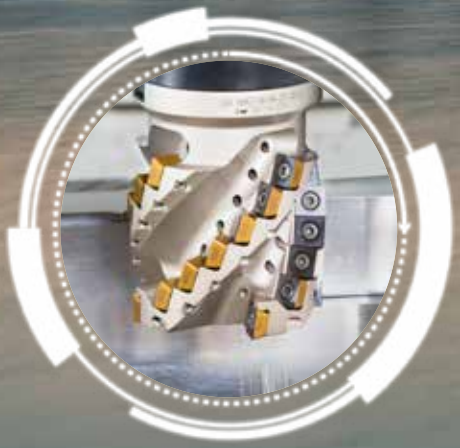
ISCAR
INDUSTREALIZE
IDEAS BECOME REALITY

Power Generation

ISCAR'S MACHINING SOLUTIONS FOR

WIND ENERGY



Member IMC Group

ISCAR

www.iscar.com

Power Generation

Wind Energy

ISCAR, A World Leader in the Renewable Energies Industry

Renewable Energy is collected from clean resources that are naturally replenished on a human time scale such as sunlight, wind, rain, tides, waves, and geothermal heat. Wind energy is the use of wind to provide mechanical power through wind turbines to turn electric generators for electrical power.

ISCAR, a company with many years of experience in the production of metal cutting tools, offers unique solutions for the new generation of industries. As a leader in providing productive and cost effective machining solutions, **ISCAR** strives to be up to date with all the new trends and technologies which are a part of a brighter, greener future.

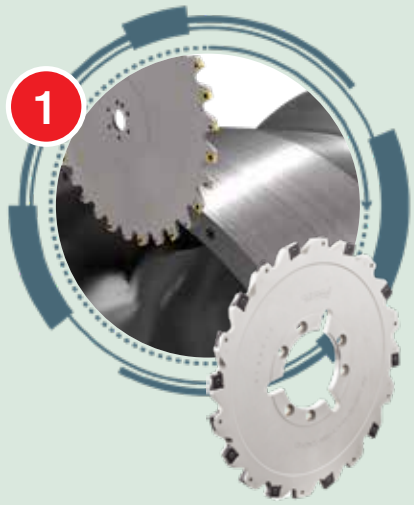
Power Generation

Rotor Blade

TANGSLOT

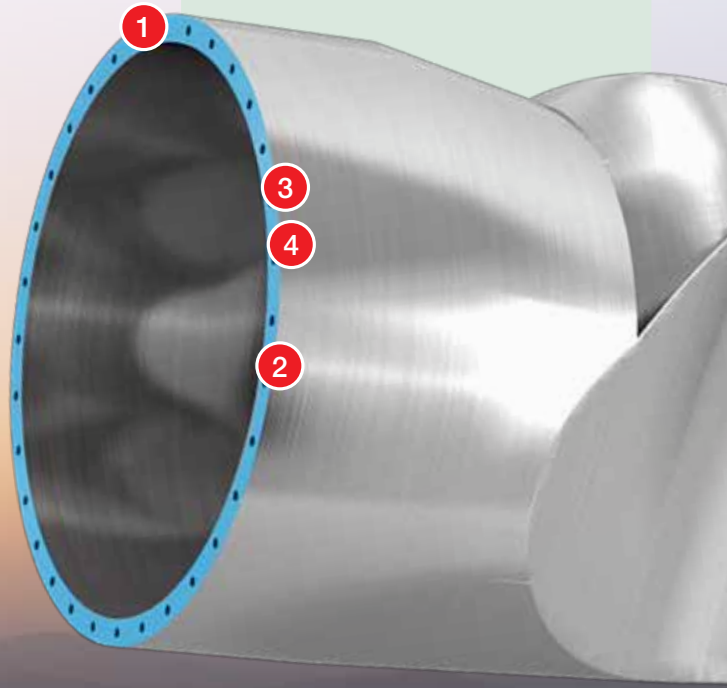
Rotor Blade

Modern commercial turbines are typically a three-blade designs and manufactured from fiberglass-reinforced polyester with an epoxy resin binder. New materials such as carbon fiber are being introduced and provide the high strength-to-weight ratio needed for modern wind turbine blades. The length of a typical turbine blade can reach 60 meters in height, installed in 5 MW machines!



Milling/Slotting (Roughing)

Slotting cutters with tangentially mounted inserts for precision shallow grooving and slotting applications. Semi-standard PCD tipped inserts are available on request.



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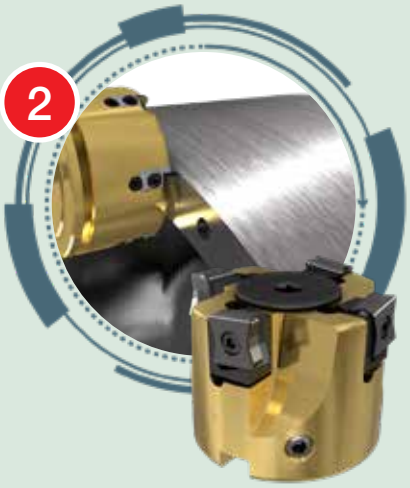


Face Milling (Finishing)

High speed dynamic balanceable face mills for machining aluminum casting and carbon fiber materials, with interchangeable PCD brazed cartridges.

SUMOCHAM
CHAMDRILL LINE

Drilling

SUMOCHAM comprises a revolutionary clamping system that enables improved productivity output rates, while enabling more insert indexes.

ISCAR PCD LINE

DR-TWIST
INDEXABLE DRILL LINE

Drilling

Drills designed with twisted coolant channels, allowing a strong body with excellent resistance to torsion and very efficient chip evacuation. Semi-standard PCD tipped inserts are available on request.

Power Generation

Blade Adapter

Blade Adapter

The rotation platform of the blade pitch system is made of cast iron. ISCAR has all the right technological solutions for the production of blade adapters.

HELIDO 490 LINE

Face Milling

HELIDO is a family of tools for 90° milling. The **HELIDO** H490 ANKX rectangular inserts have 4 helical right-hand cutting edges.

HELIDO 845 LINE

Face Milling

Multifunctional face mill for octagonal square and round insert contours with various entry angles.

CHAM-IQ-DRILL
700 LINE

Drilling

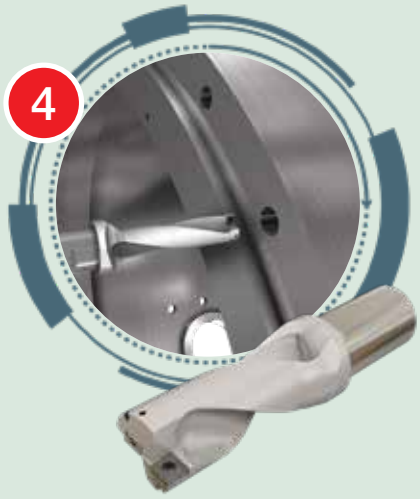
The **CHAM-IQ-DRILL** features a unique design, eliminating the need for clamping accessories. The robust structure of the drill with the concave cutting edge design enables drilling at high feed rates, providing very accurate IT8 – IT9 hole tolerance.

SUMOCHAM
CHAMDRILL LINE

Drilling

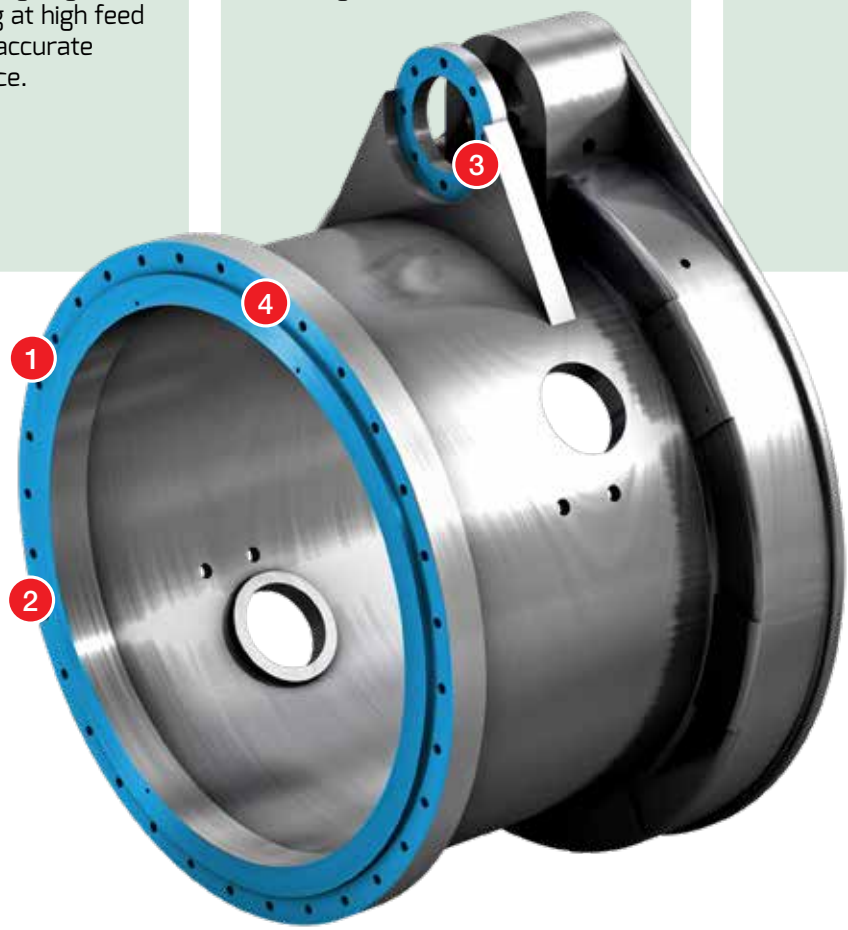
SUMOCHAM comprises a revolutionary clamping system that enables improved productivity output rates, while enabling more insert indexes.

DR-TWIST
INDEXABLE DRILL LINE



Drilling

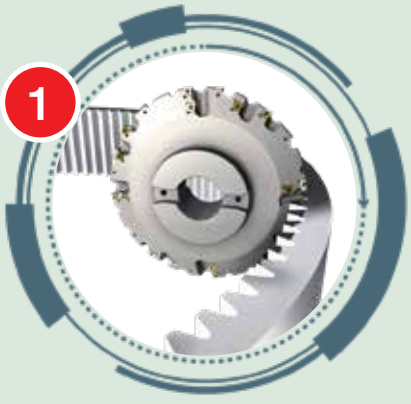
Drills designed with twisted coolant channels, allowing a strong body with excellent resistance to torsion and very efficient chip evacuation.



Power Generation

Blade Bearing

TANGSLOT



Gear Gashing Slotting Radius Profile Roughing

Gear slotting cutters with tangentially mounted inserts are excellent for roughing and finishing a variety of teeth profile modules.

DR-TWIST
INDEXABLE DRILL LINE

Drilling

Drills designed with twisted coolant channels, allowing a strong body with excellent resistance to torsion and very efficient chip evacuation.

DOVEIQTURN
HEAVY DUTY LINE

External Rough Turning

Double-sided rhombic inserts for heavy turning.

Blade Bearing

Adjusts the angle of the blades by rotating a bearing at the root of each blade. Blade bearings enable power control and rotor braking. Made of bearing steel.

SUMOTURN
HEAVY DUTY LINE

Inner Boring of Bearing Roll

A line of external and internal tools, as well as large-sized inserts for heavy duty applications.

ISOTURN

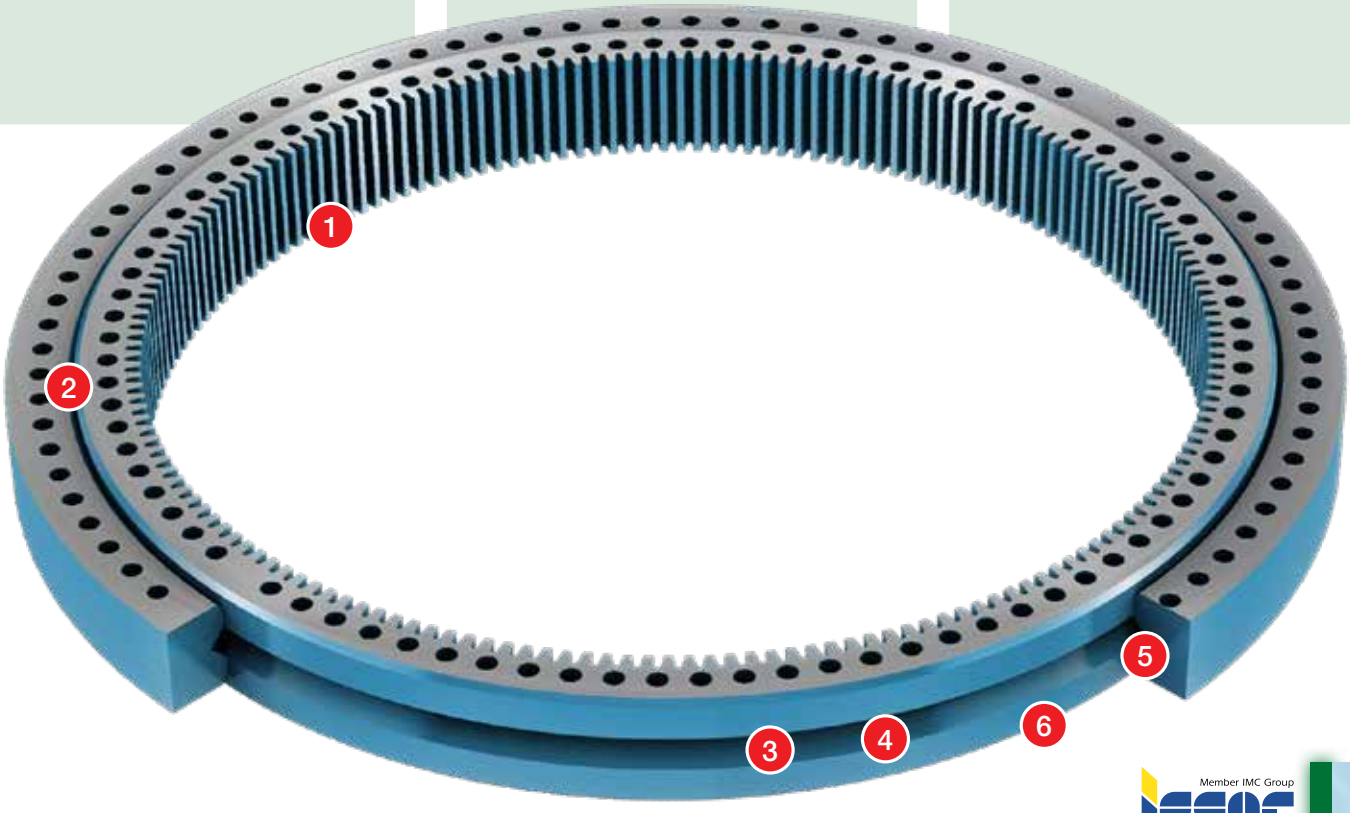
Ceramics - Hard Turning Finishing Operation

IN23 - 40 - 50 HRc
IN22 - over 50 HRc
IN420 - over 50 HRc

ISOTURN

CBN - Hard Turning Finishing Operation

IB50 - 45 - 65 HRc
(interrupted cutting)
IB10H - 58 - 65 HRc
IB10HC - 58 - 65 HRc
(continuous cutting)



Power Generation

Rotor Hub

HELITANG T490 LINE

MULTI-MASTER INDEXABLE SOLID CARBIDE LINE

LOGIQ4FEED HIGH FEED MILLING

Shouldering

4 cutting corners, tangential geometry for fast metal removal (FMR) at very high material removal rates.

Chamfering

A family of tools with shanks that have unique interchangeable heads for a variety of milling applications including ball nose, straight shoulder, slitting and slotting applications.

Rough Pocketing

FFQ4 D...
FFQ4 SOMT 1205RM-HP IC830
Square single-sided inserts with four cutting edges designed for reducing cutting forces and long overhang applications.

Rotor Hub

The rotor hub, made of a cast iron case, is the component that generally holds and connects the three-blade rotational assembly to a linear low speed shaft that connects to the turbine›s gearbox. Most modern turbine hubs contain a pitch system to adjust the angle of the blades by rotation of a bearing at the root of each blade, to control power and slow down the rotor as required.

SOLIDTHREAD

Threading

Solid carbide thread mills for the production of small internal threads. The thread mills feature a short 3-toothed cutting edge with 3 flutes and a released neck between the cutting zone and the shank.

SUMOCHAM
CHAMDRILL LINE

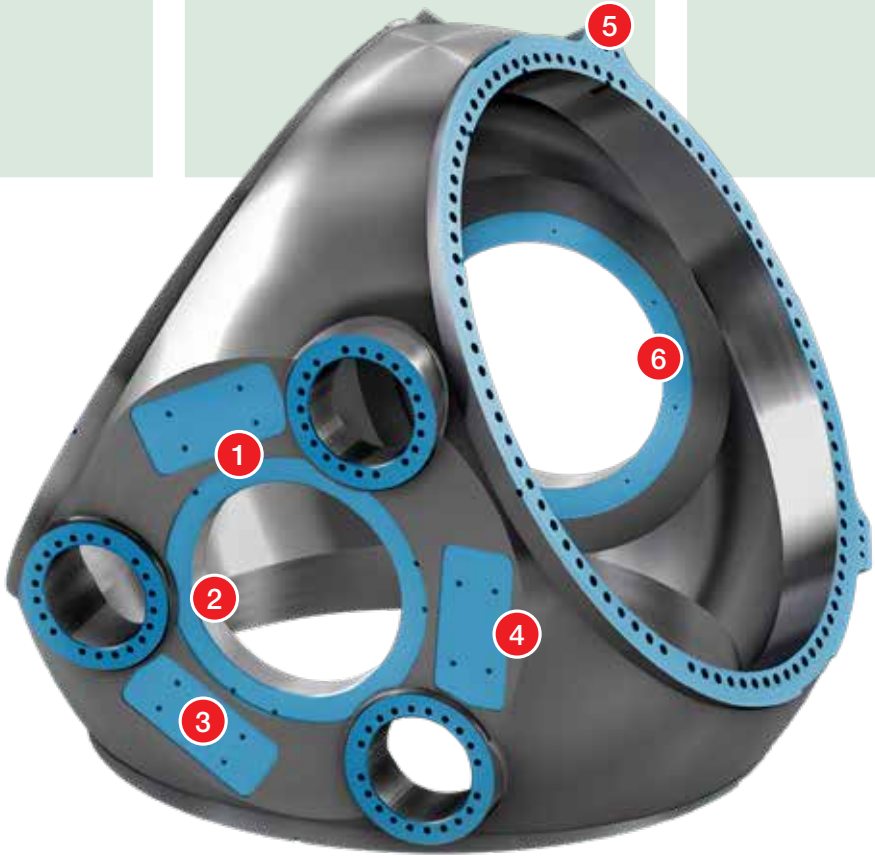
Drilling

SUMOCHAM comprises a revolutionary clamping system that enables improved productivity output rates, while enabling more insert indexes.

TANGSLOT

Back Milling

(FST slotting cutters) **ISCAR's** tangential slot milling cutters use cutting inserts with 4 cutting edges. They are suitable for high table feeds, resulting in increased productivity.



Power Generation

Rotor Hub

HELIDO 845 LINE

Face Milling

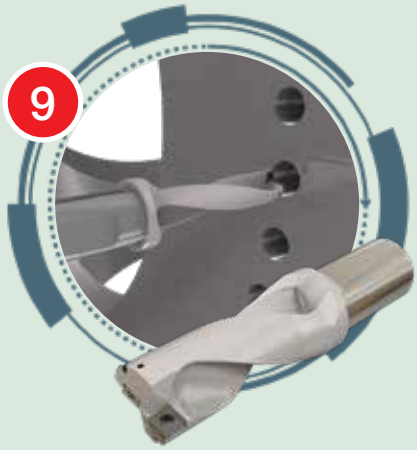
S845 SNMU 1305... - square double-sided inserts with 8 cutting edges, or ONMU 0505... octagonal, double-sided inserts with 16 cutting edges. Enables highly efficient milling.

HELITANG T490 LINE

Helical Interpolation Rough Boring

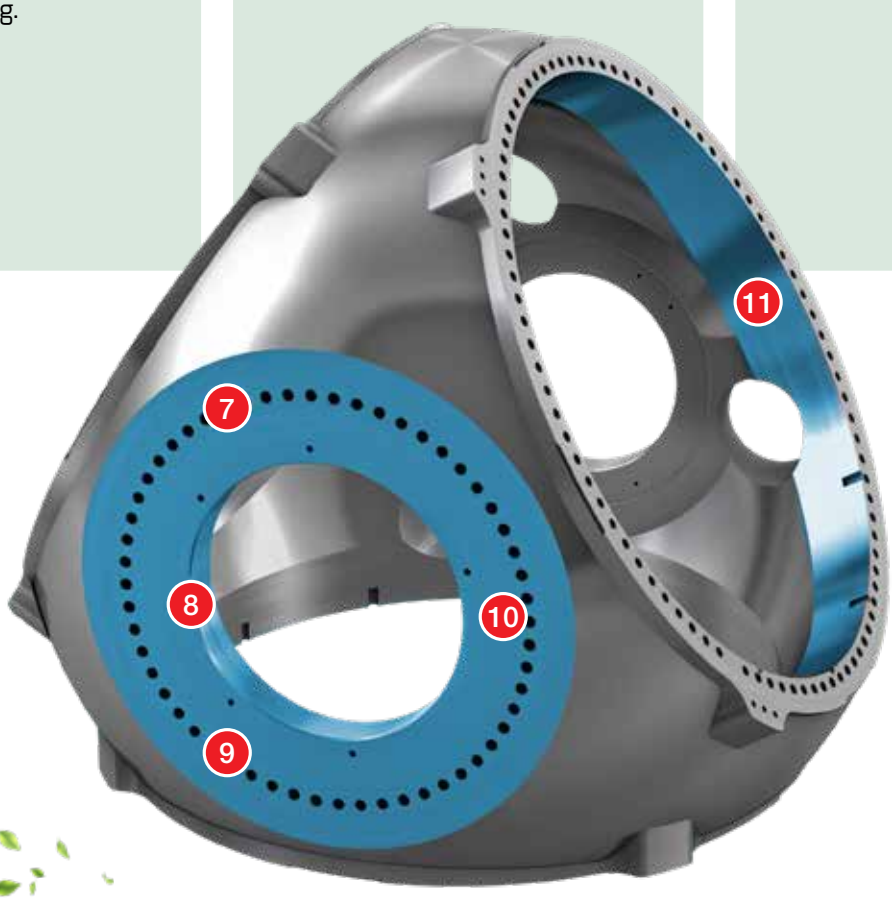
4 cutting corners, tangential geometry for fast metal removal (FMR) at very high material removal rates on the sides of the blades.

DR-TWIST INDEXABLE DRILL LINE



Drilling

Drills designed with twisted coolant channels, which allow a strong drill body with excellent resistance to torsion and very efficient chip evacuation.

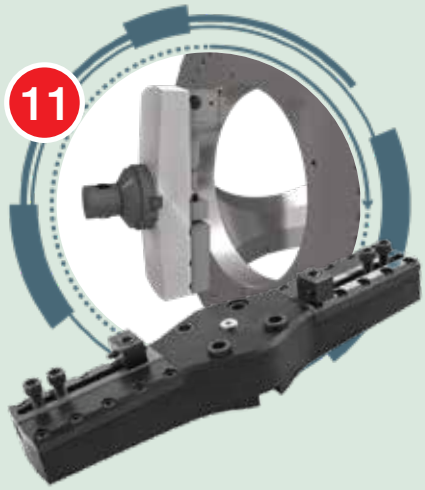


MILLTHREAD

Threading

Indexable threading endmills with a weldon shank and coolant holes.

ITSBORE



Fine Boring

TCH AL Aluminum twin cutter heads for rough and fine boring operations.

Power Generation

Axle Pin (Gearless)

Axle Pin (Gearless)

A conical cast steel axle connects the rotor hub and the annular generator directly as a fixed unit without gears. Made of alloy steel.

SUMOTURN HEAVY DUTY LINE

Rough External Turning

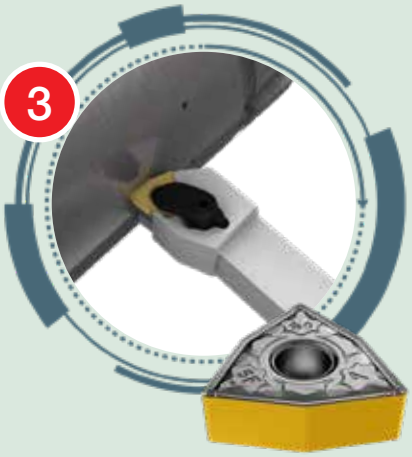
A line of external and internal tools, as well as large-sized inserts for heavy duty applications.

SUMOTURN HEAVY DUTY LINE

Rough External Turning

Tangentially clamped insert with a unique helical shaped cutting edge. Provides an exceptional solution for turning and enables very large depths of cut at high feeds.

ISOTURN



External Turning (Finishing)

A line of external and internal tools, as well as large-sized inserts for heavy duty applications.

SUMOCHAM
CHAMDRILL LINE

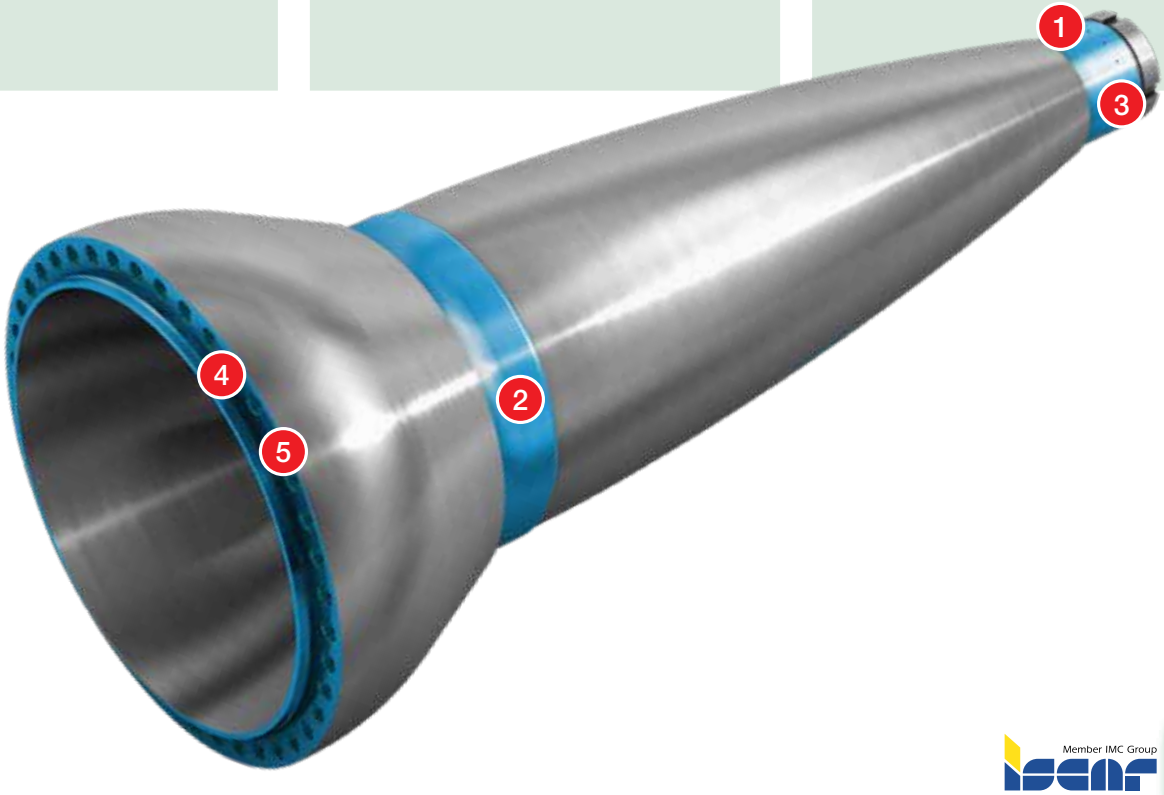
Drilling

SUMOCHAM comprises a revolutionary clamping system that enables improved productivity output rates, while enabling more insert indexes.

DR-TWIST
INDEXABLE DRILL LINE

Drilling

Drills designed with twisted coolant channels, allowing a strong body with excellent resistance to torsion and very efficient chip evacuation. Semi-standard PCD tipped inserts are available on request.



Power Generation

Main Shaft

SUMOTURN HEAVY DUTY LINE

External Rough Turning

Tangential inserts with 4 cutting edges for high metal removal of up to 35mm D.O.C. on steel.

SUMOTURN HEAVY DUTY LINE

O.D. Rough Turning

A line of external and internal tools, as well as large-sized inserts for heavy duty applications.

HELITURN TG

External Turning (Finishing)

Tangentially clamped insert with unique helical shaped cutting edges. Provides an exceptional solution for turning, enabling very large depths of cut and high feeds.

Main Shaft

The main shaft of the wind turbine is usually forged from hardened and tempered steel. The main shaft transmits a low speed rotational force from the rotor hub. Kinetic wind energy to the gearbox enables high speed rotation, which spins the generator and creates electrical energy.

ISOTURN

External Turning (Finishing)

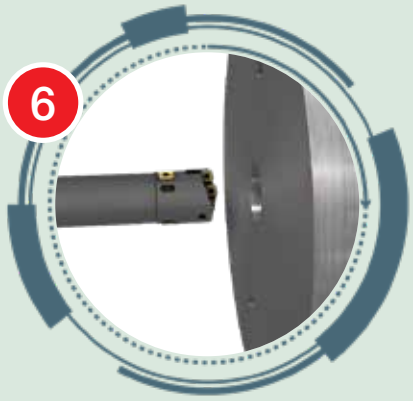
A line of external and internal tools, as well as large-sized inserts for heavy duty applications.

GROOVETURN

External Grooving

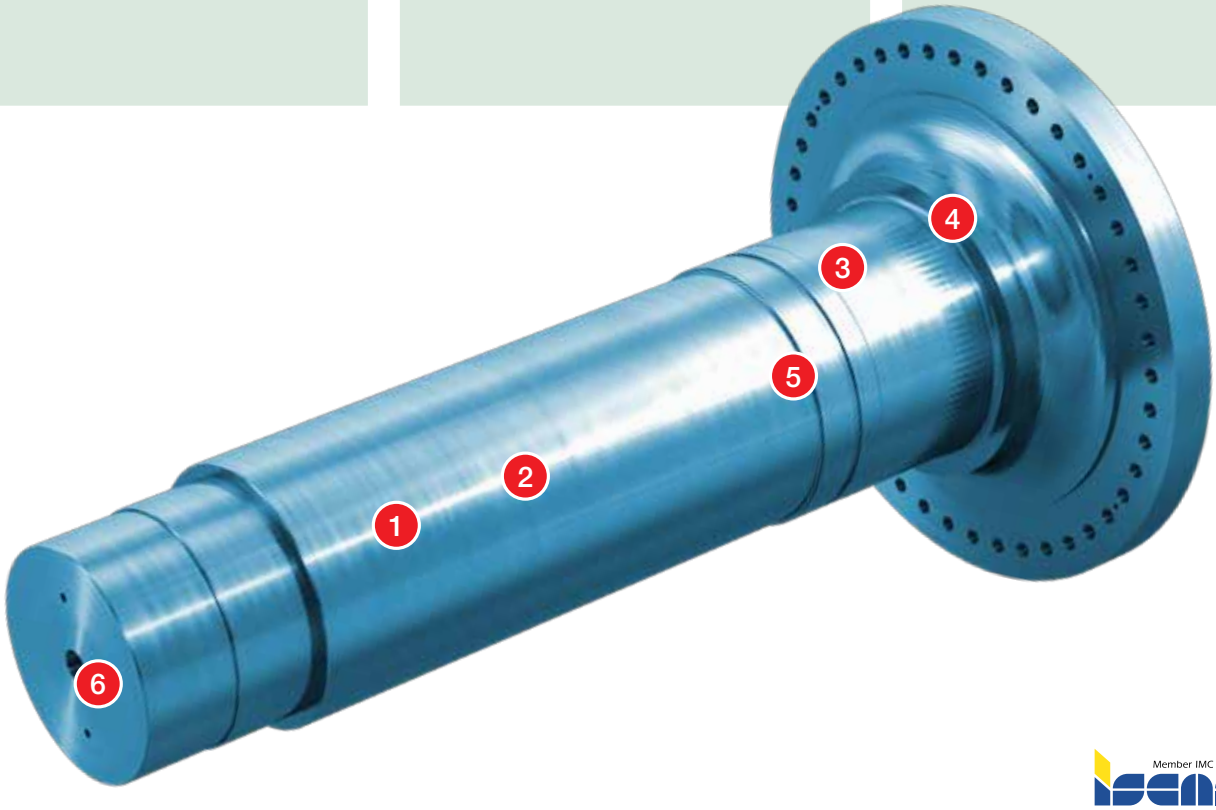
Turning with groove-turn tools provide a surface quality far superior to anything normally possible when turning with standard ISO tools. Turning with GRIP tools can produce a surface quality comparable to grinding.

ISCARDEEPDRILL



Deep Drilling

BTA System
DTS – Double Tube System
Range: Ø18.41 - 168.99 mm (Ø.724 - 6.65"), IT9-IT10
STS – Single Tube System
Range: Ø14.51 - 245.99 mm (Ø.571 - 9.68"), IT9



Power Generation

Main Shaft

HELITANG T490 LINE

Face Milling (Finishing)

4 cutting corners, tangential geometry for fast metal removal (FMR). at very high material removal rates on the sides of the blade.

16MILL

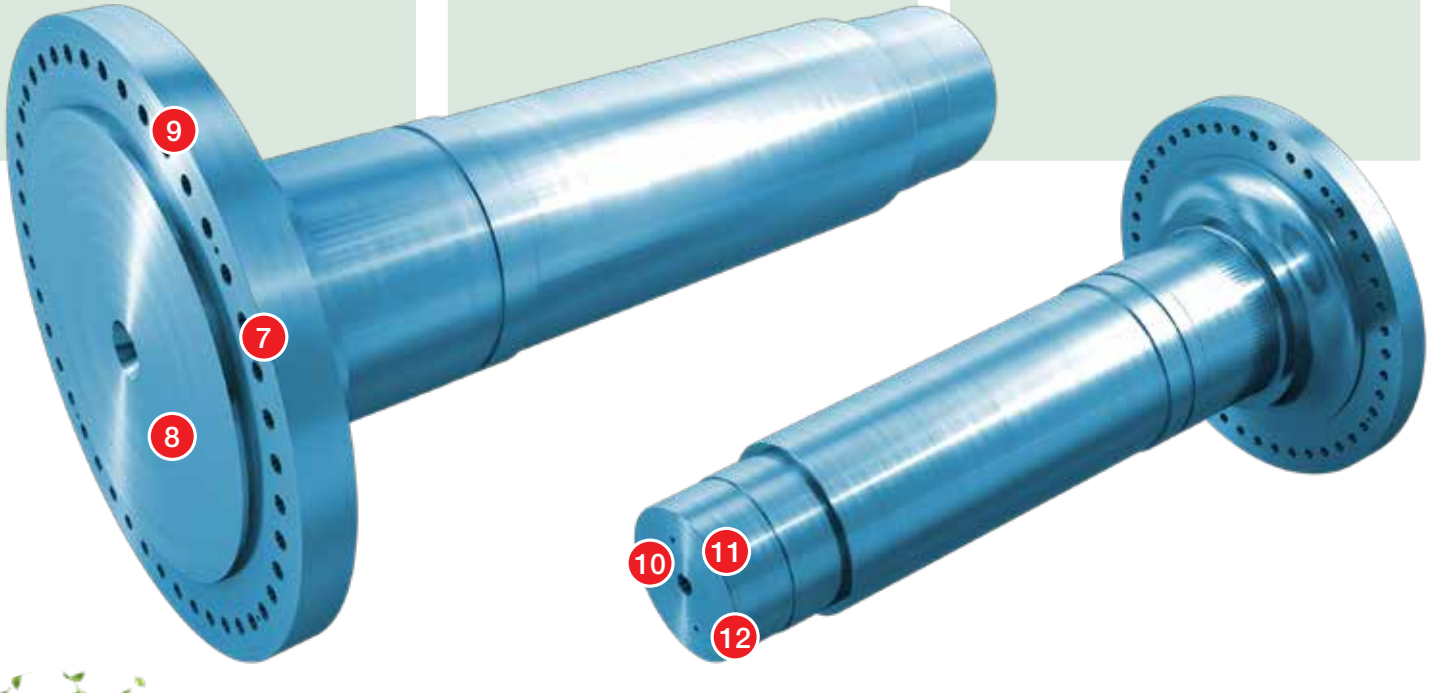
Face Milling (Finishing)

16 economical cutting corners for fast metal removal (FMR). Fine pitch 45° face mills designed for high table speed.

DR-TWIST INDEXABLE DRILL LINE

Drilling

Drills designed with twisted coolant channels, allowing a strong body with excellent resistance to torsion and very efficient chip evacuation. Semi-standard PCD tipped inserts are available on request.



HELIDO
845 LINE

Face Milling

S845 SNMU 1305... - square double-sided inserts with 8 cutting edges, or ONMU 0505... octagonal double-sided inserts with 16 cutting edges. Enables highly efficient milling.

SUMOCHAM
CHAMDRILL LINE

Drilling

SUMOCHAM comprises a revolutionary clamping system that enables improved productivity output rates, while enabling more insert indexes.

SOLIDTHREAD

Threading

Solid carbide thread mills for the production of small internal threads. The thread mills feature a short 3-toothed cutting edge with 3 flutes and a released neck between the cutting zone and the shank.

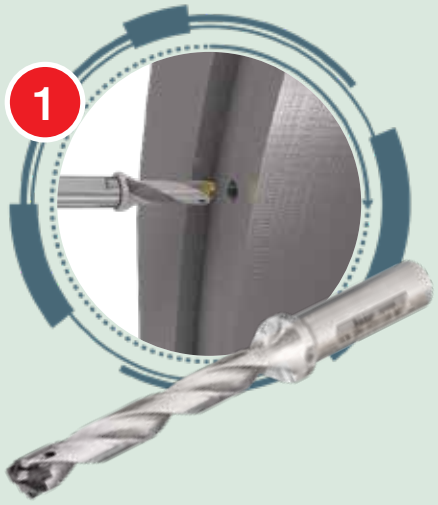
Main Bearing Housing

Main Bearing Housing

Materials:
Stainless steel
13Cr4Ni
16Cr5Ni

The main bearing housing absorbs the residual bending loads, while the rotor shaft transmits the rotational torque to the gearbox.

SUMOCHAM CHAMDRILL LINE



Drilling

SUMOCHAM comprises a revolutionary clamping system that enables improved productivity output rates, while enabling more insert indexes.

SOLIDTHREAD

Threading

Solid carbide thread mills for the production of small internal threads. The thread mills feature a short 3-toothed cutting edge with 3 flutes and a released neck between the cutting zone and the shank.

MULTI-MASTER
INDEXABLE SOLID CARBIDE LINE

Chamfering

A family of tools with shanks that have unique interchangeable heads for a variety of milling applications including ball nose, straight shoulder, slitting and slotting applications.

HELIDO
600 UPFEED LINE

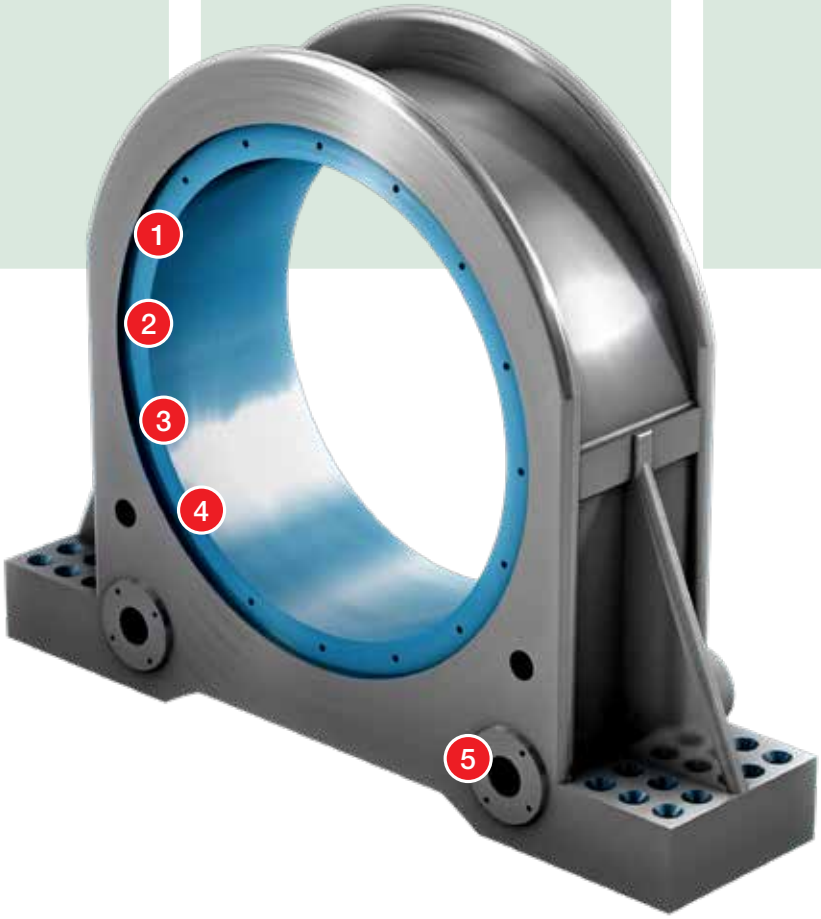
Face Milling

HELIDO is a family of tools for 90° milling. The **HELIDO** H490 ANKX rectangular inserts have 4 helical right-hand cutting edges.

TRIDEEP
DEEP DRILLING

Deep Drilling

Deep drills for milling centers and lathe machines with a drilling ratio of up to 7xD.



Power Generation

Main Bearing Housing

HELITANG T490 LINE

Option 1

Roughing by Helical Interpolation

4 cutting corners, tangential geometry for fast metal removal (FMR) at very high material removal rates.

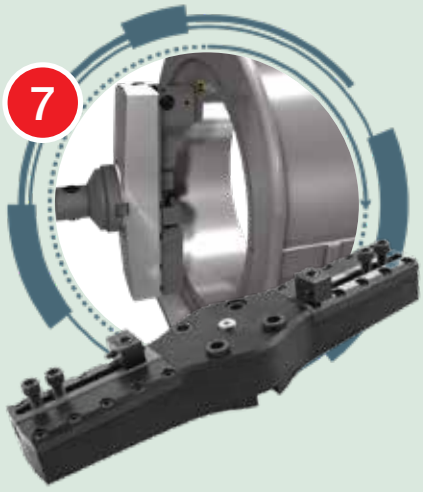
MILLSHRED P290 LINE

Option 2

Extended Flute Cutter

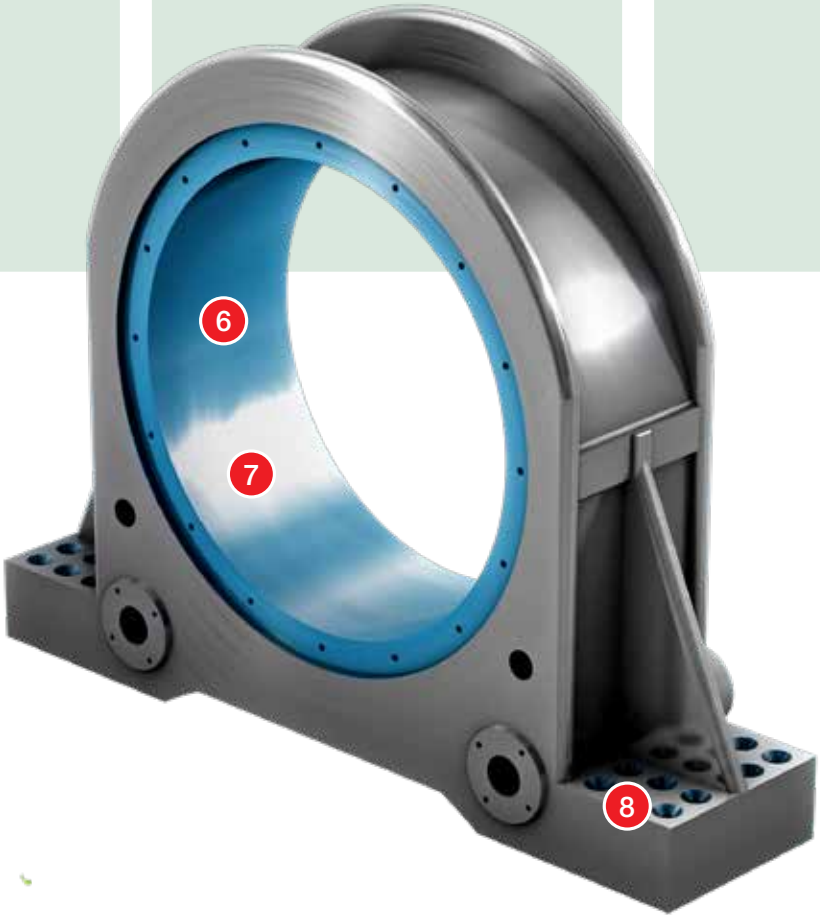
P290 SM shell mills carring 12 and 18mm long-edged insrets.

ITSBORE



ITS Bore System

TCH AL Aluminum twin cutter heads for rough and fine boring operations.



DR-TWIST
INDEXABLE DRILL LINE

Drilling

Drills designed with twisted coolant channels, allowing a strong body with excellent resistance to torsion and very efficient chip evacuation. Semi-standard PCD tipped inserts are available on request.

Power Generation

Planetary Carrier

Planetary Carrier

The rotary gear planetary carrier, made of nodular cast iron, is a part of the gear assembly. It functions to increase the slow rotation speed of the main shaft, transferred as higher rotation to the generator.

Gear Sub-Component

16MILL

Face Milling (Finishing)

16 economical cutting corners for fast metal removal (FMR). Fine pitch 45° face mills designed for high table speed.

ITSBORE

ITS Rough Boring

TCH AL Aluminum twin cutter heads for rough and fine boring operations.

ITSBORE

ITS Fine Boring

TCH AL Aluminum twin cutter heads for rough and fine boring operations.

Planetary Carrier

Planetary Carrier

The rotary gear planetary carrier, made of nodular cast iron, is a part of the gear assembly. It functions to increase the slow rotation speed of the main shaft, transferred as higher rotation to the generator.

HELITURN TG

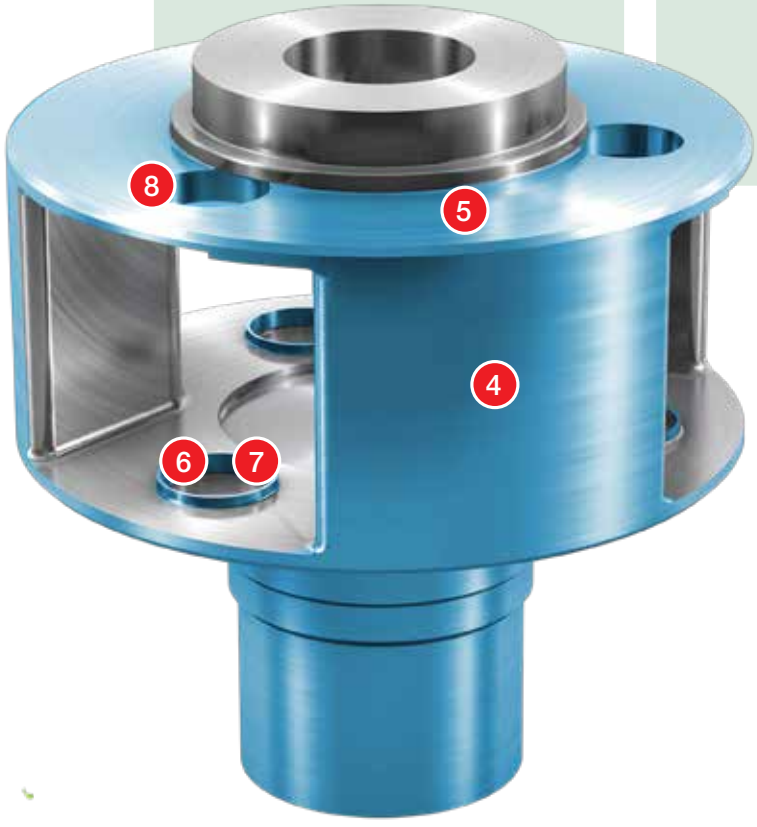
Turning

Tangentially clamped insert with unique helical shaped cutting edges. Provides an exceptional solution for turning, enabling very large depths of cut and high feeds.

SUMOTURN HEAVY DUTY LINE

Turning

A line of external and internal tools, as well as large-sized inserts for heavy duty applications.



MILLSHRED
ROUND LINE

Rough Helical Interpolation

Milling cutters that can carry either round inserts with a serrated cutting edge or regular round inserts.

HELI3MILL
HM390 LINE

Finish Helical Interpolation

HM390 endmiils carrying triangular inserts with 3 helical cutting edges.

ITSBORE

Fine Boring

BHF fine boring heads used on an MB modular boring system. Slider: BHFH... Insert holders: IHRF..

Power Generation

Support Base

Support Base

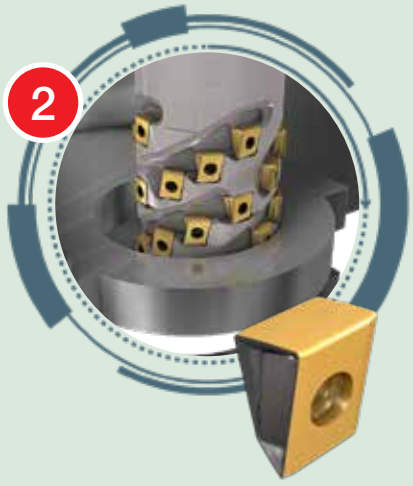
A very large casting of high quality metallurgical ductile iron supports the entire turbine drive train and transmits the load of nacelle components to the tower.

HELIDO 490 LINE

Face Milling

HELIDO is a family of tools for 90° milling. The **HELIDO** H490 ANKX rectangular inserts have 4 helical right-hand cutting edges.

HELITANG T490 LINE



Roughing by Helical Interpolation

4 cutting corners, tangential geometry for fast metal removal (FMR) at very high material removal rates.

ITSBORE

Fine Boring

ITSBORE System
Shank: BHF MB80-125x114
Boring holders: BHFH in size 40x133, 40x200, 40x300.

HELIDO 800 LINE

Face Milling

Multifunctional face mill for octagonal square and round inserts contours with various entry angles.

HELIDO 800 LINE

Face Milling

S845 SNMU 1305... - square double-sided inserts with 8 cutting edges, or ONMU 0505... octagonal, double-sided inserts with 16 cutting edges. Enables highly efficient milling.

Power Generation

Yaw System

TANGSLOT

Gear Gashing Slotting Radius Profile Roughing

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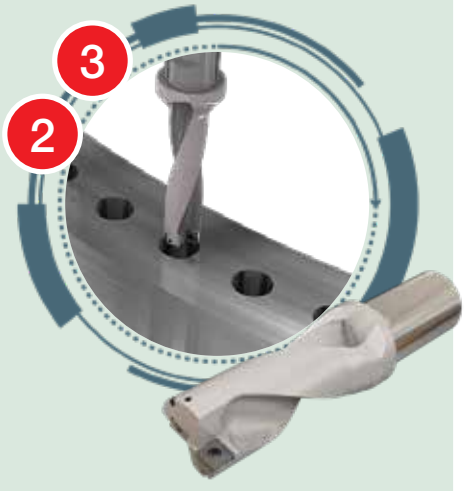
DR-TWIST
INDEXABLE DRILL LINE



Drilling

Drills designed with twisted coolant channels, allowing a strong body with excellent resistance to torsion and very efficient chip evacuation. Semi-standard PCD tipped inserts are available on request.

SUMOTURN
HEAVY DUTY LINE

External Rough Turning

A line of external and internal tools, as well as large-sized inserts for heavy duty applications.

Yaw System

The yaw system of wind turbines is the component responsible for the orientation of the wind turbine rotor towards the wind. This is a mechanism that rotates the nacelle to face the changing wind direction. Made of alloy or bearing steel.

SUMOTURN
HEAVY DUTY LINE

Rolling Bearings Inner Boring

A line of external and internal tools, as well as large-sized inserts for heavy duty applications.

ISOTURN

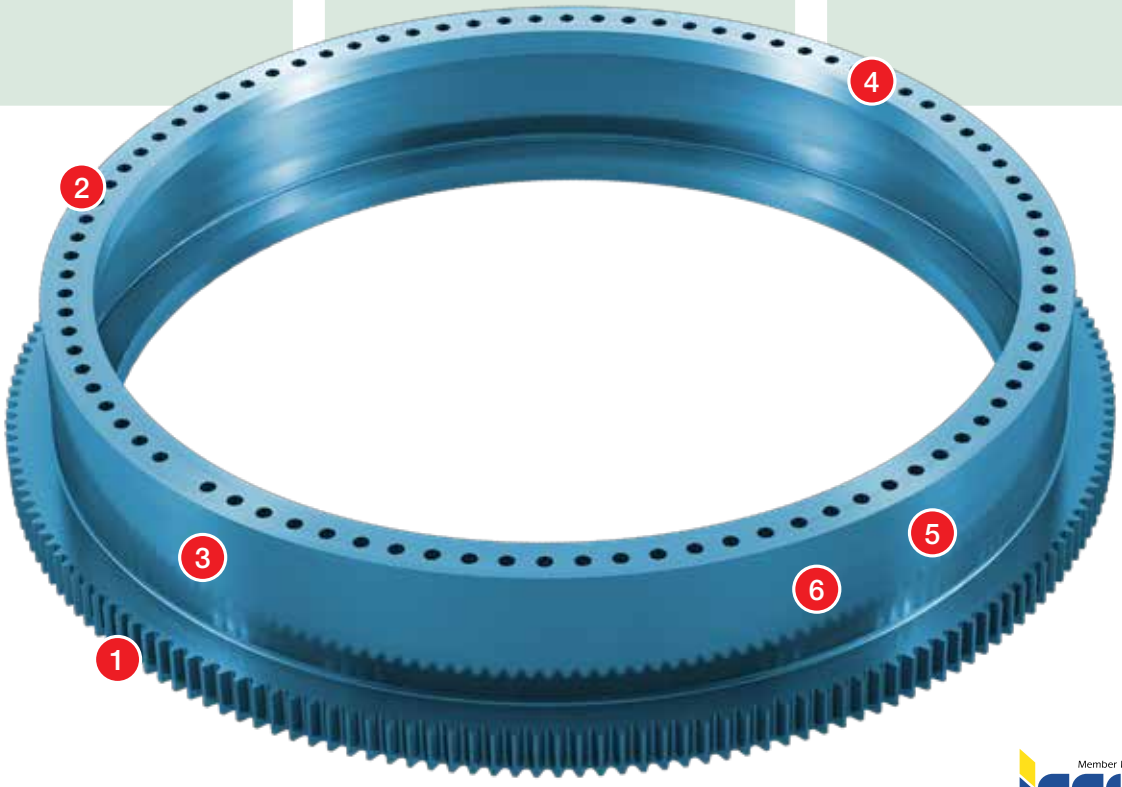
Ceramics - Hard Turning Finishing Operation

IN23 - 40 - 50 HRc
IN22 - over 50 HRc
IN420 - over 50 HRc

ISOTURN

CBN - Hard Turning Finishing Operation

IB50 - 45 - 65 HRc
(interrupted cutting)
IB10H - 58 - 65 HRc
IB10HC - 58 - 65 HRc
(continuous cutting)



Power Generation

Tower Flange

COMBICHAM

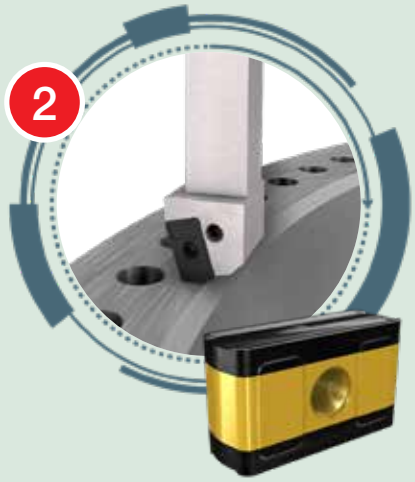
Tower Flange

The vast majority of commercial wind turbines use tubular steel, towers. In some circumstances lattice towers are used for smaller capacity turbines. Tower heights depend on rotor diameter and the wind speed conditions of the site. Tower heights range from 50 meters for a 1 MW turbine to as high as 125 meters and more for very large turbines. The flange comprises a large scale of rolled steel that connects the tower's conical links.

Drilling

Large diameter full effective indexable drills with a pilot drilling head and one flat shank. Drilling depths of 7xD and 8xD. High drilling rates, high accuracy and surface finish.

SUMOTURN
HEAVY DUTY LINE



External Turning (Finishing)

A line of external and internal tools, as well as large-sized inserts for heavy duty applications.

ISOTURN

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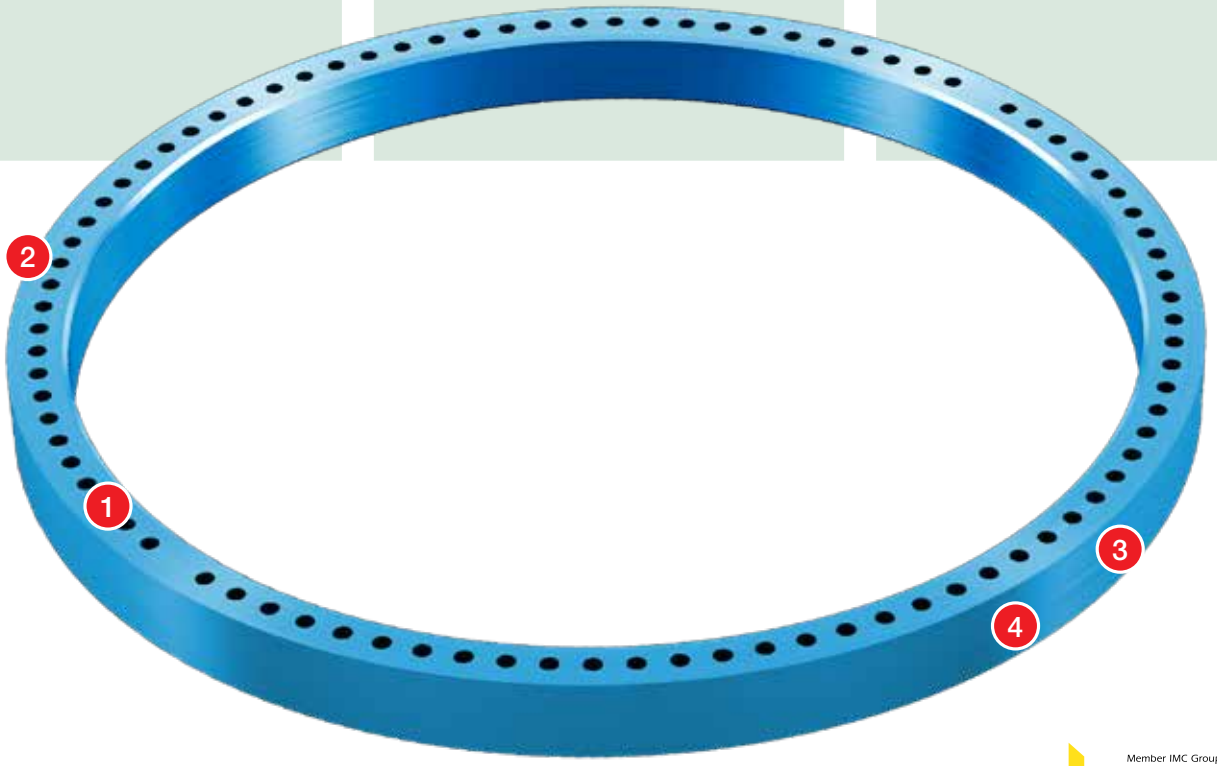


NEOTA

NEO ISCAR TOOL ADVISOR

Find The NEOLOGIQAL Tool For Your Application!

- The virtual tool advisor features advanced AI and 'Big Data' analytics
- Supports complicated machining tasks and challenges
- Offers a wide range of functions and recommendations to operate machining centers
- Features online service 24/7 in more than 30 languages
- Functions according to ISO13399

Member IMC Group

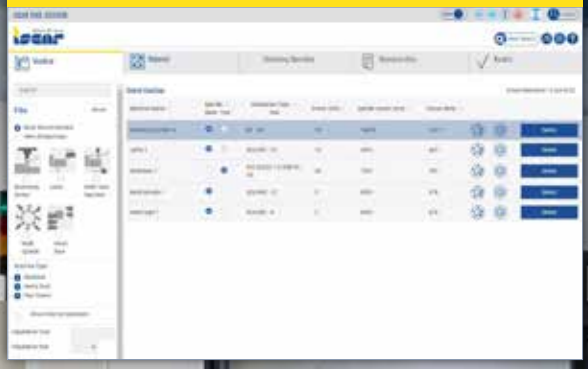
ISCAR

www.iscar.com

Available now on ISCAR.COM

NEO ITA System Workflow

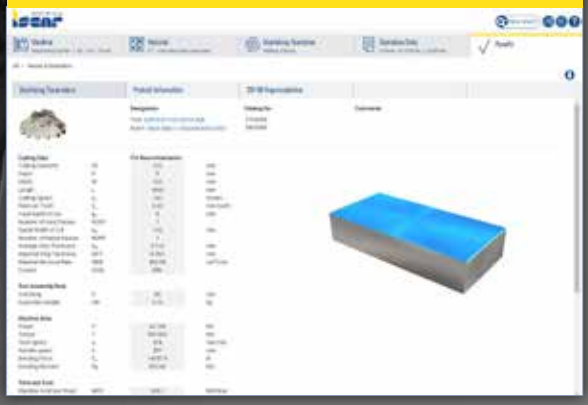
Select a Machine



Define and customize machine specifications

Search material by groups or by random choice

Choose a Tool Recommendation



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