



# THUMM

ÖLHYDRAULISCHE ANTRIEBE

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## Quick Start Guide



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# ROTATORS



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## General information

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### General

**This operating manual is to be kept permanently and ready to hand at the place of use on the excavator.**

- Only instructed persons may operate the rotator and must have follow the instruction manual before starting work, maintenance or inspection.
- Compiled from the standpoint of safety, the manual contains precise information as to what is necessary for the risk-free commissioning, operating, maintenance and repair of the rotator.

### Specified use

- The rotator is not a ready-to-use product.
- The rotator serves as:
  - connecting link between excavator and grab.
  - drive unit for rotational movement and torque.
  - absorption of axial and radial load as well bending moment caused of a side load.
  - oil supply device for grab function.
- The plant must be compatible with the actuator.
- The actuator is prohibited from being used until it has been established that the plant to on which it will be mounted complies with the regulations laid down in the EC Machinery Directive.
- Constructive measures must be taken to assure safety.

### Claim under guarantee

No claims under guarantee will be considered in the event of:

- Failure to observe the >Specified use< of the rotary actuator and the machine.
- Failure to observe the >Operating instructions and safety precautions< relating to the rotary actuator and the machine.
- This manual does not extend or replace the guarantee or the liability terms and conditions laid down in the General Terms of Business of THUMM GmbH.

- Assembly and connecting operations must be carried out in accordance with the instructions given in this manual and on the rating plate.
- The rotator must not be used other than in a technically faultless condition.
- Unauthorized modifications are prohibited.
- This manual is to be handed over to the operator at the time of delivery or after commissioning has been completed.
- All the operating, maintenance and repair instructions contained in this manual and the machine must be adhered to.
- Any other form of use will count as an unspecified use.
- All forms of unspecified use are prohibited.

## Technically Description

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### Functional characteristics

THUMM Rotors are rotary driven systems for grabs and load bearing equipment of all types of excavators and forest machines. A typical feature is that the housing rotates around the fixed flange. The compact-rotary drive system belongs to the category of radial and axial piston motors.

### Bearing technology

The stress loadings typical for a rotary actuator is absorbed by a rolling bearing. Additionally, radial or axial slide bearings support the rotator against external forces and torque.

The outstanding reputation achieved by THUMM-Rotators is based on the design principle depicted and described above.

Reliability and prolonged durability are thus assured.

## Commissioning instruction

### Function test and visual inspection before use

- The plant must be closely visually inspected and function tested on every occasion before use.
- Check the screw couplings and connections of the hydraulic system for leaks.
- If any defects are found which pose a threat to the safety of personnel or operation of the machine, the plant must not be used. Typical defects are:
  - - a faulty hydraulic hose
  - - a faulty pin locking device
  - - cracks in carrying components
- All works on the plant must have been completed in full before the actuator is put into service.
- Use of the actuator is prohibited until it has been established that the plant, to which the THUMM actuator is intended to be mounted, complies with the regulations laid down in the EC Machinery Directive.
- Use caution in case of sub-zero temperatures or later connection to an operational heating device!
- The flange surface of the load handling devices to the rotator requires a
  - > flatness of max. 0,02mm and extends the lifetime of the rolling bearings.
  - > Paint surfaces are not recommended.
- In cases of changing of direction, the rotation must be slowed down beforehand.

### Caution!

At full load an abrupt change of direction is strictly to be avoided!

### Expert inspections



According to the applicable accident prevention regulations, the plant Operator is legally required to have an inspection carried out by an expert for cracks, wear, corrosion, operating safety etc. at least once a year.

### Putting into service



#### Caution!

The safety regulations and all the accident prevention regulations must be observed when the actuator is put into service.

- Function tests to be carried out before every use:
  - open grab
  - close grab
  - rotate grab
- Do not exceed the maximum permitted loads.
- When working with sandy material, the device must be greased more often.
- At extreme temperatures in the minus range, the rotators must be warmed up over a longer period of time.

## Maintenance and repair

### Safety regulations



#### Caution!

The safety regulations and all the accident prevention regulations must be observed during maintenance and repair operations.

- The THUMM actuator may only be operated, installed and maintained by authorized specialist personnel, in accordance with this manual.
- Before carrying out any work on the THUMM actuator, shut down the plant and make it secure against unauthorized activation.
- For safety reasons, conversions and modifications to the actuator are not permitted.
- The actuator must not be drilled.
- No welding operations are permitted on the actuator.
- If welding operations are carried out on the parent machine or the attachment, the electrical grounding must not be connected through the actuator.
- After 20 hours of operation lubricate 1-2 strokes with the grease gun.
- Before carrying out any work at the hydraulic system, depressurize the plant.
- Do not mix-up hydraulic connections.
- Do not allow dirt or other contaminants to get into the system.
- Do not adjust pressure limit valves.
- When carrying out any work at the hydraulic system, wear a safety mask and gloves. Escaping jets of hydraulic fluid are toxic and can also cause fires and injuries.
- To prevent any risk of slipping, remove any spillages of hydraulic fluid on the floor.
- After any maintenance or repair work, carefully bleed the hydraulic system.
- Used hydraulic fluid, lubricating grease and parts which are no longer serviceable must be disposed of in accordance with the official national and international regulations.
- Biological hydraulic fluid should always be kept and disposed of separately.

### 9.2 Hydraulics

<p>Use hydraulic oil according to specification:</p> <ul style="list-style-type: none"> <li>• HLP acc. DIN51524;</li> <li>• API-CC;</li> <li>• MIL-L-2104B;</li> <li>• MIL-L-46152;</li> </ul> <p>Biodegradable hydraulic ester-based oil.</p>	<p>The grade of pollution for the hydraulic oil should not exceed the values of 19/15 ISO 4406.</p> <p>We recommend to use a filter with a minimum retaining rate of <math>\beta_{10} &lt; 75</math>.</p> <p>Working substance temperature range <math>\mu 20^{\circ}\text{C}</math> to <math>+80^{\circ}\text{C}</math>.</p>
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The quick start guide does not replace the instruction manual.