



TNMK/TNMKA

OWNER'S MANUAL
Terrier TNMK safety lifting clamp

Productcode

Please carefully read the safety instructions of this owner's manual before using the safety lifting clamp.

In case of any doubts, please refer to your dealer!

Our manuals are intended to be a reference source throughout the lifetime of your product. We appreciate any suggestions, and/or comments regarding this manual.

Due to continuing research and development activities, product specifications are subject to change without notice.

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1 GENERAL

Thank you for choosing one of our high-quality products. The quality systems of management and services of Terrier Lifting Clamps B.V. fully comply with ISO 9001 standards. The many years of vast experience are a guarantee of optimum quality and safety. Terrier Lifting Clamps are manufactured from high quality alloy steels and comply fully with all standards and product requirements including: European standard: NEN 13155, Australian standard: 4991, US standard: ASME B30.20-2010 and machinery directive 2006/42/EG.

2 APPLICATIONS

The Terrier TNMK has been equipped with two clamping jaws, which have been provided with a special plastic layer. The clamp is used for hoisting, turning, or vertically transporting work pieces that may not be damaged while being moved. These pieces may be made from various materials, such as stainless steel, aluminium, wood or stone, but with the exclusion of course concrete. After hoisting, the clamp will not leave any signs of damage. The clamp is locked in both the open and the closed position. Using the Terrier TNMK safety lifting clamp, you may only transport or hoist a single plate at a time. The safety clamp has been equipped with a safety locking device, allowing the load to be safely lifted and vertically transported at all times. To hoist the above-mentioned materials, the TNMK safety clamps may be applied singly, as a set of two, or even using three or more. To ensure a balanced load distribution across the lifting clamps, we recommend using an equalising device when using more than two clamps. For additional technical documentation, please refer to the manufacturer.

3 OPERATING INSTRUCTIONS

Position the opened clamp onto the plate correctly and completely, in such a way that the clamp's clamping blocks are in full contact with the plate. Apply the safety locking device. The clamp will close and remain onto the plate in pretensioned position. The plate is now ready to be hoisted. Once the load has reached its destination, the safety clamp may be removed. To do so, make sure to lower the crane hook until the clamp is fully unloaded. This can be verified by the slackness of the hoisting chain and a free movement of the clamp's lifting shackle and chain. Next, move the safety locking device towards the clamping blocks. This will open up the clamp and leave it in opened position. The clamp may be used again immediately, or stored in opened position.

4 SAFETY INSTRUCTIONS

Remember: safety first! Especially where your personal safety and that of the immediate onlookers is concerned. Carefully read the following safety instructions before using your new TNMK safety lifting clamp.

Ensure your own safety and continue to benefit from our product safety by having the clamp inspected, tested, and, if necessary, overhauled at least once a year by Terrier Lifting Clamps BV or another recognised mechanical repair and service centre. See also Section 8 – Overhaul. It is not permitted to make any constructive modifications to the clamps, for example by means of welding or grinding.

Please contact Terrier Lifting Clamps BV for further information.

TEMPERATURE

The operating temperature of the Terrier TNMK lifting clamps lies between -10°C (14°F) and $+60^{\circ}\text{C}$ (140°F). Please consult with your dealer if other ambient temperatures are applied.

LOADS

Because of their deep jaws, TNMK lifting clamps are especially suited to the hoisting of split plates. Never place the clamping blocks onto tapered or conical surfaces. If the crane hook is not secured, and/or if it is very large and heavy, always use a chain sling with D lock and a length of approximately 75 cm (30 inch) and with a strength matching the safe work load (WLL) of the clamp. This will prevent the crane driver from lowering the hook too far when putting down the load, which might cause the hook to disconnect from the lifting shackle. When attaching directly onto a secured crane hook, make sure the crane hook is able to move freely within the lifting shackle.

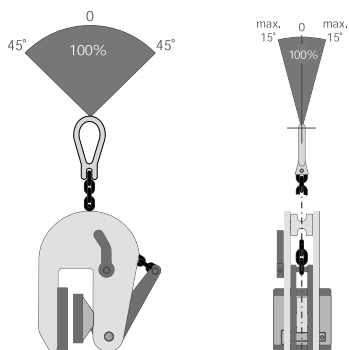
AVOID SITUATIONS INVOLVING RISK OF LIFE

Avoid situations involving risk of life by observing the following directives:

- Never operate an untested lifting clamp.
- Always keep a distance during the hoisting operation and never stand underneath the load.
- Do not use the clamp if it is damaged. Have the clamp repaired by Terrier Lifting Clamps BV or another recognised mechanical repair and service centre. When in doubt: contact your supplier.
- Never hoist more than one plate at a time.
- Never hoist loads heavier than the safe work load (WLL), as is clearly indicated on the clamp and the certificate.
- Never hoist loads that are thicker or thinner than the clamp opening, as indicated on the clamp and the certificate.
- When using more than one lifting clamp at the same time, opposite each other, provide lifting slings or chains of a sufficient length to ensure that the angle between the slings or chains does not exceed 60 degrees.
- When using more than one lifting clamp at the same time, next to each other, use a trussed hoisting girder (equalising traverse girder) and sufficiently long lifting slings or chains, so that the lifting shackle of the lifting clamp is never subjected to a lateral load.
- Never place the clamp onto tapered or conical parts of the load to be hoisted.
- Remove all grease, oil, dirt, corrosion and contamination from the plate at the point where the lifting clamp is to be attached.
- The clamp is only suitable for use in normal atmospheric conditions.

WARNING

- A free-fall or uncontrolled swinging movement at the crane hook resulting in objects being struck may cause damage to the clamp. If this occurs, check whether the clamp is in good working order before using it again.
- Lifting clamps are not suitable for creating permanent joints.
- Preventive maintenance to the clamp should be carried out on a monthly basis. See Section 6 - Maintenance.
- Do not perform constructive modifications to the clamp (such as by welding, grinding, etc.). Such modifications may adversely affect its operation and safety. If you carry out any modifications, you will nullify all forms of guarantee and product liability.
- This is also the reason to only make use of original Terrier replacement parts.
- Any improper use of the clamp and/or failure to observe all directions and warnings in this user manual concerning the use of this product may endanger the health of the user and/or bystanders.



5 HOISTING

- Make sure that the safe work load (W.L.L.) and the jaw opening of the clamp (as indicated on the clamp) agree with the load to be hoisted.
- Mount the lifting clamp onto the hoisting mechanism, either:
 - Directly to a crane hook by means of a safety shackle,
 - By means of a coupling link or D-type shackle,
 - By means of a sling or chain, if necessary in conjunction with a coupling link or D-type shackle.
- Ensure that all attachments have been tested and are of the correct tonnage. Make sure that coupling links and shackles are large enough to allow the clamp to move freely in the hook.
- Make sure the clamp has no visible signs of damage.
- Check the lifting shackle and chain for clearly visible signs of wear and/or damage.
- Check the draw spring. It should demonstrate visible tensile elasticity upon inspection with the safety lever in closed position.
- Check the clamping blocks for signs of damage and defects (the clamping blocks should be free from dirt and should be dry and undamaged). Check the frame and jaw for signs of damage, cracks, and deformation (these may indicate overloading).
- Using the lever, make sure the clamp opens and closes smoothly (if the clamp's operation is difficult, do not use the clamp. Have it serviced immediately).

- Make sure the plate is free from grease and dirt in the place where the lifting clamp will be fastened.
- Open the clamp by means of the lever.
- Position the jaw completely over the plate. Make sure that the clamp is positioned in such a way that the load is balanced during the hoisting operation.
- Ensure that the lifting shackle is pointed towards the centre of the beam or construction.
- Close the clamp by turning the lever back fully.
- Smoothly slowly operate the lifting action in order to fully apply the lifting power. Make sure the clamp is not slipping.
- If the load is slipping, follow the instructions in this lifting section once more.
- If load still slips, follow the next section, Section 6 – Maintenance.
- Ensure that the load is positioned stably before disconnecting the clamp.

6 MAINTENANCE

For optimum safety, make sure to carry out a complete inspection of the clamp at least once a month.

Stop using the clamp if:

- It is torn or deformed, especially around the jaw corners;
- The lifting shackle and chain show visible signs of damage;
- The draw spring is stretched or broken;
- The pins show visible signs of damage;
- The retaining pins are missing;
- The side(s) of the housing is/are crushed in the place of the spacer pins.
- The clamping jaws are damaged or dirty.

If any of the above-mentioned faults are observed, refer to Section 7 and Section 8.

7 DISASSEMBLY/ASSEMBLY

In view of the complexity of the clamp, it should only be assembled or disassembled by Terrier Lifting Clamps BV or by a recognised mechanical repair and service centre. See also Section 8.

8 OVERHAUL

At least once a year, or if occasioned by damage to the clamp, the TNMK safety lifting clamp should be inspected, tested and, if necessary, overhauled by Terrier Lifting Clamps BV or a recognised mechanical repair and service centre.

9 DISPOSAL

Once the TNMK safety lifting clamp has reached the end of its useful life, it can be treated as scrap iron, provided that the clamp is rendered unfit for use.

10 TROUBLESHOOTING CHECKLIST

Failure/malfunction	Possible Cause	Action
Load slipping	Load dirty Lifting shackle and chain deformed Jaw is open and bent	Clean load Do not use clamp Do not use clamp
Housing is deformed	Clamp is overloaded	Do not use clamp
Lifting shackle oval	Clamp is overloaded	Do not use clamp
Spring defective	Spring worn out	Have clamp serviced
Pins are bent or worn	Clamp is overloaded	Do not use clamp
Retainingpins are missing	Incorrectly assembly	Mount new retaining pins
Difficult to open/close clamp	Clamp is worn Clamp contaminated	Do not use clamp Clean clamp

11 WARRANTY

Terrier Lifting Clamps provides a 5 year warranty on its lifting clamps. This warranty is applicable to the original end user of the lifting clamps. Only if the clamp has been inspected, checked and maintained by this instructions and by an official dealer. This warranty period of 5 years is valid from the day of purchase, and is liable to all conditions and measurements stated in this document.

11a CONDITIONS

This warranty only covers failures in the lifting tools which is the consequence of production errors which occur during normal use. The warranty covers no wear to components such as pivots, cam assemblies, lock springs etc. Should there be any kind of failure within this guarantee period, the lifting tool will be replaced or repaired to insight of the producer.

No warranty is given to clamps due to the following failures:

- Regular wear.
- Overload.
- Wrong and/or carelessly use.
- Damages.
- Not following procedures and measures.
- Hoisting differing material other then indicated on clamp or stated in the user-manual.
- Adapting and/or modifying of the Terrier clamp.
- The injudicious use of the clamp, and not succeeding all indications which are stated in the users manual.
- When maintenance and/or revision has not been carried out by an authorised Terrier distributor.

The producer is not responsible for incidental damage or damage due to wrong use of the lifting tools as well as from violation of this manual.

11b PROCEDURE SAFETY INSPECTION

All inspections and repairings must be written down in the maintenance diagram. This counts not only for your own inspections but also for inspections which are carried out by your authorised Terrier distributor. When the clamp is handed in for maintenance and inspection you always must provide the maintenance diagram.

Defective Lifting Clamps

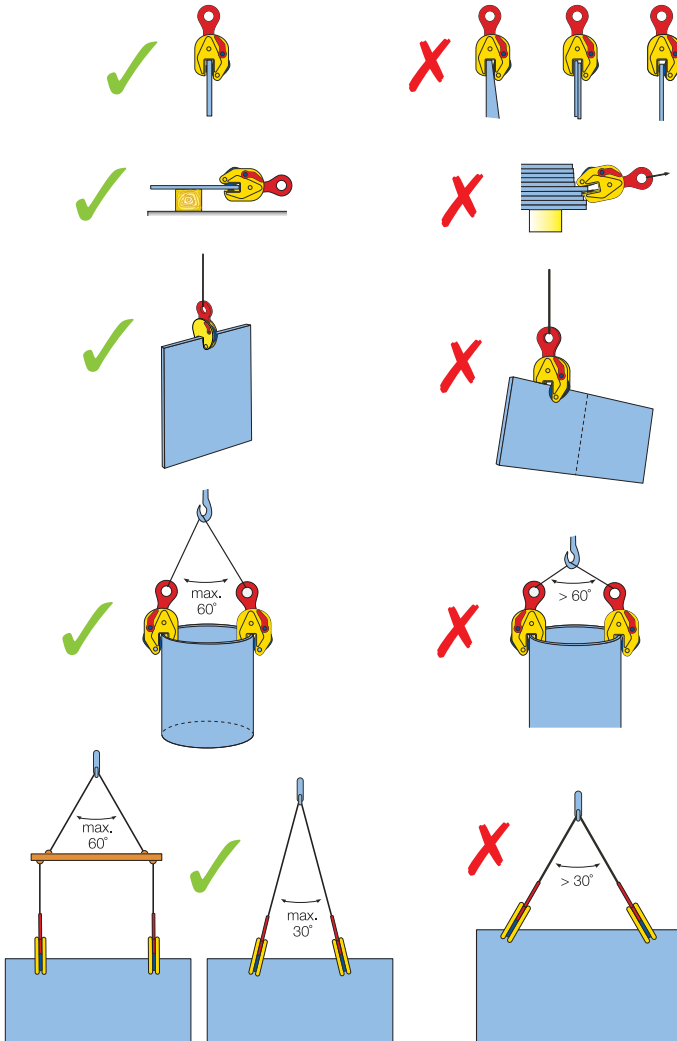
When a form of wear or damage is indicated, you must take the following measures.

- 1 Take the lifting clamp out of use. (Note the date of failure of the lifting clamp)
- 2 Try to recover the cause of the failure, for example (complete list is available in chapter a)
These claims stated in no.2 do not fall under the guarantee! To guarantee the security of you and your colleagues you are obliged to follow up this procedure.
- 3 Return your lifting clamp (with the maintenance history) to your authorised Terrier distributor.
- 4 If the lifting clamp has been revised / repaired by your distributor, you can safely use your clamp again. Please note this date in your maintenance chart (see page 31).

11c INSPECTION SCHEDULE

Months	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60
Years	1			2			3			4			5		
Safety inspections by your own inspector															
Maintenance by an official Terrier distributor															
Revision by an official Terrier distributor															

SAFELY LIFTING





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