

Instruction Manual

Spark Proof Chain Hoist

Capacity 0.5 - 30ton



NOTE: Owner and Operator must read and understand this instruction manual before using the Manual Hoist



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THANK YOU VERY MUCH FOR SELECTING OUR MANUAL HOIST!

SL-ST series stainless steel chain hoist is easy to use, easy to carry, and has high anti-corrosion performance. All exposed parts are made of stainless steel, suitable for corrosive environments such as oceans, ships and places with high cleanliness requirements such as food and biochemistry.

NOTE: All information reported herein is based on the data available at the time of printing. The factory reserves the right to modify its own products at any time without notice or incurring in any sanction. Please verify with the factory for possible updates.

1. PREFACE

This manual hoist is a portable lifting devices easily operated by hand chain. It's suitable for use in factories, mines, farms, construction sites, wharves, docks and warehouses for installation of equipment, as well as for loading and unloading goods. It's specially advantageous for lifting work in open air grounds and places where no power supply is available.

The manual hoist can be attached to a trolley of any type as traveling chain block. It is suitable to monorail overhead conveying system, hand traveling crane and jib crane.

2. SAFETY INSTRUCTION



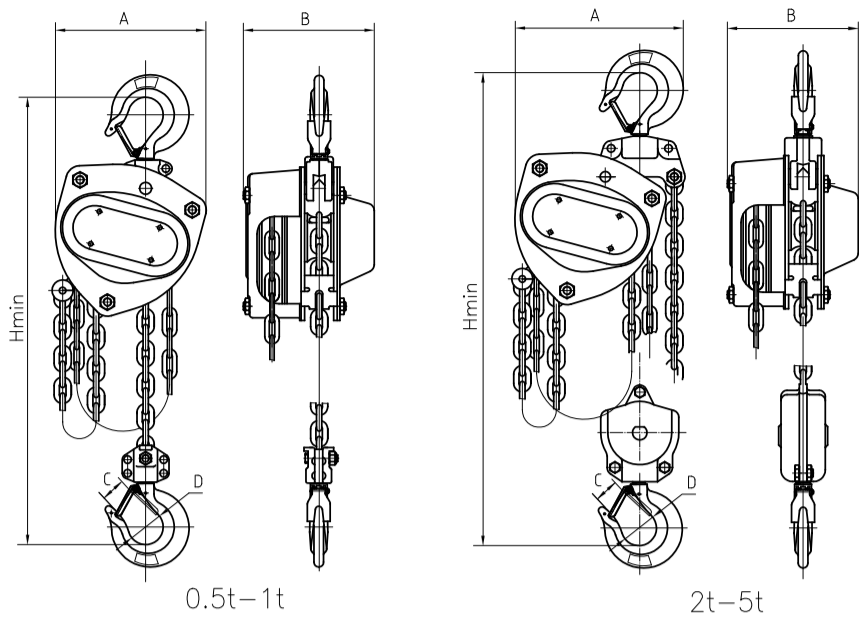
WARNING Be sure each person reads and understands this manual before operating or maintaining the hoist. The manual hoist must be properly operated and maintained at all times. Do not operate this hoist with any power devices.

- ♦ All persons involved must read this handbook and be completely familiar with all operating and maintenance procedure.
- ♦ Do not exceed the rated load limit. Overloading may cause hoist failure.
- ♦ Do not use power devices to operate the hoist, it is designed for manual operation only.
- ♦ Do not attempt to repair the chain. Replace it with new steel welded chain of

the same size and strength.

- ♦ Lubricate the chain with good quality light oil or chain oil before use.
- ♦ Do not lubricate the internal braking surfaces. The brake must be kept dry.
- ♦ Make sure the load chain has no twists in the chain sprocket, guide, and the vertical hanging length. If there is a twist, disassemble and thread the chain through the guide and chain sprocket.
- ♦ Make sure the load chain is attached to the loose end pin before each use.
- ♦ Stand in the same plane or at the same angle as the wheel when pulling the hand chain. Do not pull at an oblique angle. Keep safe footing at all times.
- ♦ Do not lift loads over people. Do not allow anyone to walk under the load. Warn personnel before lifting a load.
- ♦ Do not use the hoist to lift people.
- ♦ Avoid off-center loading. Balance the weight evenly.
- ♦ Pull the hand chain steadily and smoothly to prevent jerking or tangling.
- ♦ Seat the load firmly in the hook. Do not try to lift with the tip of the hook.
- ♦ Do not wrap the chain around the load. Balance the load weight evenly.
- ♦ Pull the lever handle steadily and smoothly to prevent jerking or tangling.
- ♦ Raise the load only enough to clear the support surface. Check for any malfunction or obstructions before continuing the lift.
- ♦ If the chain jams or the lever handle cannot be pulled any further, stop, inspect and correct the problem. Do not try to force the hoist.
- ♦ Do not leave the load suspended in the air.
- ♦ Do not lower the load beyond the usable chain length. Pulling the chain tight against the chain sprocket will cause damage.
- ♦ Do not allow the load to contact the hoist. This will block the swivel and may cause damage, twisted chains, or a jammed wheel.
- ♦ Perform periodic inspection and maintenance, Replace all damaged or malfunctioning parts.
- ♦ Test the hoist function thoroughly in both with load or without load situation. before returning it to normal operation.
- ♦ Do not touch the selector switch when the hoist is in operation.

3. SPECIFICATION



SPECIFICATIONS OF STAINLESS STEEL CHAIN BLOCK

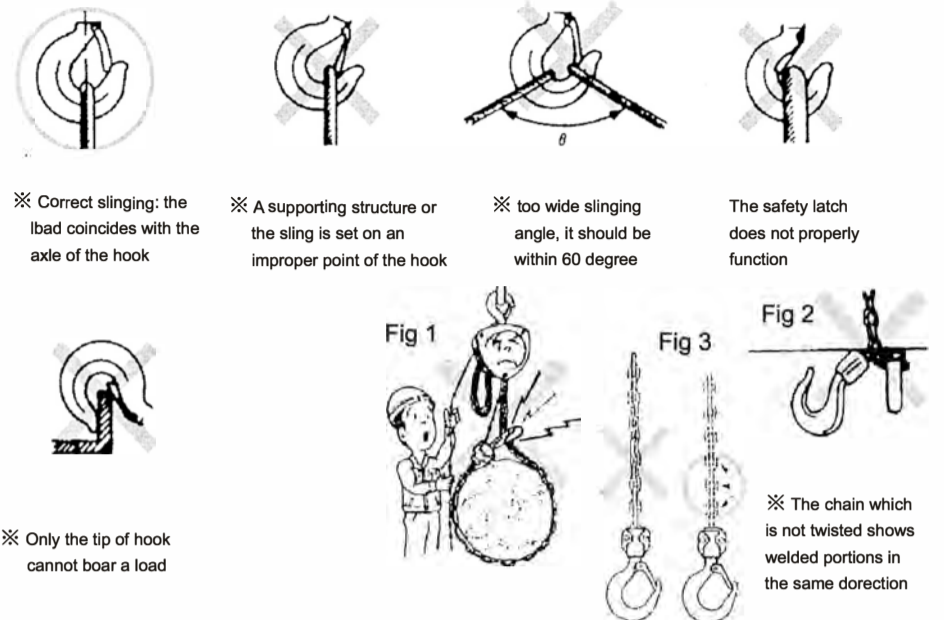
Model	SL-050ST	SL-100ST	SL-200ST	SL-300ST	SL-500ST	
Capacity	t	0.5	1	2	3	5
Lifting height	m	2.5	2.5	2.5	3	3
Test load	kN	6.25	12.5	25	37.5	62.5
Load chain	Falls	1	1	2	2	3
	φxP	6x18	7x21	7x21	9x27	9x27
Hand chain	5x23.3					
Force	N	150	304	335	343	270
Net weight	kg	12	13	19.5	31.5	60
Extra wt. per m	kg	1.65	1.97	3.1	4.37	7.3
Dimensions mm	A	172	172	192	230	365
	B	151	151	151	173	189
	C	26	26	34	39	41
	D	40	40	50	55	65
	Hmin	376	376	425	565	710

4. Installation and Operation

Installation the support (structure such as buildings) on which the hoist body is to bear 4 times of the rated load

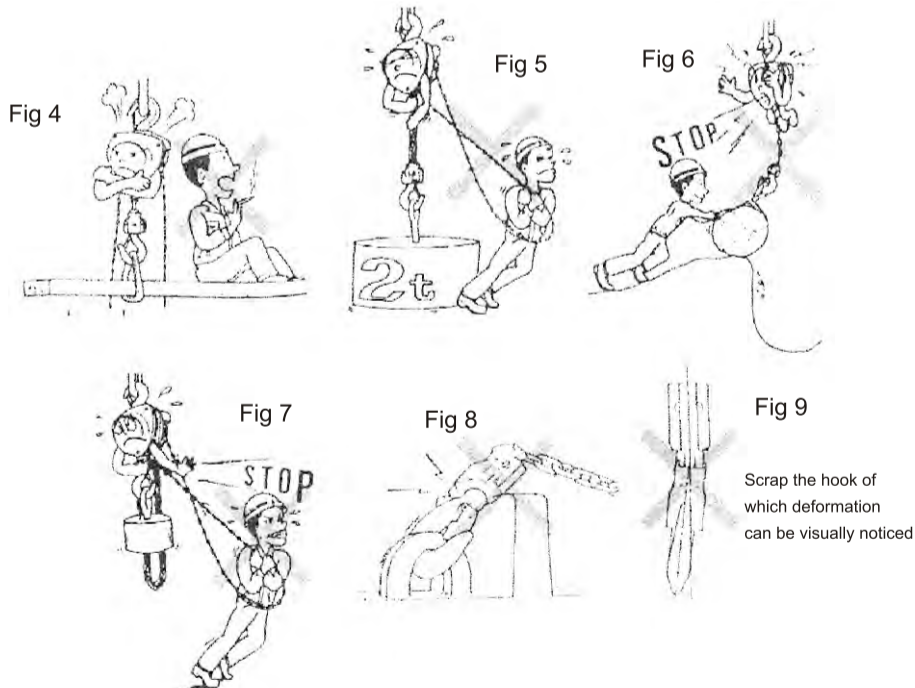
4.1 Proper Handling and cautions singing method

(1) How to apply a load to the hook Incorrect singling (Avoid the examples below):



- (2) Never wind a load chain directly around a load regardless of its weight. It is quite dangerous, since the load chain may be broken. (fig.1) It is dangerous to wind the load chain around the hook of a chassis etc. because the strength of the chain will be reduced to 1/3 to 1/5 of the normal value. (Fig.2)
 - (3) The load chain twisted should not be loaded. As the bearing capacity of
 - (4) The chain will be reduced in a twisted state. Be sure to bring the load chain into straight before applying a load.(Fig.3)
- Cautions during operation

- (5) Do not get on a load to be lifted and do not stay under a load lifted. It is
- (6) Prohibited by law to get on a load lifted by the chain hoist.(Fig.4)



- (7) Do not apply an overload to the chain hoist, that is, do not apply a load exceeding the number of tons (rated load) indicated on the nameplate.(Fig.5)
- (8) Do not give an impact to the chain hoist. Severe accident may happen, if a
- (9) Load suddenly falls regardless of the height and gives a shock to the chain hoist. (Fig.6).
- (10) Do not perform over-winding(Fig.7)
- (11) Do not apply a bending force to the hook of the chain hoist. Such handling ways as shown in Fig. 8 are very dangerous and should be absolutely avoided. The hook clearly deformed as shown in Fig. 9 should be scrapped and exchanged with a new and genuine one.(Fig.9)
- (12) Notice about the manipulation of the hand chain, it should be avoided that the hand chain will be abruptly jammed when it is manipulated with or without a load or a load is lifted by means of another power. Otherwise, the

hand chain will be partially deformed or damaged.

5. Inspection and Maintenance

5.1 Daily Inspection

- For daily operation, be sure to carry out the following check prior to operation.
- In case of any abnormality, stop operating the hoisting until and take proper counter-measure by a specialist possessing enough knowledge on the unit or by a dealer of our products.
- Do not make continuous running under abnormal condition as it is very dangerous and might lead to an severe accident.

- (1) Check if the end of the load chain without hook(chain stopper pin)is fixed correctly. Check also if the chain stopper pin is not deformed or rotates smoothly.
- (2) Are firm connections made between the top hook and the hoist body, the body and the load chain, and the load chain and the bottom hook respectively?
- (3) Are visually no deformations of the top and bottom hooks noticed?
- (4) Are no parts missing? Are no severely deformed portions noticed?
- (5) Is the load chain well lubricated?Does it show any remarkable damages or deformations?
- (6) Check whether the hand chain runs easily and smoothly on operation and smooth ratchet sound is heard during lifting.

- Immediately stop operating the chain hoist and make repair of it, when such abnormalities as mentioned above(item 1 through 6) are found.

5.2 Periodic inspection

In case of troubles and/or any abnormality, stop operating the hoisting unit and take proper counter-measures by a specialist possessing enough knowledge on the unit or by a dealer of our products. It may happen that the load chain and the hooks fall in a dangerous state even if they show no remarkable changes in their function. It is therefore indispensable to make a periodic measuring check based

on "the Methods for Maintenance and Inspection" as stated below. The periodic inspection should be normally made once a month. Exchange damaged or deformed parts with new ones.

6. The Methods for Maintenance and Inspection

- Do not use parts and the chain hoist over the limit of use.
- If any wearing parts are found in excess of the standard limit of use as stated below in carrying out the daily and periodic voluntary inspections, they should be replaced for sure. Daily and periodic voluntary inspections, they should be replaced for use.
- When replacing load chains, be sure to use the load chain manufactured by us. Load chains manufactured by any others are not applicable

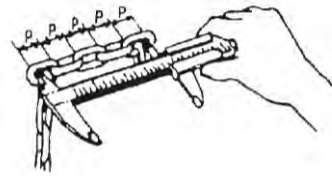
6.1 Checking the load chain and its lifetime

The load chain begins to be broken from even one piece of weak chain links and thus it is important to carefully inspect the whole chain. For checking the elongation, measure the inner length of 5 links with a vernier caliper as the above sketch shows. It is normally sufficient to check the links in a distance of approx. Every 50cm but check them by making the measuring distance shorter when the elongation of the chain is close to the limitation for use stated in Table 2 so that none of them will exceed the limitation for use.

Exchange the load chain with a new one which is found by visual check to be clearly influenced by higher temperatures or to be clearly deformed. Furthermore, do not weld a load chain to the original one by users themselves.

Limitation of the deformed load chain for use (Table 2)

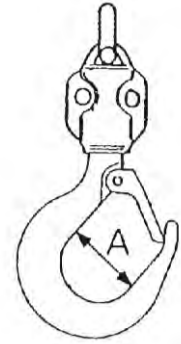
Rated load(kg)	Link diameter-Px5mm(new chain)	Limitation of Px5(mm) for use
500	∅6x90	92
1,000	∅7x105	107
2,000	∅ 10x150	153
3,000	∅ 9x135	137
5,000	∅ 9x135	137



6.2 Checking the hook and its lifetime

- When the dimension shown by "A" in the sketch has exceeded the limitation as the limitation of the deformed hook for use (Table 3)

rated load(kg)	Value A on new hook(mm)	Limit value A (mm)
500	30	33
1,000	30	33
2,000	39	43
3,000	45	49.5
5,000	49	54



specified in Table 3, the hook should be replaced with a new genuine one. Do not forget to set the split pin on re-assembling the stop bolt.

7. Criteria for Using and Checking Chain Hoists

7.1 Criteria for use

- (1) Make sure that the class of the chain hoist is fit for conditions of its use.
- (2) The chain hoist should not be used to lift a load exceeding the rated load except for testing purpose.
- (3) Do not use a bottom hook which is not equipped with a safety latch or of which latch has no safety effect.
- (4) Do not use chain block on which chain stoppers are missing.
- (5) Do not wind the load chain directly around a load.
- (6) Do not quickly pull the hand chain on lifting and lowering operation.
- (7) Do not perform over-lifting and over-lowering.
- (8) Avoid an operation of so-called earth lifting.
- (9) Before operation check the load chain for twisting or tangling. The chain hoist
- (10) Can be used only after such twisting and tangling are corrected.
- (11) When the chain hoist is used in special conditions such as lower or higher

temperatures, or corrosive atmosphere, etc., consult us before use.

- (12) The chain hoist should not be modified by the users.
- (13) Do not leave the chain hoist for many hours with a load suspended.
- (14) Make a routine inspection before use.
- (15) Immediately stop operating the chain hoist when an abnormally big pulling for the hand chain is required.
- (16) Apply a lubricant to the load chain before use.
- (17) Use the chain hoist, applying lubricants to its gears, bearings, which are liable to wear.
- (18) Consult us whenever special usage of the chain hoist is required.

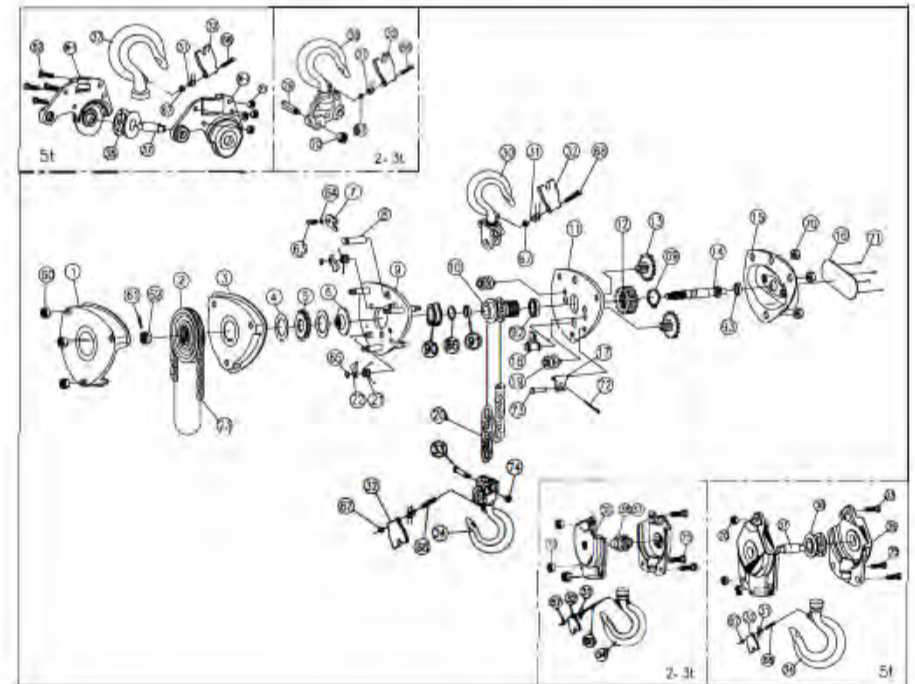
7.2 Criteria for check

- (1) Use the chain hoist by checking it daily⁽¹⁾ and periodically⁽²⁾.
- (2) Refer to Table 4 which gives check items, check methods and check criteria to be used in the daily check. However, items other than those specified should be also checked, when the checked, when the chain hoist is frequently used, or in special cases.
- (3) When the chain hoist is repaired, check it on periodic check items given in Table 4 after its repair, and make Notes

Note: ⁽¹⁾ Refer to checking before use.

⁽²⁾ Periodic check is usually made at intervals of six months Or one year depending on the frequency of use.

- (4) Check the items with the mark "✓" in table 4



Part list for stainless steel chain block

No.	Description	No.	Description	No.	Description
1	Hand weel cover ass.	11	Side plate ass. A	21	Pawl spring
2	Hand weel	12	Splined gear	22	Pawl
3	Brake cover	13	Driven shaft ass.	23	Hand chain
4	Friction plate	14	Driving shaft	29	Top chain pin
5	Ratchet disc	15	Gear case shaft	30	Top hook ass.
6	Brake seat	16	Name plate	31	Double spring
7	Lock plate	17	Suspension plate	32	Safety latch
8	Top pin	18	Stripper	33	Chain pin
9	Side plate ass. B	19	Guide roller	34	Bottom hook ass.
10	Chain sprocket	20	Load chain	35	Hook hanger component

No.	Description	No.	Description	No.	Description
36	Idle sheave ass.	65	Snap ring	75	Hexagonal screw
37	Idle sheave pin	66	Snap ring	90	Bearing left
38-1	Beam left	67	Prevailing torque type nut	91	Pin bearing
38-2	Beam right	68	Screw	92	Bearing right
		69	Snap ring	93	Bearing
60	Prevailing torque type nut	70	Prevailing torque type nut		
61	Split pin	71	Rivet		
62	Hexagonal castle nut	72	Split pin		
63	Screw	73	Pin		
64	Spring washer	74	Prevailing torque type nut		

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