

bj·gear

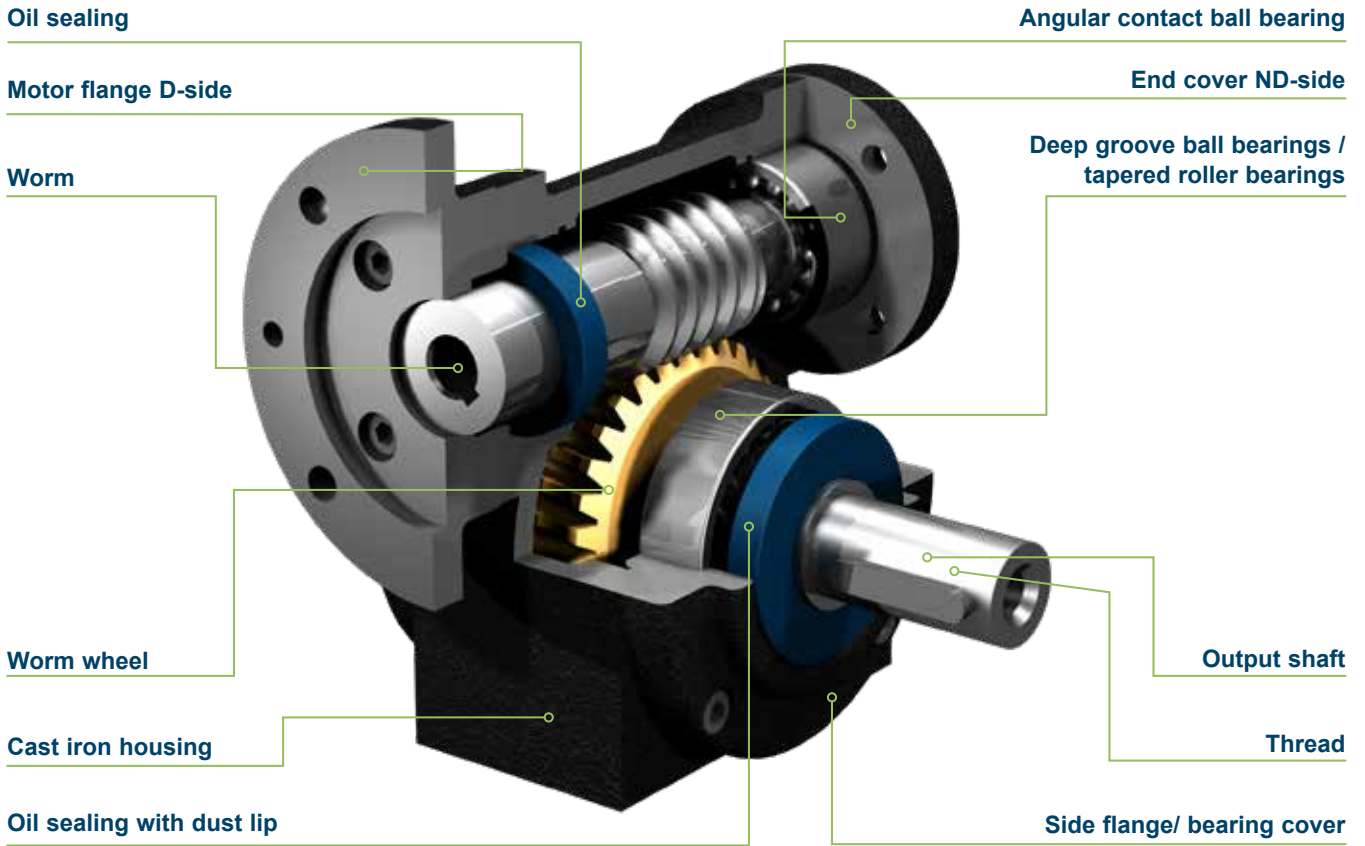


Worm gearboxes

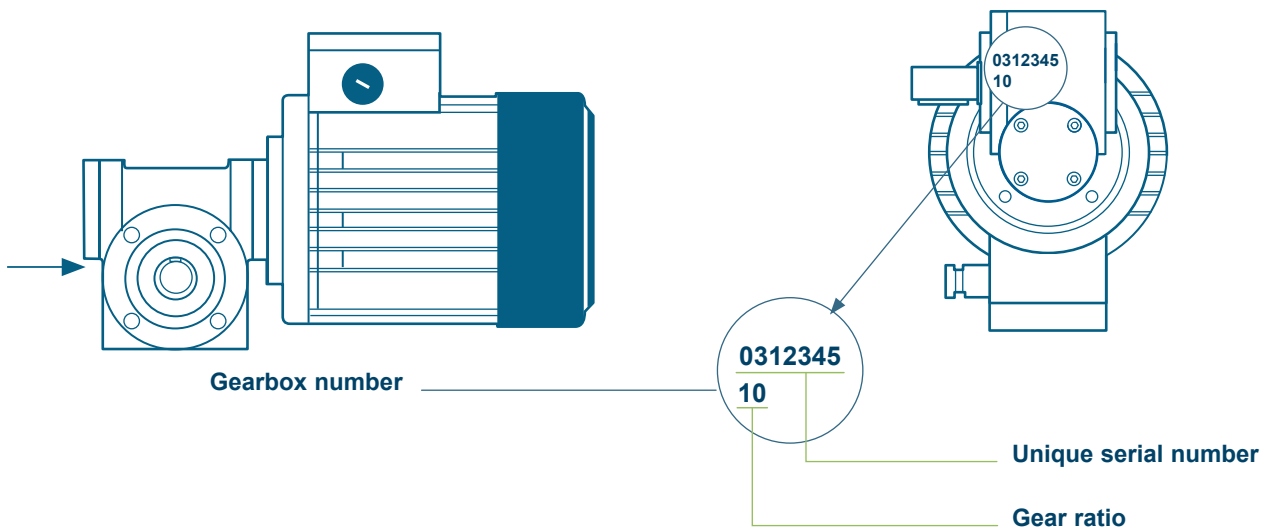
Manual

Customisation is our standard

The BJ-Worm Gearboxes



Unique gearbox number



On the ND side, our gearboxes are marked with a unique gearbox number, which consists of a serial number and a gear ratio. This ensures identification anytime at a later date. The unique serial numbering of the product means that we can always identify the worm gearbox and supply the correct spare parts. If there is a need for a replacement product, we can always reproduce a worm gearbox by using the unique serial number, no matter what degree of specialisation and whenever it was originally delivered.

Mounting instructions

This instruction applies for BJ worm gearboxes size 42, 52, 61, 79 and 99. All according to our catalogues.

Mounting and taking into service shall be done by trained and/or skilled personnel.

Field of application

- Unless otherwise agreed, the gearboxes may be used in ambient temperatures between 0 and +40°C, in normal atmosphere and normal atmospheric pressure.
- If the gearbox is used in a dusty or dirty environment be sure that ingress in glands is avoided. The same goes for outdoor use or wet environments.

Before mounting

- Examine the gearbox for damages and leakages.
- Make sure that the unit corresponds to the unit ordered.
- Some units are deliberately delivered without oil. If so, it is clearly marked. If the unit is delivered without oil, be sure to fill it with the correct type and amount according to this catalogue (see page 14 or at www.bj-gear.com).
- If possible, make a test run of the unit before mounting (see page 33).
- Be sure that unintentionally starts it are not possible.
- If the unit is delivered with motor, electromagnetic brake or coupling, encoder etc., be sure to follow the operating instructions for these.
- Be sure to secure parts that may move inadvertently, thus causing damage or harm. Be aware that not all devices are self-locking.
- Be sure that the mounting planes are stable, clean and plane.

Mounting:

- Use only the holes or threads of the unit that is intended for mounting.
- Do not make changes to the units unless approved by BJ-Gear.
- Do not over-constrain if torque arm is used.
- Be sure to mount it in such a way that sufficient cooling is provided. If the gearbox or motor is provided with cooling fan, be sure that sufficient air flow is accessible.
- Do not use hammering or excessive force during mounting.
- The drive shaft and the driven shaft are to be properly aligned.
- If the gearbox is supplied with air vent screw, the gearbox is to be positioned so it is placed above the oil level. If the gearbox is delivered with a transport screw, the transport screw is to be interchanged with the air vent screw. Do not use a motor with higher power than allowed according to catalogue or documentation.
- Do not load the gearbox with higher torque or forces than allowed according to catalogue or documentation.
- Mount the gearbox in such a way that vibrations are minimised or eliminated.
- Secure screws so they cannot loosen.
- Be sure to place feather keys where needed.

Mounting of motor and other accessories (brake, encoder etc.)

Mounting of motor:

- Lubricate using mounting grease between the motor shaft and the hollow input shaft of the gearbox.
- The input shaft should be pre-greased before mounting.
- Do not use hammering or excessive force during mounting of the motor. It can damage the bearings in the unit.
- If the motor and unit are connected by a coupling, the alignment has to be within the specifications of the coupling.

Mounting of other accessories

- The operating instructions is to be followed at all times.
- Especially with brakes and clutches it is important that there is no dirt, dust, oil or grease on or between friction elements.

Operation and maintenance instructions

Starting up

Before starting up the gearbox, be sure:

- That the motor is properly secured to the unit.
- That the gearbox is properly secured to the application.
- To test the functionality of electric brakes, clutches or safety devices, if installed.
- That brakes and couplings are released.
- That tools, wiring, clothes etc. are removed from moving parts.
- To make the starting as gentle as possible.
- To closely monitor that the intended function occurs and if it does not, shut down the system and search for errors in a safe way.
- To shut down the system and safely check for any unexpected noise or vibration.
- To examine for leakages when the gearbox has reached its operation temperature.

Running-in:

The lifetime of the gearbox will improve if a proper run in is made. A proper run in is as follows:

- The first running time should not exceed half an hour. Run the gearbox for about 15 minutes in each direction with no load.
- Let the gearbox cool down.
- Start it up and load it with an application half the torque. Gradually increase the load to full torque. Do this in both directions.
- It might not always be possible to do as described above, but some running in is better than none.

Oil change

The gearboxes are lifetime lubricated. However, gearboxes subjected to extremely heavy loads must have changed oil approx. every 5 years. Gearboxes operating in very warm environments may require oil changes every year. See page 14 for lubricants and quantities.

Oil and lubricants

The gearboxes are lubricated for life. However, gears being exposed to heavy load should be subjected to oil change approx. every 5 years. Gearboxes running in very hot environments may require oil change every year.

	Description	Application	Viscosity	Lubricant
0	Fully synthetic gear oil, standard	Normal load and ambient temp. -25°C to +40°C	220	Klübersynth GH 6-220
1	Fully synthetic gear oil	Heavy load and ambient temp. -20°C to >+40°C	460	Klübersynth GH 6-460
2	Fully synthetic gear oil	Heavy load and ambient temp. -20°C to >+40°C	680	Klübersynth GH 6-680
3	Liquid grease	Normal load and ambient temp. -40°C to >+40°C	1200	Klübersynth GE 46-1200
4	Special lubricating oil for food and pharmaceutical industries	Normal load and ambient temp. -20°C to +40°C	460	Klüberoil 4 UH1-460 N

Ambient temperatures are guide values depending on the lubricant's composition, the intended use and the application method. All data is based on synthetic oil. Do not mix synthetic oil with mineral oil.

Oil and lubricants quantities

Series 42	Series 52	Series 61	Series 79	Series 99
0.06 litres	0.18 litres	0.21 litres	0.5 litres	1.1 litres

Spare parts list

1	Bearing cover
1A	Side flange
2	Gasket
3	Screw
3A	Bolt
3B	Screw
4	Screw
5	Oil seal
6	Oil seal
7	Oil seal
8	Oil seal
8A	Oil seal
9	Ball bearing or tapered roller bearings
10	Ball bearing or tapered roller bearings
11	Ball bearing or tapered roller bearings
12	Ball bearing or tapered roller bearings
13	Worm wheel
14	Worm wheel
15	Spacer ring
16	Spacer ring
17	Hollow output shaft
18	Double output shaft
19	Single output shaft
19A	Single output shaft, extended
20	Hollow worm shaft
20A	Hollow worm with free shaft
21	Free worm shaft
21A	Double free worm shaft
22	Parallel key B
23	Parallel key A
24	Parallel key A
25	Locking ring
26	Washer

27	End cover, open
28	End cover, closed
29	Gasket
30	Motor flange
31	Bearing cover
31A	Side flange
32	Stud cover
33	Screw
35	Gearbox, type 1, for hollow output shaft
36	Gearbox, type 1, for double free output shaft
37	Gearbox, type 1, for free output shaft
38	Gearbox, type 2, with support, worm at top, for hollow output shaft
39	Gearbox, type 2, with support, worm at top, for double free output shaft
40	Gearbox, type 2, with support, worm at top, for free output shaft
41	Gearbox, type 3, with support and worm at bottom, for hollow output shaft
42	Gearbox, type 3, with support and worm at bottom, for double free output shaft
43	Gearbox, type 3, with support and worm at bottom, for free output shaft
44	Locking ring

Declaration of incorporation of Partly Completed Machinery

Issued in accordance with The Supply of Machinery (Safety) Regulations 2008

BJ-Gear A/S

Niels Bohrs Vej 47
DK-8660 Skanderborg
Tlf: +45 87 40 80 80
Fax: + 45 87 40 80 81
bj@bj-gear.com

Hereby declare that the partly completed machines:

- Worm gearboxes series 31, 35, 42, 52, 61, 79, 99, 127 and 152 in both cast iron and stainless steel versions
- Linear actuators size 42, 52 and 61 in both cast iron and stainless steel versions
- Worm gear screw jacks size 42, 52, 61 and 79 in both cast iron and stainless steel versions
- Strong spiral bevel gearboxes in both cast iron and stainless steel versions
- Stainless steel helical bevel gearboxes
- Stainless helical gearbox MA-0
- Combinations and derivatives of the above

Which are configured, dimensioned and ordered according to our standard catalogues and standard dimensioning material, conform to the relevant provisions of The Supply of Machinery (Safety) Regulations 2008.

The following essential health and safety requirements have been complied with: 1.1.2 Principles of safety integration, 1.1.3 Materials and products, 1.1.5 Design of machinery to facilitate its handling, 1.3.1 Risk of loss of stability, 1.3.2 Risk of break-up during operation, 1.3.4 Risk due to surfaces, edges or angles, 1.3.9 Risks of uncontrolled movements, 1.5.5 Extreme temperatures.

The technical documentation is compiled in accordance with Annex VII(B) of the Regulation.

We undertake to transmit, in response to a reasoned request by the national authorities, relevant information on the partly completed machinery, either electronically or on paper.

The partly completed machine must not be put into service until the final machinery in which it is to be incorporated has been declared in conformity with the provisions of the Regulations.

Skanderborg, 25.10.2022

Signed for and on behalf of BJ-Gear A/S



Jesper Olesen
R & D Manager

Declaration of incorporation of Partly Completed Machinery

Issued in accordance with The Machinery Directive 2006/42/EC

BJ-Gear A/S

Niels Bohrs Vej 47
DK-8660 Skanderborg
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Fax: + 45 87 40 80 81
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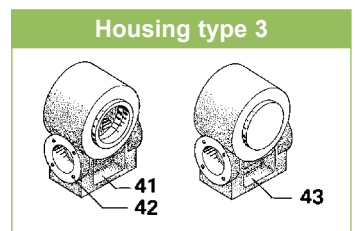
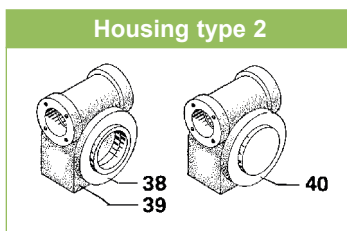
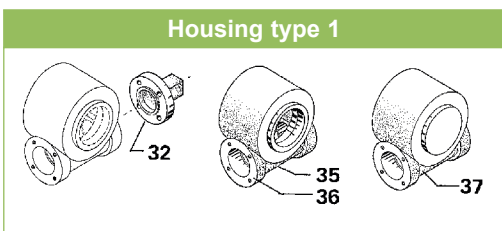
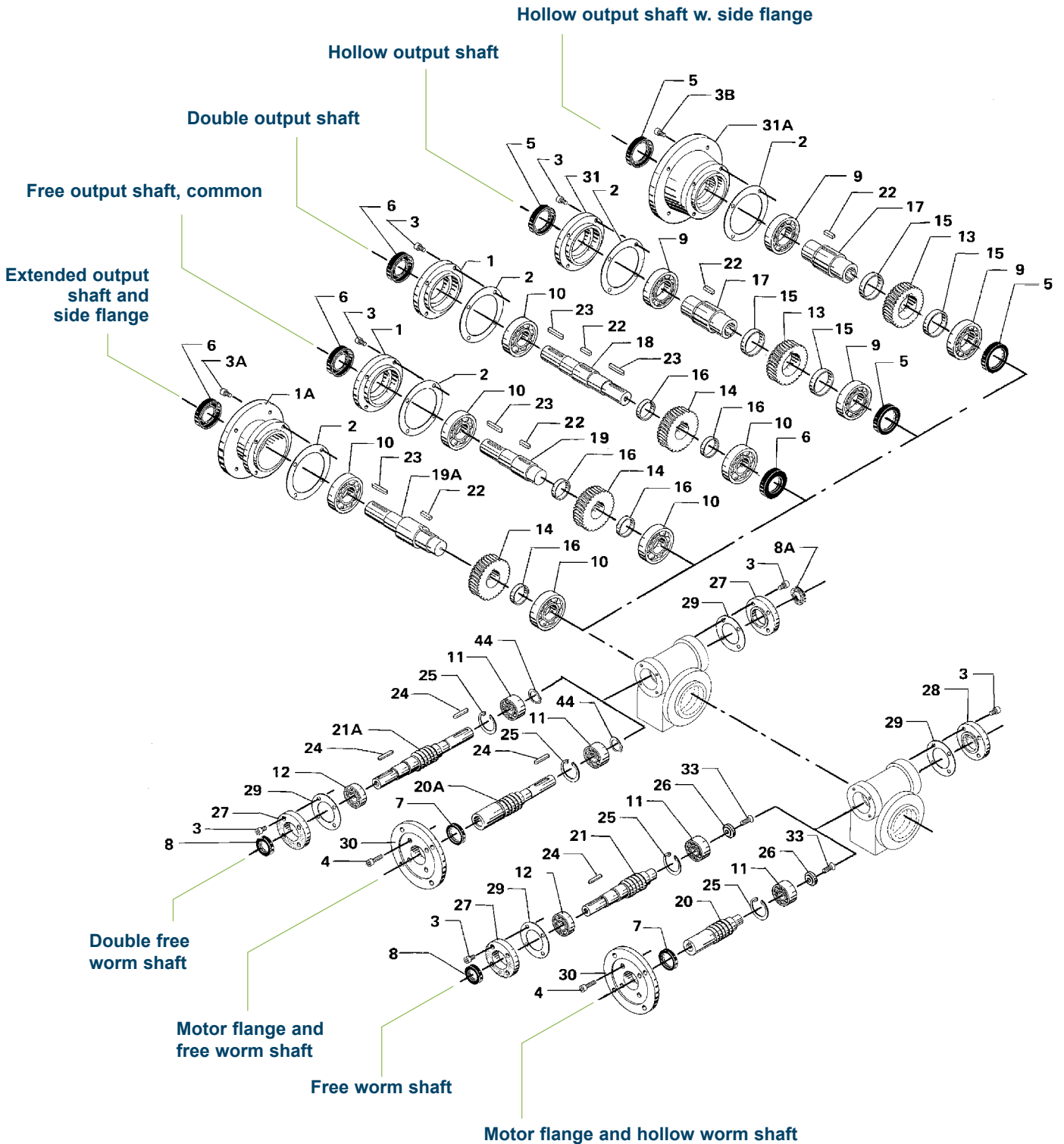
Skanderborg, 25.10.2022

Signed for and on behalf of BJ-Gear A/S



Jesper Olesen
R & D Manager

Spare parts drawing







bj-gear

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WG-M | 11 | 2022 | UK