Operating instructions

Swivel lifting shackle

MLA 85t

The original operating instructions were written in German.
All EU translations are based on the language of the original operating instructions.

www.lifteurop.com ▮ E-mail : info@lifteurop.com

25, Salzbaach ▮ L-9559 Wiltz ▮ Tel. : +352 26 95 19-1

Introduction

This operating manual contains all the information required under Section 3 of the Device and Product Safety Act (GPSG) “Prerequisites for commercial sale of machines and machine parts”.

(in the meaning of the Machinery Directive 2006/42/EC in the respectively valid version). The manual is addressed at persons who work on or with the device described herein.
Only persons who have received appropriate instruction may work on the device.

Repair and maintenance work may only be performed by qualified persons with the aid of this documentation and after previous instruction.

Symbols and icons

NOTE Additional user notes and information

ATTENTION Indicates a warning of material damage

Indicates a hazardous situation which may lead to severe bodily injury if not avoided.

Table of contents

1. General

The operating manual forms an integral part of the user documentation for the commercial sale of the lashing point.
You must read and observe this operating manual before operating the lashing point for the first time, or if you are assigned with other work on the lashing point.
The operating manual is designed to help you familiarise yourself with the lashing point and its intended uses. It contains important information about using the lashing point correctly and safely.

Observing these instructions helps:

- avoid dangers
- prevent repair costs and downtimes
- increased reliability and service life of the device

Warnings

- Load lifting equipment may not be used until the user information/operating manual have been carefully read and fully understood.
- The permitted load-bearing capacity of the load lifting equipment may not be exceeded.
- Incorrect loading can cause loads to fall.
- Incorrect use can lead to severe, even fatal injuries!

Transport and storage

All products are to be protected against weather conditions during transport and storage.

Commissioning

Only authorised personnel in accordance with DGUV 100-500, Chapter 2.8 are permitted to assemble/disassemble and use.

- Before first use, it must be ensured that
- The Declaration of Conformity and/or installation declaration with test certificate and user information/operating instructions are available and have been observed.
- The identification and load-bearing capacity stipulations on the fixture match those on the test certificate.
- The product is examined at regular intervals for damage or signs of wear during regular use.
- The reduction in load-bearing capacity at higher temperatures should be taken into account.
- Only for use in normal ambient conditions, not when exposed to acids or alkalis.

All supplied user information must be stored safely until the device is decommissioned.

Maintenance and inspection

The product must be monitored regularly during the entire operation by visual inspections. If damage is detected, follow the same procedure as for scheduled inspections.

The product must be taken out of service for repairs if the following defects occur:

ATTENTION

- illegible markings
- ruptures, deformations
- cuts, notches, grooves, cracks
- severe corrosion
- heating beyond the permissible range
- defective or damaged screws
- missing or defective bolt or retention devices.

Never perform the repairs yourself; contact the manufacturer or a qualified person.

Warning and usage instructions

The following must be taken into consideration:

- The operator may only initiate a load movement once he is confident that the load has been correctly attached and that no one is in the hazard area.
- Hands and other body parts must be kept away from device components when lifting
- The presence of persons under a raised load is prohibited
- Loads must not be left in a lifted position for extended periods of time or unattended.
- The load must be transported slowly and with great care.
- The accident prevention and / or safety regulations for the load bearing equipment of the respective country in which the load lifting equipment is used must be observed.

Additional information relating to aspects of safety can be obtained from the UVV, standards and safety sheets of the Working Group of the Iron and Metal Trade Association.

Manufacturer: MKF Möschl GmbH, OT Billingshausen, Untertorstr. 29, 97834 Birkenfeld, Tel. +49 (0) 9398 9701-0, Fax: +49 (0) 9398 9701-20, info@mkf-hebetechnik.de, www.mkf-hebetechnik.de, MKF equipment number: 20200597 item 1

2. Basic information

The lashing point has been constructed to the state-of-the-art standards and in accordance with recognised safety regulations. However, use of the device can pose a risk to life and limb of the user or third parties and give rise to severe material damage if:

- The hoist is not used as intended
- The hoist is operated by untrained personnel
- The hoist is improperly modified or adapted
- The safety requirements and notes are not observed.

The declaration of conformity is voided for areas/functions which have been modified by the operator. For the unmodified part of the device, the declaration of conformity still applies.

The assembly, commissioning, use and maintenance of the lashing point is permitted by trained specialist personnel only, with due consideration for the contents of this documentation.

In addition to this operating manual, the accident prevention regulations, environmental protection regulations and operating instructions applicable at the place of use must also be observed.

Only spare parts which have been approved by MKF or constructed and procured by the latter may be used.

Any manipulation of the device excludes the manufacturer's liability

3. Technical specifications

Dimensions and weight:	
Length:	296mm
Width:	400mm
Height:	400mm
Dead weight:	185kg
Load-bearing capacity:	85000kg
Design:	With friction bearings
Screws:	6x M48x150 FK10.9 crack-tested
Bore pattern Ø	310mm
Tightening torque:	4000Nm
Hanging fixture:	Heavy duty shackles

4. Assembly instructions

Prerequisites base material/load

The lashing point on the load to be lifted must be defined by design in such a way that the forces applied are absorbed by the base material without deformation. When using lashing points in connection with light metals, non-ferrous metals, and cast iron, a corresponding special design with an indication of the exact material designation must be requested.

Application of transverse forces by positive form locking, constructive measures

A positive form locking must be provided by constructive measures at the load and the lashing point so that the transverse forces occurring can be applied to the load.
This is established at the present lashing point as follows:

The levelness tolerance as per DIN ISO 2768-H applies to the screw attachment surface in the support diameter area. The rough depth should be between Rz 100 and Rz 400. A position tolerance of +/- 0.3 mm applies to the threaded holes. All remaining tolerances correspond with DIN ISO 2768-m. Metric inside threads must be produced according to DIN 13-6H.

The contact surfaces of the screw-on positions must be kept free of lubricants, coatings, cinders, and loose components.

Make the set-up location of the lashing points easy to recognise with contrasting colours.

Minimum screw-in depth and tightening torque:

1 x M in steel (minimum quality S235JR (1.0037) and cast iron (e.g. GG 25))

M = thread size, e.g. M48

The supplied screws must be tightened with a **torque of 4000 Nm**.

To minimize the friction forces, the sliding surfaces of the screws must be covered with suitable lubricants before tightening. Optimal lubrication is achieved when all sliding surfaces such as the thread and the head contact surface of the screws are lubricated. This is the only way to ensure that the required screw pre-tensioning force can be achieved at the prescribed tightening torque and that the screw connections can be easily loosened once the lashing points have been used.

The lubricant should only be applied in a thin layer, but it must cover the entire surface. Over-lubricating does not have any advantages, even with regard to reducing friction. The lubricant can be applied using a medium-hard, non-hairy brush or a sponge.

In case of impact stress or vibrations, especially in case of straight fittings, screw connections may loosen unintentionally. Locking options: Fluid thread locking agent, e.g. Loctite (observe manufacturer's specifications).
Lock the screw connections of the lashing points that remain at the fastening point permanently, e.g. with adhesive.

Positioning of the lashing point

The position of the lashing point must be defined so that prohibited stresses such as bending stress on the hanger beam or the load tipping over are prevented.

- Arrange the lashing point for single-strand lashes vertically above the load's centre of gravity.
- Arrange the lashing point for double-strand lashes on both sides and above the load's centre of gravity.
- Arrange the lashing point for triple and four-strand lashes equally on one level around the load's centre of gravity.

The lashing point must be able to swivel 180° and turn 360° when it is screwed on.

The lashing equipment must be freely moveable in the lashing point. When attaching round slings, ropes, or chains directly, an adapter shackle may be required to maintain the prescribed minimum turning radius of the lashing equipment manufacturer.

To avoid injuries when attaching and removing lashing equipment, keep body parts away from pinch points in the turning and swinging area of the shackle. Damage to the lashing equipment due to sharp-edged loads must be ruled out.

Temperature range

These load stands can be used at temperatures of between -10°C and +50°C.

Empty transport of the lashing point

Lashing swivels are permanently installed at the lashing point so that the lashing point can be mounted or dismounted on the load when empty. The flange surface of the lashing point is in vertical position when attached to these.

If the lashing point has to be mounted horizontally, it can be transported through the hole intended for the shackle bolt.

The lashing point must only be mounted and dismounted without the shackle in place.

The attached lashing swivels at the lashing point are only for empty transport!

5. System for tightening the screws

General

The order with which the screws are tightened has a considerable effect on the force distribution. Improper tightening results in a high dispersion of the prestressing forces and can lead to the required minimum surface pressure of the transverse force closure measures not being achieved.

The screws must be pre-mounted by hand, whereby slow-moving screws must be replaced by smooth-running ones.

Tightening procedure:

The screws must

1. be tightened crosswise, as shown in figure 1, using an hammer wrench / impact spanner and a tightening torque of 500Nm.
2. must be tightened in the same way as 1. with 100% of the nominal tightening torque and
3. must be retightened again circumferentially with the full nominal tightening torque.

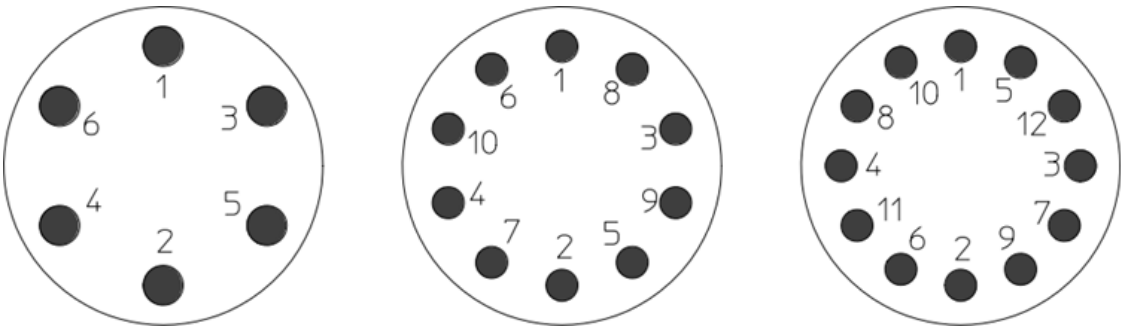

Figure 1: Diagram of tightening order depending on the number of screws at the lashing point

6. Regular inspections

Regular inspections in the form of visual inspections, dimensional inspections and functional checks must be performed by qualified personnel at least once annually in accordance with DGUV 100-500.