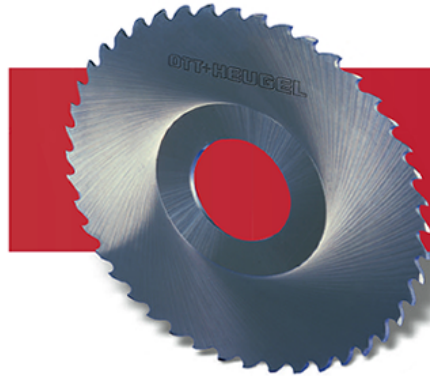


# OTT+HEUGEL



*Metal Cutting Circular Saw Blades  
made of HSS*

## OTT+HEUGEL HSS Saw Blades

OTT+HEUGEL high precision metal cutting circular saw blades made of HSS and HSS-E are for modern sawing and rotary index machines. The saw blades are well-known under the brand names SilverRex<sup>®</sup>, VapoRex<sup>®</sup> and CobaltRex<sup>®</sup>

SilverRex<sup>®</sup> represents the top quality for our high precision standard tools. SilverRex<sup>®</sup>-Alu with a special heat treatment is the optimum solution for high speed machines. VapoRex<sup>®</sup> saw blades are manufactured in the very same way as SilverRex<sup>®</sup> blades but are additionally vapor treated in a special production line. CobaltRex<sup>®</sup> are cobalt-alloyed saw blades recommended for cutting hard and tough steels under extreme cutting conditions. CobaltRex<sup>®</sup> are regularly supplied with a rake angle of 0° to 10°-12°.

## Steel Qualities

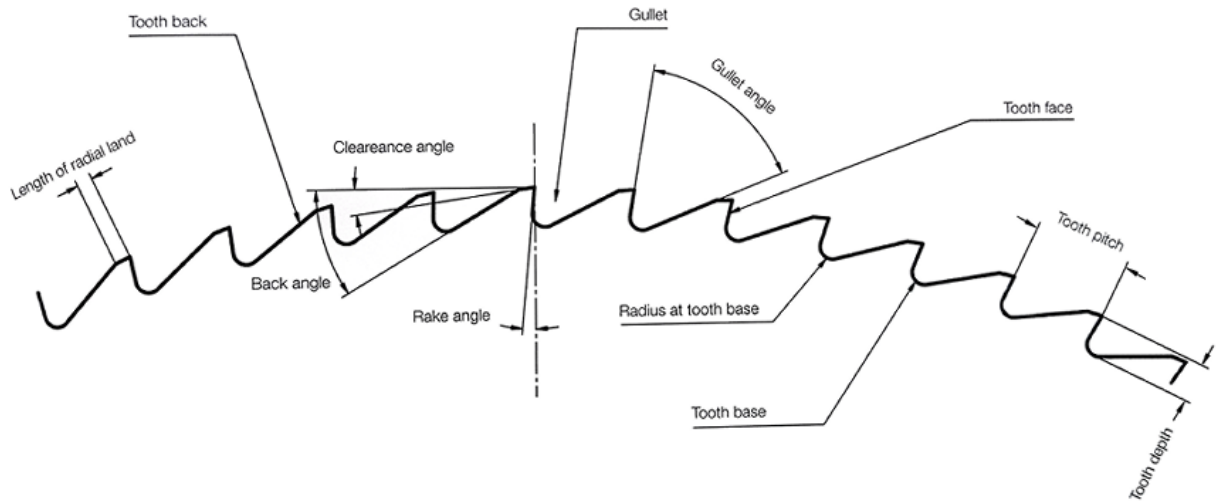
	O+H quality	DIN	AISI	JIS	Hardness
1.	HSS/DMo5	1.3343	M2	SKH51	64 HRC
2.	HSS-E (EMo5Co5)	1.3243	M35	SKH55	66 HRC
3.	<i>More steel qualities such as tool steel, powder material, etc. on demand.</i>				

## Chemical structure

O+H quality	C	Cr	Mo	V	W	Co
HSS/DMo5	0.90	4.1	5.0	1.8	6.4	-
HSS-E (EMo5Co5)	0.92	4.1	5.0	1.9	6.4	4.8

We reserve the right to make technical changes.

## Tooth Definition

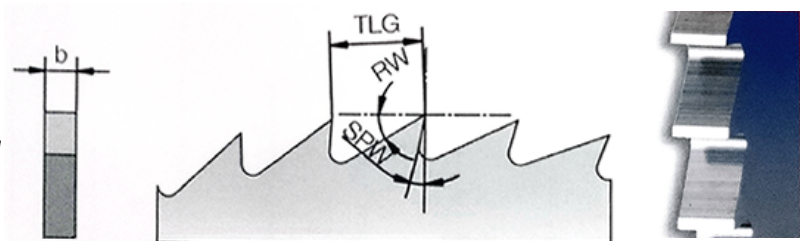


## Tooth Form Definition

Tooth form A+AW For small slitting depth and thin wall tubes.

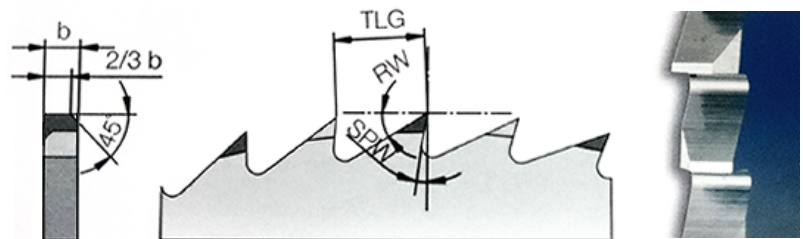
### Characteristic tooth form A:

Straight tooth (A) for normal sawing operations.



### Characteristic tooth form AW:

Straight tooth with alternating bevel (AW) for double chip breaking.



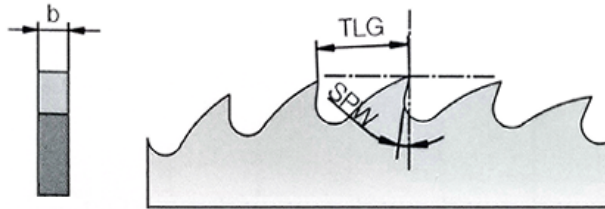
We reserve the right to make technical changes.

# OTT+HEUGEL

Tooth form B+BW For solid material, heavy slitting depth and tubes with wall thickness over 2.5mm.

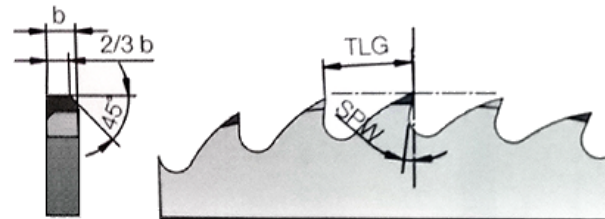
**Characteristic tooth form B:**

Curved tooth (B) for normal sawing operations.



**Characteristic tooth form BW:**

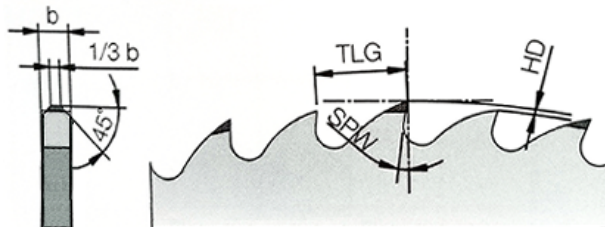
Curved tooth with alternating bevel (BW) for double chip breaking.



Tooth form C For solid material, heavy sawing operations and tubes with wall thickness over 2.5mm.

**Characteristic tooth form C:**

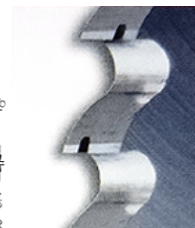
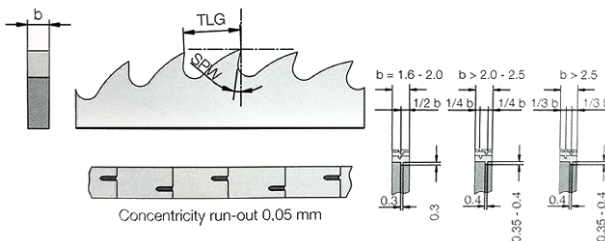
Curved tooth with high-low design (C) for triple chip breaking per tooth pair.



Tooth form BR For steel tubes up to wall thickness of 2.0 mm and high speed and feed sawing operations.

**Characteristic tooth form BR:**

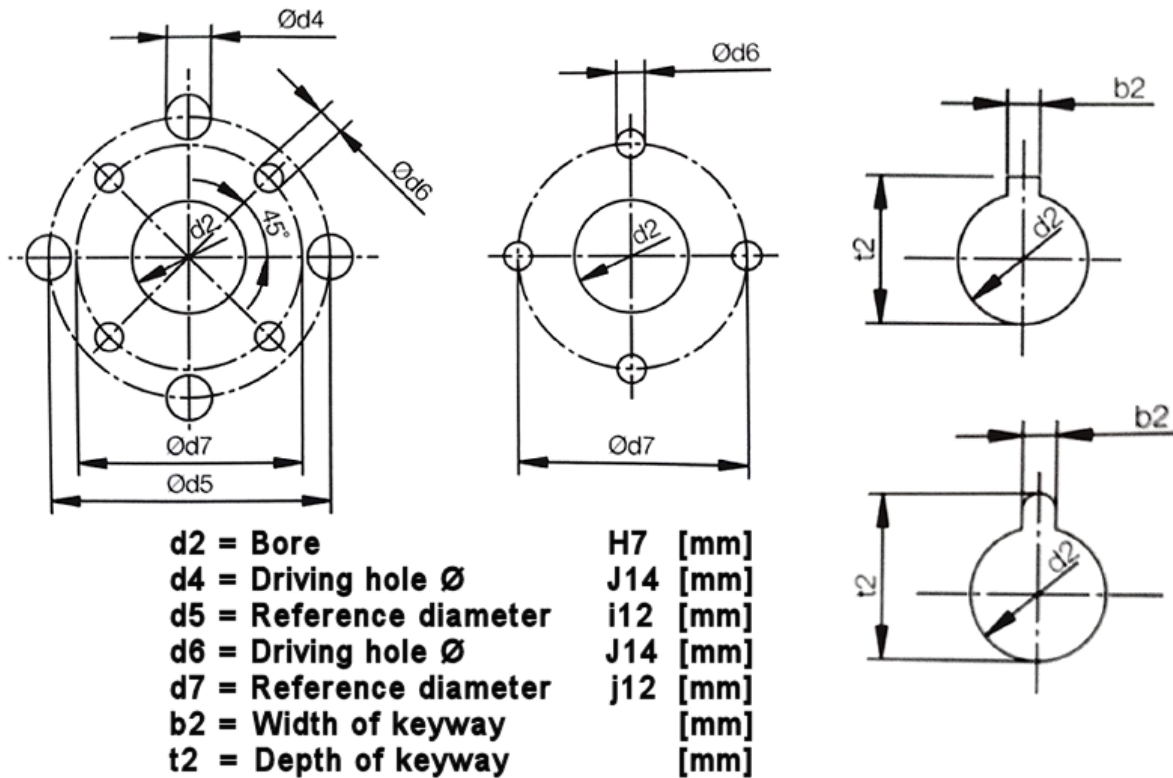
Curved tooth with chip breaker grinding (BR) for excellent removal.



We reserve the right to make technical changes.

## Driving Holes Definition

The driving holes of saw blades made of HSS or HSS-E are designed with pinholes or keyways. The technical execution of the keyway is based on DIN 138 or form E according to OTT+HEUGEL's working standard. The technical execution of the pinholes depends on the sawing or rotary index machine standards.



We reserve the right to make technical changes.



## Surface Technology

OTT+HEUGEL surface technology is defined by the roughness value and the treatment of the surface. The surface of tools made of HSS with an untreated and shiny design is called BASIC. The surface of tools made of HSS with a thin oxyd or steam treat layer is called CLASSIC. The execution of the surface is determined by the application of the tool. The roughness value is between 0.4 and 0.7  $\mu\text{m}$ .



### **BASIC**

*The BASIC surface technology is also well-known by the brand name SilverRex<sup>®</sup>*

*The typical application will be found by DIN saw blades.  
The saw blade is hardened and tempered and without any coating.*



### **CLASSIC**

*The execution is characterized by a steam-treated surface and is worldwide known by the brand name VapoRex<sup>®</sup>*

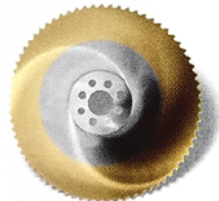
*The fine porous oxyd layer improves the coolant and friction behaviour and achieves a better tool performance.*

We reserve the right to make technical changes.

# OTT+HEUGEL

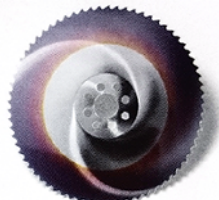
## Thin Coating Technology

OTT+HEUGEL offers various coatings in order to optimize tool performance. Wear shortens the life time of the saw blades. Since more and more production processes are being automated the wear of the tool is a steadily rising cost factor. Therefore wear protection is becoming increasingly important from the economic point of view. This is the point where the thin coating technology starts. Coatings with thin layers have been proved successful in the past years.



CONCEPT

**Character** *PVD coating based on titanium nitrid process for general sawing application in order to reduce weariness.*  
**Hardness** *2500 HV*  
**Friction Value** *0.65*  
**Colour** *gold*  
**Material** *Steel unalloyed, Tempering steel*



ADVANTAGE

**Character** *Multi layer coating with low friction value. Excellent coating for high performance and for material with a tensile strength over 800 N/mm<sup>2</sup> as well as stainless steel.*  
**Hardness** *2800 HV*  
**Friction Value** *0.45*  
**Colour** *gray*  
**Material** *Steel alloyed/unalloyed, Tempering steel, Stainless steel*



SPORTIVE

**Character** *This coating is recommended for very hard materials above 800 N/mm<sup>2</sup> and stainless steel in combination with high speed and feed.*  
**Hardness** *3000 HV*  
**Friction Value** *0.55*  
**Colour** *gray - black*  
**Material** *Steel alloyed, Stainless steel, Titanium alloyed/unalloyed, Cast Iron*



EVOLUTION

**Character** *Excellent coating for extreme conditions and demanding applications, good for all hard materials, stainless, titanium, etc.*  
**Hardness** *3300 HV*  
**Friction Value** *0.65*  
**Colour** *silver - gold*  
**Material** *Steel alloyed, Stainless steel, Titanium alloyed/unalloyed*

We reserve the right to make technical changes.

# OTT+HEUGEL

## Thin Coating Technology



**EXTREME**

**Character** PVD coating suitable for standard steels and copper, brass etc. with a low friction value.  
**Hardness** 2300 HV  
**Friction Value** 0.50  
**Colour** grey  
**Material** Copper, Bronze, Brass, Aluminium



**ESCAPE**

**Character** Coating with an excellent surface finish suitable for copper, brass, bronze and aluminium.  
**Hardness** 1000 HV  
**Friction Value** 0.30 - 0.50  
**Colour** silver  
**Material** Cast Iron, Copper, Bronze, Brass, Aluminium

We reserve the right to make technical changes.