

# Steel for wind power applications



**OVAKO**  
a feel for steel

# Ovako keeps our world in motion

## Wind power

Combined with modern technology, wind power – an ancient source of energy – offers a wide range of opportunities in the areas of capacity and sustainability.

Wind energy is available globally. Wind power is fuel free energy, which does not generate emissions into the air, water or ground. Almost all parts of a wind power plant can be recycled.

Ovako participates actively in furthering a more sustainable use of energy, by developing and supplying long special steel products for wind mill structures, and by developing a more environmental friendly steel production.

## Steel for high performance

Wind power is a demanding force. Our steel's key performances are fit to endure these harsh conditions. Ovako has developed steel cleanliness to meet the highest demands.

High performance wind mills begin and end with Ovako. We support the long-term endurance of the wind mill, producing energy efficiently – energy that we need in our own production.

## Steel for extreme performances:

- Endurance
- High performance
- Impact toughness
- Mechanical strength
- Corrosion resistance
- Machinability
- Tolerances
- Uniform and repeatable properties

## Know how and services

- Capacity
- Timely deliveries
- Local supply
- Quality
- Technical services



# Power train/ rotating elements

Ovako has a wide range of high performance steel products, which means that we can offer the optimal product for most power train applications and rotating elements. Our steel is used when extra performance is demanded, typically for parts in gearboxes and transmissions.

We can offer that little extra something, such as cleanliness, formability, machinability, high fatigue strength or hardenability, always maintaining the search for cost efficiency. Our production systems are designed to meet the customers' requirements for product optimization. We also have the resources for manufacturing pre-components in various stages.



## Example of applications

### Gearbox:

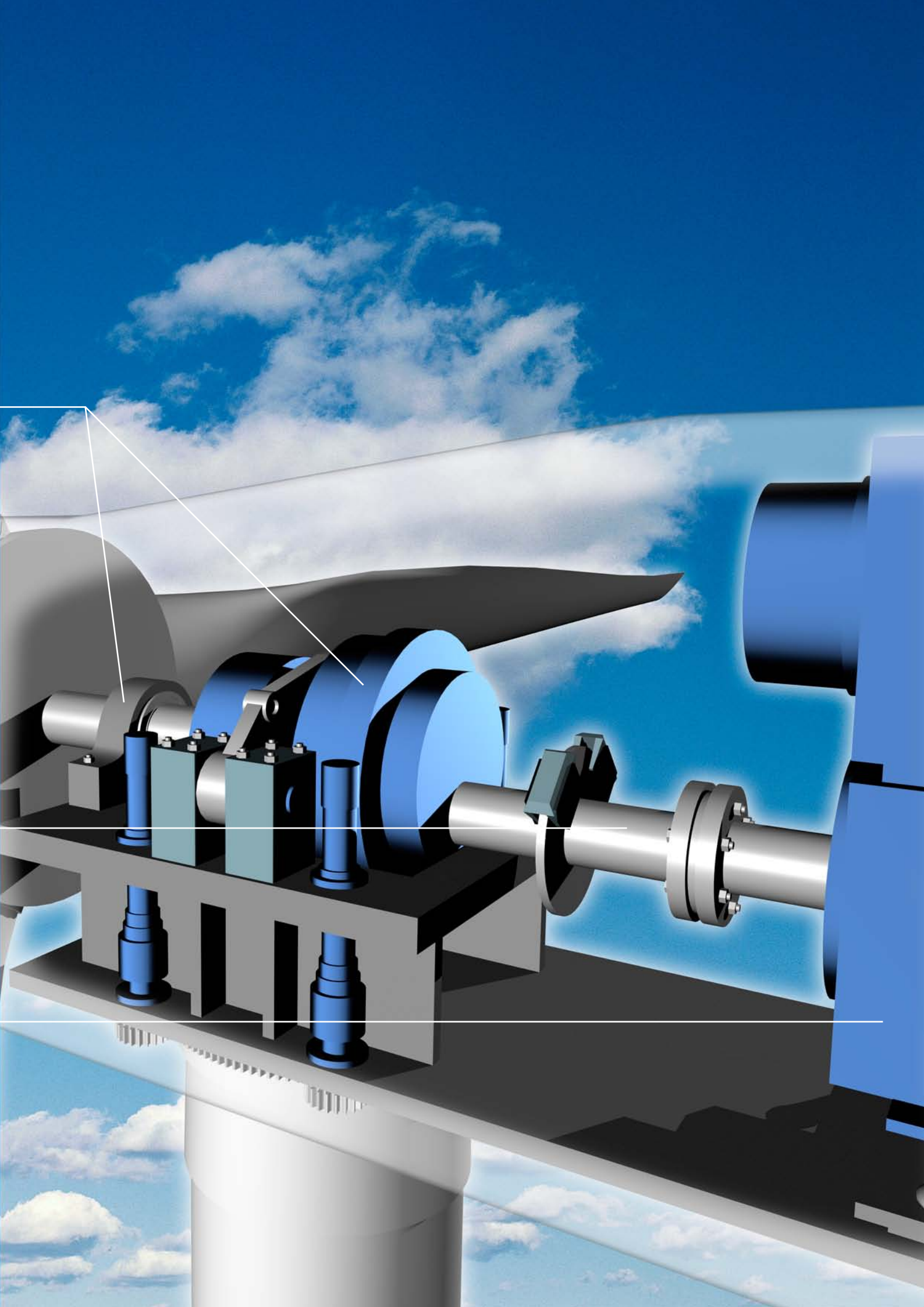
- Bearings
  - rolled rings
  - bars
- Gears
  - tube
  - bars
  - rolled rings
- Shafts
  - bars

### Main shafts:

- Bearings:
  - rolled rings
  - bars
- Couplings
  - rolled rings
  - tubes
  - bars
- Guide rings
  - rolled rings

### Generator:

- Bearings
  - rolled rings
  - tubes
  - bars
- Shafts
  - bars



# Steel for guiding and motion control

Ovako has expert knowledge of the demands on hydraulic applications within the wind power industry. We offer special solutions even for the most difficult conditions.

We deliver special steel in the shape of bars and tubes for hydraulic pitch drives and components in the wind mills. Our chrome plated bars are used in pistons.



## Example of applications

### Brakes:

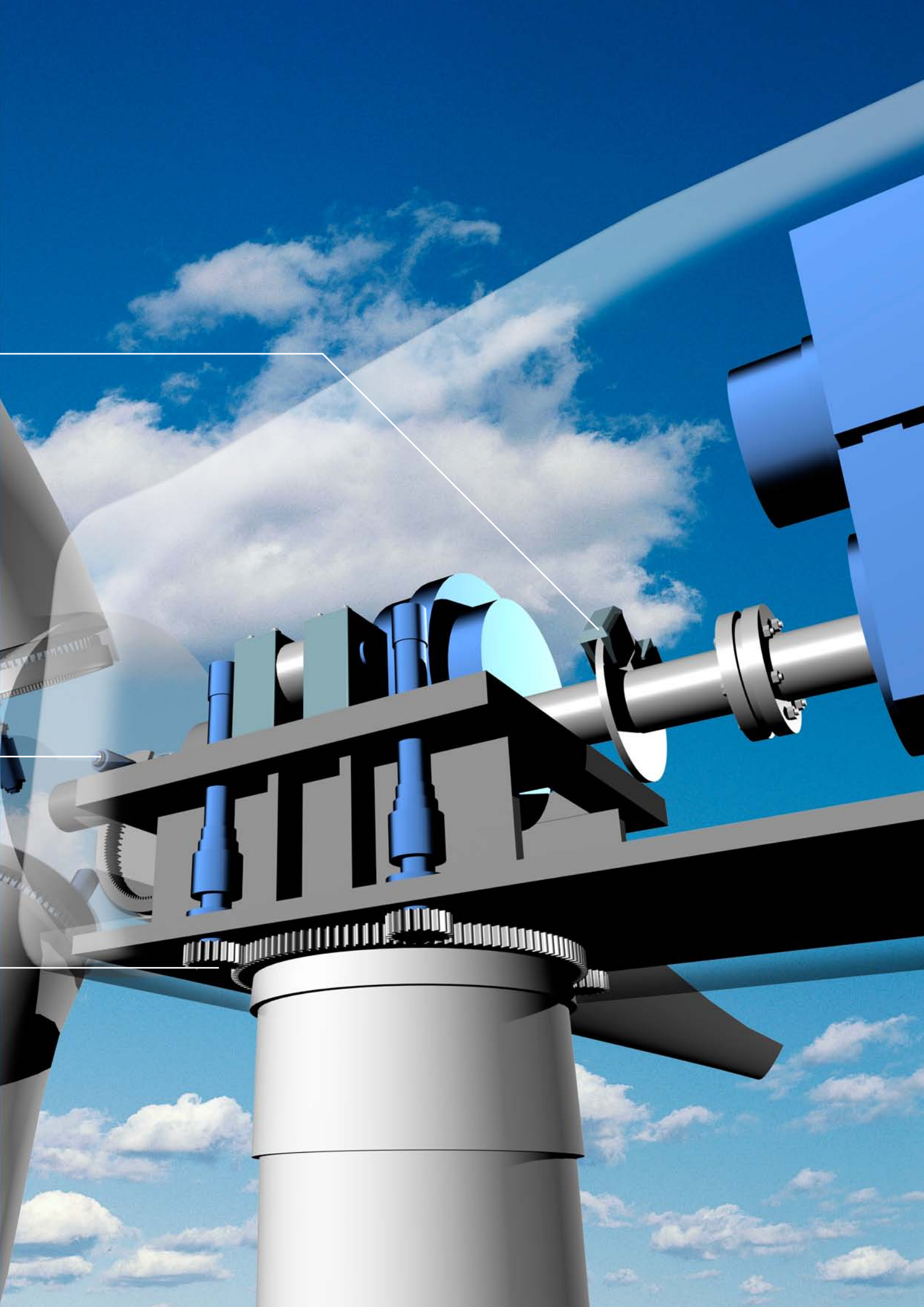
- Pistons
  - tubes
  - bars
- Cylinders
  - tubes

### Electrical and hydraulic pitch drives:

- Cylinders
  - tubes
  - bars
- Pistons
  - bars
  - chrome plated bars
- Pumps
  - tubes
  - bars
- Electrical motor shafts
  - tubes
  - bars

### Slewing motion:

- Slewing rings
  - rolled rings
  - bars
  - flat bars
  - profiled bars



# Fastening/ anchoring

Wind mill construction requires connecting elements and fasteners in order to anchor the wind mill to the ground, to assemble the modules of the tower and to fasten the wings to the body. Ovako supplies steel for the manufacturing of bolts, inserts and, in case of offshore wind mills, anchoring chains.

In order to get the most out of wind energy, wind mills are located in places with demanding weather conditions. Ovako can provide steel that withstands these conditions, including low temperatures.



Courtesy of LM Wind Power, [www.lmwindpower.com](http://www.lmwindpower.com)



## Example of applications

### Wing fastening

- Bolts  
- bars
- Inserts  
- bars

### Tower assembly:

- Bolts  
- bars

### Ground anchoring:

- Chains for offshore applications  
- bars
- Anchor bolts  
- bars



# Ovako at your service

Our production covers low alloy steels and carbon steels in the form of bars, tubes and rings. You can choose a solution suited to your needs among approximately 200 steel grades.

We have lots of standard solutions but we can also offer special design according to customer preferences and demand.

Ovako customer service in Europe and in the USA is ready to assist you, be it about the selection of steel, machining and heat treatment questions or everyday matters such as order handling or delivery control. Our sales companies serve as a bridge between the market and our production units, and also as a link between our customers and our technical expertise.

Deliveries are made directly from our production units, or via warehouses strategically located all over Europe. The products you need are always close to you, and delivered on time.

Following our quality policy, we focus on producing quality in everything we do, and on providing services to our customers' satisfaction. How may we assist you? You are welcome to contact us for more information and with your requests.





Ovako is a leading European producer of long special steel products for the heavy vehicle, automotive and engineering industries. Our production covers low-alloy steels and carbon steels in the form of bars, tubes, rings and pre-components.

The company has 14 production units and several sales companies in Europe and the USA. Net sales are EUR 1,100 million and the company employs 3,000 people. Total steel production capacity is 1.3 million tonnes per year.

For further information, visit our home page [www.ovako.com](http://www.ovako.com) or contact us.

#### **GROUP HEADQUARTERS:**

Ovako AB  
Box 5013, SE-194 05 Upplands Väsby  
Sweden  
Telephone: +46 8 622 1300  
Telefax: +46 8 622 1328

#### **SALES OFFICES:**

Ovako Bar Oy Ab, Steel Service Center  
Teollisuuskuja 1, FI-14200 Turenki  
Finland  
Telephone: +358 5 68 021  
Telefax: +358 3 633 4032

Ovako France S.A.S.,  
14 rue de Mirande, F-21000 Dijon  
France  
Telephone: +33 3 8054 1515  
Telefax: +33 3 8050 1467

Ovako GmbH,  
Postfach 12 55, DE-40672 Erkrath  
Germany  
Telephone: +49 211 25 040  
Telefax: +49 211 250 4244

Ovako Ltd  
Unit 2 York's Park  
Blowers Green Road, Dudley  
DY2 8UL, United Kingdom  
Telephone: +44 138 421 3940  
Telefax: +44 138 424 3662

Ovako Polska Sp. z o.o.  
Al. Jana Pawła II 15  
00-828 Warszawa, Poland  
Telephone +48 22 697 6464  
Telefax +48 22 697 6467

Ovako North America, Inc.  
1096 Assembly Drive, Suite 312,  
Fort Mill, SC 29708, USA  
Telephone: + 1 803 802 1500  
Telefax: + 1 803 802 1501

OOO Ovako  
Business Center "Zeleniy Grad"  
Office 1812, Savelkinskiy proezd, 4  
124482 Zelenograd, Moscow, Russia  
Telephone: +7 495 228 0780  
Telefax: +7 495 228 0781

Ovako Bar BeNeLux,  
Bedrijvenpark Twente 295,  
NL-7602 KK Almelo, The Netherlands  
Telephone: +31 546 58 83 60  
Telefax: +31 546 58 83 66

#### **OTHER SALES CONTACTS:**

[www.ovako.com](http://www.ovako.com)

