

EURONORM

DRIVE SYSTEMS



High Quality • Competitive Pricing • Delivered from stock

GEARMOTOR MANUAL

Euronorm

As an internationally operating supply partner, Euronorm supplies the market with drive components, systems and solutions.

Products

Euronorm distinguishes itself by offering a wide range of products in the field of mechanical and electrical drive technology that is easily interchangeable, of high quality and competitively priced.

Services

Euronorm is synonymous for direct contact, good advice and an agreement is an agreement. Thanks to its compact organisation, it is able to give its business relations the attention they need and to meet their (delivery) requirements. Furthermore, customers can count on high-quality technical advice, professional testing of prototypes, extensive documentation and 3D drawings.

Delivery reliability

Euronorm is a reliable supply partner and has a variety of gearboxes, motors and components in stock. Most drives are assembled in its assembly centre, enabling it to offer a very wide range of (customer-specific) drives with fast delivery times. Furthermore, Euronorm can make adjustments in its workshops, such as coating in all desired colours and coating systems, extending / adapting shafts and assembling compositions.



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1. Foreword

The following safety notes apply to gear motors from Euronorm Drive Systems. If an motor is installed, the safety and installation instructions of the motor manufacturer must also be followed. Keep the operating instructions near the gear motor. Euronorm reserves the right to change individual components or compositions. Reproduction of this manual in any way, either in full or in parts, is not permitted unless written permission has been granted by Euronorm.

2. General information

The gear motors/gearboxes and motors have live and moving parts and (possibly) hot surfaces. Only qualified personnel may carry out the following work: Installation/assembly, connection, start-up, maintenance and repair.

The following information and documentation should be reviewed and understood before performing the intended tasks:

- Relevant operating instructions and electrical wiring diagrams.
- Warning and safety symbols on the gear motor/gearbox.
- System-specific regulations and requirements.
- European/national regulations on safety and accident prevention.

Incorrect use, incorrect installation or failure to install or remove necessary guards can cause serious injuries and/or material damage.

3. Safety Notes

Read the instructions carefully before installing and using the products, and before passing them on to the end user. Strict adherence to the operating instructions is an important step in preventing injuries and material damage. The customer is responsible for the correct connection of the drive. Stop the gearmotor or gearbox immediately if a fault or defect is suspected (e.g. increased temperature, noise, vibrations and loose parts). Check the gear motor according to section "Malfunctions" and rectify the problem, if necessary, in consultation with Euronorm. The machine must not be put back into service until the cause of the fault has been determined and rectified.



ATEX: Important information on explosion protection.



Electrical hazard, possible consequences: Serious or fatal injuries.



Attention: Important information on safe and efficient use.



Dangerous situation possible consequences: Severe or fatal injury.



Warning: possible consequences: Slight injury.

4. Intended use

Euronorm gear motors/gearboxes are intended for use in industrial applications. They comply with current standards and regulations. Technical data and information on permitted operating limits can be found on the nameplate and in the documentation. It is essential that the instructions are followed! In case of improper use, the integrator/user is fully liable. Safe operation of the gear motor is only possible if a gear motor is correctly selected and dimensioned. In case of doubt about the suitability of the gear motor for the application, contact the Euronorm sales department.

5. Transport

Inspect the shipment immediately upon receipt, paying particular attention to any damage that may have occurred during transport. Inform Euronorm immediately if you find any damage. The gear motor may no longer be suitable for (safe) operation due to transport damage.



NOTE!

Use DIN 580 eyebolts to lift the gear motor. If no eyebolt is supplied, screw a suitable eyebolt completely into the threaded hole of the gear motor. The eyebolt must be tightened firmly. The eyebolts are designed to support the weight of the gear motor/gearbox and are not suitable for heavier loads. Take note of the contents of DIN 580:2010 and act accordingly. The weight "m [kg]". (see table below) indicates the maximum permissible weight in the direction of the "F" axis of the bolt. The eyebolt must, if possible, be loaded in the direction of the 'F' axis as shown in the figure below.

Wire	M8	M10	M12	M16	M20	M24	M30
m [kg]	140	230	340	700	1200	1800	3200

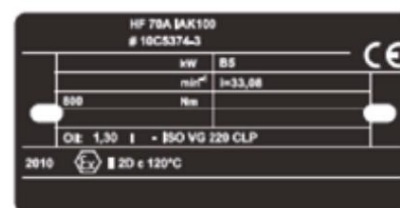


6. Launching/commissioning

Observe the following points to prevent overheating of the gear motor:





- Cool air must be able to flow freely around the gear motor.
- The gear motor must not be exposed to hot air.
- Do not supply heat to the gear motor (e.g. via an input shaft).
- Maximum surface temperature is reached within 3 hours and should not exceed 90°C.

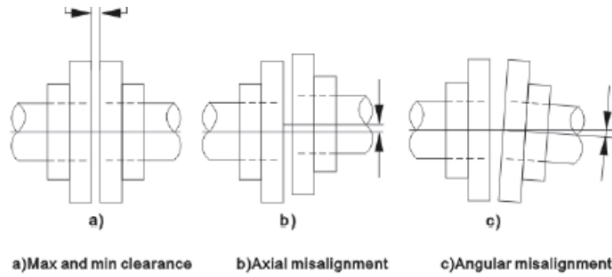
Check that the data on the nameplate corresponds to the installation location. Operating limits for a standard gear motor are an ambient temperature of -10°C to +40°C at up to 1,000 m above sea level. Contact Euronorm if the ambient temperature differs by 5°C or more from the values listed. The drive must not be exposed to oil, acid, smoke, toxic gas or radiation. The input and output shafts, and mounting flanges are treated before shipment with an anticorrosive agent. Prior to installation, thoroughly clean the shaft and flange surfaces to ensure that all anti-corrosion agent has been removed.







Further control points before commissioning:

- Check that the ventilation plug is in the correct position (for the respective mounting position) and that it is easily accessible. See the Euronorm motor gearbox catalogue for the relevant location of the various plugs.
- If a backstop is fitted: check the direction of rotation. Check the direction of rotation before installing the gear motor.

- Mount the (motor) gear motor on the machine or installation, and make sure that the gear motor is correctly aligned and firmly attached before connecting it electrically.
- Use a plastic insulation strip if there is a chance of galvanic corrosion between the gear motor and the mounting surface. The insulation material must have an electrical resistance of $<10 \Omega$. Galvanic corrosion can occur between dissimilar materials, for example; aluminium and stainless steel. Also, install the bolts with plastic washers! Use the supplied mounting screws to fasten the gear motor.
- Before starting up, check that the following gear motor specifications meet the intended use: Shaft distance, gear ratio, configuration of input and output shafts. The maximum input speed of the input shaft is 2000 rpm. The overall speed is 600-1800 rpm.
- Check that safety measures have been taken to protect personnel from moving parts (by installing guards).
-  Check whether the data on the nameplate correspond to the installation situation such as - Instrument group, - Ex category, - Atmosphere, - Temperature class, - Maximum surface voltage.
-  Check that the installation site is exposed to the following hazards: explosion, oil, acid, gas, vapour or radiation.
-  Check that the gear motor is sufficiently ventilated and that no external heat can be supplied. The cooling air must not be warmer than 40°C.
-  Check that the motor has a suitable ATEX approval.



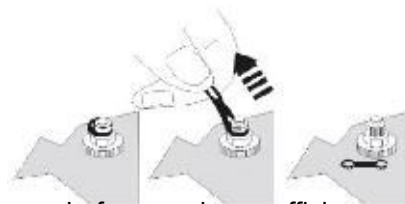
Checklist before starting the motor:

-  Check that the mains voltage and frequency match the data on the nameplate. A voltage difference of $\pm 5\%$ and frequency difference of $\pm 2\%$ is acceptable.
-  Check that the gear motor is connected properly both mechanically and electrically.
-  Check whether a motor protection switch (MPS) is connected.
-  Check that all mechanical and electrical protections for the motor are activated.
- If a backstop is fitted: check the direction of free rotation.
- Check that the terminal box is dust and waterproof sealed.
- If stationery heating is fitted: check that the stationery heating is connected.
- If forced cooling is fitted: check that the forced cooling is connected.
- Check that the gear motor is lubricated correctly before starting up.

Never load the gear motor 100% at once, but slowly build up the load.

ⓘ ATTENTION!

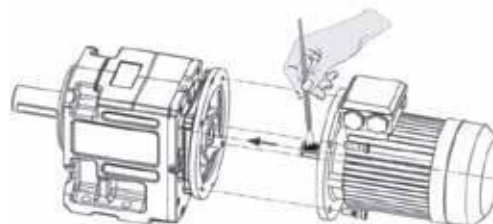
The ventilation plug must be activated before the gear motor can be put into operation. This is done by removing the transport protection (see illustration).



Helical-worm gear motors require a run-in period of at least 24 hours before maximum efficiency is reached. A separate run-in period applies for both directions of rotation if a gear motor has two directions of rotation.

Notes

Never mount pulleys, couplings, gears, etc. on the output shaft by hitting them with a hammer. This will damage the bearings, housing and shaft! Assembly is easier after applying grease (e.g. Molykote 321) to the shaft, or by heating (up to 80 - 100 °C) of the component to be assembled. The application of lubricant to the shaft prevents rust. Reaction arms must be attached correctly. The use of a frequency inverter is only permitted if the motor is suitable for this purpose.



7. Terminal box

There must be no dirt or moisture in the terminal box. Openings must be closed so that no dust or water can enter the terminal box. The terminal box must be closed with the original gasket. The terminal box, PCB and cable connections must not be damaged.

ⓘ ATTENTION!

Follow the wiring diagram supplied in the terminal box to control the motor. Do not connect the motor in any other way than as shown in the diagram. Make sure that the connections are securely and securely mounted.

Connection in order of L1, L2, L3 to U1, V1, W1 gives a motor rotation direction clockwise. Changing the phases gives a motor rotation direction counter clockwise (e.g. L1, L2, L3 to V1, U1, W1).

Cable entries

WARNING!

Wear safety glasses. Danger of injury from ejected (sharp) small parts.

Implementation:

- Attach the cover to the terminal box.
- Determine which cable entries are to be opened.
- Drill through the hole using an obliquely positioned chisel (or similar object) and a hammer.
- Remove the cover from the terminal box. Remove the broken material.
- Mount the swivel and fasten it with a lock nut.



WARNING!

Do not pass through the inside of the terminal box.

8. Gear motors/gearboxes with backstop

The backstop ensures that the gear motor/gearbox can only rotate in one direction. The direction of rotation is marked with an arrow on the output side of the gear motor and (if applicable) on the ventilation hood on the motor.

ATTENTION!

Starting the motor in the opposite direction of rotation of the backstop can lead to damage to the backstop.

9. Storage

General:

The following points must be observed when storing the gear motors:

- The drives must be stored in an enclosed space.
- Ambient temperature maximum 25°C (77°F).
- Relative humidity maximum 80%.
- The gear motors must be protected against sunlight and UV light.
- Do not store aggressive or corrosive materials in the vicinity of the gear motors.
- The gear motors must be stored in the same position in which they will be used later.
- The gear motors must be rotated 90° - 180° every 6 months to ensure that the gear motor remains properly lubricated.
- **The (motor) gear motors must be protected against mechanical loads.**

Long-term storage:

- If the gear motor is to be stored for longer than 12 months, it must be completely filled with the specified lubricant. Unprotected, bare metal parts should be protected with an anti-corrosion product (inspection every 6 months is recommended). The anti-corrosion product must be replaced after one year.
- Remove the lubricant before starting up the gear motor. Check that all lubricant chambers are emptied in case more than one lubricant chamber is present.

- Fill the gear motor with the specified lubricant. See the Euronorm sales catalogue for the respective gear motor type for lubricant type and volume.
- Before starting up, all bolts must be tightened again.
- The gear motors must be inspected for leaks if they are stored for more than 24 months. If visible damage or leakage is found, replace the defective part.

10. Inspection and maintenance

Check the oil level:

- Disconnect and lock the power supply to the motor that drives the gear motor so that the motor cannot be switched on accidentally! Wait until the gear motor has cooled down sufficiently. Danger of burns!
- Drain part of the oil.
- Check the oil viscosity (using a viscometer).
- For gear motors with an oil level plug: Remove the level plug, check the oil level and top it up if necessary.

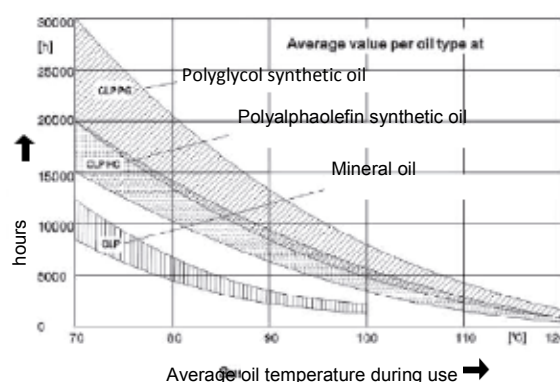
Drain the oil when the gear motor is warm. Stop the gear motor to prevent injury! Allow the gear motor to cool down until it can be touched by hand. The oil must be drained as hot as possible to ensure that the gear motor is completely drained.

- Place a suitable container under the drain plug
- Remove the ventilation and drain plugs.
- Drain all oil and clean/flush the gear motor. Then mount the drain plug.
- Fill the gear motor with new oil of the correct type through the ventilation plug hole.
- Check the oil level using the level plug and correct if necessary. Then attach the ventilation plug

Do not mix the lubricants! Contact the Euronorm for questions about lubricants.

Oil drain intervals:

Oil change intervals for standard gear motors at normal ambient temperatures (-10°C to $+40^{\circ}\text{C}$) and operating conditions, based on VG220 oil. See the Euronorm sales catalogue for further information on oil type and viscosity.



type	olie hoeveelheid [l]					
	M1 ¹⁾	M2 ¹⁾	M3	M4	M5	M6
JRTR17/R17F	0.25	0.6	0.35	0.6	0.35	0.35
JRTR27/R27F	0.25/0.4	0.7	0.4	0.7	0.4	0.4
JRTR37/R37F	0.3/1	0.9	1	1.1	0.8	1
JRTR47/R47F	0.7/1.5	1.6	1.5	1.7	1.5	1.5
JRTR57/R57F	0.8/1.7	1.9	1.7	1.8	1.7	1.7
JRTR67/R67F	1.1/2.3	2.6/3.5	2.8	3.2	1.8	2
JRTR77/R77F	1.2/3	3.8/4.3	3.6	4.3	2.5	3.4
JRTR87/R87F	2.3/6	6.7/8.4	7.2	7.7	6.3	6.5
JRTR97	4.6/9.8	11.7/14	11.7	13.4	11.3	11.7
JRTR107	6/13.7	16.3	16.9	19.2	13.2	15.9
JRTR137	10/25	28	29.5	31.5	25	25
JRTR147	15.4/40	46.5	48	52	39.5	41
JRTR167	27/70	82	78	88	66	69

type	olie hoeveelheid [l]					
	M1 ¹⁾	M2 ¹⁾	M3	M4	M5	M6
JRTRF17	0.25	0.6	0.35	0.6	0.35	0.35
JRTRF27	0.25/0.4	0.7	0.4	0.7	0.4	0.4
JRTRF37	0.4/1	0.9	1	1.1	0.8	1
JRTRF47	0.7/1.5	1.6	1.5	1.7	1.5	1.5
JRTRF57	0.8/1.7	1.8	1.7	1.7	1.7	1.7
JRTRF67	1.2/2.5	2.7/3.6	2.7	3.1	1.9	2.1
JRTRF77	1.2/2.6	3.8/4.1	3.3	4.1	2.4	3
JRTRF87	2.4/6	6.8/7.9	7.1	7.7	6.3	6.4
JRTRF97	5.1/10.2	11.9/14	11.2	14	11.2	11.8
JRTRF107	6.3/14.9	15.9	17	19.2	13.1	15.9
JRTRF137	9.5/25	27	29	32.5	25	25
JRTRF147	16.4/42	47	48	52	42	42
JRTRF167	26/70	82	78	88	65	71

type	olie hoeveelheid [l]					
	M1	M2	M3	M4	M5	M6
JRTRX57	0.6	0.8	1.3	1.3	0.9	0.9
JRTRX67	0.8	0.8	1.7	1.9	1.1	1.1
JRTRX77	1.1	1.5	2.6	2.7	1.6	1.6
JRTRX87	1.7	2.5	4.8	4.8	2.9	2.9
JRTRX97	2.1	3.4	7.4	7	4.8	4.8
JRTRX107	3.9	5.6	11.6	11.9	7.7	7.7

	olie hoeveelheid [l]					
	M1	M2	M3	M4	M5	M6
JRTRXF57	0.5	0.8	1.1	1.1	0.7	0.7
JRTRXF67	0.7	0.8	1.5	1.7	1	1
JRTRXF77	0.9	1.5	2.4	2.5	1.6	1.6
JRTRXF87	1.6	2.5	4.9	4.7	2.9	2.9
JRTRXF97	2.1	3.6	7.1	7	4.8	4.8
JRTRXF107	3.1	5.9	11.2	10.5	7.2	7.2

JRTF..,JRTFA..B,JRTFH..B,JRTFV..B

type	olie hoeveelheid [l]					
	M1	M2	M3	M4	M5	M6
JRTF37	1	1.2	0.7	1.2	1	1.1
JRTF47	1.5	1.8	1.1	1.9	1.5	1.7
JRTF57	2.6	3.7	2.1	3.5	2.8	2.9
JRTF67	2.7	3.8	1.9	3.8	2.9	3.2
JRTF77	5	7.3	4.3	8	6	6.3
JRTF87	10	13.0	7.7	13.8	10.8	11
JRTF97	18.5	22.5	12.6	25.2	18.5	20
JRTF107	24.5	32	19.5	37.5	27	27
JRTF127	40.5	55	34	61	46.5	47
JRTF157	69	104	63	105	86	78

JRTFF..

type	olie hoeveelheid [l]					
	M1	M2	M3	M4	M5	M6
JRTFF37	1	1.2	0.7	1.3	1	1.1
JRTFF47	1.6	1.9	1.1	1.9	1.5	1.7
JRTFF57	2.8	3.8	2.1	3.7	2.9	3
JRTFF67	2.7	3.8	1.9	3.8	2.9	3.2
JRTFF77	5.1	7.3	4.3	8.1	6	6.3
JRTFF87	10.3	13.2	7.8	14.1	11	11.2
JRTFF97	19	22.5	12.6	25.5	18.9	20.5
JRTFF107	25.5	32	19.5	38.5	27.5	28
JRTFF127	41.5	56	34	63	46.5	49
JRTFF157	72	105	64	106	87	79

JRTFA..,JRTFH..,JRTFV..,JRTFAF..,JRTFHF..,JRTFVF..,JRTFAZ..,JRTFHZ..,JRTFVZ..

type	olie hoeveelheid [l]					
	M1	M2	M3	M4	M5	M6
JRTF..37	1	1.2	0.7	1.2	1	1.1
JRTF..47	1.5	1.8	1.1	1.9	1.5	1.7
JRTF..57	2.7	3.8	2.1	3.6	2.9	3
JRTF..67	2.7	3.8	1.9	3.8	2.9	3.2
JRTF..77	5	7.3	4.3	8	6	6.3
JRTF..87	11	13.0	7.7	13.8	10.8	11
JRTF..97	18.5	22.5	12.6	25.0	18.5	20
JRTF..107	24.5	32	19.5	37.5	27	27
JRTF..127	39	55	34	61	45	46.5
JRTF..157	68	103	62	104	85	77

JRTK.,JRTKA..B,JRTKH..B,JRTKV..B

type	olie hoeveelheid [l]					
	M1	M2	M3	M4	M5	M6
JRTK..37	0.5	1	1	1.3	1	1
JRTK..47	0.8	1.3	1.5	2	1.6	1.6
JRTK..57.	1.2	2.3	2.5	3	2.6	2.4
JRTK..67	1.1	2.4	2.6	3.4	2.6	2.6
JRTK..77	2.2	4.1	4.4	5.2	4.2	4.4
JRTK..87	3.7	8	8.7	10.4	7.8	8
JRTK..97	7	14	15.7	20	15.7	15.5
JRTK..107	10	21	25.5	33.5	24	24
JRTK..127	21	41.5	44	51	40	41
JRTK..157	31	62	65	90	58	62
JRTK..167	35	100	100	125	85	85
JRTK..187	60	170	170	205	130	130

JRTKF..

type	olie hoeveelheid [l]					
	M1	M2	M3	M4	M5	M6
JRTKF37	0.5	1.1	1.1	1.5	1	1
JRTKF47	0.8	1.3	1.7	2.2	1.6	1.6
JRTKF57.	1.3	2.3	2.7	3	2.9	2.7
JRTKF67	1.1	2.4	2.8	3.6	2.7	2.7
JRTKF77	2.1	4.1	4.4	6	4.5	4.5
JRTKF87	3.7	8.2	9	11.9	8.4	8.4
JRTKF97	7	14.7	17.3	21.5	15.7	16.5
JRTKF107	10	22	26	35	25	25
JRTKF127	21	41.5	46	55	41	41
JRTKF157	31	66	69	92	62	62

JRTKA..,JRTKH..,JRTKV..,JRTKAF..,JRTKHF..,JRTKVF..,JRTKAZ..,JRTKHZ..,JRTKVZ..

	olie hoeveelheid [l]					
	M1	M2	M3	M4	M5	M6
JRTK..37	0.5	1	1	1.4	1	1
JRTK..47	0.8	1.3	1.6	2.1	1.6	1.6
JRTK..57.	1.3	2.3	2.7	3	2.9	2.7
JRTK..67	1.1	2.4	2.7	3.6	2.6	2.6
JRTK..77	2.1	4.1	4.6	6	4.4	4.4
JRTK..87	3.7	8.2	8.8	11.1	8	8
JRTK..97	7	14.7	15.7	20	15.7	15.7
JRTK..107	10	20.5	24	32	24	24
JRTK..127	21	41.5	43	51	40	40
JRTK..157	31	66	67	87	62	62
JRTK..167	35	100	100	125	85	85
JRTK..187	60	170	170	205	130	130

JRTS..

type	olie hoeveelheid [l]					
	M1	M2	M3 ¹⁾	M4	M5	M6
JRTS37	0.25	0.4	0.5	0.6	0.4	0.4
JRTS47	0.35	0.8	0.7	1.1	0.8	0.8
JRTS57	0.5	1.2	1	1.5	1.3	1.3
JRTS67	1	2.0	2.2/3.1	3.2	2.6	2.6
JRTS77	1.9	4.2	3.7/5.4	6	4.4	4.4
JRTS87	3.3	8.1	6.9/10.4	12	8.4	8.4
JRTS97	6.8	15	13.4/18	22.5	17	17

JRTSF..

type	olie hoeveelheid [l]					
	M1	M2	M3 ¹⁾	M4	M5	M6
JRTSF37	0.25	0.4	0.5	0.6	0.4	0.4
JRTSF47	0.4	0.9	0.9	1.2	1.0	1
JRTSF57	0.5	1.2	1	1.6	1.4	1.4
JRTSF67	1	2.2	2.3/3	3.2	2.7	2.7
JRTSF77	1.9	4.1	3.9/5.8	6.5	4.9	4.9
JRTSF87	3.8	8	7.1/10.1	12	9.1	9.1
JRTSF97	7.4	15	13.8/18.8	23.6	18	18

JRTSA..,JRTSH..,JRTSAF..,JRTSHF..,JRTSAZ..,JRTSHZ..

type	olie hoeveelheid [l]					
	M1	M2	M3 ¹⁾	M4	M5	M6
JRTS..37	0.25	0.4	0.5	0.6	0.4	0.4
JRTS..47	0.4	0.8	0.7	1.1	0.8	0.8
JRTS..57	0.5	1.1	1	1.6	1.2	1.2
JRTS..67	1	2	1.8/2.6	2.9	2.5	2.5
JRTS..77	1.8	3.9	3.6/5	5.9	4.5	4.5
JRTS..87	3.8	7.4	6/8.7	11.2	8	8
JRTS..97	7	14	11.4/16	21	15.7	15.7

Time interval	Inspection and/or maintenance task.
After the first 300 operating hours (only JKM28-58 & JRST110-150).	Cleaning the casing, changing the oil
Monthly	<ul style="list-style-type: none"> • Check the gear motor for abnormal noises. • Check the surface temperature (Max. 90°C, 194°F). • Check for visible oil leaks. • Remove the dust from the gear motor.
Every 3 months.	<ul style="list-style-type: none"> • Clean the ventilation plug and environment.
Every 3,000 operating hours, or at least every 6 months.	<ul style="list-style-type: none"> • Check oil quality and oil quantity.
Every 6 months.	<ul style="list-style-type: none"> • Check the rubber buffer set. • Check the retaining screws.
Every 10,000 hours or 5 years.	Change the oil, inspect the bearings and replace the oil seals if necessary.
Regulate if necessary (depending on environmental influences) and if applicable motor).	<ul style="list-style-type: none"> • Check the air gap of the brake (motor) and set (apply a new brake if necessary). • Remove dust from the drives and cooling fan.

11. Fault

In the event of a malfunction, please have the following information at hand when contacting the Euronorm sales department:

- Information on the nameplate.
- Type of problem and its consequences.
- When the problem has arisen and the circumstances surrounding it.
- The possible cause.

WARNING!

Disconnect and lock the power supply to the motor that drives the gear motor so that the motor cannot be switched on accidentally! Wait until the gear motor has cooled down sufficiently. Danger of burns!

Problem	Possible causes	Solution
Overheating.	Incorrect mounting of the gear motor or connection to the driven machine.	Correct the assembly/connection.
	Overload.	Reduce the load, or select a larger gear motor (if necessary, contact the Euronorm sales department).
	Incorrect oil level.	Adjust the amount of lubricant.
	Dirty or wrong oil.	Replace the oil with the correct and new oil.
Vibration.	Gear motor or connection error assembled.	Determine the cause and mount on the correct way.
	Worn or damaged teeth on the worm wheel.	Replace the gears (if necessary, contact the Euronorm sales department).
	Damaged bearing.	Replace the bearing.
The tooth surface of the worm gearbox wear extra fast. <i>Worn-out parts should be replaced as part of the corrective action.</i>	Overload.	Reduce the load, or select a larger gear motor (if necessary, contact the Euronorm sales department).
	Wrong oil.	Change the oil.
	Oil level too low.	Top up the oil.
	Lubricant is not replaced in time.	Change the oil.
	Overheating during commissioning.	1) Treat this as "overheating". 2) Reduce the ambient temperature.
Unusual sound with pattern.	Crackling sounds: Bearing damage. Tapping sounds: Unevenness in the gears.	Check the oil, replace the bearings, necessary, contact the Euronorm sales department.
Unusual noise without pattern.	Contaminated oil.	Change the oil.

Gear motor housing movement during operation.	Loose gear motor mounting.	Tighten the retaining screws firmly on.
	Rubber buffer of the reaction arm not properly tensioned or damaged.	Re-apply tension the rubber buffer or replace the damaged rubber buffer.
Gear motor becomes too hot (surface temperature > 90°C).	Too much oil.	Correct the oil level.
	Damage to the gear motor (gears, bearings).	Contact the Euronorm sales department.
	Ventilation plug defective.	Replace the ventilation plug.
Oil leakage from the gear motor housing.	Gasket is damaged.	Check the gasket, replace if necessary.
	Clogged ventilation plug.	Remove the seal.
Oil leaks along the oil seal.	Clogged ventilation plug. Oil seal is broken. Oil seal is crooked.	1) Clean or replace the ventilation plug. 2) Replace the oil seal or Correct the assembly. 3) Contact Euronorm.
Oil leaks from the ventilation plug.	Oil level too high Gear motor mounted in incorrect mounting position. Frequent cold starts (oil foams) and/or excessive oil level.	1) Adjust the oil level 2) Mount the ventilation plug on the correct place and correct it oil level. 3) Replace the ventilation plug.
Output shaft does not rotate while the motor or input shaft is running.	Output shaft no longer connected with hub. Shrink disk slips through. Check the shrink disk connection.	Contact the Euronorm

Short-term oil/lubricant leakage at the ventilation plug is possible during the run-in phase (24 hours run-in time).



Electric motors, controllers and hydro motors.

- AC and DC motors
- Frequency converters
- Hydromotors



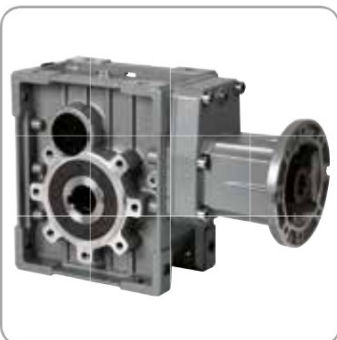
Gear motors

- Helical-worm gearboxes
- Hypoid reducers
- Gearmotors
- Angular gear motors
- Planetary gear motors
- Heavy gearboxes



Special Actuators and Components

- Spindle lifters and Actuators
- Slewing ring bearings
- Couplings
- Vibration motors
- Drum motors



Services

- (International) supply partner
- Motorering
- Technical support
- Customer-specific solutions



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