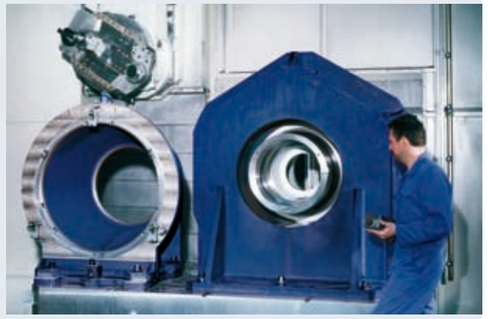
Gear Housings

With its product range Scharmann DST proves manufacturing competence for Gear Housings.

These workpieces can be machined with Scharmann horizontal machining centers e.g. ECOFORCE with facing head technology.

ECOFORCE is a powerful, efficient and highly accurate machining center which makes 5-sided machining and 5-axis machining possible through adaptable technologies to ensure economical solutions.



Technical data ECOFORCE

Power (S1)	45 – 63	kW
Torque	1,700 – 4,800	Nm
Speed, 100% ED	4,000	rpm
Tables	1,000 x 1,250 – 2,500 x 3,000	mm

Rotor Hubs

For applications like Rotor Hubs horizontal milling centers such as the Mecof MECMILL PLUS is perfectly suited. It has high thermal stability. Even workpieces with large dimensions can be reliably machined thanks to its extreme rigidity, dynamics and precision.
A special feature is that an angle plate can be individually attached to the facing plate to hold additional fixtures.

Technical data MECMILL PLUS

X-axis	min.	6,000	mm
Y-axis		1,300 / 1,600 / 1,800	mm
Z-axis		4,000 – 5,000	mm
Speed	max.	6,000	rpm
Power	max.	38	kW
Torque	max.	1,000	Nm

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07/2010

Information and news from Dörries Scharmann Technologie GmbH

Machine Tool Competence for the Windpower Industry

Wind turbines for the generation of electrical power lighten the pressure on natural resources and on the atmosphere, especially when they combine high performance and efficiency with a low noise behavior and durability.

This is why maximum requirements in terms of accuracy are placed on the bearings and gear technology. Within the scope of energy by wind power and the machines resulting out of this, the following typical workpieces are located in the nacelle:

- Torque supports
- Planet carriers
- Gear housings
- Bearings
- Ring wheels
- Rotor hubs

Dörries Scharmann Technologie GmbH (DST) provides solutions to produce these workpieces highly productive with its brands Dörries, Droop+Rein, Scharmann, Mecof and Berthiez.

From 8th to 13th September, the IMTS in Chicago, the most important machine tools trade fair in North America, will be the showcase for DST's top-ranking expertise.

INTERNATIONAL MANUFACTURING TECHNOLOGY SHOW
IMTS2010
CONNECTING GLOBAL TECHNOLOGY
September 13 - 18, 2010 - Chicago, IL - McCormick Place
South Hall 8748

DST
Dörries
Droop+Rein
Scharmann
Berthiez
Mecof

Planet Carriers

Worldwide there are more than 100 state-of-the-art Dörries vertical turning lathes used to manufacture planet carriers.

Especially the CONTUMAT VCE single column vertical lathes are used for this kind of application. The single column version is a compact design manufactured from vibration-damping cast iron components. An even temperature distribution is assured through the symmetrical drive and frame design. All main machine groups are calculated and optimised using the Finite-Element Method (FEM) regarding stiffness and cross-sections.

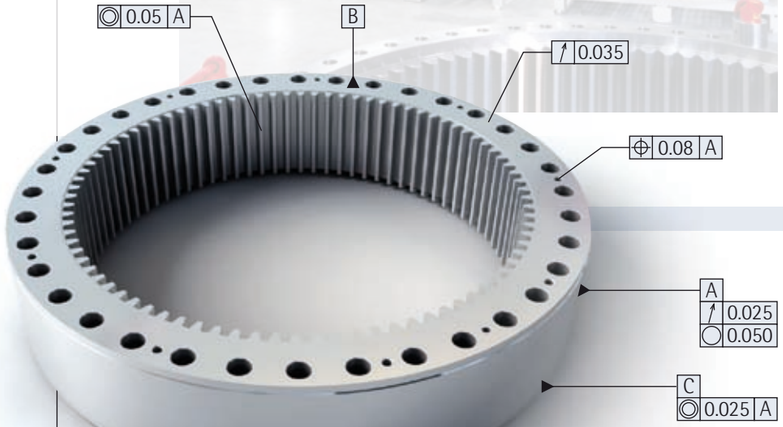
Dörries guarantee the utmost precision, highly satisfactory metal removal rates as well as good surface quality and durability. All CONTUMAT turning lathes can be configured to drill, mill and grind if required. All lathes can be used as standalone machines, supplemented with pallet systems, or linked together with other machines. Appropriate additional equipment can be included for the measurement of workpieces or tools.

Technical data CONTUMAT VCE

Table diameter	up to 2,650	mm
Swing diameter	up to 2,800	mm
Workpiece weight	6,000 – 25,000	kg
Power main drive	60 – 120	kW

Production of required accuracies under normal production conditions

Perpendicularity to main axle	0.04	mm	16/10,000	inch
Position deviation to main axle Ø	0.032	mm	15/10,000	inch
Parallelism	0.02 / 100	mm	1/250	inch
Axial run-out to main axle	0.03	mm	2/1,000	inch
Radial run-out	0.02	mm	1/1,000	inch



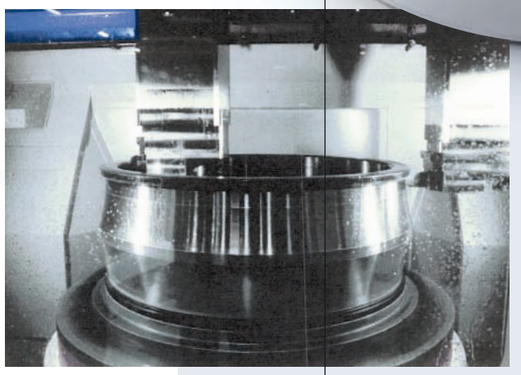
Ring Wheels

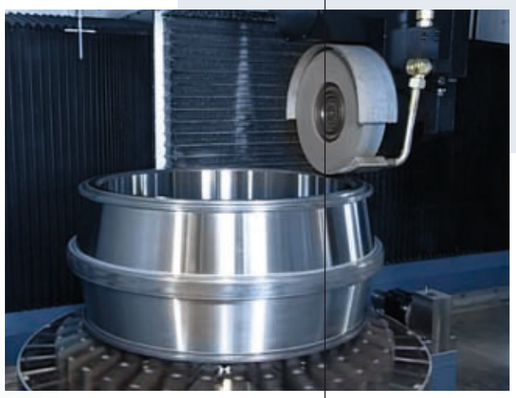
Dörries turning lathes offer also manufacturing competence for Ring wheels.

Typical accuracy of internal ring wheels for example, size with Ø 2,200 mm:

Position tolerance of dowel holes 36 x Ø 40 H7	0.08	mm
Concentricity Ø	0.05	mm
Roundness	0.05	mm
Axial run-out	0.035	mm
Radial run-out	0.025	mm

< Accuracies of internal ring wheels





Bearings

Rotary connections, i.e. blade gear (pitch gear) and tower gear (azimuth gear) are subjected to the toughest possible environmental influences in wind power. High loads, dynamic stresses coupled with long service life require robust rotary connections. Typical for tower gears are single or double-row four-point gears, usually with external gearing.

Dörries double column vertical turning lathes and Berthiez grinding machines with table diameters from 800 to 4,500 mm are used for the manufacturing of bearings and planet gear shafts.

The RVU grinding machine is a high precision machine achieving an accuracy of < 2 µm. This is a direct result of design features like hydrostatic table bearing with table drive via torque motor.. The ma-chine-line RVU is available in different sizes. The machines can be equipped with a variety of different extensions, thus being flexible to suit every specific process need.

Technical data RVU

Table diameter	800 – 4,500	mm
Power	7 – 45	kW
Workpiece height	600 – 800	mm
Table load	max. 12,000	kg