

LX ELECTRIC CHAIN HOIST



INSPECTION AND MAINTENANCE HOIST UNIT (LX1/LX3)



INTRODUCTION

This manual has been carefully prepared to assist you in the installation, maintenance and safe operation of the Street Crane equipment as described in the manual. It is in the interest of all parties involved with the use of this equipment to ensure that procedures are followed efficiently and safely.

Before installing, using or starting any maintenance work on the hoist study this manual carefully. Obtain a complete understanding of the hoist and its controls in order to ensure the safe and efficient use of the hoist. Ensure that all persons involved in the operation are suitable qualified and trained in its safe operation.

Provided that the recommended operation, maintenance and lubrication procedures are followed, you will maximise the Hoists life expectancy and have trouble free service.

Anyone working with or on the equipment should also be aware of their relevant responsibilities under the Factories Act, the Health and Safety at Work Act 1974 and Lifting Operations and Lifting Equipment Regulations (LOLER) 1998. The user has the responsibility for ensuring that the equipment is properly inspected and maintained and is safe to use.

NOTE : Other national regulations may apply for other countries.

In Great Britain codes of practice exist for the "Safe Use of Cranes". This standard, BS 7121, also covers inspection, testing and examination. The user should be familiar with its contents and it is advisable to have a copy of this standard kept alongside this manual. BS 7121 covers the following subjects:-

- Safe systems of work
- Management of the lifting operation
- Planning of the lifting operation, risk assessments and method statements
- Selection and duties of personnel and their minimum attributes
- Maintenance of cranes
- Inspection, Testing and Examination

In addition, management and supervision have an initial role to play in any safety programme by ensuring that:-

- The equipment is suitable for the job intended
- The equipment has been thoroughly examined and is safe to use
- A safety procedure is adopted for emergency situations i.e. power failure
- A safe system of work is adopted for maintenance personnel

It should be emphasised that the safety advice and maintenance details included in this document should be made available where they can be most effective. It is your responsibility to ensure that this information is made available at THE PLACE OF WORK.

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1. GENERAL INFORMATION

1.1 SYMBOLS



WARNING – This symbol draws attention to the possible injury or risk of life.



WARNING OF ELECTRICAL POTENTIAL – This symbol is found on electrical enclosures. These should only be opened by qualified persons or suitably instructed personnel.



WARNING OF SUSPENDED LOAD – This symbol warns of the risk to life and limb from standing under a suspended load.

1.2 PERSONNEL – DEFINITIONS AND ATTRIBUTES

The user should ensure that the person carrying out any task has such appropriate practical and theoretical knowledge and experience of the equipment in question as will enable them to perform the task safely and recognise any hazards associated with the work. They should be physically and mentally fit and trained in Safe Hoisting Practices and the use of safety and access equipment. No work of any kind should be authorised to persons who are under the influence of narcotics, alcohol or medication, which affects their ability to react. Hazards can only be minimised by care, common sense and being alert at all times.

Various personnel can be involved in the lifting operation, installation and inspection and maintenance of the equipment, supervisors, coordinators, operators, slingers, signallers, erectors and maintenance personnel. The duties of these personnel and their minimum attributes are defined in BS 7121-1:2006. Also, ISO 15513 gives competency requirements for crane drivers (operators), slingers, signallers and assessors. In the text of this manual the following definitions apply:-

User – person or organisation that has control of both the lifting operation and the hoist operator and has the responsibility to ensure the equipment is properly maintained and thoroughly examined by a competent person.

Competent Person – person who has such practical and theoretical knowledge and mechanical and / or electrical experience of the hoist and the equipment used in the lifting operation which enables them to detect defects or weaknesses and to assess their importance in relation to the safety and continued use of the lifting equipment.

Operator - trained person who is operating the hoist for the purpose of positioning loads.

1.3 MAINTENANCE SAFETY PROCEDURE

When personnel are required to work on the hoist for inspection, maintenance or other reasons, a system should be in operation to ensure that they are not endangered by movement of the equipment and that a secure working place is provided. Personnel should follow such a procedure. Where no formal procedure exists, Street Crane recommends the following:-

1. On commencing any maintenance work on the hoist:-
2. Obtain the necessary authorisation / permit to work.
3. Park the hoist in a designated maintenance position, clear of any personnel.
4. Follow the appropriate health and safety regulations and procedures.
5. Remove any loads or attachments from the hook and ensure that the bottom block is suitably supported to prevent accidental runaway.
6. Disconnect the mains switch and safeguard against unauthorised powering up, by placing locks and warning notices in the appropriate positions.



Some maintenance procedures are more effectively performed with power to the equipment. If work has to be carried out on live parts, an additional competent person must be available to actuate the power isolating switch in an emergency. Ensure that there is an effective manner of communication between personnel.

7. To avoid injuries, use only insulated tools and equipment.
8. On completion of any maintenance work, ensure all fixings, guards, covers, drip trays, etc. are replaced.

1.4 MAINTENANCE AND INSPECTION ACCESS

The equipment itself may have no provision for maintenance access or it may be fitted with full or partial maintenance access platforms. Where no or only partial access has been provided on the equipment, separate or additional access equipment will be required to service some of the components. These components should be accessed via a secure, mobile or temporary structure e.g. tower scaffold, self-standing stair platforms, scissor-lift or cherry picker. All access equipment should be assembled and operated by trained personnel in accordance with the manufacturer's instructions following the appropriate health and safety regulations and procedures.

The following should be considered when choosing the most appropriate type of maintenance access equipment.

- Floor space available for the access equipment.
- Working height above floor level.
- Number of personnel who require access at high level.
- Total weight of any parts to be removed / replaced.

1.5 WARRANTY / REPLACEMENT PARTS

The warranty will become invalid if the instructions for installation, operation and maintenance instructions contained in this manual are not followed.

Where replacement components are required use only genuine Street Crane parts. Modifications to the hoist or any of its mechanisms should not be carried out without the approval of Street Crane Company Limited. Failure to adopt these recommendations will invalidate the warranty and could result in an unsafe condition.

Please dispose of electrical and electronic equipment in an approved and environmentally friendly manner.

1.6 PERIODIC TESTS

The hoist must be inspected by a competent person at least once a year. The competent person may consider shorter periods to be more appropriate depending on the duty of the hoist. Record the results of the test in the hoist log book.

1.7 STORAGE

If the hoist is to be placed in storage for any period of time ensure that:-

- The hoist is covered and stored indoors in a heated building.
- Pack the hoist clear of the floor. Raise the bottom block to its top position and ensure that no chain links are damaged.
- Ensure all electrical switches are turned to the **OFF** position.
- Always fully inspect the hoist before installing and putting into service.

1.8 TRAINING AND AFTER SALES SERVICE

If required, Street Crane Company are able to provide trained service technicians to assist in inspection and maintenance procedures and provide operator training.

2. DESCRIPTION OF EQUIPMENT

The LX series hoist is of the electrically driven chain type. The hoist has a maximum load that it is permitted to lift. This is referred to as the Rated Capacity or Safe Working Load (SWL). The rated capacity is clearly marked on the hoist nameplate.

2.1 HOIST DESIGN / LAYOUT

- | | |
|-----------------|---------------------|
| 1. Chain Hoist | 4. Bottom Block |
| 2. Chain Bucket | 5. Hook |
| 3. Chain | 6. Electric Trolley |

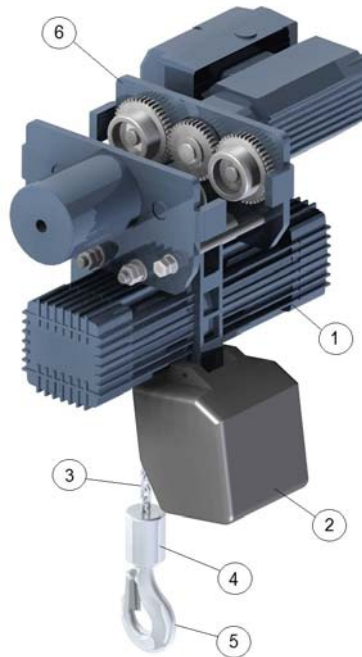


Figure 1 – Hoist Layout (LX1)

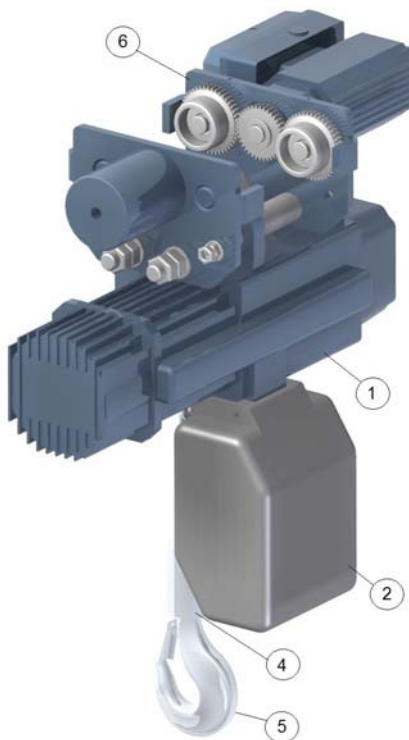


Figure 2 – Hoist Layout (LX3A)

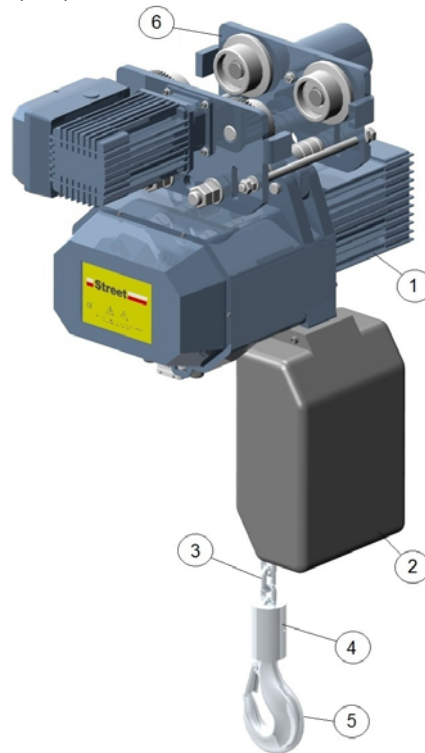


Figure 3 – Hoist Layout (LX3B)

2.2 HOIST IDENTIFICATION

Each individual hoist and its component parts/sizes can be identified by utilising the information on the hoist nameplate and model code in conjunction with the technical data tables in section 13.

2.3 HOIST NAMEPLATE

Each LX hoist is fitted with a nameplate which identifies the characteristics of that particular hoist. The nameplate is located on the hoist and contains the following information:

- The hoist model code
- The manufacturers name
- The serial number
- The year of manufacture
- Hoist classification
- Hoist capacity (SWL)
- Hoist speed

The information on the nameplate will be required when ordering replacement parts and when assessing the remaining service life of the hoist. Further information on the hoist model code can be found in section 2.4.

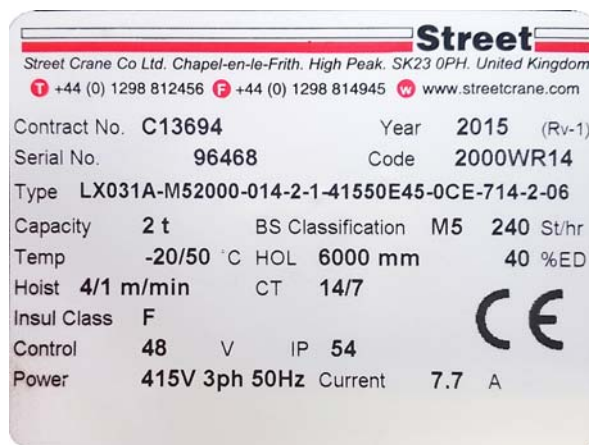


Figure 4 – LX Hoist Nameplate

2.4 HOIST MODEL CODE

The hoist model code is built up of different characters which identify individual components on the hoist. An example and break-down of each part of the code is given below.

The hoist model code complete with other information on the hoist nameplate (see 2.3) will be required when ordering replacement parts and when assessing the remaining service life of the hoist.

	LX01	1	A	-M5	0125	-005	-1	-1	-400	50	E	4	5	-OCE	-007	-1	-03
HOIST TYPE																	
NUMBER OF FALLS OF CHAIN																	
HOIST VERSION																	
HOIST DUTY																	
SAFE WORKING LOAD																	
HOIST SPEED*																	
HOIST SPEED CODE																	
RANGE																	
SUPPLY POTENTIAL																	
SUPPLY FREQUENCY																	
COMPLIANCE																	
CONTROL POTENTIAL																	
MAX AMBIENT TEMPERATURE																	
HOIST CONSTRUCTION																	
TRAVERSE SPEED*																	
TRAVERSE SPEED CODE																	
HEIGHT OF LIFT																	

HOIST TYPE:	LX01 or LX03		
NUMBER OF FALLS OF CHAIN:	1 or 2		
HOIST VERSION:	A or B		
HOIST DUTY:	M5 (M4 only on some models)		
SAFE WORKING LOAD kg/(lb):			
LX01:	0125	125	(276)
	0250	250	(552)
	0500	500	(1103)
	1000	1000	(2205)
LX03:	1000	1000	(2205)
	1500	1500	(3308)
	2000	2000	(4410)
	2500	2500	(5513)
	3000	3000	(6615)
	3200	3200	(7056)
	4000	4000	(8820)
	5000	5000	(11025)
HOIST SPEED (*varies with frequency):			
50Hz m/min	004	4	
(single speed)	005	5	
	006	6	
	007	7	
	008	8	
	012	12	
	014	14	
	016	16	
50Hz m/min	083	0.8/3	
(dual speed)	014	1/4	
	015	1.2/5	
	028	2/8	
	312	3/12	
	314	3.5/14	
60Hz m/min (ft/min)	004	4.5	(14.8)
(single speed)	004	4.8	(15.7)
	004	4.9	(16)
	006	6.6	(21.7)
	007	7.2	(23.6)
	008	8.1	(26.6)
	008	8.4	(27.5)
	009	9.2	(30.2)
	009	9.6	(31.5)
	010	10.1	(33.1)
	014	14.4	(47.2)
	014	14.5	(47.6)
	018	18.3	(60)
	020	20.1	(65.6)
60Hz m/min (ft/min)	083	0.8/3.4	(2.6/11.2)
(dual speed)	093	0.9/3.7	(3/12.1)
	014	1.1/4.5	(3.6/14.8)
	014	1.2/4.8	(3.9/15.7)
	015	1.2/5	(3.9/16.4)
	015	1.3/5.2	(4.3/17)
	015	1.4/5.7	(4.6/18.7)
	028	2.2/8.8	(7.2/28.9)

	029	2.4/9.6	(7.9/31.5)
	029	2.5/9.8	(8.2/32.1)
	314	3.6/14.4	(11.8/47.2)
	418	4.6/18.3	(15.1/60)
HOIST SPEED CODE:	1	Single Speed	
	2	Dual Speed	
RANGE: (Dependent on hoist type)	0	Models with no traverse motion or Low headroom hoists made to order	
	1	LX1 up to 160mm LX3 up to 200mm	
	2	LX1 up to 200mm LX3 up to 300mm	
	3	LX1 up to 300mm	
SUPPLY POTENTIAL:	230	230V (±10%) AC	
	380	380V (±10%) AC	
	400	400V (±10%) AC	
	460	460V (+10 / -6%) AC	
	575	575V (+10 / -6%) AC	
SUPPLY FREQUENCY (Hz):	50	50Hz (±1%)	
	60	60Hz (±1%)	
COMPLIANCE:	E	European directives (CE)	
	U	North America	
	D	Canada (CSA) Metric	
	B	Brazil	
CONTROL POTENTIAL:	1	110V AC	
	4	48V AC	
MAX AMBIENT TEMPERATURE:	5	50°C	
HOIST CONSTRUCTION:	00F	Eye Suspension	
	00H	Hook Suspension	
	OCS	Push Travel	
	OCE	Electric Travel	
	OCM	Hand Geared Travel	
	CER	Low Headroom Electric Travel	
	CSR	Low Headroom Push Travel	
TRAVERSE SPEED:	000	No traverse motion	
50Hz m/min	007	7	
(single speed)	014	14	
(dual speed)	714	7/14	
60Hz m/min (ft/min)	008	8.5	(27.8)
(single speed)	017	17	(55.7)
(dual speed)	817	8.5/17	(27.8/55.7)
TRAVERSE SPEED CODE:	0	No traverse motion	
	1	Single Speed	
	2	Dual Speed	
HEIGHT OF LIFT m (ft): (varies with hoist model; see datasheets specific to hoists. Two digit code eg 03 equals 3m)	03 - 40	3 to 40	(9.8 to 131.2)

2.5 PROCEDURE FOR ESTIMATING REMAINING SERVICE LIFE

The following gives a procedure for estimating the remaining service life of the hoist.

The hoist is classified into groups (M4 and M5) according to the desired service life and the conditions of loading (L1 to L4) to which it will be subjected.

1. Calculate or estimate the state of loading for the hoist (L?). If detailed information on the loading conditions is available, the competent person may be able to calculate the state of loading accurately by following the guidelines given in BS 466, FEM 1.001 or EN/ISO4301. If such information is not available then the competent person can estimate the state of loading using following descriptive guidelines.

L1 (light)	Mechanisms subjected very rarely to their maximum load and normally to very light loads.
L2 (moderate)	Mechanisms occasionally subjected to their maximum load and normally to rather light loads.
L3 (heavy)	Mechanisms frequently subjected to their maximum load and normally to loads of medium magnitude.
L4 (very heavy)	Mechanisms regularly subjected to their maximum load.

2. Ascertain the classification of the hoist (M?). The group classification of your equipment can be found on the equipment nameplate (see section 2.3 for nameplate and 2.4 hoist model code).
3. Knowing the state of loading and the hoist classification, determine the life expectancy of the hoist measured in hours from the following table.

State of Loading	Mechanism Classification	
	M4	M5
L1 (light)	6300	12500
L2 (moderate)	3200	6300
L3 (heavy)	1600	3200
L4 (very heavy)	800	1600

2.5.1 Record of Operating Performance

The hoist user has a responsibility to ensure that the actual operating performance of the chain hoist is recorded and documented in the Inspection Log (section 15.3) at least once a year. This record should be compared with the expected service life as determined from the above procedure. When the meter reading approaches 95% of the expected service life, the user should consider replacing the hoist or include a major overhaul as part of the immediate maintenance procedure.

If meter reading exceeds the calculated service life, the life expectancy of the hoist has been exceeded and the hoist should be taken out of service.

Example. A hoist with a design classification of M5 and a calculated / estimated state of loading of L2 has an expected service life of 6300 hours.

3. ASSEMBLY / INSTALLATION

Prior to installing the hoist, ALWAYS ensure that the structure it is being suspended from is capable of carrying the hoist AND its load, and has been certified to do so. Also make sure that the power supply being used complies with that specified for the hoist.

Immediately report any damage which may have occurred during transit. Consult with the manufacturer / supplier and repair the equipment before installation. Do not install damaged equipment. Use only original Street Crane spare parts for repairs. Do not carry out any alterations or modifications to the hoist.

3.1 ASSEMBLING THE HOIST / CHAIN COLLECTOR

The hoist may be supplied with a variety of different chain collectors. The chain collector bucket/bag must be fitted prior to commissioning. The hoist model code (2.4) can be used in conjunction with the table (section 13.3) to ascertain the type of bucket used on each hoist.

3.1.1 Assembling the chain collector (Chain Collector Bucket - Standard)



Figure 5 – Collector Bucket (Standard)

- 1 Position the chain collector bucket in such a way that the hole corresponds with that of the hoist body; the bevel must be facing backwards.
- 2 Insert the chain evenly.
- 3 Carefully feed the chain into the bucket - to avoid irregular bunching, NEVER insert all the chain in together.
- 4 Insert the screw and secure with the nut to the relevant hole at the edge of the central body.

3.1.2 Assembling the chain collector (Chain Collector Bag - Type 110/112/113)



Figure 6 – Collector Bag (Type 110/112/113)

- 1 Position the chain collector bag under the hoist to enable collection of the chain.
- 2 Insert the chain evenly.
- 3 Carefully feed the chain into the bag - to avoid irregular bunching, NEVER insert all the chain in together.
- 4 Insert the screw and secure with the nut to the bracket at the end of the hoist body.

3.1.3 Assembling the chain collector (Chain Collector Bag - Type 118)

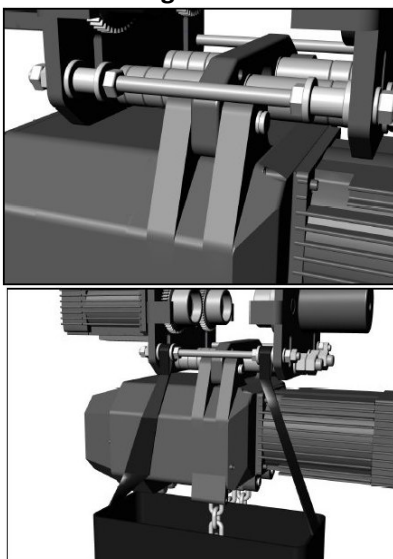


Figure 7 – Collector Bag (Type 118)

- 1 Position the chain collector bag (see Figure 7) to enable collection of the chain.
- 2 Insert the chain evenly.
- 3 Carefully feed the chain into the bag - to avoid irregular bunching, NEVER insert all the chain in together.
- 4 Attach the chain collector to the trolley spacer bar using the washers and spacers provided. Secure the spacer bar to the trolley frame assembly. Allow the collector bag to rest at the side of the hoist to enable chain collection.

Once the hoist is fully assembled to the supporting structure, it is considered by the current legislation as a new machine and is, therefore, subject to testing of the entire system.

3.1.4 Lubricating the chain

Smear the chain with industrial oil or gear oil in order to prevent wear of the chain itself and the load sprocket (see section 7.1).

3.1.5 Connection to the feed

Ensure that the hoist is compatible to the line voltage of the installation and if necessary perform the relevant modifications to adapt it. The hoists' power feed supply should be provided from a suitable fused and isolatable supply minimum cable size 1.5mm. The isolator should be mounted in an accessible place as close to the hoist as possible. The fourth wire, with a yellow-green insulating sheath, must be connected to the earth terminal situated inside the electrical board and then connected to the earth system.



If used with an incorrect voltage, the hoist can suffer serious damage. Ensure that the line voltage corresponds to that required, (voltage indicated on the hoist plate.)

3.2 INSTALLATION OF THE PUSH/ELECTRIC TROLLEY

The hoist may be fitted with a push or electric trolley. The trolley is either standard or low headroom. Figure 8 (Standard Headroom) and Figure 9 (Low Headroom) identify trolley type.

3.2.1 Standard Headroom

1. The trolley should be set with a 3-4mm gap between the flange of the beam and the hoist trolley wheel flanges.
2. To set the width, add or subtract an even number of spacers (B) from either side of the hoist.
3. Adjust the trolley load bar (C) and spacer bar (H) as required to ensure the trolley side plates (A) are parallel.
4. Ensure the hoist is positioned in the centre of the trolley and the spacers (B) are fitted evenly on the trolley load bar.

NOTE: Hoist fitting on the trolley load bar may differ between LX1 and LX3 hoists.

5. Lift up the hoist and install on the beam.
6. Check all bolts and nuts (D) and (E) for correct tightness.
7. If utilising a power travel trolley, fit the correct limit trips to the lifting beam to allow the travel limits to operate.
8. Check the operation of the hoist on the beam.
9. Lubricate the trolley gears with a suitable open gear lubricant.

3.2.2 Low Headroom

The low headroom trolley is manufactured individually to suit a specific runway beam flange width.

1. The trolley should be set with a 3-4mm gap between the flange of the beam and the hoist trolley wheel flanges.
2. Ensure the hoist is positioned in the centre of the trolley load bars (2 off).
3. Open the trolley out by removing/slackening the nuts (E) on one side of the spacer bars (H) and slide back the two side plates (A).

NOTE: Hoist fitting on the trolley load bar may differ between LX1 and LX3 hoists.

4. Lift up the hoist and install on the beam.
5. Check all bolts and nuts (D) and (E) for correct tightness.
6. If utilising a power travel trolley, fit the correct limit trips to the lifting beam to allow the travel limits to operate.
7. Check the operation of the hoist on the beam.
8. Lubricate the trolley gears with a suitable open gear lubricant.

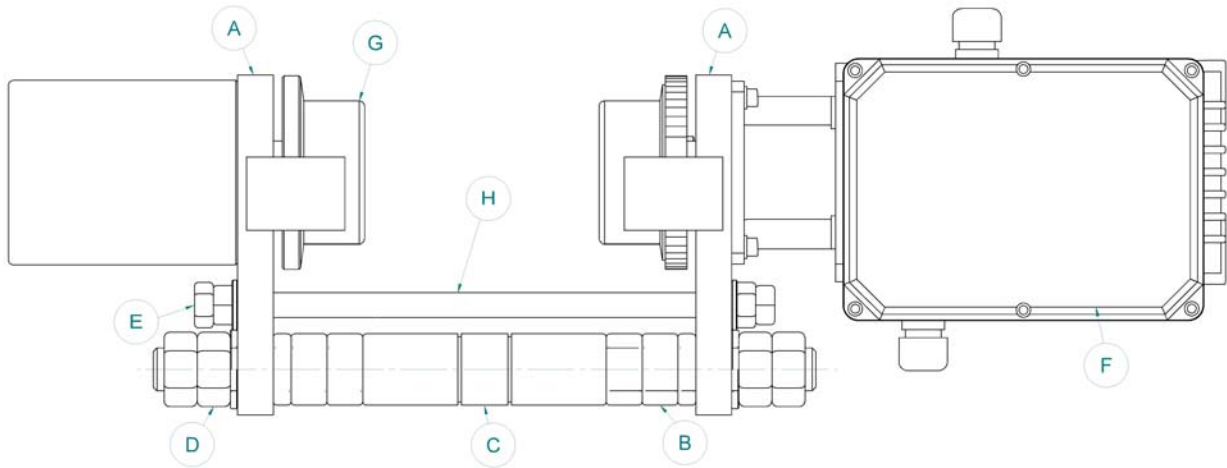


Figure 8 – Push/Electric Trolley (Standard Headroom)

Ref	Description
A	Side plate
B	Spacer
C	Trolley load bar
D	Load bar nut

Ref	Description
E	Spacer bar nut
F	Control panel (Electric Trolley only)
G	Trolley wheel
H	Spacer bar

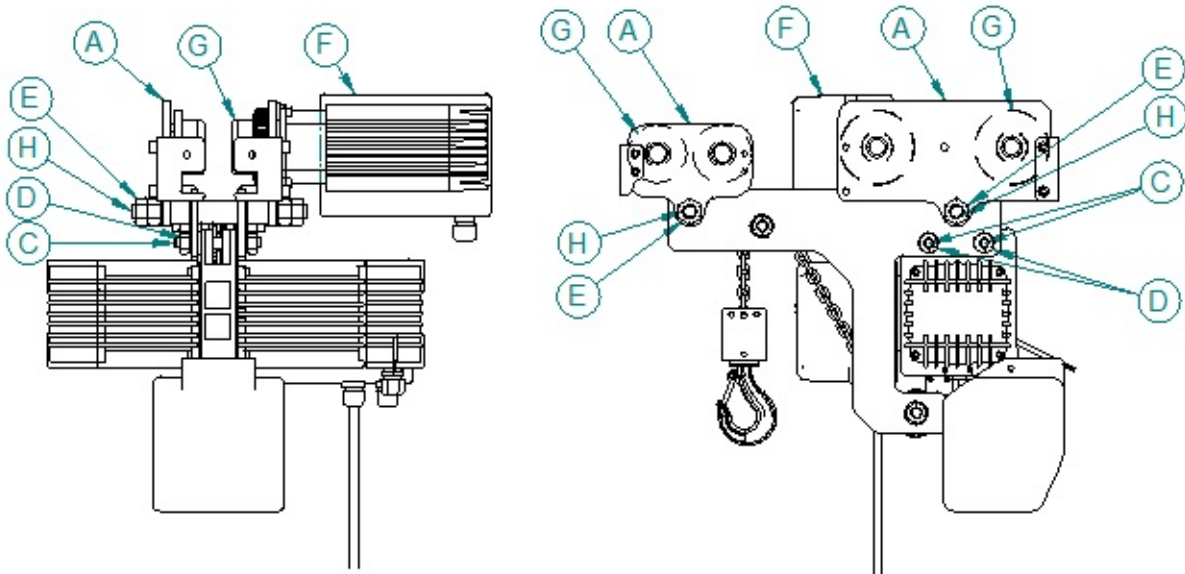


Figure 9 – Push/Electric Trolley (Low Headroom)

3.3 CROSS TRAVEL LIMIT SWITCHES

Cross Travel limit switches are normally used to indicate the position of the hoist. The LX hoist cross travel limit switches are of either the roller, or cruciform type.

3.3.1 Limit Switch Type E100E

The E100E type limit is of the roller type. When the switch comes into contact with a limit deflector, the limit actuates, stopping the cross travel motion.

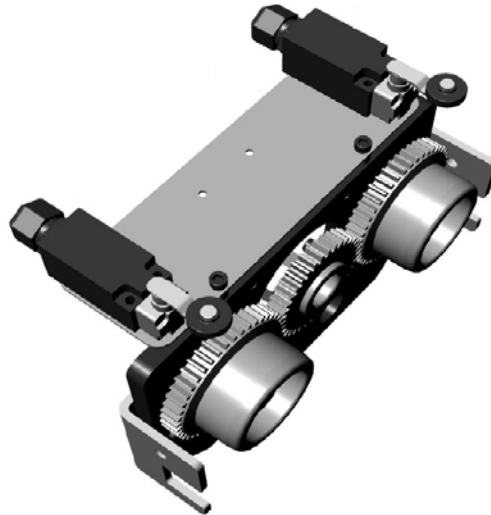


Figure 10 – Cross Travel Limit (Roller Type)

Standard Setup

Once tripped then the relative motion will stop.

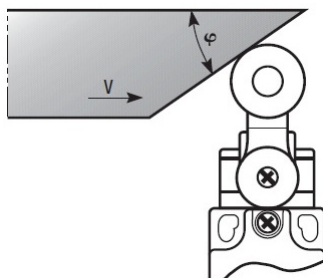
When the limit is tripped, normal operation is available in the opposite direction to that which caused the switch to operate. Once the hoist has moved away from the limit deflector, the limit switch will reset, and that motion will return to perform its original function.

The limit deflector should be positioned to enable the limits to actuate at the desired point.

To ensure reliable operation of the switch, the roller limit head should not impact with any obstruction, with the exception of the limit deflector. Care should also be taken when positioning the limit deflector, making sure it will actuate at the correct point, and not impact upon any objects other than the roller limit head. Failure to comply with this may result in permanent damage to the switch/hoist.

When setting the point of operation for the limit switch, account should be taken of the cross travel speed and the stopping distance. The point of operation should be set to allow a fully loaded hoist to stop from fast speed before reaching the required position. After setting, the correct operating position of the switch should be proven.

Limit Deflector Gradient/Speed Guide



Cross Travel Speed V (m/min)	Gradient Setting ϕ
1-14	60-90°
15-17	60

3.3.2 Limit Switch Type 7101

The 7101 type limit is of the cruciform type. The switch is operated by a striker peg, which rotates an operating arm as it comes into contact with it.

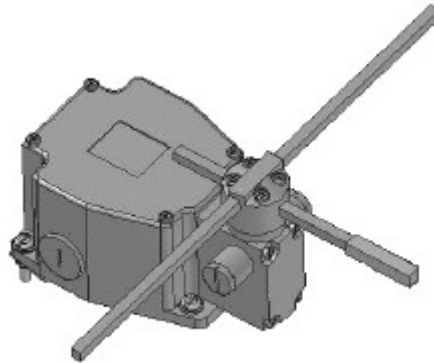


Figure 11 – Cross Travel Limit (Cruciform Type)

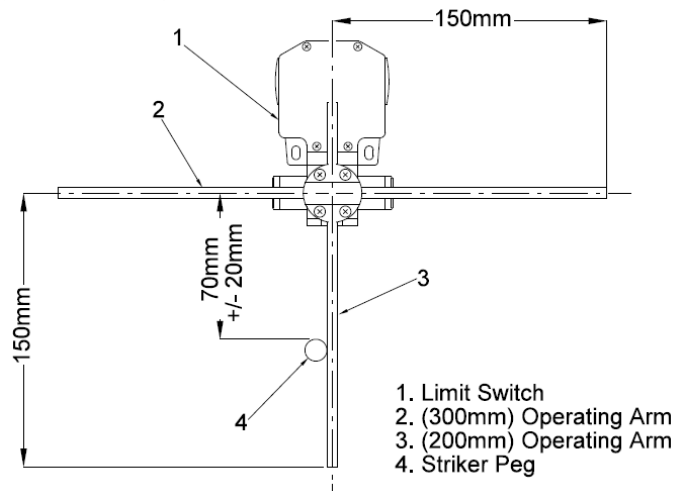
Standard Setup

Once tripped then the relative motion becomes operable in slow speed only.

Optional Setup

Once tripped then the relative motion will stop.

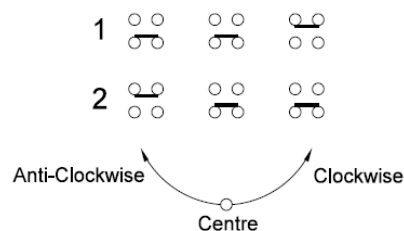
On each of the above, when the limit is tripped, normal operation is available in the opposite direction to that which caused the switch to operate. Once the crane/hoist has passed back through the limit switch, re-setting it, that motion will return to perform its original function.



To ensure reliable operation of the switch, the dimension from the edge of the striker peg to the centre line of the horizontal arm should be as shown above. The striker pegs should be located so that the switch is not rotated more than 90° in any one direction. Failure to comply with this will result in permanent damage to the switch.

When setting the point of operation for the limit switch, account should be taken of the hoist speed and the stopping distance. The point of operation should be set to allow a fully loaded hoist to stop from fast speed before reaching the required position. After setting, the correct operating position of the switch should be proven.

Contacts

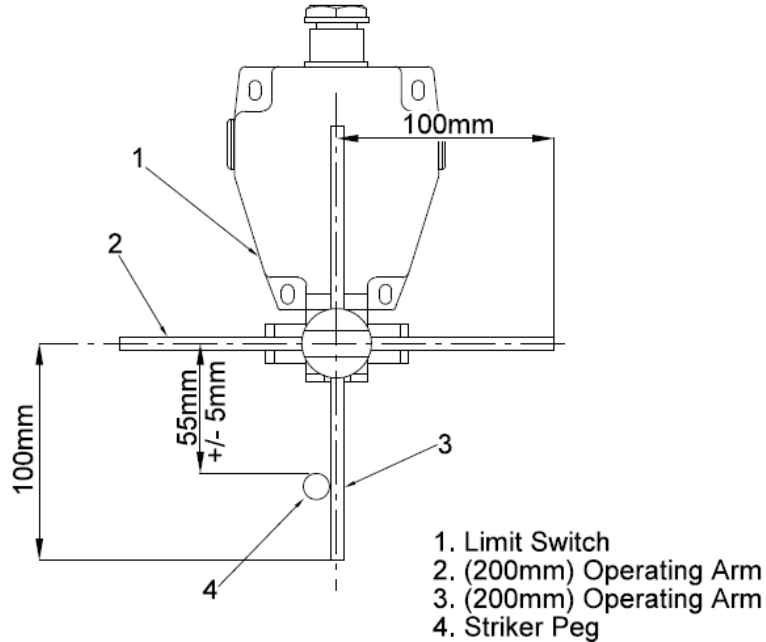


3.3.3 Limit Switch Type 7551

The 7551 limit switch is normally used either as a position indicator or for end of travel detection of a crane/hoist. The switch is operated by a striker peg, which rotates an operating arm as it comes into contact with it.

Standard Operation

Once the crane/hoist has tripped the first stage of the limit, then that motion becomes operable in slow speed only. When the second stage of the limit switch is tripped then that motion will stop. At both the first and second stages of tripping, normal operation is available in the opposite direction to that which caused the switch to operate.

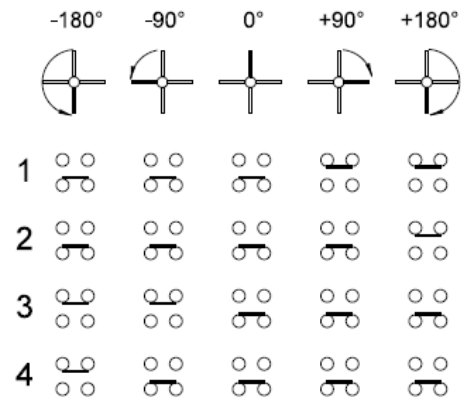


Setup

To ensure reliable operation of the switch, the dimension from the edge of the striker peg to the centre line of the horizontal arm should be as shown above. The striker pegs should be located so that the switch is not rotated more than 180° in any one direction. Failure to comply with this will result in permanent damage to the switch.

When setting the point of operation for the limit switch, account should be taken of the crane/hoist speed and stopping distance. The point of operation should be set, allowing a fully loaded crane/hoist to operate the switch before reaching the required position. After setting, operate the related motion to ensure that the switch operates correctly at the required position.

Contacts



4. OPERATING / SAFETY INSTRUCTIONS

4.1 INTENDED USE

The hoist is designed for lifting, moving and lowering loads, up to the rated capacity of the equipment, by means of a hook or other similar load handling device. The equipment should not be modified or any additions made without the approval of Street Crane Co Ltd.

- The equipment is not intended for transporting any persons either suspended in a basket from the hoist.
- The hoist is not intended for pulling loads at an angle and not for towing or dragging loads along the floor. The hoist is designed for lifting a load in a vertical path only.
- Ensure that the hoist is always operated within its rated capacity (SWL). The weight of any lifting gear should be taken into account when assessing the load on the hoist. It may also be necessary to allow for any adhesion between the load and its supports.



Overloading can lead to a possible failure of some of the load carrying parts. Overloading the hoist may start a defect, which could lead to future failure even at less than the rated capacity.

- Do not use the hoist for pulling loads loose, i.e. pulling components from moulds and always make necessary allowances for any adhesion between the load and its supports.
- The end of travel limits, (hoist or travel), are not intended to be a regular method of stopping the motion. They are safety devices and they should be approached with caution.

4.2 DAILY PRE-USE INSPECTIONS (AT THE START OF EACH DAY/SHIFT)

Part of the hoist operator's training should be to make them aware of potential malfunctions requiring adjustments or repairs and the need to bring these to the attention of the competent person for corrective action. The hoist and associated equipment should undergo daily visual and functional checks to ensure that they operate correctly. These can be executed by the operator from floor level.



In the event of a malfunction of equipment or unusual occurrences, the operator should immediately REPORT the fault(s) to the competent person. The hoist should be taken out of service until the fault(s) have been rectified by the appropriately qualified personnel.

1. Ensure that a "Men Working Overhead" or a "Permit to Work" is not in force.
2. Check all round visibility and carefully note both permanent and temporary hazards.
3. Check that the chain has not been displaced. The chain should be free from defects.
4. Check the safety latch on the hook for damage.
5. Check that no electrical equipment is exposed to contamination by oil, grease, water or dirt.
6. Check that any audible and visual warning devices operate correctly.
7. Carry out the Operational Test (see section 5).
8. Check the operation of any travel and / or traverse limit switches.



Do not use ANY limit switch as a regular method of stopping the motion. They are intended as emergency devices and are for the safety of personnel.

9. Check the operation of the hoist brake. To do this lift a load clear of the ground and release the pushbutton. The hook should remain in position with no run-back.

4.3 DUTIES OF THE OPERATOR / SAFE HOISTING PRACTICES

At the start of each working day or shift, carry out the daily pre-use checks. Do not work with any hoist if any defects are found which may compromise safety.

The following information serves as a guide for safe hoisting practices and an operator adhering to these will quickly find that he / she is able to work both smoothly and quickly, without prejudicing safety and equipment.

1. Know where the safety, fire and first aid equipment is located and how to use it.
2. Ensure that no one is working on the track or where they could be struck by the hoist.
3. Before using the hoist make a full visual inspection to ascertain that the equipment is in good working order, paying particular attention to the chain and hook. Refer to Daily pre-use inspections.
4. Do not use the hoist for anything other than its intended purpose.
5. Ensure the hoist is properly maintained and that all the necessary examination and maintenance records are up to date.
6. All relevant accident prevention, safe lifting and slinging procedures should be obeyed.
7. Constantly monitor all hoist movements and be ready to activate the emergency stop should any abnormal circumstances arise. Be especially aware of instances where the hoist may fail to stop when the push button/joystick is released or if the hoist moves unexpectedly.

8. Always operate the hoist with care and consideration. Care should be taken to avoid the swinging of loads.
9. Ensure that the SWL data plates are clearly visible to the operator at all times.
10. Centre the hoist over the load before lifting. Do not side pull as this can damage the hoist and endanger the operator.
11. Do not lift a load unless you can see it is securely slung with "suitable" lifting tackle.



Lifting tackle should only be deemed "suitable" if in accordance with LOLER 98. (Other national regulations may apply).

12. Always gently 'inch' the hoist into the load.



Running into the load at full hoist speed imposes excessive overloads on the hoist and could result in failure of parts and/or supporting structure.

13. Do not 'inch' the hoist unnecessarily. Excessive stopping and starting causes high temperatures in the motor and brake and may result in overheating or burnout of the component if continued to excess.
14. Do not try and move in the opposite direction until the hoist has come to a complete stop.



Do not stand below a suspended load or allow any other personnel to do so.

15. Prior to operating the travel or traverse motion, the operator should make personnel aware of approaching loads using audible warnings where necessary.



Do not move the loads over the heads of other personnel.

16. Do not run the hoist into the travel stops at full speed. Ensure that the rubber buffer is in place and not damaged.
17. Ensure that adequate clearance is maintained between the load or lifting attachment and the hoist structure.
18. Ensure that you can see the hook or load clearly at all times or are receiving signals from someone who can. Ensure that both parties know the full meaning of the hand signals for operating the hoist. See diagram below for recommended hand signals.
19. Do not continue to travel or traverse once the hoist has come to a stop against the endstops. This will cause localised damage to the rail or runway beam.
20. Never leave a load suspended in the air unsupervised.
21. Do not park the hoist over fumes, steam or dangerous processes. For outdoor hoists, park in a sheltered area where possible.
22. Do not leave outdoor hoists unattended for long periods without applying the storm anchors.

4.4 HAND SIGNALS

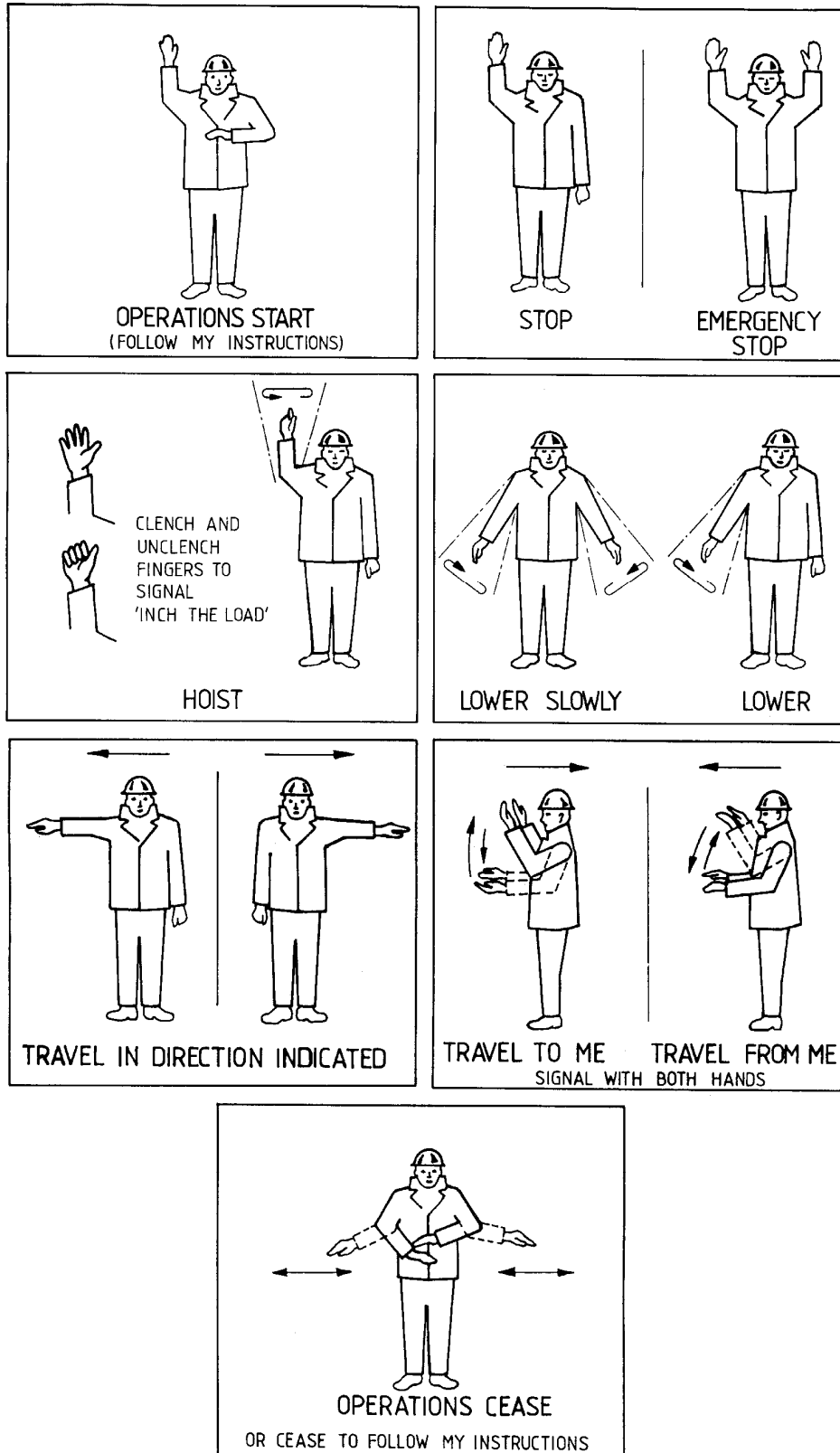


Figure 12 – Recommended Hand Signals

4.5 PENDANT OPERATING INSTRUCTIONS

The pendant is fitted with pushbuttons, these are spring applied, which when released will return to the neutral position, the motion will stop and the relevant brake will automatically apply.

4.5.1 Legend Nomenclature

A legend corresponding to the direction of motion is located next to each of the pushbuttons.

4.5.1.1 Pendant controls:

- Hoist motions: (▲ and ▼).
- Traverse motion: (◀ and ▶).
- Emergency Stop: Twist-Release Red Pushbutton (**EMG. STOP**).

4.5.2 Switch ON

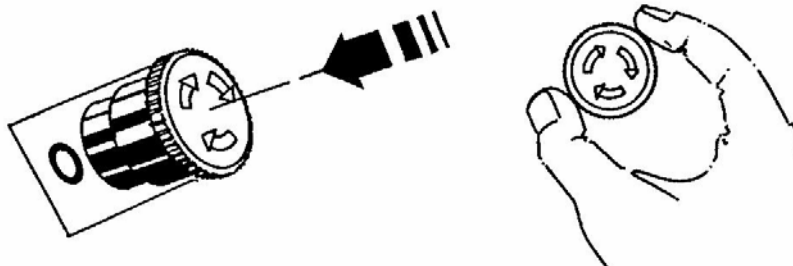
1. Establish power supply to the conductors via the main isolator (this may be located on a wall or supporting column).
2. Release the **EMERGENCY STOP** button on the controller.

4.5.3 Emergency Stop



Before starting work it is imperative to check the correct operation of the emergency stop button. It is important that the operator is constantly aware and monitoring all hoist movements and ready to activate the emergency stop should any abnormal circumstances arise or situations occur that may endanger the safety of personnel working in the vicinity. Be especially aware of instances where the hoist may fail to stop when the push button / joystick is released or the hoist starts or moves unexpectedly.

1. Depressing the **EMERGENCY STOP** push button will cause all motions to stop and all brakes to engage.
2. The emergency stop will lock all controls in the **OFF** position.
3. If the button is used in an emergency stop situation, ensure that any faults are reported and rectified before re-establishing the power supply.
4. Twist to release the **EMERGENCY STOP** button. No functions will be operative until the emergency stop is unlatched.



4.5.4 Push button operation

1. The operating controls (push button) must **never** be mechanically blocked in an **ON** position.
2. All opposing functions are mechanically interlocked e.g. hoist function cannot be operated at the same time as the lower function.
3. Control pendants can be fitted with either single (single stage) or dual pressure (two stage) pushbuttons to control hoist motions. For push button operation depress the required pushbutton and the hoist will move in the corresponding direction.
 - Select the direction of motion required.

SINGLE SPEED MOTION

Single speed hoists have single pressure buttons.

Standard Speed. To operate standard speed of a single speed motion, press the button fully in.

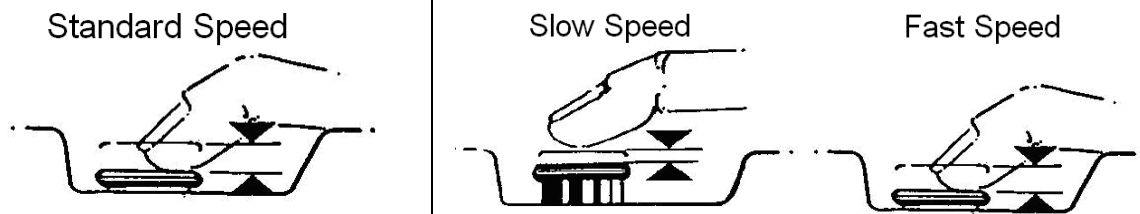
DUAL SPEED MOTION

Dual speed hoists have double pressure buttons.

Slow Speed. To operate slow speed of a dual speed motion, press the button in to the first stage.

Fast Speed. To operate fast speed of a dual speed motion, press the button fully in (i.e. to the second stage).

Change Speed from Fast to Slow. To change from fast speed to slow speed, release pressure on pushbutton completely and then engage first stage pressure. The motion will first stop and then continue at slow speed.



4. To maintain the selected motion the pushbutton must be held depressed. Releasing the push button will stop the motion.
5. Press the **EMERGENCY STOP** pushbutton if no further actions are to be taken.

4.6 LEAVING THE HOIST UNATTENDED



It is essential that a hoist operator is present when a load is suspended from a hoist. When the hoist is left unattended, even for a short period, it is essential that:-

1. The hoist is parked away from any local sources of heat, fumes, condensation or damp conditions.
2. Any slings or lifting tackle have been removed from the hook and the hook is raised to a safe position.
3. The **Pendant control** :-
 - Should be left in a safe location.
 - Must always be turned **OFF** by pressing the **EMERGENCY STOP** button.
4. For long periods and for out-of-service conditions, switch the mains isolator to the **OFF** position.
5. For outdoor hoists, attach the storm anchors.

4.7 POWER FAILURE

The appointed person should establish a safe operating procedure in the event of a power failure. If the appointed person does not have such a procedure the following is recommended: -

1. Press the **EMERGENCY STOP** button.
2. Switch **OFF** the power supply to the hoist at the main isolator until the electrical supply is restored.
3. If a load is suspended from the hoist, fence off a safe area immediately below / around the load and clear all personnel from that area.
 - Fence off and clear all personnel from the area under the load.
 - Follow the appropriate Health and Safety regulations and procedures.

When the electrical supply is restored, re-establish the hoist power supply, lower the load, then carry out the daily pre-use inspections (see section 4.2).

5. OPERATIONAL TEST

This test should be made before use of the hoist and at the start of every day.

5.1 LIFTING TEST

Switch on the power to the hoist with the isolator and then turn the emergency stop button in order to release it. Press the **UP** or **DOWN** button on the pendant to check the direction of the hoist. The movement of the chain should correspond with what is indicated on the pendant button.

5.2 TRAVEL TEST (ELECTRIC TROLLEY ONLY)

Press the button **LEFT** or **RIGHT** on the pendant to verify that the trolley runs in the correct direction.

5.3 CLUTCH TEST

Press the **UP** button on the pendant until the bottom block reaches the hoist body. The motor should continue to run with the clutch running. Repeat the same manoeuvre pressing the button **DOWN** to lower the hook until the chain stop comes up against the hoist body. In both cases check that the hoist motor continues to run and the clutch slips. For hoists with hoisting limits this test requires the limits to be linked out and should be carried out by a competent person (section 1.2).

5.4 HOISTING LIMITS (WHERE FITTED)

Press button **UP** on the pendant until the bottom block/spring stopper touches the chain limit flap (see Figure 31 / section 11). This will activate the upper limit switch and stop the hoist.

5.5 BRAKE TEST

With a small load of 20kg operate the **DOWN** and **UP** several times to check the correct operation of the hoist and brake. When either button is released the hoist should stop and the load held without slipping.

Repeat the above with the SWL of the hoist, again the load should be held without slipping.

5.6 EMERGENCY STOP BUTTON TEST

Press the **UP** or **DOWN** pushbutton and then the **EMERGENCY STOP** button to check that the hoist stops and remains stopped until it is released. Repeat with the process with other pushbutton.



If any buttons are non-functional the hoist should not be used, and Street Crane Company should be contacted.

6. INSPECTION AND MAINTENANCE / PERIODICAL CHECKS

To ensure that your hoist continues to be safe in operation and operates as efficiently as possible, a regular planned inspection and preventative maintenance programme of the equipment is essential. Preventative maintenance, including lubrication, should be undertaken at pre-set intervals, depending on the hoist duty, with the objective of keeping the equipment in a serviceable condition.

6.1 DAILY CHECKS

- Carry out daily check procedure (see section 4.2).

6.2 MONTHLY CHECKS

- Carry out daily check procedure (see section 4.2).
- Ensure that the pins of the hoist carrying the trolley are in good condition (are not bent or loose).
- Inspect the trolley plates to ensure that they are not out of shape.
- Inspect the chain (see 9.1) and hook (section 10).

6.3 ROUTINE TESTS

Depending on the conditions of use (see 2.5), the chain hoist and its supporting structure must be tested by an expert as required and at least once a year. Consult the manufacturer if in doubt. Record results of tests in the Inspection Log.

6.4 HOISTS THAT HAVE BEEN UNUSED FOR AN EXTENDED PERIOD

In cases where the hoist has been out of use for an extended period of time (6-12 months) the user should ensure that the competent person specifies a special programme of pre-use checks. The extent of the checks depends on the length of time the hoist has been out of service and the location of the hoist during that period.

As a minimum the pre-use checks should include the daily pre-start inspections mentioned above plus the following:-

1. Check chain for signs of corrosion / degradation and damage and that there is still adequate lubricant. Check the entire length of the chain.
2. Check for corrosion on the structure and mechanisms.
3. Check for damage and missing components or legends.
4. Check the brake disc, remove cover, coils and clean the brake.

Test every motion for several minutes without load and then repeat the test with a load ensuring all brakes work satisfactorily.

6.5 REPORTING OF DEFECTS AND INCIDENTS

The competent person should have a recognised procedure for reporting defects and incidents. The procedure should include the immediate notification of the following:-

1. Any defects found during the daily checks.
2. Defects found at any other time.
3. Incidents or accidents, however slight.
4. Shock loads however they occur.
5. Dangerous occurrences or reportable incidents.

6.6 KEEPING OF RECORDS

Accurate recording of the hoist performance can provide useful information in regulating maintenance procedures and control of replacement stock. In the hoist maintenance logs (section 15), record the date and reason for replacement, each time a component is replaced.

6.7 INSPECTION AND SERVICE SCHEDULE

Item	Inspection Criteria	Inspection Period		
		Before first Commissioning	Daily	Routine Inspection
Hoist Brake	Function test	•	•	•
	Check Air Gap			•
Slipping Clutch	Function test	•		•
Chain	Visual check	•	•	•
	Lubricate	•	•	•
	Measure for wear			•
Chain bucket	Check attachment	•		•
Chain Stop / Spring	Check for distortion and wear			•
Hook / Bottom block	Visual check	•	•	•
	Check return wheel roller bearing			•
Loadhook	Check bearing	•	•	•
	Check safety catch operation	•	•	•
	Check for distortion and wear			•
Controls	Function test	•	•	•
	Condition of power supply			•
Suspension eye / hook	Check for distortion and wear			•
Chain hoist	Theoretical service life			•
Traverse Brake	Function Test	•	•	•
Traverse Drive (Conical)	Check Friction Lining for wear			•
Traverse Drive (Size 6)	Check Air Gap			•

7. LUBRICATION

7.1 HOIST



Before commissioning the hoist ensure that the full length of chain is lubricated thoroughly.

Component	Lubricant	Method of Application	Characteristics	Quantity
Hoist gearbox	Factory filled / Sealed for life*			
Chain	Engine oil	Apply directly to chain using a brush, swab or spray.	SAE viscosity grade – 20W-50 Density @ 15°C – 0.896	As Req'd
Return wheel in bottom block (2 fall only)	Engine oil	Apply directly to gearwheel using a brush, swab or spray.	SAE viscosity grade – 20W-50 Density @ 15°C – 0.896	As Req'd
Trolley Wheels	Gear Compound	Apply directly to gearwheel using a brush, swab or spray.	Heavy Black Fluid Specific Gravity 1.15 Timken OK load 60 lbs Viscosity @ 40°C 1000-1300 cSt Viscosity @ 100°C 450-550 cSt	As Req'd

*If the hoist gearbox is disassembled then the lubricant should be replaced as follows:

Hoist Type	Lubricant	Characteristics	Quantity
LX1 (125kg to 500kg)	Roloil LITEX EP1 Grease	Lithium soap thickened grease containing a rust/oxidation inhibitor and EP additive. NLGI Grade 1	150g
LX1 (1000kg to 2000kg)	Roloil LITEX EP1 Grease	Penetration Consistency 310-340 Dropping Point >180° C Viscosity: 445 cSt @ 40°C 445 cSt @ 100°C	200g
LX3A	Mobil Gear 600 XP 460	Gear oil, ISO Viscosity Grade 460 460 mm ² /s @ 40°C	400ml
LX3B	Mobil Gear 600 XP 460	30.6 mm ² /s @ 100°C	500ml

8. MAINTENANCE

8.1 CLUTCH ADJUSTMENT / REPLACEMENT

8.1.1 Slipping Clutch / Overload

The slipping clutch is used to prevent the hoist from lifting a load in excess of the rated capacity (safe working load).

NOTE: The clutch is pre-set at the factory prior despatch. It may require adjusting after a long period under severe operating conditions. Any adjustments must be carried out by authorised service personnel. Correct operation of the slipping clutch can be determined by checking that the hoist raises no more than 1.25 x safe working load (SWL).



Setting of the slipping clutch requires power to the hoist unit to be switched ON. All work must be carried out with extreme care. Suitable safety precautions should be made to ensure that other motions are not accidentally activated.

8.1.2 Hoist Clutch Adjustment (LX1)

- 1 Remove the four socket head cap screws from the hoist body cover (non hoist motor / panel side).
- 2 Remove hoist body cover and counterbalance.



Remove cover carefully as counterbalance weight is inside.

- 3 Adjust the slipping clutch tension using the central adjusting nut so that the hoist is able to lift the safe working load (SWL) of the hoist plus 25%. The clutch should just start to slip at this capacity.
- 4 Replace the counterweight, body cover and screws.

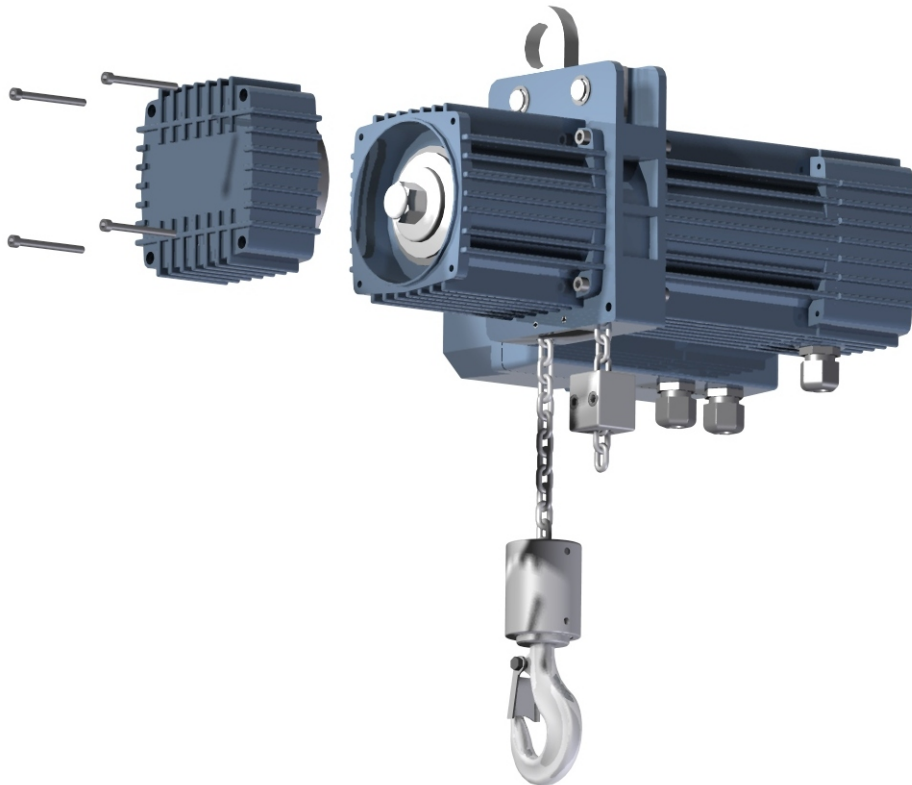


Figure 13 – Clutch Adjustment (LX1)

8.2 REPLACING THE CLUTCH OR SPRING-CUP (LX1 HOIST)

1. Isolate the hoist unit.
2. Remove the four socket head cap screws from the hoist body cover (non hoist motor / panel side).
3. Remove hoist body cover and counterbalance.



Remove cover carefully as counterbalance weight is inside.

4. Unscrew and remove the adjusting nut.
5. Withdraw the washer, cup springs, clutch disc and old clutch plate.
6. Using the new clutch disc, re assemble in reverse order.
7. Adjust the clutch.
8. Replace the counterweight, body cover and screws.

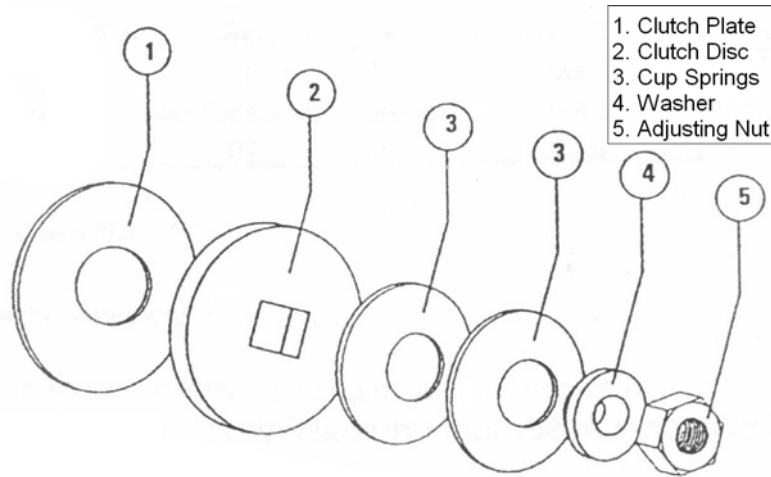


Figure 14 – Clutch Assembly (LX1)

8.3 HOIST CLUTCH ADJUSTMENT (LX3A)

1. Isolate the hoist.
2. Remove the six socket head cap screws and withdraw the electrical cover.
3. Remove electrical back plate fixings and withdraw the electrical panel sufficient to expose the adjusting nut. Support panel where necessary.

NOTE: Depending on tools available the locknut and clutch adjusting nuts may be accessible without removing the electrical panel.

4. Adjust the slipping clutch tension using the adjusting nut.
5. Replace electrical panel where necessary.
6. Replace electrical panel cover and fixings.
7. Re-connect power supply to the hoist.
8. Test the slipping clutch. The hoist should be set able to lift the safe working load (SWL) plus 25%. The clutch should just start to slip at this capacity.
9. Where further adjustment is necessary, repeat steps 4-8 above.

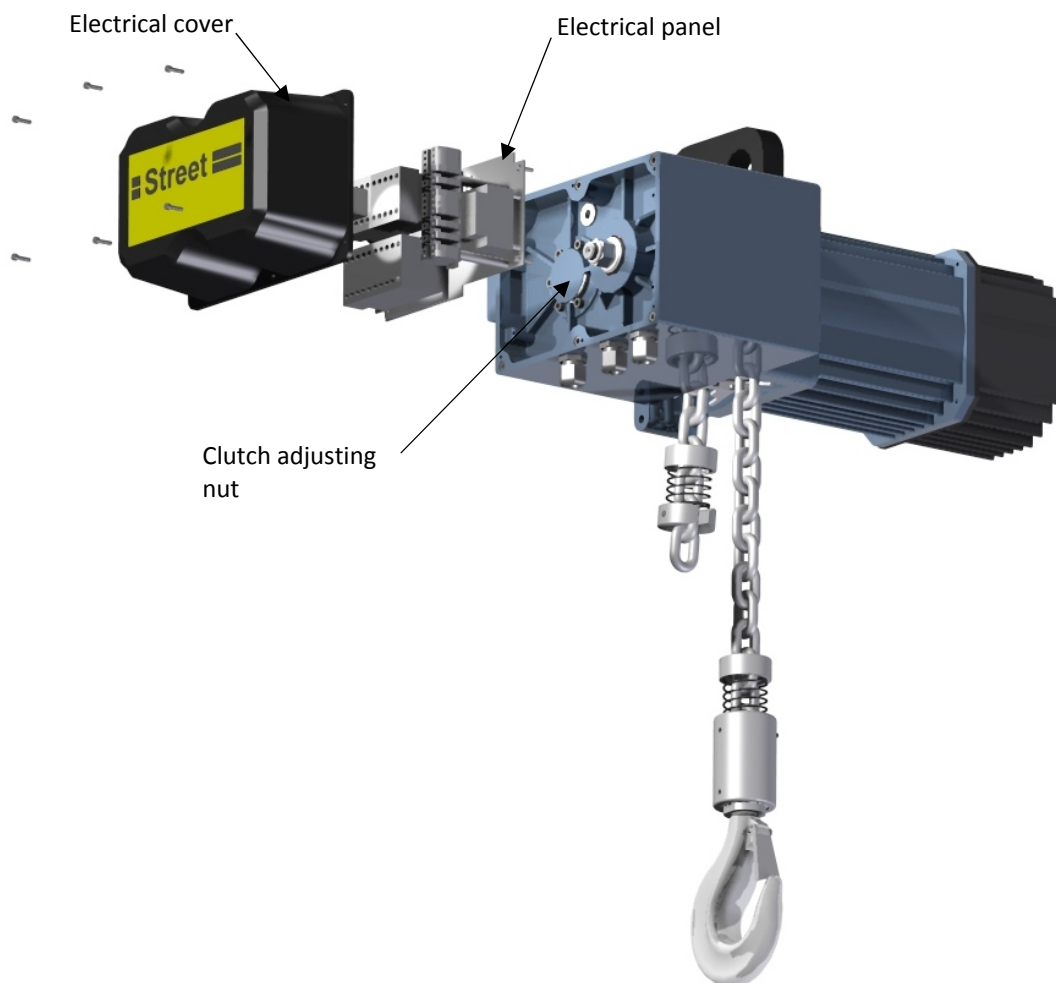


Figure 15 – Clutch Adjustment (LX3A)

8.4 HOIST CLUTCH ADJUSTMENT (LX3B)

1. Remove adjustment screw cap to the right of the hoist motor to expose clutch adjustment screw.
2. Adjust the slipping clutch tension so that the hoist is able to lift the safe working load (SWL) of the hoist plus 25%. The clutch should just start to slip at this capacity.
3. Replace the adjustment screw cap.

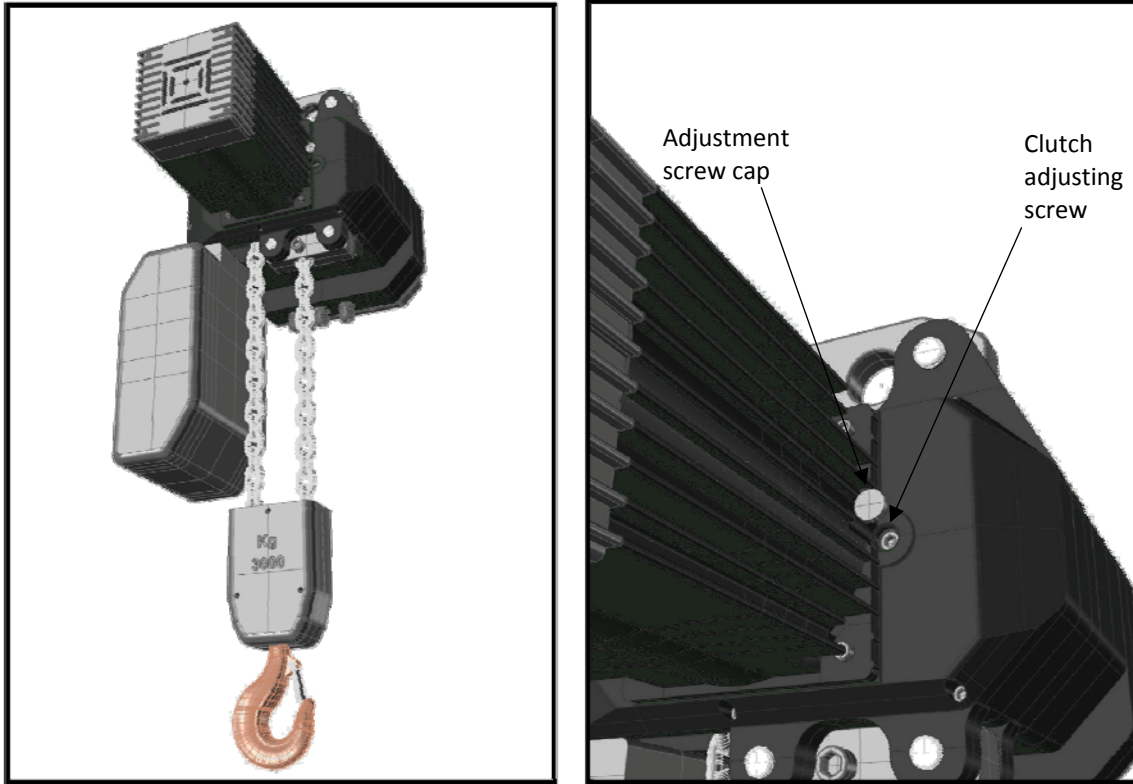


Figure 16 – Clutch Adjustment (LX3B)

8.5 HOIST BRAKE ADJUSTMENT / REPLACEMENT

The main hoist brake is a spring applied disc brake. The brake is electro-magnetically released by the application of DC to the brake coil in the stator.



Before adjusting the brake or changing the disc, raise the bottom block to the top position. Disconnect the power supply to the hoist.

To maintain a safe and efficient braking action, regular inspection of the brake is essential. When inspecting the brake, particular attention should be made to checking the air gap and the condition of the spline on the brake hub & brake disc.

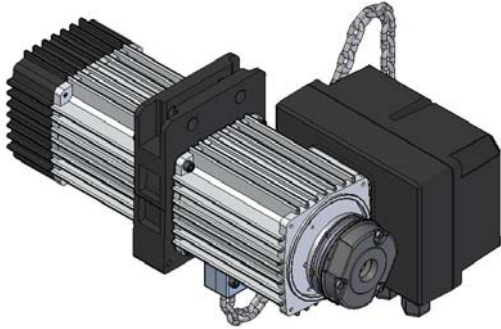


Figure 17 – Hoist Brake (LX1)

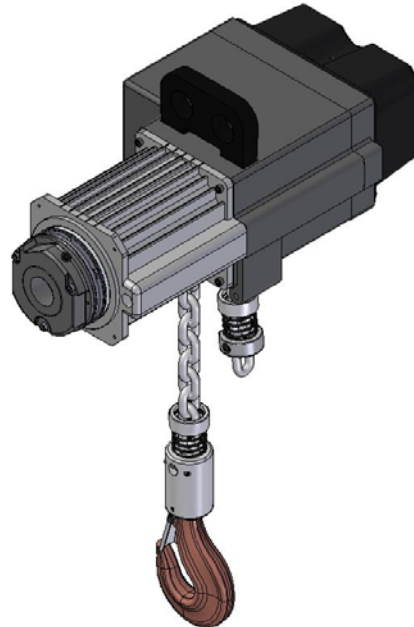


Figure 18 – Hoist Brake (LX3)

8.5.1 Hoist Brake Components

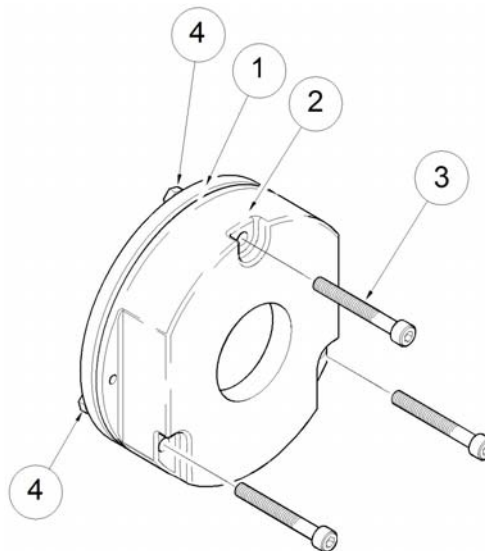


Figure 19 – Hoist Brake Components

Ref	Description
1	Armature plate
2	Stator

Ref	Description
3	Assembly screws
4	Adjustment tubes

8.5.2 Hoist Brake Data

Hoist Brake Size	6	8	10	12
Nominal air gap 'a' (mm) (+0.1, -0.05mm)	0.2	0.2	0.2	0.3
Maximum air gap 'a' (mm)	0.5	0.5	0.5	0.75
Maximum rotor thickness (mm)	6.0	7.0	9.0	10.0
Minimum rotor thickness (mm)	4.5	5.5	7.5	8.0
Rotor outside diameter (mm)	60	77	95	115
Maximum adjustment / admissible wear (mm)	1.5	1.5	1.5	2.0
Tightening torque of assembly fixings (Nm)	2.8	5.5	9.5	9.5



Before adjusting the brake or changing the disc, lower the hook to a suitable level (floor or platform) and allow it to rest on a solid support. Disconnect the power supply to the hoist and to the brake.

8.5.3 Brake Disc (Rotor) Spline

Check the brake disc and hub for wear on the spline teeth. The end of the spline can be viewed from the end of the brake shaft. For a more detailed inspection the brake disc will have to be removed. If the spline appears replace the brake disc and/or hub immediately.

8.5.4 Checking / Adjusting the Air Gap

The air gap 'a' (between the stator (2) and the armature plate (1)) should be checked in at least three positions around the circumference of the brake using non-magnetic feeler gauges. The air gap should not exceed the maximum air gap figure given in the above table.

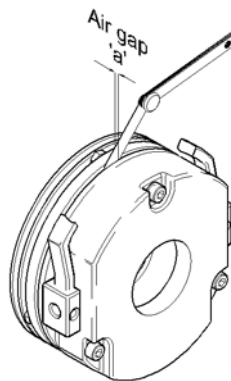


Figure 20 – Checking Hoist Brake Air Gap

Where adjustment is required, slacken the assembly screws (3). Adjust the air gap by turning the adjustment tubes (4) until the nominal air gap 'a' is reached.

- If the air gap is too large, screw the three adjustment tubes (4) into the stator. If the air gap is too small, screw the adjustment tubes out of the stator.
- NOTE : 1/6 turn adjusts the air gap by approx. 0.15mm
- Re-tighten the assembly fixings to the recommended torque value (see table in 8.5.2).
- Re-check the air gap and repeat the adjustment procedure if necessary.
- Test the brake for correct operation.

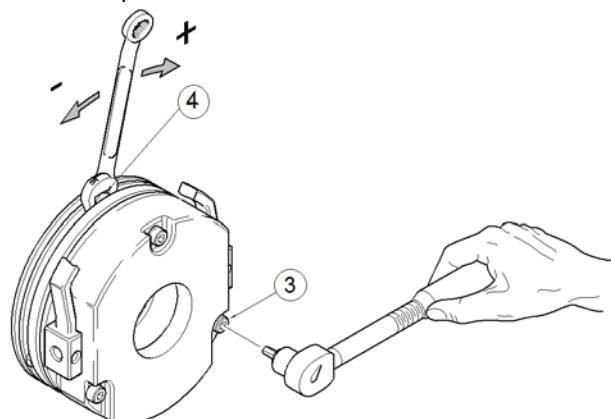


Figure 21 – Adjusting the Hoist Brake Air Gap

8.5.5 Changing the Brake Disc (brake rotor) / Inspecting the brake hub

The thickness of the brake disc can be measured using a vernier calliper without the need to remove the brake. Disconnect the power supply. Measure between the mounting flange and the armature plate (Figure 22). If the minimum thickness is below the figure given in the Hoist Brake Data table (8.5.2), the brake disc should be replaced.

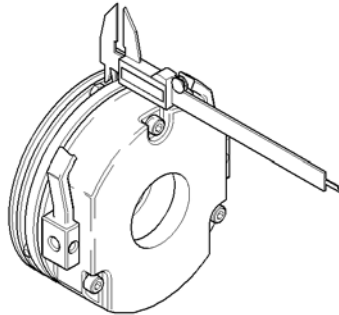


Figure 22 – Inspecting the Brake Disc

- Clean any brake dust from around the brake.
- Loosen the assembly fixings evenly and remove them taking care to support the brake body.
- Remove the brake body, taking note of its orientation.
- The brake rotor (brake disc) will now be exposed. Withdraw the brake rotor from its hub.
- Before replacing the brake disc, visually inspect the end of the key between the brake hub and shaft. Check the condition of the spline on the brake hub and ensure there is no radial or rotational play between either the new brake disc and the hub or the hub and the shaft. If the hub is damaged, worn or play is apparent, the hub should be replaced. Before replacing, consult Street Crane.
- Ensure the face of the mounting flange is clean and free of any oil or grease. If the mounting flange is worn or excessively scored it should be replaced. Consult Street Crane before replacing.
- Using a vernier calliper, measure both the new brake disc thickness and length of protrusion of the adjustment tubes from the back of the brake.
- Calculate the distance between the stator and the armature plate as follows: -
 - Distance = Brake disc thickness + Nominal Air Gap 'a' – adjustment tube height**
- The adjustment tubes should be unscrewed until the calculated distance between the stator and the armature plate is reached.
- Slide the new brake disc (rotor) onto the hub.
- Replace the brake body in the same orientation as originally installed.
- Replace the assembly fixings and tighten to the torque value stated in the table (8.5.2).
- Check and adjust, where necessary, the nominal air gap 'a' (8.5.4).
- Re-connect the brake supply and test the brake for correct operation before returning into service.

8.6 TROLLEY DRIVE - CONICAL BRAKE REPLACEMENT

The size of brake fitted to the electric trolley versions is identified in section 13. Where a “conical” brake is shown, this indicates a brake which is released by the magnetic flux in the motor rotor (3) when power is applied to the trolley motor. The brake is applied, by the spring (4) when the supply is removed from the motor. It does not require any independent electrical supply.

There is no adjustment and replacement of the hub (1) is required when the friction lining (6) has worn.

8.6.1 Procedure for replacement

1. Remove brake cover, bearing and the attached friction plate (2).
2. Remove the hub (1 and 6) and spring (4).
3. Clean the motor shaft spline (5).
4. Replace the spring.
5. Fit new hub.
6. Replace cover with attached friction plate.

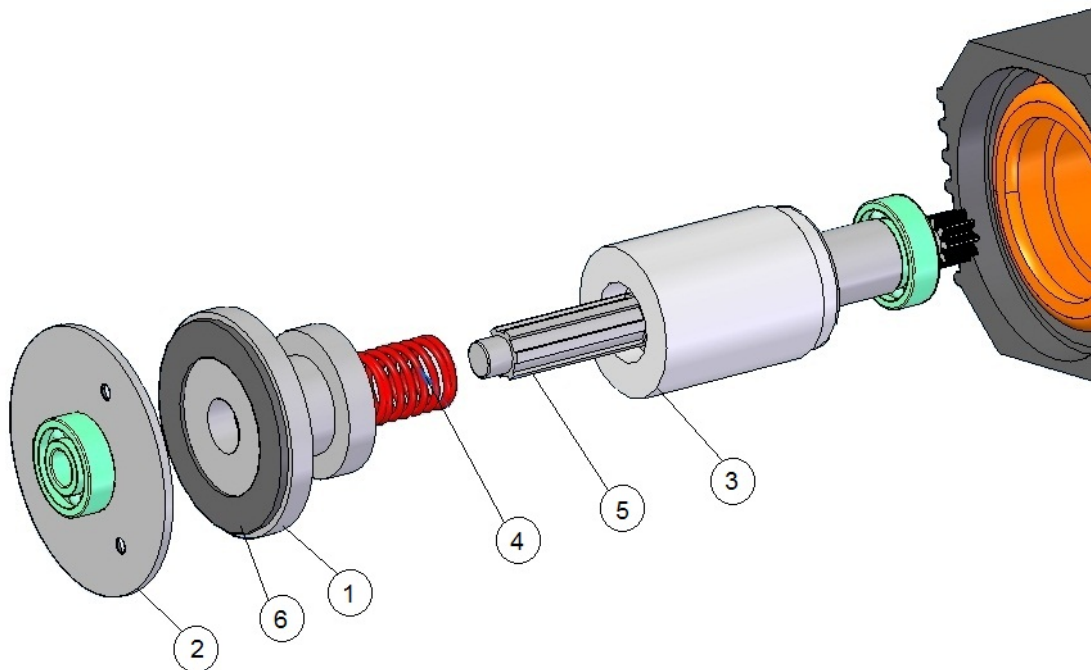


Figure 23 – Trolley Drive Conical Brake

8.7 TROLLEY DRIVE – SIZE 6 BRAKE ADJUSTMENT / REPLACEMENT

Refer to the instructions for the hoist brake size 6 (section 8.5).

9. CHAIN CARE / REPLACEMENT

Regular lubrication of a chain will, in general increase its life. The inspection and servicing intervals will vary according to the local environment and the severity of use. A daily visual check on the chain will indicate whether the chain requires lubricating. Soiled chains should be cleaned before oiling. Chains should be lubricated in the relaxed condition to ensure that the oil flows into the joints.

9.1 INSPECTING THE CHAIN

A decision to replace the chain should take account of the following criteria:

- Chain length
- Surface damage
- Corrosion

Measure the pitch of the chain and ensure that the dimensions do not exceed those featured in the following table. The chain should be pre-tensioned slightly when measuring. If the dimensions exceed the allowable, the chain should be replaced by a competent person, paying particular attention to the fit of the new chain on the load sprocket. Using a gauge, carefully check the measurements indicated below by measuring 5 chain links (Figure 24). Record the results in the chain inspection log (see 15.1).

The chain should also be replaced if there is any surface damage such as nicks, necking, or signs of corrosion.

Chain Diameter	Pitch	Link thickness in joint "dm"	Internal pitch "t"	Length over 5 links "l"
4 mm	12 mm	Min. 3.6 mm	Max. 8.4 mm	Max. 60 mm
5 mm	15 mm	Min. 4.5 mm	Max. 10.5 mm	Max. 75 mm
7 mm	22 mm	Min. 6.3 mm	Max. 15.7 mm	Max. 110 mm
10 mm	28 mm	Min. 9 mm	Max. 19 mm	Max. 140 mm
11 mm	31 mm	Min. 9.9 mm	Max. 31 mm	Max. 155 mm

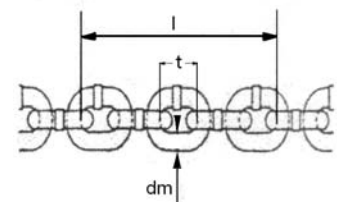


Figure 24 – Chain links



Only use original Street Crane Company spare parts on the hoist (see section 14)

9.2 CHAIN REPLACEMENT

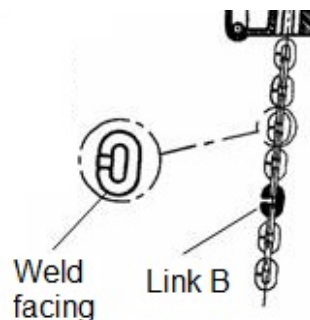


Figure 25 – Position of weld (chain links)

9.2.1 1 Fall Hoists

1. Disassemble the chain collector bucket/bag from the hoist/trolley.

NOTE: The trolley spacer bar may need to be temporarily removed to access the collector bag on some models.

2. Remove the chain stop (see 9.3).
3. Hook link B to the end of the old chain.
4. Hook the new chain link to link B, ensuring new chain link weld faces outward (Figure 25).
5. Remove the block from the chain (see 9.4)
6. Feed the new chain through the guides and sprocket by pressing the **DOWN** pushbutton.
7. Stop the chain's descent when a sufficient amount of the chain has accumulated on the load side (to enable re-attachment of the block).
8. Remove link B (and old chain).



Do not allow the chain to drop to the floor.

9. Fit block to new chain (see 9.4).
10. Assemble the chain stop to the last but one link at the free end of the chain (see 9.3).

11. Feed chain into chain collector and reattach to hoist (see section 3.1).
12. Lubricate chain before use (as per section 7).

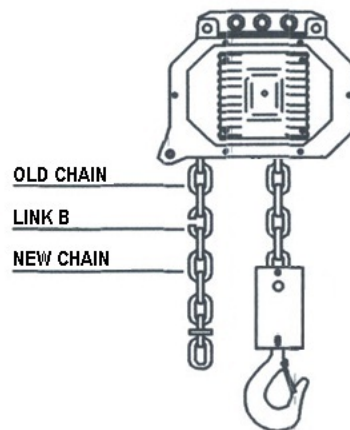


Figure 26 – Chain Replacement (1 Fall)

9.2.2 2 Fall Hoists

1. Disassemble the chain collector bucket/bag from the hoist/trolley.

NOTE: The trolley spacer bar may need to be temporarily removed to access the collector bag on some models.

2. Remove the chain stop (see 9.3).
3. Hook link B to the end of the old chain.
4. Hook the new chain link to link B, ensuring new chain link weld faces outward (Figure 25).
5. Feed the new chain through the guides and sprocket by pressing the **DOWN** pushbutton.
6. Stop the chain’s descent when a sufficient amount of the chain has accumulated on the load side (until link B has passed through the bottom block sprocket, and is visible).
7. Un-anchor old chain from hoist unit.
8. Remove link B (and old chain).



Do not allow the chain to drop to the floor.

9. Assemble the chain stop to the last but one link at the free end of the chain (see 9.3).
10. Anchor the load side end of the chain to the hoist unit.
11. Feed chain into chain collector and reattach to hoist (see section 3.1).
12. Lubricate chain and bottom block before use (as per section 7).

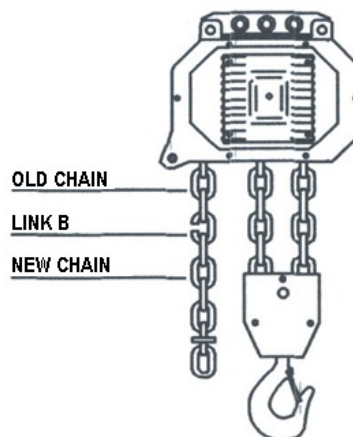


Figure 27 – Chain Replacement (2 Fall)



New chains should be lubricated before use.

9.3 REMOVING THE CHAIN STOP

The hoist is fitted with a chain stop on the loose end of the chain. The chain stop must be removed to replace the chain.

9.3.1 Chain Stop Removal / Replacement

1. Remove the socket head capscrew(s)
2. Remove and replace the chain (as procedure 9.2)
3. Insert and tighten the socket head capscrew(s)
4. Ensure chain is secure in the chain stop.

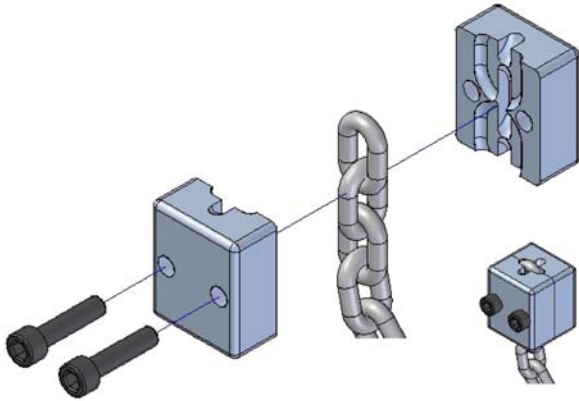


Figure 28 – Chain Stop (Block Type)

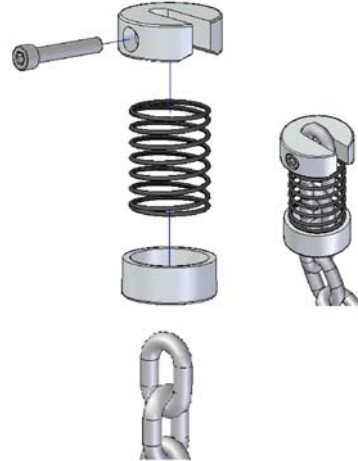


Figure 29 – Chain Stop (Spring Type)

9.4 DETACHING THE HOOK BLOCK FROM THE CHAIN

The hook block must be detached when replacing the chain (1 Fall only).

9.4.1 1 Fall Hoists

To detach the hook block from the chain:

1. Remove hook block Securing Pin
2. Remove hook block Securing Bar
3. Replace chain
4. Re-assemble

9.4.2 2 Fall Hoists

The hook block does not need to be disassembled for chain replacement on the 2 fall hoist.

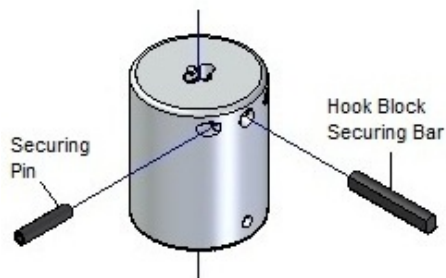
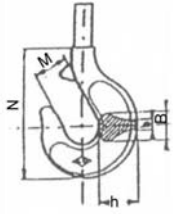


Figure 30 – Hook Block Removal (1 Fall)

10. LOAD HOOK INSPECTION

Ensure that the hook is not deformed. Measure the size of the hook and check that it is not worn. Replace if otherwise. Permanent deformation measured from the hook opening must never exceed 0.25%, if this occurs replace the hook immediately. Record the results in the load hook inspection log (section 15.2)

	Capacity Kg	M	H	B	N
	125	25	27	20	93
	250	25	27	20	93
	500	27	30	23	114
	1000	36	38	29	132
	2000	43	49	39	160
	3000	45	57	48	182
	4000	50	70	56	206
5000	50	70	56	206	

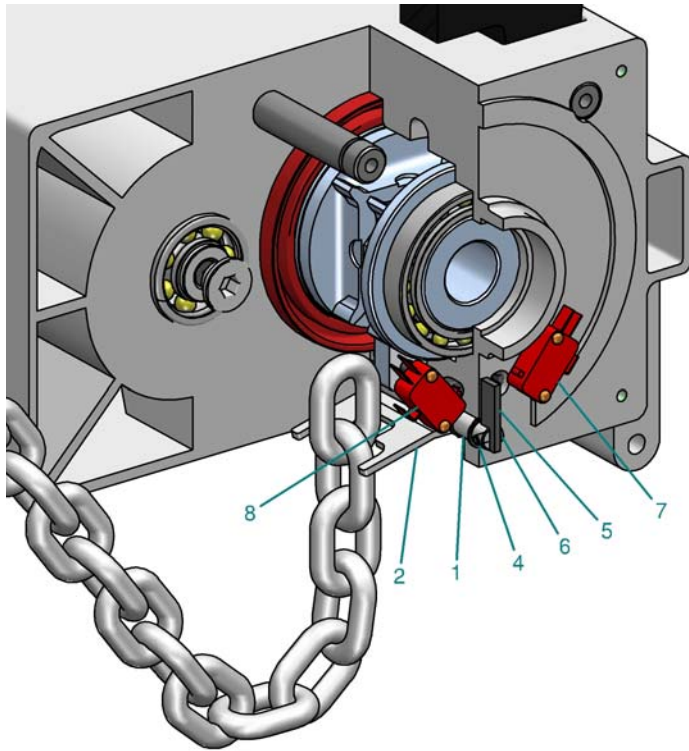


Only use original Street Crane Company spare parts on the hoist (see section 14)

11. HOISTING LIMITS

Where hoisting limits are fitted, they are actuated by a rocking lever mechanism and the buffers fitted to the bottom block and the chain near its end.

The image shows the LX3A version. To access the switches the motor housing must be removed.



ITEM	QTY	DESCRIPTION
1	1	LIMIT ROD
2	1	CHAIN LIMIT FLAP
3*	2	SOCKET HEAD CAP SCREW
4	2	EXTERNAL CIRCLIP
5	1	CHAIN FLAP LEVER
6	1	SOCKET HEAD CAP SCREW
7	1	BOTTOM LIMIT SWITCH
8	1	TOP LIMIT SWITCH
		*NOT VISIBLE

Figure 31 – Hoisting Limit

The switches fitted to the LX3B are located in the electrical panel.

12. FAULT FINDING

Problem	Possible Cause	Remedy
The hoist does not move.	A phase is missing	Connect the wires in the box correctly and ensure that the current is correct
	A fuse is burnt out.	Replace.
	The brake is blocked.	Disassemble it and clean it thoroughly (this can occur after a 6/12 month period of inactivity due to oxidation of the brake lining).
The load drops	The brake motor is worn out.	Check and repair the motor.
The hoist does not lift the load		Adjust the clutch.
The hoist does not stop	The pendant control switch is stuck.	Replace.
Current is present on the hook	The system is not insulated.	Inspect the system thoroughly and ensure that the system's earthing is correct.
The chain makes an abnormal noise	The chain is dry.	Lubricate chain.
	The load sprocket is worn out.	Replace.
The trolley does not run on the beam.	The beam is tilted.	Check and correct the tilt.
	The beam is dirty with oil.	Clean the trolley beam with a cloth.



Only use original Street Crane Company spare parts on the hoist (see section 14)

13. TECHNICAL DATA

13.1 50HZ CE HOISTS

Model code	SWL (kg)	Type	Chain size	Hoist brake size	Std. Chain bucket	Max HOL with std. bucket (m)	Trolley brake size
LX011A-M50125-005-1	125	LX1	4	6	1	6	CONICAL
LX011A-M50125-008-1	125	LX1	4	6	1	6	CONICAL
LX011A-M50125-012-1	125	LX1	4	6	1	6	CONICAL
LX011A-M50125-014-2	125	LX1	4	6	1	6	CONICAL
LX011A-M50125-028-2	125	LX1	4	6	1	6	CONICAL
LX011A-M50125-314-2	125	LX1	4	8	1	6	CONICAL
LX011A-M50250-005-1	250	LX1	4	6	1	6	CONICAL
LX011A-M50250-008-1	250	LX1	4	6	1	6	CONICAL
LX011A-M50250-012-1	250	LX1	5	6	1	6	CONICAL
LX011A-M50250-016-1	250	LX1	5	6	1	6	CONICAL
LX011A-M50250-014-2	250	LX1	4	6	1	6	CONICAL
LX011A-M50250-028-2	250	LX1	5	6	1	6	CONICAL
LX011A-M50250-312-2	250	LX1	5	6	1	6	CONICAL
LX011A-M50500-004-1	500	LX1	5	6	1	6	CONICAL
LX011A-M50500-006-1	500	LX1	5	8	1	6	CONICAL
LX011A-M50500-008-1	500	LX1	5	8	1	6	CONICAL
LX011A-M50500-012-1	500	LX1	5	8	1	6	CONICAL
LX011A-M50500-014-2	500	LX1	5	6	1	6	CONICAL
LX011A-M50500-028-2	500	LX1	7	6	2	3	CONICAL
LX012A-M41000-083-2	1000	LX1	5	6	2	4.5	CONICAL
LX011A-M51000-004-1	1000	LX1	7	8	2	3	CONICAL
LX011A-M51000-006-1	1000	LX1	7	10	2	3	CONICAL
LX011A-M51000-008-1	1000	LX1	10	10	4	3	CONICAL
LX011A-M51000-014-2	1000	LX1	7	6	2	3	CONICAL
LX011A-M51000-028-2	1000	LX1	10	10	4	3	CONICAL
LX031A-M51000-008-1	1000	LX3A	10	10	4	3	CONICAL
LX031B-M51000-012-1	1000	LX3B	10	12	5	8	CONICAL
LX031B-M51000-312-2	1000	LX3B	11	12	5	7	CONICAL
LX031A-M51000-028-2	1000	LX3A	10	10	4	3	CONICAL
LX031A-M51500-004-1	1500	LX3A	10	10	4	3	CONICAL
LX031A-M51500-014-2	1500	LX3A	10	10	4	3	CONICAL
LX031B-M51500-028-2	1500	LX3B	10	10	5	8	CONICAL
LX031B-M51500-012-1	1500	LX3B	10	12	5	8	CONICAL
LX031B-M51500-312-2	1500	LX3B	11	12	5	7	CONICAL
LX012A-M42000-083-2	2000	LX1	7	6	3	4	CONICAL
LX031A-M52000-004-1	2000	LX3A	10	10	4	3	CONICAL
LX031B-M52000-008-1	2000	LX3B	11	10	5	7	6
LX031A-M52000-014-2	2000	LX3A	10	10	4	3	CONICAL
LX031B-M52000-028-2	2000	LX3B	11	10	5	7	6
LX031B-M52500-008-1	2500	LX3B	11	10	5	7	6
LX031B-M52500-028-2	2500	LX3B	11	10	5	7	6
LX032B-M53000-004-1	3000	LX3B	10	10	5	4	6
LX032B-M53000-014-2	3000	LX3B	10	10	5	4	6
LX032B-M53200-004-1	3200	LX3B	11	10	5	3.5	6
LX032B-M53200-014-2	3200	LX3B	11	10	5	3.5	6
LX032B-M54000-004-1	4000	LX3B	11	10	5	3.5	6
LX032B-M54000-014-2	4000	LX3B	11	10	5	3.5	6
LX032B-M55000-004-1	5000	LX3B	11	10	5	3.5	6
LX032B-M55000-014-2	5000	LX3B	11	10	5	6.5	6

13.2 60HZ HOISTS

Model code	SWL (kg)	SWL (lb)	Type	Chain size	Hoist brake size	Std. Chain bucket	Max HOL with std. bucket (m)	Max HOL with std. bucket (ft)	Trolley brake size
LX011A-M50125-006-1	125	276	LX1	4	6	1	6	20	CONICAL
LX011A-M50125-009-1	125	276	LX1	4	6	1	6	20	CONICAL
LX011A-M50125-016-1	125	276	LX1	4	6	1	6	20	CONICAL
LX011A-M50125-014-2	125	276	LX1	4	6	1	6	20	CONICAL
LX011A-M50125-029-2	125	276	LX1	4	6	1	6	20	CONICAL
LX011A-M50125-416-2	125	276	LX1	4	8	1	6	20	CONICAL
LX011A-M50250-006-1	250	551	LX1	4	6	1	6	20	CONICAL
LX011A-M50250-009-1	250	551	LX1	4	6	1	6	20	CONICAL
LX011A-M50250-014-1	250	551	LX1	5	6	1	6	20	CONICAL
LX011A-M50250-019-1	250	551	LX1	5	6	1	6	20	CONICAL
LX011A-M50250-014-2	250	551	LX1	4	6	1	6	20	CONICAL
LX011A-M50250-029-2	250	551	LX1	5	6	1	6	20	CONICAL
LX011A-M50250-314-2	250	551	LX1	5	6	1	6	20	CONICAL
LX011A-M50500-004-1	500	1103	LX1	5	6	1	6	20	CONICAL
LX011A-M50500-007-1	500	1103	LX1	5	8	1	6	20	CONICAL
LX011A-M50500-009-1	500	1103	LX1	5	8	1	6	20	CONICAL
LX011A-M50500-014-1	500	1103	LX1	5	8	1	6	20	CONICAL
LX011A-M50500-014-2	500	1103	LX1	5	6	1	6	20	CONICAL
LX011A-M50500-029-2	500	1103	LX1	7	6	2	3	10	CONICAL
LX012A-M41000-093-2	1000	2205	LX1	5	6	2	4.5	15	CONICAL
LX011A-M51000-004-1	1000	2205	LX1	7	8	2	3	10	CONICAL
LX011A-M51000-007-1	1000	2205	LX1	7	10	2	3	10	CONICAL
LX011A-M51000-009-1	1000	2205	LX1	10	10	4	3	10	CONICAL
LX011A-M51000-014-2	1000	2205	LX1	7	6	2	3	10	CONICAL
LX011A-M51000-029-2	1000	2205	LX1	10	10	4	3	10	CONICAL
LX031A-M51000-009-1	1000	2205	LX3A	10	10	4	3	10	CONICAL
LX031A-M51000-029-2	1000	2205	LX3A	10	10	4	3	10	CONICAL
LX031B-M51000-012-1	1500	3308	LX3B	10	12	5	8	26	CONICAL
LX031B-M51000-314-2	1500	3308	LX3B	11	12	5	7	23	CONICAL
LX031A-M51500-004-1	1500	3308	LX3A	10	10	4	3	10	CONICAL
LX031A-M51500-014-2	1500	3308	LX3A	10	10	4	3	10	CONICAL
LX031B-M51500-029-2	1500	3308	LX3B	10	10	5	8	26	CONICAL
LX031B-M51500-012-1	1500	3308	LX3B	10	12	5	8	26	CONICAL
LX031B-M51500-314-2	1500	3308	LX3B	11	12	5	7	23	CONICAL
LX012A-M42000-093-2	2000	4410	LX1	7	6	3	4	13	CONICAL
LX031A-M52000-004-1	2000	4410	LX3A	10	10	4	3	10	CONICAL
LX031B-M52000-009-1	2000	4410	LX3B	11	10	5	7	23	6
LX031A-M52000-014-2	2000	4410	LX3A	10	10	4	3	10	CONICAL
LX031B-M52000-029-2	2000	4410	LX3B	11	10	5	7	23	6
LX031B-M52500-009-1	2500	5513	LX3B	11	10	5	7	23	6
LX031B-M52500-029-2	2500	5513	LX3B	11	10	5	7	23	6
LX032B-M53000-004-1	3000	6615	LX3B	10	10	5	4	13	6
LX032B-M53000-014-2	3000	6615	LX3B	10	10	5	4	13	6
LX032B-M53200-004-1	3200	7056	LX3B	11	10	5	3.5	11	6
LX032B-M53200-014-2	3200	7056	LX3B	11	10	5	3.5	11	6
LX032B-M54000-004-1	4000	8820	LX3B	11	10	5	3.5	11	6
LX032B-M54000-014-2	4000	8820	LX3B	11	10	5	3.5	11	6
LX032B-M55000-004-1	5000	11025	LX3B	11	10	5	3.5	11	6
LX032B-M55000-014-2	5000	11025	LX3B	11	10	5	3.5	11	6

13.3 CHAIN COLLECTOR SELECTION

Model code 50 Hz CE Hoists	Model code 60 Hz Hoists	Std. Chain bucket	Max HOL with std. bucket		Option 1. bucket or bag	Option 1. HOL		Option 2. bucket or bag	Option 2. HOL		Option 3. bucket or bag	Option 3. HOL		Option 4. largest bucket or bag	Max HOL with largest bucket or bag	
			m	ft		m	ft		m	ft		m	ft		m	ft
LX011A-M50125-005-1	LX011A-M50125-006-1	1	6	19.7	-	-	-	-	-	-	-	-	-	2	9	29.5
LX011A-M50125-008-1	LX011A-M50125-009-1	1	6	19.7	-	-	-	-	-	-	-	-	-	2	9	29.5
LX011A-M50125-012-1	LX011A-M50125-016-1	1	6	19.7	-	-	-	-	-	-	-	-	-	2	9	29.5
LX011A-M50125-014-2	LX011A-M50125-014-2	1	6	19.7	-	-	-	-	-	-	-	-	-	2	9	29.5
LX011A-M50125-028-2	LX011A-M50125-029-2	1	6	19.7	-	-	-	-	-	-	-	-	-	2	9	29.5
LX011A-M50125-314-2	LX011A-M50125-416-2	1	6	19.7	-	-	-	-	-	-	-	-	-	2	9	29.5
LX011A-M50250-005-1	LX011A-M50250-006-1	1	6	19.7	-	-	-	-	-	-	-	-	-	2	9	29.5
LX011A-M50250-008-1	LX011A-M50250-009-1	1	6	19.7	-	-	-	-	-	-	-	-	-	2	9	29.5
LX011A-M50250-012-1	LX011A-M50250-014-1	1	6	19.7	-	-	-	-	-	-	-	-	-	2	9	29.5
LX011A-M50250-016-1	LX011A-M50250-019-1	1	6	19.7	-	-	-	-	-	-	-	-	-	2	9	29.5
LX011A-M50250-014-2	LX011A-M50250-014-2	1	6	19.7	-	-	-	-	-	-	-	-	-	2	9	29.5
LX011A-M50250-028-2	LX011A-M50250-029-2	1	6	19.7	-	-	-	-	-	-	-	-	-	2	9	29.5
LX011A-M50250-312-2	LX011A-M50250-314-2	1	6	19.7	-	-	-	-	-	-	-	-	-	2	9	29.5
LX011A-M50500-004-1	LX011A-M50500-004-1	1	6	19.7	-	-	-	-	-	-	-	-	-	2	9	29.5
LX011A-M50500-006-1	LX011A-M50500-007-1	1	6	19.7	-	-	-	-	-	-	-	-	-	2	9	29.5
LX011A-M50500-008-1	LX011A-M50500-009-1	1	6	19.7	-	-	-	-	-	-	-	-	-	2	9	29.5
LX011A-M50500-012-1	LX011A-M50500-014-1	1	6	19.7	-	-	-	-	-	-	-	-	-	2	9	29.5
LX011A-M50500-014-2	LX011A-M50500-014-2	1	6	19.7	-	-	-	-	-	-	-	-	-	2	9	29.5
LX011A-M50500-028-2	LX011A-M50500-029-2	2	3	9.8	-	-	-	-	-	-	-	-	-	3	8	26.2
LX012A-M41000-083-2	LX012A-M41000-093-2	2	4.5	14.8	-	-	-	-	-	-	-	-	-	-	-	-
LX011A-M51000-004-1	LX011A-M51000-004-1	2	3	9.8	-	-	-	-	-	-	-	-	-	3	8	26.2
LX011A-M51000-006-1	LX011A-M51000-007-1	2	3	9.8	-	-	-	-	-	-	-	-	-	3	8	26.2
LX011A-M51000-008-1	LX011A-M51000-009-1	4	3	9.8	-	-	-	-	-	-	-	-	-	5	8	26.2
LX011A-M51000-014-2	LX011A-M51000-014-2	2	3	9.8	-	-	-	-	-	-	-	-	-	3	8	26.2
LX011A-M51000-028-2	LX011A-M51000-029-2	4	3	9.8	-	-	-	-	-	-	-	-	-	5	8	26.2
LX031A-M51000-008-1	LX031A-M51000-009-1	4	3	9.8	-	-	-	-	-	-	-	-	-	5	8	26.2
LX031A-M51000-028-2	LX031A-M51000-029-2	4	3	9.8	-	-	-	-	-	-	-	-	-	5	8	26.2
LX031B-M51500-012-1	LX031B-M51500-012-1	5	8	26.2	113	10	32.8	110	15	49.2	112	20	65.6	118*	40	131.2
LX031B-M51500-312-2	LX031B-M51500-314-2	5	7	23.0	113	9	29.5	110	12	39.4	112	20	65.6	118*	38	124.7
LX031A-M51500-004-1	LX031A-M51500-004-1	4	3	9.8	-	-	-	-	-	-	-	-	-	5	8	26.2
LX031A-M51500-014-2	LX031A-M51500-014-2	4	3	9.8	-	-	-	-	-	-	-	-	-	5	8	26.2
LX031B-M51500-028-2	LX031B-M51500-029-2	5	8	26.2	113	10	32.8	110	15	49.2	112	20	65.6	118*	40	131.2
LX031B-M51500-012-1	LX031B-M51500-012-1	5	8	26.2	113	10	32.8	110	15	49.2	112	20	65.6	118*	40	131.2
LX031B-M51500-312-2	LX031B-M51500-314-2	5	7	23.0	113	9	29.5	110	12	39.4	112	20	65.6	118*	38	124.7
LX012A-M42000-083-2	LX012A-M42000-093-2	3	4	13.1	-	-	-	-	-	-	-	-	-	-	-	-
LX031A-M52000-004-1	LX031A-M52000-004-1	4	3	9.8	-	-	-	-	-	-	-	-	-	5	8	26.2
LX031B-M52000-008-1	LX031B-M52000-009-1	5	7	23.0	113	9	29.5	110	12	39.4	112	20	65.6	118*	38	124.7
LX031A-M52000-014-2	LX031A-M52000-014-2	4	3	9.8	-	-	-	-	-	-	-	-	-	5	8	26.2
LX031B-M52000-028-2	LX031B-M52000-029-2	5	7	23.0	113	9	29.5	110	12	39.4	112	20	65.6	118*	38	124.7
LX031B-M52500-008-1	LX031B-M52500-009-1	5	7	23.0	113	9	29.5	110	12	39.4	112	20	65.6	118*	38	124.7
LX031B-M52500-028-2	LX031B-M52500-029-2	5	7	23.0	113	9	29.5	110	12	39.4	112	20	65.6	118*	38	124.7
LX032B-M53000-004-1	LX032B-M53000-004-1	5	4	13.1	113	5	16.4	110	7.5	24.6	112	10	32.8	118*	20	65.6
LX032B-M53000-014-2	LX032B-M53000-014-2	5	4	13.1	113	5	16.4	110	7.5	24.6	112	10	32.8	118*	20	65.6
LX032B-M53200-004-1	LX032B-M53200-004-1	5	3.5	11.5	113	4.5	14.8	110	6	19.7	112	10	32.8	118*	19	62.3
LX032B-M53200-014-2	LX032B-M53200-014-2	5	3.5	11.5	113	4.5	14.8	110	6	19.7	112	10	32.8	118*	19	62.3
LX032B-M54000-004-1	LX032B-M54000-004-1	5	3.5	11.5	113	4.5	14.8	110	6	19.7	112	10	32.8	118*	19	62.3
LX032B-M54000-014-2	LX032B-M54000-014-2	5	3.5	11.5	113	4.5	14.8	110	6	19.7	112	10	32.8	118*	19	62.3
LX032B-M55000-004-1	LX032B-M55000-004-1	5	3.5	11.5	113	4.5	14.8	110	6	19.7	112	10	32.8	118*	19	62.3
LX032B-M55000-014-2	LX032B-M55000-014-2	5	3.5	11.5	113	4.5	14.8	110	6	19.7	112	10	32.8	118*	19	62.3

*Bag 118 attaches to trolley only

14. SPARE PARTS

14.1 LX1 SPARES

14.1.1 LX1 Hoist

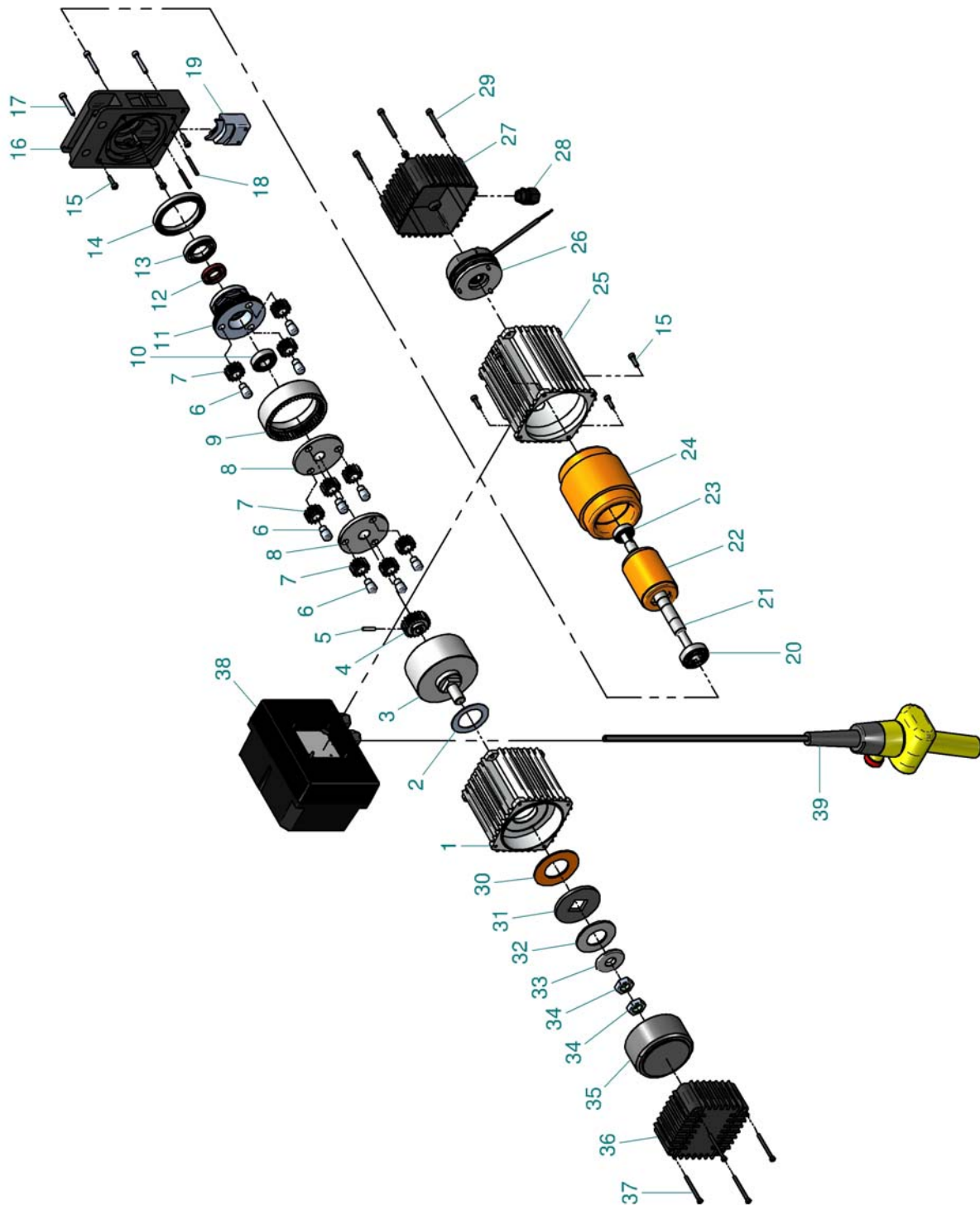


Figure 32 – Hoist Exploded View (LX1)

LX1 Hoist Parts Listing

ITEM	QTY	DESCRIPTION
1	1	GEAR BOX CASING
2	1	CLUTCH INNER LINING
3	1	ANNULAR GEAR BIG
4	1	SUN GEAR
5	1	SPLIT PIN
6	9	PIN (PLANETARY GEAR)
7	9	PLANETARY GEAR
8	2	SUN GEAR (WITH FLANGE)
9	1	ANNULAR GEAR SMALL
10	1	BALL BEARING
11	1	CHAIN SPROCKET
12	1	LIP SEAL
13	1	16006 BALL BEARING 30x55x09
14	1	61814 BALL BEARING 70x90x10
15	8	SOCKET HEAD CAP SCREW
16	1	HOIST HOUSING MAIN
17	4	SOCKET HEAD CAP SCREW
18	2	SPRING PIN
19	1	CHAIN GIUDE
20	1	BALL BEARING
21	1	MOTOR SHAFT
22	1	MOTOR ROTOR
23	1	BALL BEARING
24	1	MOTOR STATOR
25	1	MOTOR HOUSING
26	1	BRAKE ASSEMBLY
27	1	BRAKE COVER
28	1	CABLE GLAND
29	4	SOCKET HEAD CAP SCREW
30	1	CLUTCH OUTER LINING
31	1	CLUTCH PLATE
32	1	DISC SPRING
33	1	CLUTCH SLEEVE
34	2	NUT
35	1	COUNTER WEIGHT
36	1	CASING COVER
37	4	SOCKET HEAD CAP SCREW
38	1	ELECTRIC PANEL ASSEMBLY
39	1	PENDANT ASSEMBLY

14.2 LX3 SPARES

14.2.1 LX3 Hoist (Version A)

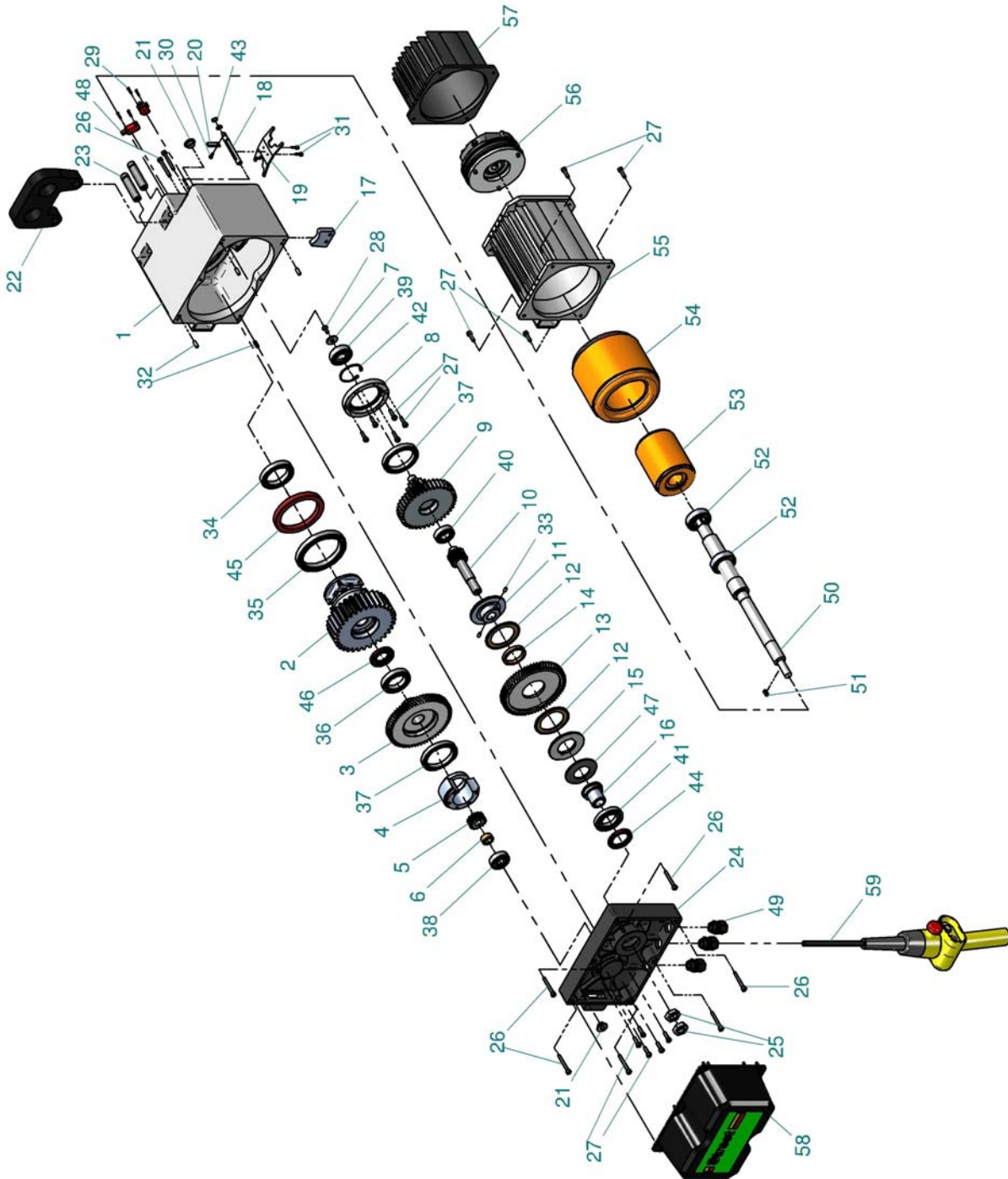


Figure 33 – Hoist Exploded View (LX3 Version 'A')

LX3 Hoist Parts Listing (Version A)

ITEM	QTY	DESCRIPTION
1	1	MAIN HOUSING 1
2	1	FOURTH WHEEL, CHAIN SPROCKET
3	1	SECOND WHEEL, THIRD PINION
4	1	HUB
5	1	FIRST PINION
6	1	PINION STOPPER
7	1	SCREW PLUG
8	1	WHEEL 2 DISC 1
9	1	THIRD WHEEL, FOURTH PINION
10	1	SECOND PINION
11	1	CLUTCH DISC
12	2	CLUTCH LINING
13	1	FIRST WHEEL
14	1	FIRST WHEEL SPACER
15	1	CLUTCH DISC
16	1	CLUTCH ADJUSTING SLEEVE
17	1	CHAIN GUIDE
18	1	LIMIT ROD
19	1	LEVER PLATE
20	1	CHAIN FLAP LEVER
21	2	PLUG
22	1	SUSPENSION EYE
23	2	PIN
24	1	MAIN HOUSING 2
25	2	NUT
26	8	SOCKET HEAD CAP SCREW
27	14	SOCKET HEAD CAP SCREW
28	1	COUNTERSUNK SOCKET HEAD SCREW
29	4	LIMIT SPACER BOLT
30	1	SOCKET HEAD CAP SCREW
31	2	SOCKET HEAD CAP SCREW
32	4	PIN
33	3	PIN
34	1	BALL BEARING
35	1	BALL BEARING
36	1	BALL BEARING
37	2	BALL BEARING
38	1	BALL BEARING
39	1	BALL BEARING
40	1	BALL BEARING
41	1	BALL BEARING
42	1	INTERNAL CIRCLIP
43	2	EXTERNAL CIRCLIP
44	1	LIP SEAL
45	1	LIP SEAL
46	1	LIP SEAL
47	1	DISC SPRING
48	2	LIMIT SPACER
49	3	CABLE GLAND
50	1	MOTOR SHAFT
51	1	KEY
52	2	EXPLORER BALL BEARING
53	1	MOTOR ROTOR
54	1	MOTOR STATOR
55	1	MOTOR HOUSING
56	1	BRAKE ASSEMBLY
57	1	BRAKE COVER
58	1	ELECTRIC PANEL ASSEMBLY
59	1	PENDANT ASSEMBLY

14.2.2 LX3 Hoist (Version B)

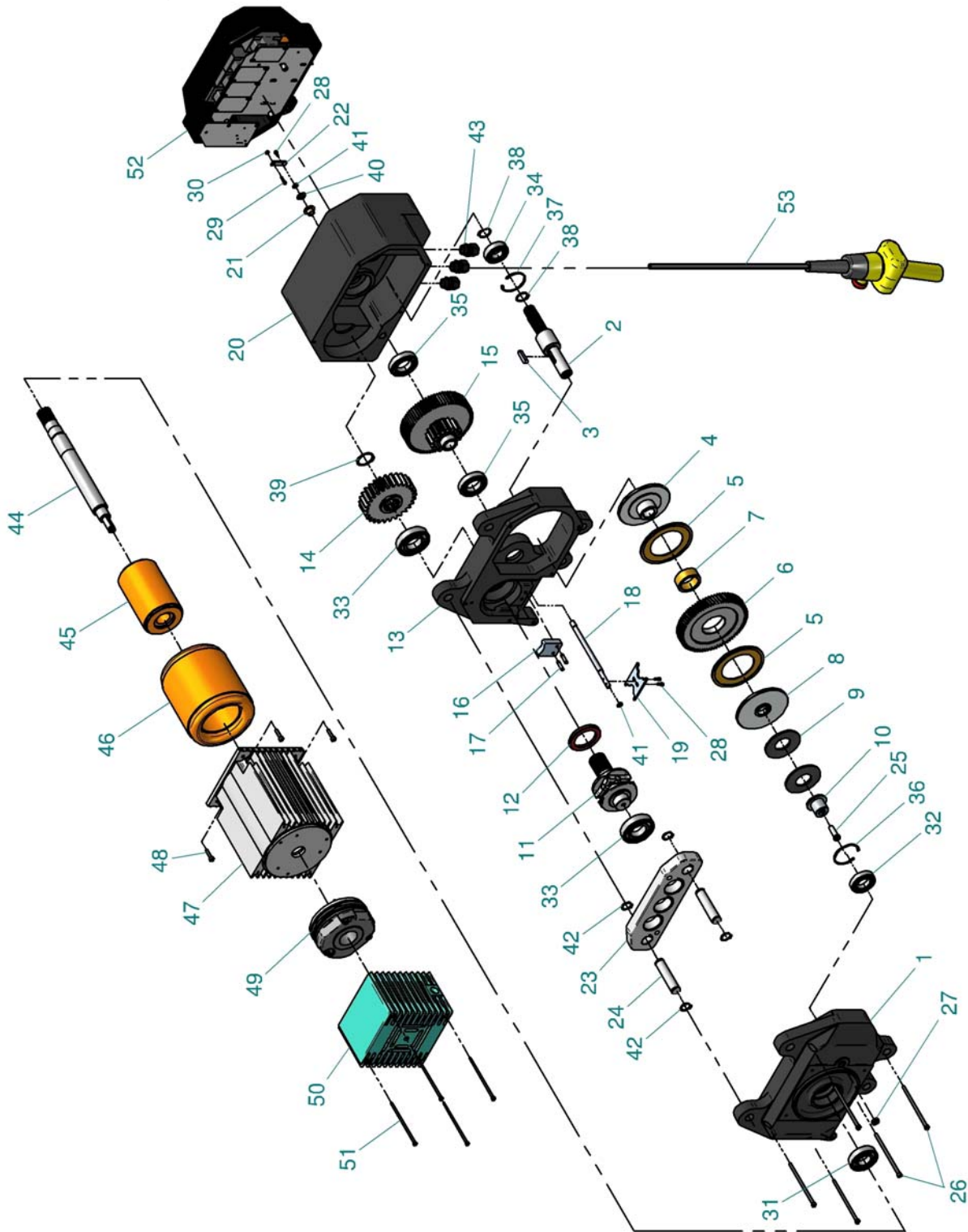


Figure 34 – Hoist Exploded View (LX3 Version 'B')

LX3 Hoist Parts Listing (Version B)

ITEM	QTY	DESCRIPTION
1	1	MAIN HOUSING 3
2	1	INTERMEDIATE SECOND PINION
3	1	KEY
4	1	CLUTCH DISC
5	2	CLUTCH LINING
6	1	FIRST WHEEL LH HELIX
7	1	FIRST WHEEL SPACER
8	1	CLUTCH DISC
9	2	DISC SPRING
10	1	CLUTCH ADJUSTING SLEEVE
11	1	CHAIN SPROCKET
12	1	LIP SEAL
13	1	MAIN HOUSING 2
14	1	OUTPUT WHEEL
15	1	SECOND WHEEL , THIRD PINION
16	1	CHAIN GUIDE
17	2	LENGTH PIN
18	1	LIMIT ROD
19	1	CHAIN LIMIT FLAP
20	1	MAIN HOUSING
21	1	STOPPER
22	1	CHAIN FLAP LEVER
23	1	SUSPENSION PLATE
24	2	LENGTH PIN
25	1	CLUTCH ADJUSTABLE SCREW
26	5	SOCKET HEAD CAP SCREW
27	1	CAP SCREW PLUG
28	3	SOCKET HEAD CAP SCREW
29	1	SOCKET HEAD CAP SCREW
30	1	HEX NUT
31	1	BALL BEARING
32	1	BALL BEARING
33	2	BALL BEARING
34	2	BALL BEARING
35	2	BALL BEARING
36	1	INTERNAL CIRCLIP
37	1	INTERNAL CIRCLIP
38	2	EXTERNAL CIRCLIP
39	1	EXTERNAL CIRCLIP
40	1	SPACER
41	2	EXTERNAL CIRCLIP
42	4	EXTERNAL CIRCLIP
43	3	CABLE GLAND
44	1	MOTOR SHAFT
45	1	MOTOR ROTOR
46	1	MOTOR STATOR
47	1	MOTOR HOUSING
48	4	SOCKET HEAD CAP SCREW
49	1	BRAKE ASSEMBLY
50	1	MOTOR COVER
51	4	SOCKET HEAD CAP SCREW
52	1	ELECTRIC PANEL ASSEMBLY
53	1	PENDANT ASSEMBLY

14.3 TROLLEY

14.3.1 Electric Trolley (Standard Headroom)

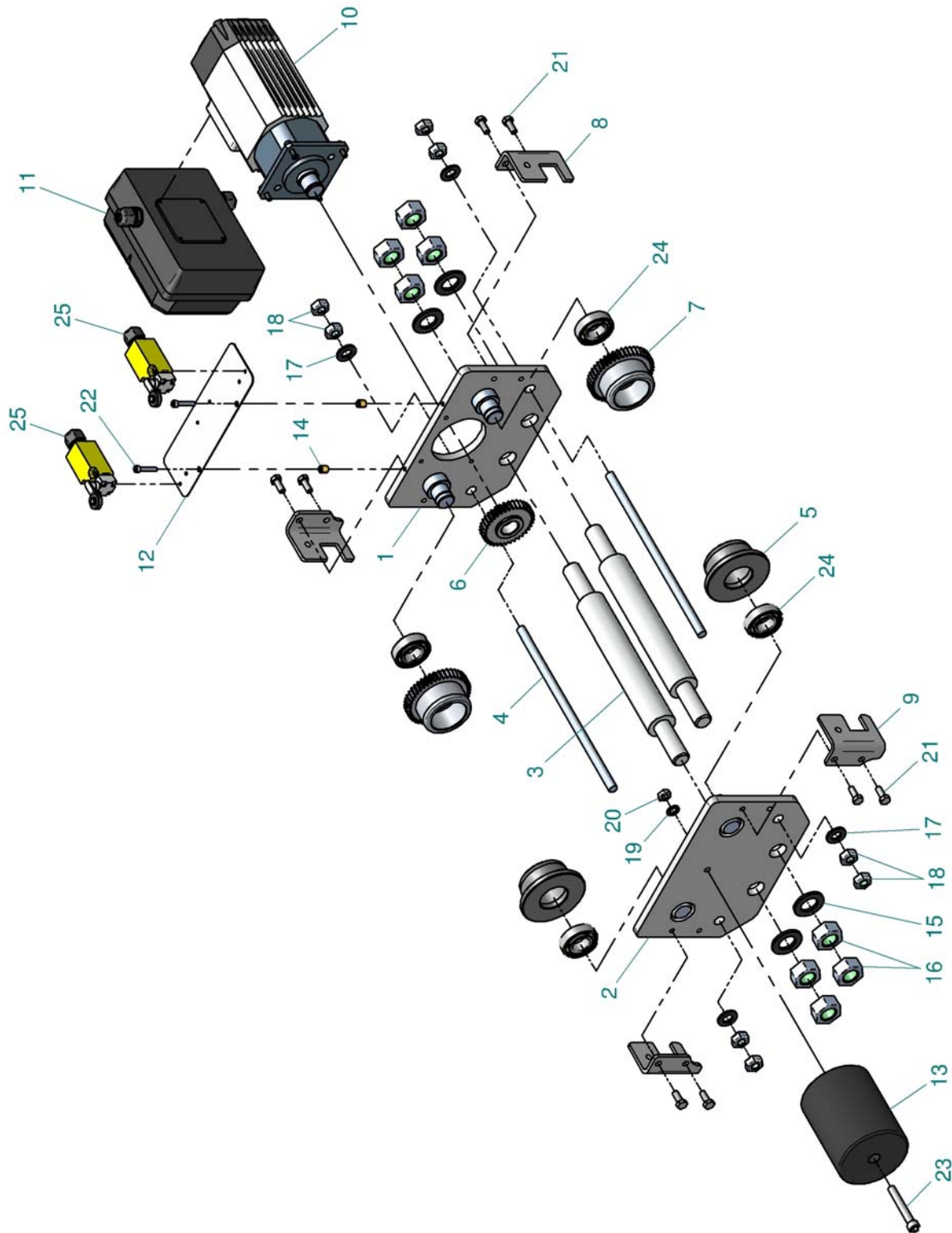


Figure 35 – Trolley Exploded View (Standard Headroom)

Electric Trolley Parts Listing (Standard Headroom)

ITEM	QTY	DESCRIPTION
1	1	WHEEL MOUNTING PLATE 2
2	1	WHEEL MOUNTING PLATE 1
3	2	SHAFT-2
4	2	SHAFT-1
5	2	DRIVEN WHEEL
6	1	DRIVING GEAR
7	2	DRIVING WHEEL
8	2	ANGLE BRACKET 1
9	2	ANGLE BRACKET 2
10	1	TROLLEY MOTOR ASSEMBLY
11	1	TROLLY MOTOR ELECTRIC PANEL
12	1	LIMIT SWITCH MOUNTING PLATE
13	1	COUNTER WEIGHT
14	2	SPACER
15	4	WASHER
16	8	NUT
17	4	WASHER
18	8	NUT
19	1	WASHER
20	1	NUT
21	8	HEX BOLT
22	2	SOCKET HEAD CAP SCREW
23	1	SOCKET HEAD CAP SCREW
24	4	BALL BEARING
25	2	LIMIT SWITCH ASSEMBLY

14.3.2 Electric Trolley (Low Headroom)

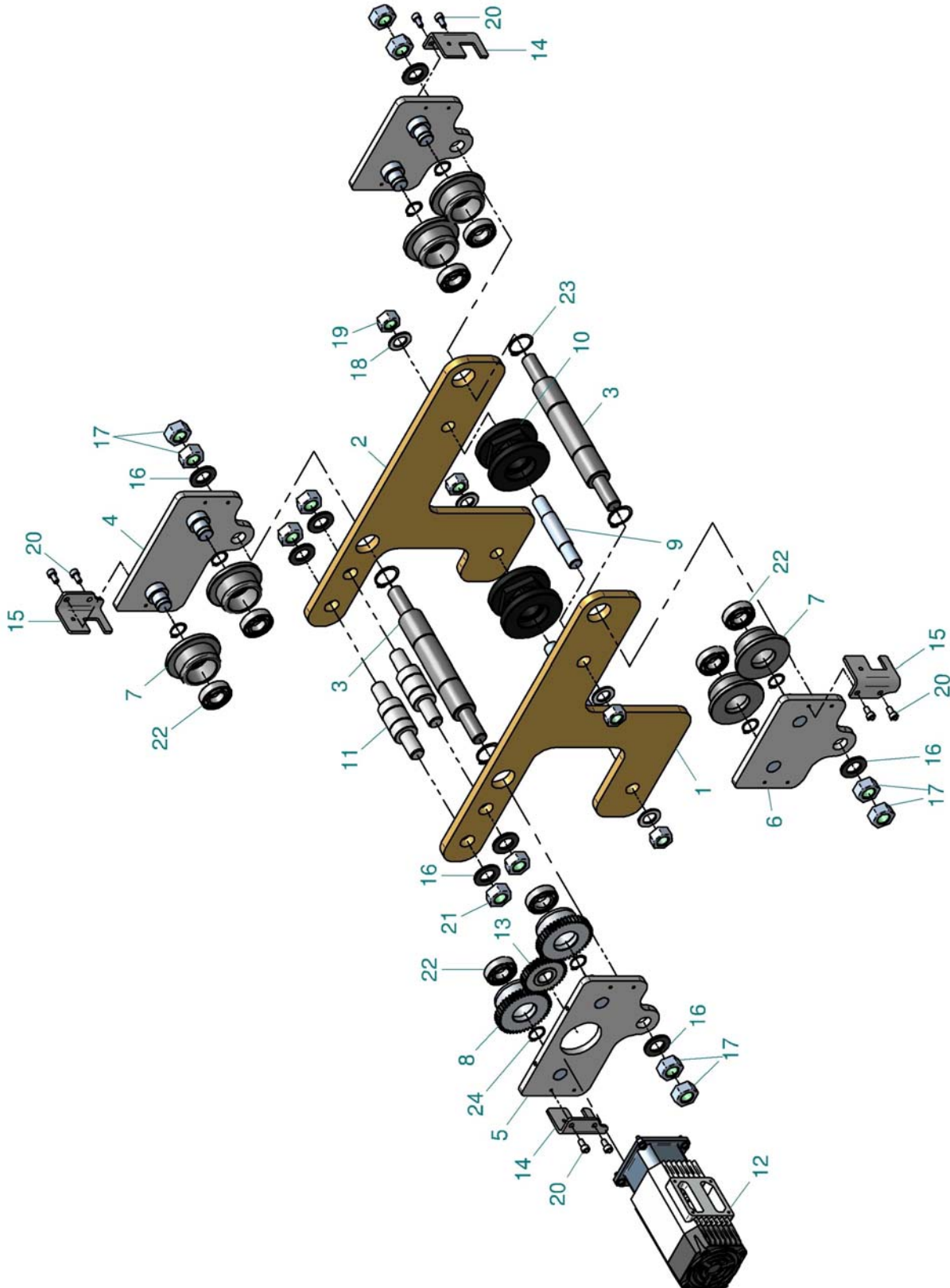


Figure 36 – Trolley Exploded View (Low Headroom)

Electric Trolley Parts Listing (Low Headroom)

ITEM	QTY	DESCRIPTION
1	1	MOUNTING PLATE 1
2	1	MOUNTING PLATE 2
3	2	WHEEL SUPPORT SHAFT
4	1	WHEEL PLATE ASSEMBLY 1
5	1	WHEEL PLATE ASSEMBLY 2
6	2	WHEEL PLATE ASSEMBLY 3
7	6	DRIVEN WHEEL
8	2	DRIVING WHEEL
9	2	CHAIN PULLEY PIN
10	2	CHAIN PULLEY
11	2	HOIST ASSEMBLY SUPPORT SHAFT
12	1	TROLLEY MOTOR ASSEMBLY
13	1	DRIVING GEAR
14	2	ANGLE BRACKET 1
15	2	ANGLE BRACKET 2
16	8	WASHER
17	8	NUT
18	4	WASHER
19	4	NUT
20	8	SOCKET HEAD CAP SCREW
21	4	NUT
22	8	BALL BEARING
23	4	EXTERNAL CIRCLIP
24	8	EXTERNAL CIRCLIP

15. HOIST MAINTENANCE LOG

15.1 CHAIN INSPECTION LOG

Inspected On: By:	Length over 5 links (mm)	"t" (mm)	"dm" (mm)	Remarks

15.2 LOAD HOOK INSPECTION LOG

Fitted On: By:	Markings	"M" (mm)	"H" (mm)	"B" (mm)	"N" (mm)	Remarks

15.3 PERIODIC TESTS

HOIST SERIAL No				
Date	Estimated Hours Run	Defects found	Remedial actions	Signature

PERIODIC TESTS (CONT'D)

HOIST SERIAL No				
Date	Estimated Hours Run	Defects found	Remedial actions	Signature

15.4 RECORD OF REPLACEMENT PARTS

HOIST SERIAL No			
Date	Estimated Hours Run	Part description / Reason for replacement	Signature



RECORD OF REPLACEMENT PARTS (CONT'D)

HOIST SERIAL No			
Date	Estimated Hours Run	Part description / Reason for replacement	Signature

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