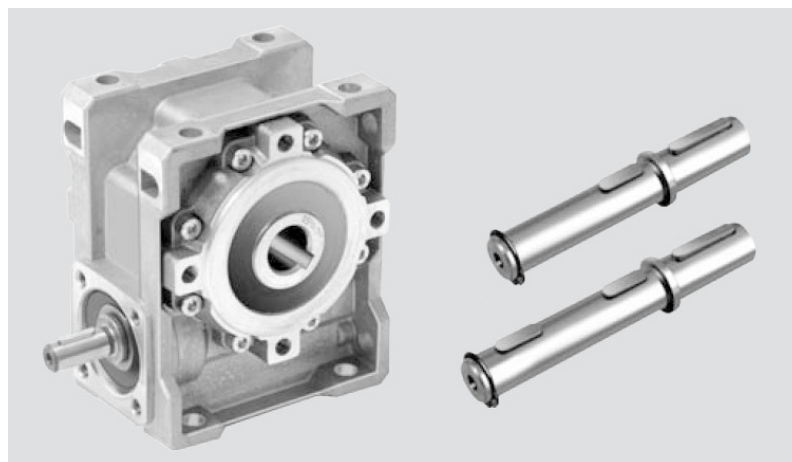




Operating and maintenance instructions

Worm gear boxes H/I



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Foreword

A standalone gearbox is not subject to the Machinery directive. Through appropriate installation and/or assembly in an overall system it becomes a component of the machine or plant under construction, which must comply with the relevant standards and directives. The manufacturer of the machine bears the sole responsibility for compliance with these standards.

1. Safety Instructions

A machine may not be taken into use until it has been ascertained that it meets the protection and safety requirements of machinery directive 89/392/EEC and its amending directives 91/368/EEC and 93/44/EEC. The basic prerequisite for correct installation and connection is knowledge of, and compliance with, the operating and safety instructions, and the regulations relating to industrial safety and accident prevention. Only qualified persons may be charged with work on geared motors. Faults susceptible to prejudice safety must be rectified immediately by previously appointed staff.

Gearboxes are devices for use in industrial machinery and plant. In operation, these devices can have dangerous live, non-insulated parts, or perhaps moving or rotating parts. Hence, for example, unauthorised removal of the required casing, or improper use, incorrect operation or poor maintenance, could lead to severe bodily harm or damage to machinery.

Persons responsible for the safety of the machine or plant must therefore ensure that:

- only qualified persons are charged with working on the machines or plant.
- such persons always have access to the current operating instructions and other product documentation applicable to the work in hand, and that they are charged with consistent compliance with these documents.
- unqualified persons are prohibited from working on or near the machines or equipment.

Qualified personnel are persons who by reason of their training, experience, instruction and their knowledge of the relevant standards, regulations, accident prevention rules and working conditions have been authorized by the person responsible for the safety of the machine or plant to perform the appropriate activities required, and thereby are able to recognise and prevent potentially dangerous situations (For the definition of skilled workers see VDE 0 105 or IEC 364, which also regulate the prohibition of the employment of unqualified persons). A knowledge of first aid and the local rescue organisation must also be included.

It is assumed that the basic planning of the machine or plant and all operations relating to its transportation, assembly, installation, commissioning, maintenance and repair will be performed by qualified personnel or controlled by responsible skilled hands. In this respect, special attention should be paid to:

- technical data and information on permissible use which are included in the catalogue, the documents relating to the order and on the data plate, - the general regulations applicable to erection and safety.
- the local regulations and requirements specific to the machine or plant - the proper employment of tools, lifting and transport devices.
- the use of personal protective equipment.
- assembly conditions, to ensure the necessary protection for operators during use, and to prevent personnel from approaching too closely for safety.

The present documentation would become too unwieldy if it contained all the detailed information relative to possible construction variants, and it cannot take into account every conceivable case involving erection, operation or maintenance. Consequently, it only contains the essential instructions necessary for qualified personnel operating geared motors in industrial areas of application. Should, in a special case where it is intended to use the machine or plant in non-industrial areas of application, more stringent requirements have to be met (e.g. to prevent children's fingers from touching the machine), these conditions must be assured during assembly by introducing additional safety measures for the machine or plant.

Changes from normal operation (increased power consumption, raised temperatures, vibrations, noises, etc. or indications from monitoring facilities) lead to the assumption that the machine is not functioning correctly. To prevent faults which, in their turn, might cause serious indirect or direct damage to persons or machinery, the responsible maintenance staff must be informed immediately.

IN CASE OF DOUBT: SWITCH OFF THE MACHINE INVOLVED AT ONCE!!!

2. Regulation Use

The geared motors are designed exclusively for installation in or for mating with a machine or plant in industrial use. Use for any other or extended purpose is non-regulation. The supplier will not be liable for any damage arising from this improper use.

3. Erection

The beds on which the gears and geared motors are to be erected must be adequately dimensioned and free from vibration. When mounting the gearboxes, care must be taken to ensure that these are immovably mounted, free from distortion, and on a level surface. If the gearbox is operated by a motor, adequate ventilation for the motors must be assured. Should coupling elements be fitted onto the drive- or output-shaft blows to the shafts must be avoided since they could cause leakage or damage to the bearings. Prior to fitting, the shaft-ends should be lightly greased to facilitate mounting. We recommend that a flexible coupling be employed in order to reduce shock on the gears or geared motor from the machine being driven.

4. Maintenance

Attention! If the gearbox is operated by a motor: Before starting any maintenance operations, the motor must be permanently disconnected from the mains.

On delivery, the gearboxes are ready for use and filled with gear grease or oil. This ensures long-term lubrication for all drive parts and bearings. No complicated stripping, cleaning or grease change are required. Should, however, any additional greasing become necessary then synthetic and mineral lubricants must not be mixed.

Lubrication – filling quantities in dm³

Gearbox size	Quantity in dm ³ (liter)	Type of lubrication
031	0,05	Synthec oil
040	0,07	Synthec oil
050	0,15	Synthec oil
063	0,40	Synthec oil
075	0,60	Synthec oil