Manual torque amplifier

XVK

XVR

Operating instructions

Keep for future reference.

PLARAD®
Torque & Tension Systems

Contents

1. Manufacturer

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2. Notes

2.1. Admissible and inadmissible use

Manual torque amplifiers by PLARAD amplify an input torque by means of a transmission.

The torque amplifiers must be used exclusively in connection with manually operated spider and socket wrenches! Do not operate the torque amplifier using a power tool. Do not connect the torque amplifier to a motor driven output drive shaft. Such use would bring up substantial hazard and would destroy the torque amplifier!

2.2. Notes concerning use

Proper use and care ensure long service life. Be sure to observe the following:

1. Read the entire manual before operating the unit
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2. To tighten a screwed joint, select a unit that is capable of generating a torque approximately twice as high as needed for the application. Note that the loosening torque may substantially exceed the tightening torque.

3. Protect the torque amplifier from overload. The service life depends on the operating mode and the torques applied. Frequent use near the rated or maximum torque will reduce the service life.
4. The shear pin integrated into the drive head protects the transmission from overload. It only reacts when the unit is grossly overloaded. However, frequent slight overload may likewise damage the transmission. If the shear pin breaks, replace it exclusively with an original shear pin approved by PLARAD. In no case use a standard pin! The shear pin must be centred properly! Overload occurs primarily when bolts are loosened with uncontrolled force. To prevent this, be sure to check the loosening torque using a torque wrench.
5. Avoid faulty operation! Especially observe the notes concerning switch-over of the sense of rotation!
6. Reliable torques are reached when the torque wrench is moved very slowly and evenly shortly before the set value is reached; avoid jerky motion. To achieve exact torque values, we recommend using the PH - 36 Z torque wrench adapted to the PLARAD torque amplifier.

2.3. Notes concerning maintenance and care

1. With use the torque multiplier will change due to reduced friction in the transmission. If reaching exact torque values is vital for your work and your PLARAD torque amplifier is used frequently, have it calibrated on PLARAD's test bench at least twice a year; be sure to have it calibrated upon every repair.

3. Operation

1. Attach the reaction arm to the toothing on the torque amplifier and - depending on the type – secure it with a snap ring.

2. Attach the socket to the output shaft of the torque amplifier and secure it with a pin.

3. Apply the torque amplifier with the socket to the nut or bolt to be tightened and move the reaction arm against the contact point (avoid misalignment).

4. Attach a ratchet or torque wrench to the drive shaft square of the torque amplifier. Turn the drive head of the torque amplifier to loosen or tighten the bolt.
5. Most exact torques applied to each joint are reached by use of an electronic torque transducer.

Attention!

Destruction of the torque amplifier by excessive torque applied for loosening.

- **The maximum admissible torque must not be exceeded during loosening!**

Please observe the following when using a torque amplifier, type XVR:

Attention!

If the sense of rotation is set falsely, the torque amplifier blocks and is damaged.

- **Set the ratchet to the same sense of rotation as the return lock in the torque amplifier.**

When switching to right or left-hand rotation, be sure to always switch the ratchet *and* the control lever of the torque amplifier to the same sense of rotation.

Positions of the control lever:

R = sense of rotation, right

L = sense of rotation, left

M = neutral

During tightening the return lock holds the torque amplifier steady between bolt and reaction arm. Do not remove the torque amplifier forcibly, but proceed as follows:

2. Briefly retighten and hold the bolt using the operating tool (ratchet/torque wrench).
3. Switch the control lever over.
4. Slowly turn the operating tool backward until the torque amplifier is released.

To achieve the desired tightening torques, observe the torque table supplied!

4. Maintenance

Lubrication:

After approx. 10 operating hours relubricate the unit at the required spots. We recommend using MOLYKOTE or similar lubricants.

Calibration:

To ensure the set torque is reached within a tolerance of approx. ±5%, the torque amplifier must be calibrated together with the torque wrench used. Depending on the frequency of use, the calibration should be repeated. We recommend a recalibration after 6 months at the latest. We recommend using our special PLARAD torque wrench for this purpose.

5. Disposal

Dispose of the product according to the locally applicable regulations.

PLARAD® Torque & Tension Systems

... a successful connection!

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Last update: 01/2014

D01-000-1-02100

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