



# TR7

## Tiger Lever Hoist

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### ORIGINAL INSTRUCTION GUIDE

- PLEASE PASS ONTO OPERATOR

Sticker here



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## Operator Instruction Guide



### MUST READ BEFORE USE

1. It is important that this manual is read and fully understood and that all instructions are followed before using the lever hoist.
2. Inspect the machine , chain and accessories for any damage or wear before use. Do not use the machine if it is not in good working order.
3. When a "DO NOT OPERATE" sign is placed onthe hoist, do not operate the hoist until the sign has been removed by designated personnel.
4. The lever hoist must be operated, inspected, maintain ed and repaired by a competently trained person in accordance with applicable safety codes and regulations.
5. Do not use the machine to lift, support or transport people in any way.
6. Do not hoist loads over or near people.
7. Never work under or near hoisted loads.
8. The machine is for manual operation only. Do not attempt to use a motorized mechanical device to operate the machine.
9. Do not attempt to overload the machine as this could cause damage to person or machine.
10. Do not use the lever hoist in explosive environments unless an ATEX version has been supplied.
11. It is the responsibility of the operator to exercise caution, use good practice, common sense and be familiar with proper rig ging techniques.
12. Improper lever hoist use could result in death or serious injury.
13. The supplier takes no responsibility for any form of consequential loss or damage as the result of unauthorised repair or use of spare part other than those issued on behalf of the manufacturer/supplier.

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For details of the full Tiger product range visit our website: [www.tigerlifting.com](http://www.tigerlifting.com)

Due to our policy of continual product development, dimensions, weights and specifications may change without prior notice.





## 1. Safety Information

Tiger Lifting products have been built in accordance with state of the art and generally accepted engineering standards. Nonetheless, incorrect handling when using the products may cause dangers to life and limb of the user or third parties and/or damage to the hoist or other property. The operating company is responsible for the proper and professional instruction of the operating personnel. The personnel responsible for operation, maintenance or repair of the product must read, understand and follow these operating instructions. These instructions are intended to make the user familiar with the product and enable them to use it to the full extent of its intended capabilities. This manual contains important information to help you properly install, operate and maintain your lever hoist for maximum performance, economy and safety. Acting in accordance with these instructions helps to avoid danger, reduces repair costs and downtime and increases the reliability and lifetime of the product.

The operating instructions must always be available at the place where the product is operated. Apart from the operating instructions and the accident prevention act valid for the respective country and area where the product is used, statutory regulations and procedures along with the commonly accepted regulations for safe and professional work must also be adhered to. The indicated protective measures will only provide the necessary safety if the product is operated correctly and installed and/or maintained according to the instructions. The operating company must be committed to ensure safe and trouble-free operation of the product.

If the product's ability to do a job, or to do so safely is in question - DON'T TRY IT.

### Definitions

#### ! WARNING

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury. It may also be used to alert against unsafe practices.

### Competent person

The competent person should have appropriate, practical and theoretical knowledge and experience of the Tiger product which will enable them to detect defects or weaknesses and to assess their importance in relation to the safety and continued use of the unit. Competent persons may be, for example, the maintenance engineers of the manufacturer or the supplier. However, the company may also assign performance of the inspection to its own appropriately trained specialist personnel.

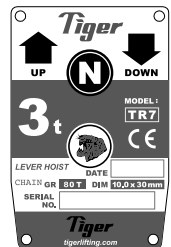
### Health and Safety at Work

All lifting equipment must be maintained and tested to meet relevant statutory regulations (e.g. PUWER/LOLER) when put to use. It is the responsibility of every company to ensure that their employees have been fully and properly trained in the safe operation of their equipment.

It is the owner's and user's responsibility to determine the suitability of a product for any particular use. It is recommended that all applicable industry, trade association, federal, state and local regulations are checked. Read all operating instructions and warnings before operation.

### Equipment Labelling

The identification label/name plate details the product type, model, manufacturer, working load limit (WLL), position markers for up, down and neutral, serial number and the grade and size of the load chain. The CE marking indicates compliance with the essential health and safety requirements of the Machinery Directive 2006/42/EC. Other international standards that the unit conforms to may be shown.



An example of the TR7 label.





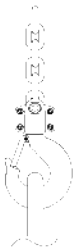
## Safety Instructions

### ! WARNING

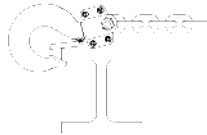
Improper use of lever hoists could result in death or serious injury, to avoid these hazards:

- Always** be familiar with lever hoist operating controls, procedures and warnings.
- Always** allow only competently trained people to operate the hoist.
- Always** operate a hoist only if you are physically fit.
- Always** inspect the hoist before use.
- Always** let the authorised personnel inspect the hoist periodically.
- Always** make sure the lever hoist suspension hook is securely attached to a suitable support. The selection and calculation of the appropriate supporting structure are the responsibility of the operating company.
- Always** maintain a firm footing or be otherwise secured when operating the lever hoist.
- Always** make sure that load slings or other approved sling attachments are properly sized and seated in the hook saddle. Only approved and certified lifting tackle must be used.
- Always** make sure that the hook latch, is closed and not supporting any part of the load.

YES



NO



- Always** make sure that the load is free to move and will clear all obstructions.
- Always** take up slack chain carefully, check load balance, then lift a few centimetres and check to be sure the brake will hold the load and that attachments to the load are firmly seated.
- Always** avoid any swinging of the load or load hook.
- Always** protect load chain from weld spatter or other damaging contaminants.
- Always** report any malfunction, unusual performance or damage of lifting equipment promptly to the appropriate person.
- Always** inspect the lever hoist regularly, replace damaged or worn parts and keep appropriate records of maintenance.
- Always** use genuine Tiger parts when repairing the lever hoist.
- Always** apply lubricant to the load chain as recommended in this manual.
- Always** make sure that you and others are clear of the load before lifting begins and stay clear of the suspended load.
- Always** warn personnel of your intention to move a load in their area. The operator may start moving the load only after it has been attached correctly and all persons are clear of the danger zone.
- Always** make sure that the chain length is long enough for the intended job.
- Always** check that the hook latches are in proper working order before use (Refer to Chapter 2). Replace missing, damaged or broken hook latches.
- Always** be sure that the hoist's rated capacity, which is found on the hoist's name plate/label and forged into the hooks, is in excess of the weight of the load.
- Always** keep the load from hitting the chain.
- Always** use two hoists which have rated capacities equal to or more than the load to be lifted whenever you must use two hoists to lift a load. This will provide adequate protection in the event that a sudden load shift or failure of one hoist occurs.

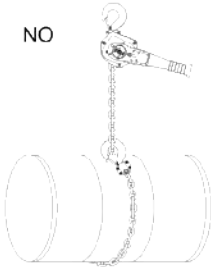


- Always** check the brake before use.
- Always** check for loose or missing parts before use.
- Always** lubricate the hoist regularly (Refer to Chapter 3).
- Always** pay attention to the load at all times when operating the hoist.
- Always** secure a hoist and loads properly after use.
- Always** consult the manufacturer or your dealer if you plan to use a hoist in an excessively corrosive environment.
- Always** operate the hoist with manual power.
- Always** stop using the hoist immediately in case of functional defects or abnormal operating noise.
- Always** observe that the chain hangs straight (without twists) from lever hoist to lower hook.
- Always** pull or lift in a straight line from hook to hook.
- Always** make sure the lever hoist is free to swivel on the upper hook.
- Always** fit load chains which have been approved by the manufacturer.
- Always** position the end stop if the load or tension is to be left in place.

### ! WARNING

Improper use of lever hoists could result in death or serious injury, to avoid these hazards:

- Never** attempt to lift more than the rated load capacity (WLL) of the suspension and the supporting structure.
- Never** allow your attention to be diverted from operating the lever hoist.
- Never** attempt to operate this equipment under the influence of alcohol or drugs.
- Never** wrap the load chain around the load and hook onto itself as a sling/choker chain.



- Never** wrap loose chain into a hook bowl.
- Never** insert the point of the hook into a chain link.
- Never** lift a load if binding prevents equal loading on the load chain.
- Never** let the load swing or come into contact with other objects.
- Never** use the lever hoist to lift, lower, support or transport people.
- Never** lift a load over people.
- Never** work near or under hoisted loads.
- Never** use a damaged lever hoist or a lever hoist that is not working correctly.
- Never** use a lever hoist which has been taken out of service until it has been properly repaired or replaced.
- Never** use a hoist if the hook latch is missing or broken (if one is intended to be fitted).
- Never** splice load chain by using pins, bolts, screw drivers or similar between links.
- Never** attempt to lengthen the load chain or repair damaged load chain.
- Never** force a hook or chain into place by hammering.
- Never** use the lever hoist with twisted, kinked, damaged, stretched or worn chain.
- Never** swing a suspended load.



- Never** support a load on the tip of the hook.
- Never** suspend a load for an extended period of time.
- Never** run the load chain over a sharp edge ; use a sheave .

**YES**



**NO**



- Never** weld or cut a load suspended by a hoist.
- Never** use the hoist chain as a welding electrode or allow the chain or hook to be touched by a live welding electrode.
- Never** allow the chain or hook to be used as an earth for welding.
- Never** use the hoist with rusty chain.
- Never** run the lower hook block into the lever hoist frame or bring the load in contact with the lever hoist . Case and/or chain guide damage may result.
- Never** operate the lever hoist beyond limits of load chain travel or run the hook assembly into the frame of the hoist .
- Never** use the chain s top as an operational limit device.
- Never** operate a hoist if chain is jumping, if there is excessive noise, or if jamming, overloading or binding occurs.
- Never** use a hoist without both load chain anchoring points correctly fitted.
- Never** use a hoist without a name plate /label or with illegible name plate /label.
- Never** use modified or deformed hooks (refer to Chapter 2).
- Never** use a motor to operate a manual lever hoist.
- Never** use a hoist near fire or where hot objects may touch it.
- Never** use the hoist in temperatures below  $-40^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$ ) or above  $+50^{\circ}\text{C}$  ( $+122^{\circ}\text{F}$ ).
- Never** adjust or repair a lever hoist unless qualified to perform lever hoist maintenance.
- Never** perform maintenance on the hoist while it is supporting a load
- Never** use the unit for pulling free a jammed load
- Never** allow loads to drop when the chain is in a slack condition (danger of chain breakage and shock loading).
- Never** move the load into areas which are not visible to the operator.
- Never** suspend more than one load lifting attachment in the hook of the hoist.
- Never** reach into moving parts.
- Never** throw a hoist or allow the unit to fall from height. Always place it properly on the ground.
- Never** heat treat nor weld any part of the lever hoist , especially the load chain.
- Never** shock load lever hoist , chain or hook.
- Never** operate the lever hoist unless it is rigged to pull in a straight line from hook to hook.
- Never** lift a load unless the chain is properly seated in the chain wheel(s).
- Never** allow sharp contact between two lever hoists or between the lever hoist and any obstructions.
- Never** drag the chain , lever hoist or hook along the floor or across other objects.



#### NOTICE

Upon receiving hoist, check immediately for evidence of damage during shipment. **DO NOT USE** a damaged hoist Report damage to carrier. It is the responsibility of the owner/user to install, inspect, test, maintain and operate the hoist in accordance with the Safety Standard for Lever Hoists (ANSI/ASME B30.21) and OSHA Standards. Any ANSI Standards referenced in this manual may be purchased from American National Standards Institute, 11 West 42<sup>nd</sup> Street New York, NY10036.

#### ! WARNING

Equipment described herein is not designed for, and should not be used for, lifting, supporting, or transporting humans.

User should not use this hoist in conjunction with other equipment unless necessary and/or required safety devices applicable to the system are installed by the user.

Modifications to upgrade, react or otherwise alter this hoist shall be authorized only by the original equipment manufacturer or qualified professional engineer.

Failure to comply with any one of limitations noted herein may result in serious bodily injury.

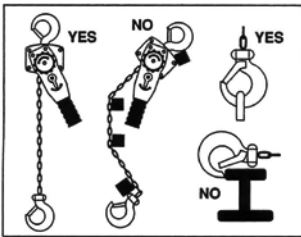


Figure A

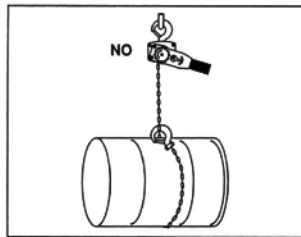


Figure B

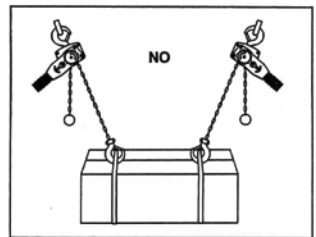


Figure C



## SAFETY PRECAUTIONS

1. Read and heed all instructions and warnings furnished with or attached to hoist
2. Support for stationary hook must be strong enough to sustain load.
3. DO NOT install with hooks and chain out of alignment.(Fig.A)
4. Make sure load can move without obstruction.
5. Eliminate any twist or kinks in chain before operating.
6. Before operating, inspect hooks for nicks, gouges, cracks, and signs of deforming, pulling apart or twisting. (MAINTENANCE-HOOKS)
7. Be sure load is secured in saddle of hook. AVOID TIP LOADING (Fig.A). **DO NOT OVERLOAD.**
8. NEVER load when in free-wheeling position.
9. DO NOT transport loads over heads of people.
10. DO NOT wrap load chain around load, or use load chain as a sling. (Fig. B)
11. DO NOT try to suspend load with two blocks.(Fig. C)

## OPERATING INSTRUCTIONS

1. Apply a thin coat of oil to the chain to ensure smooth operation of links and prevent twisting.
2. Attach hooks and chain linearly to avoid undue strain (PRECAUTION 3, Fig.A).
3. To Adjust Chain Length
  - ④ To shorten slightly: Set change lever in central position and turn grip ring clockwise for up / counterclockwise for down.
  - ⑤ For major adjustment:
    - ① Set change lever in central position then adjust chain freely by hand in either direction, UP or DOWN.(Fig. D)
    - ② Set change lever in desired direction, UP or DOWN, and operate handle back and forth to move load in proper direction.(Fig.E & Fig. F)

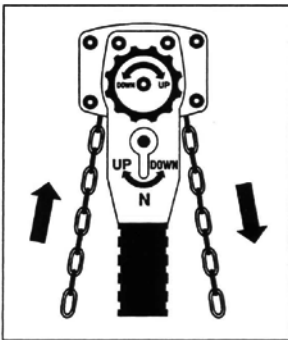


Figure D

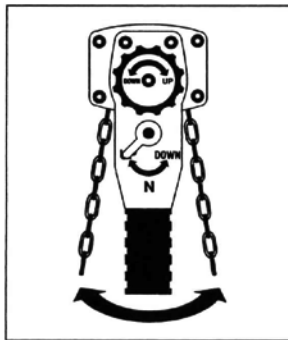


Figure E

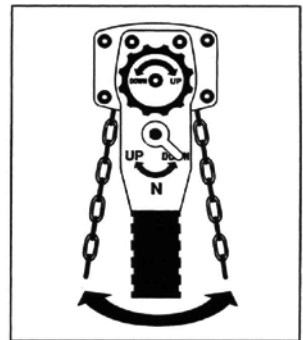


Figure F





## Thorough Examination

Thorough Examination may be needed at several points during the life of the unit : on initial use or following installation, periodically during its life , or following exceptional circumstances. This lever hoist must be subject to periodic thorough examination in compliance with national statutory regulations. The intervals between periodic thorough examinations must consider the following:

- The condition of the unit.
- The environment in which it is to be used .
- The number of lifting operations and loads lifted .

Reports of thorough examination can be based on statutory maximum intervals or via a written examination scheme based on risks and hazards associated with use. i.e. :

- Annual Inspection .
- Period defined by examination scheme .
- Following exceptional circumstance.

Due to the construction of the lever hoist, it will be necessary to partially disassemble the unit to perform the periodic inspections.

Initial inspection and recurring inspections must be documented. Chapter 8 contains the inspection log which must be maintained for each hoist. Any deficiencies noted are to be corrected before the lever hoist is returned to service.

The external conditions may show the need for a detailed inspection which, in turn, may require the use of non - destructive type testing. Any parts that are deemed unserviceable are to be replaced with new parts before the unit is returned to service. It is very important that the unserviceable parts are destroyed to prevent possible future use as a repair item and are properly disposed of.

**Note:** Only qualified personnel to perform lever hoist maintenance.

## 2. Chain and Hooks

The hooks and load chains are made of special alloy -steels and are precisely heat -treated. Never weld or heat-treat them again.

### Load Chain

The load chains are exceptionally long -wearing, but wear is unavoidable and certain conditions will cause wear and corrosion that will lessen the strength. Inspect the load chain for sufficient lubrication, mechanical damage and check for external defects, deformations, superficial cracks, wear and corrosion marks.

Round steel section chains must be replaced when the original nominal thickness 'd' on the chain link with the worst wear has been reduced by more than 10% or when the chain has elongated to a value greater than the discard levels shown in the tables below. There are two alternative tables for either measuring the chain over 21 links or measuring the chain over 7 pitches. Chain should be clean, free of twists and pulled taut before measuring.

### Measuring the diameter of the chain



$$d_m = \frac{d_1 + d_2}{2}$$

Replace the chain if  $d_m \leq 0.9 \times d$ , where  $d$  is the normal diameter of the chain wire .



### Measuring over 21 links

Capacity (tonnes)	Diameter of Chain Wire dØ (mm)	Discard if Diameter of Chain Wire dØ (mm)	Dimensions of Chain (mm) (dØ x P)	Discard if 21 links (mm)
0.75/1.0	6.3	5.7	6.3 x 19	421.6
1.5	7.1	6.4	7.1 x 21	467.4
3.0/6.0	10.0	9.0	10 x 30	668.0

### Measuring over 7 pitches

Capacity (tonnes)	Diameter of Chain Wire dØ (mm)	Discard if Diameter of Chain Wire dØ (mm) ≤	Dimensions of Chain (mm) (dØ x P)	Discard if L (mm) ≥
0.75/1.0	6.3	5.7	6.3 x 19	137.0
1.5	7.1	6.4	7.1 x 21	151.5
3.0/6.0	10.0	9.0	10 x 30	216.5

Do not knot the load chain or splice/connect it by using pins, bolts, screw drivers or similar. Do not repair load chains installed in the hoist. Protect load chain from weld spatter or other damaging contaminants.

Only fit load chains which have been approved by the manufacturer. Non-compliance with this specification will render the legal warranty or guarantee void with immediate effect. See Chapter 3 Maintenance for more information on maintenance of the load chain.

### Hooks

Do not remove the safety latches from top and/or bottom load hooks unless you are replacing them with new latches .

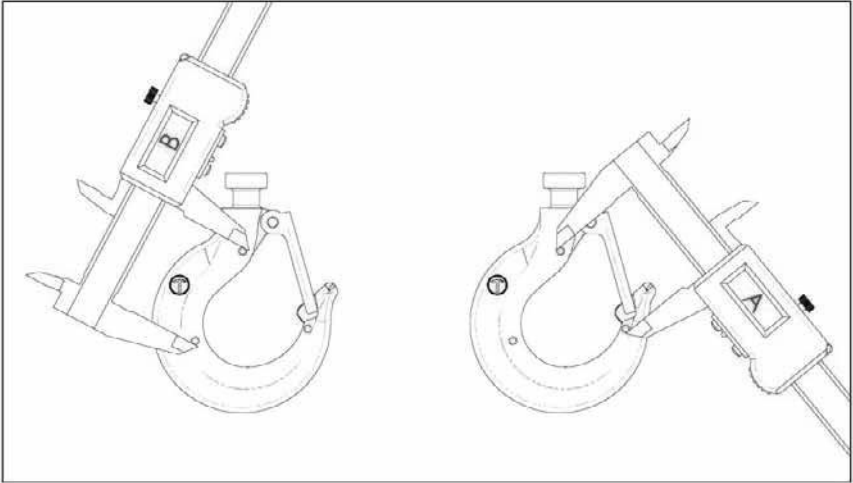
Never mark or hard stamp hooks or any other load bearing parts.

The hook opening will elongate with overloads and incorrect hooking. When the hook measurements have changed beyond the permissible discard limits shown in the table in Chapter 6 Technical Data /Hooks, it is dangerously deformed and must be replaced immediately.

Dye penetrant, magnetic particle inspections (MPI) or other suitable crack detecting inspections should be performed on hooks at least once a year, if external conditions indicate there has been unusual usage.

TR7 products are fitted with the patent pending Tiger "EZ check" 3 point marking system. With this system a quick check that the A and B measurements are the same ( as shown in the diagram below ) will indicate if the hooks have stretched If  $A \leq B$  the hook is fine; If  $A > B$  the hook needs to be replaced:





### 3. Maintenance

#### ! WARNING

Never perform maintenance on the hoist while it is supporting a load.

Before performing maintenance attach a notice/tag to the hoist to indicate that it must not be used while maintenance is in progress.

Servicing and repairs should only be carried out by qualified, competent, and responsible people.

After performing any maintenance to the hoist, always perform a functional test before returning to service. After the replacement of components, a subsequent inspection by a competent person is obligatory!

Repair work may only be carried out by a specialist workshop that uses original Tiger spare parts.

Before handling lubricants, read the associated product health and safety data information sheet obtained from the lubricant supplier.

#### Load Chain

To determine if load chain should be continued in service, check gauge lengths and condition. Chain worn beyond the maximum allowable gauge length (as shown in Chapter 2), nicked, gouged or twisted chain should be replaced before returning the lever hoist to service.



## 4. Manufacturer Testing and Verification

This product was manufactured under our single -unit control of quality and was passed with strict inspection in accordance with our inspection standards.

Capacity (tonne)	WLL(kg)	Test Load (kg)
0.75	750	1125
1.0	1000	1500
1.5	1500	2250
3.0	3000	4500
6.0	6000	9000

## Declaration of Conformity

Products are tested in line with the requirements within applicable sections of the European standard BS EN 13157:004+A1:2009, the Australian standard AS1418.2, the American standard ANSI/ASME B30.21-2005, and the South African standard SANS 1636. All items comply with the essential health and safety requirements of the Machinery Directive 2006/42/EC. Tiger lever hoists are third party verified by SGS Certificate Number MDC 1302.

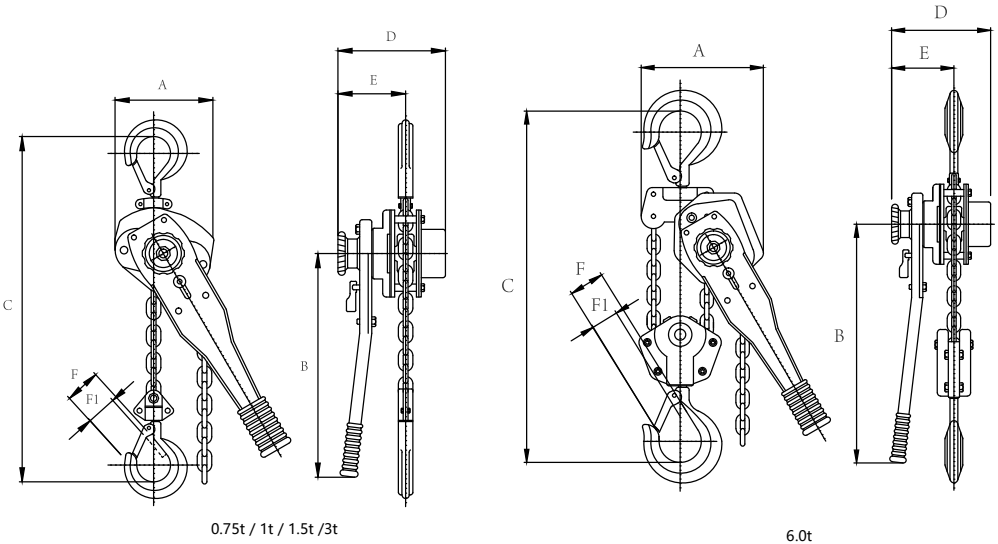
## 5. Troubleshooting

Problem	Cause	Solution
Chain is jammed	Load is not being pulled in a straight line	Load chain to be positioned in a straight line
	Load swivel has ceased operating	a) Unload load and de-swivel b) Replace hook assembly
	Hoist is dirty, or hampered with foreign matter	Refer to maintenance and repair section of this manual
	Fall of chain is tangled	Unravel and straighten chain
	Hoist is overloaded	Check the load chain for elongation and replace as required. Load hoist to recommended capacity only
	Brake mechanism has jammed	Return to supplier or authorised service centre for repair
Hoist Seized	Wear and tear	Replace hoist
	Poor maintenance and inspection	Refer to manual for maintenance and inspection details
	Poor storage and handling	Always store unit in a dry and clean area
	Hoist is overloaded	Load hoist to rated capacity only
Hoist not braking	Brake mechanism worn	Return to supplier for repair and testing
Load chain catches or jams	Damaged load chain, pinion shaft, gears or sheaves.	Disassemble hoist, inspect and repair or replace damaged components.
	Load chain not installed properly (twisted, kinked or "capsized").	Remove load chain and re-install.
Hook Latch does not work.	Latch broken.	Replace hook latch.
	Load hook bent or twisted.	Inspect load hook as described in Chapter 5 Inspection. Replace if necessary.



## 6. Technical Data

Product code	Capacity (ton)	Test Load (ton)	Effort (kg)	Standard HOL(m)	Mass kg @ std HOL	Load Chain		Dimensions (mm)						
						Diameter (mm)	No. of falls	A	B	C	D	E	F	F1
<b>LB-0.75</b>	0.75	1.125	22	1.5	7.4	Ø6.3	1	128	236	275	158	99	29	24
<b>LB-1</b>	1.0	1.5	29	1.5	7.6	Ø6.3	1	128	236	295	158	99	34	28
<b>LB-1.5</b>	1.5	2.25	26	1.5	10.1	Ø7.1	1	154	360	320	172	104	39	34
<b>LB-3</b>	3.0	4.5	38	1.5	18.2	Ø10.0	1	182	360	400	195	108	42	36
<b>LB-6</b>	6.0	9.0	30	1.5	29.3	Ø10.0	2	242	360	570	195	108	54	49

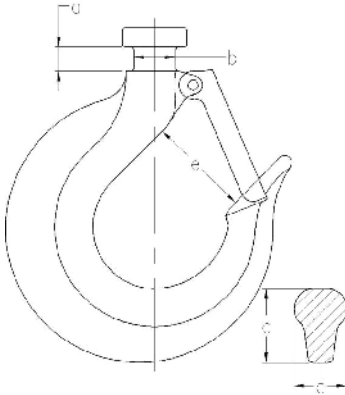




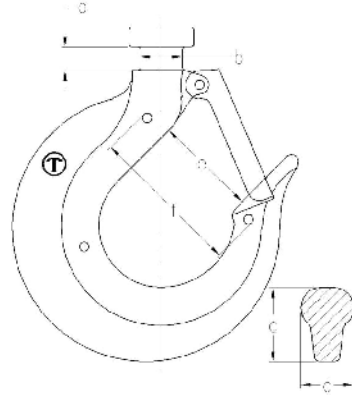
## Hooks

The following table shows the normal measurements for the Tiger hooks and the discard limits.

Capacity (Tonnes)	Collar measurements (mm)				Hook thickness at point shown in diagram (mm)				Hook throat Opening (mm)		"EZ Check" measurement (mm)	
	a		b		c		d		e		f	
	Normal	Discard $\geq$	Normal	Discard $\leq$	Normal	Discard $\leq$	Normal	Discard $\leq$	Normal	Discard $\geq$	Normal	Discard $\geq$
0.75	8	8.5	13.5	12.8	19	18	15	14	29	32	45	48
1.0	8	8.5	13.5	12.8	23	21.5	17	16	34	37	52	55
1.5	10	10.5	15.5	14.7	26	24.2	21	19.5	39	43	59	63
3.0	12.5	13.5	20	19	37	35	32	30	42	47	76	81
6.0	19	20.5	30	28.5	43	40.5	36	34	58	63.5	86	91.5



Traditional Tiger Hooks

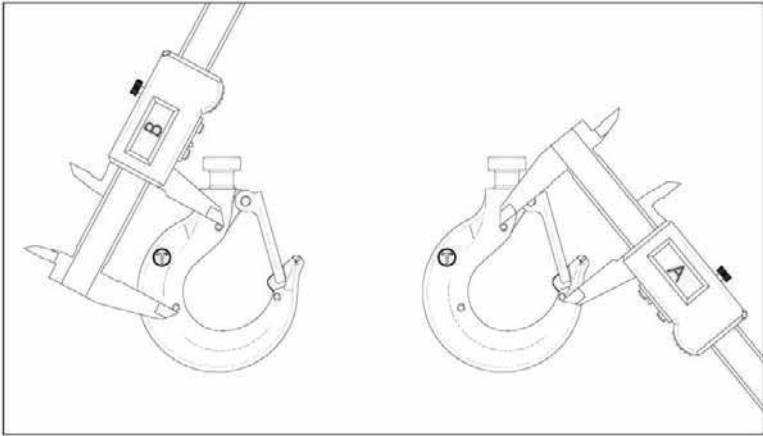


Tiger Hooks with new "EZ Check"  
3 point marking system

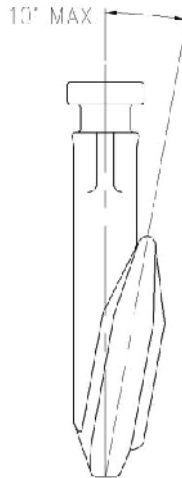


**Tiger**

TR7 products are fitted with the patent pending Tiger "EZ check" 3 point marking system. With this system a quick check that the A and B measurements are the same (as shown in the diagram below) will indicate if the hooks have stretched. If  $A \leq B$  the hook is fine; If  $A > B$  the hook needs to be replaced:



In addition to the above checks, more than a 10° twist from the plane of hook is enough to warrant replacement of the hook.

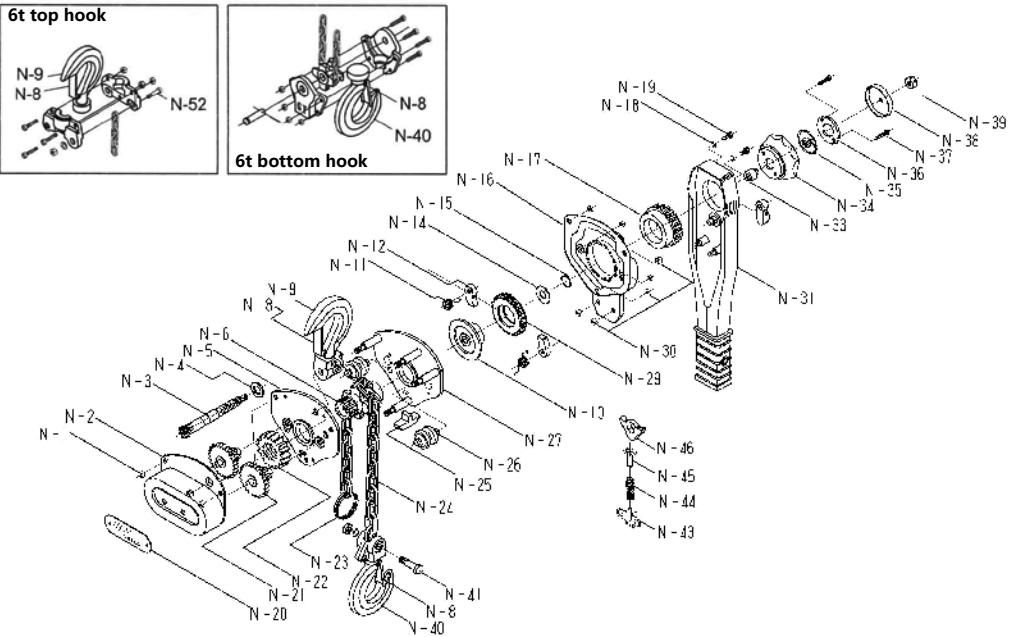




## 7. Exploded diagrams

### Lever Hoist

For 750kg, 1.0t, 1.5t, 3.0t and 6t capacity units:



Part No.	Part Name	Q'ty	Part No.	Part Name	Q'ty	Part No.	Part Name	Q'ty
N-1	Nut for Gear Cover	4	N-17	Change Gear	1	N-33	Retaining Spring Base	1
N-2	Gear Cover	1	N-18	Spring Washer	2	N-34	Grip Ring	1
N-3	Pinion Shaft	1	N-19	Screw for Handle	2	N-35	Retaining Spring	1
N-4	Pinion Shaft Washer	1	N-20	Label	1	N-36	Fixing Plate	1
N-5	Gear-side Plate	1	N-21	Pinion Gear	2	N-37	Screw for Fixing Plate	2
N-6	Load Sheave	1	N-22	Load Gear	1	N-38	Grip Ring Cover	1
N-8	Safety Latch Set	2	N-23	End Stop	1	N-39	Pinion Nut	1
N-9	Top Hook Assembly	1	N-24	Load Chain	1	N-40	Bottom Hook Assembly	1
N-10	Disc Hub	1	N-25	Chain Stripper	1	N-41	Bottom Hook Pin	1
N-11	Pawl Spring	2	N-26	Load Chain Guide	2	N-43	Spring Stand	1
N-12	Brake Pawl	2	N-27	Wheel-side Plate Assembly	1	N-44	Pushing Up Spring	1
N-14	Spring Disc	1	N-29	Ratchet Gear with Brake Disc	1	N-45	Pushing Up Pin	1
N-15	Snap Ring	1	N-30	Nut for Handle Cover	2	N-46	Change Pawl	1
N-16	Brake Cover with Handle Cover	1	N-31	Handle Assembly	1	N-52	Chain-End-Fixing Screw	1











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