwood wet and dry or cross-laminated solid wood board.

Technical information:

With large lateral tooth overhang.



Sawblade

WK 150-2-09

D	SB	TDI	BO	BO _{max.}	NLA	FLD	Z	ZF	SW	ID
mm	mm	mm	mm	mm	mm	mm			Degree	
600	5,9	4,0	30		4/9/74		48	WZ	20	057537 ●
630	5,0	3,6	30	150		200	62	WZ	20	057514 ●
700	5,9	4,0	30				72	WZ	20	057538 ●
735	5,9	4,4	30		4/8,3/90 4/15/415 12/9/140	160	68	WZ	20	057539 ●
760	5,9	4,4	30		4/8,3/90 4/15/415 12/9/140	160	68	WZ	20	057540 ●
800	5,9	4,4	30		4/8,3/90 4/15/415 12/9/140	160	70	WZ	20	057541 ●