

Subject: Green Pin® Lifting eyes

Note: Main dimensions, general info and warnings can be found in our latest catalogue.

Article

Green Pin® Lifting eyes

Subject

Instructions for use - Green Pin® Lifting eyes

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Ref

PI-03-08A EN

Revision

A

### Application:

Green Pin® Lifting eyes can be fitted or welded (PAS only) on a load to serve as lifting point.

### Assortment:

Green Pin® offers a wide range of alloy steel lifting eyes: fixed, pivoting and / or rotating.



- Fixed lifting eyes:
  - Eye nut, type EL,
  - Eye bolt, type AL
- Pivoting and rotating lifting eye bolts:
  - Eye bolt, type OL. Pivoting (180°) in combination with mounted products with a clevis part, e.g. MP, XLC, CO, CSC, etc.
  - Pivoting (180°) and rotating (360°) eye bolt, type ADA
- Welded transport ring, pivoting (180°), type PAS

### Design:

The lifting eyes are made of grade 8 alloy steel. According to the ASME B30.26 standard. Only the forged base of type PAS is made of a weldable quality steel. Compared to the DIN 580 and DIN 582 lifting eyes of carbon steel, the lifting eyes of alloy steel have a higher workload at a similar size. For example, the DIN 580 M20 eyebolts in carbon has a maximum Working Load Limit (WLL) of 1.2 t, while the AL M20 lifting eye of alloy steel has a WLL of 2.5 t.

The pivoting and rotating eyebolts type ADA may be loaded in all directions, while providing full security.

Each eye bolt and eye nut is generally marked with:

manufacturer's symbol	GP (or EXCEL before)
traceability code	e.g. AB, for a particular party
steel grade	8
CE Conformity code	CE (Conformité Européenne)
item code	e.g. EL, AL, ADA, OL, PAS
Thread diameter	e.g. M16 x (2.00)
Working Load Limit	e.g. 1.5T
Country of origin	France

## Finish

The eye bolts and eye nuts are epoxy painted and supplied with a protective cover over the threads. Do not remove the cover until use. Grade 8 products were painted red under the Excel® brand. However, grade 8 products under the Green Pin® brand will be painted white.

## Instructions for use

- Eye bolts and eye nuts should be inspected before use to ensure that:
- all markings are legible;
- an eye bolt or eye nut with the correct WLL has been selected;
- the thread is undamaged and clean;
- eye bolts and eye nuts are free from nicks, gouges and cracks;
- never grind, machine or cut an eye bolt or eye nut;
- eye bolts or eye nuts may not be heat treated as this may affect their WLL;
- never modify, repair or reshape an eye bolt or eye nut by machining, welding, heating or bending as this may affect the WLL;
- lifting points and the other components are of the same steel grade;
- lifting points AL can be side loaded with reduction of the WLL (except ADA);
- lifting points EL and OL should not be side loaded. Can be used between 0-30°; 100% WLL.
- always make sure that the lifting point is supporting the load correctly;
- lifting points should be seated well down in the hook;
- lifting points are not distorted or unduly worn;
- when used as a lifting device, the eye bolt or eye nut should always be fully screwed into the load in such a way that it fits properly against the load.

If extreme temperature situations occur, the following load reductions must be taken into account:

Temperature	Reduction for elevated temperatures New Working Load Limit
up to 200°C	100% of original Working Load Limit
200 - 300°C	90% of original Working Load Limit
300 - 400°C	75% of original Working Load Limit
> 400°C	not allowed

## Assembly

The thread length should be adapted to the material of the load. For hard materials, the thread length must not be smaller than 1.5 times the diameter (e.g. M20, minimum length 30 mm). For soft materials such as aluminium or brass, a length of 3 times the diameter is needed. For soft materials, consider using a longer length and through-hole mounting with a nut and washer on the other side. The nut on the bolt should at least be Class 8, but Class 10 or 12 is recommended.

The bolt thread and the tapped hole in the load must be compatible and both must be in a good condition. The tapping should be at least 20% deeper than the thread length. The surface should be flat and perpendicular to the thread to enable full contact with the lifting point.

The material to which the lifting point is attached should be strong enough to withstand lifting forces without any deformation. The lifting points must fit perfectly on the material of the load to be lifted. Full contact between the lifting point and the surface is required.



1



2

1. The lifting points should match the size of the hook, so that they can be correctly positioned into the hook.
2. Never use a chain as a loop between two eyebolts.

Please pay attention to the center of gravity of the load when positioning the lifting eye (symmetrically to the center). The threaded hole is to be located at a distance of at least 3 times the diameter of the bolt from the edge of the load.

Fasten the lifting eyes by hand and without the use of any tools or leverage. The lifting eye has to be tightened until the lower edge connects to the surface of the load.

Below load reductions must be taken into account when use slings under a angle. These values are valid in the same plan as the lifting point.

#### AL and ALDIN eyebolts

100% of original WLL: 0-45°  
50% of original WLL: 45-90°

\*ALDIN M64; 90% of original WLL: 0-30°  
Can't be used above 30°

#### EL and OL eyebolts

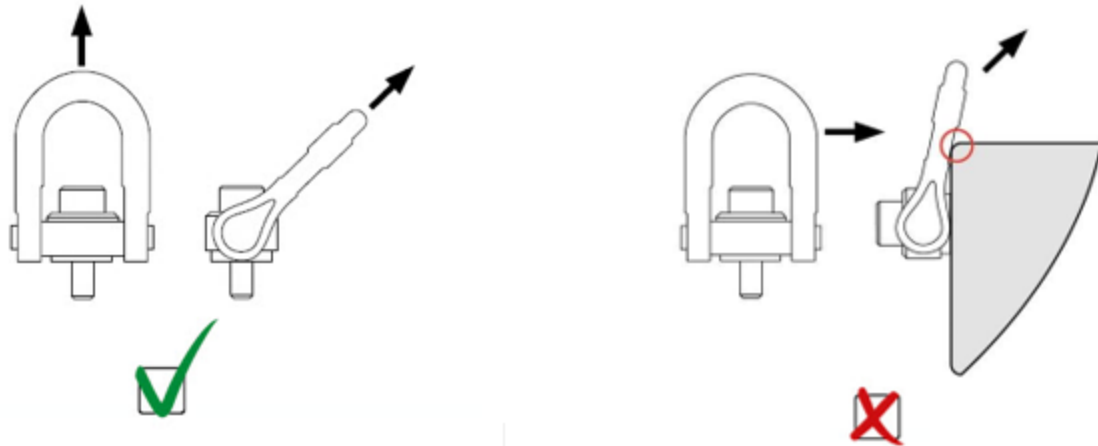
100% of original WLL: 0-30°

Never use EL, OL above 30° as the maximum working load limit (WLL) decreases significantly. We recommend the use of pivoting and rotating lifting eyes (ADA) when the angle is above 30° or use AL eyebolts with reduction above 45°.

#### ADA

100% of original WLL: 0-90°

For ADA type pivoting and rotating lifting eyes, the mounting screws are to be tightened at the recommended torque (see table in the catalogue). The torque should be regularly checked as screws can come loose after prolonged use. Make sure the hoist ring can pivot and rotate freely in all directions.



The type PAS transport ring should be welded as described in the product information sheet PI-03-01.

It is required that the products are regularly inspected and that the inspection should take place minimally in accordance with the safety standards given in the country of use. This is required because the products in use may be affected by wear, misuse, overloading, etc. with a consequence of deformation and alteration of the material structure. Inspection by a competent person should take place at least every six months and even more frequently when the components are used in severe operating conditions.

If you have further questions, please do not hesitate to contact us.  
Kind regards,

Van Beest Product Management