



Warrior Electric Chain Hoists ECH250, ECH500 & ECH1000



User Manual

CE

CERTIFICATE OF INSPECTION

This product has been examined and passed our standards to be allowed to leave the factory.

Model No:

Serial No:

Manufacture Date:

In the Box:

1. Chain electric hoist..... 1 pc
2. Bucket stationary shaft..... 1 pc
3. Inner hexagon socket screw 2 pcs
4. Hexagon nut..... 2 pcs
5. Flat washer 4 pcs
6. Inner hexagon spanner 1 pc
7. Grease..... 1 bag
8. User manual..... 1 copy

Carefully read this manual for proper operation before setting-up, operation, maintenance and inspection of the electric chain hoist. Do not begin to operate it before you have read this manual.

Special Warning

1. **ENSURE**, before operation, that the electric chain hoist has a reliable earth connection.
2. **DO NOT** use an electric chain hoist with twisted, kinked or damaged load chains. Make sure that the bottom hook of the load chain is in good working order.
3. **DO NOT** lift a load which exceeds the rated load. The rated load is indicated on the hook block or on the identification plate of the electric chain hoist body.
4. **DO NOT** climb on a suspended load and do not use the electric chain hoist to lift, support or transport persons.
5. **DO NOT** work under a suspended load.
6. **DO NOT** operate chain hoist in damp, wet or rainy conditions After outdoor use the chain hoist **MUST** be removed and stored inside in a dry area.
7. **DO NOT** lift a load using the tip of hook.
8. **DO NOT** operate the electric chain hoist intermittently (abrupt reversing & frequent inching).
9. **NEVER** try to operate the electric chain hoist above or below up & down lifting limits.
10. **DO NOT** lift a load using more than one chain hoist at a time.
11. The length of the outdoor power supply cable **SHOULD NOT** exceed 50 meters. Otherwise, the power supply cable diameter should be increased to avoid high amperage.
12. After the power supplied and before the operation, the three or single phase power consumption should be checked.

Note: The load chain of the electric chain hoist is not lubricated when it leaves the factory. Make sure before operation that you have applied No.20 oil or grease.

Introduction

The Warrior electric chain hoist adopts advanced Japanese technology to improve the labour & efficiency in the work place, is suitable for use in fabricated buildings, barns, factories, warehouses, construction sites, and is the ideal tool for many lifting and lowering applications.

Main features

1. High Safety

a. The electric chain hoist has power supply phase protection which will automatically activate if the incorrect phase is used. This in turn will prevent the chain hoist from any movement.

b. The electric chain hoist has upper & lower limit devices. The power supply will be automatically cut and the hook will stop moving immediately when the hook reaches its limit.

2. Elegant Design

a. The electric chain hoist is of small volume, light weight and beautiful design constructed of die-cast aluminium structure.

b. The electric chain hoist is made of 3 stage planetary gearing which provides smooth and low noise driven gearing.

3. High intensity of components and spare parts

a. The main components and spare parts of the electric chain hoist have the feature of high durability which adopts advanced alloy steel with multi special heat treatment machining.

b. Upper and lower hooks have the feature of high tensile strength which adopt advanced alloy steel with heat treatment machining. Thus, if the electric chain hoist is overloaded the hook will minor distort instead of brittle rupture.

4. The electric chain hoist features a chain bucket or bag which prevents locking or damage if the load chain when it is raised and lowered automatically.

Technical Specs

	Capacity (t)	Lifting height (m)	Lifting Chain (mm)	Voltage	Motor Load	Power	Current (A)	Lifting Speed (m/min)
ECH500	0.25	3	5x15	240v	S3 - 30% 20 min	400 watts	3.5	8
ECH500	0.5	3	8x24	240v	S3 - 30% 20 min	650 watts	6.5	5
ECH1000	1	6	8x24	240v	S3 - 30% 20 min	650 watts	6.5	2.5

Environment requirement

1. Relatively humidity: <85%

2. Temperature: -25°C to 40°C

3. Altitude: < 1 000m

4. Do not use where there is danger of fire, volatile or poisonous gases, molten metal, flammable or explosive substances.

5. Noise Level >95 dBa

Operation instructions

1. Installation and set up

a. Suspend the electric chain hoist on a reliable frame or support beam, connect a suitable power source to the hoist and press the up and down push button on handset. Watch the working condition of the electric chain hoist, the connection is correct if the hook moves according to the direction of the push buttons. Otherwise, when the electric chain hoist does not operate while the breaker is put on and a push-button is pressed, the electric chain hoist is being blocked by the function of “negative phase protection device” (**Three phase 380V Model Only**) In such a case, put the breaker off and change the T-line (black) with the R-line (red) on the cable side. The electric chain hoist will then properly operate. (ENSURE sure that the S-line is connected to the earthed phase of the power source.)

b. Check the electric chain hoist for movement operation for approx. 10 min before first load being applied. (Do Not use for a long periods of time).

2. Frequency

The motor of the electric chain hoist adopts S4 chain motor which starts about <240 times/h

3. Maintenance

Regular maintenance should be carried out by competent personal only, pay close attention to the main components and moving parts:

a) Load chain: Keep the electric chain hoist oiled or lubricated in the daily operation and the operator should check the for worn condition of the chain on daily basis.

b) Brake system: Make sure friction pads are clean, not worn or damaged. It is **IMPERATIVE** to pay attention to the damaged or worn condition of the friction brake pads. If the thickness of the friction pads is too small to work or load is creeping, then they should be replaced immediately with a new set (Can buy separately from agents or manufacturer).

c) Gear-driven part: It should be cleaned and oiled (No.1 lubricating oil) as set out in the annual inspection.

d) All bearing: It should be cleaned and oiled (No. 1 lubricating oil) as set out in the annual maintenance.

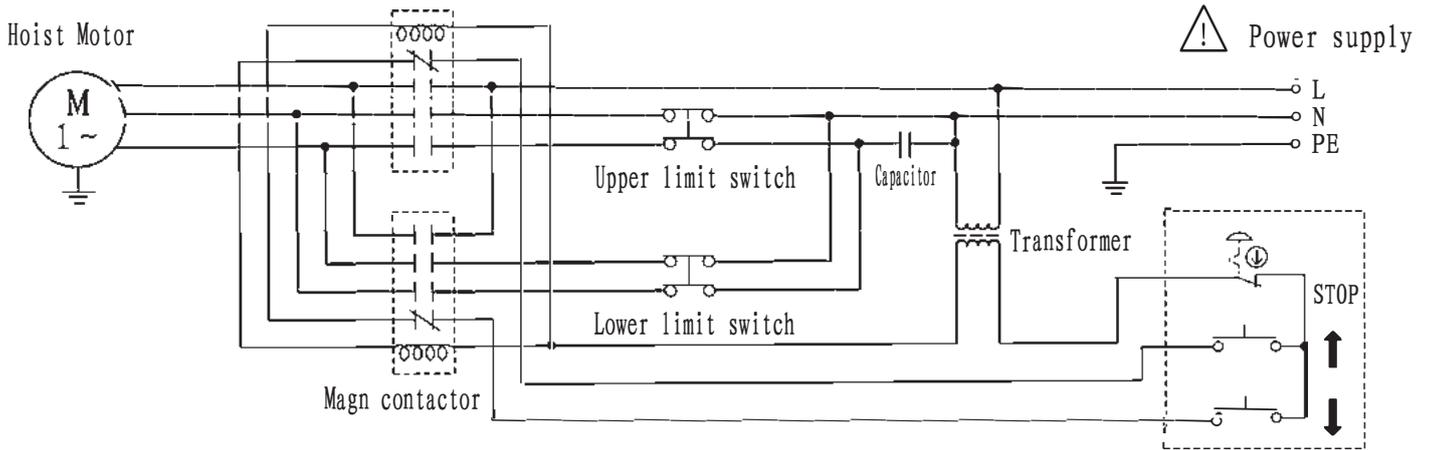
e) Hook: Pay attention to the worn condition of the hook in annual maintenance. If the worn place bigger than 10% of the hook, then it should be replaced with a new one.

4. Repair warning: If the electric chain hoist is destroyed or inoperative in use, please inform us or our identified agents instead of repairing it by yourselves.

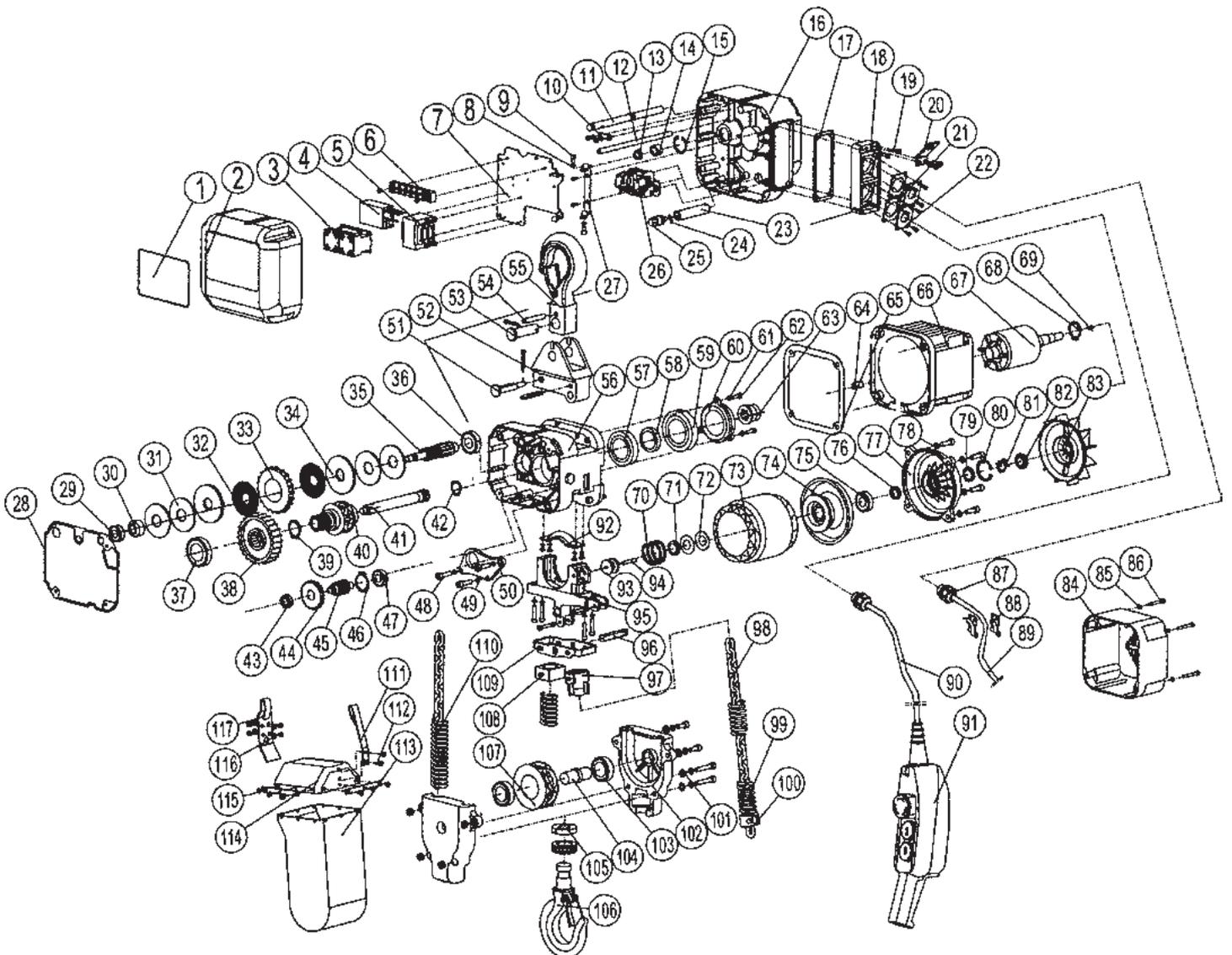
Troubleshooting

Issue	Possible reasons	Suggested Fix
The motor does not work	Improper connection of power supply line	Properly make connection of R-S-T lines of power source
	Master switch on the switch cabinet is turned off. Fuses are burnt out. Breaker is activated.	Check the switch cabinet and turn on the master switch.
	Power source is connected to the reverse phase.	Make change of R-T lines of power source
The unit does not work after the power source connected and have buzzer sound in the brakes	The voltage is too low and the electromagnetic can not open	Secure voltage as specified.
	Bad connection of master switch	Check for it continuity and replace damaged parts with new one. Secure connection.
The unit exhibits other movements than those directed by the push-buttons	Inside wiring like push-buttons and electromagnetic relay are not correct	Make proper connection as per connecting diagram
	Malfunction of directional switches	Check for connection
	Incorrect connection of motor starting coils	Make change of starting coil terminals.
Brake does not function	Big voltage drop of power source	Secure voltage as specified
	Brake gap exceeds the limit	Replace worn parts with new one.
	Terminals are disconnected. Solenoid coil burnt out.	Replace the brake coil with new one
	Damaged rectifier	Replace the printed board with new one
	Incorrect connection of printed boards	Make correct connection according to marking of the boards
Abnormal sound	Extremely worn gears	Replacement of parts
	Extremely worn chains, sprockets and guides	Replacement of parts
When contacting the electric chain hoist, a shock is given	Wrong grounding	Firmly connect the earth line to the earth. Firmly connect the travel rail to the earth. Keep the rail face contacting the wheels free from paint,etc
	Electrical components like push-buttons are not properly insulated	Make repair of disordered points and replace damaged parts with new ones.

Single phase series electric chain hoist wiring diagram



Technical Parts Diagram



Technical Parts List

NO	Description	NO	Description	NO	Description
1	Nameplate	41	Motor output shaft	81	Thrust washer
2	Junction box cover	42	External circlip	82	Round nut
3	AC contactor	43	Bearing	83	Fan blade
4	Phase sequence protector	44	Transmission gear (A)	84	Cover
5	Transformer	45	Transmission shaft A	85	Spring washer
6	Connector terminal	46	External circlip	86	Hexagon slot round bolt
7	Mounting plate	47	Bearing	87	Housing plug
8	Spring washer	48	Hexagon slot round bolt	88	Guy clip
9	Hexagon slot round bolt	49	Spring washer	89	Power cord
10	Spacing plate	50	Bearing plate	90	Control cable
11	Hook shaft	51	Chain axle	91	Control switch
12	Hanging pole	52	Hook bracket	92	Protective cover
13	Oring	53	Hook fixed shaft	93	Guide wheel
14	Shaft sleeve	54	Elastic cylindrical pin	94	Cylindrical pin
15	Internal circlip	55	Hook components	95	Chain guide holder
16	Gear box cover	56	Gear case	96	Spacing axis (2)
17	Gasket	57	Bearing	97	Guiding inlet (B)
18	Wire holder	58	Rubber seal ring	98	Chain
19	Hexagon slot round bolt	59	Bearing	99	Spacing spring
20	Hang line board	60	Bearing seat	100	Chain buckle
21	Seal ring IH	61	Spring washer	101	Flat washer
22	Tensile machine plate	62	Hexagon slot round bolt	102	Loose pulley box
23	Limit shaft A	63	Spline sleeve	103	Bearing
24	Elastic cylindrical pin	64	Elastic cylindrical pin	104	Loose pulley shaft
25	Limit shall head	65	Seal ring II	105	Load semicircle hoop
26	Limit switch	66	Motor casing	106	I look
27	Hinge seat	67	Rotor	107	Hook chain guide
28	Seal ring I	68	External circlip	108	Guiding inlet (A)
29	Locknut	69	Flat key	109	Chain guiding inlet plate
30	Centering sleeve	70	Tripping spring	110	Socket cap screw
31	Disc spring(big)	71	Retaining ring A	111	Lifting lug (2)
32	Paper-based friction plate	72	Disc spring(small)	112	Socket cap screw
33	Transmission gear (B)	73	Stator	113	Chain bucket
34	Pressure plate	74	Brake set	114	Tray entrance
35	Transmission shaft B	75	Bearing	115	Pressing plate
36	Bearing	76	Retaining ring B	116	Nut
37	Bearing	77	Motor cover	117	Lifting lug (1)
38	Sprocket shaft gear	78	Spring washer		
39	External circlip	79	Shaft sleeve		
40	Chain wheel	80	Internal circlip		



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