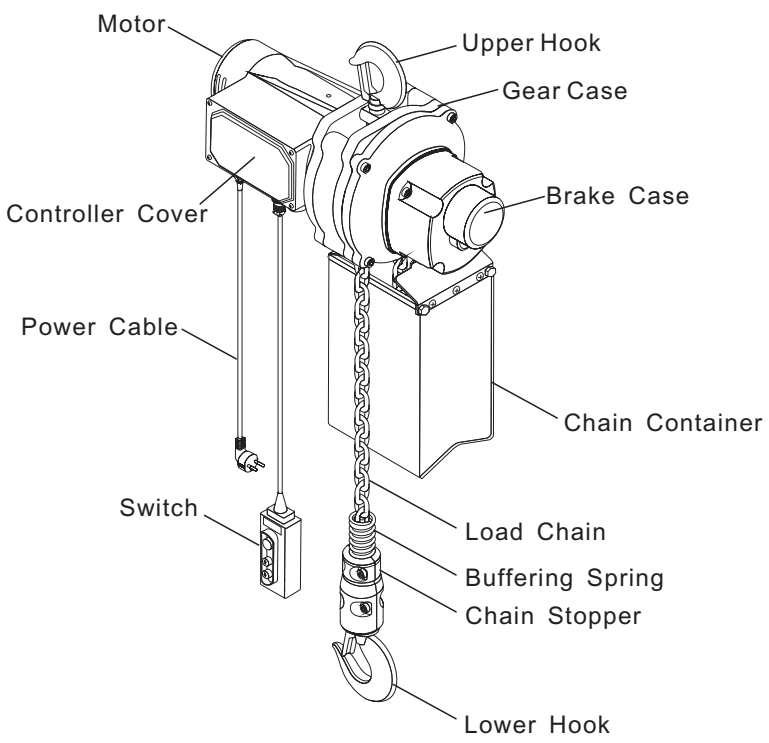
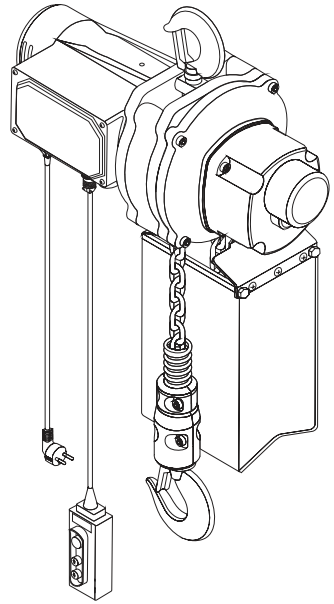
Parts name



Instruction Manual

Mini Electric Chain Hoist

H2.5 H5 H10



READY THIS MANUAL BEFORE USING THESE PRODUCTS

This manual contains important safety, installation, operation and maintenance information. Make this manual available to all persons responsible for the operation, installation and maintenance of the electric chain hoist.

Table of Contents

Section Page

1.Technical information.....2
1.1 Specifications
1.2 Dimensions

2. Pre-operational Procedures.....3
2.1 Chain
2.2 Load chain Lubrication
2.3 Mounting Hoist
2.4 Electrical Connections
2.5 Pre-operational Checks and Trial Operation
2.6 Environmental Precaution

3.Operation.....4
3.1 Introduction
3.2 Handling Precautions

4.Inspection.....5
4.1 Inspection classification

5. Maintenance and Replacement
5.1 Lubrication..... 6
5.1 Carbon Brush Replacement
5.3 Load chain replacement
5.4 Mechanical Load Brake with Friction Clutch
5.5 Fuses
5.6 Outdoor Installation

6.Trouble Shootings.....9

7.Wiring Diagram.....11

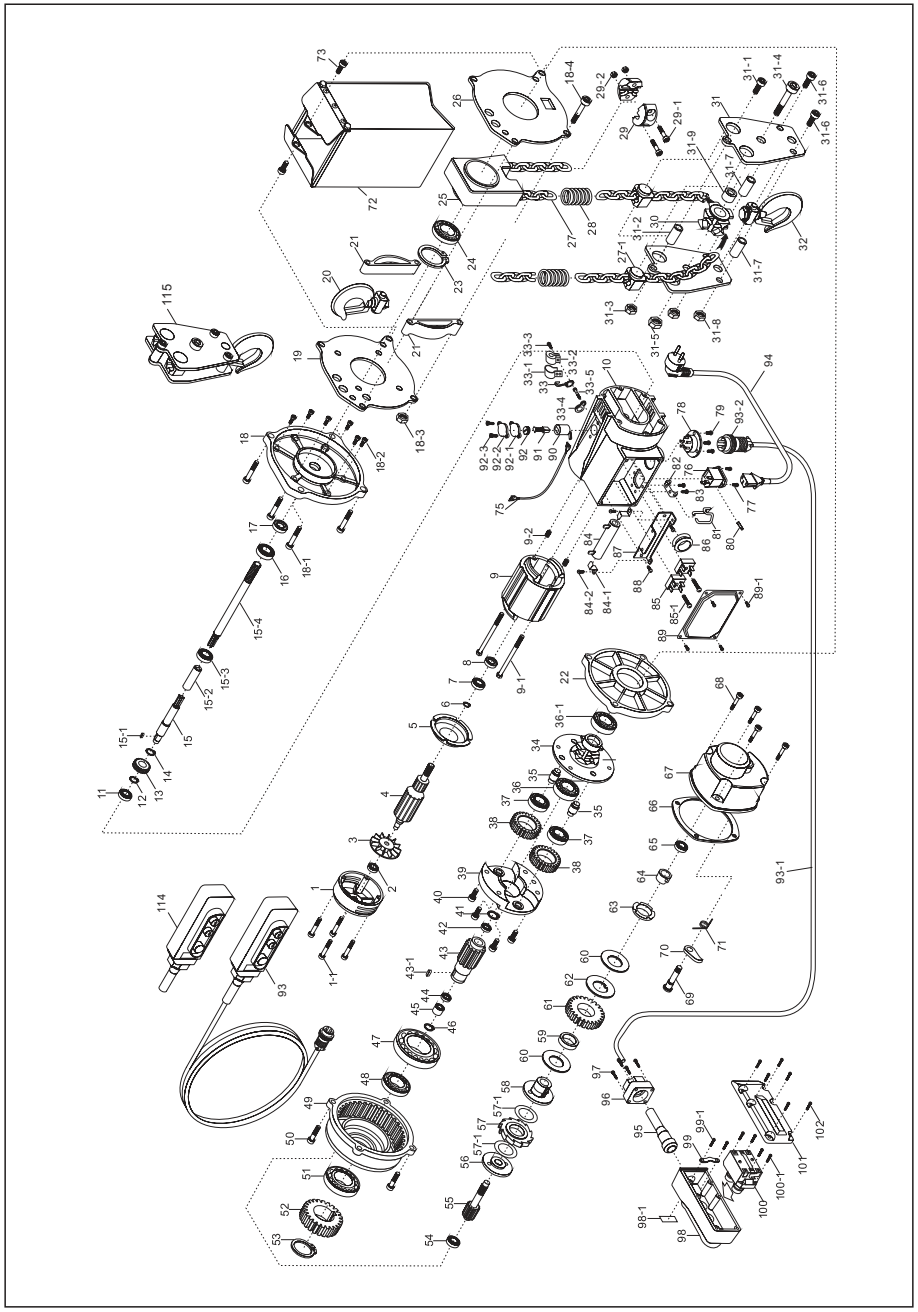
8. Spare Parts Drawing- H2.5,H5 12
Spare Parts Drawing- H10

9. Parts List 14

9. Parts List

No.	Parts description	No.	Parts description	No.	Parts description
1	Motor Cover	31-5	Locknut	68	Socket Bolt
1-1	Socket Bolt	31-6	Socket Bolt	69	Pawl Pin
2	Bearing	31-7	Spacer	70	Pawl
3	Fan	31-8	Locknut	71	Pawl Spring
4	Armature	31-9	Needle Bearing	72	Chain Container
5	Air Guiding Cover	32	Lower Hook	73	Socket Bolt
6	Retaining Ring	33	Hanger Hook	75	Carbon Cable
7	Bearing	33-1	Cable Hanger	76	Power Socket
8	Oil Seal	33-2	Rubber Hanger	77	Screw
9	Stator	33-3	Screw	78	Switch Socket
9-1	Socket Bolt	33-4	Twin-hole Suspender	79	Screw
9-2	Headless Screw	33-5	Socket Bolt	80	Fuse
10	Motor Case	34	Load Sheave	81	Power Cable Hanger
11	Bearing	35	Support	82	Holder
12	Retaining Ring	36	Bearing	83	Screw
13	First Reduction Gear	36-1	Bearing	84	Resistor
14	Retaining Ring	37	Bearing	84-1	Resistor Feet
15	First Reduction Pinion A	38	Planet Driven Gear	84-2	Screw
15-1	Key	39	Gear Support	85	Bridge Regulator
15-2	Spline Housing	40	Socket Bolt	85-1	Screw
15-3	Bearing	41	Retaining Ring	86	Insulation Sheath
15-4	First Reduction Pinion B	42	Oil Seal	87	Bracket
16	Bearing	43	Sun Gear	88	Screw
17	Oil Seal	43-1	Key	89	Controller Cover
18	Gear Left Cover	44	Oil Seal	89-1	Screw
18-1	Socket Bolt	45	Needle Bearing	90	Carbon Brush Holder
18-2	Socket Bolt	46	Retaining Ring	91	Carbon Brush
18-3	Lock Nut (H10)	47	Bearing	92	Carbon Brush Cap
18-4	Chain Anchorage (H10)	48	Bearing	92-1	Protective Cover 1
19	Left Sheet	49	Gear Case	92-2	Protective Cover 2
20	Upper Hook	50	Socket Bolt	92-3	Screw
21	Spacer	51	Bearing	93	Switch with Cable Set
22	Gear Right Cover	52	Second Driving Gear	93-1	Control Cable
23	Retaining Ring	53	Retaining Ring	93-2	Connector
24	Bearing	54	Bearing	94	Power Cable
25	Chain Guide House	55	Second Driven Pinion	95	Cable Sheath
26	Right Sheet	56	Brake Seat	96	Cable Packing
27	Load Chain (6.3MM)	57	Ratchet Disc	97	Screw
27-1	Chain Guide	57-1	Brake Disc	98	Switch Box
28	Buffering Spring	58	Torque Gear Seat	98-1	Sticker
29	Chain Stopper	59	Copper Cover	99	Cable Fixing Plate
29-1	Socket Bolt	60	Press Spring Disc	99-1	Screw
29-2	Locknut	61	Torque Gear	100	Internal Switch Connector
30	Idle Sheave	62	Brake Washer	100-1	Screw
31	Lower Hook Holder	63	Torque Limited Nuts	101	Switch Cover
31-1	Socket Bolt	64	Anti-receding Bushing	102	Screw
31-2	Supporting Spacer	65	Bearing	114	Switch Without Cable
31-3	Locknut	66	Gasket	115	Lower Hook Assy (H10)
31-4	Socket Bolt	67	Brake Case		

8. Spare parts drawing (H10)

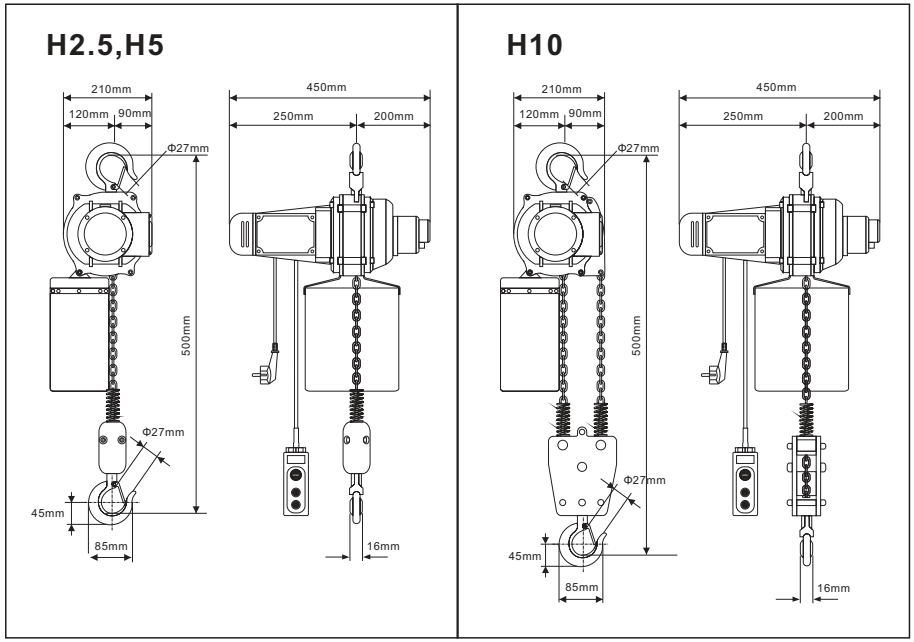


1. Technical information

1.1 Specifications

Model		H2.5	H5	H10
Rated load		250kg	500kg	1000kg
Lifting height		3m	3m	3m
Chain size		6.3x19mm	6.3x19mm	6.3x19mm
Chain fall		Single	Single	Double
Lifting speed		12m/min	6m/min	3m/min
Power supply		Single-phase, 200-240V AC (100-120V) 50/60 Hz		
Motor	100-120V	1300W 12A		
	200-240V	1300W 6A		
Duty Cycle		ED 25% Max.on time: 15 min/hr.Max. number of starts: 150/hr.		
Ingress Protection		Hoist Body	IP54	
		Switch	IP65	
Insulation class		F		

1.2 Dimentions



2. Pre-operational Procedures

2.1 Chain

Chain components including Buffering spring and Chain stop assemblies. Never operate the hoist with incorrect, missing or damaged chain components.

2.2 Load Chain Lubrication

- Always lubricate load chain weekly, or more frequently, depending on severity of service.
- Always make sure to apply ISO VG 46 or 48 or equivalent machine oil. Insufficient oil lubrication will accelerate Load Chain wear.

2.3 Mounting Hoist

Ensure that the suspension and the supporting structure are adequate to support the hoist and its loads. Hook Mounted to a Fixed Location-Attach the hoist's top hook to the fixed suspension point. If necessary consult a professional that is qualified to evaluate the adequacy of the suspension location and its supporting structure.

2.4 Electrical Connections

- Ensure that the voltage of the electric power supply is proper for the hoist.
- Before proceeding, ensure that the electrical supply for the hoist or trolley has been de-energized (disconnected).

2.5 Pre-operational Checks and Trial Operation

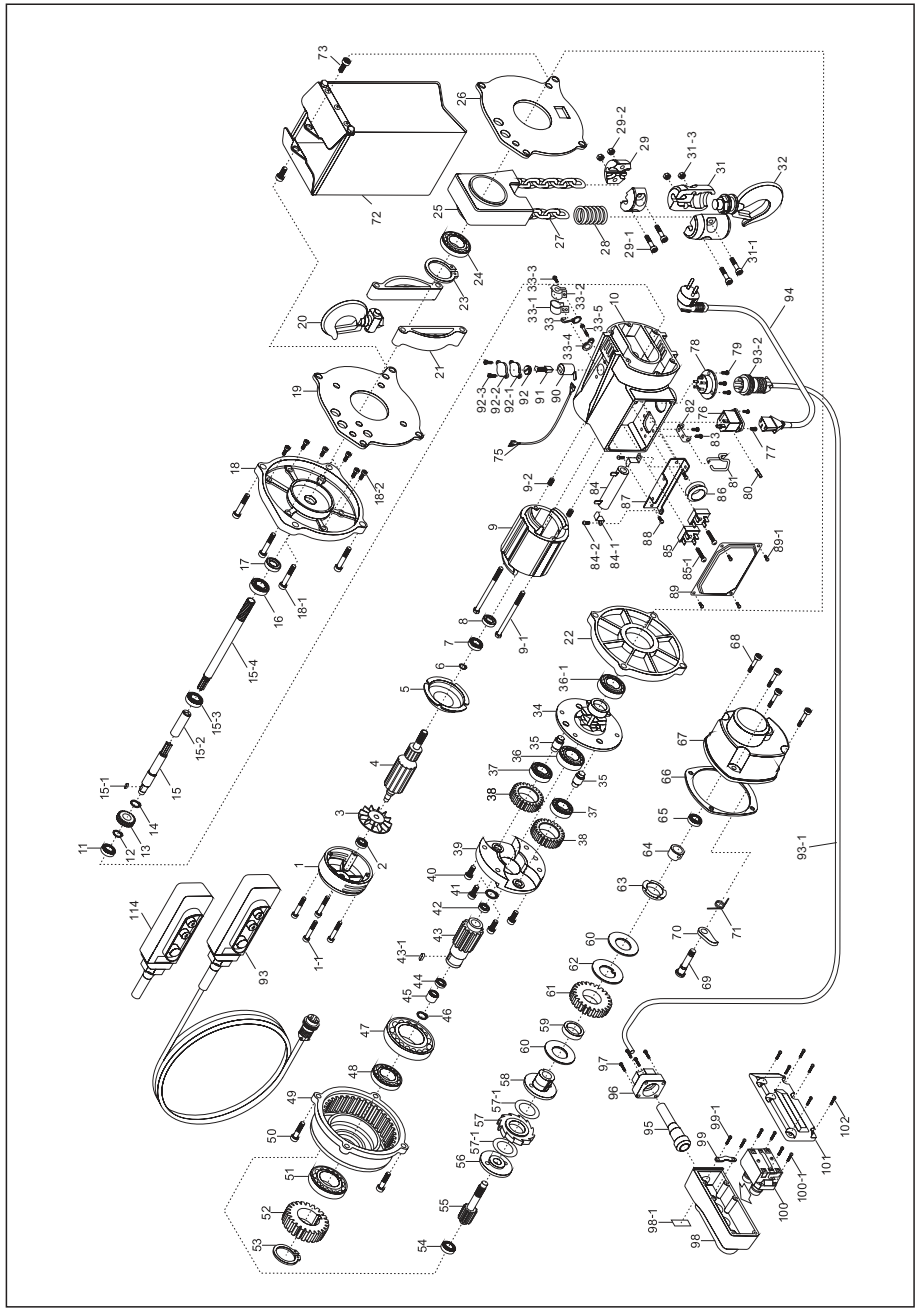
- Confirm the adequacy of the rated capacity for all slings, chains, wire ropes and all other lifting attachments before use. Inspect all load suspension members for damage prior to use and replace or repair all damaged parts.
- Ensure that the hoist is properly installed to either a fixed point, or trolley, whichever applies
- If hoist is installed on a trolley, ensure that: Trolley is properly installed on the beam, and stops for the trolley are correctly positioned and securely installed on the beam.
- Ensure that all nuts, bolts and split pins (cotter pins) are sufficiently fastened.
- Check supply voltage before everyday use. If the voltage varies more than 10% of the rated value, electrical devices may not function normally.
- Before operating read and become familiar with Section 3 - Operation.
- Before operating ensure that the hoist (and trolley) meets the Inspection, Testing and Maintenance requirements
- Before operating ensure that nothing will interfere with the full range of the hoist.

2.6 Environmental Precaution

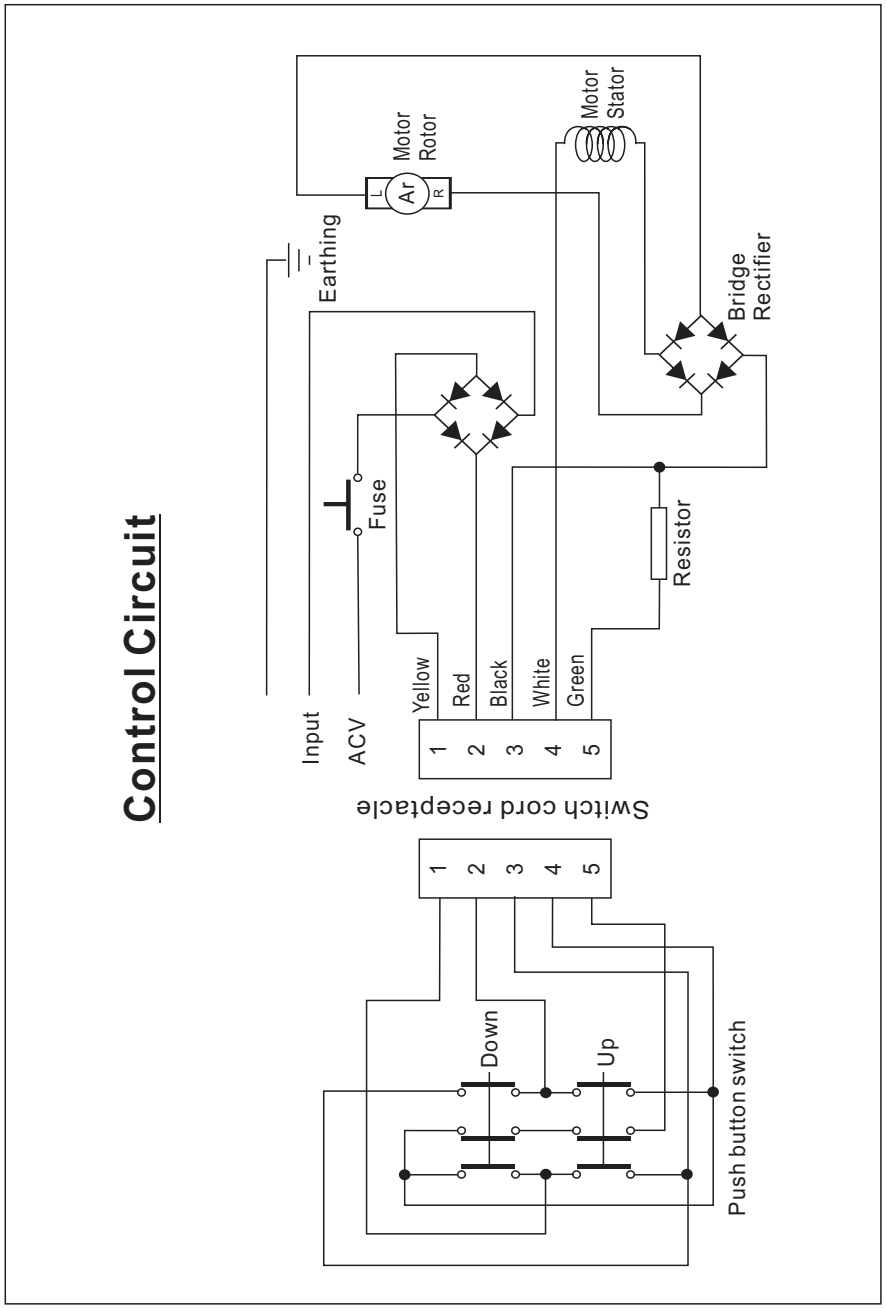
The following environmental conditions may result in the possible causes of electric chain hoist trouble.

- Low temperature below –10° high temperature above 40° or humidity above 90% conditions.
- In an organic chemistry or explosive power conditions.
- In heavy acid or salty conditions.
- In the rain or snow condition.
- In a heavy general powder conditions.

8. Spare Parts Drawing (H2.5,H5)



7. Wiring diagram



3. Operation

3.1 Introduction

- Hoist operators shall be requited to read the operation section of this manul.
- Operator should also be trained in proper rigging procedures for the attachment of loads to the hoist hook.
- Hoist operators should trained to be aware of potential malfunctions of the equipment that require adjustment of repair and to be instructed to stop operation if such malfunctions occur. and to immediately advise their supervisor so corrective action can be taken.
- Hoist operators should have normal depth perception, field of vision, reaction time, manual dexterity, and coordination.

3.2 Handling Precautions

- NOT lift more than rated load for the hoist.
- NOT work, walk or stand under an operating chain hoist
- NOT use the hoist to lift, support, or transport people.
- NOT lift loads over people.
- NOT attempt to lengthen the load chain or repair damaged load chain.
- NOT operate unless load is centered under hoist.
- NOT use hoist with twisted, kinked, damaged, or worn chain.
- NOT use the hoist in such a way that could result in shock or impact loads sheave.
- NOT use load chain as a sling or wrap load chain around load.
- NOT apply the load to the tip of the hook or to the hook latch.
- NOT allow the chain, or hook to be used as an electrical or welding ground.
- NOT operated beyond the limits of the load chain travel.
- Be familiar with operating controls, procedures.
- Make sure the unit is securely attached to a suitable support before applying load.
- Take up slack carefully and make sure load is balance.
- Make sure all persons stay clear of the supported load.
- Protect the hoist's load chain from weld splatter or other damaging contaminants.
- Always look up when working around chain hoist, there is potential danger overhead.
- Warn personnel before lifting or moving a load.
- Warn personnel of an approaching load.

4. Inspection

4.1 Inspection Classification

Inspection should made by Initial inspection-prior to initial use, all new, altered, or modified electric chain hoist, daily inspection and periodical Inspection as the following table.

Inspection Classification				Inspection Item		Inspection Method	Inspection Reference
Daily	Periodical						
	One month	Three month	One year				
			◎	Marking	Label and the like	Visual	Existence of label
		◎		Installation	Functional operating mechanisms	Visual	To be properly adjusted and free from unusual sounds when operation
◎				Control/ Switch	Working	Function	Reasonable actuation
◎					Housing	Visual	To be free from cracks
◎					Wiring	Visual	To be free from remarkable loose or damaged
◎					Cord	Visual, electricity	To be free from exposure of conductive wire
	◎			Motor	Condition of insulation	Measure with resistance tester	1MΩ min
◎					Staining damage	Decomposition check	To be free from abnormalities
		◎		Braking	Wearing of brake disc	Decomposition check	To be free from remarkable wear and damage
	◎			Gear	wearing	Decomposition check	To be free from remarkable wear and damage
◎				Load Chain	elongation of link length	Measure	5% minimum
◎					Decreasing of link diameter	Measure	8% of normal diameter max
◎					Kink phenomena run-out of foundation	Visual	To be free from kink phenomena
◎					Deforming or corrosion	Visual	To be free from abnormality
◎					Lubrication condition	Lubricating	The chain should be lubricated every week for normal usage
◎					Surface condition	Visual	To be free from rust, nicks, gouges, dents and weld splatter.
		◎		Sprocket / Idle Sheave	Reeving	function	Chain should be reeved properly through sprocket and idle sheave for double fall operation
◎				Frame	Housing and mechanical components	Visual, function	To be free cracks, rupture harmful deformation
◎				Load Hook	Housing and mechanical components	Visual, function	To be free cracks, rupture and harmful deformation by 5% maximum
◎					latch	Visual	To be free from deformed

6. Trouble shootings

Symptom	Possible cause	Remedy
Hoist lifts but not low	Down circuit open	Check circuit for loose connectors. Check down side of limit switch for malfunction
	Broken conductor in switch cord	Check the continuity for each conductor in the cable. If one is broken, replace entire cable.
	Faulty switch	Check electric continuity. Check electrical connections Replace or repair as needed.
	Hoist overloaded	Reduce load to within rated capacity
Hoist not lift rated load	Faulty friction clutch	If abnormal operation or slippage occurs do NOT attempt to disassemble or adjust the mechanical load brake with friction clutch. Replace the worn or malfunction mechanical load brake with friction clutch as an assembly with a new, factory adjusted part.
	Brush wear	Insect motor brush and replace it if necessary
Short circuit	Melted contact of switch	Replace switch
	Burnt resistor	Replace resistor
	Burnt motor	Replace motor
	Accumulating too much carbon powder on carbon brush holder	Clean carbon powder
Having smell or smoke	Burnt resistor	Replace resistor
	Malfunction of contact of the switch	Replace switch
Oil leakage	Improper installation of cap screw	Proper installation of cap screw.

6. Trouble shootings

Before performing any trouble shooting on the electric chain hoist, de-energize the supply of electricity as hazardous voltages are present in the electric chain hoist and in connections between components.

Symptom	Possible cause	Remedy
Hoist not operate	Loss of power	Check circuit breakers, switches, fuses and connections on power cable.
	Wrong voltage or frequency	Check voltage and frequency of power supply against the rating on the nameplate on motor.
	Improper, loose, or broken wire in hoist electric system	Shut off power supply, check wiring connection on hoist control panel and inside push-button pendant.
	Motor overheated	Take a rest and perform the hoist according to its duty cycle percentage rated at 25%ED.
	Motor burned out	Replace motor frame,stator, shaft, armature and any other damaged parts.
	Fuses burned out	Replace fuses
	Brush wear	Insect motor brush and replace it if necessary
Hoist lows but not lift	Faulty switch in pendant	Check electrical continuity. Check electrical connections. Replace or repair as needed.
	Faulty friction clutch	Repair by a qualified person trained in repair of hoist and proper friction clutch adjustment procedures. Replace it as needed.
	Hoist overloaded	Reduce load to within rated capacity of hoist
	Up circuit open	Check circuit for loose connections. Check up side of limit switch for malfunction
	Broken conductor in pendant cord	Check the continuity of each conductor in the cable. If one is broken, replace entire cable.

5. Maintenance and replacement

5.1 Lubrication

■ Load chain

- For longer lift, the load chain should be lubricated.
- The load chain lubrication should be accomplished after cleaning the load chain with an acid free cleaning solution.
- The chain should be lubricated every 3 months.

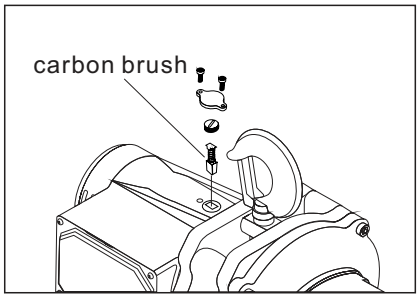
■ Needle bearing of Low hook Idle sheave

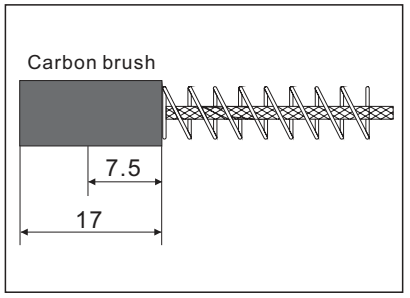
Bearing should cleaned and lubricated at least once per year for normal usage. Clean and lubricate more frequently for heaver usage or severe conditions.

5.2 Carbon Brush Replacement

Clean the accumulated powder of carbon brush periodically to ascertain the insulation resistance up to 1 MΩ.

- It is essential to check the carbon brush periodically. If its length is left less than 7.5 mm resulting from wear, it is absolute necessary to replace carbon brush immediately.
- While replacing, smoothly insert carbon brush into carbon holder in the first place, then put brush cap into the hole.
- Before tightening the carbon brush holder, make sure to position O-ring.
- A set of carbon brush consists 2 piece of carbon brush. Ascertain to replace 2 pieces of carbon brush on opposite sides of winch body at the same time.



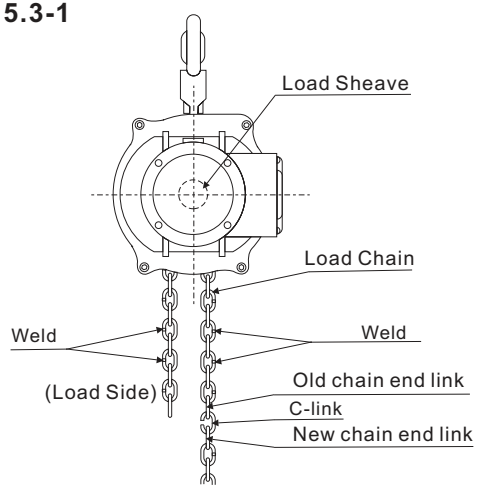


5. Maintenance and Replacement

5.3 Load Chain Replacement

- Be sure that the replacement chain is the exact size, grade and constructions as the original chain.
- The new load chain must have a an odd number links so that both its end links have the same orientation.
- Destroy the old chain to prevent its reuse.
- When replacing load chain, check for wear on mating parts, such as Load sheave and replace parts if necessary.
- Remove all chain components including bottom hook kit from the old chain for reuse on new chain.
- Inspect and replace any damaged or worm parts.
- When replacing chain, pay an attention to chain weld side. Weld side must be to outside. Refer to Dwg. 5.3-1
- Single fall operation: Using a C-link to attach the end link of new chain and old chain. then pass over the load sheave.
  Refer to Dwg.5.3-1 and Dwg.5.3-2
- Double falls operation: Using a C-link to attach the end link of new chain and old chain. then pass over the load sheave and all remaining chain components. Refer to Dwg.5.3-1 and Dwg. 5.3-2
- Make sure Chain stopper, Buffering spring, Chain guide, Chain anchorage, Socket bolt, Locknut are properly installed.
- Operate the hoist down to move the chain through the hoist body, until a sufficient amount of new chain is accumulated on the load side.

Dwg. 5.3-1

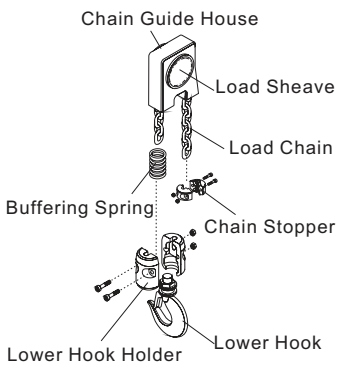


5. Maintenance and replacement

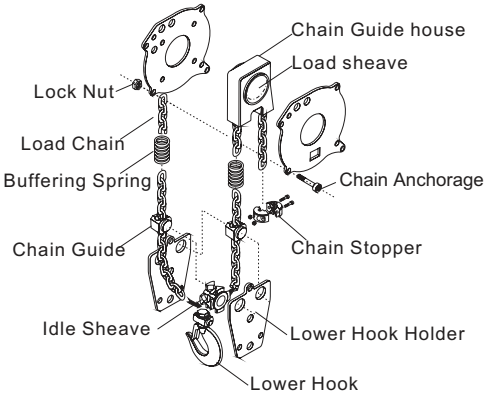
5.3 Load Chain Replacement

Dwg. 5.3-2

Single fall (H2.5, H5)



Double falls (H10)



5.4 Mechanical Load Brake with Friction Clutch

Mechanical Load Brake with Friction Clutch- If abnormal operation or slippage occurs DO NOT attempt to disassemble or adjust the Mechanical Load Brake with Friction Clutch. Replace the worn or malfunctioning mechanical Brake with Friction Clutch as an assembly with a new one which factory adjusted part.

5.5 Fuses

The fuses size -main fuses rating (Amps) 10

5.6 Outdoor Installation

- The storage location should be clean and dry.
- For hoist installations that are outdoors, the hoist should be covered when not in use.
- Possible of corrosion on components of the hoist increases for installations where salt air and high humidity are present. Make frequent and regular inspections of the unit's condition and operation.