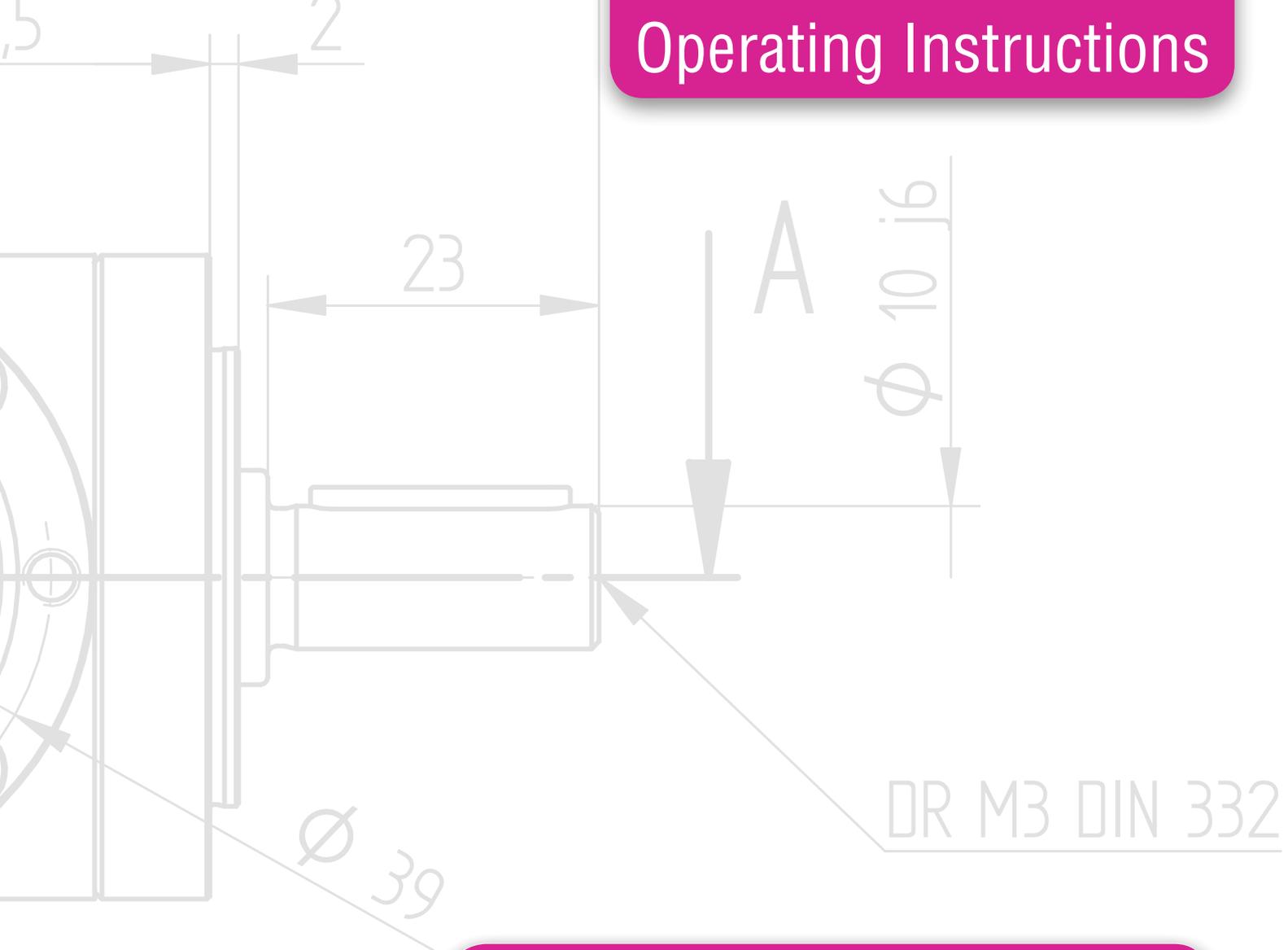
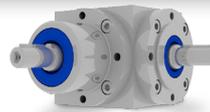


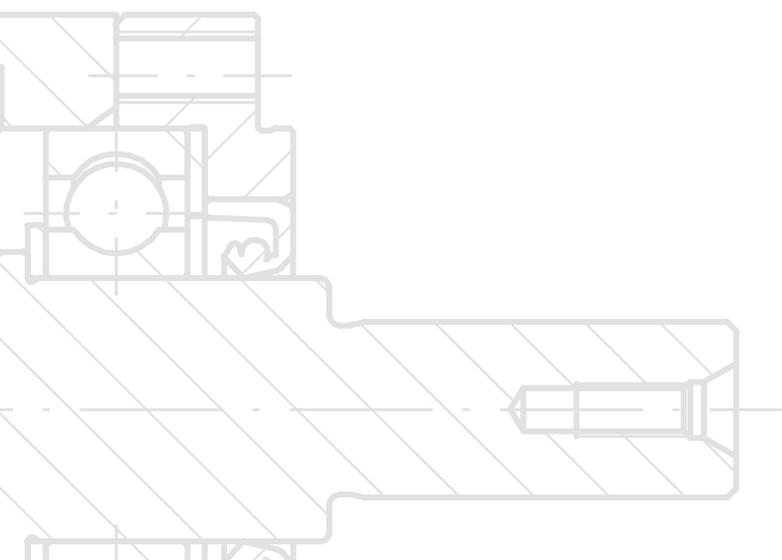
# Operating Instructions



Type L | Type V | Type S



4x8



## Type L / V / S

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## Manufacturer's Declaration

We hereby declare that our spiral bevel gearings, worm gearings and hypoid gearings have been defined according to the Machinery Directive 2006/42/EC as a **component** or **component assembly**. Thus, they **do not** fall within the Directive's scope of application. If any of our gearboxes is installed into a machine that is subject to the above-mentioned Machinery Directive the commissioning of the gearbox is not allowed until the conformity of the machine with the Machinery Directive 2006/42/EC has been declared.

## General Safety Instructions

The warranted properties of our gearboxes as well as meeting any warranty claims require compliance with these instructions. We therefore ask you to read these Operating Instructions thoroughly before working on the gearbox or putting it into service. All work related to transport, storage, installation/assembly, commissioning, maintenance and servicing must be performed by qualified personnel only. The following must be taken into account:

- *The information and guidance notes contained in this manual;*
- *The identification plate on the gearbox;*
- *The system-specific provisions and requirements; and*
- *The national / regional regulations on safety and accident prevention.*

Qualified operating personnel are persons that have appropriate occupational qualification and are familiar with the performance of the above-mentioned work.

Serious personal injury and property damage may result from

- *improper use*
- *incorrect installation or operation*
- *impermissible removal of required protective covers.*

## Safety & Information Signs



*This symbol is used to indicate a general hazard.*



*This symbol is used to indicate a hazard caused by electric current.*



*This symbol is used to indicate a hazard caused by rotating parts.*



*This symbol is used to indicate hot surfaces.*



*Warning of harmful or irritating substances.*

## Intended Use

ATEK gearboxes are components within the meaning of the Machinery Directive 2006/42/EC. They are designed to be installed in machines and are solely intended for the redirection and multiplication of torques according to the ATEK catalogue. Any other use or use going beyond will be regarded as improper use.

The manufacturer will not be liable for any damage resulting therefrom. The risk will be borne solely by the user.

## Type Designation

Please refer to the type-specific instructions for an explanation of the type designation.

The character string "/00" represents the standard design. Deviating numbers identify special designs.

The type of special design is described in the purchase order text.

## After Receipt of Delivery

- *Comparison with the shipping documents*
- *Checking of packaging for any damage*
- *Notify the transport company and ATEK immediately of any damaged packaging or commodity*

## In-House Transport

Use permissible and sufficiently rated and dimensioned materials handling equipment, such as lifting tackles, slings, eye bolts, etc. Generally, damaged gearboxes must not be used. A fall from a great height may result in damage within the gearbox and thus in a potential hazard.

## Storage

In case of storage, the following must be observed:

- *Appropriate positioning according to the design*
- *Closed, vibration-free, cool, dry, ozone-free and moderately ventilated rooms without major temperature fluctuations*
- *No direct solar radiation onto the gearboxes*
- *Temperatures below -10°C and above +35°C will reduce the sealing quality in the long term*
- *Do not store any solvents, fuels, lubricants, chemicals, acids, disinfectants or rubber solvents in close proximity.*
- *A priming coat is insufficient for long-term conservation*

## Painting

If the painting cannot be made by ATEK the radial shaft sealing rings and vent filters will have to be protected from the influence of solvents, hardening agents, and paint. Varnished radial shaft sealing rings will dry out and represent a considerable damage potential.

## Modifications and Alterations

The gearboxes must not be modified with respect to the design or safety-related features unless approved by us. Any unauthorised alteration in this regard will exclude any liability.

## Assembly / Installation

When a varnish coating is applied later it is absolutely necessary to protect the vent filter and the bleeder valve from any ingress of paint.

### Mounting Preparations

- *Do not clean any contamination by means of sharp-edged items, wire brushes or abrasive paper*
- *Do not clean sealings by means of solvents or aggressive chemicals*
- *Check the sealing ring seats of the shafts for damage in the form of scratches, contaminations or rust formation*
- *Fitting positions can be derived from the designations of the gearbox sides where the side facing downwards is specified as fitting position*
- *Attach the gearbox distortion-free and stress-free and only in the ordered fitting position on a vibration-absorbing, torsionally rigid base*

### Spatial Requirements

- *Ensure sufficient space with adequate air circulation*
- *Avoid severe pollution in the air (unless the seals are matched thereto)*
- *Do not encase or clad the gearboxes without consultation/coordination*
- *The influence of abrasive or chemically aggressive substances on the sealings should be avoided for service life purposes*

### Venting

If venting of the gearbox is intended the screw plug (sealing during transport) must be removed and replaced by the vent filter supplied. On vertical gearbox walls, the vent filter is to be screwed into the elbow contained in the delivery scope.

If the gearbox is operated without a previously intended vent filter this may result in damage to the sealing ring due to the overpressure and cause impermissible oil leakage. The owner/user has to ensure that the vent is protected against deposits and that sufficient air exchange is enabled.

### Gearbox Installation

When the gearboxes are installed, even support by a flat, vibration-suppressing and torsion-proof base structure must be ensured for an installation that is free from distortion.

## Installation of Mounting Parts

Mounting parts for the output shaft such as toothed gears or toothed belt pulleys must be installed without applying undue force. In no case must they be mounted by forcing-on or hitting. Use appropriate tools or devices. If clamping elements are used the permissible tightening torques of the clamping elements must be observed. The tightening torque must be applied step by step and evenly in the correct sequence.

The mounting parts must be secured axially also in case of shrink-fit connections. Shaft connections and flange connections must be aligned very thoroughly, while observing the reduced tolerance range from DIN 42955, if possible.

Ensure that forces acting on the output shaft (e.g. by belt tension) do not exceed the permissible forces. Mounting parts, flanges or the base structure must not cause any heating of the gearbox above 90°C.

## Commissioning

**Commissioning is not allowed until it has been established that the machine into which this gearbox type is installed conforms to the provisions of the Machinery Directive 2006/42/EC.**

**Prior to commissioning it must be checked whether:**

- *The lubricant has been filled in;*
- *All bolts/nuts have been tightened and rotating parts have been secured against loosening;*
- *The coupling of the input and output shafts does not generate any impermissible transversal forces or torques.*
- *Monitoring and protective devices must not be bypassed.*
- *If a vent filter was intended it must be checked whether it has been installed.*

If possible, perform a test run without load, while checking the running noises and temperature development.



**Caution!** Rotating parts may cause hazards.

The gearbox temperature must not exceed 90°C unless the value has been coordinated with ATEK.



**Caution!** Hot surfaces may cause hazards.

In case of abnormal noise or vibrations, discontinue the commissioning and contact the service department. The same applies to gearboxes that were not designed for temperatures above 90°C but that exceed this temperature.

## Lubrication

Please observe any guidance notes on the identification plate of the gearbox. Permanently lubricated gearboxes have been factory-filled with the required lubricant quantity and are maintenance-free under normal operating conditions.

In case of extreme requirements or increased service life demands we recommend an oil change.

Operating temperature: < 60°C	lifetime lubrication
Operating temperature: > 60°C and < 90°C	oil change after 15,000 h

An oil change will also be required if a larger lubricant amount has escaped due to leakage. You may inquire the oil quantity and the oil grade from our service. You will need the serial number of the gearbox for this.

The following can be taken as a rough guidance value of the filling quantity:

for bevel gearboxes:	the middle of the horizontal shaft;
for worm gearings:	the middle of the gear meshing.



**Lubricants must not be swallowed or get into the eyes.**

## **Maintenance**

All ATEK drives require only a minimum of maintenance. For gearboxes with lifetime lubrication, maintenance is reduced to regular checks for lubricant loss due to leakage, to visual status inspection of the sealings, and temperature measurements if appropriate.

Please note that any warranty claim will expire by opening of the gearboxes. Therefore the gearboxes should only be opened at an ATEK factory or after consent by ATEK.

## Ordering Examples

Type	Size	Gear ratio	Construction type	Mounting side	Fitting position	$n_{2max}$	Design
V	140	3:1	C0	- 1 .	1 -	500 /	0000 = standard
L	045	4:1	C0	- 1 .	1 -	500 /	0000 = standard
S	080	20:1	B02	- 1 .	1 -	20 /	0000 = standard

## Gearbox Sides

The gearbox sides are numbered according to the drawing. Side 3 designates the collar flange, or the side of the drive shaft. These numbers are used to designate the mounting side and the fitting position. So, the fitting position always describes the gearbox side facing downwards.

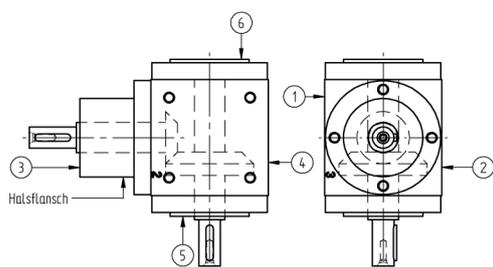


Fig. 1, type V and type VL

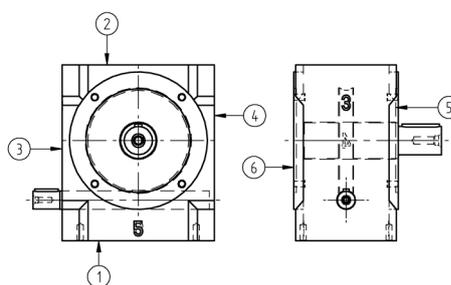


Fig. 2, type S

The values of the fast-rotating gearbox shaft are denoted  $n_1$  and  $T_1$ , respectively. Accordingly, the values of the shaft rotating slowly are denoted  $n_2$  and  $T_2$ , respectively.

## Installation of Mounting Parts and Commissioning

See "General Operating Instructions" chapter.

## Lubrication

An oil change may be necessary depending on the operating conditions.

On the L series and the size 065 of the V series, an oil change is only possible by dismounting the collar flange!

**There is a risk that the adjustments of bearing prestress and gear meshing are lost due to incorrect installation.**

**Any contamination and debris must be prevented from entering the gearbox!**

**After the oil change, the screw plugs must be firmly tightened!**

Please observe any guidance notes on the identification plate.