
MANUAL

User's Manual(Operator)

HSH-A820

SERIES LEVER HOIST



 **WARNING**

This equipment should not be installed, operated or maintained by any person who has not read and understood all the contents of this manual. Failure to read and comply with the contents of this manual can result in serious bodily injury or death, and/or property damage.

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1. DEFINITIONS

This HSH-A820 Series lever hoist has been designed for vertically lifting and lowering loads, by hand, under normal atmospheric conditions of the work place.

⚠ DANGER Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING Indicates an imminently hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used alert against unsafe practices.

2. SAFETY RULES

2.1 General

Failure to read and comply with the contents of this manual can result in serious bodily injury or death, and property damage. Although you may be familiar with this or similar equipment, it is strongly recommended that you read this manual before installing, operating or maintaining the product.

Equipment described herein should not be used in conjunction with other equipment unless necessary and required safety devices applicable to the system. The company shall have no liability to the client for any loss, damage or other claims for compensation arising from this type of misuse. Modifications to upgrade, rerate, or otherwise alter this equipment shall be authorized only by the original equipment manufacturer.

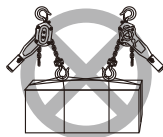
⚠ DANGER



① NEVER use a hoist for lifting, supporting or transporting people.



② NEVER use your foot to apply pressure to the lever handle.



③ NEVER use two or more hoists together to lift load beyond the rated capacity of hoist.



④ NEVER lift up load beyond the rated capacity of the hoist.



⑤ NEVER lift or transport loads over or near people.

2.2 Rules before use

⚠ CAUTION Hoist operators shall be required to read this manual, the warning contained in this manual, instruction and warning labels on the hoist or lifting system. The operator shall also be required to be familiar with the hoist controls before being authorized to operate the hoist or lifting system.

⚠ WARNING

Do not use the hoist if there are deep nick, gouges or stretch on hook, contact our company or the distributor of the hoist and replace the hook with new parts.

⚠ CAUTION

1. Ensure every description of name plate is clear and visible.
2. Check the hoist before daily use according to the Daily Inspection.
3. Estimate the weight of load and choose the hoist of suitable rated capacity.
4. Ensure hooks not be deformed and rotates freely with no roughness.
5. Ensure the running of the brake system is normal.
6. Lubricate load chain according to recommendations of manufacturer

2.3 Rules for operation

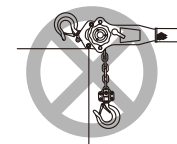
⚠ WARNING



① NEVER use a twisted, kinked, damaged or stretched load chain.



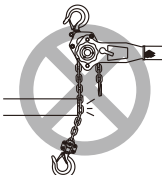
② NEVER use the hoist chain as a sling.



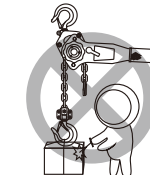
③ NEVER use the hoist as a support.



④ NEVER support a load on the tip of the hook..



⑤ NEVER run the load chain together over an sharp edge.



⑥ NEVER weld or cut a load suspended by a hoist.

⚠ WARNING

1. NEVER use damaged hoist or hoist that is not working properly.
2. NEVER swing a suspended load.
3. NEVER use the hoist chain as a welding electrode.
4. NEVER operate a hoist so far that the bottom hook touches the hoist body.
5. NEVER operate a hoist so far that the load chain pulls the anchorage.
6. NEVER operate a hoist if excessive noise occurs.
7. NEVER allow your attention to be diverted from operating the hoist.

2.4 Rules after use

⚠ CAUTION

Put down the load slowly and safely after lifting.

⚠ WARNING

NEVER suspend a load for an extended period of time.

2.5 Inspection and maintenance

CAUTION Ensure the qualified service personnel inspect the hoist periodically.

WARNING Do not attempt repair of a hook by heat treating, bending or attaching anything by welding. Such procedures will weaken and may cause failure of the hook.

2.6 Others

CAUTION Always consult the manufacturer or your dealer if you plan to use a hoist in an excessively corrosive environment (salt water, sea air and/ or acid, explosive environment or other corrosive compounds, etc.).

WARNING NEVER use a hoist which has been taken out of service until the hoist has been properly repaired or replaced.

3. MAIN SPECIFICATION

3.1 Operation conditions

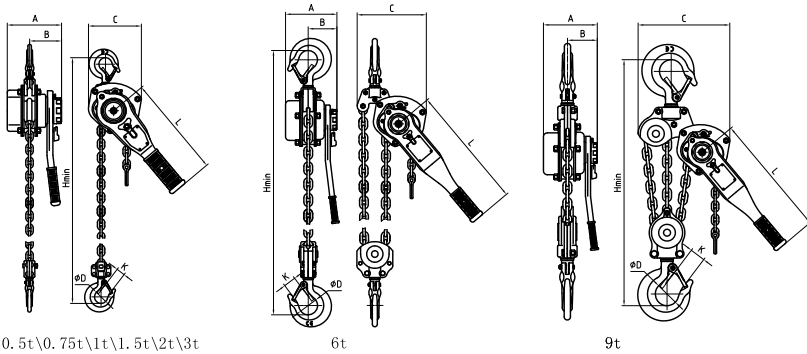
Allowable ambient conditions

Operation temperature: -10°C to $+60^{\circ}\text{C}$

Operation humidity: 100%RH or less, this product should not be used under water.

Non-asbestos material: Friction plates are made of asbestos free material.

3.2 Technical specification



0.5t\0.75t\1t\1.5t\2t\3t

6t

9t

Model	H007-AR20	H007.5-AR20	H010-AR20	H015-AR20	H020-AR20	H030-AR20	H060-AR20	H090-AR20
Capacity	0.5	0.75	1	1.5	2	3	6	9
Load chain	mm 6×18	6×18	6×18	8×24	8×24	10×30	10×30	10×30
Strands of load chain	1	1	1	1	1	1	2	3
Strands lift	m 1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Load chain distance by rotating the hand wheel one circle	mm 19.8	19.8	19.8	21.3	21.3	16.8	8.4	5.6
Effort required to lift rated load	N 180	270	360	295	393	335	370	420
Running test load	kN 6.13	9.2	12.3	18.4	24.5	36.8	73.5	110.3
Dimensions (mm)	A	158	158	158	176	176	198	198
	B	97.5	97.5	97.5	102	102	112	112
	C	135	135	135	162	162	211	254
	D	34	40	40	45	50	55	65
	Hmin	300	320	320	380	380	480	620
	L	250	250	250	270	270	430	430
	K	21	26	26	30	30	38	44
Extra weight per metre of extra lift	kg 0.8	0.8	0.8	1.4	1.4	2.2	4.3	
Net weight	kg 6.8	7.3	7.3	10.6	10.9	20	29	

4. OPERATION

4.1 Introduction

This hoist has been designed for vertically lifting and lowering loads, by hand, under normal atmospheric conditions of the work place. However, since dealing with heavy loads may involve unexpected danger, all the Safety Rule must be followed.

Safety Working Environment: the operator must be aware of the following points while using the hoist.

- (1)The operator must have a clear and unobstructed view of the entire travel area before operating the hoist. When not possible, a second or more persons must serve as scouts in the nearby area.
- (2) The operator must check the entire travel area is safe and secure before operating the hoist.

4.2 Features

Place the selector switch on the handle in the middle position when without load, then the load chain could move freely. Pull the load chain by hand to position the bottom hook.

4.3 The method of operation

1. Place the selector switch on the handle in the middle position.
2. And then adjust the load chain to suitable position.

WARNING NEVER pull the load chain sharply when the selector switch in the middle position. If the chain is pulled too suddenly, the brake may set preventing further pulling.. Re-set the hoist is needed when this happens.

4.4 Load operation

Hoist	Selector switch	Hand lever operation
Lift	UP	Clockwise
Lower	DOWN	Counterclockwise

5. INSPECTION

5.1 General

There are two types of inspection, the Daily Inspection performed by the operator before using the hoist, and the more thorough Periodic Inspection performed by qualified service personnel who have the authority to remove the hoist from service.

5.2 Daily inspection

Before each work shift, check the following points:

Item	Inspection method	Discard limit/criteria	Remedy
Name plate	Check visually	Every description should be clear and visible.	Replace the name plate.
Function	Turn selector switch to the UP/down position, pull the load chain at the hook side, and ratchet the handle.	The ticking sound when ratchet the handle indicates normal condition.	Repair or replace as necessary.
Hook	Check visually	No wear, deformation or damage, and the swivels should rotate freely.	Replace the hook.
Hook latches	Check visually	No deformation and harmful flaws.	Replace the part.
Load chain	Check visually	No obvious rust or corrosion. Lubrication must be on surface.	Oil the load chain. Replace the load chain.
Other	Check visually	No missing nuts and/or split pins. No flaws or damages on the hoist surface. No missing and/or twist chain stopper.	Replace the parts.

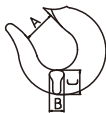
5.3 Periodic inspection

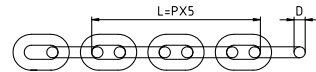
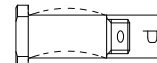
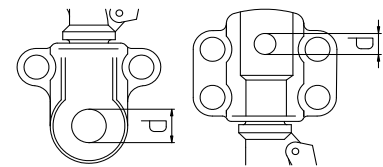
Periodic inspection shall be made at the interval shown below and should the given procedures.

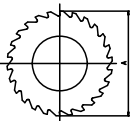


NORMAL (Normal use): Six monthly inspection


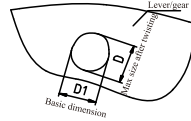
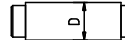
HEAVY (Frequent use): Quarterly inspection

SEVERE (Excessively frequent use): Monthly inspection

Item	Inspection method	Discard criteria	Remedy																																																
1. Hook assembly 1.1 Stretch and wear 	Measure	Measure the dimension A when new. <table border="1"> <thead> <tr> <th rowspan="2">Capacity (t)</th> <th colspan="2">A* (mm)</th> <th colspan="2">B (mm)</th> <th colspan="2">C (mm)</th> </tr> <tr> <th>Normal</th> <th>Standard</th> <th>Discard</th> <th>Standard</th> <th>Discard</th> <th>Discard</th> </tr> </thead> <tbody> <tr> <td>0.75</td> <td>30.0</td> <td>13.0</td> <td>≤ 12.4</td> <td>21.5</td> <td>≤ 20.3</td> <td></td> </tr> <tr> <td>1.5</td> <td>36.0</td> <td>17.0</td> <td>≤ 16.2</td> <td>28.8</td> <td>≤ 27.3</td> <td></td> </tr> <tr> <td>3</td> <td>40.0</td> <td>25.0</td> <td>≤ 23.8</td> <td>43.8</td> <td>≤ 41.6</td> <td></td> </tr> <tr> <td>6</td> <td>50.0</td> <td>32.0</td> <td>≤ 30.4</td> <td>52.5</td> <td>≤ 49.9</td> <td></td> </tr> <tr> <td>9</td> <td>64.0</td> <td>40.0</td> <td>≤ 38.0</td> <td>60.4</td> <td>≤ 57.4</td> <td></td> </tr> </tbody> </table> <p>* These values are nominal since the dimension is not controlled to a tolerance. The A dimension should be measured when the hook is new. The A dimensions should not be greater than 1.05 times that measured and recorded at the time of purchase.</p>	Capacity (t)	A* (mm)		B (mm)		C (mm)		Normal	Standard	Discard	Standard	Discard	Discard	0.75	30.0	13.0	≤ 12.4	21.5	≤ 20.3		1.5	36.0	17.0	≤ 16.2	28.8	≤ 27.3		3	40.0	25.0	≤ 23.8	43.8	≤ 41.6		6	50.0	32.0	≤ 30.4	52.5	≤ 49.9		9	64.0	40.0	≤ 38.0	60.4	≤ 57.4		Replace
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1.2 Flaw	Check visually	Should be free from significant rust, weld splatter, deep nick, or gouges.	Replace																																																
1.3 Rotate	Check visually and function	Should rotate freely with no roughness.	Replace																																																
1.4 Hook yoke	Check visually and function	Should not slack or miss rivets, nuts or bolts.	Replace																																																
1.5 Hook latch	Check visually	Proper positioning and smooth working.	Replace																																																

2. Load chain																																					
2.1 Wear	Measure	 <table border="1"> <thead> <tr> <th rowspan="2">Capacity (t)</th> <th colspan="2">L (mm)</th> <th colspan="2">D (mm)</th> </tr> <tr> <th>Standard</th> <th>Discard</th> <th>Standard</th> <th>Discard</th> </tr> </thead> <tbody> <tr> <td>0.75</td> <td>90.0</td> <td>≥ 92.5</td> <td>6.0</td> <td>≤ 5.4</td> </tr> <tr> <td>1.5</td> <td>120.0</td> <td>≥ 123.3</td> <td>8.0</td> <td>≤ 7.2</td> </tr> <tr> <td>3、6、9</td> <td>150.0</td> <td>≥ 154.0</td> <td>10.0</td> <td>≤ 9.0</td> </tr> </tbody> </table>	Capacity (t)	L (mm)		D (mm)		Standard	Discard	Standard	Discard	0.75	90.0	≥ 92.5	6.0	≤ 5.4	1.5	120.0	≥ 123.3	8.0	≤ 7.2	3、6、9	150.0	≥ 154.0	10.0	≤ 9.0	Replace										
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2.2 Flaws, deformations	Check visually	Should be free from twist or harmful flaw.	Replace																																		
2.3 Rust	Check visually	Should be free from obvious rust.	Remove rust, oil the chain																																		
Item	Inspection method	Discard criteria	Remedy																																		
3. Bottom hook pin		Replace the hook pin if there is obvious deformation, and the screw thread of hook pin should be free of flaw and deformation.																																			
3.1 Twist, deformations	Check visually, measure	 <table border="1"> <thead> <tr> <th>Capacity(t)</th> <th colspan="2">D (mm)</th> </tr> </thead> <tbody> <tr> <td>0.75</td> <td>7.5</td> <td>≤ 7.1</td> </tr> <tr> <td>1.5</td> <td>10.0</td> <td>≤ 9.5</td> </tr> <tr> <td>3</td> <td>14.5</td> <td>≤ 13.8</td> </tr> <tr> <td>6</td> <td>14.5</td> <td>≤ 13.8</td> </tr> <tr> <td>9</td> <td>14.5</td> <td>≤ 13.8</td> </tr> </tbody> </table>	Capacity(t)	D (mm)		0.75	7.5	≤ 7.1	1.5	10.0	≤ 9.5	3	14.5	≤ 13.8	6	14.5	≤ 13.8	9	14.5	≤ 13.8	Replace																
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3.2 Rust	Check visually	Should be free from obvious rust.	Remove rust, oil the pin																																		
4. Top/Bottom hook pin hole																																					
4.1 Deformations	Measure	 <table border="1"> <thead> <tr> <th rowspan="2">Capacity(t)</th> <th colspan="4">Diameter (mm)</th> </tr> <tr> <th colspan="2">Bottom hook pin hole</th> <th colspan="2">Top hook pin hole</th> </tr> </thead> <tbody> <tr> <td>0.75</td> <td>7.5</td> <td>≥ 8.0</td> <td>12.5</td> <td>≥ 13.1</td> </tr> <tr> <td>1.5</td> <td>10.5</td> <td>≥ 11.0</td> <td>14.5</td> <td>≥ 15.2</td> </tr> <tr> <td>3</td> <td>15.0</td> <td>≥ 15.7</td> <td>18.0</td> <td>≥ 18.9</td> </tr> <tr> <td>6</td> <td>15.0</td> <td>≥ 15.7</td> <td>18.0</td> <td>≥ 18.9</td> </tr> <tr> <td>9</td> <td>15.0</td> <td>≥ 15.7</td> <td>18.0</td> <td>≥ 18.9</td> </tr> </tbody> </table>	Capacity(t)	Diameter (mm)				Bottom hook pin hole		Top hook pin hole		0.75	7.5	≥ 8.0	12.5	≥ 13.1	1.5	10.5	≥ 11.0	14.5	≥ 15.2	3	15.0	≥ 15.7	18.0	≥ 18.9	6	15.0	≥ 15.7	18.0	≥ 18.9	9	15.0	≥ 15.7	18.0	≥ 18.9	Replace hook assembly
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5. Broke system			Remove rust, oil the parts, or replace.															
5.1 Rust	Check visually	All parts should be free from rust.																
5.2 Flaw on friction disc	Check visually	Should be free from harmful flaw.	Replace															
5.3 Wear on friction disc	Measure	Retain uniform thickness and friction disc shall not be worn more than 0.5mm.	Replace															
		<table border="1"> <tr> <th rowspan="2">Capacity (t)</th> <th colspan="2">Thickness of friction disk(H)</th> </tr> <tr> <th>Standard</th> <th>Discard</th> </tr> <tr> <td>0.75-9</td> <td>3.0mm</td> <td>≤ 2.5mm</td> </tr> </table>		Capacity (t)	Thickness of friction disk(H)		Standard	Discard	0.75-9	3.0mm	≤ 2.5mm							
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0.75-9	3.0mm	≤ 2.5mm																
5.4 Flatness of friction disc	Check clearance with gauge.	Clearance should be uniform. Internal part should not be thicker than external part.	Replace															
Item	Inspection method	Discard criteria	Remedy															
5.5 Ratchet disc 	Measure	Measure the external diameter A of ratchet disc	Replace															
		<table border="1"> <tr> <th>Capacity(t)</th> <th colspan="2">A dimension(mm)</th> </tr> <tr> <td>0.75</td> <td>74.5</td> <td>≤ 71.5 (Discard)</td> </tr> <tr> <td>1.5</td> <td>85.0</td> <td>≤ 83.0 (Discard)</td> </tr> <tr> <td>3</td> <td>94.0</td> <td>≤ 91.0 (Discard)</td> </tr> <tr> <td>6</td> <td>94.0</td> <td>≤ 91.0 (Discard)</td> </tr> <tr> <td>9</td> <td>94.0</td> <td>≤ 91.0 (Discard)</td> </tr> </table>		Capacity(t)	A dimension(mm)		0.75	74.5	≤ 71.5 (Discard)	1.5	85.0	≤ 83.0 (Discard)	3	94.0	≤ 91.0 (Discard)	6	94.0	≤ 91.0 (Discard)
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9	94.0	≤ 91.0 (Discard)																
5.6 Pawl 	Check visually	Should be free from wear on the surface.	Replace															
5.7 Pawl spring	Check visually	Should be free from deformation	Replace															
5.8 Free spring 	Measure	Measure the length	Replace															
		<table> <tr> <td>0.75t</td> <td>L≤27 (mm)</td> </tr> <tr> <td>1.5t</td> <td>L≤22.5 (mm)</td> </tr> <tr> <td>3~9t</td> <td>L≤27 (mm)</td> </tr> </table>		0.75t	L≤27 (mm)	1.5t	L≤22.5 (mm)	3~9t	L≤27 (mm)									
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3~9t	L≤27 (mm)																	
6. Lifting system																		
6.1 Load sheave	Check visually	Should be free from large wear or deformation.	Replace															
6.2 Gear	Check visually	Tooth should be free from large wear or flaw.	Replace															
6.2 Gear box	Check visually	Should be free from wear or deformation.	Replace															

7. Lever handle system												
7.1 Hand lever, feed ratchet, spring pin	Check visually	Should be free from wear or deformation.		Replace								
7.2 Ratchet spring 	Measure	Measure the length		Replace								
		<table> <tr> <td>0.75 t</td> <td>L≤37.0</td> </tr> <tr> <td>1.5-9 t</td> <td>L≤39.0</td> </tr> </table>			0.75 t	L≤37.0	1.5-9 t	L≤39.0				
0.75 t	L≤37.0											
1.5-9 t	L≤39.0											
8. Body												
8.1 Top hook pin hole on the side plate 		Measure the dimension D.		Replace								
		<table border="1"> <tr> <th>Capacity(t)</th> <th>D1(Standard)</th> <th>D(Discard)</th> </tr> <tr> <td>0.75</td> <td>10.2</td> <td>≤ 10.7</td> </tr> <tr> <td>1.5</td> <td>13.2</td> <td>≤ 13.7</td> </tr> <tr> <td>3~9</td> <td>17.2</td> <td>≤ 17.7</td> </tr> </table>			Capacity(t)	D1(Standard)	D(Discard)	0.75	10.2	≤ 10.7	1.5	13.2
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1.5	13.2	≤ 13.7										
3~9	17.2	≤ 17.7										
8.2 Top hook pin 	Measure	<table> <tr> <td>0.75 t</td> <td>D≤9.5 mm</td> <td rowspan="3">Measure the external diameter of the top hook pin.</td> </tr> <tr> <td>1.5 t</td> <td>D≤12.4 mm</td> </tr> <tr> <td>3-9 t</td> <td>D≤16.1 mm</td> </tr> </table>	0.75 t	D≤9.5 mm	Measure the external diameter of the top hook pin.	1.5 t	D≤12.4 mm	3-9 t	D≤16.1 mm		Replace	
0.75 t	D≤9.5 mm	Measure the external diameter of the top hook pin.										
1.5 t	D≤12.4 mm											
3-9 t	D≤16.1 mm											
Item	Inspection method	Discard criteria		Remedy								
8.3 Guide plate	Check visually	Should be free from wear or deformation.		Replace								
8.4 Chain stopper ring	Check visually	Should be free from wear or deformation.		Replace								
9. Function												
9.1 Lifting and lowering	Lift and lower a light load.	No abnormal difficulty in lifting and lowering.		Overhaul and service.								
9.2 Brake	Lift and lower a light load.	Confirm that none of the problems listed below occur during lifting and lower: (1) Lifting impossible. (2) Load slips down slowly. (3) Load falls when the operator releases the hand lever.		Overhaul and service.								

6. MAINTENANCE

6.1 General

Incorrect maintenance may result in serious bodily injury or death. Only trained and competent personnel could maintain this equipment.

⚠ WARNING After performing any maintenance on the hoist, always test the hoist according to this manual before returning to service.

⚠ CAUTION

- (1) Always take care hand or clothes will not be caught in a chain, idle sheave or other moving parts.
- (2) Never operate the hoist when maintenance.
- (3) Always inspect all the items if abnormal difficulty in lifting and lowering.
- (4) Never perform maintenance on the hoist while it is supporting a load.
- (5) Always wipe off all dirt and water.
- (6) Always store the hoist in dry and clean place.

6.2 Lubrication

Make sure to lubricate load chain, hook latches, top/bottom hook pin and hook yoke, etc.. Load chain is one of the important parts of a hoist, it is should be lubricated well with machine oil.

⚠ CAUTION

- (1) Lubricate load chain weekly, or more frequently, depending on severity of service.
- (2) Lubricate load chain more frequently than normal in a corrosive environment.

Notes: Recommended lubricant of this product is lithic grease #3.

7. TROUBLESHOOTING

⚠ WARNING Any disassembly or repair of the lever hoist should be performed by properly trained personnel.

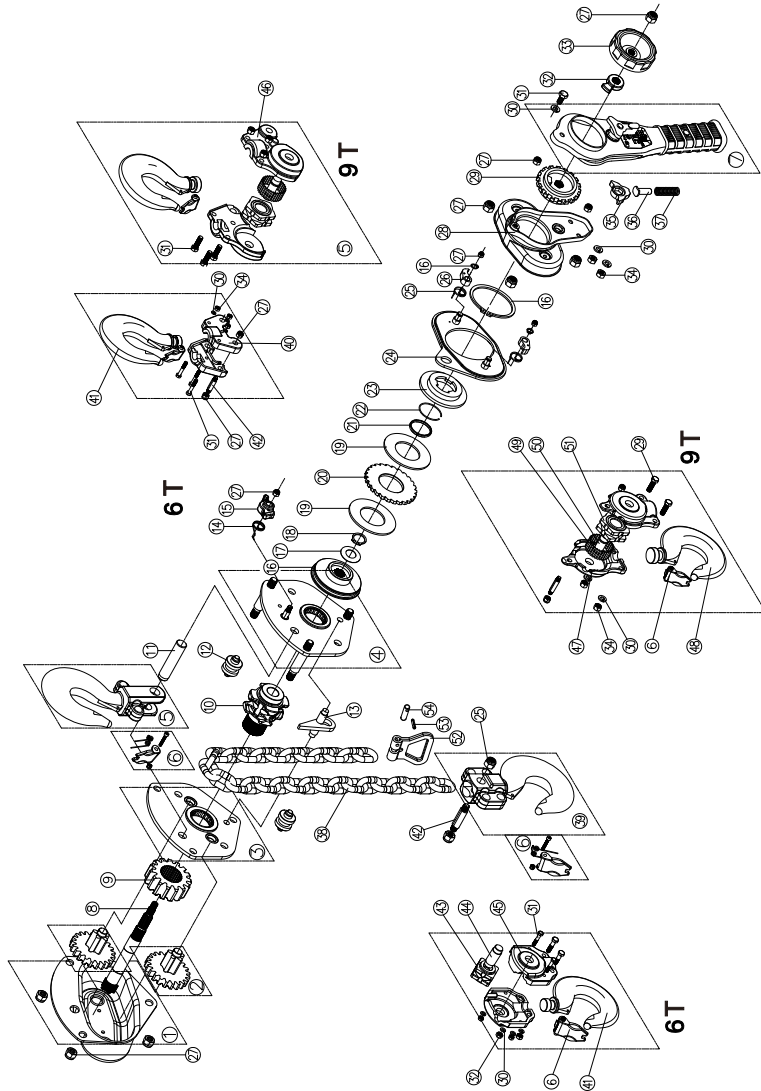
The numbers in parentheses refer to the parts breakdown assemblies.

Trouble	Probable	Remedy
Hoist will not lift (no clicking sound).	Pawl not engaging ratchet disc; possible dirt or foreign material.	Clean and lubricate pawl and ratchet disc assemblies.
	Pawl spring is damaged.	Replace pawl spring.
	Ratchet spring is loose or damaged.	Tighten or replace ratchet spring.
Load slips or drifts while being lowered.	Dirt or corrosion foreign material in hoist components.	Inspect and correct problem. Keep hoist clean and lubricated.
	Brake is slipping. Friction disc are worn from long-term use, or are damaged from overloading or misuse.	Replace friction disc. See chapter 5. INSPECTION for minimum allowable thickness. Do not overload hoist.
Load drops the instant lowering is started.	The braking surface is dirty. During assembly, the braking surface must be wiped cleaned of dirt.	Clean or replace the brake assembly.
	The braking surface is oily. The braking surface must not be allowed to become soiled with grease or machine oil because it is a dry-type brake.	Clean or replace the brake assembly.
Hoist will not lower load.	The brake has caught. (Hoist was left under load condition for extended period, or was shock-loaded while operating.)	Place selector lever in DOWN position and pull hard on the lever handle to re-set the brake. Resume operation.
	Brake components are corroded or damaged.	Replace components are needed; keep hoist clean and lubricated.
The chain is tight when lifting, even without a load. (A squeaking noise can be heard at times.)	Gear teeth are worn. From long-term use, or for not being greased regularly.	Disassemble and replace the load gear, gear case and side plate.

8. PARTS LIST

8.1 Exploded View Drawing

HSH-A820 SERIES LEVER HOIST 0.75T-9T



8.2 Parts list

1 Gear case assembly	13 Stripper	25 Pawl spring	37 Spring	49 Needle
2 Drive shaft gear	14 Safe clip spring	26 Pawl	38 Load chain	50 Idle sheave shaft
3 Right plate assembly	15 Safe clip	27 Self lock nut	39 Bottom hook asly	51 Idle sheave
4 Left plate assembly	16 Brake set	28 Ratchet cover asly	40 Up hook frame	52 Hand ring
5 Up hook assembly	17 Disc spring	29 Change over gear	41 Hook	53 Spring pin
6 Safty latch assembly	18 Wire snap ring	30 Spring gasket	42 Bolt	54 Hand ring pin
7 Outer lever handle asly	19 Friction disk	31 Screw	43 Idle sheave	
8 Long shaft	20 Ratchet gear	32 Adjust block	44 Idle sheave shaft	
9 Splined gear	21 Ratchet internal cover	33 Hand wheel	45 Bottom hook frame	
10 Load sprocket	22 wire snap ring	34 Nut	46 Up hook frame	
11 Up hook shaft	23 Brake ring	35 Change over pawl	47 Bottom hook frame	
12 Guide wheel	24 Support plate asly	36 Spring set	48 Hook	