



OWNER'S MANUAL

BLITZ

ELECTRIC CHAIN HOIST



Table of Contents

- 1.0 Safe Operating Practice3
 - 1.1 For Your Safety5
- 2.0 General Information7
 - 2.1 Blitz Electric Hoist7
 - 2.2 Application Information8
 - 2.3 Repair Parts Ordering Information8
 - 2.4 Function Testing8
- 3.0 Operation9
 - 3.1 Good Operating Practices9
 - 3.2 Handling the Load.....9
- 4.0 Maintenance9
 - 4.1 Preventive Maintenance Schedule9
 - 4.2 Inspection.....9
 - 4.3 Maintenance11
 - 4.4 Function Testing13
- 5.0 Troubleshooting14
 - 5.1 Procedures.....14
- 6.0 Disassemble and Reassembly17
 - 6.1 Installing New Chain17
- 7.0 Parts List and Drawing.....18
 - 7.1 Hoist Assembly Diagram18
 - 7.2 Hoist Assembly Part List.....19
 - 7.2 Hoist Assembly Part List (Continued).....20
 - 7.2 Hoist Assembly Part List (Continued).....21
- 8.0 Electric Illustration for Double Speed Motor22
- Starke Products Warranty.....23

▲CAUTION - IMPORTANT

Before using the hoist, anyone who will install, operate, or maintain the hoist should read this manual thoroughly. For safe, dependable, and economic performance, follow all the instructions and recommendations contained herein. Do not use this hoist in a manner other than those stated in this manual. It is also important to retain this manual for future use.

▲WARNING

This hoist is intended for industrial use only and should not be used to lift, support or otherwise transport human cargo.

1.0 Safe Operating Practice

The following are recommendations for safe operation of overhead hoist.

Failure to heed the following recommendations could endanger the operator and others.

Always use good common sense.

Safety is the responsibility of the operator of the equipment.

You must be competent and attempt to foresee and avoid all hazardous conditions.

To be safe as possible, the hoist must be given proper preventive, periodic inspection and maintenance as described in this manual and National Safety Codes for overhead hoist.

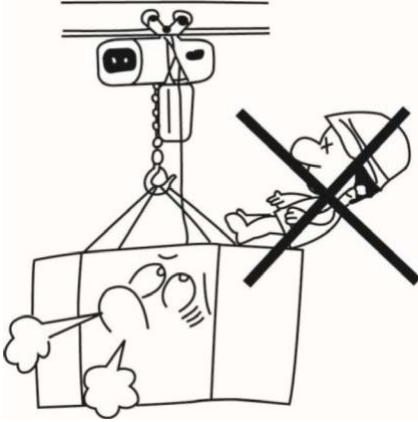
- Do not operate a hoist unless you are properly trained, physically fit, and authorized to do so.
- Do not operate hoist unless you are familiar with all controls, warning, and instructions on or attached to the hoist, safe operating listed in this bulletin, National Safety Codes, and all pertinent federal, state local regulation before starting operation.
- Do not allow any unqualified personnel to operate the hoist.
- Never pick up a load beyond the rated capacity appearing on the hoist.
- Never carry personnel on the hook or the load.
- Never lift a load with the hoist until all personnel are clear.
- Never use the chain as a sling.
- Do operate the hoist apart from the load suspended.
- Do not try to lift fixed or obstructed loads.
- Do not transport load over personnel.
- Do not use the chain as a ground for welding.
- Never touch a welding electrode to the chain.
- Do not leave a load suspended in the air for extended or unattended periods.
- Keep watching the load while operating the hoist.
- Center hoist unit over the load before lifting. Avoid side pull and end pull.
- Be sure the sling is properly seated in the saddle of the hook.
- Make sure a load clears neighboring stockpiles of machinery before moving.

- Avoid plugging, excessive inching, and quick reversals of load.
- Avoid swinging of load or load hook when traveling the hoist.
- Check Limit devices and braking mechanism daily for proper function Check daily the chain for improper seating, twisting, kinking, wear, or other defects before the hoist.
- Be sure that the power supply is disconnected before performing maintenance and repair procedures.
- Do not operate the hoist if it is functioning improperly.
- Do not use the limit switch as a means of stopping the loaded hook in the down direction. This is primarily a backup device.
- Do not use a hoist in the manner not described in this manual.
- Perform all daily, monthly, and yearly inspections as indicated.
- Do not remodel the hoist.
- Do not use hoist in the manner to restrict a free action of lifting, such as material cargo guided by rails for example.
- Do not use the hoist where it is exposed to rain or water.
- Double fall chain does not opposite use

1.1 For Your Safety

Please read and follow the instruction manual in detail.

1. Do not lift people and never ride the hoisting load.



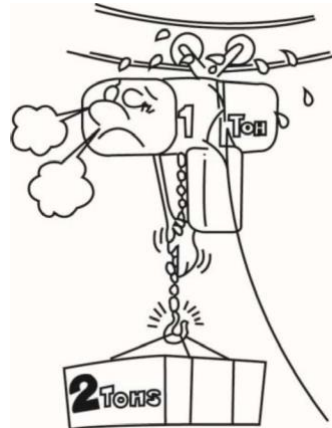
2. Do not lift load over people. Do not be under the hoisting load.



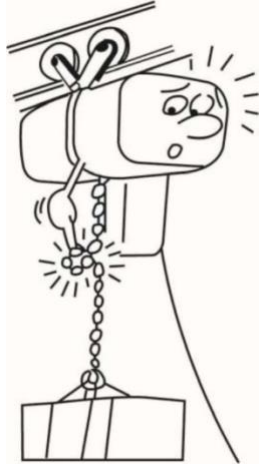
3. Make sure the sling is well balanced. Avoid tip loading and loading on hook latch.



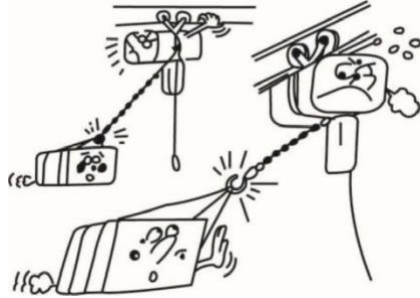
4. Never lift the load over the rated capacity.



5. Do not operate with kinked, twisted, or damaged chain.



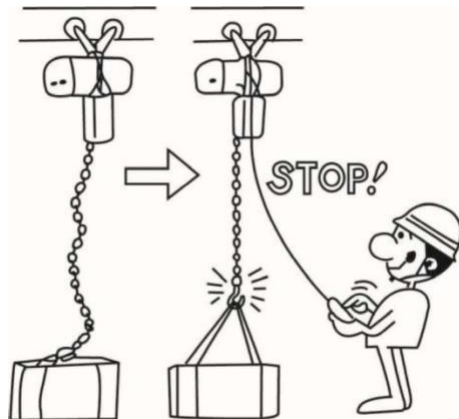
6. Avoid side pull or end pull, and quick reversal operations.



7. Never leave the suspended load unattended.

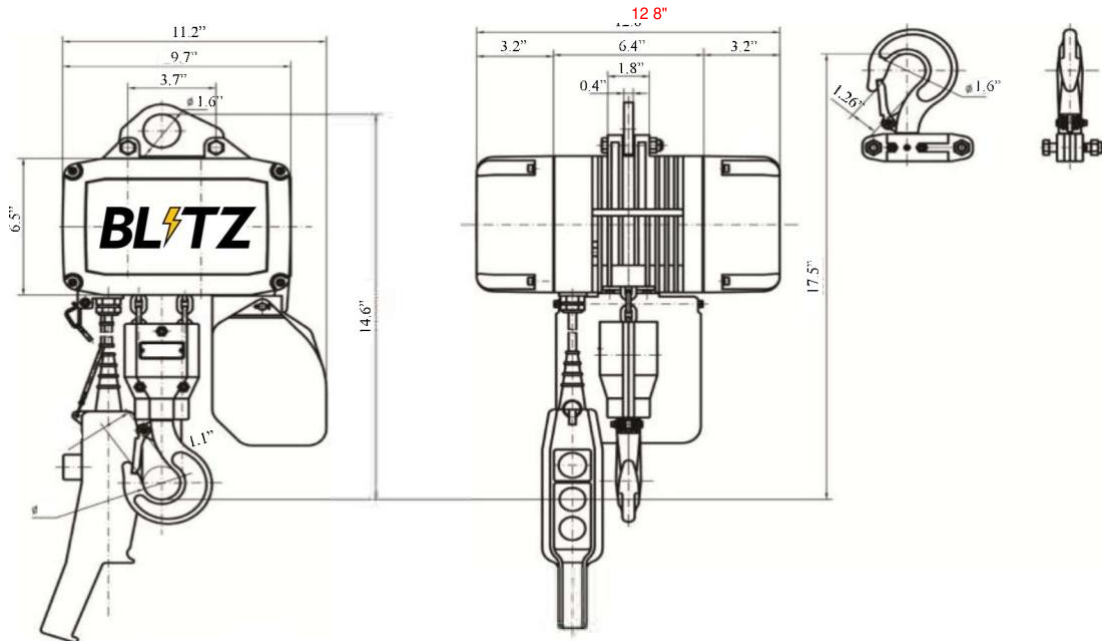


8. Make sure you take up slack slowly.



2.0 General Information

2.1 Blitz Electric Hoist



Blitz Series - High Speed Electric Chain Hoist

Three Phase / 2-Speed

SKU	Cap	Speed	Lift	Voltage	HP	Amp	Headroom	Net Weight
SBH2550-20	250 lbs	50/25 FPM	20'	460/3	1	2.1	17"	60 lbs.
SBH2585-20	250 lbs	85/25 FPM	20'	460/3	1	2.1	17"	60 lbs.
SBH5050-20	500 lbs	50/25 FPM	20'	460/3	1	2.1	17"	60 lbs.

Single Phase / 1-Speed

SKU	Cap	Speed	Lift	Voltage	HP	Amp	Headroom	Net Weight
SBS2543-20	250 lbs.	43 FPM	20'	230/1	0.6	6	17"	60 lbs.
SBS5025-20	250 lbs.	25 FPM	20'	230/1	0.6	6	17"	60 lbs.
SBS1018-20	1000 lbs.	18 FPM	20'	230/1	0.6	6	17"	60 lbs.

2.2 Application Information

This hoist is intended for general industrial use in the lifting and transporting of freely suspended material loads within its rated capacity. Prior to installation and operation, we caution the user to review his application for abnormal environmental or handling conditions and to observe the applicable recommendations as follows:

▲ CAUTION

- Do not use the hoist for transporting hot molten masses.
- Do not use the hoist in explosion hazard areas.
- Do not use the hoist aggressive environments and outdoors.
- Do not use the hoist at low temperature below 0°C or high temperature over 40°C.

2.2.1 Adverse Environmental Conditions Do not use the hoist in areas containing flammable vapors, liquids, gases or any combustible dusts or fibers. Do not use this hoist in highly corrosive, abrasive, or wet environments. Do not use this hoist in applications involving extended exposure to ambient temperatures below 32 Deg F or high temperature over 104 Deg F. Do not use a hoist over 3500 ft above sea level. Do not use the hoist in the areas with humidity over 85%.

2.2.2 Lifting of Hazardous Loads This hoist is not recommended for use in lifting or transporting hazardous loads or materials which could cause widespread damage if dropped. The lifting of loads which could explode or create chemical or radioactive contamination if dropped, requires fail-safe redundant supporting devices which are not incorporated into this hoist.

2.2.3 Lifting Of Guided Loads This hoist is not recommended for use in the lifting of guided loads, including dumbwaiters and non-riding elevators. Such appliances require additional protective devices which are not incorporated into this hoist.

2.3 Repair Parts Ordering Information

To provide prompt service, place all parts orders with your Starke America dealer. The following information must accompany all correspondence or replacement parts orders.

- Complete data from hoist nameplate. (Type, Volt, Phase and Hertz)
- Part Numbers, description, and quantity required.
- When ordering chain or a chain container, give additional information, lift of hoist and number of falls.
- The address for shipping items.

2.4 Function Testing

2.4.1 Limit Switch Operation. Before placing a stored hoist in operation check for proper operation of the upper and lower limit switch. Push the UP (DOWN) button and hold until the hook hits the limit, try this in both directions. The hoist should stop immediately once the limits are encountered.

▲ **CAUTION** Do not operate the hoist if the limit switch is not operating properly. **DO NOT** use the limit switch as a means of stopping the hook travel. This is primarily a backup device.

▲ **2.4.2 Brake Operation.** Check for load hook drift with rated load on the hook, if hook does not stop within 25mm when push button is released, it may be necessary to adjust or replace the brake assembly.

2.4.3 Rated capacity limiter. The rated capacity limiter is designed for safe operation of the hoist. It is composed of brake washer, butterfly spring, spring seat, and adjusting nut.

3.0 Operation

3.1 Good Operating Practices

3.1.1 The operator should not engage in any practice which will divert his attention while engaged in operating the hoist.

3.1.2 Before starting the hoist, the operator should be certain that all personnel are clear.

3.1.3 Pushbutton, brake, and limit switch should be tested by the operator before beginning a shift. If these controls do not operate properly, they should be repaired or replaced before any operation of the hoist is started.

3.2 Handling the Load

▲**CAUTION** Do not exceed the rated load.

4.0 Maintenance

4.1 Preventive Maintenance Schedule

The periods between inspections will vary due to the wide range of duty cycle and operating conditions. The following inspection periods are based on average duty with single shift operation (20—25% on time and 100— 150 times/hour starts) under normal environmental condition.

If the hoist is used in heavier applications or under adverse environmental conditions, it should be inspected more frequently.

▲**CAUTION** Do not operate hoist until all deficiencies are corrected.

4.2 Inspection

4.2.1 Daily inspection Inspect the following items daily before operating the hoist.

- Check pushbutton station, brake, and limit switch for improper operation.
- Inspect the hook to ensure that no abnormal wear exists on the sling section and the hook is not bent to open excessively. Fig. 3 shows standard dimensions of the mouth opening.

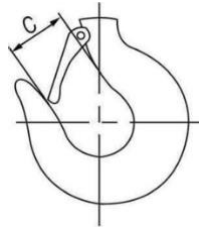


Figure 3 Hook Dimensions

Capacity	0.125T	0.25T	0.5T	1T
Normal "C"	28mm	28mm	28mm	32mm

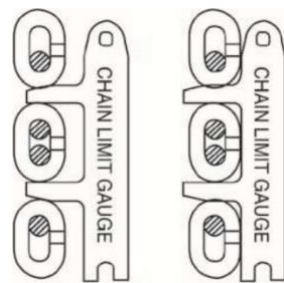
- Make sure that the bottom hook swivels freely.
- Check link chain for wear, twist, or distortion.
- Check for damaged or improper hook latch.

▲ IMPORTANT NOTE: If bent or twisted hook is observed, other load bearing components of hoist or trolley shall be inspected, because bent or twisted hooks indicate over loading or abuse of the unit.

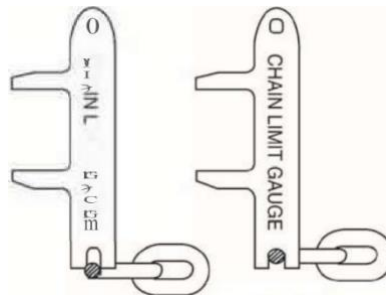
▲ CAUTION Do not operate the hoist is functioning improperly or damage is noticed.

4.2.2 Monthly inspection Inspect the following items at 30-day intervals.

- All items under daily inspection.
- Chain: If chain binds, jumps or is noisy, check for cleanliness and proper lubrication, if trouble persists, inspect chain for wear and elongation.(See Fig4 and Fig5)



Usable Unusable
Measuring the Pitch



Usable Unusable
Measuring the Link Stock

- Hooks: check for cracks or deformations. Replace hook if die mouth opening is more than normal hook opening or twists from normal plane of hook.
- Load and idler sheaves: sheaves which are worn should be replaced. Worn sheave can greatly reduce life of load chain.

- Electric parts: check for signs of pitting or any deterioration of controls, limit switch and pushbutton.
- Check for loose bolts, screw, and nuts.
- **Brake gap:** Check brake gap. When the brake gap is above the limit of 0.3mm the brake gap should be readjusted. Fig. 6.

0.3max<l

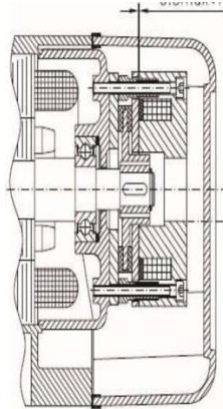


Fig.6

▲IMPORTANT NOTE: When measuring the brake gap, the magnetic field should be pressed against the brake support. When adjusting the brake gap, turn off the power supply and unload the electric chain hoist lower hook if there is weight present.

4.2.3 Annual inspection Inspect the following items annually.

- Check all items under daily and monthly inspection.
- Check hooks for cracks by means of magnetic particle test or other suitable crack detecting test
- Inspect supporting structure and trolleys (if used) for continued ability to support the imposed loads.
- Check brake.
- Check the quantity of lubricant grease in the gear case.

▲IMPORTANT NOTE: It is recommended that an annual inspection be done by an authorized Starke representative and the records be kept for future use.

Visit StarkeAmerica.com for more information.

4.3 Maintenance

4.3.1 Lubricant The gear case of this hoist is packed with 500g (around 1/2 lb) of molybdenum disulfide grease for use under high pressure. When the gear case is opened, refill with lubricant which contains molybdenum for high pressure use. The following table shows recommended standard frequency of lubrication for each part.

Component	Type of lubricant	Type of Service and Frequency of Lubrication		
		Heavy	Normal	Infrequent
Load chain	# 1 Multi-purpose lithium base grease	Daily	Weekly	Monthly
Gearing	#1 multi-purpose lithium base grease	As periodic inspection		
Limit switch shaft	General purpose spray lubricant	Monthly	Yearly	Yearly
Lower hook bearing	SAE 30 gear or motor oil	Weekly	Monthly	Yearly
Top hook	SAE 30 gear or motor oil	Monthly	Yearly	Yearly
Idler sheave bearing	# 1 Multi-purpose lithium base grease	As periodic inspection		

4.3.2 Wiring and terminal

- Make sure all connections are tight. Terminals are to be securely crimped to wires and insulation in good condition.
- Replace terminals or wire if necessary.
- Replace the lock washer if it is missing.

4.3.3 Load chain Carefully inspect the chain for wear between the links in the section of chain that most often passes over the sheaves. Check several links, as wear is seldom even from one link to another. The chain should be replaced if wear has increased beyond the specified gauge length limits. Chain gauge is attached to each unit for convenience. (See Figure 7) If chain gauge is missing, measure the gauge length by caliper.

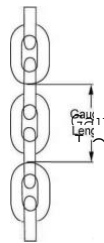


Figure 7. Gauge Length

Dia. of chain	Max Gauge Length Allowable Used Chain
05mm	35mm

▲IMPORTANT NOTE: The gauge length should be checked with a load on the hook.

4.4 Function Testing

4.4.1 After repair of hoist, test with a light load for proper function. Make sure that all device mechanisms operate properly with a light load, then apply 100% of rated capacity.

4.4.2 Check brake operation.

5.0 Troubleshooting

5.1 Procedures

It is quite difficult to give general instructions which will cover all possible cases. Here are listed only extremely common examples. If any trouble which is not listed here occurs, contact your nearest Starke representative.

5.2 Hook Does Not Respond to Push Button

Possible Cause	Remedy
(a) No voltage at hoist-main line or branch circuit open; fuse blown or circuit breaker tripped.	(a) Close switch, replace fuse or reset breaker.
(b) Open control circuit Open or shorted winding in the trans; reversing controller coil or speed selecting relay coil; loose connection or broken wire in circuit; mechanical binding in contactor relay; control station (push button) contacts not closing or opening	(b) Electrical continuity and repair or replace defective part.
(c) Brake not opening	(c) Check solenoid lead. Replace the solenoid if necessary.
(d) Wrong voltage or frequency.	(d) Be sure all electrical characteristics are listed on the hoist name plate. See electrical installation in page 2.
(e) Excessive overload.	(e) Reduce loading to the capacity of hoist.

5.3 Hook Moves in Wrong Direction

Possible Cause	Remedy
(a) Wrong connections reversed at either the control station or terminal block.	(a) Check connections with the wiring diagram.
(b) Failure of the Direction Switch (motor reversing switch) to effect dynamic braking at the time of reversal.	(b) Check connections to switch. Replace a damaged switch or faulty capacitor.
(e) Error Phase	(e) Replace the connect phase

5.4 Hook Lowers Will Not Raise

Possible Cause	Remedy
(a) Excessive load.	(a) Reduce load to the capacity of the hoist.
(b) Open hoisting circuit-open or shorted wiring in reversing contactor coil; loose connection or broken wire in circuit; control station contacts not making; Upper limit switch contacts	(b) Check the switch connections and contacts for sticking or damage. Check centrifugal mechanism for loose or damaged components. Replace defective pan.
(c) Start Capacitor damage	(c) Replace the running capacitor

5.5 Hook Raises But Will Not Lower

Possible Cause	Remedy
(a) Open lowering circuit-open or shorted wiring in reversing contactor coil: loose connection or broken wire circuit; control station contacts not making; Upper limit switch contacts	(a) Check the switch connections and actuator and contacts for sticking or damage. Check centrifugal mechanism for loose or damaged components, Replace defective

5.6 Hook Does Not Stop Promptly

Possible Cause	Remedy
(a) Brake slipping.	(a) Check brake mechanism. (See page 10)
(b) Excessive load.	(b) Reduce loading to the capacity of hoist.
(c) Wrong wiring of brake leads.	(c) Check connectors with wiring diagram.

5.7 Hoist Operates Sluggishly

Possible Cause	Remedy
(a) Excessive load.	(a) Reduce loading to the capacity of hoist.
(b) Low voltage.	(b) Correct low voltage condition.
(c) Brake dragging.	(c) Check brake mechanism described in page 10.
(d) Running capacitor damage	(d) Replace the damaged running capacitor

5.8 Motor Overheats

Possible Cause	Remedy
(a) Excessive load.	(a) Reduce load to the capacity of the hoist.
(b) Low voltage.	(b) Correct low voltage condition.
(c) Wrong wiring of brake leads.	(c) Above ambient temperature 40 ° C (104 ° F), the frequency of hoist operation must avoid overheating of motor. Special provision should be made to ventilate the space shield the hoist from radiation.
(d) Frequent starting or reversing.	(d) Avoid excessive inching, jogging, or plugging. This type of operation drastically shortened the motor and causes excessive brake wear.
(d) Brake dragging.	(e) See item 6-(c).

5.9 Hook Fails to Stop at Either or Both Ends of Travel

Possible Cause	Remedy
(a) Limit switches not opening circuit.	(a) Check switch connections. Electrical continuity and mechanical operation. Check switch adjustment described on page 6

5.10 Hoist is Noisy

Possible Cause	Remedy
(a) Noisy gears-excessive wear of gear, insufficient quantity of grease.	(a) Check gears. Replace gear or degrease.
(b) Higher voltage (single phase model)-pulsation of single-phase motor become W	(b) Check voltage at power source.
(c)	(c) Change
(c) Noisy chain engagement-wear of chain, load sheave or chain guides.	(c) Check chain, load sheave chain guides. Replace worn part.

5.11 Load Chain Jumps on Sheave

Possible Cause	Remedy
(a) Worn chain.	(a) Check chain wear.(See page12)
(b) Worn chain guide or sheaves.	(b) Replace.
(c) Incorrect chain.	(c) Replace with correct chain.

5.12 Electrical Shock When Touching the Hook or Chain

Possible Cause	Remedy
(a) No grounding.	(a) Ground the grounding line in the power supply.
(b) Incorrect grounding.	(b) Check grounding terminal.
(c) Live part contacting to grounded part.	(c) Check electrical wiring and correction.
(d) Capacitor damage	(d) Replace capacitor

6.0 Disassemble and Reassembly

6.1 Installing New Chain

▲CAUTION Do not remove the old chain from the hoist unit; it is used to install the new chain. This method involves utilizing a partial link (the C-link) to pull the new chain into the sprocket utilizing the existing chain.

6.1.1 Remove the split pin from the hanger pin in the lower hook assembly and remove the hanger pin from the hook block. Remove the chain stopper from the lowering side of the load chain.

6.1.2 If you have a C-link of the same size as the link chain, go to step (5).

6.1.3 If you do not have an appropriate C-link, make one as follows; cut a link from the old chain (WITHOUT REMOVING IT FROM THE HOIST) making a sufficiently large notch to remove it without bending or otherwise distorting the link.

6.1.4 By grinding or cutting, notch the link as shown in Fig. 7. Do not bend or distort the link.

6.1.5 Attach the new chain to the lowering side of the old chain with the C-link making sure that the chain welds are old chain so that when the new chain is installed, the welds will face out from the sprocket groove. See Fig. 8

6.1.6 With slight pressure on the new chain to maintain tension against the C-link, slowly rotate the motor so that the old chain pulls the new chain through the sprocket mechanism.

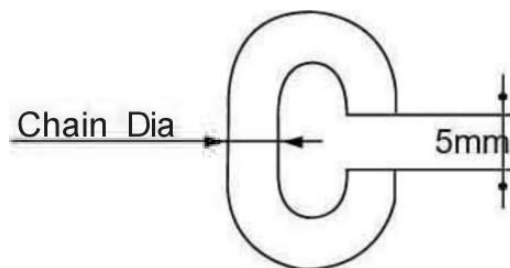
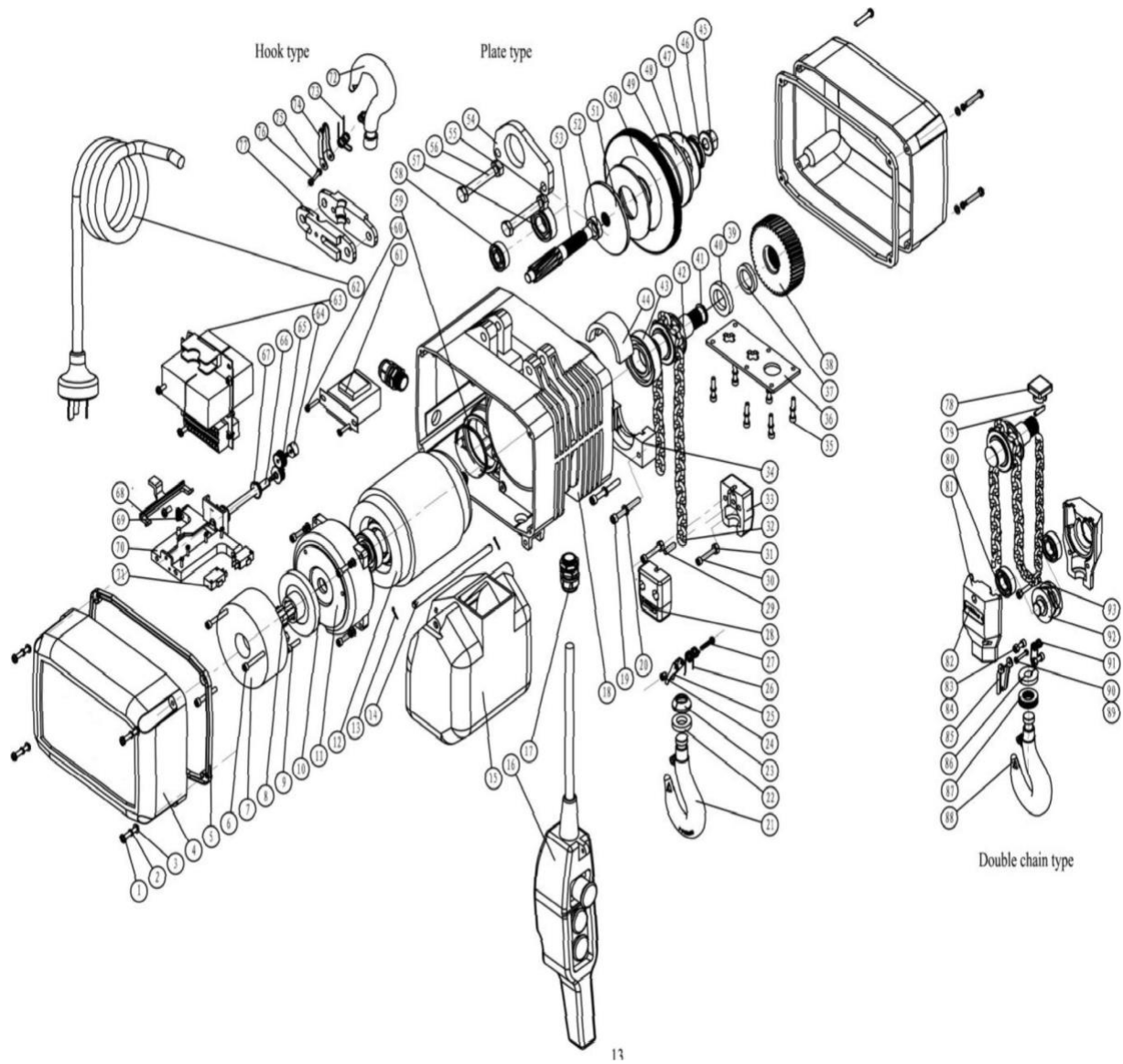


Figure 8 C-link

7.0 Parts List and Drawing

7.1 Hoist Assembly Diagram



7.2 Hoist Assembly Part List

Drawing No.	Part Description	Qty
1	Bolt MSX20	8
2	Spring Washer MS	18
3	Washer 5	18
4	Case Cover	2
5	Gear Cover Packing	2
6	Inner Hexagon Screw MSxSS	6
7	Brake	1
8	Spline Housing	1
9	Inner Hexagon Screw MSx20	4
10	Brake Disc	1
11	Motor Back Cover	1
12	Motor Rotor Assembly	1
13	Split Pin 2x12	2
14	Pin For Chain Bucket Set	1
15	Chain Bucket Set	1
16	Push Button	1
17	Cable Tie-In	2
18	Case Body	1
19	Inner Hexagon Screw M6xso	2
20	Washer 6	2
21	Bottom Hook	1
22	Needle Roller Thrust Bearing	1
23	Bottom Hook Block	1
24	Lock Nut M4	1
25	Safety Latch	1
26	Double Loop Spring	1
27	Slotted Pan Head Screw M4x22	1
28	Indicator	2
29	Pin	1
30	Inner hexagon screw MSx16	2
31	Lock nut MS	2
32	Load chain	1
33	Bottom Guide Chain Frame	1
34	Inner Hexagon Screw Msx25	6
35	Plate	1
36	Oil Seal	1
37	Spline Gear	1

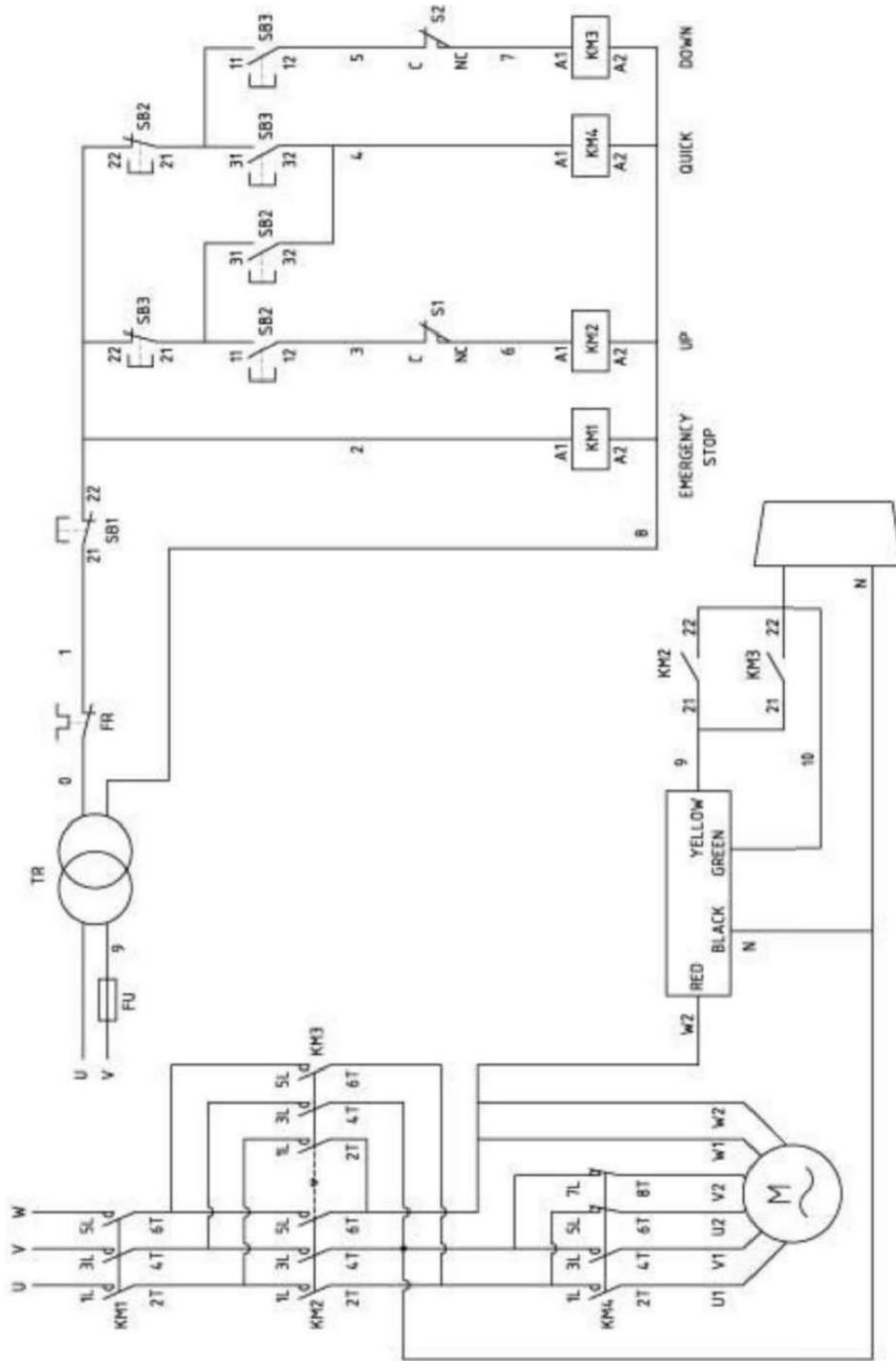
7.2 Hoist Assembly Part List (Continued)

Drawing No.	Part Description	Qty
38	Gear Cover Packing	1
39	Bearing 6005	1
40	Seal For Shaft 20	1
41	Sprocket Wheel	1
42	Bearing 6206	1
43	Guide Chain Block	1
44	Lock Nut M14x1. 5	1
45	Spring Seat	1
46	Disk Spring	1
47	Spacer	1
48	Friction Disc	2
49	Gear Wheel	1
50	Clutch Set	1
51	Washer	1
52	Gear	1
53	Connecting Plate	1
54	Lock Nut M10	2
55	Hex Bolts M10x60	2
56	Bearing 6004	1
57	Bearing 6201	1
58	Seal For Hole 62	1
59	Nut M4x20	2
60	Transformer	1
61	Plug cable	1
62	Electrical control panel	1
63	Bush	1
64	Nylon gear	2
66	Adjust Knob	2
67	Stop Plate	1
68	Spring For Limit Stop	1
69	Limit Stop	1
70	Jiggle Switch	2
71	Hook	1
72	Double Loop Spring	1
73	Safety Latch	1
74	Lock	2
75	Inner Hexagon Screw M4x30	2
76	Lifting Plate	2
77	Lifting Chain Block	1
78	Pin Shaft for Lifting Chain Block	1
79	Bearing 6004	2

7.2 Hoist Assembly Part List (Continued)

Drawing No.	Part Description	Qty
80	Cover Plate	2
81	Indicator	2
82	Lock	3
83	Inner Hexagon Screw M6x20	2
84	Safety Latch	1
85	Bottom Hook Block	2
86	Bearing 51104	1
87	Bottom Hook	1
88	Slotted Pan Head Screw M4x30	1
89	Lock Nut M4	1
90	Double loop spring	1
91	Idle wheel	1
92	Inner hexagon screw M6x50	1

8.0 Electric Illustration for Double Speed Motor





Starke Products Warranty

1 Year (12 Month) Parts & Labor Warranty

Unless otherwise specified, Starke guarantees that our products are free from material defects in design and workmanship under normal use, proper maintenance, and service.

This warranty is strictly limited to 12 months for single shift operation or 2,000 hours after installation, or 14 months after shipment, whichever is shorter. Within ten days after defect is found, warrantee must deliver a written notice to Starke providing defect information. All requested warranty information must be received promptly by Starke in no more than 5 business days.

Customer is responsible for all shipping charges on returned/warrantable items. Starke will cover the repair (parts and labor) at no charge or provide a replacement item at Starke's discretion.

This warranty does not cover defects or damage caused by acts of God, unusual wear and tear, improper use, or improper maintenance by the user. No responsibility for consequential damage is expressed or implied, and the responsibility under this warranty/guaranty is limited to the repair or replacement of the defective materials. Repair or replacement of the item is fully at the discretion of Starke.

ALL OTHER REPRESENTATIONS, EXPRESS OR IMPLIED, WARRANTY, OR LIABILITY RELATING TO THE CONDITION OR USE OF THE PRODUCT ARE SPECIFICALLY DISAVOWED, AND IN NO EVENT SHALL STARKE BE LIABLE TO BUYER, OR ANY THIRD PARTY, FOR ANY DIRECT OR INDIRECT CONSEQUENTIAL OR INCIDENTAL DAMAGES

STARKE

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Notes

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Contact Your Starke Representative for More Information on Products to Help Maximize Your Workplace Efficiency



Hoists & Trolleys



Crane Components



Electrification

Crane Kits



Slings



Safety

