

bj·gear



bj·gear

Gear drive solutions

Customisation is our standard

Dedicated gear drive solutions

BJ-Gear A/S is one of the leading companies within developing, manufacturing and assembling gearboxes, geared motors, linear products, special gearboxes and complete transmission solutions.

We benefit from modern production facilities and highly qualified staff, which enable us to offer a wide product range with a consistently high quality. Our combination of innovation, know-how, modern production facilities and our focus on customers' needs make us a competent partner.

Flexible production and fast delivery

Our flexible production machinery and our modular designed product range ensure short delivery times, also for special products. The flexibility also enables us to produce standard or special products in smaller numbers.

We have more than 25,000 components in our warehouse and we stock most spare parts to be dispatched immediately. Alternatively, our flexible production system enables us to swiftly manufacture desired parts. We are certified to the EN ISO 9001 standard for quality management.

CSR - Investing in the environment

BJ-Gear A/S takes responsibility for the environment. Our aim is to help reduce the CO2 impact on the climate, while also strengthening employee welfare. Therefore, we prioritise sustainability and decent working conditions in our investments and activities.

Customisation is our standard

A large standard programme is one of our strengths. The programme comprises our own manufactured worm gearboxes, helical gearboxes, spiral bevel gearboxes, actuators and worm gear screw jacks.

Our standard programme is highly adaptable and we offer customisations of our entire standard programme. The degree of adaptation may vary from a simple adjustment to a more fundamental change. Even minor adjustments such as special flanges and output shafts can optimise your transmission solution.

All components are stocked or manufactured for prompt delivery.

Targeted benefits for your business

BJ-Gear A/S has great expertise and specialised knowledge of the requirements for transmission solutions. Our knowledge is acquired through many years of close collaboration with companies within the industry. We have an extensive knowledge of requirements within development, design, functionality, quality and documentation to achieve the best results in industries such as:

- Healthcare
- Food processing and packaging
- Aerospace and defence
- Offshore and marine
- The energy and environmental sector
- Firefighting
- Many other business areas

Worm gearboxes

Simple and well proven

BJ-Gear A/S offers a very wide range of worm gearboxes. Due to the modular design the standard programme comprises countless combinations when it comes to selection of gear housings, mounting and connection options, flanges, shaft designs, type of oil, surface treatments etc.

Sturdy and reliable

The design of the BJ worm gearbox is simple and well proven. We only use high quality components such as houses in cast iron, aluminum and stainless steel, worms in case hardened and polished steel and worm wheels in high-grade bronze of special alloys ensuring the optimum wearability. The seals of the worm gearbox are provided with a dust lip which effectively resists dust and water. In addition, the gearboxes are greased for life with synthetic oil.

Low noise

Our worm gearboxes and actuators are extremely quiet. This is due to the very smooth running of the worm gear combined with the use of cast iron and high precision on component manufacturing and assembly. In connection with our precision gearboxes, we take extra care of any sound that can be interpreted as a murmur from the gear. So the general noise level of our gearbox is reduced to an absolute minimum.

Angular gearboxes

The input shaft and output shaft on the worm gearbox are perpendicular to each other. This often proves to be a deci-

sive advantage making the incorporation of the gearbox considerably simpler and more compact. The worm gearbox is an angle gear. This is often an advantage for incorporation into constructions.

Strong bearings in solid housing

The output shaft of the BJ worm gearbox is very firmly embedded in the gear house and is ideal for direct suspension for wheels, movable arms and other parts rather than having to build a separate suspension.

Atex approved

Our standard worm gearboxes are approved for Zone 2 and 22, but we offer to supply all our products in zone 1, 2, 21 and 22 according to the requirements.

Self locking

For larger gear ratios, BJ-Gear's worm gearboxes will provide a self-locking effect, which in many situations can be used as brake or as extra security. Also worm gear screw jacks with a trapezoidal spindle are self-locking, making them ideal for a wide range of solutions.



Large reduction 100:1 in one step

The worm gearboxes allow for reductions of up to 100:1 in one single step or 10.000:1 in a double reduction. An equivalent gearing with the same gear ratios and the same transferred power is bigger than a worm gearing. Meanwhile, the worm gearbox is in a more simple design. A double reduction may be composed of 2 standard gearboxes or as a special gearbox.

Worm gearbox	Ratios	Maximum output torque [Nm]	Housing design
Series 35	5:1 - 90:1	25	Aluminium
Series 42	5:1 - 75:1	50	Cast iron
Series 52	7:1 - 60:1	130	Cast iron
Series 61	7:1 - 100:1	200	Cast iron
Series 79	7:1 - 60:1	300	Cast iron
Series 99	7:1 - 100:1	890	Cast iron

Worm gearboxes with high precision

BJ-Gear A/S is also able to offer precision gearboxes and high precision gearboxes with a dual lead design.

The precision gearboxes

The precision gearboxes meets more strict precision requirements by virtue of special designs, production and assembly methods. The precision gearboxes are characterised by a low backlash and a very low generation of noise and vibrations. The gearboxes' backlash can be documented by measuring reports. On request we can deliver gearboxes with even lower backlash.

Gear size	Backlash standard gearboxes	Backlash precision gearboxes
Series 42	< 0.80°	< 0.20°
Series 52	< 0.75°	< 0.20°
Series 61	< 0.70°	< 0.20°
Series 79	< 0.55°	< 0.15°
Series 99	< 0.55°	< 0.15°

The high precision gearboxes with dual lead design

All high precision gearboxes are produced for a specific purposes and according to customers' demands. They can be produced in aluminum, stainless steel or cast iron. The gearboxes are highly adaptable for various customised needs such as special flanges and output shafts. Even though the gearboxes are customised they can be delivered quickly due to a flexible and automatised production. The design can be customised and fitted with AC, DC or servo motors.

- Low noise
- Low backlash - backlash down to 1 arc minute
- No loss of efficiency

See the full
worm gearbox brochure



STANDARD worm gearboxes stainless steel

- Up to 96% efficiency
- Easy-to-clean
- Protection degree of minimum IP65
- Ideal for use in the food industry

Series
42, 52 and 61



Series
79 and 99



BJ-Gear A/S offers a self-produced stainless gearbox range of high quality. The series is developed specifically for the process line in the food industry and other industries where there are continuously stringent requirements for the resistance of the material and easy-to-clean design.

The protection of the gearboxes is IP65, and for stainless motors it is IP66. This ensures that the products can be cleaned with water under pressure from all directions.

The stainless steel worm gearboxes are as standard made in five sizes: **42, 52, 61, 79 and 99**. The number indicates the centre distance of the axles and thus the gear size.

Hygienic and easy-to-clean

The standard stainless steel gearboxes are made of a smooth stainless gear housing, they are life lubricated, and can of course be supplied with oil approved for the food industry. Oil seals are as standard made of nitrile rubber.

To reduce the risk of bacterial growth, the design is characterised by smooth machined surfaces without unnecessary flanges, recesses and mounting holes. It is also possible to order the gearboxes with torque arm, side flange, free worm and plug-in shaft. Other adjustments are performed on request.

In cases where you want a complete hygienic gear motor, we can offer the BJ gearboxes fitted with stainless AC or servo motor.

Resistant to cleaning with water under pressure

The protection of the gearboxes is IP65, and for stainless motors it is IP66. This ensures that the products can be cleaned with water under pressure from all directions. To achieve an overall protection of IP66 by assembly of gearboxes and motor, you must use a gasket of nitrile rubber for the joint. This means that the gearmotors are ideal for free mounting without a traditional stainless safety cover in areas where hygiene requirements are highest. Hidden sources of pollution can thereby be avoided.

The gearboxes are as standard supplied with a center distance of 31, 42, 61, 79 and 99 mm with gear ratios from 5:1 to 100:1 and with an output torque of up to 900 Nm.

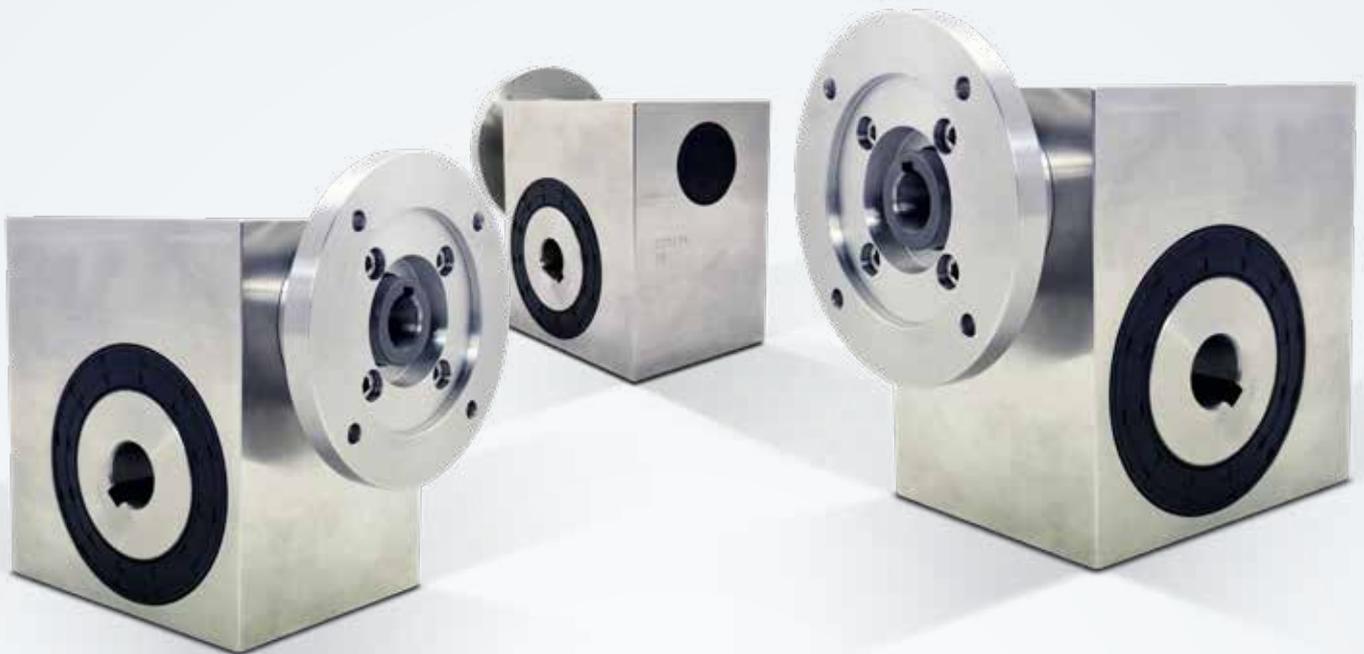
Stainless steel worm gearbox	Ratios	Maximum output torque [Nm]	Housing design
Series 42	5.4:1 - 75:1	57	Stainless steel
Series 52	7.5:1 - 62:1	130	Stainless steel
Series 61	7:1 - 100:1	208	Stainless steel
Series 79	7:1 - 60:1	337	Stainless steel
Series 99	7:1 - 100:1	891	Stainless steel

See the full stainless steel worm gearbox brochure



PREMIUM Gearbox

BJ-Gear A/S offers a self-produced stainless gearbox range of high quality. The series is developed specifically for the food industry and other industries where there are continuously stringent requirements for the resistance of the material and easy-to-clean design.



- **Up to 96% efficiency**
- **Smooth surfaces that reduces the risk of bacterial growth**
- **Unnecessary flanges, recesses and mounting holes**
- **Hygienic and easy-to-clean**
- **Protection degree of minimum IP65**
- **Ideal for use in the food industry**

BJ-Gear A/S offers a self-produced stainless gearbox range of high quality. The series is developed specifically for the process line in the food industry and other industries where there are continuously stringent requirements for the resistance of the material and easy-to-clean design.

The protection of the gearboxes is IP65, and for stainless motors it is IP66. This ensures that the products can be cleaned with water under pressure from all directions.

The stainless steel worm gearboxes are as Premium made in five sizes: **31, 42 and 61**. The number indicates the centre distance of the axles and thus the gear size.

Hygienic and easy-to-clean

The stainless steel gearboxes are made of a smooth stainless gear housing, they are life lubricated, and can of course be supplied with oil approved for the food industry. Oil seals are as standard made of nitrile rubber.

To reduce the risk of bacterial growth, the design is characterised by smooth machined surfaces without unnecessary flanges, recesses and mounting holes. It is also possible to order the gearboxes with torque arm, side flange, free worm and plug-in shaft. Other adjustments are performed on request.

In cases where you want a complete hygienic gear motor, we can offer the BJ gearboxes fitted with stainless AC or servo motor.

Resistant to cleaning with water under pressure

The protection of the gearboxes is IP65, and for stainless motors it is IP66. This ensures that the products can be cleaned with water under pressure from all directions. To achieve an overall protection of IP66 by assembly of gearboxes and motor, you must use a gasket of nitrile rubber for the joint. This means that the gearmotors are ideal for free mounting without a traditional stainless safety cover in areas where hygiene requirements are highest. Hidden sources of pollution can thereby be avoided.

The gearboxes are as standard supplied with a center distance of 31, 42 and 61 mm with gear ratios from 5:1 to 100:1 and with an output torque of up to 900 Nm.

Stainless steel worm gearbox	Ratios	Maximum output torque [Nm]	Housing design
Series 31	5:1 - 75:1	25	Stainless steel
Series 42	5.4:1 - 75:1	57	Stainless steel
Series 61	7:1 - 100:1	208	Stainless steel

See the full stainless steel worm gearbox brochure



Actuator in stainless steel

with trapezoidal spindle

- Smooth surfaces that reduces the risk of bacterial growth
- Hygienic and easy-to-clean
- Protection degree of minimum IP67K
- Low noise
- Ideal for use in the food industry



Stainless steel actuators based on a worm gear drive

Stainless steel actuators from BJ-Gear are very sturdy in terms of overload and operating environment. The design is compact, simple and its modular construction allows great flexibility. The modular design is also ideal if customisations are needed.

If higher speed and loads are needed, we have extensive experience in adapting or designing special solutions.

We are certified according to EN ISO 9001 and EN ISO 14001.

Furthermore, the stainless steel actuator is IP69K classified which insures that the product can be cleaned with water under pressure from all directions.



IP-classification IP69K

IP69K



The protection of the stainless steel actuator is IP69K which ensures that the product can be cleaned with water under pressure from all directions. To be more accurate the actuator is to be sprayed with water from angles of 0°, 30°, 60° and 90° with an interval of 30 seconds in every position and at a distance of 10-15 cm.

The water must be at least 80° C and the water pressure must be 14-16 litres per minute. Furthermore, the product is placed on a turntable that rotates 5 rpm. This degree of protection can only be achieved with an equivalent high degree of protection against dust which results in the designation of IP69K. This approval is especially used in the food industry.

An electrical actuator is primarily used where an intermittent axial movement and positioning is needed. It is a good alternative to hydraulic and pneumatic cylinders due to the simple connection to electrical operational systems and to the hygienic benefits. Furthermore, you will achieve a steady speed all over the load range compared to hydraulics and pneumatics solutions. The dynamic tensile/compression force is up to 29,4 kN of standard products. Higher force can be achieved by customised solutions.

Actuators with trapezoidal spindle

This type of actuator is simple and of a sturdy construction. It is based on our worm gearboxes on which a set of cylindrical stainless steel tubes and an inner threaded spindle are mounted. Using a ball screw it is possible to achieve linear movements of up to approx. 6,500 mm/min. on standard products. Higher speed can be achieved by customised solutions.

See the full Stainless actuator brochure



Stainless steel products

BJ-Gear A/S manufactures a wide range of stainless steel gearboxes, actuators and worm gear screw jacks. The stainless steel products are developed specifically for the food industry and industries where the requirements for material resistance and an easy-to-clean design are continuously stringent. The gearboxes are life lubricated and can be supplied with lubricants approved for the food industry. The products of stainless steel can be customised according to your needs.

Worm gearboxes

Features and advantages

- Hygienic design
- Sturdy and reliable
- Compact design
- High quality
- Can be equipped with stainless AC motors, servo motors, encoders and brakes
- High efficiency or self locking
- Custom design



Premium stainless steel worm gearbox



Standard stainless steel worm gearbox



Stainless worm gearbox with a special motor flange for DC motor and a stainless motor shield



Integrated stainless steel worm gearbox with enhanced bearings and special output shaft



Standard stainless steel worm gearbox

Brake, module system

The brake meets the strict requirements for products to be used directly in a process line. The brake is designed to be mounted between a flanged motor and a gearbox, and is available in three sizes with torques from 5-20 Nm.



Stainless steel motors

The stainless steel AC motors are of acid-resistant steel and in protection classes from IP66 to IP69K. They are available as TENV (Totally Enclosed Non-Ventilated) up to effects of 0.75 kW or as TEFC (Totally Enclosed Fan Cooled).

The motors are equipped with thermistors as standard.

The completely smooth surface makes them ideal for use within the food industry or where an easy-to-clean design is important.



Helical and helical bevel gearboxes

The helical bevel gearboxes are characterised by high power density and an efficiency of up to 96%. The compact and modular design makes the gearbox easy to incorporate in numerous applications.

Features and advantages

- Reliable performance
- Compact design. Available in hygienic design
- Quiet, reliable and efficient operation
- High quality
- Can be equipped with AC, DC or servo motors, encoders and brakes
- Custom design



Actuators and worm gear screw jacks

Actuator in stainless steel with trapezoidal spindle or ball screw



Actuator based on toothed belt drive made of stainless steel with motor of stainless steel



Stainless steel actuator with motor and the stainless steel BJ-Gear brake



Worm gearboxes

BJ-Gear A/S offers a wide range of worm gearboxes. Due to the modular design the programme comprises countless combinations when it comes to selection of gear housings, mounting and connection options, flanges, shaft designs, type of lubricants, surface treatments etc.

Features and advantages

- Sturdy and reliable
- Compact design
- Low noise
- Strong bearings in solid housing
- High quality
- Material of aluminium, stainless steel or cast iron
- Custom design



Worm gearbox with special worm shaft for brake and encoder and special output flange



Worm gearbox of cast iron



Worm gearbox with special output shaft and flange



Worm gearbox with special motor flange, output shaft and reduced backlash



Standard aluminium worm gearbox with output shaft and flange



Worm gearbox with special motor flange, output flange and brake



Worm gearbox with special output shaft and flange



Yellow chromated worm gearbox with motor



Aluminium worm gearbox with special motor flange and output shaft

Precision worm gearboxes

The precision gearboxes are characterised by low backlash and low generation of noise and vibrations. The degree of backlash is adjustable and can be documented by measuring reports.

Features and advantages

- Backlash down to 1 arc-minute with no loss of efficiency
- Material of aluminium, stainless steel or cast iron
- High quality
- Can be equipped with AC, DC or servo motors, encoders and brakes
- Custom design



Spiral bevel gearboxes

BJ-Gear A/S manufactures a wide range of spiral bevel gearboxes in high quality. The spiral bevel gearboxes are characterised by high performance in a very compact and modular design. The design also makes the spiral bevel gearboxes easy to incorporate in numerous applications.

Features and advantages

- Reliable performance
- Compact design. Available in hygienic design
- Quiet, reliable and efficient operation
- High quality
- Can be equipped with AC, DC or servo motors, encoders and brakes
- Custom design



Actuators and worm gear screw jacks

BJ-Gear A/S manufactures two variants of actuators for linear motions. We offer actuators based on a worm gear drive and actuators based on a belt drive. Our actuators are extremely sturdy in terms of overload and operating environment. The modular design allows great flexibility in regards of mounting options, flanges and surface treatments. The modular design is also ideal if any customisation is needed

Features and advantages

- Wide speed range
- Extremely durable
- Simple and compact design
- Modular design with high flexibility
- Custom design



ATEX approved actuator based on a worm gear drive. The actuator is mounted with cylindrical aluminium tubes and an inner threaded spindle



Worm gear screw jacks with ball screw spindle and a special nut



Actuator with inner and outer tubes in stainless steel



Actuators based on toothed belt drive is in stainless steel and in a hygienic design



Worm gear screw jack converts a rotary motion into a linear motion with three to four times higher efficiency than other worm gear screw jacks



Two worm gear screw jacks assembled for synchronous movement

Special products

BJ-Gear A/S has excellent expertise within consulting, engineering and production of special gearboxes and actuators. When standard products are not the optimum solution, BJ-Gear A/S is able to manufacture special customised products. If larger and more complex projects are needed, our engineers are available throughout the entire process.

We ensure a competent delivery from the conception of design and production to delivery of the prototype and subsequently the delivery of the finished product. Our flexible RandD department and our modern production facilities ensure swift production of any special gearbox and actuator at a reasonable price, even in small numbers.



Worm gearbox with double reduction and high safety factors



2-step helical gearbox with DC motor, brake and encoder



Special gearbox solution integrated in a lever arm



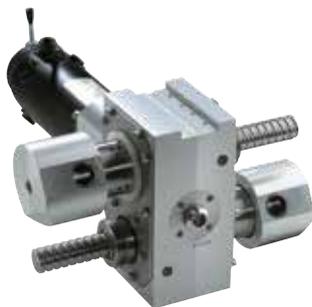
Stainless meat cutting saw with stainless AC motor



Stainless steel water cannon with 3 special geared motors



Compact inline actuator with planetary gearbox and servo motor



Double acting worm gear screw jacks with ball screw, servo motor and brake



Highly efficient worm gearbox with DC motor and clutch

Flange bearings

NG bearing units are of high material resistance and a design, that is easy-to-clean. To reduce the risk of bacteria growth the design is characterised by a smooth surface and rounded corners. The bearings are maintenance free and resistant to all cleaning products and to most chemicals.

We also offer bearing units of stainless steel.

Features and advantages

- Solid housings
- Easy assembly
- IP66 and IP67 (IP68 and IP69K on request).
- Maintenance free bearings
- USDA accepted
- Food grade acc. to reg. (EC) No. 1935/2004
- FDA food grade acc. to CFR 175.300
- NSF H1 registered grease

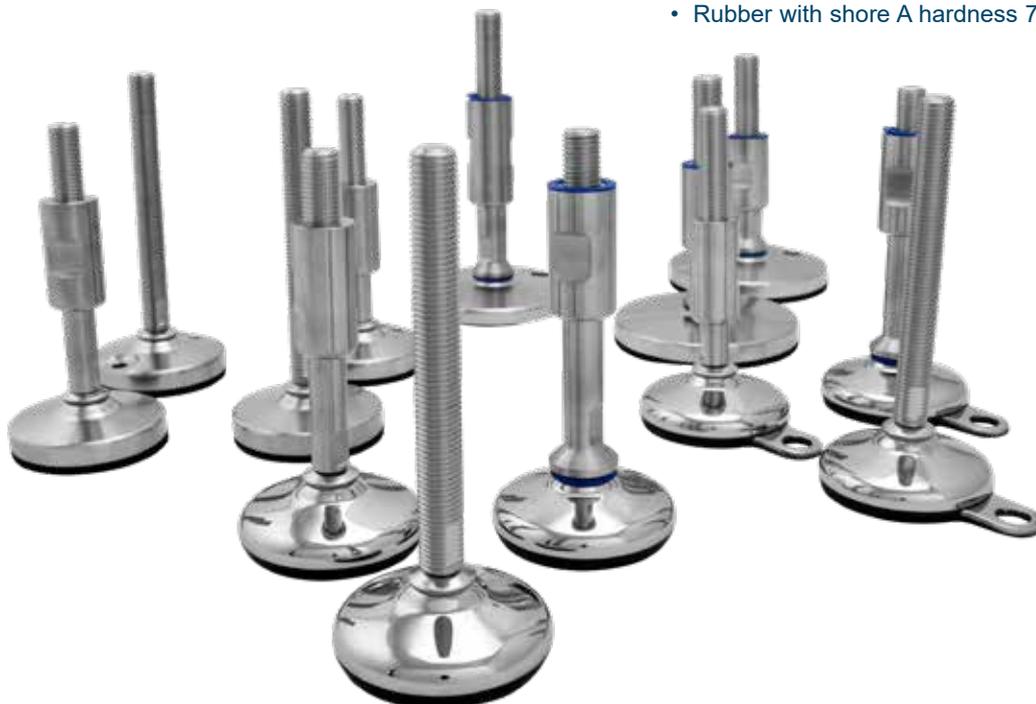


Levelling feet

The stainless steel levelling feet are available with and without fixing plate to prevent movement. The embedded rubber has rounded and hygienic design making the feet easy to clean. Furthermore, the levelling feet can cope with a maximum of 10° slope on floors and equipment.

Features and advantages

- Stainless steel AISI 304 (A2)
- Application temperature max. 250 °C
- Rubber temperature range from -15 °C to +95 °C.
- High chemical and corrosion resistance
- Rubber with food grade
- Rubber with shore A hardness 70-75



Accessories for complete solutions

In addition to our manufactured gearboxes and actuators, we supply transmission components of recognised brands, which makes it possible to supply complete transmission solutions at short notice.

When choosing BJ-Gear A/S as a total supplier, you are guaranteed correct assembly of all components with a functional test subsequently. All components are stocked or manufactured for prompt delivery.

Spindles, gear wheels and racks

BJ-Gear A/S manufactures gear wheels, gear racks, worms, worm wheels, splines etc. of high quality.

BJ-Gear A/S is certified according to DS/EN ISO 9001 and we use advanced CNC machining and measuring machines ensuring high precision and flexibility in our production.



Acme threaded spindles



Gear wheels and racks

Gearboxes - right angle and planetary

BJ-Gear A/S cooperates with manufacturers of right angle gearboxes and planetary gearboxes.

Right angle gearboxes are compact with houses of light alloy and can be mounted in any position.

The planetary gearboxes are typically applied for servo solutions and positioning tasks and are available as straight or angle planetary gearboxes.



Right angle gearboxes



Planetary gearboxes

Motors AC, DC and servo

BJ-Gear A/S cooperates with competent manufacturers to deliver AC, DC, servo, air or hydraulic motors for complete gear drive solutions.

We stock standard AC motors for immediate delivery. The motors meet the efficiency requirements in accordance with the EU directive. For special requirements in regards to performance, function or price, we cooperate with several other AC motor suppliers.

If DC, servo, air or hydraulic motors are needed for a complete gear drive solution, we supply from competent manufacturers.

Motors are supplied in standard versions or customised to your specifications.

Features and advantages

- Sturdy and flexible
- High performance
- Reliable and high quality
- Comply with international standards.
- Comply with the directives for CE marking
- Low sound level



AC motor



DC motor



Stainless steel motor



Servo motor



Stainless steel servo motor

Couplings and clutches

BJ-Gear A/S manufactures AXO tooth couplings characterised by a compact design and high performance. We also stock several different types of couplings from leading manufacturers in Europe and the United States.

Couplings



The AXO tooth couplings range within torques from 358 to 6430 Nm and have crowned teeth in order to absorb axial misalignment as well as a possible bore from 20-125 mm.

We supply elastic couplings and claw couplings from German R+L Hydraulics. They are available in aluminium, cast iron/sintered steel and as flange couplings in cast iron.

We have a large stock of flexible couplings from French CMD. CMD produces couplings from 52 Nm up to 7.780 kNm for shaft diameters from 28 up to 800 mm.

One way clutches and backstops



BJ-Gear A/S stocks free-wheels and backstops from German Stieber Clutch. Stieber Clutch has great experience and is represented worldwide.

Safety and bellow couplings



We have a large stock of bellow couplings, elastic couplings and safety couplings. The couplings can also be provided in stainless steel.

Other commodities

Connections - line shaft and shaft/hub



We supply connection shafts in various versions depending on purpose. Our line shaft series are available for torques up to 4,000 Nm and shaft diameters up to 100 mm.



We offer mechanical shafts/hub connections from German KBK Antriebstechnik GmbH. The locking devices connect drive components to shafts and make a backlash free transmission of high torques possible.

Encoders and frequency converters



The enhanced requirements for precision has increased the use of encoders. BJ-Gear A/S offers incremental encoders and magnetic incremental encoders (flange encoders) or absolute Encoders both magnetic and optical. They are available in ATEX designs or stainless steel designs.



Frequency converters make a good dynamic performance to be used in machines with precise speed control. A frequency converter can improve efficiency in many systems, because it will adjust the motor speed to the need.

Electromagnetic components



BJ-Gear A/S supply electromagnetic pull/push magnets, vibrators, couplings and brakes from Kendrion N.V. Kendrion N.V. combines the brands Binder, Linnig and Kuhnke and is represented worldwide. Electromagnetic clutches and brakes from Precima.

Hydro-Mec gearboxes

Hydro-Mec gearboxes are an Italian alternative to our own manufactured gearboxes. The wide range of gearboxes allows for application in many industries while the customisable design makes them easy to interchange with gearboxes from the most popular manufacturers. The products are light and compact.

Worm gearboxes



Features

- Single-piece aluminium alloy housing
- Light weight
- High tensile strength
- Precision machined for alignment of bearings and gearing

Optionally: stainless steel housing

Helical bevel gearboxes



Features

- Hardened and ground gearboxes
- Single-piece aluminium alloy housing
- Light weight
- High tensile strength
- Precision machined for alignment of bearings and gearing

Optionally: stainless steel housing

Helical and shaft mounted gearboxes



Features

- Hardened and ground gearboxes
- Single-piece aluminium alloy housing
- Light weight
- High tensile strength
- Precision machined for alignment of bearings and gearing
- Large center distance

bj·gear

Customisation is our standard



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