

Instructions for Use

Arctic Master Links



GUNNEBO
Industries

EC Declaration of incorporation

We declare that products stated in table 1 and table 2 can be used as a part of CE-marked lifting assembly. It must not be put into service until the full assembly into which it is incorporated has been declared in conformity with the provisions of Machinery Directive 2006/42/EC.

This is an original instruction according to the Machinery Directive 2006/42/EC, section 1.7.4 Instructions and Annex II.1.A EC Declaration of Conformity of the Machinery from manufacturer: *Gunnebo Industries AB*. The instruction comprises the products stated in in table 1 and table 2.

Code /Marking	WLL (tonnes)
M-9T-OS	9,3
M-12T-OS	12,5
M-18-OS	18,5
M-24T-OS	24,0
M-30T-OS	30,5
M-40T-OS	40,0
M-50T-OS	50,0
M-65T-OS	65,0
M-90T-OS	90,0
M-125T-OS	125,0

Table 1. Arctic Master link M.

Code /Marking	WLL (tonnes)
MT-9T-OS	9,3
MT-12T-OS	12,5
MT-18-OS	18,5
MT-24T-OS	24,0
MT-30T-OS	30,5

MT-40T-OS	40,0
MT-50T-OS	50,0
MT-65T-OS	65,0

Table 2. Arctic Master link MT.

Manufacturer

Gunnebo Industries AB
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General Description

Gunnebo Arctic Master links and master link assemblies are used to be used as the top part of a lifting sling specially designed for the purpose to lift offshore containers approved according to DNV 2.7-1:2013.

All Master links are type tested and approved to handle the working loads stated in table 1 and 2 with a safety factor of 5:1. Master links with WLL up to 30 tonnes have been fatigue tested and approved for 20 000 cycles. All Master links and Master link assemblies have a static test coefficient of 2,5 times the WLL (Working Load Limit).

The components confirms with the following standards:

- DNV 2.7-1: Offshore containers (2013).
- DNVGL-ST-E273: Portable offshore units (2016).
- EN 12079-2: Offshore containers and associated lifting sets – Part 2: Lifting sets design, manufacture and marking.
- EN 1677-4: Components for sling – Safety – Part 4: Links grade 8.
- A952/A952M-2: Standard specification for forged grade 80 and grade 100 steel lifting components and welded attachment links.
- IMO/MSC 860: Guidelines for approval of containers handled in open seas.

Intended Use

Gunnebo Arctic Master links and master link assemblies are used to be used as the top part of a lifting sling specially designed for the purpose to lift offshore containers approved according to DNV 2.7-1:2013. The design temperature of the master link is - 40°C.

See selection table 3 for recommended Master link depending on container rating, reference: DNV 2.7-1, Table 8.1.

Container rating (kgs)	Min. required WLL (tonnes)	Recommended Master link M	Recommended Master link MT
500 – 4500	7,00 – 9,30	M-9T-OS	MT-9T-OS
5000 – 7500	9,80 - 12,5	M-12T-OS	MT-12T-OS
8000 – 13500	13,07 – 18,18	M-18T-OS	MT-18T-OS
14000 – 21000	18,54 – 23,92	M-24T-OS	MT-25T-OS
21500 – 25000	24,39 – 27,59	M-30T-OS	MT-30T-OS

Table 3. Master link selection chart.

Limits of Use

The following limits of use apply for the Master links:

- Temperature range: -40°C to 200°C.
- Any type of welding is prohibited.
- Use in acidic conditions (pH<6) or in alkaline conditions (> pH 10) is not allowed.
- Hot dip galvanization or plating is not allowed outside the control of the manufacturer.
- Additional heat treatment is not allowed.

Asymmetric loading conditions

For unequally loaded slings, the following approach to permissible loads is recommended:

- A two-legged system is treated as a single-legged system.
- A three – or four-legged system is treated as a two-legged system.

Assembly

The Master links that are to be assembled with a wire according to EN 13414-1 when to be used in a DNV 2.7-1 approved sling.

All slings must have a unique ID identification tag giving 100% product traceability.

Inspection Prior to Use

It is required that the products are regularly inspected and that the inspection should take place in accordance with the safety standards given in the country of use.

- Before each use the sling should be checked for obvious damage or deterioration.
- Make sure that you know the weight of the load, center of gravity and ensure that it is ready to move and that no obstacles will obstruct the lift.
- Check the conformity of the load with the WLL of the ID identification tag.
- Prepare the landing site.

Warnings

- Never use a sling without a legible valid ID identification tag.
- Never overload a sling.
- Lift and lower loads smoothly – do not jerk.
- Never use an improper sling configuration.
- Never use a worn out or damaged sling.
- Never ride on the load.
- Never walk or stand under a suspended load.
- Take into consideration that the load may swing or rotate.
- Watch your feet and fingers while loading/unloading.
- Care should be taken so no bending or deformation occurs, when handling large master links.

Maintenance

- Clean if possible with fresh water after use in offshore environments.
- Sharp edges and burrs must be removed to prevent snagging.
- Store sling hanging if possible.

Inspection Criteria for Periodic Thorough Examination

It is required that the products are regularly inspected and that the inspection should take place in accordance with the safety standards given in the country of use.

Perform inspections regularly at least once a year, harsh conditions and intensive use will require in more frequent inspections. At an interval not exceeding 48 months either an NDE or a load test should be performed according to DNV 2.7-1. Inspections must be performed by a competent person who is suitable trained, qualified through knowledge and experience.

Cleaning (prior to inspection) must not take place using methods involving acid pickling or solutions (risk for cause hydrogen embrittlement) or extensive heat

Look for:

- The wear of the Master link or sub links shall not in no place exceed 10 % of its dimensions
 - The wear is defined as the reduction of the mean diameter measured in two directions perpendicular to each other
- Scouring or cracks
- Severe corrosion
- Bending, elongation and twisting

If the Master link shows faults from the above stated inspection, it must immediately be removed from service.



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