



Strong Partner
Strong Partner





The IMO Group in the metropolitan region of Nuremberg with headquarters located in Gremsdorf has more than 20 years of experience in designing and manufacturing Slewing Rings and Slew Drives. Future-oriented technologies and solutions in the machine and plant manufacturing sector complement the portfolio.

We are certified according to the standards DIN EN ISO 9001, 14001 and OHSAS 18001.

Several times, IMO has achieved awards for its product innovations at Exhibitions for Ideas-Invention-New Products and has also earned several awards for its exceptional growth. In our sector we are one of the leading suppliers. We export our products worldwide.



Strong Partner
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IMO Anlagenbau offers future-oriented products and solutions in the machine and plant manufacturing sector as well as environment technology. In addition to standard machines and special machines, the company's activities include development and implementation of solar tracking systems, as well as solar home systems. The IMO Anlagenbau experts also offer consulting support and take charge of turn-key projects.

IMO Antriebseinheit is specialized in developing and manufacturing pinion or worm driven Slew Drives. These patented component systems are used for example in manlift platforms, steering gears, construction machinery and solar trackers.

IMO Energy is one of the leading suppliers of yaw and blade bearings for onshore and offshore wind turbines. Slewing Rings manufactured by IMO Energy are also used as single main bearing for gear- and shaftless wind turbines and as blade bearing for tidal stream systems.

IMO Momentenlager is developing, manufacturing and supplying Ball and Roller Slewing Rings up to a diameter of 5,200 mm in a wide range of products. They are used for instance in the following applications: special purpose machinery, construction machinery, cranes and manlift platforms, tunnel boring machines, ship building, medical technology and bulk handling.

IMO Holding acts as service provider for the other companies of the IMO Group. IMO Holding comprises the central departments of the Group such as quality assurance, finance, human resource, IT and marketing.



IMO Anlagenbau offers future-oriented products and solutions in the machine and plant manufacturing sector as well as environmental technology.

Mechanical Engineering

More than 10 years experience

Our Product Spectrum

- High-performance vertical turret lathes with up to 4 tools in use at the same time
- High-performance gear-cutting machines for gear milling to module 36
- Dual-table tandem drill and milling centers with alternating wet cell locations
- High-performance ring hardening machinery with single, dual, horizontal, vertical or swivel design
- Machine tool benches of „stand-alone design“ with combined bearing and (torque) drive concept



Services

Around the clock worldwide

Development – We make visions come true

With help of feasibility and profitability analyses, we can jointly put together a comprehensive project plan. Complex FEM calculations, simulations and material testing are our tools. We are happy to take on the documentation and software programming for you.

Training – No Unanswered Questions

We pass on our valuable knowledge and teach users and service staff at either your location or ours.

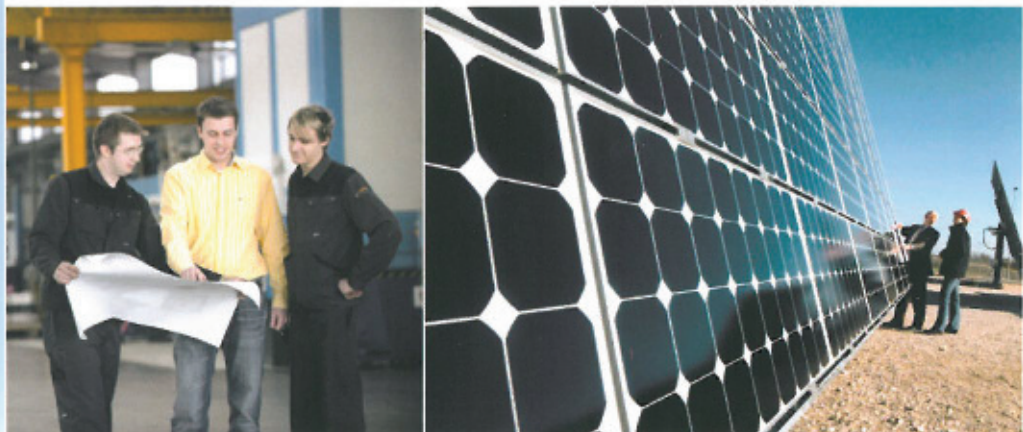
Project Management – Single Contract or Complete Project

We will take on the project from the planning, to the production and final handover of the product. Furthermore, after completion we will take care of your continued operation if requested e.g. support and maintenance.

Service Worldwide – 24 hours a day

No distance is too far; our service team is always available for you around the world.

IMO Anlagenbau GmbH & Co. KG
 Imostrasse 1
 91350 Gremsdorf
 Germany
 Tel. +49 9193 6395-50
 Fax +49 9193 6395-5140
 E-Mail anlagenbau@goimo.com
www.goimo.com



Environmental Engineering

Using alternative energy

Fixed Solar Systems

- Open ground or roof-top systems

Tracking Solar Systems

- Tracking single-axis or dual-axis solar systems in robust and high quality design (free from backlash systems with particularly high rigidity are possible on request)
 - Single-axis: 12 kWp (with a module power of 150 Wp/m²)
 - Dual-axis: 22 kWp (with a module power of 150 Wp/m²)

Solar Home Systems

- Enclosed systems for fixing to walls or on the roof. Current for example 220-240 V, 50 Hz. On request, we will supply the optimal system for your requirements.
 - Module power 65 Wp, 200 Wh/per day*
 - Module power 135 Wp, 430 Wh/per day*

*Assumed values: global radiation 5.47 kWh/m²d

Village or Telecommunication Supply Equipment

- Individual energy sources
- Hybrid combinations from multiple energy sources

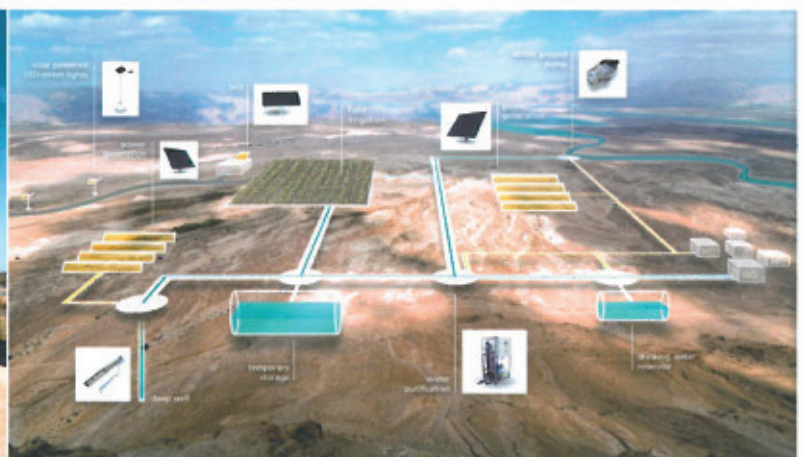
Street Lighting Systems

- Highly efficient, durable solar street lighting systems using LED technology, developed for everyday use.

Water Technologies

Complete solutions in the fields of water catchment, water processing and the necessary provision/storage.

- Solar deep-well technology for groundwater production
- Water condensation and water treatment plant (water purification, desalinization plant)
- Machinery for potable water storage and field irrigation



IMO Anlagenbau – your strong partner

Precision

Our machinery and systems are state-of-the-art, have high inherent rigidity and low vibration. IMO Solar Systems are tracked with high precision astronomy.

Quality

We never compromise on product quality. The strictest criteria assure our well-known IMO quality.

Optimal Support

From the planning and conception, through the consultation and training, to the implementation and production, we are there all the way.

Solid Construction and Corrosion Prevention

IMO machinery and systems are designed to withstand high loads. IMO Solar Systems are additionally treated with corrosion protection and are suitable for all weather conditions.

Modular System

We deliver only what you require; single assemblies, tracker, with or without solar modules, or just the tracking unit, the complete plant or machinery. However, we are also happy to supply turnkey projects.

Maximum Yield

We use sophisticated software for the planning of your machinery and systems. IMO Solar Systems are sited with the help of cloud-coverage simulators to achieve the maximum yield – and on request provide a yield guarantee.

Short Development Times

We take time for you. Our engineers are ready for sophisticated developments. Together we will find the right solution promptly.

Slew Drives

Self-contained Slew Drive systems including slew bearing, gear drive and motor

- Easy, drop-in installation of complete system, no adjusting or sub-assembly of components
- Totally enclosed housings provide protected operation and reduced maintenance
- Compact envelope
- High reliability and long operating life
- Smooth 360 deg. operation, without lurching or jumping, even at slow speed operations or in backdriving modes
- Units are easy to order – one part number = complete Slew Drive system
- Wide range of standard sizes available from stock
- Deliverable with hydraulic or electric motors included
- Provides clean, attractive installation
- Wide application possibilities
- Corrosion protected version available

Slew Drives
Slew Drives

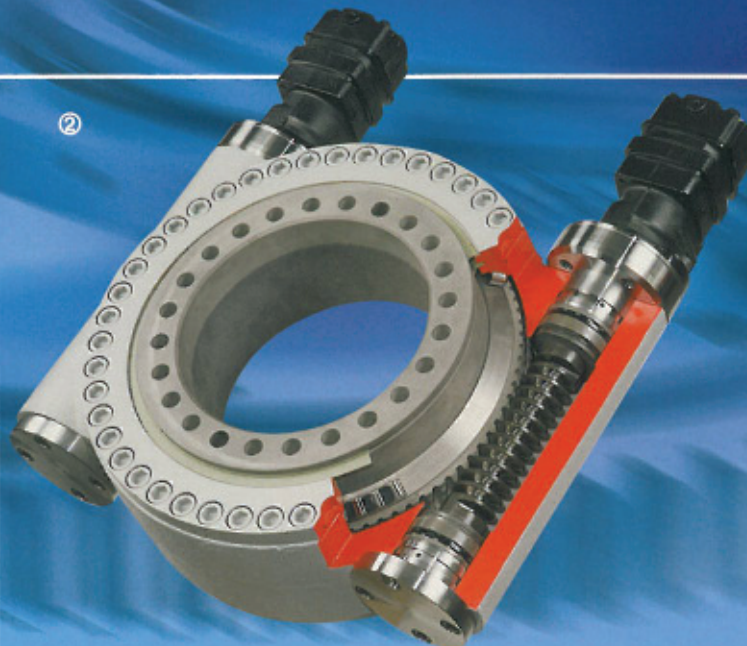


Patented
EP 1 150 039
EP 0 631 068

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②

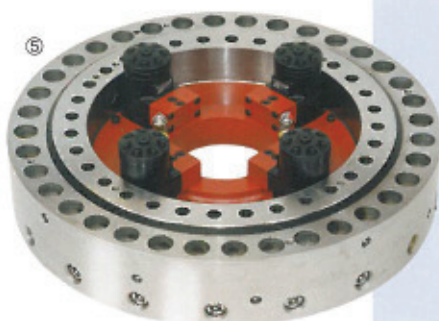


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① Worm driven Slew Drives for light duty applications

- Torque capacity up to 42,820 Nm (31,585 ft-lb) and moment loads up to 320 kNm (236,000 ft-lb)
- Available in 6 sizes (diameters of 156, 223, 343, 419, 478 and 625 mm – approx. 6, 9, 14, 17, 19 and 25 in) with one or double raceway bearing configurations
- Flat, lightweight design (unit weights ranging from 30 to 224 kg – 66 to 494 lb)
- Typical applications include manlift platforms, truck unloading cranes, municipal vehicle attachments, turntables, forklift rotators, solar tracking systems, handling equipment and many more



② Worm driven Slew Drives for heavy duty applications

- Provides the highest drive and holding torque available on the market
- Designed torque capacity up to 672,000 Nm (495,640 ft-lb) and moment loads up to 2,600 kNm (1,900,000 ft-lb)
- Eight standard sizes (inner ring PCD include 146, 220, 300, 373, 490, 645, 700 and 750 mm – approx. 6, 9, 12, 15, 19, 25, 28 and 30 in)
- Unit weights from 65 kg to 2,500 kg (143 to 5511 lb)
- Units can be assembled with one or two motors (two motors provide double the torque capacity) or without a motor
- Applications include cranes, positioning systems, excavator attachments, mining equipment
- Ideal for use as 360 deg. steering gears on large, harbour mobile cranes, straddle carriers, gantry cranes, ship hoists and heavy load transporters

③ Spur gear driven Slew Drives

- Torque capacity up to 44,000 Nm (32,450 ft-lb) and moment load capacity up to 600 kNm (442 ft-lb)
- 13 standard sizes with diameters from 229 to 1,091 mm (9 to 43 in)
- Units assembled with single or multiple motors
- Ideal for use on harvesters, light duty cranes, packaging equipment, machine tool changers, handling equipment



④ Special designs

- Units can be modified to meet specific customer specifications
- Worm or pinion driven slewing options
- Brakes and positioning sensors can be added to basic units
- Units can be modified for continuous operation or severe environmental conditions
- Special construction materials can be included to meet customer specifications

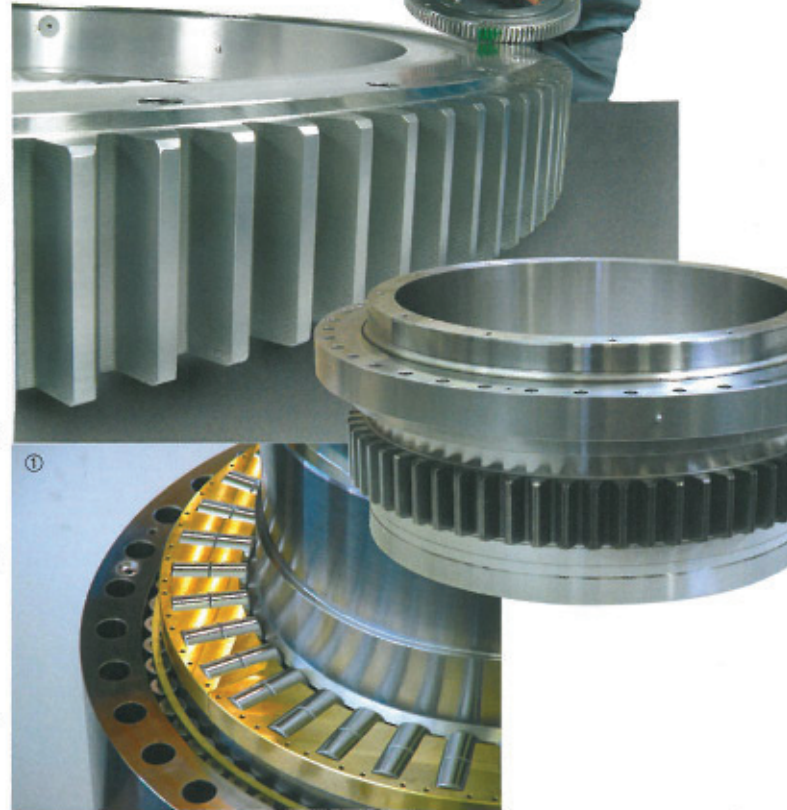
⑤ Subsystems

- Basic unit designs can be modified to provide special functions or connect to customer specific components such as valves, hydraulic connections, adaptation plates, sensors, etc.
- Internal overload protection systems available upon request

IMO Slewing Rings

Large-diameter anti-friction bearings designed to handle simultaneously occurring axial, radial and moment loads

- Replaces traditional systems using fixed and floating bearings or king-pins.
- Integrated mounting holes
- Available with integral internal or external gearing of bearing rings (module 1 to 30 mm)
- Sealed raceways, lubrication included
- Ball or Roller Slewing Ring configurations
- Available in diameters from 100 to 5,200 mm (4 to 205 in)
- Standard or custom configurations
- IMO Slewing Rings are certified to meet DIN EN 10204 requirements for materials, dimensions and operating specifications



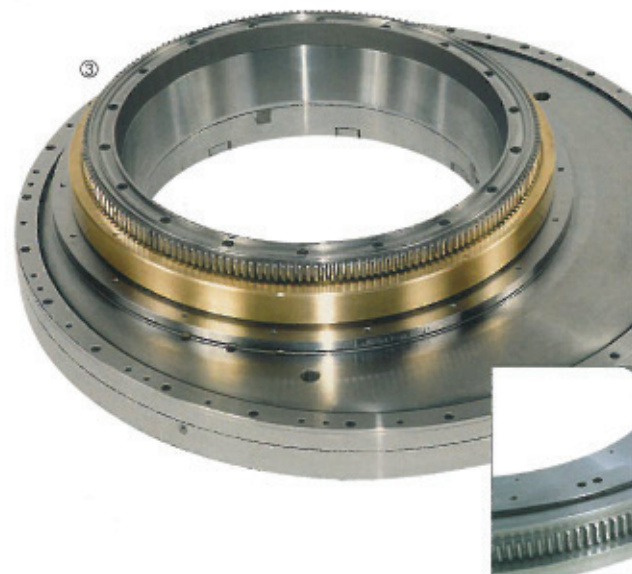
① Roller Slewing Rings

- 3-row-roller Slewing Rings or cross roller designs
- Rolling elements with diameters from 16 to 100 mm (0.63 to 3.94 in)
- Roller bearing retention cages can be provided in steel, bronze or synthetic materials, as required to meet operating conditions
- Designed to provide the combination of the highest capacity in the smallest configuration
- Ideal in high precision installations, or in applications where extra stiffness or low steady frictional torque is required



② Ball Slewing Rings

- Single and double row configurations
- Ball diameters from 12 to 80 mm (0.47 to 3.15 in)
- Standard or precision grade units in stock
- Pre-loaded bearings available
- Excellent service in severe duty environments requiring rugged designs



Service

- Express Service for urgently needed replacement parts
- Rapid prototyping including customized designs
- Approvals for Slewing Ring materials, bolt/stress calculations and final bearing dimensions/properties from certifying authorities including, but not limited to, DNV, Bureau Veritas, Lloyd's Register of Shipping

Accessories

- Gear rims available in diameters up to 5,200 mm (205 in) and modules up to 30 mm (1.18 in)
- Customer specified pinions

③ Special bearings

- Capable of modifying standard designs to meet individual customer specific specifications, e.g. custom mounting hole patterns or prototypes
- Ball and Roller Slewing Rings available as well as roller/ball combination bearings
- Extreme temperature or vacuum environment options are available
- Special surface treatments or paints available upon request
- Special bearing cages for high operating speeds
- Special sealing systems for extreme operating conditions
- Special lubrications for specific environments, for example food industry
- Stainless steel bearing rings available
- Light weight, precision slew bearings made from aluminium rings and using steel wire races are also available upon request

④ Subsystems

- Integration of special parts/functions onto Slewing Rings to create a subsystem, e.g. mounting flanges doweled with slew bearing
- Assembly of multiple Slewing Rings into one integral bearing unit



IMO ENERGY



©vwind-Hagem/SatelliteHydro



IMO MOMENTENLAGER

Applications

IMO ANTRIEBSEINHEIT





Plant I, Gremsdorf, Germany



Plant II, Gremsdorf, Germany



Plant III, Summerville, SC, USA

Solutions in Machine and Plant Manufacturing

IMO Anlagenbau GmbH & Co. KG
Imostrasse 1
91350 Gremsdorf, Germany
Tel. +49 9193 6395-50
Fax +49 9193 6395-5140
anlagenbau@imo.de

Slew Drives

IMO Antriebseinheit GmbH & Co. KG
Gewerbepark 16
91350 Gremsdorf, Germany
Tel. +49 9193 6395-20
Fax +49 9193 6395-2140
schwenktriebe@imo.de

Slewing Rings for Renewable Energy

IMO Energy GmbH & Co. KG
Imostrasse 1
91350 Gremsdorf, Germany
Tel. +49 9193 6395-30
Fax +49 9193 6395-3140
energy@imo.de

Slewing Rings

IMO Momentenlager GmbH & Co. KG
Imostrasse 1
91350 Gremsdorf, Germany
Tel. +49 9193 6395-40
Fax +49 9193 6395-4140
drehverbindungen@imo.de

Central Services

IMO Holding GmbH
Imostrasse 1
91350 Gremsdorf, Germany
Tel. +49 9193 6395-0
Fax +49 9193 6395-1140
holding@imo.de

China

Germany IMO Holding GmbH
Beijing Representative Office
Unit 502 & 505, 5th Floor
North Office Tower, Beijing Kerry Centre
1 Guang Hua Road, Chaoyang District
Beijing 100020, P.R. China
Tel. +86 10 85296463
china@imo.de

USA

IMO USA Corp.
101 Innovation Drive
McQueen Park
Summerville, South Carolina 29483, USA
Tel. +1 843 291-2882
americas@goimo.com

All contact details of our global partners are to be found at: www.imo.de

References:
References:
in excerpts



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