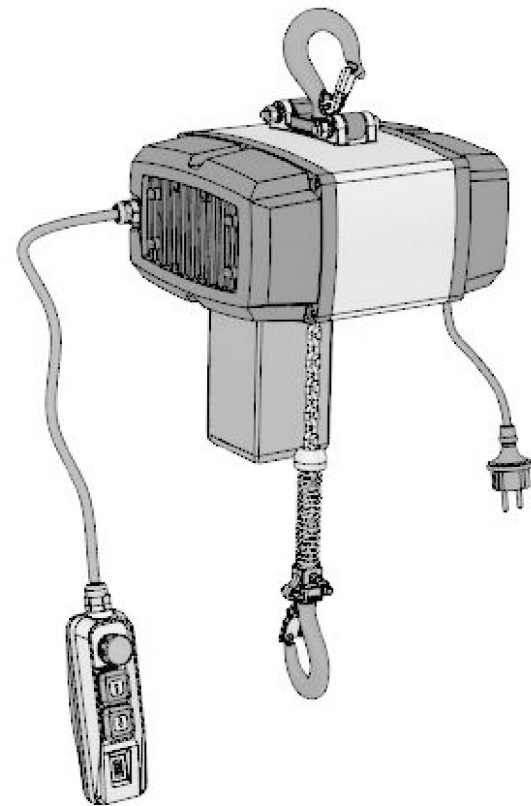


TSH Series Electric Chain Hoist

Instructions For Use



Description

Thank you for buying our TSH Series Electric Chain Hoist, we hope that it will help you when you need it.

Before installing and operating the TSH Series Electric Chain Hoist, be sure to read and understand the issues and precautions mentioned in this Instruction for Use carefully, especially the Warning Instructions and Safety Operating Procedures. Ensure that the person operating TSH Series Electric Chain Hoist has carefully read and understood the contents of this Instruction for Use before operation.

Product Instruction for Use is subject to change without notice.

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Technical Parameters

Model number	TSH series							
	100	200	250		500		1000 (Double hook)	
Voltage	230V		230V	380V	230V	380V	230V	380V
Rated power	3.5A		7.5A	3A	7.5A	3A	7.5A	3A
Rated current	450W		1100W					
Rated load	100	200	250		500		1000	
Lifting speed	0-18.0 m/min	0-9.0 m/min	0-20.0 m/min		0-10.0 m/min		0-5.0 m/min	
Lifting height	5m							
Insulation class	B							
Chain diameter	4.0mm		6.3mm					
Mechanism job class	M5							
Breaking strength of chain	≥900N/mm²							
Protection class	IP54							
Working system	S3 50% -10min							
Working temperature range	0-40℃							
Net weight	13.4Kg		30Kg				36.8Kg	

Warnings

- (1) Open the box to remove the Electric Chain Hoist. Carefully check hoist profile, wire, hook, chain and control switch for damage during transport. Make sure to check whether there are debris placed and wound on the chain, whether the chain is in a knotted state, and if it is checked that there is no difference, connect the upper hook parts to the machine correctly according to the instructions for use. If you try the machine in a hurry, it can cause the chain to crash the direction stop or jam the machine.
- (2) Ensure that cable is properly positioned from rotating or moving objects on the Electric Chain Hoist.
- (3) Electric Chain Hoist shall be powered off and insulated when unattended or temporarily away from the operator. Do not hang heavy objects in air for extended periods of time to prevent permanent deformation or accident of parts.
- (4) Do not let electric chain hoist exposed in rain or use electric chain hoist in damp places. Keep the work area well lit and do not allow electric chain hoist near flammable liquids or gases.
- (5) When electric chain hoist is in a rising or falling state, ensure that personnel do not move within the lifting range to prevent accidents.
- (6) Electric chain hoist should not be used for handling hot melts and should not be used in hazardous or low-temperature environments.

Safe Operating Procedure

Before using Electric Chain Hoist, be sure to pay attention to safety and the following safety practices:

1. The installation location of electric chain hoist must be selected to meet safety needs and facilitate operation. Periodically check that electric chain hoist is installed securely and chains are intact.
2. The elevating capacity of electric chain hoist is limited. Do not use under overload or use in situations where the weight of the lifted object is unclear (including lifting the implant)! Overloading will not only damage electric chain hoist components and service life, but also increase unsafe factors during operation.
3. When lifting heavy objects, do not use twisted, knotted, damaged and worn chains.
4. It is recommended to electric chain hoist at a temperature range of 0-40 ° C. If electric chain hoist is applied at extreme ambient temperatures (above 40 ° or below -10 °), it will degrade the performance of the lubricant, which will increase the additional burden of work.
5. When the speed of electric chain hoist is too slow, it indicates overload, this can lead to lifting a heavy object in an abnormal situation or inability to lift a heavy object. Some noise may be generated when the lifting load exceeds the rated value and 1 appears on the handle Nixie tube. If this situation occurs, stop electric chain hoist immediately and reduce the load to the rated value. When the overload is removed, the machine can operate normally.
6. Electric chain hoist is designed according to the working system of S3 50% - 10 min (i.e., 5 min of work and 5 min of rest). Do not use continuously for a long time. Continuous use of it may increase unsafe factors during operation; in severe cases, it may damage the motor components.
7. It is not allowed to “pull” (pull obliquely, fall obliquely, etc.) the electric chain hoist suspended objects while working, which will increase the load of electric hoist and easily make in in the overload situation.
8. If the chain needs to be replaced, its model and specification must be consistent with the original chain.
9. Keep the work area of electric chain hoist clean and tidy. No idle personnel shall be near the working area, no one shall touch the tightened chain, and no one shall stand under electric chain hoist in operation.

10. When operating the chain, wear thicker gloves and do not let the chain slide over other parts of your body to avoid cutting your body by the damage of the chain.
11. After end of operation of electric chain hoist, unplug the power supply in time to ensure that electric hoist is in a de-energized state.
12. Do not catch on the chain itself with the hook, or tether the suspended object with the chain of electric hoist, otherwise it will damage the chain. Please use other suitable ropes to fasten the suspended object.
13. The upper and lower limits are configured as a safety device to automatically cut off the rising or falling circuit when the hook rises or falls to the limit position. Do not use a stopper as a travel switch.
14. Do not use electric hoist to lift a person or for use in a manned elevator.
15. The electric hoist installation position shall be selected so that the warning mark and indicative mark are in a conspicuous state and shall be correctly operated according to the relevant mark.
16. Ensure that electric hoist is operating without obstructions.
17. Do not operate electric hoist in alcohol consumption, medication, illness, and external conditions.
18. When the Electric Chain Hoist is working, do not work under and around the hoist to avoid accidents.
19. Please use the fixed attachments provided with this product, otherwise it may put you in an unsafe state.
20. Do not modify or weld parts of the Electric Chain Hoist at will, otherwise it will reduce the safety performance of the Electric Chain Hoist and thus make you in an unsafe state.

Installation

1. Before using electric chain hoist, connect hook correctly to the machine according to the Figure 1. A 1 mm clearance should be left in the connection between the self-locking nut and the reducer box, and over-tightening will create unnecessary stress and cause damage to the box.

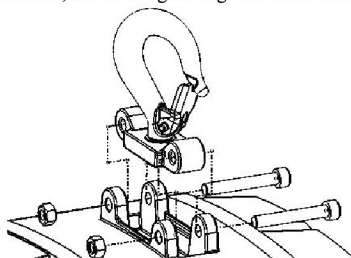


Figure 1-1 TSH-100&200

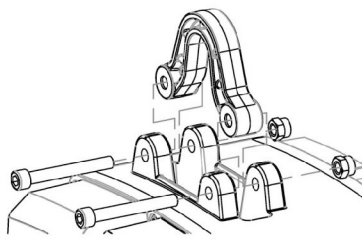


Figure 1-2 TSH-250&500

2. The installation location of electric chain hoist depends on the job needs as appropriate. (Recommended to be mounted on a dedicated electric hoist holder, which must be firm and reliable). Structures used to support electric hoist must have sufficient strength to withstand multiple loads applied. Insufficient strut strength of hoist suspension may cause injury and damage to hoist and load, causing electric hoist not working properly. Fixation of electric chain hoist requires the use of accessories such as upper hook and fixation bolts. (This product has provided accessories). Ensure the components are installed correctly.
3. The standard power supply for electric chain hoist operation is single-phase AC 230 (V)/50 (Hz) and must use a socket with ground wire.

Introduction of Components: See Figure 2

1. Upper hook
2. M8 self-locking nut
3. M8 * 55 internal hex screw
4. Main body
5. Operating handle
6. Lower hook
7. Chain bag
8. Power cord

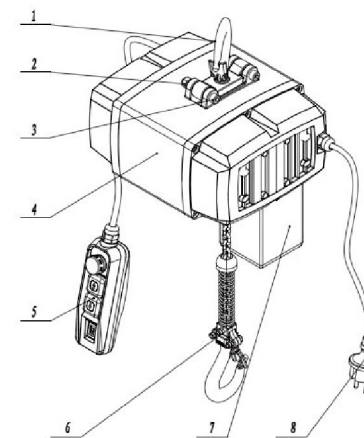


Figure 2

Operating Method

Operating handle : See Figure 3

The operation handle of TSH series electric chain hoist uses magnetic contactless induction switch, when the switch is not operated, the rise button and fall button are in the disconnected state, and the emergency stop switch is in the ON state. Pressing the emergency stop switch to keep the emergency stop switch in the OFF (functional failure) state, and slightly turning the emergency stop switch clockwise to return the emergency stop switch to the ON (functional effective) state. When the emergency stop switch is in the ON state, press the rise button, the rise switch is in the ON state, the power supply of the rise loop of the electric hoist is on, while the electric hoist is in the running up state, the speed of the electric hoist lifting will change with the distance pressed by the rise button. When pressing the drop button, the drop switch is in the ON state, the power supply of the drop loop of the electric hoist is on, while the electric hoist is in the operation down state, and the speed of the drop of the electric hoist will change with the distance pressed by the drop button. When the electric hoist is in the lifting or dropping state, press the emergency stop switch, then the ascending loop and descending loop are disconnected at the same time. At this point, the electric hoist can not operate after pressing the up button and down button, in this case, reset emergency switch to make electric hoist work normal. Below the button is a digital display tube that shows the various states of the machine. Figure 3

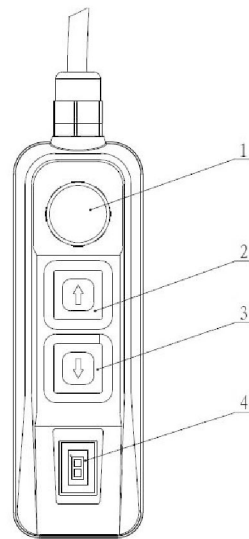


Figure 3

1. Emergency switch stop 2. Up button 3. Down button 4. Digital tube

Maintenance Measures

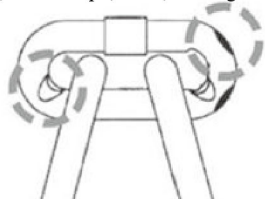
Periodically inspect bolts and power cords of electric hoist and promptly remove dust, water, and corrosive fluids that have accumulated on the cables.

Lubricating oil

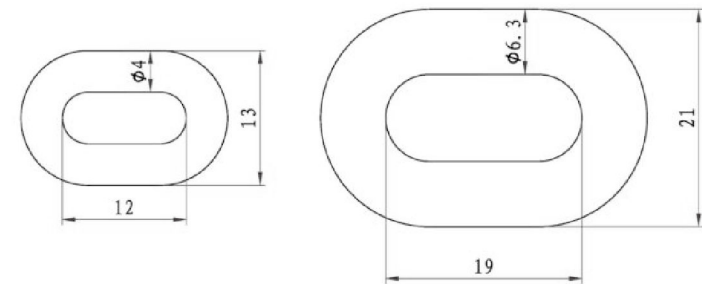
Newly purchased electric chain hoist is filled with lifelong maintenance lubricant. During operation of the electric chain hoist, there may be a small amount of lubricant oozing, especially during the first operation. This is normal situation and does not require adding of lubricating oil of the electric chain hoist.

Chain

It is required to regularly inspect the chain components of electric chain hoist, and replace the chain if there are any of the above defects in the chain such as notch, ditch, twisted chain, welding slag, corrosion pit, crack, welding fracture, wear and stretch. As shown in the figure:



Chain specification is as follows:



4.0mm chain size

6.3mm chain size

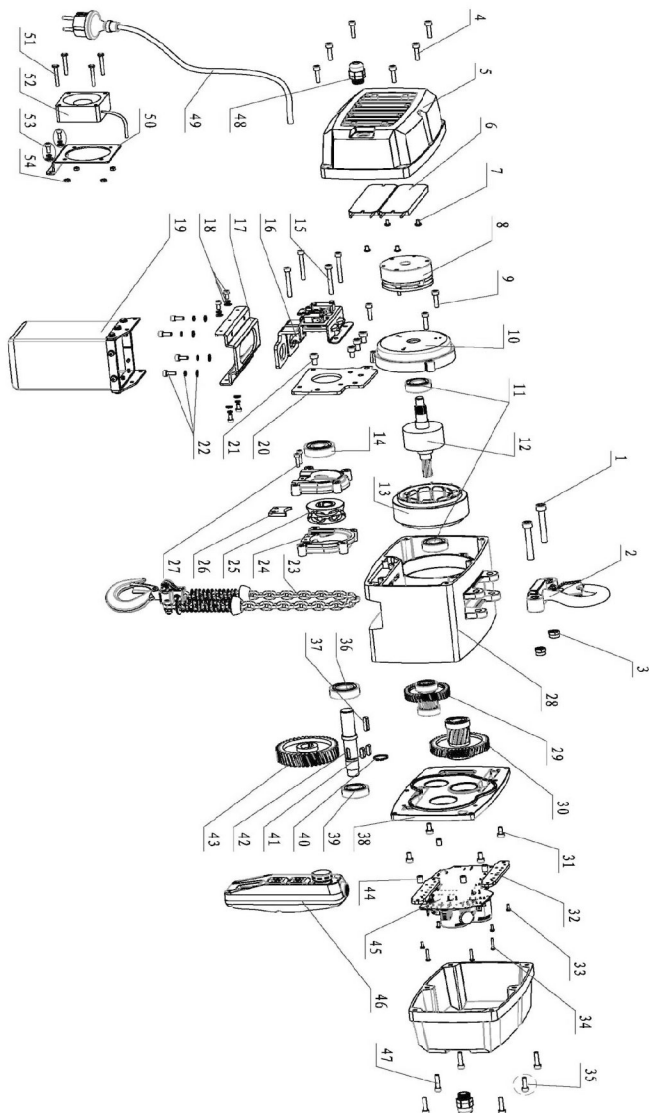
Recommended use of original chain

Inspect of upper and lower hook:

The main damages of hook include corrosion, deformation, fracture, or distortion greater than 10 ° compared with normal hook, enlarged hook opening, etc., which indicate improper use or overload of hook.

Check hook safety catch to make sure it is not damaged or bent. The criteria for hook to work properly are that the hook can be pressed firmly against the hook, and when released, the hook can be repositioned and pressed along the hook edge, and the hook can work normally. If the hook safety catch does not work properly, it should be replaced.

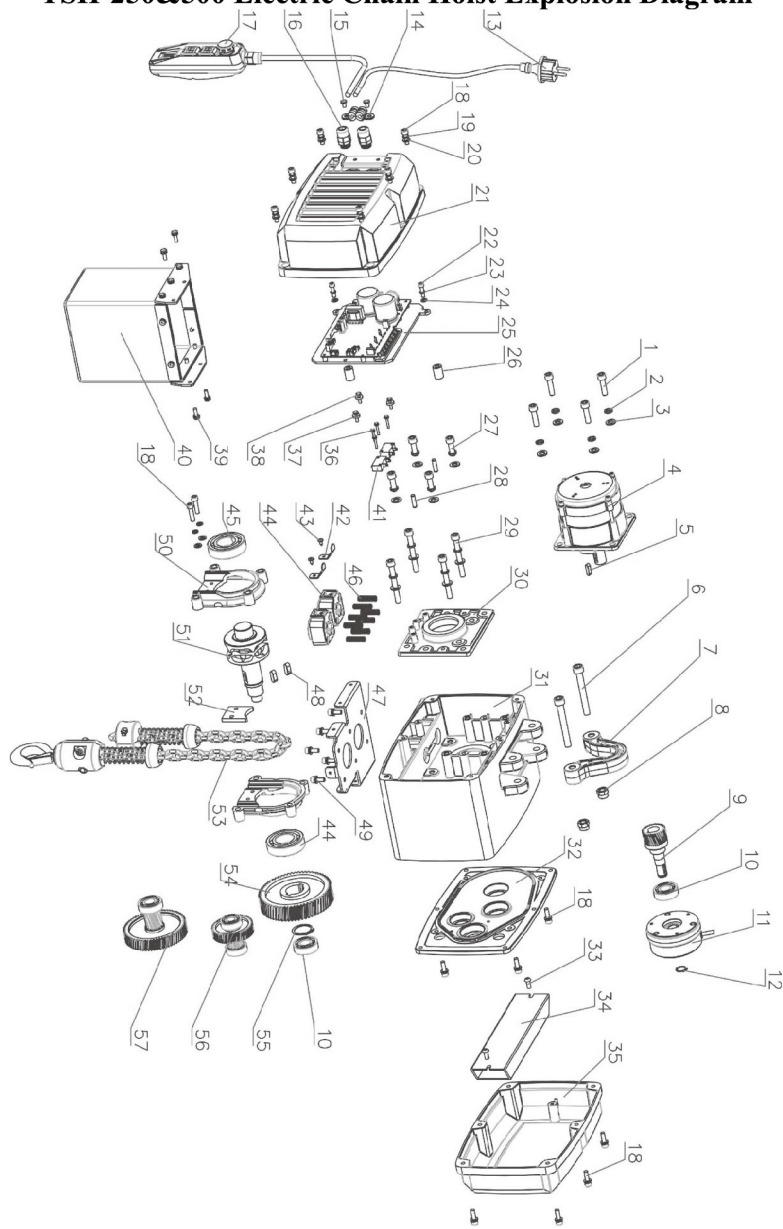
TSH-100&200 Electric Chain Hoist Explosion Diagram



Details of TSH-100&200 Electric Chain Hoist Explosion Diagram

No.	Components	Quantity	No.	Components	Quantity
1	Hexagon socket cap screws M8 × 55	2	33	Cross recess head screw M3 x 8	4
2	Hook assembly	1	34	Cross recess head screw M3 x 16	4
3	Lock nut M8	2	35	Hexagon socket cap screws M5 x 16	1
4	Hexagon socket cap screws M5 x 20	6	36	Rolling bearing 6203-2RS	1
5	Appliance cover	2	37	Flat key 5 x 22	1
6	Resistance	2	38	Reduction case cover	1
7	Cross recess head screw M4 x 6	4	39	Rolling bearing 6202- 2RS	1
8	4N/M brake	1	40	Flex ring for axis d17	1
9	Hexagon socket cap screws M5 x 30	3	41	Flat key 5 x 16	2
10	Motor rear cover	1	42	Chain wheel axis	1
11	Rolling bearing 6202-2RS	2	43	Tertiary gear wheel	1
12	Rotor	1	44	Plastic pad	4
13	Stator	1	45	Main control board	1
14	Rolling bearing 6203-2ZN + stop ring d40	1	46	Handle assembly	1
15	Hexagon socket cap screws M5 x 45	4	47	Hexagon socket cap screws M5 x 20	5
16	Limit assembly	1	48	Cable fixing head M16	2
17	Chain belt base	1	49	Plug	1
18	Cross recess head screw triple combination M4 x 10	4	50	Fan mounting plate	1
19	Chain belt components	1	51	Cross recess head screw M4×30	4
20	Support plate	1	52	Fan	1
21	Hexagon socket cap screws M6 x 14	4	53	Hexagon socket cap screws three-in-one combination M4×10	2
22	Hexagon socket cap screws triple combination M5 x 12	4	54	All metal lock nut M4	4
23	Chain assembly	1	55		
24	Chain wheel racket	2	56		
25	Chain wheel	1	57		
26	Chain baffle	1	58		
27	Hexagon socket cap screws M4 x 16	2	59		
28	Casing	1	60		
29	Primary gear assembly	1	61		
30	Secondary gear assembly	1	62		
31	Hexagon socket cap screws M5 x 10	4	63		
32	Heating panel	2	64		

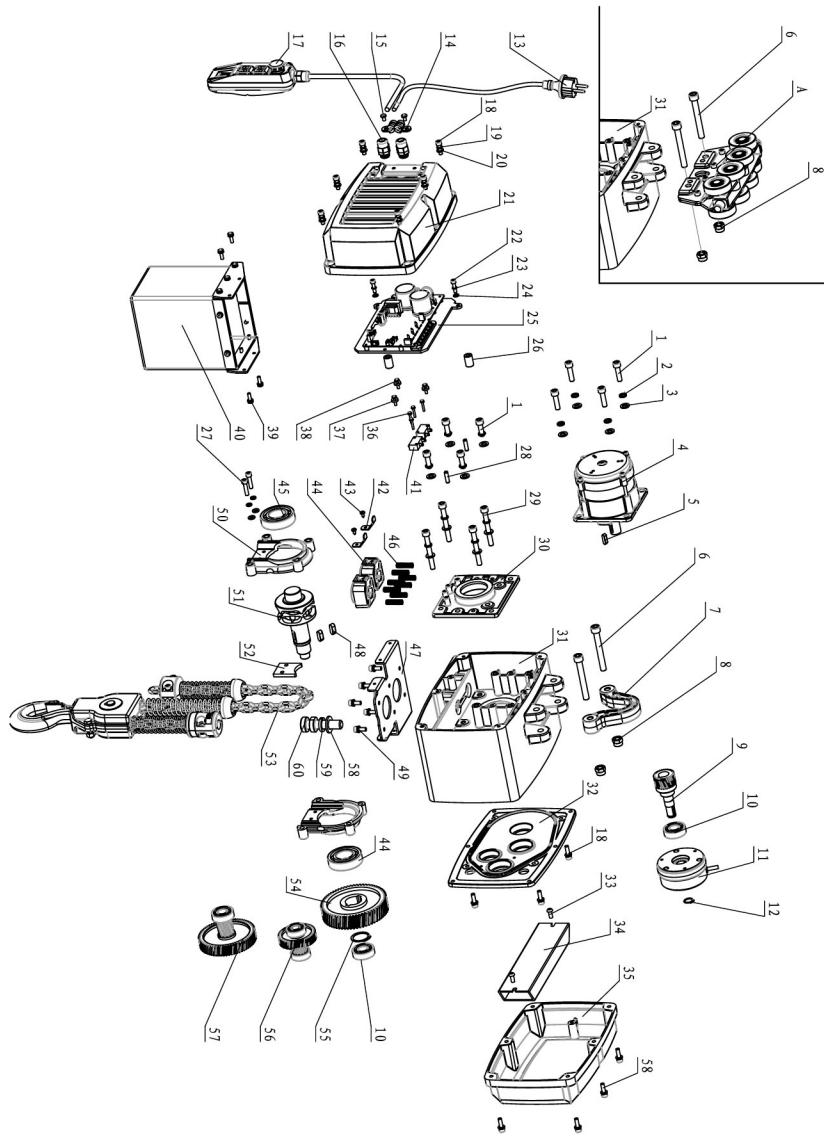
TSH-250&500 Electric Chain Hoist Explosion Diagram



Details of TSH-250&500 Electric Chain Hoist Explosion Diagram

No.	Components	Quantity	No.	Components	Quantity
1	Hexagon socket cap screws M8 × 30	4	33	Hexagon socket button head screws M6X14	2
2	Flat washer d8	12	34	Resistance	1
3	Spring washer d8	12	35	Resistance shield	1
4	Motor assembly	1	36	Cross recess head screw M3 × 18	4
5	Flat key 6 × 20	1	37	Bakelite pad	3
6	Hexagon socket cap screws M10 × 80	2	38	Cross recess head screw M4 × 16	3
7	Hook holder	1	39	Cross recess head screw M5 × 10	4
8	Locking nut M10	2	40	Chain bag assembly	1
9	Primary pinion	1	41	Microswitch	2
10	Rolling bearing 6203-2RS	2	42	Limit plate	2
11	6N/M brake	1	43	Cross recessed pan head self-tapping screw st4.2 × 10	2
12	Elastic collar for shaft d15	1	44	Limit block	2
13	Plug	1	45	Rolling bearing 6206-2RS	2
14	Galvanized rubber clamp φ6 × 15 mm	2	46	Limit spring	8
15	Cross recess head screw M5X8	2	47	Chain bag base	1
16	Cable fixing head M16 × 1.5	2	48	Flat key 8 × 20	2
17	Handle assembly	1	49	Hexagon socket cap screws M6 × 16	6
18	Hexagon socket cap screws M6 × 20	18	50	Chain wheel racket	2
19	Flat washer d6	24	51	Chain wheel	1
20	Spring washer d6	24	52	Chain damper	1
21	Motor cover	1	53	Chain assembly	1
22	Hexagon socket cap screws M5 × 35	2	54	Tertiary gear wheel	1
23	Flat washer d5	2	55	Elastic retainer ring for shaft d30	1
24	Spring washer d5	2	56	Secondary gear assembly	1
25	Circuit board assembly	1	57	Tertiary gear assembly	1
26	Support sleeve	2	58		
27	Hexagon socket cap screws M8 × 25	4	59		
28	Chain wheel support frame	2	60		
29	Hexagon socket cap screws M8 × 70	4	61		
30	Cylindrical pin 6 × 20	2	62		
31	Deceleration box	1	63		
32	Reduced case cover	1	64		

TSH-1000 Electric Chain Hoist Explosion Diagram



Details of TSH-1000 Electric Chain Hoist Explosion Diagram

No.	Components	Quantity	No.	Components	Quantity
1	Hexagon socket cap screws M8 × 25	8	33	Hexagon socket button head screws M6 × 14	2
2	Flat washer d8	12	34	Resistance	1
3	Spring washer d8	12	35	Resistance shield	1
4	Motor assembly	1	36	Cross recess head screw M3 × 18	4
5	Flat key 6 × 20	1	37	Bakelite pad	3
6	Hexagon socket cap screws M10 × 80	2	38	Cross recess head screw M4 × 16	3
7	Hook holder	1	39	Cross recess head screw M5 × 10	4
8	Locking nut M10	2	40	Chain bag assembly	1
9	Primary pinion	1	41	Microswitch	2
10	Rolling bearing 6203-2RS	2	42	Limit plate	2
11	6N/M brake	1	43	Cross recessed pan head self-tapping screw st4.2 × 10	2
12	Elastic collar for shaft d15	1	44	Limit block	2
13	Plug	1	45	Rolling bearing 6206-2RS	2
14	Galvanized rubber clamp φ6 × 15 mm	2	46	Limit spring	8
15	Cross recess head screw M5 × 8	2	47	Chain bag base	1
16	Cable fixing head M16 × 1.5	2	48	Flat key 8 × 20	2
17	Handle assembly	1	49	Hexagon socket cap screws M6 × 16	6
18	Hexagon socket cap screws M6 × 20	10	50	Chain wheel ratchet	2
19	Flat washer d6	24	51	Chain wheel	1
20	Spring washer d6	24	52	Chain damper	1
21	Motor cover	1	53	Chain assembly	1
22	Hexagon socket cap screws M5 × 35	2	54	Tertiary gear wheel	1
23	Flat washer d5	2	55	Elastic retainer ring for shaft d30	1
24	Spring washer d5	2	56	Secondary gear assembly	1
25	Circuit board assembly	1	57	Tertiary gear assembly	1
26	Support sleeve	2	58	Hexagon socket cap screws M6 × 30	6
27	Hexagon socket cap screws M6 × 25	2	59	Flat washer d16	1
28	Chain wheel support frame	2	60	Spring washer d16	1
29	Hexagon socket cap screws M8 × 70	4	61	Double hook shaft	12
30	Cylindrical pin 6 × 20	2	62		
31	Deceleration box	1	63		
32	Reduced case cover	1	64		

Troubleshooting

Electric chain hoist will have various faults due to long-term use or improper operation. Common faults, causes and maintenance measures are shown in the table below:

Common faults	Cause	Services measures
Button switch motor does not turn	(1) Power supply not connected (2) Broken or loose wiring (3) Switch failure (4) Emergency stop switch not reset	(1) Power on (2) Check wiring and repair (3) Repair or replace switch (4) Reset stop emergency switch
Motor is loud and does not start properly	Power supply voltage too low or too high	Check supply voltage and frequency
Excessive noise	(1) Poor lubrication (2) Damaged gears or bearings (3) Impurities inside gear or at rotor spline (4) Poor assembly or bump after disassembly	(1) Add an appropriate amount of grease (2) Inspect replacement gear or bearing (3) Purge impurities (4) Recheck assembly of parts and repair bump
Enclosure charged	(1) Grounding failure or no grounding (2) Internal conductor to case ground	(1) Inspect and repair grounding (2) Inspect and repair internal leads
Handle Nixie tube digital	A: Indicates an emergency stop.	Rotate clockwise to release emergency stop
	—: Indicates that the machine is functioning normally;	
	0: Indicates that the button is pressed at the same time;	Release one of the buttons
	1: Maximum power limit;	Weight reduction
	2: Abnormal driving voltage;	Check voltage
	3: IGBT fault;	Replace control board
	4: Locked-rotor;	Check for overloading or mechanical jamming
	5: Over-current;	Check for overload
	6: Over-pressure;	Check voltage or brake resistance
	7: High temperature;	Equipment overheats and needs to be cooled before use
Emergency stop switch	8: Sampling abnormality;	Contact the manufacturer for technical support.
	9: Hall abnormality;	Contact the manufacturer for technical support.
Emergency stop switch	Pressing emergency stop switch can temporarily relieve the Nixie display tube from problem 1, 2, 4, 5, 6	
Other matters	Please reach out to the sales unit or our company	