



## **TECH- SERIES 240V ELECTRIC CHAIN HOIST**

**(Capacity 1T & 2T)**

### **OPERATING INSTRUCTIONS**



#### **WARNING**

This hoist should not be installed, operated or maintained by any person who has not read all the contents of these general instructions. Failure to read and comply with these instructions or any one of the limitations noted herein can result in injury and/or property damage.

## **1、 Warning**

- a) Ensure the hoist has correct earth connection before operation.
- b) Before lifting a load, examine the load chain to ensure that there is no twist, kink, and no turn-over of bottom hook for multi-falls.
- c) The hoist is only used for load within capacity, any application for over rated capacity is forbidden.
- d) Ensure to lift a load vertically, diagonal lift or tow a load is not allowed beyond 10degree.
- e) While operating, personnel are prohibited to stand or work underneath the load.
- f) Do not lift any load with the load chain acting as a sling.
- g) Never apply any load to the tip of hook for lifting.
- h) While lifting, do not operate the hoist rapidly up and down & repetitively.
- i) Don't run the hoist out of the limit position.
- j) Never lift a load using 2 or more than 2 hoists simultaneously.
- k) Don not dismantle and adjust the limit load device.
- l) Measuring the load by load limit device is forbidden.
- m) The load chain should be properly lubricated with suitable oil or grease before applied to lifting purpose, and periodic lubrication is necessary in normal operation.
- n) When lifting, the slings should be properly put into the hook throat with the safety latch properly closed.

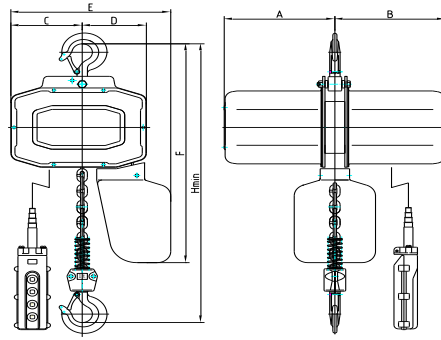
## **2、 Application**

TECH series electric chain hoist is based on Japanese and Germany technology with the features of compact structure, light weight, easily operation with load limit and thermal protection. The hoist is widely used in factories, workshops, mines, ports, warehouses etc, and can be used together with cranes as an integral part of an overhead craning system, serving as a highly efficient method of operation.

## **3、 Features**

- 1) Safe and reliable
  - a) Brake: adopting D.C. normal close brake, without asbestos. Once the motor stops, the brake can hold the load safely and continually .
  - b) This hoist is equipped with an electronic limit load device, which prevents chain failure and stretching.
  - c) Friction clutch: prevents motor damage due to overloading and chain stretching.
  - d) The motor is equipped with a thermal protection device, which preventing the motor being damaged due to overheating.
  - e) Top and bottom hooks are made of high tensile alloy steel with special heat treatment. It prevents the hook from breaking and being deformed gradually under a sudden extra-load.
  - f) Load chain is carbonized to ensure good wear and long life.
  - g) Chain container serves as a storage bag, keeping the load chain clear of dirt and dust, and without tangles while falling down freely.

## 4、 Dimension & Specification



Item NO.	TECH0103	TECH0106	TECH0203	TECH0206
Rated Load (ton)	1	1	2	2
Standard Lift (m)	3	6	2	6
Lifting Speed (m/min)	6	6	3	2
Output (kw)	1.2	1.2	1.2	1.2
Power Supply	240v 50HZ Single Phase			
INS Class	F			
%ED	40%			
Dimension of Load chain	7.1mmX 21mm			
Strands of Load chain	1	1	2	2
Test load (ton)	1.25	1.25	2.5	2.5
Cable Length(m)	2.5	2.5	2.5	2.5
Net Weight (kg)	58	62	63	70
Extra weight per meter of extra lift (kg)	1.1	1.1	2.2	2.2
Minimum headroom (mm)	520	520	630	630
Main dimensions	A (mm)	245	245	245
	B (mm)	245	245	245
	C (mm)	158	158	124
	D (mm)	142	142	176
	E (mm)	350	350	350
	F (mm)	600	600	610

## 5、 Technical Specification:

- 1) Relative humidity: <85%
- 2) Ambient temperature: -25°C - 40°C
- 3) Working class: M4
- 4) Level of Protection: IP54
- 5) Main power: 1P/240V/50HZ
- 6) Chain size:  $\phi$  7.1X 21
- 7) The hoist can not be used in a flammable, explosive or corrosive environment.

## 6、 Duty Cycle

The hoist is not designed for continuous all day usage and has a recommended duty cycle. Please refer to the table below to ensure a long and safe life for this product.

( table 3-1)

Table 3-1

Load cond.	Explanation	Load spectrum factor	Daily operating time (h)	Total operating time (h)
1, Light load	Seldom lifting rated load, generally for light lifting	0.125	2-4	6400
2, Medium	Sometimes lift rated load, generally lift. Medium Load.	0.25	1-2	3200
3, Heavy	Often lift rated load, generally for heavy load lifting.	0.5	0.5-1	1600
4, Extra heavy	Frequently lifting rated load.	1.0	0.25-0.5	800

## 7、 Installation instruction

### 1) Installation and test operating

- a) When TECH series is ready to install, install the hoist to a rated support structure, switch it on as the nameplate indicates, and push the pendant button to watch for the running direction of load hook,
- b) Before operating a new hoist for its first lifting, it should be operated without load for a full cycle to ensure the correct and smooth running. The same procedure should be given to a hoist which has been out of usage for a long time.

### 2) Maintenance

Maintenance should be effected by qualified personnel every year, and great attention paid to the below parts and components.

- a) Load chain: with daily service, the chain should be always oiled or lubricated by grease, in the meantime, a periodically inspection for abrasion is needed. Refer to the illustration figure for the inspection, if any one of the measurements in the following table are exceeded, the chain must be replaced.
- b) Brake device: Maintenance inspection every three months, the brake should be

cleaned to ensure it is clear of dust and oil, also, inspect the working space of the brake device, if abrasion (wear) of the brake disc is more than the maximum working space (1mm), then the working space should be adjusted and if abrasion of friction disc is near to the aluminum core, the brake disc should be replaced, otherwise, the brake device will be damaged.

- c) Gearing: cleaned and greased (i.e.no.1) every year.
- d) Bearing: cleaned and greased (i.e.no.1) every year.
- e) Hooks: to be checked periodically for deformation and wear, if the wear or deformation measures a reduction of 10% or greater of the standard sizes (ref to illustrated figure), replace the hooks.

f)

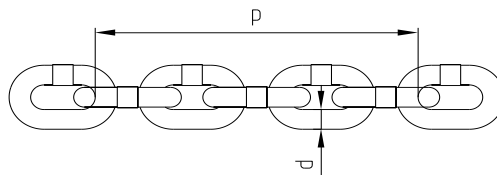
### 3) Repair

There are no user serviceable parts inside hoist. Covers should only be removed by qualified service personnel..

### 8) Illustration figure for chain inspection

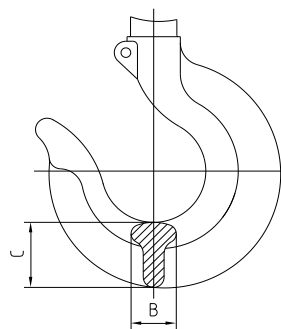
If chain is worn over the limit value, it must be replaced with a new one.

Dia. of chain (d)	Wearing Limit value (d)	Measure links	standard value (p)	Wearing Limit value (p)
7.1mm	6.4mm	5	106mm	109.2mm



### 5) Illustration figure for hook inspection

If the size “b” and “c” is smaller than the 90% of the standard size, please replace with new one.

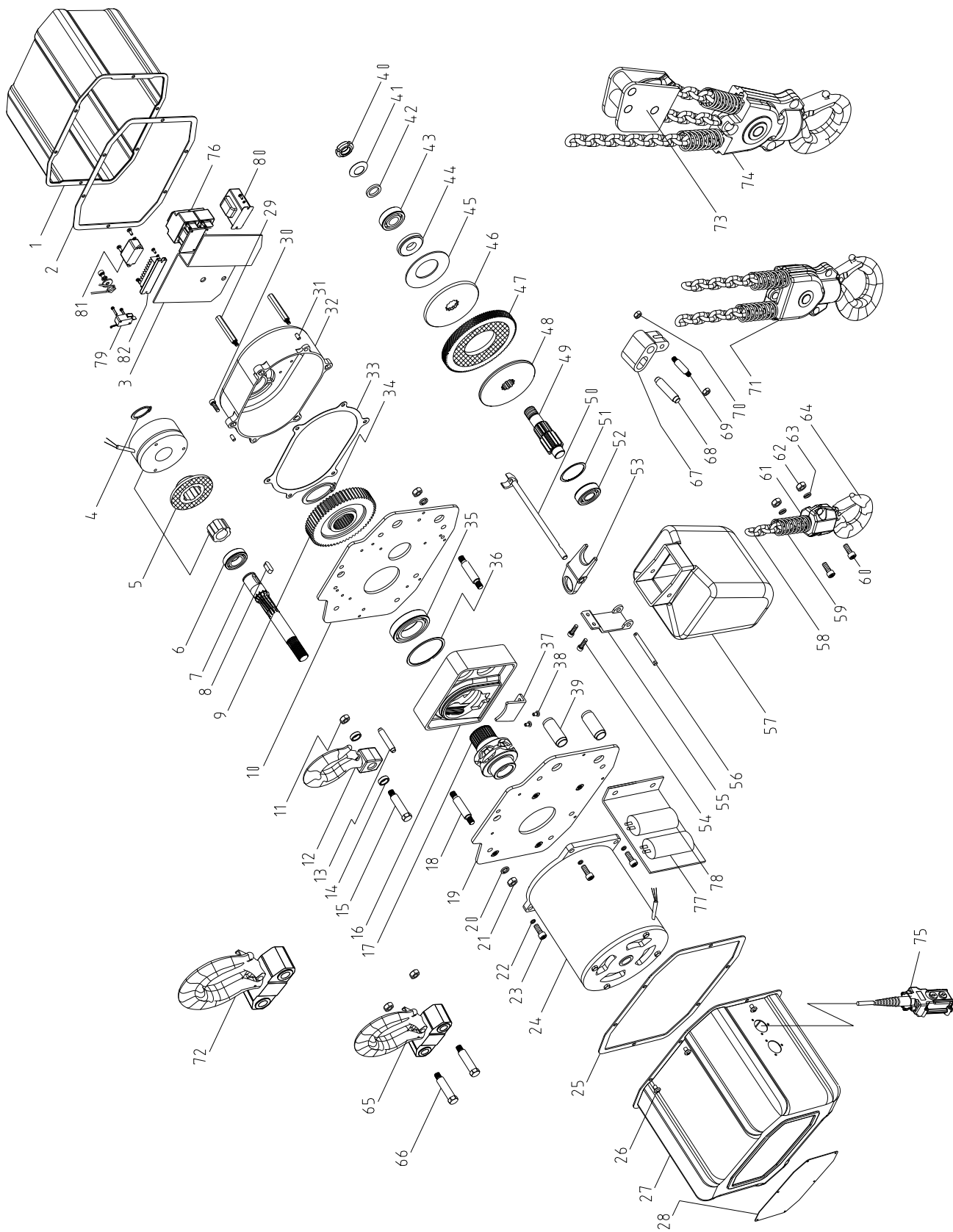


capacity (t)	B (mm)		C (mm)	
	Normal Size	Abnormal Size	Normal Size	Abnormal Size
1	19.5	17.5	27	24.3
2	22	19.8	32	28.8

## 8、Fault finding

NO.	Condition	Causes	Check
1	The hoist fails to operate when switched on	Power cable not connected or loose	Check and fasten all the cable connection points.
		Electrical parts damaged	Replace the damaged part
2	Hoist refuses to operate, and the brake parts emit a buzzing noise.	Voltage is too low.	Operate under rated voltage.
3	After switching off, the load drops while braked	Dust or oil on brake disc	Clean the disc
		Severe wear of disc	Replace the disc
4	Hoist still operates when the control button is released	The contactor is damaged or faulty.	Replace contactor
5	Excessive chain noise when running	The chain is not lubricated properly	Lubricate chain by oil or grease
		The chain or sprocket wheel is worn	Replace.
6	Voltage leakage	The earth connection is faulty	Ensure good earth connection
		High humidity in the air	Improve the environment
		Dust on the electrical parts	Keep the parts clear of dust

# 9、EXPLODED DRAWING



## 10、Parts List

No.	Part name	Quantity	NO.	Part name	Quantity
2	Cover A	1	42	Nut washer	1
2	Motor cover packing	1	43	Rolling bearing 6004Z	1
3	Electric board	1	44	Spring set	1
4	Axle race 25	1	45	Spring	1
5	Brake assembly	1	46	Friction disk pressing panel	1
6	Rolling bearing 6005Z	1	47	Washer A	1
7	Pinion gear A	1	48	Limit device base	1
8	Flat key 8×7×20	1	49	Pinion B	1
9	Master gear B	1	50	Limiter rotating axle	1
10	Right side plate	1	51	Stop ring 47	1
11	Hex nut M10	10	52	Rolling bearing 6204ZN	1
12	Top hook	1	53	Limiter baffle	1
13	Hook holder stop lever	1	54	Screw M6×16	2
14	Hook axle washer	2	55	Chain container hanging plate	1
15	Hook axle	1	56	Connecting pole	1
16	Chain container	1	57	Chain container	1
17	Chain sprocket	1	58	Load chainφ7.1×21	1
18	Staying pole	4	59	Limit spring	2
19	Left side plate	1	60	Hex bolt M8×30	2
20	Spring washer 10	8	61	Bottom hook assembly	2
21	Hex nut M10	8	62	Hex nut M8	2
22	Hex screw M8×20	4	63	Spring washer 8	2
23	Hex screw M8×20	4	64	Bottom hook	1
24	Motor assembly	1	65	Top hook assembly(2t)	1
25	Motor cover packing	1	66	Hook axle (2t)	2
26	Screw M6×8	12	67	Chain suspension holder (2t)	1
27	Cover B	1	68	Connecting pin(2t)	1
28	Name plate	2	69	Pin (2t)	1
29	Rivet screw	2	70	Hex nut M8(2t)	2
30	Hex screw M6×20	4	71	Bottom hook assembly (2t)	1
31	Spring locating pin 6×16	2	72	Top hook assembly(3t)	1
32	Gear case	1	73	Top pulley assembly (3t)	1
33	Gear case space	1	74	Bottom hook assembly (3t)	1
34	Axle race 42	1	75	Push button	1
35	Rolling bearing 6009ZN	1	76	contactor	3
36	Stop ring 75	1	77	Run capacitor (30 μ F)	1
37	Load chain baffle	1	78	Start capacitor (170 μ F)	1
38	Screw M6×10	2	79	Limit switch	2
39	Conduit	2	80	transformer	1
40	Nut M20×1.5	1	81	rectifier	1
41	Stop washer 20	1	82	Amphenol connector	1



# 11. ELECTRICAL DRAWING

