



[®] **nemag handles your bulk**

For many years now, Nemag is the preferred partner for the handling of dry bulk materials. Whether it is the handling of coal and iron ore or the loading and unloading of grain, animal feed, scrap metal, minerals, biomass or other bulk goods. Nemag ensures that you can work as efficiently as possible. All our products are made in close consultation to meet our clients' demand. That is why our grabs have such a strong reputation around the world.



Efficient bulk handling

Nemag was established in 1924, when it started repairing ships and grabs in the Rotterdam harbour. Since 1980, Nemag products find their way from a well-equipped manufacturing site in Zierikzee to leading companies around the world. Skilled and dedicated employees design and manufacture our products, using state-of-the-art technology and the finest materials. Quality products with perfect performance at the lowest possible cost per ton of cargo handled. Nemag products last longer, require little

maintenance and rarely malfunction. Many large dry bulk handling companies confirm this on a daily basis.

Development and innovation

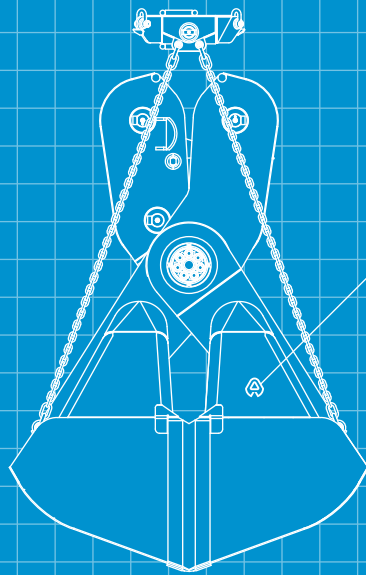
Nemag spends a lot of time on research and development. Together with our customers, research institutes and universities, we continuously work on technological improvements and refinements. We investigate new materials, experiment with new types of grabs to increase efficiency for unloading cargo and to lowering the

costs per transhipped ton. Furthermore, we are always looking for ways to meet the increasingly strict environmental regulations. This way, we help our clients to fulfil their responsibility toward the environment.



® the scissors grab

For years now, Nemag has worked with the largest steel plants and dry bulk handling companies in the world. This cooperation enables us to continue to develop our products. A good example of this process is the Nemag Scissors grab, specifically suited for the large-scale handling of coal, ore, minerals, biomass, concentrates and bauxite. This product guarantees high productivity, long life-expectancy and low maintenance costs under all working conditions.



specifications

Lifting power 20 - 120 ton Safe Working Load

Volume over 60 m³ (coal)

Bulk goods coal, iron ore, minerals, bauxite and biomass

Shell can be open or half closed

Grab opening in relation to the crane can be longitudinal, transversal and diagonally opening



The Nomag Scissors grab combines speed, lightweight and stability on sloping surfaces to ensure the highest average productivity. This makes the use of trimming equipment, such as bulldozers or shovel loaders, practically unnecessary. Especially the excellent cleaning-up capabilities of the Scissors grab lead to considerable savings on the total unloading time and savings on the deployment of people and machines. This does not only lead to the highest average productivity, but also to the lowest cost per unloaded ton of material.

With its extremely efficient design, the Scissors grab combines a favourable distribution of forces in the construction with the advantages of easy operation. Nomag Scissors grabs stand out thanks to their excellent digging and filling capabilities, extremely short cycle times, long life expectancy and very low maintenance costs. While designing the

Scissors grab, we took extreme working conditions and high occupancy degree of the installation into account.

Scissors grabs are available with every possible kind of opening direction and with diverse cable patterns: longitudinal, transversal and diagonally opening in relation to the crane. To combat the emission of dust, the Scissors grab can also be fitted with environmentally friendly shells.

Characteristics

The Scissors grab is available with lifting powers up to 120 tons Safe Working Load. Volumes can exceed 60 m³, e.g. for coal. The Scissors grab is very suitable for handling (sticky) coal and ore, minerals, biomass, concentrates and bauxite. The Scissors grab is available with an open or half-closed shell.

Advantages

The Scissors grab has the highest average productivity and is known for its stability on sloping surfaces. It has excellent cleaning-up capabilities, very good digging and filling specifications and extremely short cycle times. The robust design guarantees long life expectancy and low maintenance costs.

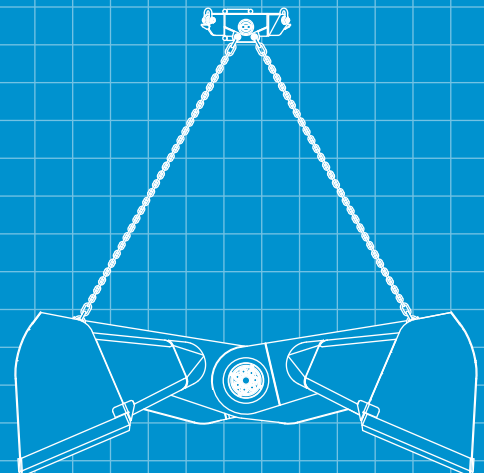
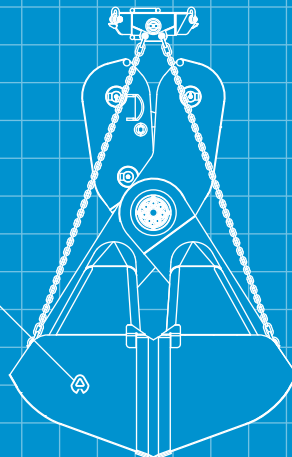
the scissors grab



characteristics

- Balanced design
- Shell type open and half closed
- Very low centre of gravity when grab is opened
- Extremely short rope withdrawal length
- Very stable grab for working on slopes
- Excellent for working under hatch coaming edges
- Flexible chain arms to avoid damage to hatch coamings
- Grab closes horizontally
- Very constant and high filling degree
- Highest average productivity
- Savings on the deploying of trimming equipment
- Round knife edges avoid damage to ship
- Grab almost completely made of wear-resistant material and high-tensile steel
- Special knife types on demand
- Central lubrication on demand

- Shortest cycle times thanks to the extremely short withdrawal length
- Very stable while working on slopes
- Highest average productivity





the added value of the scissors grab

Highest average productivity because it extends the free digging phase

Extremely favourable cleaning-up capabilities, reducing the cleaning-up phase

The favourable centre of gravity saves time because the grab does not topple over

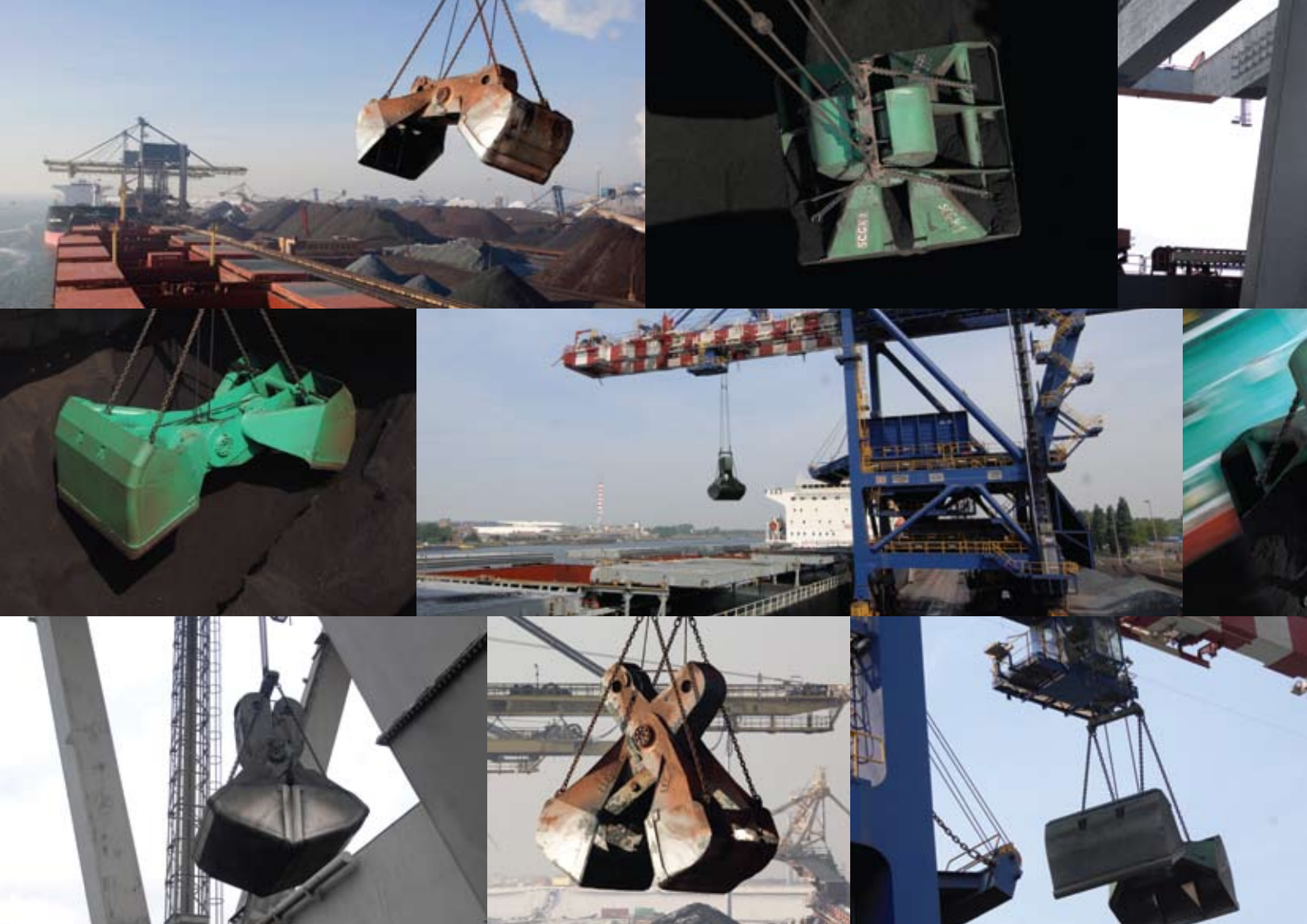
Reduced risk of ship's damage thanks to grab design and horizontal digging curve

Lower operational costs thanks to reduced deployment of trimming machines and staff

Very low maintenance costs per ton material handled

Grab can be changed without climbing into the grab

Specifically suited for use with automated gantry cranes



references

For years now, Nemag's customers includes many leading companies. Companies that, just like us, stand for quality and reliability. We are proud of this.

We are not only proud of this, but it supports us in our conviction that innovation and quality lead to satisfied customers and therefore to an important market share. Our customers choose products that perform well and reliable, have a long life expectancy and require little or no maintenance. In summary, clients opt for Nemag as their partner, resulting in both parties benefiting from

each other's knowledge and experience and reaching optimal results when processing bulk goods. Our products continue to develop in order to ensure the best handling of bulk materials.

A few of the leading companies, some of which have chosen for Nemag's advice and products for many years now are:

- EBHI
- Tata Steel
- EMO
- Sea Invest
- Konecranes
- ThyssenKrupp
- Arcelor Mittal
- EBS
- Endesa
- OBA
- Vale
- EECV
- Oldendorff
- Sandvik



quick release link and rope pear socket

The Nemag Quick-Release Link and the Rope Pear Socket form a strong and reliable connection between the steel wire ropes of the crane and the grab. This connection can be disconnected by one man in a matter of seconds. Both products can easily be used with every type of crane and every type of grab.

Nemag Quick-Release Link¹

The Quick-Release Link is used worldwide in all our grabs and also in those of other brands.

It is an easy, quick and safe connection in which the locking piece can be removed using a simple key.

The inside of the C-section are tempered, increasing the life-expectancy of the Quick-Release Link considerably.

The construction of the locking piece ensures a reliable and safe operation.

The locking piece can be exchanged with others.

The ingenious closing mechanism guarantees optimal safety.

Nemag Rope Pear Socket²

The Rope Pear Socket is designed specifically so that it can pass the pulleys without difficulty, whether it is used with the Nemag Quick-Release Link or not.

The life expectancy of the Rope Pear Socket often exceeds that of the steel wire ropes.



1. Nemag Quick-Release Link



2. Nemag Rope Pear Socket

trimming grab | cactus grab | quick release link | rope pear socket | scissors grab | clamshell grab | trimming grab | cactus grab
cket | scissors grab | clamshell grab | trimming grab | quick release link | rope pear socket | scissors grab | clamshell grab
scissors grab | clamshell grab | trimming grab | cactus grab | quick release link | rope pear socket | scissors grab | clamshell grab
link | rope pear socket | scissors grab | clamshell grab | trimming grab | cactus grab | quick release link | rope pear socket | scissors grab | clamshell grab
ll grab | trimming grab | cactus grab | quick release link | rope pear socket | scissors grab | clamshell grab | trimming grab | cactus grab
e pear socket | scissors grab | clamshell grab | trimming grab | cactus grab | quick release link | rope pear socket | scissors grab | clamshell grab
grab | clamshell grab | trimming grab | cactus grab | quick release link | rope pear socket | scissors grab | clamshell grab | trimming grab | cactus grab
| rope pear socket | scissors grab | clamshell grab | trimming grab | cactus grab | quick release link | rope pear socket | scissors grab | clamshell grab | trimming grab | cactus grab
hell grab | trimming grab | cactus grab | quick release link | rope pear socket | scissors grab | clamshell grab | trimming grab | cactus grab
scissors grab | clamshell grab | trimming grab | cactus grab | quick release link | rope pear socket | scissors grab | clamshell grab | trimming grab | cactus grab
link | rope pear socket | scissors grab | clamshell grab | trimming grab | cactus grab | quick release link | rope pear socket | scissors grab | clamshell grab | trimming grab | cactus grab



P.O. Box 110
NL-4300 AC Zierikzee
Deltastraat 15
NL-4301 RC Zierikzee
The Netherlands

Phone: +31 (0) 111 418 900
Fax: +31 (0) 111 416 154
E-mail: grab@nemag.com

www.nemag.com