

From:	Product Management	Date:	22-8-2014
For:	Sales	Ref:	PI-03-08 EN
Article:	EXCEL® Hoisting eyes (EL/AL/OL/ADA/PAS)	Revision:	0
Subject:	Instructions for use - EXCEL® Hoisting eyes (EL/AL/OL/ADA/PAS)		
Note:	Main dimensions, general info and warnings can be found in our latest catalogue.		



ADA
AL
EL
OL
PAS

EXCEL® Hoisting eyes EL/AL/OL/ADA/PAS

Application

Lifting eyes can be fitted or welded on a load to serve as lifting point.

Assortment

Van Beest 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 alloy steel of class 8. Only the forged base of type PAS, is made of a weldable quality steel. Compared with the DIN 580 and DIN 582 lifting eye 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 ton, while the AL M20 lifting eye of alloy steel has a WLL of 2.5 ton. The pivoting and rotating eyebolts type ADA may be loaded in all directions, while providing full security.

In general, these parts are indicated by the following marks:

Characteristic of the manufacturer	EXCEL
Traceability code	e.g. AB, for a particular party
Steel grade	8
CE Conformity	CE (Conformité Européen)
Article code	e.g. EL, ADA etc.
Thread size x pitch	e.g. M16 x 2.00
Maximum working load (WLL)	e.g. 1.5 ton
Country of origin	FRANCE (France)

VAN BEEST B.V. Manufacturer and Supplier of wire rope and chain fittings. Reg. trade marks 'Green Pin' and 'Excel'



P.O. Box 57
3360 AB Sliedrecht
The Netherlands
Industrieweg 6
3361 HJ Sliedrecht
Telephone +31 184 41 33 00
Telefax +31 184 41 49 59
E-mail sales@vanbeest.com
Internet www.vanbeest.com

Finish

The lifting eyes of Class 8 have a red powder coating. All eyebolts have a protective sleeve over the threads that should be removed at the time of commissioning.

Directions for use

The lifting eyes should be inspected before use to ensure that:

- all markings are legible
- lifting points are free from nicks, gouges, cracks and corrosion
- lifting point with the correct Working Load Limit has been selected with respect to the load to be lifted, the angle, the thread and the shank length
- lifting eyes should never be side-, tip- or back-loaded
- always make sure that the lifting eye is supporting the load correctly
- lifting eyes may not be heat treated as this may affect their Working Load Limit
- never modify, repair or reshape a lifting eye by machining, welding, heating or bending as this may affect the Working Load Limit
- lifting eyes and the other components are all identifiable as being of the same steel grade
- lifting eyes are not distorted or unduly worn
- lifting point should be seated well down in a hook
- lifting points should be well fixed in the load (same thread, well positioned)

The WLL of the hoisting eyes, must be derated, when used above 200°C. For more information see the product information in our catalog.

Mounting

The thread length must not be smaller than 1.5 times the diameter (e.g. M20, minimum length 30 mm). For hard materials, the length should be minimal 1.5 times the thread diameter. In soft materials like Aluminum or brass, a length of 3 times the diameter is needed. For softer material, consider a longer length and through-hole mounting with a nut and washer on the other side. If a nut on the bolt is screwed, it should at least be of Class 8. Class 10 or 12 is recommended.

The bolt thread and the tapped hole in the load must be compatible and both in a good state. The depth of the tapping should be at least 20 % more than the thread length. The surface should be flat and perpendicular to the lifting eye thread, providing full contact with the lifting eye.

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



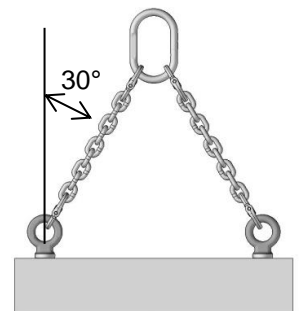
The hoisting points should be in accordance with the hook size, so that they can be correctly positioned into the hook.

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.

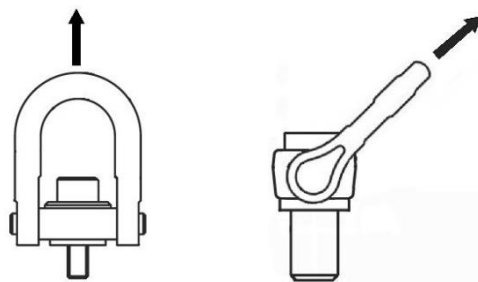
Fasten the lifting eyes by hand and without the use of any tools or leverage. The lifting eye has to be tightened just as deep the lower edge connects to the surface of the load.



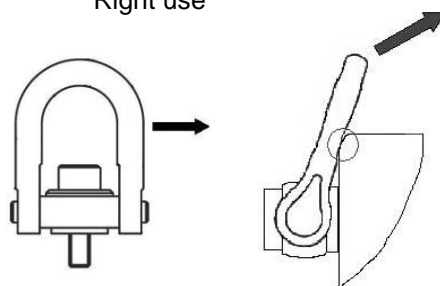
For the AL, EL and OL eyebolts, the application angle can be up to 30° from the vertical. Above 30°, the maximum working load (WLL) decreases significantly. We recommend the use of pivoting and rotating lifting eyes (ADA) when the angle is above 30°.



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



Right use



Wrong use



VAN BEEST B.V. Manufacturer and Supplier of wire rope and chain fittings. Reg. trade marks 'Green Pin' and 'Excel'



Ref:	PI-03-08 EN
Revision:	0

The maximum work load per lifting eye will depend on the angle of inclination and should be calculated according to the following formula:

$$WLL = \frac{W}{N \cdot \cos\beta}$$

W = weight of the load in kg

N = number of chains or lifting eyes

β = the angle inclination of the leg to the vertical

The transport ring type PAS 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

VAN BEEST B.V. Manufacturer
and Supplier of wire rope and
chain fittings. Reg. trade marks
'Green Pin' and 'Excel'



PO. Box 57
3360 AB Sliedrecht
The Netherlands
Industrieweg 6
3361 HJ Sliedrecht
Telephone +31 184 41 33 00
Telefax +31 184 41 49 59
E-mail sales@vanbeest.com
Internet www.vanbeest.com