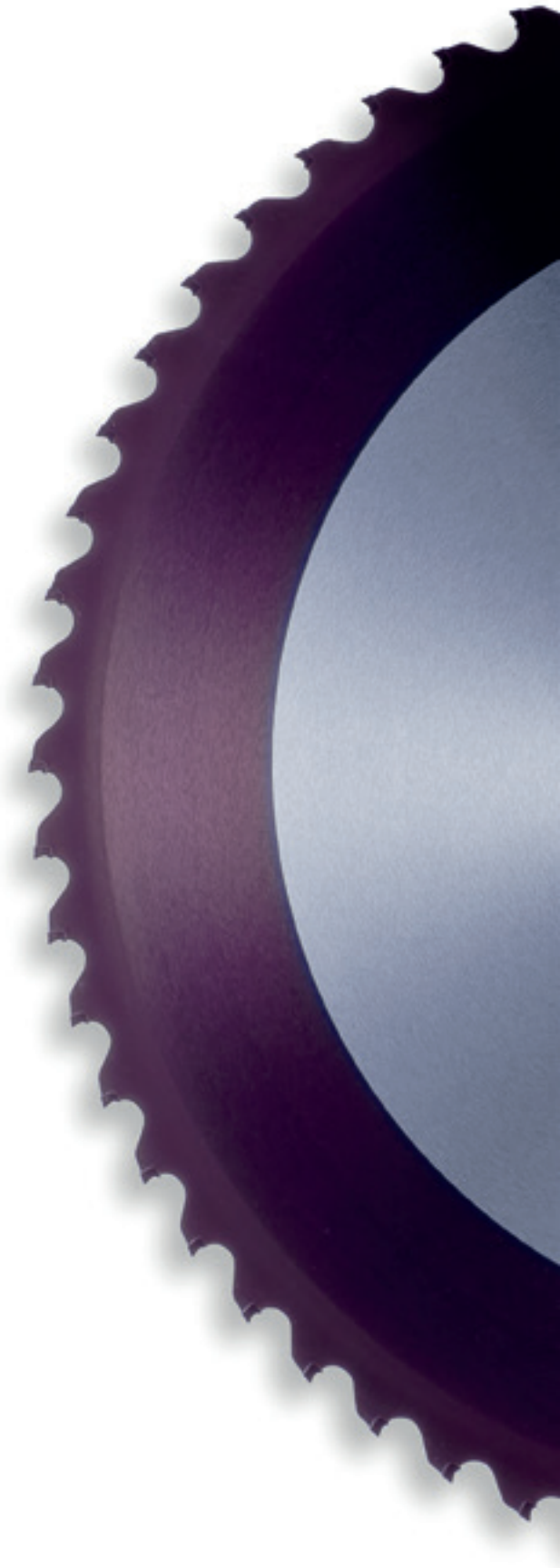
HM

CARBIDE TIPPED CATALOGUE
CATALOGUE CARBURE
CATALOGO METAL DURO

julia®
USA

THE POWER OF CUTTING



There are no materials that can withstand the power of our ideas and the hardness of our blades. The words "resistance, hardness, strength" are all common attributes of the metal, but for Julia they are synonomous with the problem solving techniques we use on a daily basis.

Aucun matériau ne peut résister à la puissance de nos idées et à la dureté de nos lames. Les termes "Résistance, Dureté et Force" sont des termes issus du métal, mais aussi pour nous chez Julia une façon de travailler pour aborder et résoudre vos problèmes quotidiens.

Ningun material puede resistir a la potencia de nuestras ideas y a la dureza de nuestras sierras. Las palabras "resistencia, dureza, potencia" estan asociadas al metal, pero para nosotros de Julia son tambien una manera de trabajar para enfrentar y resolver dia tras dia vuestros problemas.

WORLDWIDE LEADER FOR 40 YEARS

LEADER DEPUIS 40 ANS | LIDER DESDE 40 AÑOS

Julia was founded in 1978. We were born with a dream: to become the world leader in the production of circular saws for cutting metals. For decades, we have worked hard and learned from our mistakes.
Worldwide markets have rewarded us by recognizing our know-how, professionalism, competent solutions and fair business practices. Today, we are proud to say that our dream has become reality.

En 1978 nous avons fondé la société Julia. Nous avions un rêve: devenir le plus grand fabricant mondial de lames de scies circulaires pour couper le métal. Pendant des années nous avons travaillé dur et appris de nos erreurs.
Les marchés du monde entier reconnaissent aujourd'hui notre savoir-faire, notre professionnalisme et nos compétences. Nous pouvons dire que le rêve est devenu réalité.

En 1978 hemos fundado la Julia Utensili. Teniamos un sueño: ser los lìderes mundiales en la producciòn de sierras circulares para el corte de metales. Durante años hemos trabajado muy duro, aprendiendo tambien de nuestros errores.
Los mercados de todo el mundo nos han premiado reconociendo nuestro know how y nuestra profesionalidad, basado sobre valores de competencia. Hoy podemos decir que el sueño se ha hecho realidad.

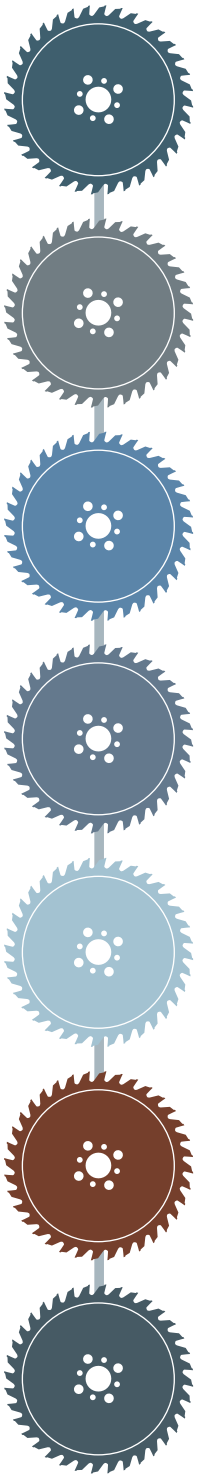
WE LIKE TO CUT AMBITIOUS GOALS

NOUS AIMONS COUPER DES OBJECTIFS AMBITIEUX
NOS GUSTA TENER METAS AMBICIOSAS

In order to satisfy our customer's requirements, our technicians are constantly studying the sawing machines that are available in the market. They communicate daily with the machine builders to optimize the performance of the tool and ensure it is properly matched to the machine and application. This effort has contributed to improve and widen our range of tools, by adding to the HSS circular saws also the HSS and HM integral DIN saws, the bandsaws, the hard metal circular saws for cutting light alloy and wood and eventually the circular saws in hard metal and Cermet for pipes and full steels cutting.

Pour satisfaire toutes les demandes, nos ingénieurs étudient en permanence les machines de coupe. En contact quotidien avec les fabricants pour optimiser les performances, ce travail a permis d'améliorer et d'élargir notre gamme de lames de scies circulaires HSS, de scies HSS DIN et carbure monobloc , de scies à ruban, de scies circulaires à pastilles carbure pour alliages légers et bois et enfin, de scies circulaires à pastilles carbure ou cermet pour les tubes et les barres en acier.

Para satisfacer todas las demandas, nuestros tecnicos estudian constantemente las maquinas de corte. Cada dia confrontamos ideas con los constructores para optimizar las prestaciones de maquina y herramienta. Este trabajo nos ha ayudado a mejorar y ampliar nuestra gama de herramientas juntando a las sierras circulares HSS, tambien las sierras DIN en HSS y HM integral, las sierras de cinta, las sierras circulares en HM para el corte de materiales no ferrosos y madera y al final tambien las sierras HM y Cermet para el corte de tubo y de barra de aceros.



HSS circular saw blades
Fraises-scies en HSS
Circulares en HSS

HSS slitting Saw
DIN en HSS
DIN en HSS

Solid carbide slitting saw
DIN aus HM
DIN en carbure monobloc
DIN en HM

Band-saw blades
Scies à rubans
Sierra de cinta

HM saw blades for non ferrous materials
Alliages légers
Aleaciones ligeras

HM saw blades for wood cutting
Bois
Madera

HM / CERMET
CARBURE/CERMET
HM/CERMET

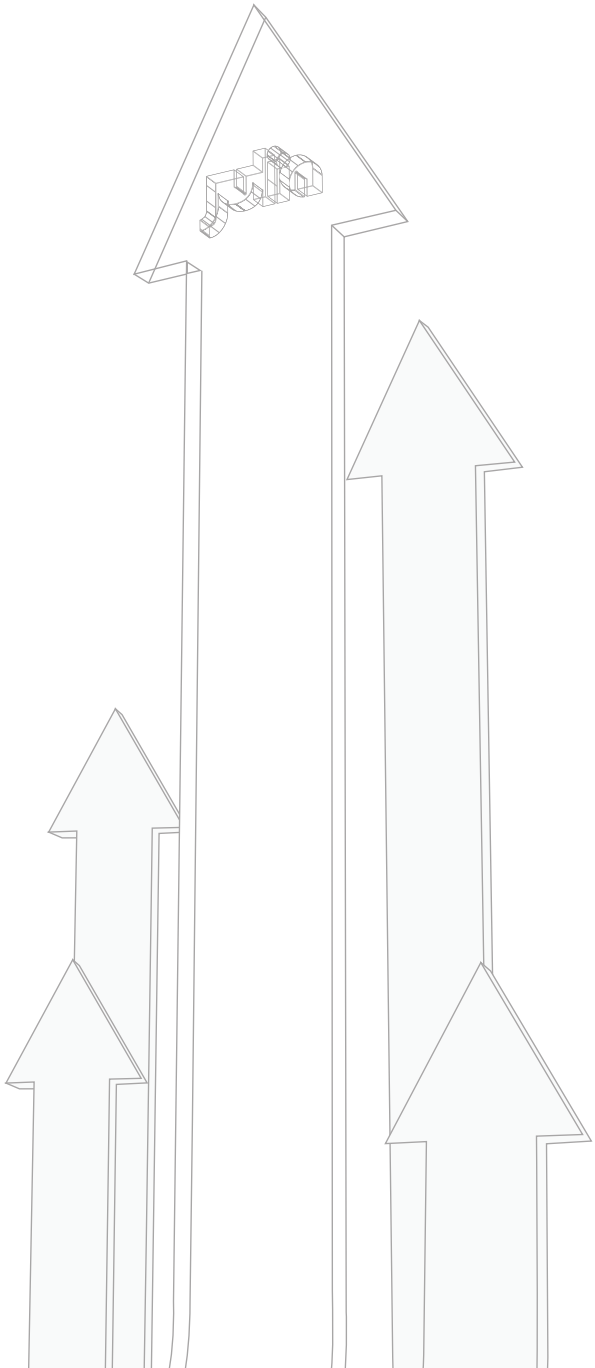
NOUS NE PARTONS PAS TOUJOURS LES PREMIERS, MAIS ARRIVONS PARMI LES PREMIERS
NO SALIMOS SIEMPRE LOS PRIMEROS PERO LLEGAMOS ENTRE LOS PRIMEROS

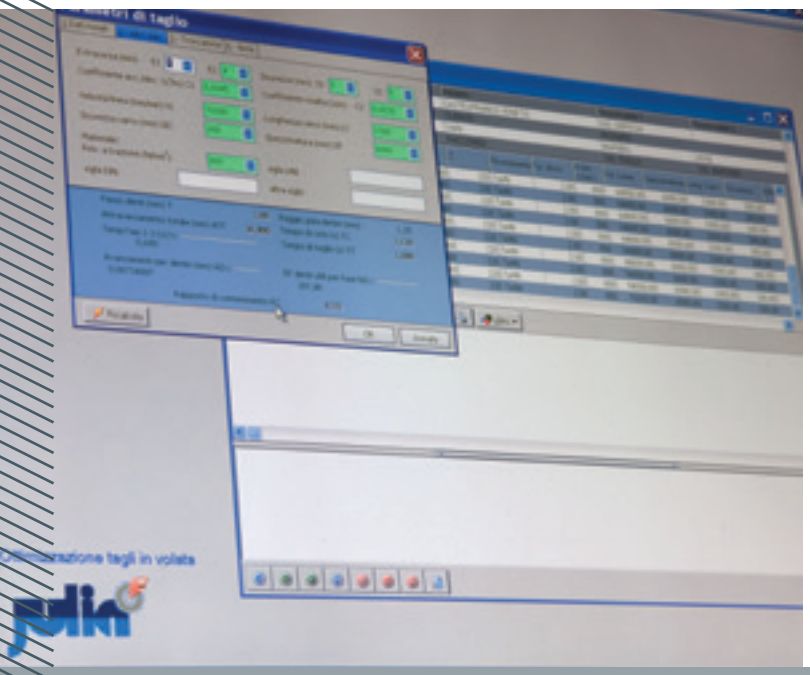
START SLOW AND FINISH STRONG

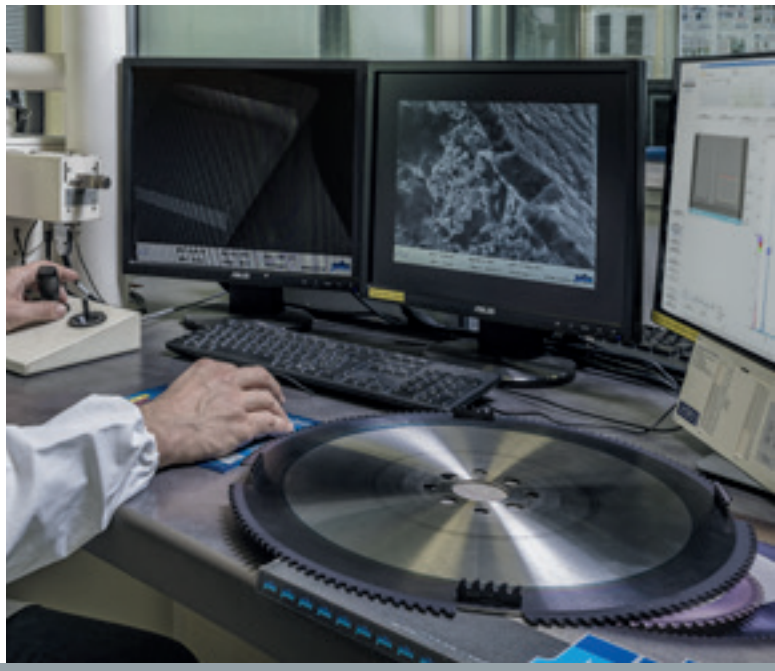
The engineering of our tools originates from studying our customers real needs. We have invested an enormous amount of time and money in the research and development process. The results of our development efforts are clearly visible in the ability of our tools to cut any kind of materials, even the most resistant, with unmatched performance and quality.

La conception de nos outils provient de l'étude et des besoins réels des clients. Il s'agit d'un processus dans lequel nous investissons massivement dans la recherche et le développement. Les résultats visibles de ces efforts sont nos outils qui coupent à travers n'importe quel matériau, même les plus résistants, et notre capacité à réussir là où les autres échouent.

Los proyectos de construcciòn de nuestras herramientas nacen del estudio real de las necesidades de los clientes. Este es un proceso por el cual invertimos muchos recursos tecnicos y de desarrollo. El resultado visible de este compromiso son nuestras herramientas que cortan cualquier material, hasta el mas resistente, obteniendo performance donde los demàs no llegan.







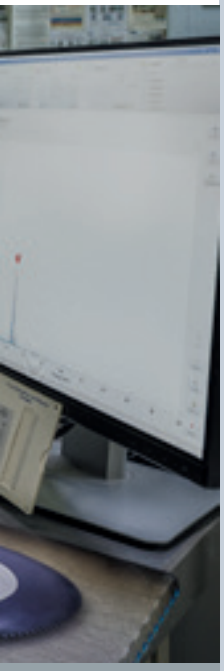
QUI CHERCHE TROUVE | QUIEN BUSCA, ENCUENTRA

SEEK AND YOU SHALL FIND

Our production is the heart and passion of our business. Our research and development team is a perfect mix of dynamic individuals, with a hightened sense of curiosity and more than thirty years of experience. We provide on-site analysis and technical support at end-users and OEM locations. Weekly discussions and reviews are used to keep all team members within Julia focused on problem solving and innovation. The outcome is a continuous improvement of our tools in order to make them suitable for evolving market. To provide the best solutions, all customers have access to our technicians and application specialists whenever required.

Le moteur qui nous pousse, c'est notre passion pour ce travail. Notre équipe de recherche et développement est une combinaison parfaite de dynamisme, de curiosité et d'une trentaine d'années d'expériences. Le travail effectué auprès des clients et des constructeurs de machines, devient l'objet de discussions hebdomadaires au sein de l'équipe. Le résultat est l'amélioration continue de nos outils afin de les rendre appropriés à l'évolution du marché. Tous nos clients peuvent contacter nos spécialistes et obtenir des solutions technologiques pour leurs diverses applications.

El motor que nos mueve es la pasiòn por este trabajo. Nuestro equipo de ingenierìa de proyectos y desarrollo es una perfecta uniòn entre dinamismo curiosidad y experiencia de mas de 30 años. Nuestro trabajo, que està operado junto a los clientes y fabricantes de maquinaria, cada semana se confronta en la sala de juntas con reuniones tecnicas, en las cuales participan todo el equipo tecnico. El resultado es mejorar continuamente la fabricaciòn de nuestras herramientas para adaptarlos a las exigencias del mercado. Todos los clientes pueden confiar y contactar con nuestros tecnicos para obtener soluciones tecnologicas para las diferentes aplicaciones.



KEEPING CONTROL

L'EXTERNALISATION N'EST PAS POUR NOUS | EL OUTSOURCING NO ES PARA NOSOTROS

The entire production process takes place in our facilities. We constantly monitor all phases of the manufacturing process to ensure compliance to our strict quality standards. All operations are checked to make sure all parameters and specifications fall within the specified tolerances to guarantee functionality, quality and safety. We manufacture all tooling for internal use in our manufacturing facility in Tarcento. By carefully controlling all steps of the production process and all tooling used within our facilities, we ensure the most reliable, consistent quality and best performance of the saw blades we produce.

La production a lieu dans nos installations, ce qui nous permet de surveiller en permanence tous les stades du processus de production. Dans nos ateliers chaque opération est contrôlée en fonction des paramètres et des expériences qui assurent la fonctionnalité, la qualité et la sécurité.
Afin d'obtenir des produits avec ces caractéristiques, nous avons décidé de produire l'ensemble de nos outils sur place à Tarcento. Nous considérons que de cette façon nos clients peuvent être sûrs d'obtenir des outils fiables et efficaces.

Todo el proceso productivo està hecho en nuestra fabrica y esto nos permite monitorear constantemente todas las fases de este proceso. En nuestras oficinas cada operaciòn individual està controlada segun los parametros que garantizan funcionalidad, calidad y seguridad. Por esta razòn y para obtener herramientas con estas calidades, hemos decidido fabricar todo en la unidad de Tarcento. Creemos que es la unica forma de garantizar que nuestros clientes reciban herramientas de calidad y alto rendimiento.

A GREAT START

In order to reach excellence, we need raw materials with the same characteristics. Our steels are manufactured according to ISO 9000 quality standards. All shipments are supplied with a chemical analysis certification in order to guarantee quality and consistency. To produce the highest quality saw blades, it is imperative that we start with the best available raw material.

Pour atteindre l'excellence, vous avez besoin de matières premières avec les mêmes caractéristiques. Nos produits en acier sont certifiées ISO 9000 et proviennent d'aciéristes européens. Toutes les fournitures sont accompagnées de certificats d'analyses chimiques et de coulées pour assurer une qualité constante et de hautes performances.

Para sobresalir en la excelencia se necesita de materias primas siempre con las mismas caracteristicas. Nuestros aceros estan producidos por parte de acererias certificadas ISO9000. Todas las entregas estàn acompañadas de analisis quimicos y certificados de colada las cuales garantizan totalmente la calidad del producto.

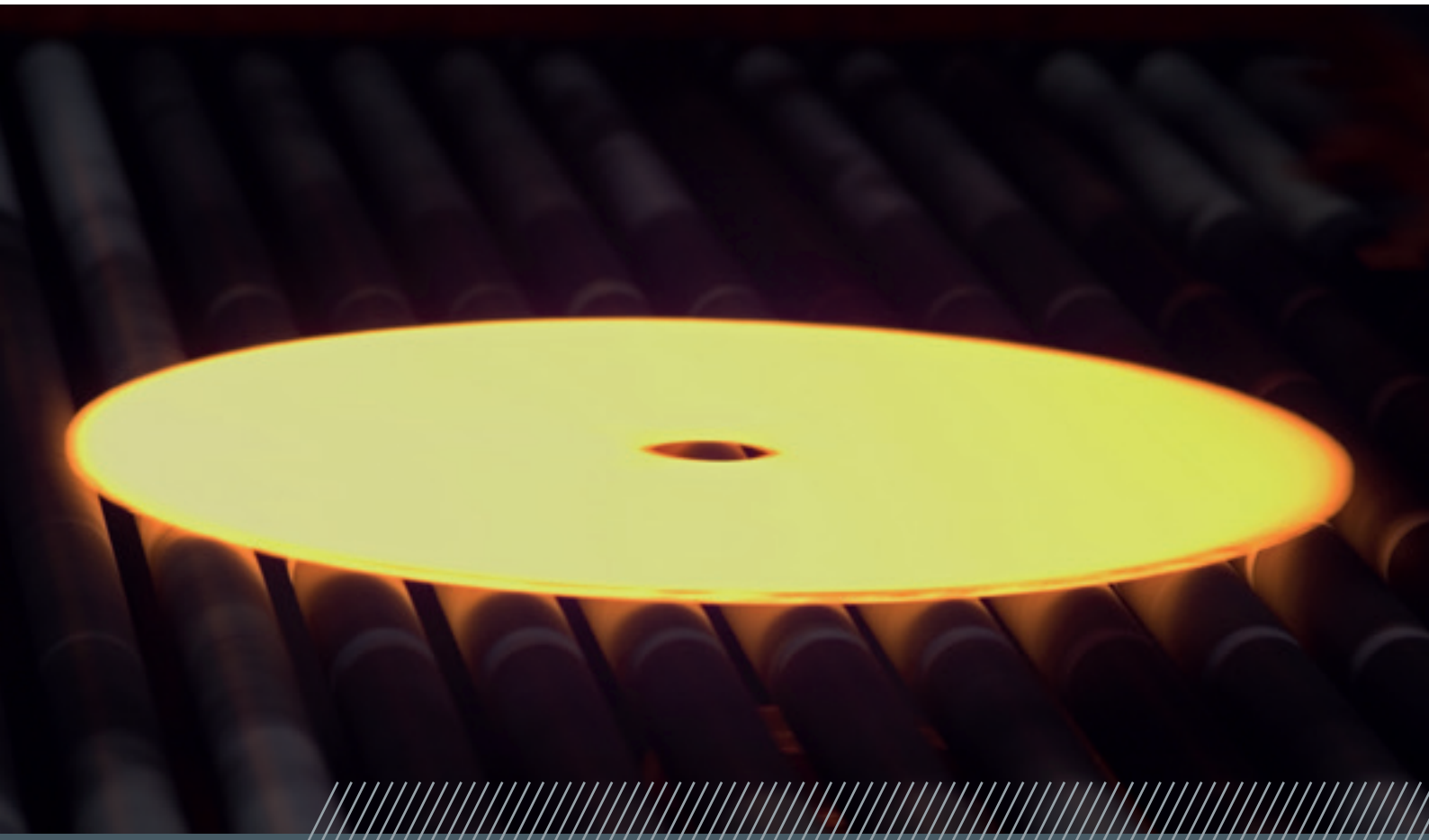
PRECISE AND SHARP, WITHOUT IMPERFECTIONS

COUPE PRECISE, MAIS SANS BAVURE | PRECISAS Y AFILADAS, PERO SIN REBABA

All steel sheets are cut with modern laser machines to ensure the perfect alignment with the models designed by C.A.D. from our technical office. The nitrogen laser cut reduces the thermal impact on the cut bodies and therefore prevent the formation of cracks and defects from overheating.

Toutes les plaques sont découpées au laser avec des équipements modernes pour assurer la conformité parfaite avec les plans conçus en C.A.D par notre département technique. La découpe laser utilise de l'azote, ce qui réduit l'impact thermique sur le corps usinés et empêche la formation de fissures ou de défauts de surchauffe.

Todas las chapas de acero estan cortadas con unidades laser de alta tecnologia, para garantizar una perfecta correspondencia con el diseño C.A.D. de nuestras oficinas tecnicas. El corte laser en nitrògeno que usamos reduce el calor sobre la chapa, evitando dejar esta con microfracturas o defectos debidos al calentamiento.



SOME LIKE IT HOT

NE PLIE PAS ET NE CASSE PAS | NO ME DOBLO Y NO ME QUIEBRO

The heat treating process is an integral part of our manufacturing. Our furnaces are the most modern you can find anywhere in the world. Constant monitoring of the metallurgy by our laboratory ensures our tools will have the correct hardness, abrasion resistance and austenitic grain structure.

Le traitement thermique est le cœur et la fierté de nos outils. Les installations dans notre service de traitement sont les plus modernas qu'il peut y avoir pour le traitement thermique des aciers. Le travail d'optimisation continue de notre laboratoire métallographique garantit la dureté, la ténacité et la taille du grain austénitique. Le résultat de cet engagement quotidien est un outil qui peut couper tous les matériaux, même les plus difficiles, endurant toutes les contraintes que l'outil peut rencontrer.

El tratamiento termico es el corazòn de nuestras herramientas. Las unidades de nuestro local de temple son extremadamente modernas y de ultima tecnologia. El continuo trabajo de optimizaciòn en el que opera nuestro departamento de analisis metalogràfico, garantiza a nuestras herramientas una dureza, tenacidad y dimensiones del grano del acero austenitico que dificilmente se encuentran en estos tipos de producto. El resultado de esta acciòn que opera dia tras dia ès una herramienta que podrà cortar todo tipo de material, hasta el mas duro, soportando todos los esfuerzos mecanicos que la herramienta recibe.

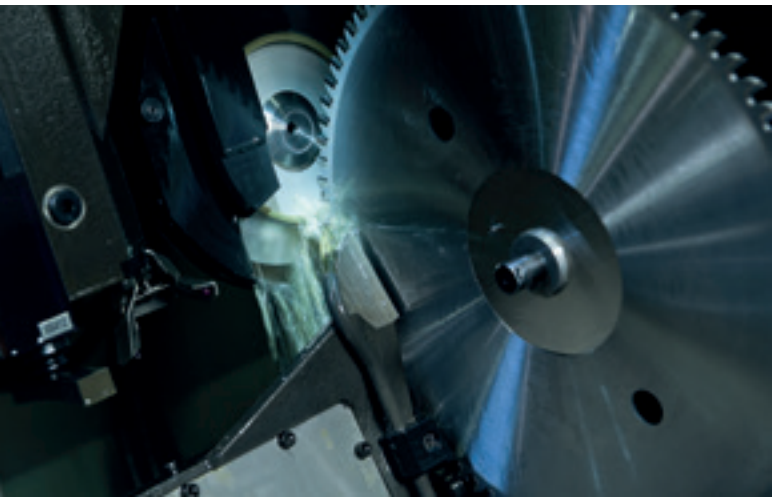
THE DAILY GRIND

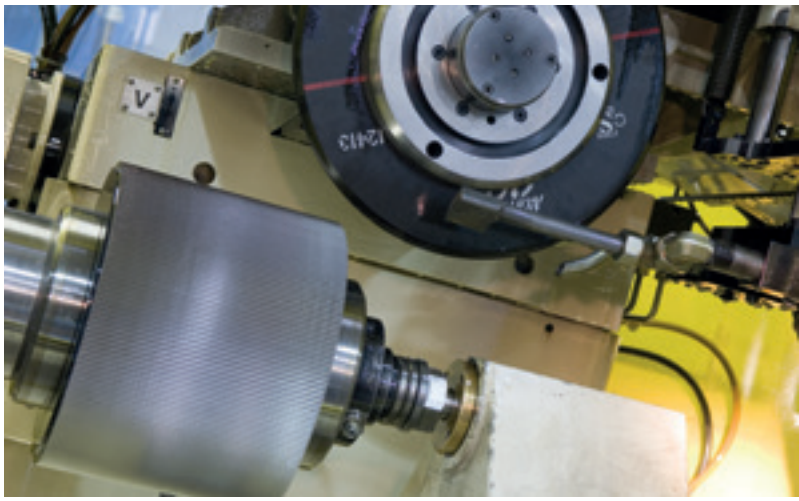
PRECIS, BRILLANT ET COUPANT
PRECISOS, BRILLANTES Y CORTANTES

All grinding operations for the bore, hub, sides and teeth are monitored "in process" in order to ensure repeatability, dimensional consistency and adherence to our tolerances.
We have dedicated considerable resources to manufacture our professional and integrated grinding systems and obtain tools with excellent sharpness, precision and surface roughness.

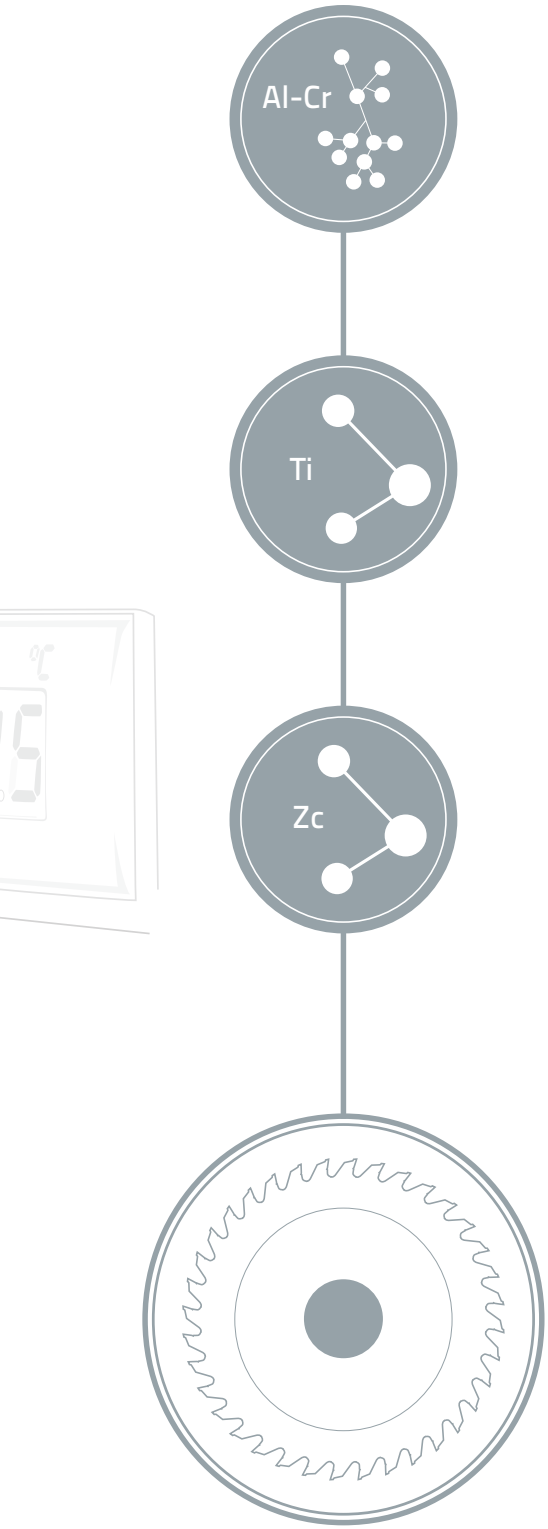
Tous les travaux de rectification, qu'il s'agisse de l'alésage, des flancs ou des dents, sont contrôlés selon un processus précis afin d'assurer la répétabilité, la constance dimensionnelle et le respect des tolérances.
Nous avons investi beaucoup de compétences professionnelles et d'importantes ressources financières afin de pouvoir produire des outils ayant d'excellentes capacités de coupe, de précision et générant un état de surface de qualité.

Todas las operaciones de rectificado del eje central, del boton, de la conicidad y de los dientes de las sierras, vienen controlados "in process", para garantizar que el producto sea siempre constante en dimensiòn y respetando las tolerancias. Hemos dedicado muchos recursos economicos y profesionales para realizar nuestros sistemas integrales de rectificaciòn para poder obtener herramientas con excelentes caracteristicas de corte, precisiòn y rugosidad superficial.





ONLY THE BEST COATINGS



MICROFILMS TOUJOURS EN PREMIERE MONDIALE
MICROCAPA SIEMPRE COMO NOVEDAD MUNDIAL

We utilize the most modern coating mulit-layer PVD (Physical Vapor Deposition) coating technology. We use cutting edge coating chambers supplied by Platit. Our nanocoating enables us to deposit a multilayer film with a much higher set of molecules per unit-of-surface. This provides a better hardness, better coating-adhesion and higher wear resistance.

Nous appliquons les technologies modernes de dépôts de surface (Physical Vapor Deposition). Nous avons cherché les meilleures installations, étudié, expérimenté et finalement réalisé notre centre de revêtements. Nos nano-revêtements nous permettent de déposer un film multi-couches avec un nombre très élevé de molécules par unité de surface, conférant ainsi à l'outil une plus grande dureté, une meilleure adhérence du revêtement et une meilleure résistance à l'usure. Le savoir-faire acquis au fil des années nous permet de produire des revêtements particulièrement innovants qui caractérisent les hautes performances de nos outils.

Nos hemos casado con las mas modernas tecnologias para el recubrimiento superficial (Physical Vapour Deposition). Hemos invertido en las mejores maquinas, estudiando y experimentando con el paso del tiempo. Al final hemos realizado nuestro centro de recubrimiento PVD.
Nuestros nano-recubrimientos nos permiten depositar una capa multistrato con un numero mayor de molèculas por unidad de superficie, dando de esta forma una mayor dureza a la herramienta, una mayor adhesion del material y una alta resistencia al desgaste. El Know-How conseguido durante estos años nos permite realizar recubrimientos particularmente innovadores que dan a nuestras herramientas performance del mas alto nivel.

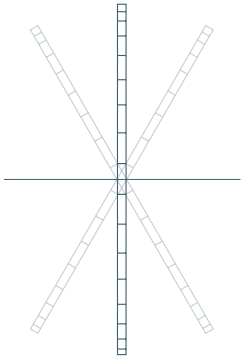
INSPECT FOR SUCCESS

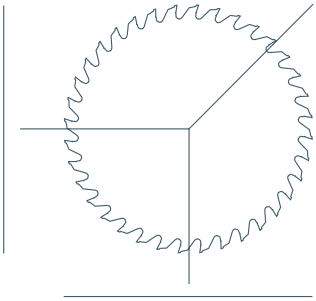
RIEN NE NOUS ECHAPPE | NADA SE NOS PASA

We only trust the careful and professional evaluation of our technicians for the final tests of our tools. They carefully test all of our circular tools before shipping. We inspect 100% of our products to ensure compliance to our strict quality standards.

Concernant le contrôle final des outils nous fonctionnons quelque peu à l'ancienne par soucis d'efficacité. 100% des produits sont contrôlés avant expédition. Pour ce faire, nous ne faisons confiance qu'à l'œil vigilant de nos techniciens professionnels qui mesurent méticuleusement tous les outils.

En los controles finales Julia trabaja a la manera "antigua", confiando en los tecnicos que avalan nuestras herramientas, haciendo pruebas de corte antes de enviar las herramientas. El control de eventuales defectos asi como la prueba final estan efectuados sobre el 100% de nuestros productos.





OBJECTIVE: ZERO TOLERANCE

OBJECTIF: TOLÉRANCE ZÉRO | OBJETIVO: TOLERANCIA CERO

To maintain the level of quality and consistency we demand, it is not always possible to find the machines that will achieve the end result we are searching for. In these cases, we are charged with the requirement to design, build, test and implement machines on our own. We have the expertise build special machines when the situation dictates.

Pour intégrer et appliquer les résultats de nos recherches sur nos produits, il ne nous est pas toujours possible de trouver la solution sur le marché. C'est pourquoi, nous sommes très souvent obligés de développer nous-même nos systèmes de production et de les laisser fabriquer en supervisant leur réalisation. C'est un choix stratégique très coûteux, mais qui a toujours porté ses fruits. C'est de toute évidence cette façon de faire qui nous a toujours permis de réduire de façon progressive et significative les tolérances de fabrication de nos outils.

Para integrar y aplicar el resultado de nuestras investigaciones,no siempre encontramos en el mercado las maquinas idoneas. Por eso hemos tenido que proyectar y desarrollar internamente estos tipos de maquinas que, siendo de todas formas muy costosas, nos garantiza una tolerancia minima en la fabricacion de nuestras herramientas.

HM

HARD METAL AND CERMET CIRCULAR SAWS FOR CUTTING METALS

FRAISES-SCIES A PASTILLES CARBURE ET CERMET POUR LA COUPE DES METAUX
SIERRAS CIRCULARES EN METAL DURO Y CERMET PARA EL CORTE DE METALES

It is with a great pleasure that we introduce this catalogue with our latest creations:
Carbide circular saws and Cermet circular saws for cutting steel tubes and solids.
We are proud to introduce a complete line of blades for both stationary and flying cutoff machines.

C'est avec grand plaisir que nous vous présentons ce catalogue avec nos dernières créations:
Les Fraises-scies à pastilles carbure et cermets pour la coupe de tubes et de profils pleins en acier.
Nous présentons une gamme complète d'outils pour tous les besoins de coupe, que ce soit sur machines statiques ou pour des coupes à la volée ou orbitales.

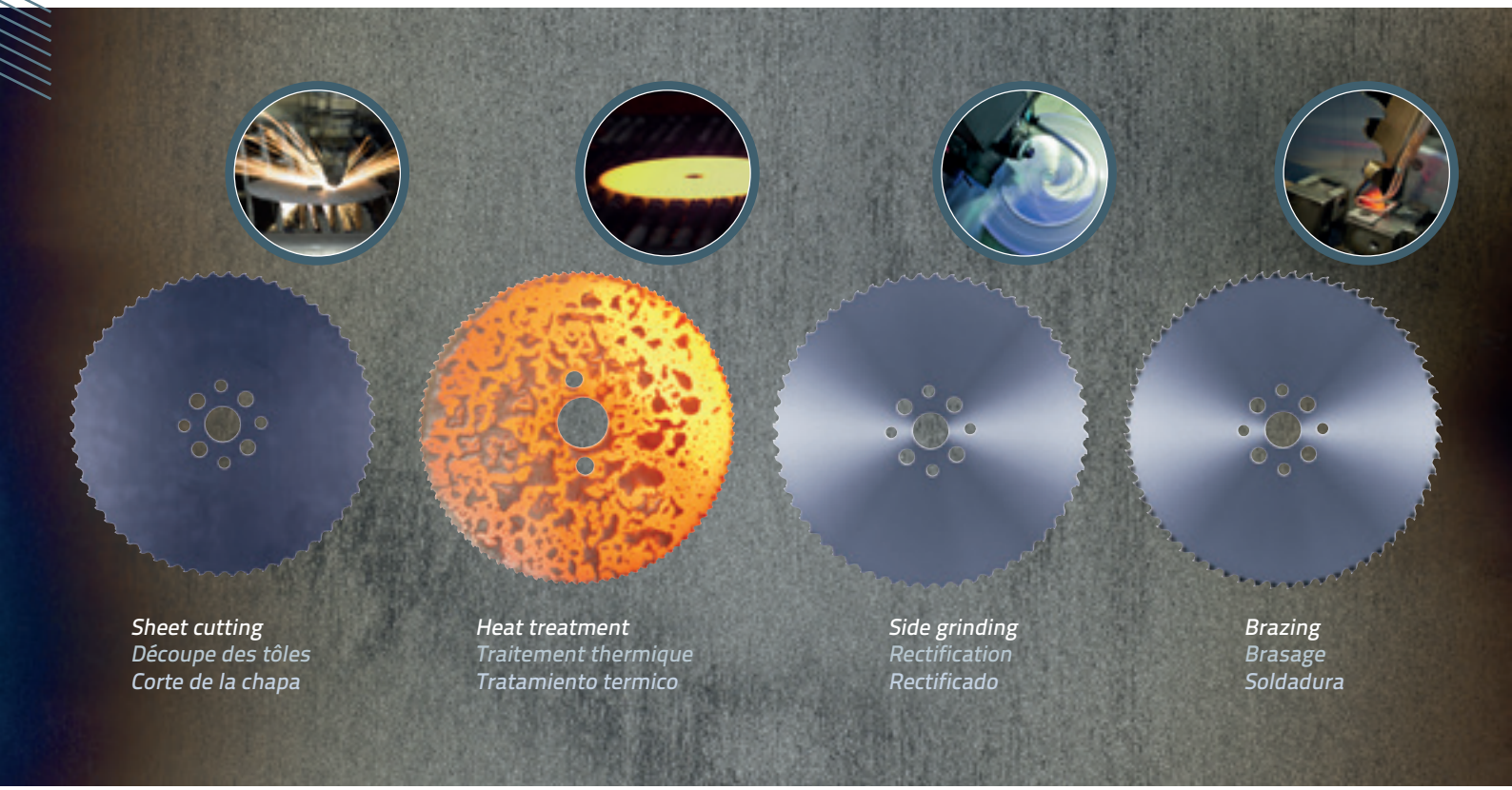
Es un placer poderles presentar este catalogo con las ultimas novedades:
Las sierras circulares en Metal Duro y Cermet para el corte de tubos de acero y de perfiles solidos.
Les presentamos una gama completa de herramientas para todas las necesidades de corte, sea sobre maquinas tronzadoras estàticas que sobre maquinas de corte de tubo (corte volante y orbital).

HM and CERMET.
***Julia's** new winning challenge.*
CARBURE et CERMET.
*Le nouveau défi de **Julia**.*
HM y CERMET.
*El nuevo desafio ganador de **Julia**.*

OUR OPERATIONS START FROM THE STEEL SHEET

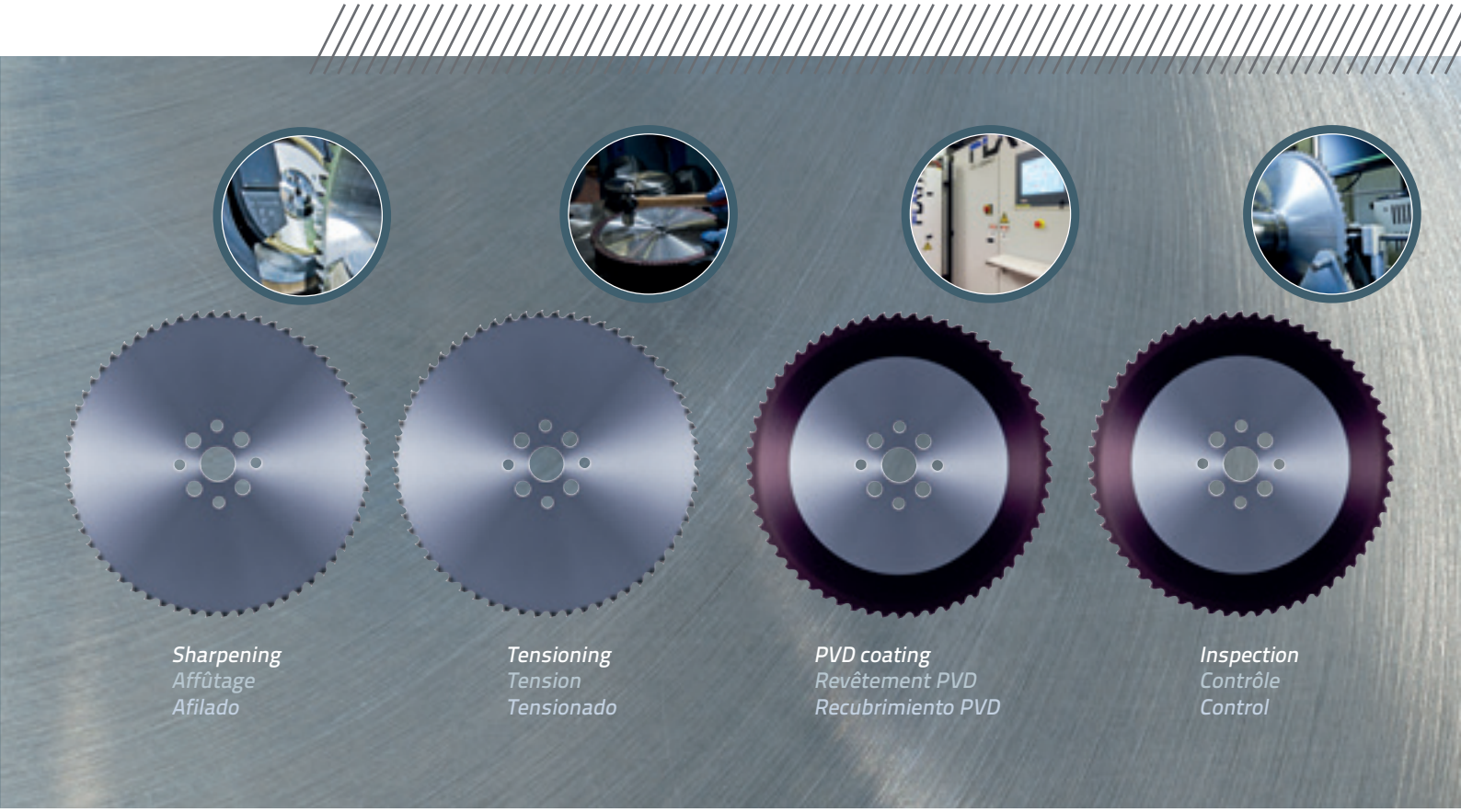
NOTRE TRAVAIL COMMENCE A LA TÔLE
NUESTAS OPERACIONES EMPIEZAN DESDE LA CHAPA

Most of the manufacturer of HM and Cermet circular saws prefer to purchase the saw bodies from an outside company. It is easier to buy the bodies finished, then braze and sharpen the teeth. We have chosen to purchase only the raw material sheets. This is a very important strategic step for us. We will control all aspects of the manufacturing process in house. We are firmly convinced that this is the only way to keep our blades aligned with our tradition.



La plupart des fabricants de lames de scies circulaires à pastilles carbure ou cermet préfèrent ne pas produire le corps. Il est de toute évidence plus facile de l'acheter pour ensuite n'avoir plus qu'à braser les pastilles et les rectifier. Nous continuons à croire en la pertinence de nos choix stratégiques et préférons garder le processus de production complet dans nos usines afin de mieux pouvoir le contrôler. Nous sommes fermement convaincus que c'est la seule manière d'obtenir de meilleurs outils respectant notre philosophie et nos traditions.

Los mayores fabricantes de sierras circulares HM y Cermet prefieren no construir los cuerpos. Seguramente es mas simple comprarlo, soldar los dientes y terminar el ciclo con el afilado de los mismos. Nosotros continuamos creyendo en nuestas elecciones y en nuestra estrategia, manteniendo el proceso productivo en su totalidad en nuestra fabrica. Estamos convencidos que es la unica forma de poder fabricar herramientas de alta calidad y que reflejen nuestra tradiciòn.

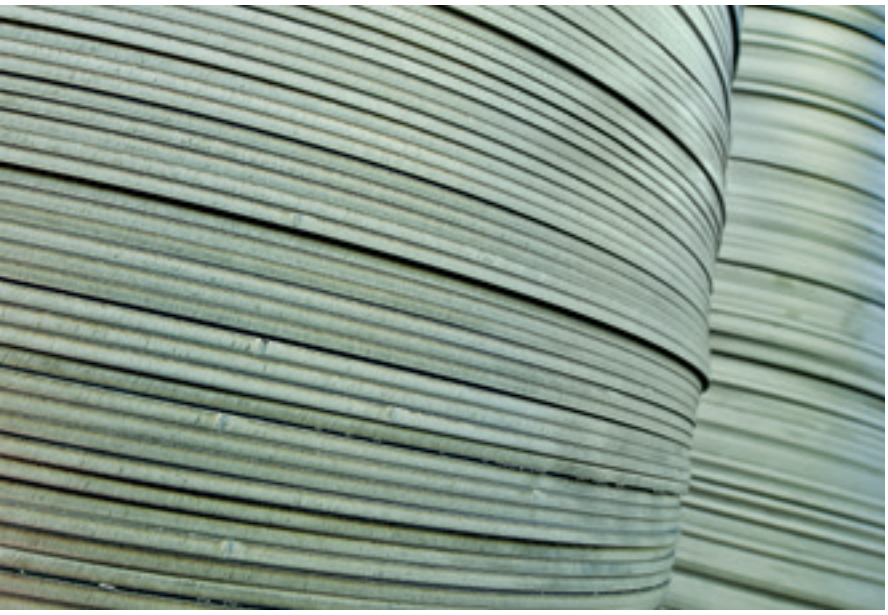


CHOOSE WISELY

In order to obtain a saw body that responds to our expectations, we tested materials from all the best european and japanese steel plants. We made hundreds of thermal treating tests and stress tests over the resulting samples. We eventually chose the right material and obtained the saw body we were searching for. The saw body is the heart of a tool and by selecting the correct body, we ensure the hardness and stability along the cutting edge and the right wear and shock resistance.

Pour obtenir un corps qui respecte nos exigences, nous avons testé de nombreuses matières de grandes aciéries européennes et japonaises. Nous avons fait des centaines de tests de dureté et soumis les aciers à de multiples conditions de stress. Pour finir, nous avons choisi le type d'acier idéal pour obtenir le corps que nous souhaitions avoir : un corps de lame qui ne sert pas uniquement de support aux dents, mais un corps qui soit stable pendant la coupe et qui ai la capacité à absorber les vibrations et résonnances liés à la coupe.

Para obtener un cuerpo que refleje nuestas expectativas, hemos analizado materiales procedentes de las principales acererias europeas y japonesas. Hemos hecho centenares de pruebas de tratamiento termico asi como tests sobre los aceros que hemos recibido como muestra. Al final hemos elegido un cierto tipo de material y escojido el tipo de cuerpo que queriamos: un disco que permita una perfecta estabilidad durante el corte y la correcta tenacidad para absorber vibraciones y resonancias.



THE POWER OF OUR LASER

LA PUISSANCE DE NOTRE RAYON LASER | LA POTENCIA DE NUESTRO RAYO LASER

The right chip evacuation is fundamental in order to obtain adequate surface finish and ensure long blade life. Our 3D solid modeler study for testing chip removal enables the creation of the best tooth shape. With our precise laser cutting machines, we can achieve this tooth shape with perfection.

L'évacuation des copeaux est une condition préalable incontournable pour obtenir une bonne surface de coupe sur une pièce et une longue durée de vie de l'outil. L'étude des copeaux grâce à la modélisation 3D nous a permis de concevoir des formes d'outils optimales que nous pouvons réaliser aisément et de façon très précise avec notre Laser.

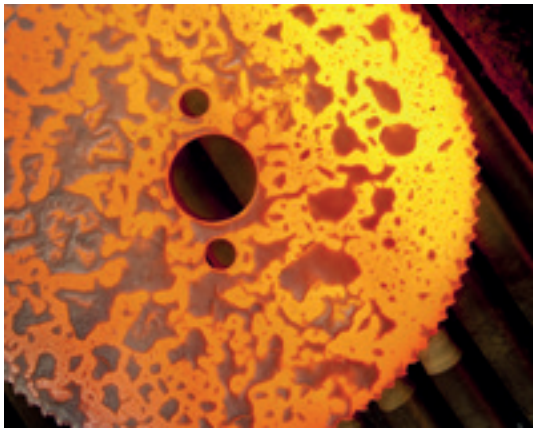
Una correcta evacuaciòn de la viruta es fundamental para obtener de la sierra un corte con acabados muy finos, asi como alta resistencia y durabilidad. El estudio y el diseño, lo hacemos con un programa en 3D donde se puede apreciar la forma del diente para poderlo posteriormente trabajar con el laser.

LEARNING IS A PROCESS

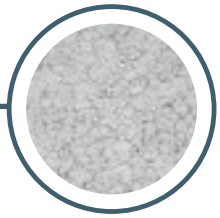
Saw bodies for our HM and Cermet saw blades have a lot of differences compared to our HSS circular saw blades.
We studied an innovative thermal treatment in order to get to the right technological mix we needed.
This new process incorporates different phases along the manufacturing cycle of the saw body. The new temper cycle that we named "MULTIstep", showed an unexpted evolution of the metal structure during our oberservations.
This new treatment has not yet revealed all its potential and therefore we will keep studying its possible improvements with the aim to further enhance the quality standard of our tools.

Les corps des lames de scies à pastilles ont des exigences techniques totalement différentes des corps de lames en HSS. Nous avons étudié un traitement thermique innovant afin d'aboutir à la technologie dont nous avions besoin .
Ce nouveau processus comprend plusieurs étapes au cours du cycle de fabrication du corps de la lame. Le nouveau process de traitement thermique que nous avons appelé "MULTIstep", nous a montré lors d'observations au microscope métallographique, une évolution de la structure du métal à laquelle même certains de nos ingénieurs ont été surpris.
Ce nouveau traitement n'a pas encore révélé tout son potentiel et nous allons continuer à étudier ses évolutions dans le but d'améliorer encore la qualité de nos outils.

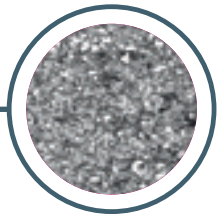
Los cuerpos de las sierras circulares con dientes de HM tienen diferentes exigencias que son distintas respecto a las sierras HSS. Hemos estudiado y desarrollado un tratamiento termico muy nuevo, para poder encontrar esa mezcla correcta que necesitabamos. Este nuevo proceso consiste en diferentes fases durante la construcciòn del cuerpo de la sierra. El nuevo ciclo de templado, que hemos llamado "MULTIstep", nos ha permitido descubrir algo inesperado a nivel de estructura metalografica, en el sentido de como se comporta el metal al momento de este ciclo productivo. Este nuevo tratamiento todavia no nos ha revelado todas las potencialidades, por lo tanto continuaremos estudiando sus posibles desarrollos con el fin de mejorar aun mas la calidad de nuestras herramientas.



METALLURGICAL STRUCTURE
STRUCTURE MÉTALLOGRAPHIQUE
ESTRUCTURA METALOGRAFICA

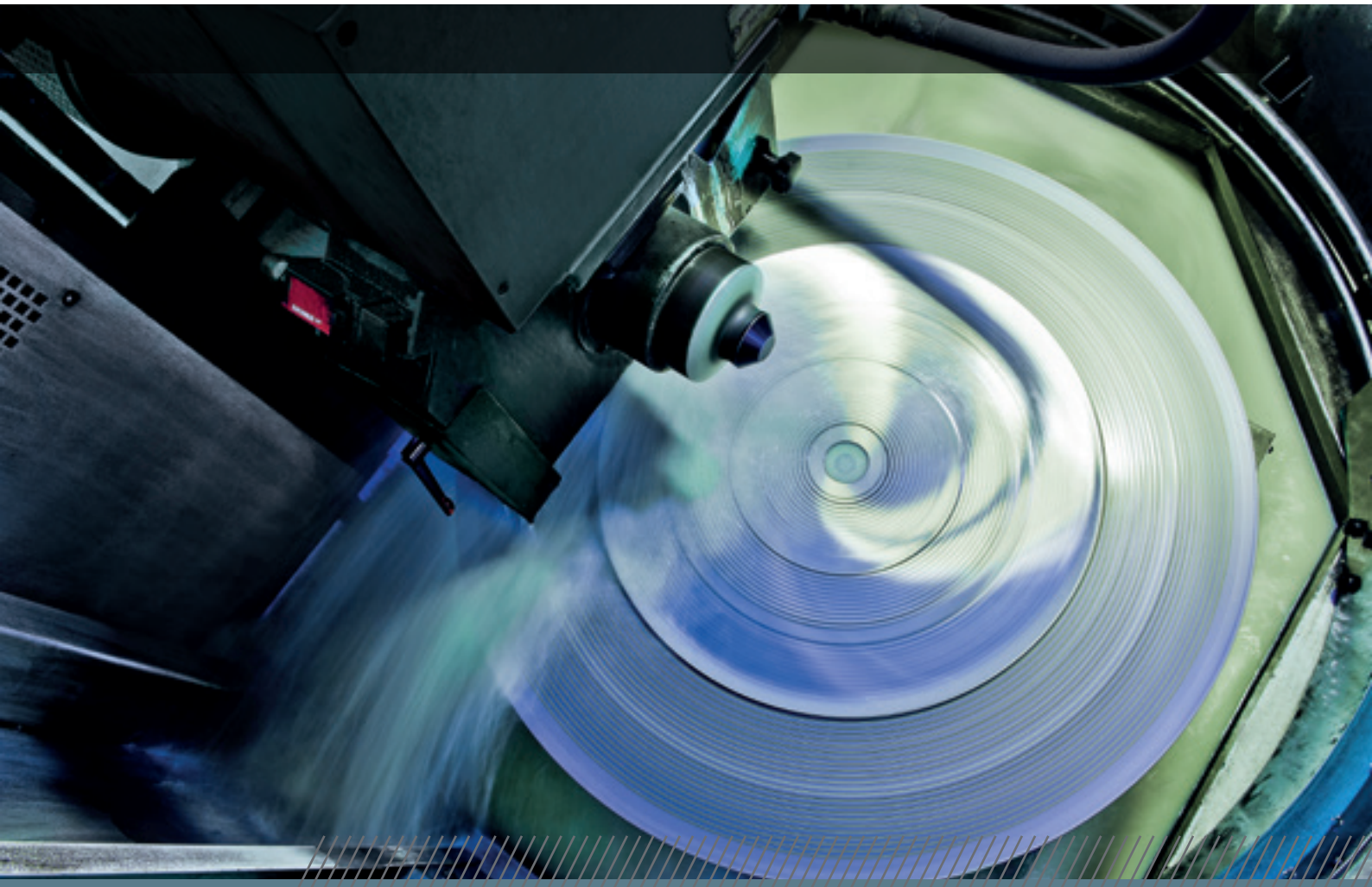


Hardening
Trempe
Temple



Tempering
Revenu
Revenido

Footprint hardness
Empreinte de Dureté
Huella de Dureza



EVERYTHING IS UNDER CONTROL

TOUT EST SOUS CONTROLE | TODO BAJO CONTROL

In order to keep the features that we provided to the blade body with the "MULTIstep" treatment, we had to be very careful with the grinding phases. It was fundamental to find the right grindstones to avoid deformations and localized overheating that could compromise the stability of the circular saw. Saw body runout and tension are constantly monitored during the grinding cycle. This ensures nothing is altered as a result of the grinding process.

Afin de ne pas dégrader les caractéristiques du corps de la lame obtenu après notre process "MULTIstep", nous avons été très vigilants aux étapes de rectifications. Il était important de trouver la meule idéale pour éviter toute surchauffe locale qui pourrait entraîner une distorsion et affecter la stabilité de la scie circulaire. Une attention particulière est apportée aux corps de lames pendant les opérations de brasages et de rectifications afin de ne pas générer de tensions à l'acier.

Para poder aprovechar al maximo las calidades del cuerpo que hemos conseguido con el tratamiento "MULTIstep", hemos querido dar maxima atenciòn a la fase de rectificado. Ha sido fundamental encontrar en el mercado muelas de alta calidad, para evitar deformaciones y calentamiento localizado sobre la sierra, que habrian podido perjudicar la estabilidad de la misma.

HARD METAL OR HM

HIGH HARDNESS
DURETÉ ÉLEVÉE
DUREZA ELEVADA

RESISTANCE TO HEAT
RÉSISTANCE AUX HAUTES TEMPÉRATURES
RESISTENCIA A LA ALTA TEMPERATURA

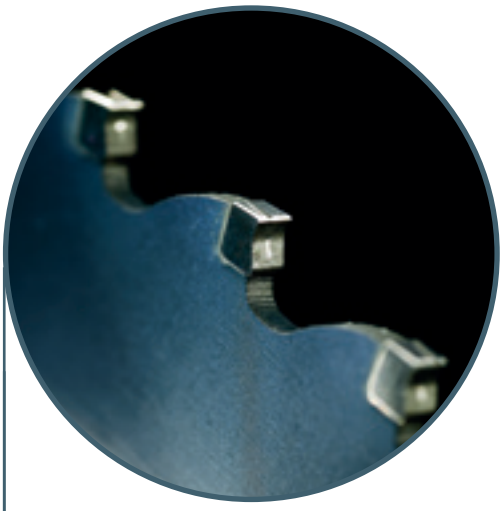
CARBURE OU HM
METAL DURO O HM

The material is obtained through the synthesizing of tungsten carbide dust, titanium and tantalum mixed with cobalt dust as binder. The finely mixed materials are heated to 1500°C and pressed in order to let the molecules unify and form a single homogeneous solid.
The main features of hard metal are to keep hardness and wear resistance even at the highest operating temperatures developed in the most severe applications. We selected six types of HM with different features to obtain the best cutting results for the different steel alloys.

C'est un matériau obtenu par frittage de poudres de carbure de tungstène, de titane, de tantale et mélangé avec de la poudre de cobalt qui agit comme un liant. Les poudres finement mélangées sont chauffées jusqu'à 1500 ° C et comprimé de telle sorte que les molécules se joignent pour former une matière solide homogène. Les caractéristiques principales du carbure sont de conserver sa dureté et sa rigidité, même dans les conditions de températures élevées qui se développent lors de la coupe d'aciers fortement alliés. Nous avons retenu six types de carbure différents avec chacun ses caractéristiques spécifiques afin d'obtenir les meilleurs résultats de coupe dans les divers aciers de construction et aciers inoxydables.

Es un material obtenido con la sinterizaciòn de polvos de carburo de tunsgteno, titanio, tantalio y mezcladas con polvo de cobalto que es el aliante de estas. Los polvos finos vienen mezclados y calentados en un horno a temperatura de 1500 °C, para ser posteriormente prensados para que las molèculas se formen en una unica pieza solida. Las caracteristicas principales del Metal Duro son mantener la dureza y tenacidad aun trabajando a altas temperaturas, las cuales de desarrollan durante la fase de corte. Hemos elegido seis tipos diferentes de HM segun el tipo de aplicaciòn, sea esta tanto para el corte de acero al carbòn como para el corte de acero inoxidable.

CERMET



VERY HIGH HARDNESS
DURETÉ TRÈS ÉLEVÉE
DUREZA MUY ELEVADA

HIGH RESISTANCE TO CORROSION, IMPACT, WEAR
HAUTE RÉSISTANCE À LA CORROSION, AUX CHOCS ET À L'USURE
ALTA RESISTENCIA A LA CORROSION, FRICCION Y DESGASTE

TOUGHNESS
RÉSISTANCE AUX CHOCS
TENACIDAD

CERMET
CERMET

Cermet is a special product obtained through the synthesizing of ceramic dust, oxides, nitrides and silicon carbides. Also included are metal oxides which are resistant to the highest temperatures such as: chrome, cobalt, nickel, titanium, aluminum and tungsten. Cermet is a material with a hardness between silicon carbide and diamond. It is very resistant againts high cutting temperatures and is able to withstand extremely high machining rates. Cermet produces an excellent surface finish on the cut material and an extra long-life of the tool. The production technology of Cermet inserts was born in Japan and that country's producers are still the best worlwide. Julia decided to collaborate with two Japanese companies and after testing dozens of different grades, we chose four kinds of Cermet to adequately respond to all of our needs.

Il s'agit d'un matériau obtenu par frittage de poudres céramiques, de poudres d'oxydes, de nitrures et carbures de silicium ainsi que d'oxydes métalliques résistantes à des températures extrêmement élevées comme le chrome, le cobalt, le nickel, le titane, l'aluminium et le tungstène. C'est un matériau présentant des caractéristiques de dureté extrême situé entre le carbure de silicium et le diamant. Il est résistant aux chocs et à l'usure, même dans des conditions de températures élevées. L'utilisation de cermet améliore grandement les états de surface et la durée de vie des outils. La technologie de production de pastilles cermet est née au Japon et les producteurs de ce pays sont toujours les meilleurs. Julia a choisi de s'associer avec deux sociétés japonaises, et après avoir essayé une douzaine de types différents, en ont choisi quatre pour répondre adéquatement à tous les besoins.

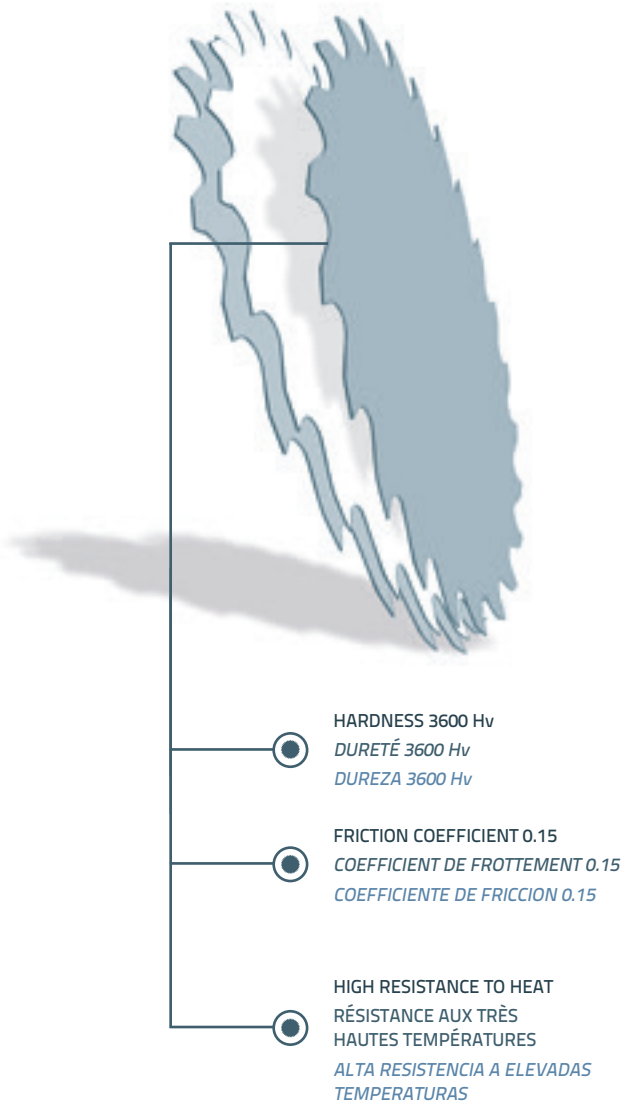
Es un producto especial que se obtiene con la sinterizacion de mezclas de polvos ceràmicos, oxidos, nitruros y carburos de silicio y oxidos metalicos, resistentes a altas temperaturaso como el cromo, cobalto, niquel, titanio, aluminio y tunsgteno. Es un material con caracteristicas de dureza muy alta, que se puede posicionar entre el carburo de silicio y el diamante. Es muy resistente a los golpes y al desgaste, incluido en aquellas operaciones donde el corte calienta mucho la sierra. Garantiza excelentes acabados de corte y una vida de la herramienta muy larga. La tecnologia de este tipo de material nace en Japòn y actualmente podemos decir que los japoneses son los mayores productores. Julia ha decidido cooperar con dos empresas japonesas y despues de haber probado diez diferentes hemos decidido ofrecer al mercado cuatro tipos de Cermet para poder responder a las exigencias de los clientes.

ONE-OF-A-KIND COATING

In Julia we trust that in order to manufacture high quality circular saws we cannot simply decide whether it is best to use a specific type of coating like TICN, TIALN or ALTIN . On the otherhand, it is necessary to create a coating that holds the same features of the saw blade, wear resistance and high performance.
The coating we use for the products in this catalogue is a completely new and innovative one that give the circular saw a high hardness for the deposited layer (3600 Hv) with excellent adhesion to the substrate.
It has a very low friction coefficient (0,15) to avoid chip-bonding on the sides of the blade and to facilitate chip evacuation from the cutting area. From this coating we obtained a very high temperature resistance. This feature contributes to protect the saw body from deformations and the cutting-edge from wear due to high temperature.

Nous sommes convaincus chez Julia que pour produire des scies circulaires à haute valeur ajoutée on ne peut se contenter de choisir s'il est préférable d'utiliser un revêtement TICN, TIALN ou ALTIN, comme on est forcé de le faire lorsque les revêtements sont réalisés par une société extérieure. Nous pensons qu'il est plus judicieux de recourir à un revêtement qui remplit exactement les exigences que requiert l'outil. Le revêtement que nous utilisons pour les produits de ce catalogue est un revêtement complètement novateur qui procure à la scie circulaire une grande dureté en surface (3600 Hv) et qui adhère parfaitement au support. Le coefficient de frottement très faible (0,15) permet d'éviter des phénomènes de collage de matière sur les flancs de la lame et faciliter l'évacuation des copeaux. Grâce à ce revêtement nous avons obtenu une excellente résistance aux températures élevées, qui contribue à protéger le corps contre la déformation et ralentit l'usure au niveau de l'arête de coupe.

Nosotros en Julia estamos convencidos que para producir sierras circulares de altisima calidad no debemos escoger uno de los recubrimientos TICN, o TIaln o ALTIN, como hacen los que recubren sus mismos discos en empresas externas. Creemos que la mejor opcion sea esa de poder generar un recubrimiento todo nuestro, con las caracteristicas que cada herramienta necesita.
El recubrimiento que utilizamos para todas las herramientas de este catalogo es un recubrimiento nuevo y de ultima generaciòn que da a la sierra circular una elevada dureza en la capa depositada (3600 Hv) con una excelente adhesion al cuerpo. Tiene un coeficiente de fricciòn muy bajo (0.15) para evitar que la viruta se pegue al cuerpo y dando mayor salida a la viruta durante el corte. Con este recubrimiento hemos obtenido una maxima resistencia a las altas temperaturas, para evitar que durante las operaciones de corte se genere calentamiento excesivo, causa del desgaste del filo del diente.

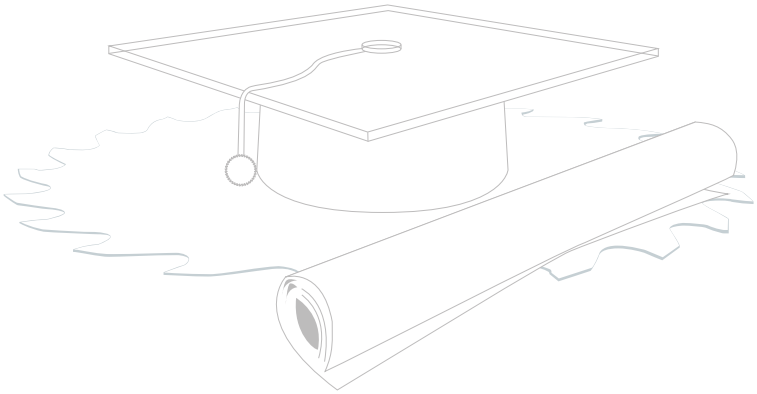


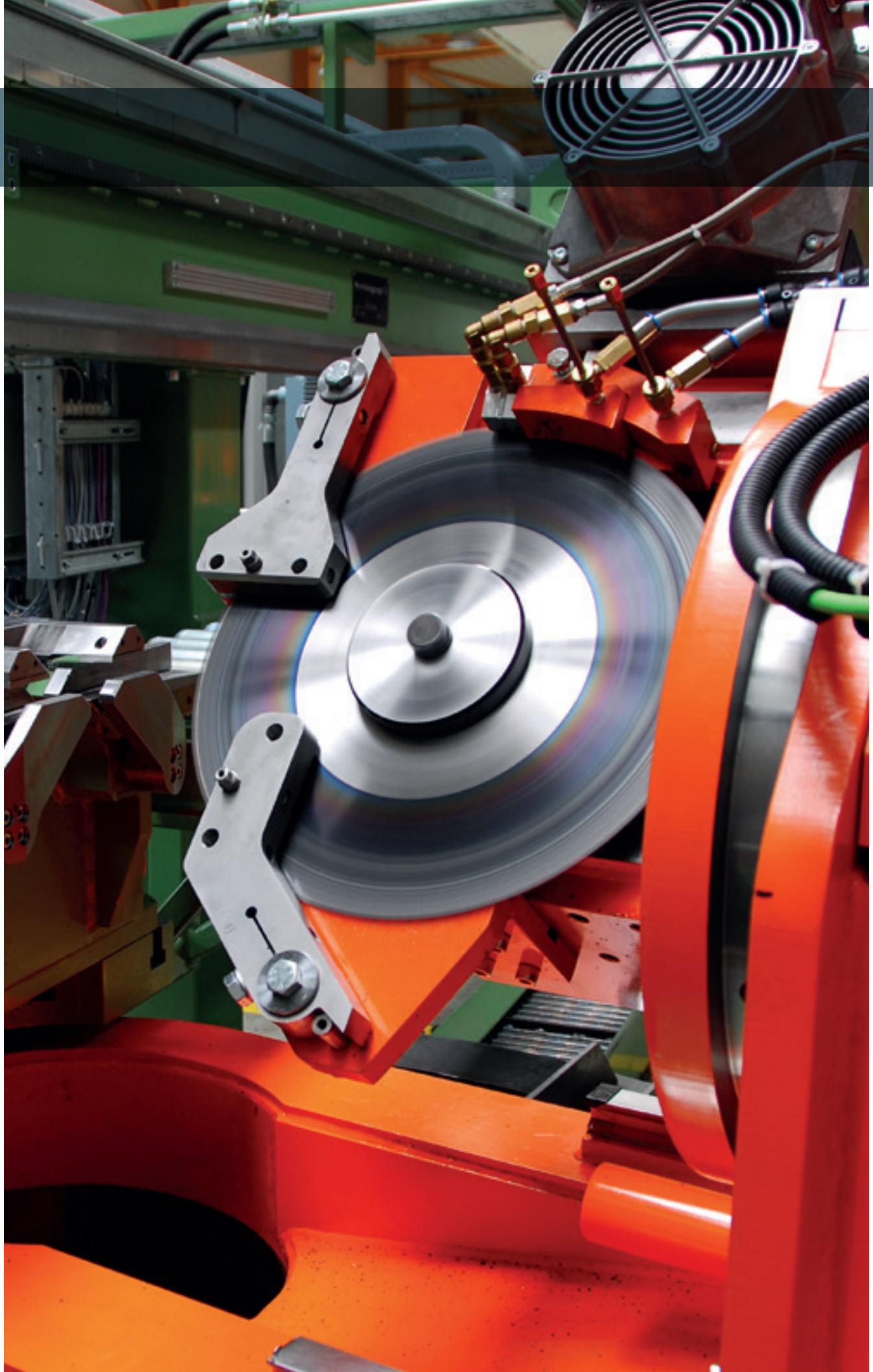
FINAL TEST AND PRODUCT TRACK

All Julia's products are tested before being delivered to the customer. The dimensional tolerances for the HM and Cermet saws are checked 100% of the time. The final test includes the teeth concentricity, the side clearance, the geometry and the central bore dimension.
On 100% of our products the body tension is checked and finally it is coded in a file within our information systems along with all dimensional and control data. The identification code is marked on the saw and therefore we are always able to keep track of all data for our tools.

Tous les outils sont testés par Julia avant d'être livré au client. Les tolérances dimensionnelles ainsi que de voilage sont contrôlés sur 100% des produits. Le test final contient également la vérification de la concentricité et de la planéité. Pour finir, nous contrôlons la tension du corps de lame sur l'ensemble de nos outils. Les données mesurées sont intégrées dans le système informatique et associées à un numéro de production. Cette identification étant gravée sur les outils, nous sommes à tout moment en mesure de visualiser toutes les données de nos outils.

Todos las herramientas Julia han sido probadas antes de ser entregadas al Cliente. Las tolerancias a nivel de dimension o de alabeo exigen un control del 100% de nuestros productos. El test final prevee un control de la concentricidad de los dientes, del alabeo, del rectificado de ambas caras y del eje central.
En todas nuestras sierras se controla el tensionado del cuerpo y se genera un codigo para cada sierra que se construye. El codigo identificativo esta marcado sobre el cuerpo de la sierra para poder tener acceso siempre a un historial del proceso productivo de la sierra misma.





PRODUCT RANGE INDEX

GAMME DE PRODUITS | GAMA DE PRODUCTOS

STAHLTEK TORNADO

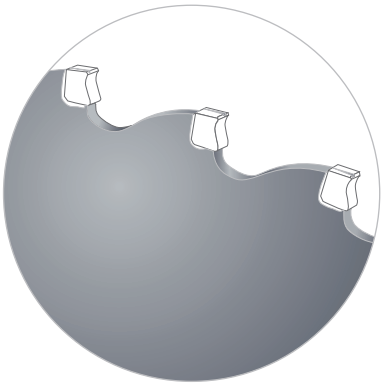
CERMET

"TA" CIRCULAR SAW BLADES, WITH CERMET TEETH, NOT COATED, USED FOR CUTTING MILD AND LOW CARBON STEELS ON STATIONARY MACHINES. NOT TO BE USED FOR CUTTING STAINLESS STEEL.

FRAISES SCIES (JETABLES) A PASTILLES CERMETS NON REVETUES POUR LA COUPE DE MATERIAUX PLEINS EN ACIERS ALLIES SUR MACHINES DE SCIAGE STATIQUES. NON ADAPTE A LA COUPE DES ACIERS INOXYDABLES.

SIERRA CIRCULAR CON DIENTES SOLDADOS EN CERMET, TIPO USAR Y TIRAR, SIN RECUBRIMIENTO, SUGERIDA PARA EL CORTE DE BARRA SOLIDA DE ACERO DE DUREZA MEDIO-BAJA. UTILIZABLE EN MAQUINAS ESTATICAS NO SE ACONSEJA EL USO DE ESTA SIERRA PARA CORTE DE ACEROS INOXIDABLES.

D	B/b	d	Z
250	2,00/1,70	32/40	54/60/72/80
285	2,00/1,70	32/40	60/72/80
285	2,00/1,75	32/40	60/72/80
315	2,50/2,25	32/40/50	48/60/72/80
350	2,60/2,25	32/40/50	60/80/100
360	2,60/2,25	32/40/50	60/80/100
420	2,70/2,25	50	40/60/80/100
425	2,70/2,25	50	40/60/80/100
450	2,70/2,25	50	40/60/80/100
460	2,70/2,25	50	40/60/80/100
520	3,50/3,00	50	60/80
560	3,50/3,00	80	40/60/80
580	3,60/3,10	80	60/80/100
630	3,60/3,10	80	60/80/100



STAHLTEK MIRAGE

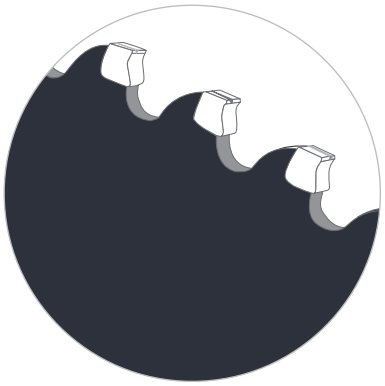
HM

"TA" CIRCULAR SAW BLADE, WITH TUNGSTEN CARBIDE TEETH, PVD COATED, USED FOR CUTTING MEDIUM-HIGH CARBON STEEL AND STAINLESS STEEL SOLID MATERIAL ON STATIONARY MACHINES.

FRAISES SCIES (JETABLES) A PASTILLES CARBURE REVETUES POUR LA COUPE DE MATERIAUX PLEINS EN ACIERS ALLIES SUR MACHINES DE SCIAGE STATIQUES OU POUR LA COUPE DES ACIERS INOXYDABLES.

SIERRA CIRCULAR CON DIENTES SOLDADOS EN HM, TIPO USAR Y TIRAR CON RECUBRIMIENTO DE PVD. RECOMENDADA PARA EL CORTE DE MATERIAL SOLIDO DE ACERO CON DUREZA MEDIO-ALTA, ACEROS INOXIDABLES EN MAQUINAS ESTATICAS..

D	B/b	d	Z
250	2,00/1,70	32/40	54/60/72/80
285	2,00/1,70	32/40	60/72/80
285	2,00/1,75	32/40	60/72/80
315	2,50/2,25	32/40/50	60/72/80
350	2,60/2,25	32/40/50	60/80/100
360	2,60/2,25	32/40/50	60/80/100
420	2,70/2,25	50	40/60/80/100
425	2,70/2,25	50	40/60/80/100
450	2,70/2,25	50	40/60/80/100
460	2,70/2,25	50	40/60/80/100
500	2,90/2,50	50	60/80/90/100/120
580	3,60/3,10	80	60/80/100
630	3,60/3,10	80	60/80/100



STAHLTEK PREDATOR

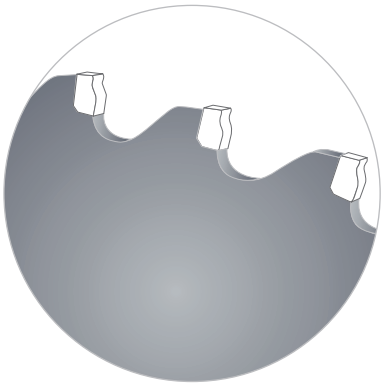
CERMET

"TA" CIRCULAR SAW BLADES, WITH CERMET TEETH, NOT COATED, USED FOR CUTTING MILD AND LOW CARBON STEEL SOLID MATERIAL OR THICK-WALLED PIPES ON STATIONARY MACHINES. SUITABLE FOR HIGH DEMANDING APPLICATIONS, NOT TO BE USED TO CUT STAINLESS STEEL.

LAMES DE SCIE CIRCULAIRES « JETABLES », AVEC DENTS CERMET, NON REVÊTUE, UTILISÉES POUR LA COUPE DES MATÉRIAUX SOLIDES EN ACIER DOUX À FAIBLE TENEUR EN CARBONE OU TUBES À PAROIS ÉPAISSES, SUR MACHINES STATIONNAIRES. ADAPTÉES AUX APPLICATIONS EXIGEANTES, NE PAS UTILISER POUR COUPER DE L'ACIER INOXYDABLE.

SIERRA CIRCULAR CON DIENTES SOLDADOS EN CERMET, DE TIPO MONO-USO SIN REVESTIMIENTO, APTA PARA EL CORTE DE MACISOS O TUBOS DE GRAN ESPESOR EN ACEROS ALTO Y MEDIO-LEGADOS EN MÁQUINAS ESTÁTICAS (MONODISCO). APTA PARA APLICACIONES CON ELEVEDADA PRODUCTIVIDAD, NO SE ACONSEJA PARA EL CORTE DE ACEROS INOXIDABLES.

D	B/b	d	Z
250	2,00/1,70	32/40	54/60/72/80
285	2,00/1,70	32/40	60/72/80
285	2,00/1,75	32/40	60/72/80
315	2,50/2,25	32/40/50	60/72/80
350	2,60/2,25	32/40/50	60/80/100
350	2,70/2,40	32/40/50	60/80/100
360	2,60/2,25	32/40/50	60/80/100
360	2,70/2,4	32/40/50	60/80/100
400	2,60/2,25	32/40/50	40/60/80 /100
420	2,70/2,25	50	40/60/80/100
425	2,70/2,25	50	40/60/80/100
450	2,70/2,25	50	40/60/80/100
460	2,70/2,25	50	40/60/80/100



STAHLTEK APACHE

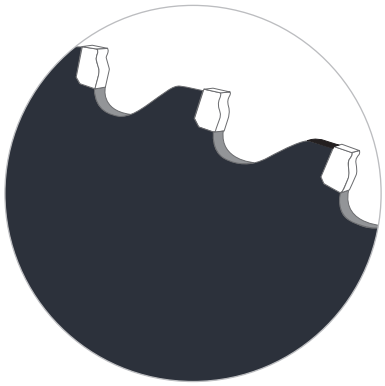
HM

"TA" CIRCULAR SAW BLADE, WITH TUNGSTEN CARBIDE TEETH, PVD COATED, USED FOR CUTTING MEDIUM-HIGH CARBON STEEL AND STAINLESS STEEL SOLID MATERIAL OR THICK-WALLED PIPES ON STATIONARY MACHINES. SUITABLE FOR HIGH DEMANDING APPLICATIONS.

LAMES DE SCIE CIRCULAIRES "JETABLES" AVEC DENTS EN CARBURE TUNGSTÈNE, REVÊTEMENT PVD, UTILISÉES POUR LA COUPE D'ACIER AU CARBONE MOYEN-ÉLEVÉ ET DE MATÉRIAUX SOLIDES EN ACIER INOXYDABLE OU TUBES À PAROIS ÉPAISSES SUR DES MACHINES STATIONNAIRES. ADAPTÉ AUX APPLICATIONS EXIGEANTES.

SIERRA CIRCULAR CON DIENTES SOLDADOS EN HM, DEL TIPO MONO-USO REVESTIDA, APTA PARA EL CORTE DE MACISOS O TUBOS DE GRAN ESPESOR EN ACEROS ALTO O MEDIO-LEGADOS, COMO ASÍ TAMBIÉN PARA EL CORTE DE ACEROS INOXIDABLES EN MÁQUINAS ESTÁTICAS (MONODISCO). APTA PARA APLICACIONES DE ELEVADA PRODUCTIVIDAD.

D	B/b	d	Z
250	2,00/1,70	32/40	54/60/72/80
285	2,00/1,70	32/40	60/72/80
285	2,00/1,75	32/40	60/72/80
315	2,50/2,25	32/40/50	60/72/80
350	2,60/2,25	32/40/50	60/80/100
350	2,70/2,40	32/40/50	60/80/100
360	2,60/2,25	32/40/50	60/80/100
360	2,70/2,40	32/40/50	60/80/100
400	2,60/2,25	32/40/50	40/60/80/100
420	2,70/2,25	50	40/60/80/100
425	2,70/2,25	50	40/60/80/100
450	2,70/2,25	50	40/60/80/100
460	2,70/2,25	50	40/60/80/100



TUBOTEK FIGHTER

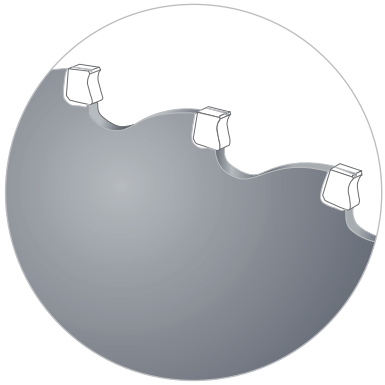
CERMET

"TA" CIRCULAR SAW BLADE, WITH CERMET TEETH, NOT COATED, USED FOR CUTTING TUBES WITH WALL THICKNESS GREATER THAN 5 MM IN MEDIUM AND LOW CARBON STEEL ON STATIONARY MACHINES. NOT TO BE USED FOR CUTTING STAINLESS STEEL.

FRAISES SCIES (JETABLES) A PASTILLES CERMETS NON REVETUES POUR LA COUPE DE TUBES EN ACIERS ALLIES AYANT UNE EPAISSEUR DE PAROI SUPERIEURE A 5 MM, SUR MACHINES DE SCIAGE STATIQUES. NON ADAPTE A LA COUPE DES ACIERS INOXYDABLES.

SIERRA CIRCULAR CON DIENTES SOLDADOS EN CERMET, TIPO USAR Y TIRAR SIN RECUBRIMIENTO, RECOMENDADA PARA EL CORTE DE TUBOS CON ESPESOR DE PARED MAYOR A 5 MM DE ACERO CON DUREZA MEDIO-BAJA. UTILIZABLE EN MAQUINAS ESTATICAS (MONOSIERRA). NO SE ACONSEJA EL USO DE ESTA SIERRA PARA CORTE DE ACEROS INOXIDABLES.

D	B/b	d	Z
250	2,00/1,70	32/40	100
285	2,00/1,70	32/40	100/120
285	2,00/1,75	32/40	100/120
315	2,50/2,25	32/40/50	100/110/120
350	2,60/2,25	32/40/50	100/120/140
350	2,70/2,40	32/40/50	100/120/140
360	2,60/2,25	32/40/50	100/120/140
360	2,70/2,40	32/40/50	100/120/140
400	2,60/2,25	32/40/50	100/120/140
450	2,70/2,25	50	110/120/130/150
460	2,70/2,25	50	110/120/130/150



TUBOTEK PHANTOM

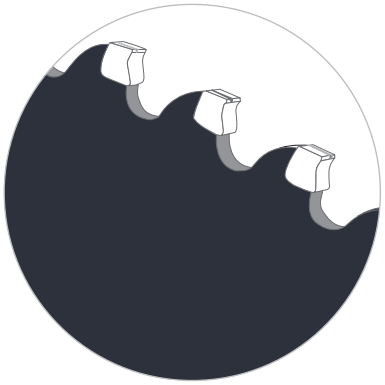
HM

"TA" CIRCULAR SAW BLADE, WITH TUNGSTEN CARBIDE TEETH, PVD COATED, USED FOR CUTTING TUBES WITH WALL THICKNESS GREATER THAN 5 MM, IN MEDIUM OR HIGH CARBON STEEL, STAINLESS STEEL ON STATIONARY MACHINES.

FRAISES SCIES (JETABLES) A PASTILLES CARBURE REVETUES POUR LA COUPE DE TUBES EN ACIERS ALLIES OU EN ACIERS INOXYDABLES AYANT UNE EPAISSEUR DE PAROI SUPERIEURE A 5 MM, SUR DES MACHINES DE SCIAGE STATIQUES.

SIERRA CIRCULAR CON DIENTES SOLDADOS EN HM, TIPO USAR Y TIRAR CON RECUBRIMIENTO PVD. RECOMENDADA PARA EL CORTE DE TUBOS DE ACERO CON ESPESOR DE PARED SUPERIOR A 5 MM CON DUREZA MEDIO-ALTA, ACEROS INOXIDABLES EN MAQUINAS ESTATICAS.

D	B/b	d	Z
250	2,0/1,70	32/40	100
285	2,00/1,70	32/40	100/120
285	2,00/1,75	32/40	100/120
315	2,50/2,25	32/40/50	100/110/120
350	2,60/2,25	32/40/50	100/120/140
350	2,70/2,40	32/40/50	100/120/140
360	2,60/2,25	32/40/50	100/120/140
360	2,70/2,40	32/40/50	100/120/140
400	2,60/2,25	32/40/50	100/120/140
420	2,70/2,25	50	120/140/160
425	2,70/2,25	50	120/140/160
450	2,70/2,25	50	120/140/160/180
460	2,70/2,25	50	120/140/160/180



FLYTEK RAPTOR

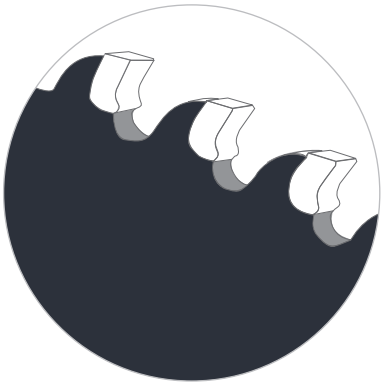
HM

"TA" CIRCULAR SAW BLADE, WITH TUNGSTEN CARBIDE TEETH, PVD COATED, USED FOR CUTTING STEEL TUBES WITH WALL THICKNESS GREATER THAN 3 MM, ON FLYING MACHINES (SINGLE OR TWIN) OR PARTICULARY STATIONARY APPLICATIONS.

FRAISES SCIES (JETABLES) A PASTILLES CARBURE REVETUES POUR LA COUPE DE TUBES EN ACIERS AVEC UNE EPAISSEUR DE PAROI SUPERIEURE A 3 MM SUR MACHINES DE SCIAGE STATIQUES OU POUR COUPE A LA VOLEE SUR LIGNE DE PRODUCTION DE TUBES MONO OU MULTI-LAMES.

SIERRA CIRCULAR CON DIENTES SOLDADOS EN HM, TIPO USAR Y TIRAR CON RECUBRIMIENTO PVD. SE UTILIZA PARA EL CORTE DE TUBOS DE ACERO CON ESPESOR DE PARED SUPERIOR A 3 MM, EN MAQUINAS VOLANTES (MONOSIERRA O TWIN) O EN MAQUINAS ESTATICAS.

D	B/b	d	Z
400	2,90/2,50	40/50/80	100/120/130/140
450	2,90/2,50	50/80	120/130/140/150/160
500	3,50/3,00	50/80/90	120/130/140/150/160/170
525	3,50/3,00	50/80/90	130/140/160/180
530	3,50/3,00	50/80/90	130/140/160/180
550	3,80/3,00	80/90/140	120/140/150/160/170
560	3,80/3,30	80/90/140	120/140/150/160/170
600	3,80/3,30	80/90/140	140/150/160/170/180
620	3,80/3,30	80	110/130/140/160
630	3,80/3,30	80	110/130/140/160
650	3,80/3,30	80	120/150/170
660	3,80/3,30	80	120/150/170
690	3,80/3,30	50/80	140/150/170
700	3,80/3,30	50/80	140/150/170



ROTOTEK HORNET

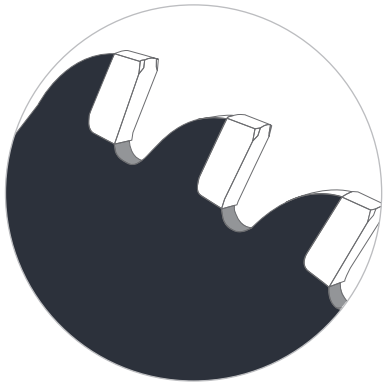
HM

RE-SHARPENABLE CIRCULAR SAW BLADE, WITH TUNGSTEN CARBIDE TEETH, PVD COATED , USED FOR CUTTING TUBES WITH WALL THICKNESS GREATER THAN 3 MM, ON ORBITAL MACHINES LIKE KUSAKABE TYPE, LINSINGER, MAIR, NAKATA, FIVES OTO MILLS, SMS-MEER.

FRAISES SCIES (AFFUTABLES) A PASTILLES CARBURE REVETUES POUR LA COUPE DE TUBES AYANT UNE EPAISSEUR DE PAROI SUPERIEURE A 3 MM, POUR MACHINES DE SCIAGE ORBITALE OU A LA VOLEE SUR LIGNE DE PRODUCTION DE TUBES (MONO OU MULTI-LAMES), TELLES QUE KUSAKABE, LINSINGER, MAIR, NAKATA, OTO MILLS, SMS-MEER.

SIERRA CIRCULAR CON DIENTES SOLDADOS EN HM, TIPO REAFILABLE CON RECUBRIMIENTO PVD. RECOMENDADA PARA EL CORTE DE TUBOS CON ESPESOR DE PARED SUPERIOR A 3 MM. PARA MAQUINAS ORBITALES O VOLANTES (MONOSIERRA O MULTISIERRA) TIPO KUSAKABE, LINSINGER, MAIR, NAKATA, OTO-MILLS, SMS-MEER.

D	B/b	d	Z
300	3,80/3,00	80	44/52
315	3,50/2,70	50	50/60/70/80/90
315	3,80/3,00	50	50/60/70/80/90
350	2,90/2,250	45	60/70/80/90/100
350	3,50/2,70	50	60/70/80/90/100
350	3,80/3,00	50	50/60/70/80/90/100
355	2,90/2,25	45	60/70/80/90/100
355	3,50/2,70	50	60/70/80/90/100
360	3,80/3,00	50	50/60/70/80/90/100
380	3,80/3,00	115	52/64/66/70/80/90/100
400	3,80/3,00	115	100/120



JOINTEK INTRUDER

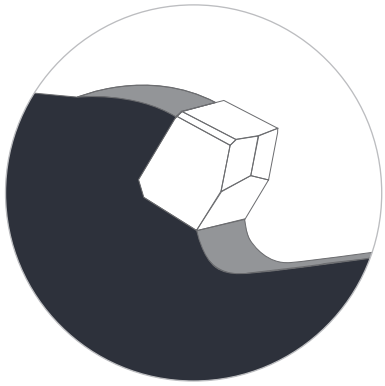
HM

"TA" CIRCULAR SAW BLADE, WITH TUNGSTEN CARBIDE TEETH, PVD COATED, PARTICULARLY DESIGNED TO CUT STEEL TUBES WITH ID SCARFING ON FLYING MACHINES.

LAMES DE SCIE CIRCULAIRES "JETABLES" AVEC DENTS EN CARBURE TUNGSTÈNE, REVÊTEMENT PVD, SPÉCIALEMENT CONÇUES POUR LA COUPE DE TUBES EN ACIER AVEC RACLAGE INTERNE SUR DES MACHINES DE COUPE À LA VOLÉE.

SIERRA CIRCULAR CON DIENTES SOLDADOS EN HM, DEL TIPO MONO-USO REVESTIDA PVD, PROYECTADA PARA EL CORTE VOLANTE (MONODISCO Y TWIN) DE TUBOS EN ACERO CON DESCORDONADO INTERNO.

D	B/b	d	Z
350	3,60/3,20	50	110
400	3,60/3,20	50	120/140
450	3,60/3,20	50	120/130/140/150
500	3,60/3,20	50/80/90	140/150/160/170
550	3,60/3,20	50/90/140	140/160/170/180
560	3,60/3,20	50/90/140	140/160/170/180
600	3,60/3,20	50/90/140	120/150/190




MADE IN ITALY
550x3,8/3,3x140Z
360
MADE IN ITALY
350x3,8/3,0x115Z.60

STATIONARY SAWING MACHINE MODEL AND SAWBLADE SIZE
MODÈLES DE MACHINES STATIONNAIRES ET DIMENSIONS D'OUTILS
MODELO DE LA MAQUINA DE CORTE Y DIMENSIONES DE LA SIERRA CIRCULAR

MACHINE | *MACHINE* | *MAQUINA*			SAWBLADE DIMENSIONS | *DIMENSIONS D'OUTILS* | *DIMENSIONES DE LA SIERRA CIRCULAR*			
BRAND *FABRICANT* *MARCA*	MODEL *MODÈLE* *MODELO*	PINHOLES *TROUS D'ENTR.* *TAL. DE ARRAS.*	D	B/b	d	Z
Adige	CM 502 - CM 512	4/11/63	350	2,6/2,25	32	60/72/80
	CM 601 - EM 80 - BC 80	4/11/63	350	2,6/2,25	32	50/60/80/90/100/110
	CM 602	4/12/64	360	2,6/2,25	40	50/60/80/90/100/110
Amada	CM 65 AN	4/11/80	285	2,0/1,75	40	60/72/80
	CM 75 CNC	4/11/80	285	2,0/1,75	40	60/72/80
	CM 100 AN	4/11/90	360	2,6/2,25	40	50/60/80/90/100/110
	CM 100 CNC	4/11/90	360	2,6/2,25	40	50/60/80/90/100/110
	CM 150 AN	4/11/90	460	2,7/2,25	50	40/60/80/100/120
Anderson	NCB-65	4/11/63	280	2,0/1,75	32	60/72/80
	NCB-100	4/11/90	360	2,6/2,25	40	50/60/80/90/100/110
Behringer-Eisele	HCS 70	2/15/80	250	2,0/1,75	40	54/60/72/80
	HCS 70	2/15/80	285	2,0/1,75	40	60/72/80
	HCS 70	2/15/80	315	2,3/2,00	40	80/100
	HCS 90	2/15/80	285	2,0/1,75	40	60/72/80
	HCS 90	2/15/80	315	2,3/2,00	40	80/100
	HCS 90	2/15/80	360	2,6/2,25	40	50/60/80/90/100/110
	HCS 130	2/15/80	315	2,3/2,00	40	80/100
	HCS 130	2/15/80	360	2,6/2,25	40	50/60/80/90/100/110
	HCS 130	2/15/80	420	2,7/2,25	40	50/60/80/100
	HCS 150	2/15/80	360	2,6/2,25	40	50/60/80/90/100/110
	HCS 150	2/15/80	425	2,7/2,25	40	50/60/80/100
	HCS 150	2/15/80	460	2,7/2,25	40	40/60/80/100/120
BEWO	ECH108	4/12/64	250	2,0/1,75	40	54/60/72/80
BEWO	DCH76	4/12/64	350	2,6/2,25	40	80/100/120/140
Daito/Delta	P-65A	4/11/80	285	2,0/1,75	40	60/72/80
	P-100A	4/11/90	360	2,6/2,25	40	60/80/100
Endo	HS-36 (SS 36)	4/16/80	360	2,6/2,25	50	50/60/80/90/100/110
Everising	P-65A	4/11/63	250	2,0/1,70	32	54/60/72/80
	P-65A/P-70B	4/11/63	285	2,0/1,75	32	60/72/80
	P-100A/B	4/11/90	360	2,6/2,25	40	50/60/80/90/100/110
	P-150A/B	4/13/90	460	2,7/2,25	50	40/60/80/100/120
Exact - Cut	MAC 60	4/9/50	250	2,0/1,75	32	54/60/72/80
	MAC 60	4/9/50	285	2,0/1,75	32	60/72/80
Fong Ho	THC-70NC	4/11/63	250	2,0/1,75	32	54/60/72/80
	THC-70NC/B90NC	4/11/63	285	2,0/1,75	32	60/72/80
	THC-B90NC	4/11/63	315	2,3/2,00	32	48/60/80/100
	TAC-130NC	4/15/80	360	2,6/2,25	50	50/60/80/90/100/110
	TAC-130NC	4/15/80	425	2,7/2,25	50	50/60/80/100
	TAC-165NC	4/21/90	460	2,7/2,25	50	40/60/80/100/120
I.T.E.C.	DC 65	4/9/50	285	2,0/1,75	32	60/72/80
	DC 85	4/11/63	360	2,6/2,25	40	50/60/80/90/100/110
Kaltenbach	KMR 100 AP	4/15/80	360	2,6/2,25	50	50/60/80/90/100/110
Kasto (Wagner)	WA C7	4/9/50	250	2,0/1,70	32	54/60/72/80
	WA C7	4/9/50	285	2,0/1,70	32	60/72/80
	Speed C9	4/9/50	250	2,0/1,70	32	54/60/72/80
	Speed C9	4/9/50	285	2,0/1,70	32	60/72/80
	Speed C9	4/9/50	315	2,5/2,25	32	48/60
	Gripspeed C10	4/11/90	360	2,6/2,25	40	50/60/80/90/100/110
	Vario/Speed C14/C15	4/15/80	360	2,6/2,25	50	50/60/80/90/100/110
	Vario/Speed C14/C15	4/15/80	425	2,7/2,25	50	50/60/80/100
	Vario/Speed C14/C15	4/15/80	460	2,7/2,25	50	40/60/80/100/120
Kentai	KTC-65	4/11/63	250	2,0/1,75	32	54/60/72/80
	KTC-85	4/11/63	315	2,3/2,00	32	80/100

STATIONARY SAWING MACHINE MODEL AND SAWBLADE SIZE
MODÈLES DE MACHINES STATIONNAIRES ET DIMENSIONS D'OUTILS
MODELO DE LA MAQUINA DE CORTE Y DIMENSIONES DE LA SIERRA CIRCULAR

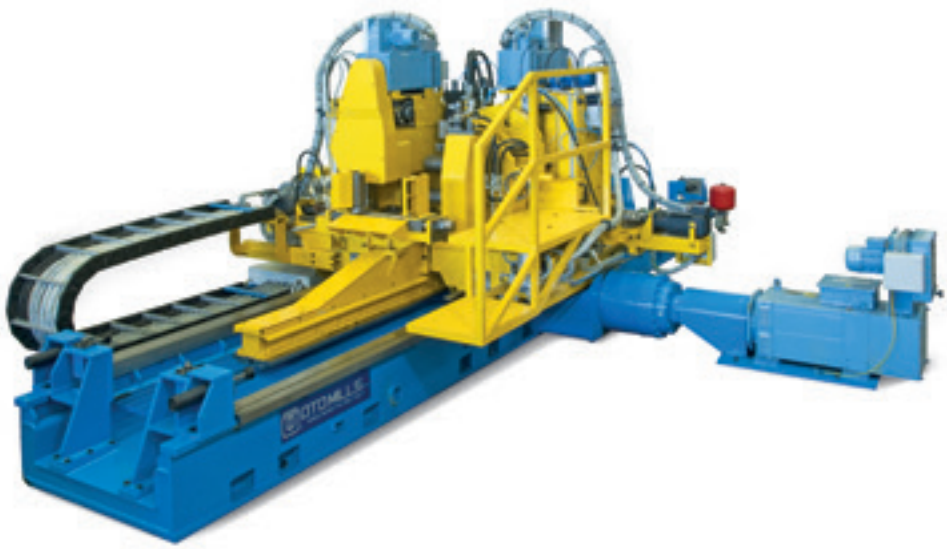
MACHINE | *MACHINE* | *MAQUINA*			SAWBLADE DIMENSIONS | *DIMENSIONS D'OUTILS* | *DIMENSIONES DE LA SIERRA CIRCULAR*			
BRAND *FABRICANT* *MARCA*	MODEL *MODÈLE* *MODELO*	PINHOLES *TROUS D'ENTR.* *TAL. DE ARRAS.*	D	B/b	d	Z
Mega	CS 65	4/11/63	285	2,0/1,75	32	60/72/80
	CS 100	4/11/90	360	2,6/2,25	40	50/60/80/90/100/110
	CS 150	4/11/90	460	2,7/2,25	50	60/60/80/100/120
Missler	CS 4	4/11/90	360	2,6/2,25	40	50/60/80/90/100/110
Nishijima	NHC-050 NA	4/11/63	250	2,0/1,70	32	54/60/72/80
	NHC-070 NA	4/11/63	285	2,0/1,70	32	60/72/80
	NHC-100 NA	4/16/80	360	2,6/2,25	50	50/60/80/90/100/110
	NHC-150 NA	4/21/90	460	2,7/2,25	50	40/60/80/100/120
	NHC-180 NA	4/21/120	560	3,0/2,50	50	44/60
Noritake	NCS-2/50	2/11/63	240	2,0/1,75	32	54/60/72/80
	NCS-5/50	4/11/63	240	1,5/1,25	32	60
	NCS-2/65	2/11/80	280	2,0/1,75	40	60/80
	NCS-2A/70	4/11/80	285	2,0/1,75	40	60/72/80
	NCS-2A/100	4/11/90	360	2,6/2,25	40	50/60/80/90/100/110
	NCS-2/150	4/11/90	460	2,7/2,25	50	40/60/80/100/120
Plantool	QCS 15/210	4/12/64	250	2,0/1,75	40	54/60/72/80
	QCS 15/210	4/12/64	315	2,3/2,00	40	80/100
Rattunde	ACS 90/2	4/16/80	360	2,6/2,25	50	50/60/80/90/100/110
Rhobi	KTC-65CNC	4/11/63	250	2,0/1,75	32	54/60/72/80
	KTC-65CNC	4/11/63	285	2,0/1,75	32	60/72/80
	KTC-85CNC	4/11/63	315	2,3/2,00	32	80/100
RSA	Rasacut SC	4/12/64	315	2,3/2,00	40	80/100
	Rasacut XXL	4/15/80	360	2,6/2,25	50	80/100/120
	Rasacut XXL	4/15/80	500	2,7/2,25	50	100/120/140/160
Shyh Hong (Shoma)	KD-65	4/11/63	280	2,0/1,75	32	60/72/80
	KD-70	4/11/63	285	2,0/1,75	32	60/72/80
	KD-100	4/11/90	360	2,6/2,25	40	50/60/80/90/100/110
Simac	SIMAX 100	4/16/80	360	2,6/2,25	50	60/80
	SIMAX 150	4/21/90	460	2,7/2,25	50	50/60/80
Sinico	TOP 2000	4/16/80	350	2,6/2,25	32	50/60/80/90/100/110
Trennjager	SPA 75	4/11/63	280	2,0/1,75	32	60/72/80
	SPA 100	4/11/90	360	2,6/2,25	40	50/60/80/90/100/110
	SPA 150	4/11/90	460	2,7/2,25	50	40/60/80/100/120
Tsune	TK5C-50GL	4/11/63	250	2,0/1,70	32	54/60/72/80
	TK5C-70GL	4/11/63	285	2,0/1,70	32	60/72/80
	TK5C-100GL	4/15/80	360	2,6/2,25	50	50/60/80/90/100/110
	TK5C-101GL	4/15/80	360	2,6/2,25	50	50/60/80/90/100/110
	TK5C-101GL	4/15/80	425	2,7/2,25	50	50/60/80/100
Webo	DB-70	4/11/63	250	2,0/1,70	40	54/60/72/80
	DB-70	4/11/63	315	2,3/2,00	40	80/100

STANDARD PIN HOLES / *TROUS D'ENTRAINEMENTS STANDARD* / *TALADROS DE ARRASTE STANDARD*

Bore / *Alésage* / *Agujero central*	
Ø 32 mm	4 / 9 / 50 + 4 / 11 / 63
Ø 40 mm	4 / 16 / 80 + 4 / 12 / 90
	4 / 12 / 64 + 2 / 12 / 80 + 2 / 15 / 80
	4 / 12 / 90 + 2 / 15 / 80 + 2 / 11 / 63
Ø 45 mm	2 / 17 / 120
Ø 50 mm	4 / 16 / 80 + 4 / 13 / 90 - 4 / 16 / 80 + 4 / 21 / 90
	4 / 13 / 90 + 4 / 21 / 90
Ø 80 mm	4 / 23 / 120
Ø 90 mm	3 / 12,5 / 160
Ø 115 mm	2 / 21 / 200
Ø 140 mm	4 / 17,5 / 170

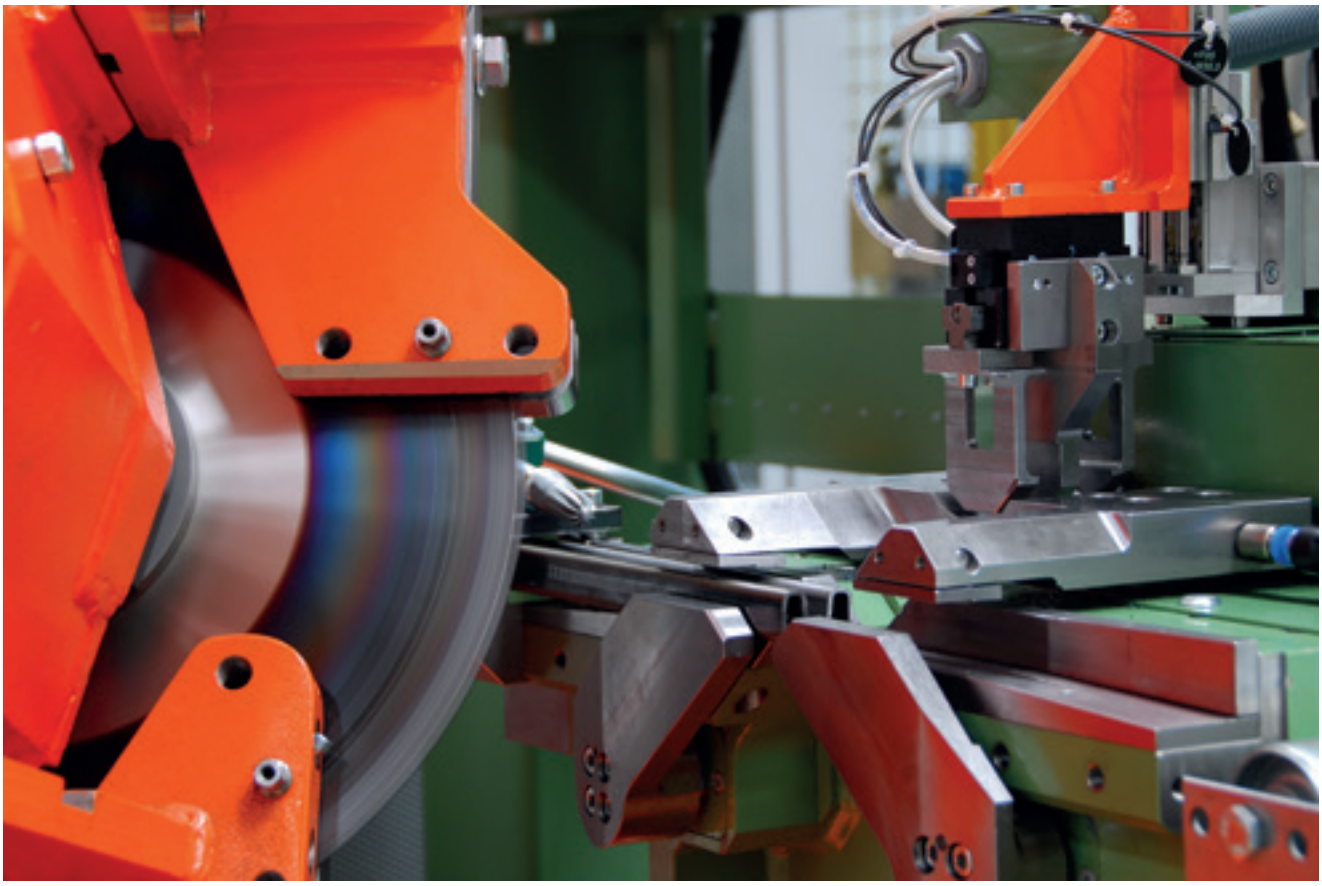
SELECTION OF TOOTH NUMBER FOR SOLID MATERIAL CUTTING
SELECTION DU NOMBRE DE DENTS POUR LA COUPE DE MATERIAUX PLEINS
SELECCION DEL NUMERO DE DIENTES PARA EL CORTE DE MATERIAL SOLIDO

SOLID BAR *BAR SOLIDE* *BARRA SOLIDA*	SAW BLADE *LAME* *SIERRA*	TEETH NUMBER *N° DENTS* *N° DIENTES*
d	Ø	
40 - ≤ 60	250	54
30 - ≤ 50	250	60
20 - ≤ 40	250	72
10 - ≤ 20	250	80
40 - ≤ 70	285	60
30 - ≤ 60	285	72
20 - ≤ 40	285	80
60 - ≤ 80	315	60
30 - ≤ 50	315	80
60 - ≤ 90	360	60
40 - ≤ 70	360	80
20 - ≤ 40	360	100
100 - ≤ 130	425	50
80 - ≤ 120	425	60
60 - ≤ 90	425	80
40 - ≤ 60	425	100
100 - ≤ 130	460	60
70 - ≤ 100	460	80
50 - ≤ 70	460	100



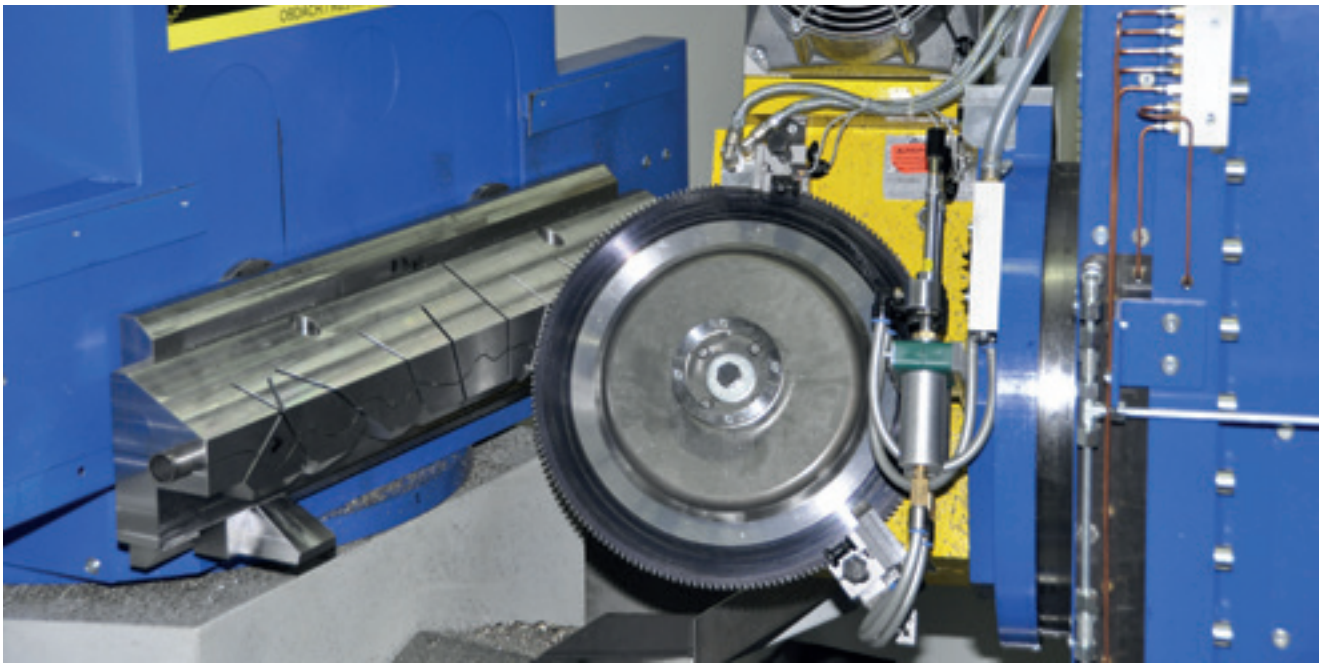
SELECTION OF TOOTH NUMBER FOR TUBE CUTTING
SELECTION DU NOMBRE DE DENTS POUR LA COUPE DE TUBES
SELECCION DEL NUMERO DE DIENTES PARA EL CORTE DE TUBO

Ø	S	Ø TUBE / *TUBE* / *TUBO* (MM)									
		20	30	40	50	60	70	80	90	100	110
315	3 - ≤ 5	Z=110	Z=110	Z=100	Z=100	Z=100	Z=100	Z=100			
350	3 - ≤ 6			Z=120	Z=100	Z=100	Z=100	Z=100			
400	3 - ≤ 6			Z=140	Z=140	Z=140	Z=120	Z=120	Z=100	Z=100	
	6 - ≤ 8			Z=120	Z=120	Z=120	Z=100	Z=100	Z=100	Z=100	
450	3 - ≤ 6				Z=150	Z=130	Z=130	Z=130	Z=130	Z=130	
	6 - ≤ 8				Z=150	Z=130	Z=130	Z=110	Z=110	Z=110	
500	5 ≤ 10					Z=160	Z=140	Z=140	Z=140	Z=120	
	≥ 10					Z=160	Z=140	Z=140	Z=140	Z=120	
550	5 ≤ 10						Z=170	Z=170	Z=140	Z=140	Z=120
	≥ 10						Z=170	Z=170	Z=140	Z=140	Z=120
560	5 ≤ 10						Z=170	Z=170	Z=140	Z=140	Z=120
	≥ 10						Z=170	Z=170	Z=140	Z=140	Z=120
600	5 ≤ 10							Z=180	Z=170	Z=160	Z=140
	≥ 10							Z=180	Z=170	Z=160	Z=140



CUTTING SPEED / *VITESSE DE COUPE / VELOCIDAD DE CORTE*

MATERIAL DESCRIPTION *DESCRIPTION MATIÈRE* *DESCRIPCION DEL MATERIAL*	DIN/UNI	N. MAT.	AISI	TENSILE STRENGTH *RES- À LA TRACTION* *RES- A LA TRACCION* (N/MM²)	CUTTING SPEED *VIT. DE COUPE* *VEL. DE CORTE* (M/MIN)	AV. Z AV. Z AV. Z (MM/Z)
Case-hardening steel *Aciers trempés* *Acero de cementacion*	C 10	1.0301	1010	<450	130-150	0,06-0,08
	C15	1.0401	1015	<450	130-150	0,06-0,08
Structural steel *Aciers de construction* *Acero de construccion*	St 33	1.0035	-	<450	130-150	0,06-0,08
	St 37.0	1.0254	-	450-600	110-140	0,07-0,09
	St 44-2	1.0044	A570	450-600	110-140	0,07-0,09
	St 52.4	1.0581	-	600-750	100-120	0,08-0,10
	15 CrNi6	1.5919	-	600-750	100-120	0,08-0,10
Hardened and tempered steel *Aciers trempés et revenus* *Acero bonificado*	C45	1.0503	1045	700-1100	90-110	0,09-0,11
	36NiCr6	1.5710	3135	700-1100	90-110	0,09-0,11
	34CrMo4	1.7220	-	800-1200	90-110	0,09-0,11
	42CrMo4	1.7225	-	800-1200	90-110	0,09-0,11
Steel bearings *Aciers à roulements* *Acero para cojinetes*	100Cr6	1.3505	E52100	900-1250	70-90	0,06-0,07
	115CrV3	1.2210	L2	900-1250	70-90	0,06-0,07
High-alloy steel *Aciers fortement alliés* *Acero de alta aleacion*	X210Cr12	1.2080	D3	450-700	50-80	0,07-0,09
	X42Cr13	1.2083	-	450-700	50-80	0,07-0,09
Austenitic stainless steel *Aciers inoxydables austénitiques* *Acero inoxidable austenitico*	X5CrNi18-10	1.4301	304H	500-700	50-70	0,04-0,05
	X2CrNiMo 18-14-3	1.4435	316L	500-700	50-70	0,04-0,05
	X6CrNiMoTi17-12-2	1.4571	316Ti	500-700	50-70	0,04-0,05
Ferritic stainless steel *Aciers inoxydables ferritiques* *Acero inoxidable ferrico*	X6Cr13	1.4000	403	450-650	50-90	0,05-0,07
	X6CrMo17-1	1.4113	434	450-650	50-90	0,05-0,07
	X20Cr13	1.4021	420	600-850	50-90	0,05-0,07



JULIA USA CORPORATION - TERMS AND CONDITIONS OF SALE

BY PLACING AN ORDER FOR PRODUCTS PURSUANT TO A JULIA USA CORPORATION QUOTATION OR BY ACCEPTING DELIVERY OF PRODUCTS PURSUANT TO A JULIA USA CORPORATION INVOICE, PURCHASE ORDER, OR PACKING LIST, CUSTOMER (AS HEREINAFTER DEFINED) AGREES TO BE BOUND BY AND ACCEPTS THE FOLLOWING TERMS AND CONDITIONS. THESE TERMS AND CONDITIONS SUPERSEDE ANY AND ALL PRIOR OR CONTEMPORANEOUS REPRESENTATIONS, DISCUSSIONS, CORRESPONDENCE, OR AGREEMENTS BETWEEN THE PARTIES AND ARE IN LIEU OF AND REPLACE ANY AND ALL TERMS AND CONDITIONS SET FORTH IN ANY DOCUMENT ISSUED BY CUSTOMER, INCLUDING WITHOUT LIMITATION ANY REQUEST FOR QUOTE OR PURCHASE ORDER. ANY ADDITIONAL, DIFFERENT, OR CONFLICTING TERMS AND CONDITIONS ON ANY DOCUMENT ISSUED BY CUSTOMER AT ANY TIME ARE HEREBY OBJECTED TO AND REJECTED BY JULIA USA CORPORATION. THIS DOCUMENT CONSTITUTES THE COMPLETE AND EXCLUSIVE AGREEMENT BETWEEN JULIA USA CORPORATION AND CUSTOMER FOR THE SALE OF THE PRODUCTS BY JULIA USA CORPORATION TO CUSTOMER AND CANNOT BE ALTERED OR AMENDED WITHOUT THE EXPRESS WRITTEN CONSENT OF JULIA USA CORPORATION.

AGREEMENT: Any agreement between JULIA USA CORPORATION ("**JULIA USA**") and a buyer or purchaser ("**Customer**") for the supply and/or delivery of circular saw blades and knives, parts, and/or components (collectively. the "**Product**") is expressly conditioned upon Customer's assent to all of the terms and conditions contained herein (the "**Terms and Conditions**"). Customer is deemed to have assented to the Terms and Conditions unless JULIA USA receives written notice of Customer's objection(s) thereto within ten (10) days after Customer's receipt of these Terms and Conditions.

OFFERS / PRICES / ORDERS / ACCEPTANCE: In the event that JULIA USA will issue an offer to a Customer, such offer will be valid for thirty (30) days from the date of issuance. Each offer issued by JULIA USA shall indicate the applicable prices to the Products, and Customer acknowledges and agrees that such prices are not binding upon JULIA USA. Customer shall submit the purchase order in writing to JULIA USA by facsimile or email. JULIA USA shall accept the purchase order within five (5) business days; in the event of non-acceptance by JULIA USA within such term, Customer's purchase order will be deemed rejected. Customer will purchase the Products from JULIA USA at the prices set forth in each accepted purchase order by JULIA USA. Prices for the Products shall not be subject to adjustments prior to shipment, unless in the event of a significant increase in the cost of raw materials, labor or energy to manufacture the Products; if the prices should be increased by JULIA USA before shipment to Customer, then these Terms and Conditions shall be construed as if the increased prices were originally inserted herein and Customer shall be billed by JULIA USA on the basis of such increased prices. In the event of JULIA USA's acceptance of a purchase order for specially manufactured Products.

PAYMENTS / TAXES / TERMS: Customer shall pay JULIA USA for all amounts and/or charges listed on the accepted purchase order, including without limitation all packaging, shipping and handling charges. Customer shall be responsible for all applicable federal, state, municipal, and government taxes, duties, and levies, however designated or levied on the manufacture, assembly, sale, transportation, and/or disposal of the Product. All payments required under such purchase order shall be in U.S. dollars. Unless otherwise stated in writing by JULIA USA, all payments shall be due, by wife transfer, upon Customer's receipt of the Product. If a payment is not received within ten (10) days after it is due, then a finance charge equal to the lesser of eighteen percent (18)% per annum or the maximum interest allowed by law shall apply to such overdue amount. As security for payment of any balances due, JULIA USA shall have the right to retain possession of and shall have a security interest in all of Customer's property and shall have a purchase money security interest and right of possession in the Product, even if already shipped. Customer agrees to execute any requested financing statement and provide any document requested by JULIA USA to protect its security interest. JULIA USA may suspend performance of any order, defer shipments, accelerate the due date on all amounts owed, require security and/or require adequate assurances when, in JULIA USA's sole opinion, the financial condition of Customer warrants such action. Customer agrees to pay all of JULIA USA collection costs, including without limitation reasonable attorneys' fees.

TITLE / DELIVERY / RISK OF LOSS: JULIA USA shall determine the schedule for delivery of the Product in its sole discretion and subject to the availability of finished Products. JULIA USA shall have the right to make partial shipment of the Product, and Customer shall pay the amounts due and payable for such partial shipment. Unless otherwise provided in writing by JULIA USA delivery of the Product shall be made Ex-works (Incoterms 2010). The title to and risk of loss or damage with respect to the Product shall pass to Customer upon delivery to Customer or Customer's designated carrier at the Ex-works point of shipment. JULIA USA's obligation to deliver the Product, when and if applicable, is subject to receipt from Customer of all necessary information and documentation from Customer including, but not limited, to exemption and/or resale certificates, licenses, and other documents as may be required from Customer. Transportation shall be at Customer's sole risk and expense, and any claims for losses or damage in transit shall be against the carrier only, and Customer hereby agrees to waive any such claim against JULIA USA. If delay in delivery is caused, in whole or in part, by Customer, JULIA USA reserves the right to invoice Customer for the applicable Product and to make reasonable charges for storage until such time as delivery can be made. The Product shall be packed for shipment in such manner as may be determined by JULIA USA.

SHORTAGES AND REJECTION: Customer shall promptly notify JULIA USA, in no event later than ten (10) business days after delivery, of any claimed shortages or rejection as to any Product that is in material non-conformance. Such notice must be in writing and shall reasonably detail the grounds for any such rejection. Failure to give such notice within such time shall be deemed an acceptance in full of any such delivery. Customer shall provide JULIA USA with a reasonable time to cure any notified shortage or material non-conformance of the Product. In the event of Customer's order for specially manufactured Products, as defined from time to time by JULIA USA, if JULIA USA delivers to Customer a quantity of Products of up to ten-percent (10%) more or less than the quantity set forth in the accepted purchase order, Customer shall not be entitled to object to or reject the Products or any portion of them by reason of the surplus or shortfall and shall pay for such Products the price set forth in the accepted purchase order adjusted accordingly. Notwithstanding the foregoing, in the event of Customer's order for a Minimum Quantity of specially manufactured Products (as hereinafter defined), Customer agrees that JULIA USA might supply a quantity of Product up to one (1) more or less Product than the quantity set forth in the accepted purchase order, and Customer further agrees that Customer shall not be entitled to object to or reject such Products or any portion of them by reason of the shortfall and shall pay for such Products the price set forth in the accepted purchase order adjusted accordingly. For the purposes of this Section, the term "Minimum Quantity" shall mean an ordered quantity of Products between no less than five (5) and up to a maximum of nine (9).

CONFIDENTIAL INFORMATION: All proprietary information (whether written, electronic, or oral) furnished (whether before or after the date of the agreement entered into by and between JULIA USA and Customer) by JULIA USA to Customer relating to the Product, except information that legally is or becomes publicly available or is rightfully received by Customer from a third party, is hereinafter referred to as the "**Confidential Information**". Customer, together with its officers, directors, employees, and agents, agrees: (i) to keep the Confidential Information confidential and not to disclose such Confidential Information in any manner whatsoever without the prior written consent of JULIA USA, except as required by applicable law, regulation, or legal process, and (ii) not to use the Confidential Information for other purposes than evaluating the purchase of Product from JULIA USA Customer shall cause its officers, directors, employees, and agents to observe the terms of this provision and shall be liable for any breach of this provision. Upon request by JULIA USA, Customer shall promptly return all Confidential Information to JULIA USA.

INTELLECTUAL PROPERTY: All intellectual property rights in and to the Product, in whole or in part, shall remain the property of JULIA USA, its parent, or affiliate companies (or their respective licensors) as applicable from time to time. The sale of the Product by JULIA USA to Customer does not in any way grant, convey, or confer upon Customer or anyone else any license, express or implied, under any patent, copyright, trademark, mark, work right, or other intellectual property right in the Product production or design processes. JULIA USA makes no representation or warranty with respect to the patentability of the Product or that any of the Product will be free from claims of infringement. In addition to the indemnification provisions stated herein, Customer agrees to indemnify and defend JULIA USA in any suit, action, or proceeding for any claim resulting from actual or alleged infringement of any domestic or foreign letters of patent for any feature, construction or design incorporated into the Product at Customer's request or any additions, changes, or adaptations made by Customer or Customer's customers after delivery of the Product.

EXCUSE FROM PERFORMANCE: JULIA USA shall not be liable for and its performance shall be excused when there is any contingency beyond the control of JULIA USA or its supplier that interferes with JULIA USA's production, supply, or transportation, including but not limited to natural disaster, acts of war, unavailability or shortages of materials, fuel or power through normal commercial channels at customary and reasonable rates, terrorist act, embargo, action by federal, state, local or foreign government, public protest, destruction of equipment, governmental actions, or labor difficulties. When performance is so excused, all quantities of affected Product may be eliminated from future agreements without liability and JULIA USA may allocate its supplies and Product among their various uses in any manner which is commercially reasonable.

LIMITED WARRANTY: JULIA USA warrants that for a period of one (1) year from the date of shipment, the Product will be materially free from defects in materials and workmanship under normal use and proper maintenance. JULIA USA's obligation under this Limited Warranty shall be limited to the repair or replacement (at JULIA USA's sole option) of the affected Product or parts thereof, exclusive of the cost of field labor for replacing, removing or re-installing such Product or parts thereof. A warranty claim is not valid unless it is delivered to JULIA USA in writing within eight (8) days after Customer learns of the alleged defect and provides reasonable detail of the alleged defect. In the event that Customer claims a defect of a Product (the "**Defective Product**"), Customer can send, at its own expenses, to JULIA USA the Defective Product. Upon inspection and evaluation of the claimed defect JULIA USA, at its sole discretion, may repair or replace such Product. JULIA USA will bear the costs and expenses of reparation or replacement.

JULIA USA shall have no obligation under the Limited Warranty to the extent the alleged defect is the result of (i) misuse, abuse, neglect, accident, improper maintenance, or incorrect handling by Customer; (ii) operation of the Product other than in accordance with the operating manual, documentation, use supplements, and bulletins provided by JULIA USA; (iii) use of the Product with parts, components, or re-agents not approved for use by JULIA USA; or (iv) any modification of any part of the Product not expressly authorized in writing by JULIA USA.

DISCLAIMER: THE LIMITED WARRANTY IS EXCLUSIVE, JULIA USA MAKES NO OTHER WARRANTIES, CONDITIONS, PROMISES, OR REPRESENTATIONS, EXPRESS, IMPLIED, STATUTORY, OR OTHERWISE, REGARDING THE PRODUCT, RELATED EQUIPMENT, RELATED SERVICES, OR ANY MATERIALS, PARTS, OR COMPONENTS THEREOF, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OR CONDITIONS OF QUALITY, PERFORMANCE, MERCHANTABILITY, SUITABILITY FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, OR THOSE ARISING FROM COURSE OF DEALING OR USAGE OF TRADE. ALL SUCH WARRANTIES, CONDITIONS, AND REPRESENTATIONS ARE HEREBY DISCLAIMED TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW.

UNLESS AUTHORIZED IN WRITING BY AN EXECUTIVE OFFICER OF JULIA USA, NO AGENT, EMPLOYEE OR REPRESENTATIVE OF JULIA USA HAS ANY AUTHORITY TO BIND JULIA USA TO ANY AFFIRMATION, REPRESENTATION OR WARRANTY CONCERNING THE PRODUCT SOLD.

LIMITATION OF LIABILITY: The Limited Warranty shall constitute JULIA USA's sole liability and Customer's exclusive remedy in connection with any claim of any kind relating to the Product, including without limitation its quality, condition, performance, or delivery, whether such claim is based upon principles of contract, warranty, negligence or other tort, breach of any statutory duty, principles of indemnity or contribution, the failure of any limited or exclusive remedy to achieve its essential purpose, or otherwise.

JULIA USA SHALL NOT BE LIABLE TO CUSTOMER UNDER ANY CIRCUMSTANCES FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, PUNITIVE, OR EXEMPLARY DAMAGES ARISING OUT OF, RELATED TO, OR IN ANY WAY CONNECTED WITH THE PRODUCT OR THE AGREEMENT TO SELL PRODUCT TO CUSTOMER, INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR INJURIES, LOST PROFITS, LOSS OF USE, OR FOR ANY DAMAGES OR SUMS PAID BY CUSTOMER TO THIRD PARTIES, EVEN IF JULIA USA HAS BEEN ADVISED OF POSSIBILITY OF SUCH DAMAGES.

ASSIGNMENT: No quotation, invoice, purchase order, or packing list is transferable or assignable by Customer without the prior written consent of JULIA USA.

CHANGES: JULIA USA may at any time, and without notice, discontinue the manufacture of the Product or any piece, component, or part thereof, in which case JULIA USA shall have no liability to Customer except, if applicable, the return of deposits or pre-payments.

SEVERABILITY: The invalidity or unenforceability of any provisions of this Terms and Conditions shall not affect the validity or enforceability of any other provision of such instrument, which shall remain in full force and effect.

GENERAL: The invoice, purchase order, or packing list, as applicable, together with these Terms and Conditions, constitutes the complete and final agreement between Customer and JULIA USA and may be modified only by an amendment, expressly stated as such, signed by both parties. The failure of JULIA USA to enforce any terms or conditions herein shall not constitute a waiver of that term or condition or any other term or condition. If any provision or any portion of any provision contained herein or the application of such provision or any portion thereof, shall be held invalid or unenforceable, the remaining portion of such provision and the remaining provisions herein, shall not be affected thereby. The document shall be interpreted in accordance with the laws of the State of Illinois without regard to conflict of law principles and Customer consents to the exclusive jurisdiction (including without limitation personal jurisdiction) and venue in Illinois.

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