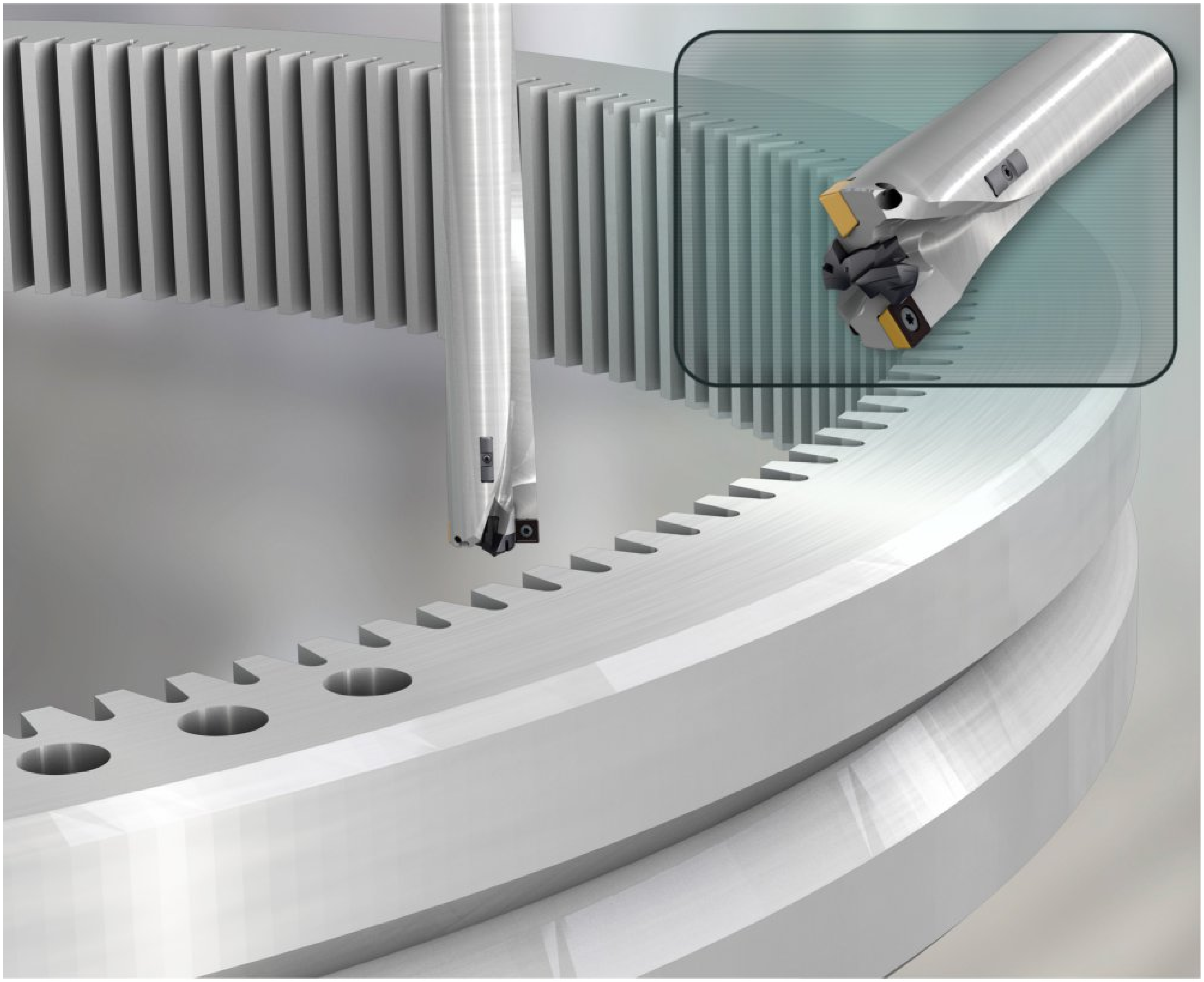
NPA New Product Announcement
HOLE MAKING JANUARY 2018 • METRIC 1-2018



COMBICHAM

Expansion of the COMBICHAM Large Diameter Drills for the Wind Turbine Industry

Member IMC Group

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Highlights

ISCAR is expanding the COMBICHAM drills family by adding 3 drill diameters:
33.2, 36.2, and 39.2 mm in drilling depths of 7 and 8 L/D ratio.

The new drills provide an ultimate solution for drilling the most popular hole diameters in wind turbine parts such as blade bearings, tower flanges, yaw rings and planetary ring gears.

Planetary Ring Gear
Ring gears embrace the gearbox's planetary gears, allowing them to transform low incoming speed to high outgoing speed.

Yaw Ring
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.

Blade Bearing
Adjusts the angle of the blades by rotating a bearing at the root of each blade.
The blade bearing enables control of the power and slows the rotor. Made of bearing steel.

Tower Flange
The vast majority of commercial wind turbines use tubular steel towers. Tower heights depend on rotor diameter and wind speed conditions of the site. Their 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 which connects the tower's conical links.

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The drills feature a pilot SUMOCHAM drilling head and standard SOGT square precision ground inserts with a wiper in various sizes, made from IC808 SUMO TEC PVD coated grade.

This truly effective drill enables high feed drilling, providing high drilling rates, high accuracy and excellent surface finish.

4 Cutting Edges

SUMOCHAMIQ CHAMDRILL LINE

High Productivity COMBI DRILL for Windmills

New **COMBICHAM** drilling line provides minimum cycle time and the most cost effective solution for this operation.

Features

- New Diameters: 33.2, 36.2, 39.2 mm
- 2 effective cutting edges for high productivity
- 2 guide pads for improved stability during machining
- New drilling ratio: 7 & 8 xD
- The HCP central drilling head provides a self-centering ability for premium hole accuracy. No pre-hole is needed.
- Peripheral SOMT/X wiper inserts feature 4 cutting edges and ensure premium surface quality.

Click Link to See Short Video ▶ https://youtu.be/Q8BYKMIBAcw

See Short Video

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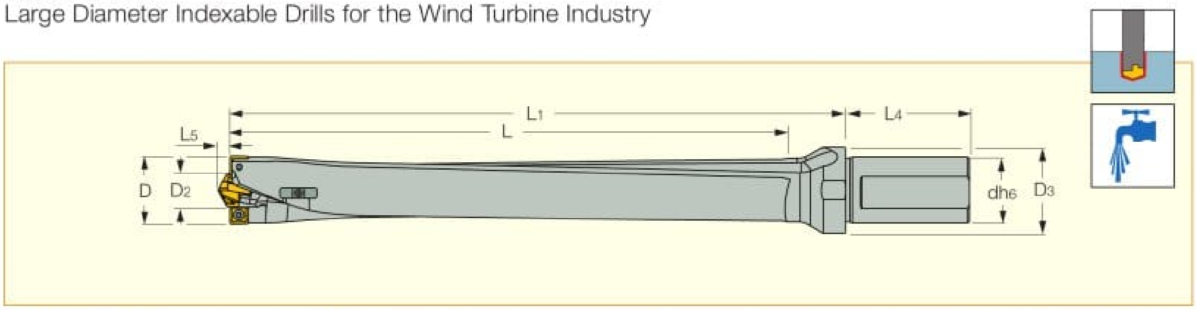
MNC-7/8D

Large Diameter Indexable Drills for the Wind Turbine Industry



Designation	D	D_2	L	L_1	L_4	L_5	d	D_3	Insert(1)	Insert $_1$(2)
MNC 332-265 A32-175-09-8D	33.20	17.50	265.0	298.8	60.0	5.57	32.00	42.00	SOGT 09T306-W	HCP 175-IQ
MNC 362-289 A32-190-10-8D	36.20	19.00	289.0	321.3	60.0	5.57	32.00	42.00	SOGT 100408-W	HCP 190-IQ
MNC 392-289 A40-219-10-7D	39.20	21.90	289.0	346.3	68.0	5.94	40.00	50.00	SOGT 100408-W	HCP 219-IQ

- Hole tolerance: D+0.10/-0.05 in average conditions. However, it can be higher or lower according to machine and tooling conditions
- Intermediate sizes are available on request

(1) Outer insert (2) Central insert

Spare Parts

Designation	Screw	Screw 1	Key	Torx Blade	Handle	Clamping Key	Guide Pad
MNC 332-265 A32-175-09-8D	SR 34-506	SR 34-508/S-HG	T-7/51	BLD T09/M7-SW4	SW4-SD	K MNC MULTI	GPS-05-18-060
MNC 362-289 A32-190-10-8D	SR 14-571	SR 34-508/S-HG	T-7/51	BLD T10/S7	SW6-SD	K MNC MULTI	GPS-05-18-060
MNC 392-289 A40-219-10-7D	SR 14-571	SR 34-508/S-HG	T-7/51	BLD T10/S7	SW6-SD	K MNC MULTI	GPS-05-18-060

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Mat. No.	Cutting Speed Vc [m/min]		Feed vs. Drill Diameter F [mm/rev] 33< ØD <35		36< ØD <43	
	Vc min	Vc max	f min	f max	f min	f max
1	120	200	0.25	0.40	0.25	0.40
2						
3	130	190				
4						
5						
6	120	180	0.25	0.38	0.25	0.38
7						
8						
9						
10	100	160	0.25	0.36	0.25	0.36
11						
12	90	140	0.16	0.25	0.18	0.25
13						
14	90	140	0.16	0.25	0.18	0.25
15	150	250	0.3	0.50	0.3	0.50
16						
17						
18						
19						
20						
21	160	260	0.35	0.55	0.35	0.55
22						
23						
24						
25						
26						
27						
28						
29						
30						
31	30	60	0.15	0.20	0.15	0.22
32	20	50				
33						
34						
35						
36						
37						
38	20	50	0.14	0.2	0.14	0.2
39						
40						
41						

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