



INSTRUCTION MANUAL FOR SWIVEL LIFTING RINGS

1. EC DECLARATION OF CONFORMITY



2. PRODUCT DESCRIPTION

These instructions for use apply to every swivel lifting ring manufactured by CODIPROLUX. All these rings are listed and described in the technical catalogue in force. Only the official technical catalogue CODIPROLUX can be used as a benchmark.

All the international standards we follow will be mentioned on the certificate of conformity delivered with each lifting ring. Third party certification is optional.

Individual tracking of each ring thanks to a unit code. Manufacturing marking on each ring component.

3. QUICK START

1. Read the instruction manual



2. Load in adequacy with the WLL



3. Loading angle



4. Tight contact of the base on the load



5. Torque tightening



6. Mobility of moving parts



4. SAFETY INSTRUCTIONS

Do not use the equipment without having read and understood this manual.
Do not use a damaged or faulty ring.
Do not lift persons.
Do not leave suspended loads unattended.
Do not repair, alter or modify the lifting system.
Check that the lifting system is in proper shape after each use.
Wearing PPE is mandatory

5. USE TERMS

Only handled by capable people and trained following to current European standards on the place of use. No going under a suspended load and/or no putting in danger operators in the handling area. During handlings, avoid any dangerous operations: shocks, tugs, vibrations,... Scrupulous respect of WLL engraved on the ring.

When used for lashing, the capacity is indicated as $LC=WLL_{SF5} \times 2^*$, unless otherwise specified. Never exceed the lashing capacity engraved on the ring. Do not use a ring for lifting if it has already been used for lashing, and vice versa.

* $LC = \text{Lashing Capacity} / WLL_{SF5} = \text{Working load limit with safety factor 5}$

It is the user's responsibility to ensure that the supports and accessories in contact with the swivel rings comply with the applicable standards and are compatible with the swivel ring's WLL.

The thread (Diameter and/or length) must be appropriate to the material in which it will be screwed. For your information, it is advised to use these followings coefficients (minimum):

- 1 x for steel (ST 37 minimum)
- 1.25 x for cast-iron
- 2 x for aluminium
- 2.5 x for light metals

When fastening in low resistance material, allow a bigger thread diameter to compensate for a lower resistance. The tap must be in accordance with European standards in force and long enough to fit with the full bolt length. The user is responsible for calculating the bolt thread length as well as the resistance of the material of the part to lift. Only use compatible nuts and washers supplied by CODIPRO.

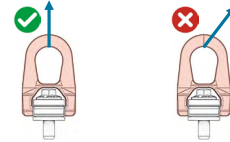
The thread must be clean, compatible, compliant with current standards and of sufficient length to accept the whole screw.

Material developed for temperature between -20°C and $+200^{\circ}\text{C}$:

- From -40°C to -20°C loss of 20% of WLL
- From $+200^{\circ}\text{C}$ to $+300^{\circ}\text{C}$ loss of 10% of WLL
- From $+300^{\circ}\text{C}$ to $+400^{\circ}\text{C}$ loss of 25% of WLL

Avoid using in corrosive area, sandy, chemical, acid, moisture... (Contact the manufacturer for stainless steel rings solution).

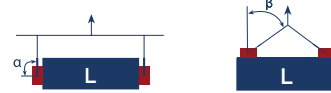
Apply force to the shackle in a longitudinal direction. Never apply side loading pressure to the shackle.



The ring's operating range is defined for loading angles (α) from 0 to 90° . For loading angles from 90° to 120° , we recommend not exceeding 80% of the WLL. Use beyond 120° is not permitted.

The use of swivel lifting rings with a sling angle (β) leads to WLL reduction coefficients. Please refer to the lifting angle table in our technical catalogue to calculate these coefficients.

These are theoretical and for information purposes only. Before any lift, the user



is responsible for the lifting configuration, taking all parameters into account. In case of any doubt, a lifting plan can be studied by the manufacturer. For lifting rings offering a WLL superior to 32t and with use cycles over 5,000 cycles, it is recommended to work on 5:1 safety factor (and/or carry out a deep control every 5,000 cycles).

6. SPECIAL CONDITIONS OF USE

Specific rings not listed in the technical catalogue, or with a WLL of over 32t, are certified for use up to 10,000 lifting cycles. The operating angle range is $0-90^{\circ}$ unless otherwise specified. Please refer to the general terms and conditions. In the event of any contradiction, the special terms and conditions apply.



Some rings can only be used linearly or in specific angle ranges.

Please refer to the marking and, where applicable, to the certificate. If in doubt, please consult the manufacturer.

Female ring (Fig 1)

The ring must be screwed at tightening torque, with the baseplate resting against the load, onto a compatible threaded spindle with a recommended minimum strength class of 10.9.

Ring fitted with a spacer (Fig. 2)

The spacer must be in full contact with the load and the ring tightened to torque.

Bell-type lifting ring (Fig. 3)

It is the user's responsibility to ensure that the load's axis resistance is compatible with the lifting operation in question. The bells' WLLs are designed for 8.8-class loads, and in compliance with the safety coefficients recommended for lifting accessories.

Ring fitted with centering (Fig. 4)

The ring must only be mounted in a compatible counterbore. For tolerances, please refer to the CODIPRO technical catalogue.



Risk of damage: the absence of a counterbore can lead to material damage due to the extra leverage.

Ring fitted with double centering (Fig. 5)

The equipment is designed for H13 holes. The upper washer is permanently attached to the screw, while the lower washer is smooth. Both washers must be fitted, resting against the load and screwed down to the ring's tightening torque.


Ring fitted with an adapter (Fig. 6)

The entire reinforcement must rest on the load. Apply the torque indicated on the ring.


7. RECEIPT AND COMMISSIONING

On receipt of the equipment, check that it conforms to its description. Carry out a suitability test before first use.

8. ASSEMBLY

 Risk of unscrewing: the bolt and/or nut must be tightened to the torque engraved on the equipment and listed in the CODIPRO technical catalogue.

Use a calibrated torque wrench set to the ring torque value, avoid abrupt tightening. For mounting in a through hole, provide an H7 adjustment. The chamfer lead should be approx. 0.5 x thread pitch

 Risk of damage: the ring's entire baseplate must be in contact with the part to be moved.

Every swiveling part must stay movable in every direction without meeting any obstacles.

Rings with centring (type +C) absolutely must be used after an extra drilled hole is done.

Take the center of gravity into account. Before each lifting, make sure of the right orientation of the shackle in lifting direction.

9. OPERATING MODE:

- Perform the pre-use checks.
- Screw the ring onto a compatible load.
- Make sure the baseplate is fully in contact with the load.
- Tighten to torque using a torque wrench.
- Make sure all parts are correctly linked.
- Take into account the centre of gravity and angles for stability and lifting force evaluation.
- Proceed with lifting.

10. CONTROL

Control must be done by competent people and trained following to current European standards on the place of use. A visual control before each use is necessary. The following points must be checked:

1. The equipment system is complete and the thread in good condition.
2. Presence and conformity of markings (WLL, CE, Manufacturer)
3. No cracks
4. No deformation
5. All joints functioning correctly
6. No excessive or abnormal wear.

If any of these criteria is deemed non-compliant, the ring must be downgraded or subjected to further examination.

11. USER TRAINING

Ensure that users of the lifting system have read and understood the contents of this manual.

12. STORAGE


Store the equipment stably in a clean, dry place. Do not disassemble the rings. Life-long greasing.

13. CARE AND MAINTENANCE

The lifting system must be kept clean. Use a damp cloth for cleaning. Periodic general inspection is mandatory: once a year for normal use, several times a year for intensive use. The following points must be checked:

1. Visual inspection
2. Mobility and articulation
3. Thread
4. Engravings
5. Screwing
6. Wear and tear
7. Any deformation
8. Cracks

Please refer to the CODIPRO inspection document.

 If a problem is detected during an inspection, do not use the lifting system again until the problem has been rectified. A non-rectified problem can cause fatal accidents.

In some particular cases, frequent detailed controls are required (refer to local regulation in force).

14. DECOMMISSIONING

If the equipment no longer meets the requirements for use, it must be made unusable.

Consult local regulations on recycling and reuse.

15. APPENDIX

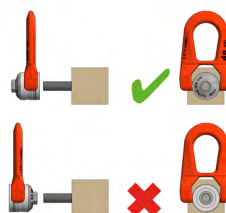


fig. 1

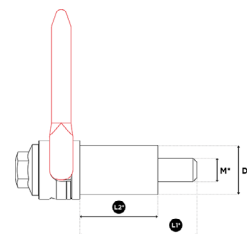


fig. 2

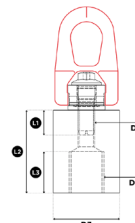


fig. 3

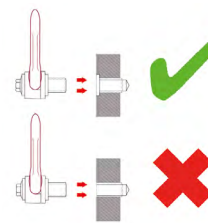


fig. 4

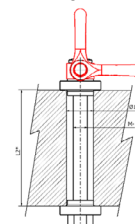


fig. 5

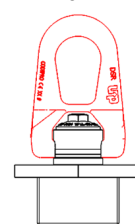


fig. 6