



## MANUAL LEVER HOIST



**NOTE:** All information contained herein is based on documentation available at the time of printing. We reserve the right to change our own products at any time without notice. Please read the operating instructions carefully before using the product. Always have a copy of this instruction manual available. If any ambiguities arise, please contact your supplier.



**THIS IS THE SAFETY ALERT SYMBOL. IF YOU HAVE THIS SYMPOLO ON YOUR SAS LEVER HOIST OR SEE IN THIS MANUAL, PLEASE BE AWARE OF HAZAROUS SITUATIONS. FOLLOW THE RECOMMENDED AND SAFE ONE AT ALL TIMES OPERATING INSTRUCTIONS.**



# DANGER NOTICE

- ⚠ NEVER USE THE SAS LEVER HOIST BEFORE READING AND FULLY UNDERSTANDING THE OPERATIONS MANUAL. THE USER MUST UNDERSTAND IT COMPLETELY.**
- ⚠ THE SAS LEVER HOIST MAY ONLY BE USED BY QUALIFIED PERSONS. PLEASE ENSURE THAT THE WORKING PEOPLE ARE FAMILIAR WITH ALL SAFETY REQUIREMENTS.**
- ⚠ THERE MUST BE NAMEPLATES. IF NAMEPLATES ARE REMOVED OR DESTROYED, PLEASE DO NOT USE THE DEVICE.**
- ⚠ DO NOT EXCEED THE RATED CAPACITY.**
- ⚠ ALWAYS ENSURE THAT THE SUPPORTING STRUCTURE AND FASTENERS (IE CRANE, CHAINS AND HOOKS) ARE DESIGNED TO CARRY THE WEIGHT OF THE SAS LEVER HOIST AND THE LOAD.**
- ⚠ OPERATORS MUST BE FAMILIAR WITH OPERATION AND SAFETY INSTRUCTIONS BEFORE USING THE SAS LEVER HOIST.**
- ⚠ THE SAS LEVER HOIST MUST BE IN VISIBLY GOOD CONDITION AND GOOD FUNCTION, OTHERWISE PLEASE CONTACT YOUR SUPPLIER.**
- ⚠ PLEASE CHECK THE LOAD CHAIN MUST BE IN GOOD CONDITION BEFORE USING THE DEVICE. IT SHOULD SHOW NO INDICATIONS OF WEAR OR DAMAGE, IF ANY SIGNS OF WEAR OR DAMAGE EXISTS. PLEASE CONTACT YOUR SUPPLIER.**
- ⚠ INSTALLATION TO BE CONDUCTED BY A TECHNICALLY COMPETENT / QUALIFIED PERSON.**
- ⚠ NEVER PLACE A LOAD OVER ANYONE OR IN GREAT PROXIMITY TO PEOPLE.**
- ⚠ ALWAYS KEEP AN ADEQUATE DISTANCE WHEN LIFTING.**
- ⚠ NEVER LEAVE A LIFTED LOAD UNATTENDED.**
- ⚠ ALWAYS INFORM ALL BYSTANDERS THAT THE LIFTING IS IN PROCESS.**
- ⚠ MAINTENANCE AND REPAIRS ARE PERFORMED BY QUALIFIED PERSONS.**
- ⚠ ALWAYS USE THE SAS SPARE PARTS.**
- ⚠ NEVER USE THE SAS LEVER HOIST THAT IS DAMAGED OR NOT WORKING PERFECTLY.**
- ⚠ IF YOU HAVE ANY QUESTIONS, UNCLARIFICATIONS OR CONCERNS, PLEASE CONTACT YOUR SUPPLIER.**

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## 1 INTRODUCTION


The SAS Lever Hoist is designed for vertical lifting, pulling and tensioning of cargo in a safe working environment. The operator is responsible for correct use and must constantly ensure that the weight of the load does not exceed the rated load capacity. Overloading is strictly prohibited!

The SAS Lever Hoist is following safety requirements in conformity with the European Communities Machinery Directives 2006/42/EC.

SAS reserves the right to change the material and design. For the correct use of the lever pulls, please follow operating and maintenance instructions. Misuse, repairs by unauthorized persons or the use of replacement parts not approved by SAS will case the warranty to expire and can make operation dangerous.

Please read the instructions carefully before using the product. If anything is unclear, please contact your supplier.

## 2.SAFETY INSTRUCTION

<b>DANGER</b>	
	The improper operation of a the SAS lever hoist can create a potentially dangerous situation. If not avoided, lead to minor to moderate damage can. Please read the safety instructions carefully.


- 2.1** The SAS Lever Hoist may only be used by qualified, adult personnel. Make sure that people using the product properly, are familiar with handling and are familiar with all safety requirements. The operator must be in good mental and physical condition.
- 2.2** All persons using the SAS Lever Hoist for the first time must check (under risk-free conditions) all security requirements and understands methods fully to use it safely and efficiently.
- 2.3** For professional purposes, please pull the lever under the responsibility of one person who is familiar with the regulations applicable at the location of the operation.
- 2.4** The operator must wear and use the required personal protective equipment when using the SAS Lever Hoist.
- 2.5** Make sure that all applicable health and safety regulations are observed when installing, maintaining and using.
- 2.6** The SAS Lever Hoist may only be installed in compliance with applicable regulations and under conditions that ensure the safety of the installer.
- 2.7** Make sure that an anchor or structure is attached that has the required load capacity to support the maximum load stated on the type plate/label on the device.
- 2.8** The SAS Lever Hoist must have a nameplate indicating the maximum load capacity specified, If this is not the case, please contact your supplier.
- 2.9** The SAS Lever Hoist was designed for manual operation and should never be motorized.

- 2.10** Before use, ensure that all required inspections and maintenance services have been carried out. Make sure that the lever pull is in visibly perfect condition.
- 2.11** Inspect the load chain, it must be in perfect condition to be safe to ensure operation. If the lever show signs of wear it must be taken out of service and repaired by a qualified person.
- 2.12** Make sure the load chain is correctly installed and secured. The load chain wheel runs around and is guided by the guide plate. Before each use, check that the bottom stop (end ring) is in place. The lower hook must be attached to the other end.
- 2.13** The operator must not lift anything if the rated load capacity is exceeded. This is strictly forbidden! Therefore, always determine whether the weight currently being lifted is overloaded.
- 2.14** During operation (lifting and lowering), the operator must constantly check the load and observe to avoid any contact with obstacles.
- 2.15** Use the SAS Lever Hoist not for transporting or lifting persons.
- 2.16** The operator should never be distracted by the surroundings and concentrate on the lifting process until it is completed.
- 2.17** In order to avoid dangerous situations, it is strictly forbidden to allow people to stand under the load or in the danger area when the load is being raised or lowered.
- 2.18** The operator must never leave a lifted load unattended.
- 2.19** The user must ensure that the chain is constantly under tension due to the load. In particular, that it does not come into contact with an obstacle when lowering. This can result in damage to the chain if the chain comes loose from its obstacle.
- 2.20** Do not use the load chain as a sling or lifting strap.
- 2.21** Do not pull the lever if the load chain is knotted.
- 2.22** Never pull the load chain over a sharp edge or put it elsewhere to avoid rubbing each other.

- 2.23** Never shorten or knot the load chain using screws, screwdrivers, bolts etc.
- 2.24** If there is no qualified staff to assist in the side and the operator/owner disassemble or modify the load chain by themselves, then the operator/owner should be responsible for it.
- 2.25** Do not extend the lever bar.
- 2.26** Do not remove or modify the safety bars or upper hook. When without consultation of qualified staff and the operator/owner disassemble or modify the load chain by themselves, then the operator/owner should be responsible for it.
- 2.27** The registration and documentation of inspections and maintenance work is a responsibility of the Owner/user. These documents should be kept and be visible at any time.
- 2.28** The SAS Lever Hoist is not suitable for use underwater or in damp environments or in danger zones.
- 2.29** If defects are discovered, immediately stop using the lever pull. Please contact your supplier.
- 2.30** Use only original SAS Spare Parts. Any repair without contacting a qualified person is the sole responsibility of the owner/user.

**If you have any further questions, ambiguities or concerns, please contact your supplier.**

### 3. PRELIMINARY EXAMINATION

<b>DANGER</b>	
	<p>Improper installation of the lever hoist can result in potentially dangerous situations. If not avoided, they can result in minor to serious injuries or even death.</p> <p>Please read the safety instructions carefully.</p>

The SAS Lever Hoist and its parts must be inspected before use. Make sure that there is no damage and that the parts function properly. Check on any signs of cracks, wear or corrosion. Inspect carefully the Load chain, the braking device and the lubricants.

The SAS Lever Hoist should be installed directly above the load so that the load can be moved without side pull. The housing of a lever hoist must also hang freely and must not rest anywhere. Therefore, do not restrict the freedom of movement of the frame in any way and do not allow it to lean on any part of the supporting structure.

The lever hoist can be operated in ambient temperatures between  $-10^{\circ}\text{C}$  and  $+60^{\circ}\text{C}$  become. Brake systems must be checked for icing at ambient temperatures below  $0^{\circ}\text{C}$ .



## WARNING



Lever pull must be in good condition.

Check whether the weight of the load is within the rated load capacity.

Check whether the hooks and safety bars are in good condition.

Check whether the lower stop (ring) is in place.

Check that the load chain is installed correctly and shows no signs of wear or damage.

**If you have any questions or concerns, please contact your supplier.**

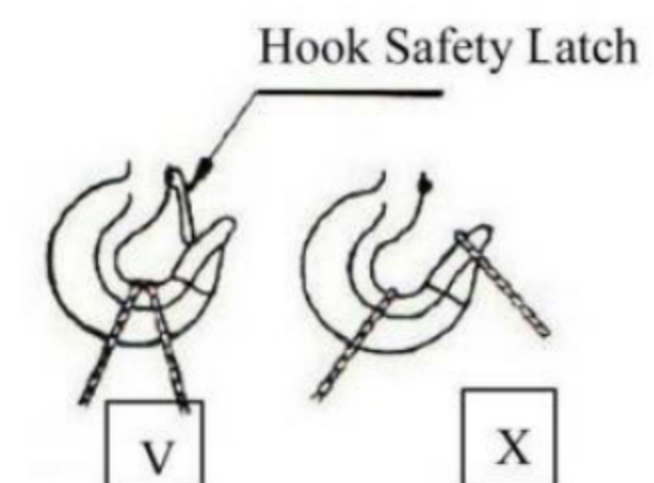
**3.1** The SAS Lever Hoist is delivered fully assembled and are ready for immediate use. If this is not the case, contact your supplier directly.

**3.2** It is recommended to lightly oil the lever hoist chain before use.

**3.3** Check whether the chain is inserted correctly and the lower stop is in place.


**3.4** Make sure the lower hook is correctly mounted on the load chain and works perfectly. The hook must be replaced if the hook of the safety bar is into the hook tip snaps. This means the hook has been overloaded.

**3.5** Before each use, check whether the top hook is correctly hooked into the support member and the the safety bar engages on the lower hook. Tilt not the load hook.



**3.6** Check before use: The lever pull should ensure smooth operation and correct braking function can be tested. Take a light load and for the test Lift it briefly (use the handle like a ratchet). The lever pul/brake should hold the load. If that works, take one Load in the order of the nominal load capacity and lift it with the pull the lever until it no longer touches solid ground. Now check again and Make sure the brake holds the load before moving the load any further lift. As long as you stay within the rated load capacity, the load must not make the hook slip off.

## 4. USER/INSTALLATION INSTRUCTION

<b>WARNING</b>	
	Improper operation of a lever pull can lead to potentially dangerous situations. If not avoided, it can cause serious injury and can even result in death.

### 4.1 SINGLE LEVER PULL

**4.1.1** The operator should check before use whether the SAS Lever Hoist and the load chain are correctly installed and secured, otherwise dangerous situations are possible. It is strictly prohibited to exceed the working load limited indicated on the nameplate.

**4.1.2** Installation of the load hook at the load suspension point.

- I. Make sure there is no load hanging on the chain. Turn the load wheel counterclockwise to release the brake, the chain is released.
- II. If the load wheel does not turn, move the selector lever to the “Down” position and operate the lever, applying some force with your hand to the hook side of the chain exercise. Place the selector lever in the “neutral/middle” position and, using the lower stop, pull on the chain, which will then be released.
- III. Secure the load hook to the load (or to a fixed point) or to the point where tension applies. Tension the chain slightly by pulling on the chain using the bottom stop.

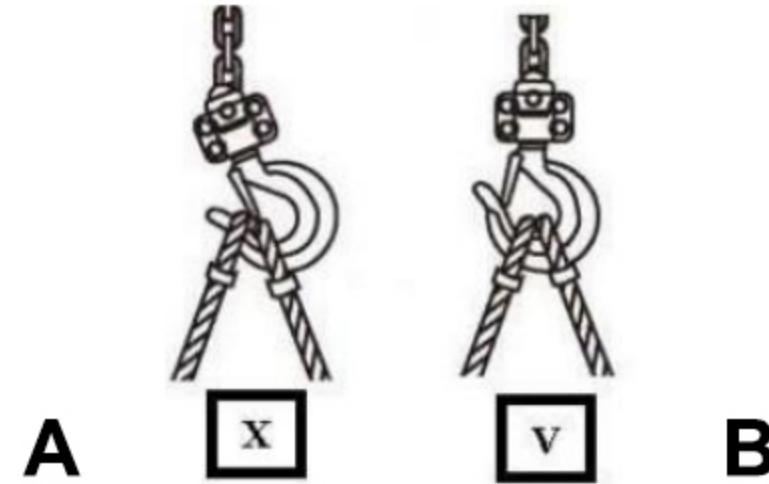


**DANGER**



Check:

1. The SAS lever hoist must hang properly on its top hook and the Safety bar must be properly closed (B). The bracket must not tip over.



2. Check that the load has the minimum weight to trigger the automatic brake.
3. Check that the load chain was not twisted during assembly.
4. Check when using the SAS Lever Hoist with a rolling chassis, whether the chassis can move freely (without load).
5. When using a trolley, check the direction of movement by pulling on the hand chain. The movement should take place on a completely flat surface (without Charge).
6. The charge of the lever pull must hang freely so that it is at the anchor point of the lever pull.


#### 4.2 Lifting:


Select "UP" position on selection switch, ratchet handle to lift load.

#### 4.3 Lowering:


Select "DN" position on selection switch, ratchet handle to lower load.

4.4 To release a jammed brake: Place the selector lever in the 'DOWN' position and operate the handle with a strong blow. If the brake is firmly jammed, it can be released by several strong blows on the handle.


<b>WARNING</b>	
	The load may only be released if it is securely secured to a solid surface. The lower hook may only be removed when the load is no longer under tension. The loading area must also be free of people and other obstacles.

<b>DANGER</b>	
	<p>Emergency procedure in case the chain is blocked or the lever hoist is otherwise not working: Stop the operation immediately without attempting any other measures.</p> <p>Immediately establish a security perimeter around the hoist and directly beneath the load to prevent unauthorized access. Call the personnel required to remove the load and take necessary action on the hoist together.</p>

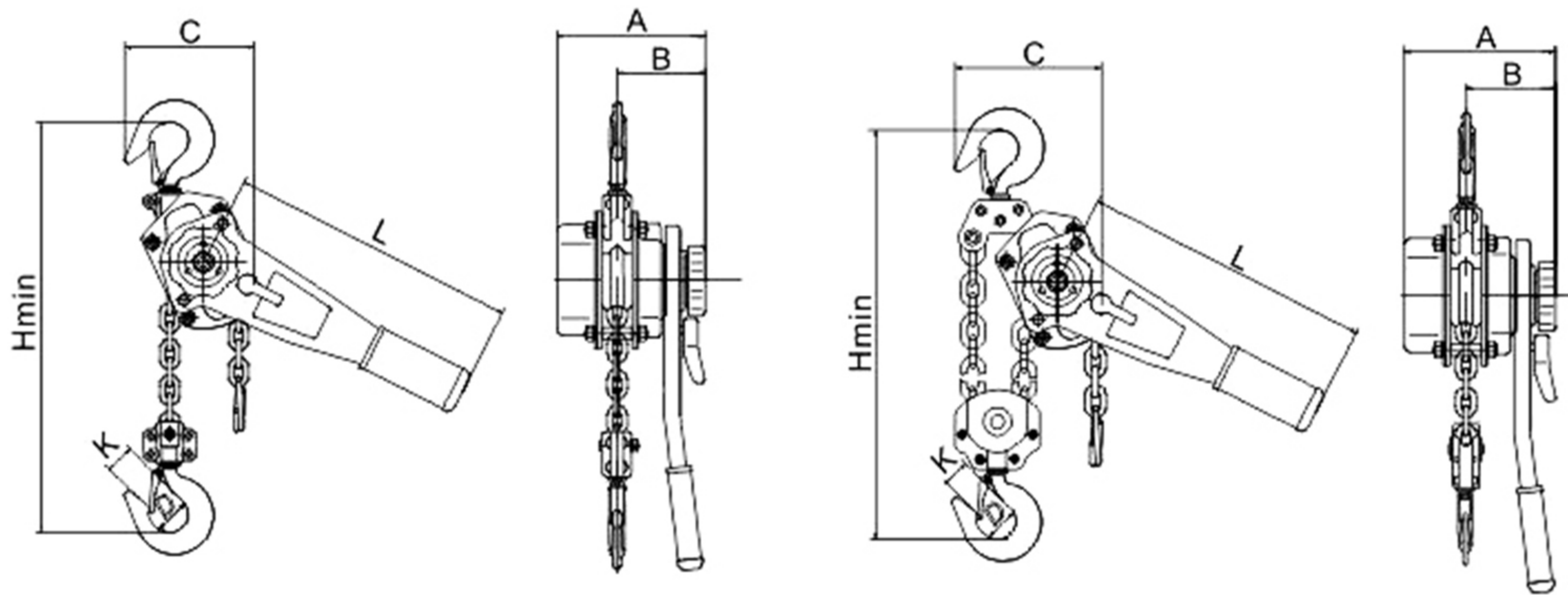
#### 4.5 OPERATE WITH TWO OR MORE THE SAS LEVER HOIST

<b>WARNING</b>	
	<p>If a load is to be lifted using multiple hoists, an engineering study must first be carried out and approved by a qualified technician prior to installation. The installation must then be carried out in accordance with this study to ensure an even distribution of the load in the relevant circumstances.</p>

- 4.5.1 If different loading capacities are used, ensure that the lowest capacity is not exceeded.
- 4.5.2 The SAS Lever Hoist that are used in a series must be the same capacity.
- 4.5.3 Use steel wires, clips and fasteners, etc. that have sufficient load-bearing capacity, have top and bottom hook support.
- 4.5.4 If the SAS Lever Hoist is used together with other machines, overloading is strictly prohibited.

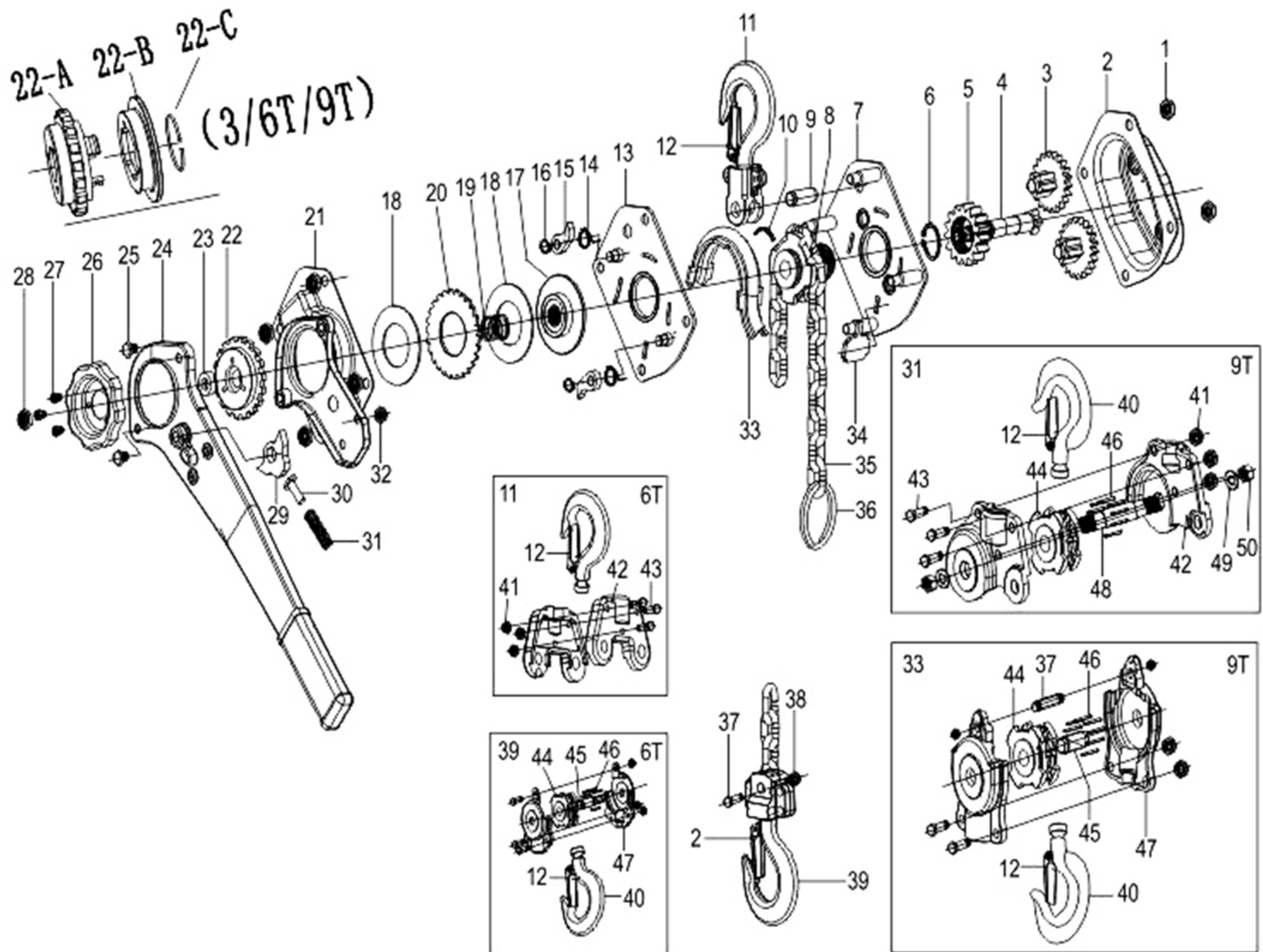
<b>DANGER</b>	
	<p>Emergency procedure in case the chain is blocked or the lever hoist is otherwise not working: Stop the process immediately without attempting any other measures.</p> <p>Immediately establish a security perimeter around the hoist and directly beneath the load to prevent unauthorized access. Gather the personnel required to remove the load and take necessary action on the hoist.</p>

## 5. TECHNICAL INFORMATION




Capacity	tons	0.25	0.5	0.75	1	1.5	2	3	6	9
Standard lift	m	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Running test load	Kn	3.75	7.5	11.25	15	22.5	30	45	75	112.5
Effort required to lift max. Load	N	120	240	140	185	220	240	320	340	360
No. of columns of load chain		1	1	1	1	1	1	1	2	3
Load chain diameter	mm	4	4	6	6	8	8	10	10	10
Dimensions (mm)	A	100	100	148	148	172	172	200	200	200
	B	65	65	90	90	98	98	115	115	115
	C	75	75	136	136	160	160	180	235	320
	D	35	35	40	40	45	45	58	64	85
	H	240	240	325	325	380	380	480	620	700
	L	160	160	280	280	410	410	410	410	410
	K	25	25	34	34	38	38	48	52	58
Net weight	kg	2.3	2.3	7	7	11	11.8	17.5	28.5	45
Packing measurement	cm	33x12x9	33x12x9	36x12.5x9	36x12.5x9	50x13.5x19	50x13.5x19	54x17x21.5	54x28x21.5	83x32x21.5
Extra weight per meter of extra lift	kg	0.35	0.35	0.8	0.8	1.4	1.4	2.2	4.4	6.6

## 6. PARTS LIST



- |                               |                            |                                       |
|-------------------------------|----------------------------|---------------------------------------|
| 1. Nut for plate              | 20. Ratchet gear           | 36. Chain stop                        |
| 2. Gear cover set             | 21. Lever cover            | 37. Bolt for load chain               |
| 3. Gear set                   | 22. Change over gear       | 38. Nut for load chain                |
| 4. Pinion shaft               | 22-A. Change over gear(3T) | 39. Bottom hook                       |
| 5. Lift wheel gear            | 22-B. Brake ring(3T)       | 40. Bottom hook for 6T/9T             |
| 6. Snap ring                  | 22-C. Wire snap ring(3T)   | 41. Lock nut                          |
| 7. Gear side plate assembly   | 23. Bushing                | 42. Upper hook holder                 |
| 8. Load sheave                | 24. Lever handle assy      | 43. bolt for hook holder              |
| 9. Upper hook pin             | 25. Bolt for lever         | 44. Idle sheave                       |
| 10. Roller                    | 26. Hand wheel             | 45. Idle sheave axle                  |
| 11. Top hook                  | 27. Bolt for hand wheel    | 46. Needle                            |
| 12. Latch kits                | 28. Nut for Pinion Shaft   | 47. Idle sheave holder                |
| 13. Brake side plate assembly | 29. Change over pawl       | 48. Upper Idle Sheave Axle            |
| 14. Retaining spring          | 30. Spring seat            | 49. Washer for Upper Idle Sheave Axle |
| 15. Retaining pawl            | 31. Change over spring     | 50. Nut for Upper Idle Sheave Axle    |
| 16. Snap link for pawl        | 32. Nut for lever cover    |                                       |
| 17. Friction hub              | 33. Chain guide            |                                       |
| 18. Brake disc                | 34. Chain stripper         |                                       |
| 19. Wire snap ring            | 35. Load chain             |                                       |

## 7. CARE AND MAINTENANCE

<b>WARNING</b>	
	<p>Use only those from SAS delivered Replacement load chain and only original SAS Spare Parts.</p> <p>Do not drop or throw the lever pulley.</p>

- 7.1 Clean and grease the parts with petroleum every year. It is recommended to leave the cleaning work to professionals.
- 7.2 Inspect the load chain for wear and damage before and after use!
- 7.3 Lubricate the load chain weekly or more frequently depending on product usage.
- 7.4 If there is damage or wear to the Lever pull or on the load chain the lever hoist must be put out of operation. Please contact your supplier.
- 7.5 All lifting equipment must be inspected at least once a year by a qualified person and the operator is responsible for registration.
- 7.6 Maintenance work may only be carried out by authorized or professional technicians.
- 7.7 The use of spare parts not supplied by SAS are not permitted. Physical or material damage resulting from the use of such parts is the sole responsibility of the operator responsible.
- 7.8 Recording, documentation and registration of maintenance or testing services are the responsibility of the Responsibility of the owner/user.



## WARNING



Improper maintenance can cause serious physical injury and can even result in death. The device may only be used by trained and qualified personnel.

1. Always make sure that your hands and clothing are not caught in the chain, load sprocket or other moving parts.

2. Never work with the device when performing maintenance work.

3. Always check all points. If unusual difficulties occur when lifting and lowering goods take that Lever pull out of operation and set. Please contact your supplier.

4. Always wipe off any dirt.

5. Always put the lever in a dry and clean place.

Retest the device every time if any maintenance work has been carried out on the lever hoist. If you have any questions, please contact your supplier.

### 7.10 Maintenance Schedule

	Before <b>use</b>	After <b>use</b>	Weekly	Quarterly	Yearly
Visual and functional inspection SAS Lever Hoist, hook, brakes and load chain	X				
Check for loose screws, nuts, etc	X				
Check for worn gears, brake discs, bearings, pawl, pawl spring and shaft				X	
Lubricate the load chain			X		
Cleaning the SAS Lever Hoist		X			
Maintenance by professional technician – Security test					X
Store unloaded in one clean and dry Vicinity		X			