KINKELDER®
the cutting experts

TUBE CUTTING

Cutting tubes to length on automatic (flying cut-off) sawing machines

HSS Series
Cutting harder materials at higher cutting speeds

Due to a sophisticated PVD coating for wear protection which achieves a very low friction coefficient, the EC 3000 saw blade is a cost efficient solution for cutting structural and non-alloy tool steel thin walled tubes.

APPLICATIONS: All structural steel , non-alloy tool steel and stainless steel thin walled tubes. Tensile strength up to 600 N / mm^2.

PARAMETERS:		Suggested cutting speed	Blade life
	Steel	60 - 120 m/min	
	Austenitic stainless steel (300 series)	30 - 50 m/min	≈ 1 m^2
	Ferritic w/o Ti (409 & 412)	220 - 260 m/min	≈ /< 1 m^2
	Ferritic with Ti (441)	60 - 120 m/min	

MACHINES: Automatic

Pulsar saw blades distinguish themselves by a low friction coefficient, which makes them especially efficient at cutting harder materials at higher cutting speeds. Also very suitable for cutting stainless steel.

APPLICATIONS: Ideal for cutting stainless steel and sticky, gummy materials

PARAMETERS:		Suggested cutting speed	Blade life
	Steel	60 - 120 m/min	
	Austenitic stainless steel (300 series)	30 - 50 m/min	0,8 - 1,5m^2
	Ferritic w/o Ti (409 & 412)	220 - 260 m/min	< 1,5 m^2
	Ferritic with Ti (441)	60 - 120 m/min	

MACHINES: Automatic

A special multilayer coating with high thermal insulation capacity enables the Fusion saw blade to cut harder materials at high cutting speeds with spray mist coolant.

APPLICATIONS: Medium to high tensile strength (carbon) steel

PARAMETERS: Suggested cutting speed: 100 - 180 m/min. Feed: 0,04 - 0,15 mm/tooth

MACHINES: Semi-automatic and automatic machines, flying cut-off

Performance 3000 is an allround saw blade for industrial applications on a very high performance level. The sophisticated multilayer coating combines high temperature resistance with a very low friction coefficient.

APPLICATIONS: Cutting harder materials at higher cutting speeds

PARAMETERS: Suggested cutting speed: 100 – 180 m/min.Feed: 0,04 – 0,15 mm/tooth

MACHINES: Semi-automatic and automatic machines

Champion & CX series
The best choice for high volume steel tube cutting

Champion TL is our latest blade for cutting tubes with tensile strength of 600 – 1,100 N/mm² on high output/high quality saw machines.

APPLICATIONS:	Cutting steel tubes with a tensile strength up of 600 – 1,100 N/mm²
PARAMETERS:	Suggested cutting speed: 180 – 280 m/min. Feed: 0.04 – 0.12 mm/tooth
MACHINES:	Rattunde, Sinico, Bewo, RSA, Adige, Tsune

Champion TH has been developed for cutting (thin walled) tubes with tensile strengths up to 1,800 N/mm², using cutting speeds up to 350 m/min and very high feed rates.

APPLICATIONS:	Cutting thin walled steel tubes with a tensile strength up to 1,800 N/mm²
PARAMETERS:	Suggested cutting speed: 200 – 350 m/min. Feed: 0,04 – 0,2 mm/tooth
MACHINES:	Rattunde, Sinico, Bewo, RSA, Adige, Tsune

The CX 3 saw blade has been developed for cutting tubes on high performance automatic sawing machines, at a higher maximum cutting speed than with HSS saw blades. It is most effective on sawing machines with accurate control of chip load and variable feed rate. Bigger tips are applied at pitches > 9mm for added stability.

APPLICATIONS:	Steel tubes with a tensile strength between 600 to 1,500 N/mm²
PARAMETERS:	Suggested cutting speed: 180 - 280 m/min. Feed: 0,04 - 0,16 mm/tooth.
MACHINES:	Rattunde, Sinico, Bewo, RSA, Plantool, Adige, OMP

The high nickel content of austenitic stainless steel tubes makes them difficult to cut with HSS saw blades. With the dedicated tooth geometry of the carbide tipped and PVD coated CX 4 saw blade, perfect surface finish and burr-free tube ends can be achieved.

APPLICATIONS:	Cutting austenitic stainless steel tubes
PARAMETERS:	Suggested cutting speed: 60 – 300 m/min. Feed: 0,04 – 0,16 mm/tooth
MACHINES:	Rattunde, Bewo, Sinico, Tsune

The CX 5 saw blade has been specifically designed to cut thin walled tubes. Because of its light cutting properties it is also very well suited for use on a wide range of automatic cut-off machines.

APPLICATIONS:	Thin wall high hardness tube cutting on lighter machines. High performance cutting of thin walled tubes and unstable profiles on high-end machines.
PARAMETERS:	Suggested cutting speed: 160 – 280 m/min. Feed: 0,025 – 0,12mm/tooth
MACHINES:	Kasto, Bewo, RSA, Adige, Sinico, Rattunde, Tsune

Flying cut-off
3 proven sawing concepts for ERW tube and pipe industry

A new generation of TubeMaster products has been developed, applying a new body design, a new carbide grade, a new tip geometry and a special coating. The new TubeMaster generation shows a higher blade life.

APPLICATIONS:	Orbital, flying cut-off applications
PARAMETERS:	Suggested cutting speed: 350 - 400 m/min. Feed: 0,04 -0,12 mm/tooth
MACHINES:	TubeMaster saw blades are available for all types of orbital cutting machines, such as MTM, OTO mills, Elmaksan, Kusakabe, Linsinger and SMS Meer.

The TubeMaster Stainless saw blade has specifically been developed for cutting stainless steel tubes on orbital flying cut-off machines. These saw blades can cope with cutting speeds between 60 – 120 m/min. TubeMaster Stainless offers high uptime due to a blade life up to 3,5 m^2, combined with high cut quality and production output.

APPLICATIONS:	Cutting stainless steel tubes on orbital flying cut-off machines
PARAMETERS:	Suggested cutting speed: 60 - 120 m/min. Feed: 0.035 - 0.10 mm/tooth
MACHINES:	TubeMaster Stainless saw blades are available for orbital cutting machines

ScarfMaster is a PVD coated carbide tipped saw blade featuring a very specific tooth geometry, while the tips themselves are made of a highly shock resistant type of carbide. The teeth are supported by a saw body with extra strong shoulders, which give the combination tooth/body very high stability and fracture resistance and therefore extended blade life.

APPLICATIONS:	Flying cut-off applications dealing with heavy ID Scarf
PARAMETERS:	Suggested cutting speed: 450 - 600 m/min. Feed: 0,04 mm/tooth.
MACHINES:	ScarfMaster saw blades are available for flying cut-off machines, such as MTM, OTO mills, Nakata and Olimpia.

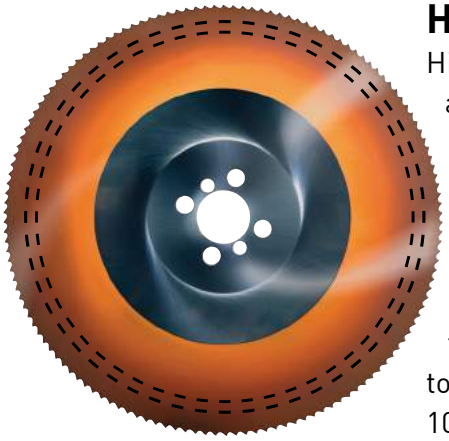
SpeedMaster is a TCT saw blade for flying cut-off applications on tube mills. It provides an opportunity to greatly increase the tube manufacturing line speeds and cut the production costs. Where cutting speed limits of coated HSS saw blades have been reached, SpeedMaster saw blades provide an effective solution.

APPLICATIONS:	Single and twin flying cut-off machines designed for TCT cutting with small or no ID-scarf. Cutting tubes with a tensile strength up to 1800 N/mm^2
PARAMETERS:	Suggested cutting speed: 200 - 600 m/min
MACHINES:	OTO mills, MTM, Olimpia 80, SMS Meer, Nakata

TUBE CUTTING WITH VISION

Kinkelder offers a wide range of circular saw blades for the Tube & Pipe industry, for stationary as well as flying cut-off applications. Dedicated technical advice and service are being provided to the world's most demanding customers by a worldwide network of local distributors.

In cooperation with machine manufacturers, we continuously challenge existing frontiers to enable end users to achieve higher outputs and lower costs per cut. Specialized technical support on site is offered to optimize specific application conditions.



HSS saw blades

High Speed Steel circular saw blades offer the lowest saw blade cost and are widely used on applications where blade cost is more important than output and surface quality.

An HSS blade is specified by a blade diameter and number of teeth, and is coated for most applications. For high performance applications, the teeth are coated as well. When the HSS blade passes a certain threshold (quality of the cut surface, machine torque), the blade has to be regrinded and in some cases recoated. This can be repeated for 10 – 15 times.

After each regrind, the blade diameter shrinks; when the tooth pitch is kept constant, the number of teeth becomes less. The maximum tube diameter that can be cut also diminishes over the life cycle of the HSS blade. With recoating, the number of cuts in between two regrinds will increase. As HSS blades have a defined conicity, regrinding can take place as far as the clearance allows.

TCT saw blades

Tungsten Carbide Tipped circular saw blades are typically being used for applications where output and surface quality are highly valued.

TCT blades are conceptualized and applied for single use. The geometry, carbide grinding and coating need to be perfectly controlled to offer the best performance.

Application specific blades can be developed to meet individual customers' needs. Very high outputs can be obtained with our TCT saw blades, provided machine conditions, cutting parameters and blade selection are optimal.

Applying single use TCT blades prevents regrinding logistics and extends the up-time of your sawing process.

For more information:

www.kinkelder.com

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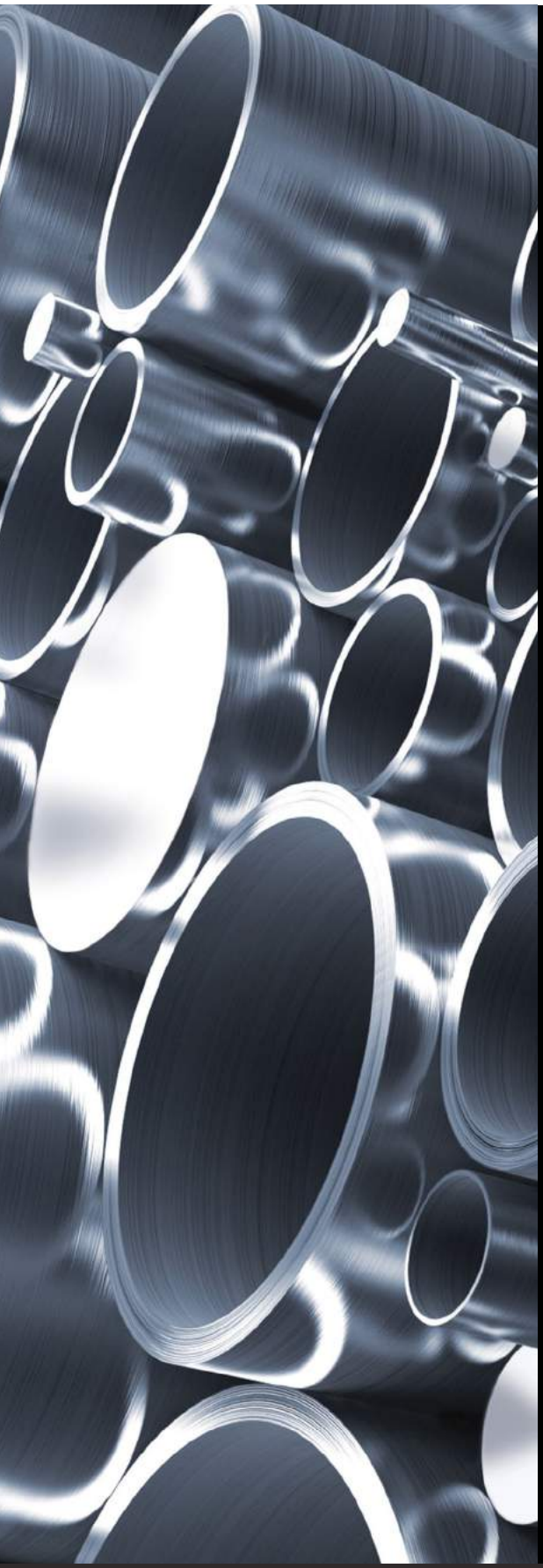

Kinkelder BV
Corporate Headquarters

Nijverheidsstraat 2
(Industrial Area Zuidspoor)
NL-6905 DL Zevenaar
P.O. Box 242
NL-6900 AE Zevenaar
The Netherlands

T: +31 (0)316 58 22 00
F: +31 (0)316 58 22 17
info@kinkelder.nl
www.kinkelder.com

Kinkelder Belgium
N.V./S.A.
Sint-Pieters-Leeuw, Belgium
T: +32 (0)2 465 64 42
info@kinkelder.be
www.kinkelder.be

KR Saws
Coventry, United Kingdom
T: +44 (0)24 7661 0907
sales@krsaws.co.uk
www.krsaws.co.uk

Kinkelder France SA
Orchies, France
T: +33 (320) 71 02 12
sales@kinkelder.fr
www.kinkelder.com/fr

Kinkelder France
Messein, France
T: +33 (383) 539713
info@kinkelder.fr
www.kinkelder.com/fr

AMV Service
Le Chambon Feugerolles
France
T: +33 (477) 405229
info@amvservice.com
www.amvservice.com

Sepio spol s.r.o.
Zborovice, Czech Republic
T: +420 (0)57 366 91 35
sepio@sepio.cz
www.sepio.cz

Kinkelder Cutting
Technology Co., Ltd.
Suzhou City, China
T: +86 (0)512 693 68 780
info@kinkelderchina.cn
www.kinkelder.com/cn

Saws International
USA Headquarters
Machesney Park (IL), USA
T: +1 (815) 965 6900
info@sawsinternational.com
www.sawsinternational.com

Kinkelder Saw Inc.
Canton (MI), USA
T: +1 (734) 453 1199
info@kinksaw.com
www.kinkelder.com/en

Kinkelder Cutting
Solutions Inc.
Louisville (KY), USA
T: +1 (502) 329 8244
cridge@kinkelderusa.com
www.kinkelder.com/en

Alabama Cutting
Technologies
Pell City (AL), USA
T: +1 (205) 884 49 71
info@alcuttingtech.com
www.alcuttingtech.com

KTS Sägetechnik GmbH
Zülpich, Germany
T: +49 (2252) 835178-0
info@kts-saegetechnik.de
www.kts-saegetechnik.de

Grasche GmbH
Remscheid, Germany
T: +49 (0) 2191-5615-0
info@grasche.de
www.grasche.de

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