BAJAJ
indef

YOUR WINNING COLLABORATOR

OPERATING & MAINTENANCE INSTRUCTION MANUAL WITH SPARE PART LIST

(Guarantee Will be Void if not used as Instructed in this Manual)

WRH II

2t - 2 Fall, 4t - 4 Fall

WIRE ROPE HOIST

INDEX

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

Important Information and Warnings

Terms and Summary

This manual provides important information for personnel involved with the installation, operation and maintenance of this product. Although you may be familiar with this or similar equipment, it is strongly recommended that you read this manual before installing, operating or maintaining the product.

Danger, Warning, Caution and Notice - Throughout this manual there are steps and procedures that can present hazardous situations. The following signal words are used to identify the degree or level of hazard seriousness.

DANGER :- Danger indicates an imminently hazardous situation which, if not avoided, **will** result in **death or serious injury**, and property damage

WARNING :- Warning indicates an imminently hazardous situation which, if not avoided, **could** result in **death or serious injury**, and property damage.

CAUTION :- Caution indicates a potentially hazardous situation which, if not avoided, **may** result **minor or moderate injury** or property damage.

NOTICE :- Notice is used to notify people of installation, operation, or maintenance information which is important but not directly hazard-related.

CAUTION

These general instructions deal with the normal installation, operation, and maintenance situations encountered with the equipment described herein. The instructions should not be interpreted to anticipate every possible contingency or to anticipate the final system, crane, or configuration that uses this equipment. For systems using the equipment covered by this manual, the supplier and owner of the system are responsible for the system's compliance with all applicable industry standards, and with all applicable federal, state and local regulations/codes.

This manual includes instructions and parts information for a variety of trolley and hoist types. Therefore, all instructions and parts information may not apply to any one type or size of specific trolley or hoist. Disregard those portions of the instructions that do not apply.

Record your hoist and trolley's Product Code and Serial Number on the front cover of this manual for identification and future reference to avoid referring to the wrong manual for information or instructions on installation, operation, inspection, maintenance, or parts.

Use only Indef authorized replacement parts in the service and maintenance of this trolley.

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

WARNING

Equipment described herein is not designed for and MUST NOT be used for lifting, supporting, or transporting people, or for lifting or supporting loads over people.

Equipment described herein should not be used in conjunction with other equipment unless necessary and/or required safety devices applicable to the system, crane, or application are installed by the system designer, system manufacturer, crane manufacturer, installer, or user.

Modifications to upgrade, rerate, or otherwise alter this equipment shall be authorized only by the original equipment manufacturer.

Failure to read and comply with any one of the limitations noted herein can result in serious bodily injury or death, and/or property damage.

The angle between rope and plane perpendicular to the axis of the drum shall not exceed 5° (As per IS 3938 6.1.1.2).

Hoists shall not be operated unless the hoist unit is centered over *the load, except when authorized by a qualified person who has determined that the components of the hoist and its mounting will not be overstressed. Should it be necessary to pick a load that is not centered under the hoist unit, precautions should be taken to control the swing of the load when it is picked clear of its support.*

DANGER

HAZARDOUS VOLTAGES ARE PRESENT IN THE CONTROL BOX, OTHER ELECTRICAL COMPONENTS, AND CONNECTIONS BETWEEN THESE COMPONENTS.

Before performing ANY mechanical or electrical maintenance on the equipment, de-energize (disconnect) the main switch supplying power to the equipment; and lock and tag the main switch in the de-energized position.

Only trained and competent personnel should inspect and repair this equipment.

Information
This symbol indicates tips and useful information.

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

Warning Tag and Labels

The warning tag illustrated below in Figure is supplied with each hoist and trolley shipped from the factory. If the tag is not attached to the pendant cord for your hoist/trolley, order a tag from your dealer and fixit it. Read and obey all warnings attached to this Hoist/Trolley. Tag is not shown in actual size.

WARNING

IMPROPER use of powered Hoist could result in death Or serious injury.

To avoid these hazards:

- ALWAYS read owner's manual and safety instructions.
- Do NOT lift more than rated load.
- Do NOT lift or transport loads over or near people.
- Do NOT use a hoist for lifting supporting or transporting people.
- Do NOT operate unless load is centered under hoist.
- Do NOT support a load on the tip of the hook
- Do NOT use a hoist if the hook latch is missing or broken.
- Do NOT remove or obscure the warning lables.
- Do NOT run the load chain or wire rope over a sharp edge.
- Do NOT use the load chain or wire rope as a sling.
- Do NOT operate beyond the travel limits of the hook or load block.
- Do NOT use a twisted, kinked, damaged, or stretched load chain or wire rope.
- Do NOT operate a wire rope hoist with a wire rope that is not properly seated in its groove.

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

CONDITIONS WHERE WARRANTY WILL BE VOID / NOT APPLICABLE

HHL does not provide reimbursement for maintenance and visit charges for items such as: brake adjustments, lubrication oil changes, or any other item or activity deemed solely by HHL to be maintenance related.

HHL will not be liable for damage or malfunction and consequently warranty resulting from:

a. Lack of maintenance.

b. Use of improper or insufficient lubricants

c. Supply voltage high/low or insufficient.

d. Environmental conditions (including but not limited to extreme temperatures, humidity and corrosive environments).

e. Outdoor applications where HHL is not intimated and recommendations for protection from the elements are not followed.

f. Misuse or abuse (including but not limited to overloading, shock loading, or side / angular lifting / pulling).

g. Use of parts other than genuine HHL replacement parts.

h. Improper repairs or maintenance.

I. Modifications not approved by HHL.

j. Improper handling of product after it leaves HHL factory.

k. Fire, accidents, or acts of God or nature, including but not limited to floods, hurricanes and lightning.

l. Any piece of equipment not supplied by Hercules Hoists Limited, is installed on products.

m. Malfunction or damage caused by items added to Hercules Hoists Limited products, including but not limited to controls and control components.

n. Relocation of hoist / equipment without proper installation and commissioning by HHL / ABP.

o. Misalignment in existing / installed Crane rail and hoist monorail, improper existing power feed track.

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

Operational cause Note

Overhead crane & hoists are typically designed to lift objects vertically. The specific guide lines are mentioned in respective IS standard .

Sometimes, however, operators attempt to make a side pull or cross pull or use the hoist horizontally to lift an object that is not directly underneath it.

This can cause damage to hoist.

Probable failures/Risks:

- Side pulling can cause damage to various hoist parts – Load Chain Wheel, Chain Guide Roller, Chain Stripper, Hook and hook latch assembly, in electric Chain Hoists the load chain guide and chain stripper ad in Wire Rope Hoists the rope drum, rope guide and the rope itself.
- Additionally, it may place the operator and personnel working near the crane at risk for injury.
- One of the main risks for an operator is load swing, which can damage the load or cause injury to the operator. In extreme cases, there might be a load drop.
- A rope that has been worn by side pulls may also snap and lead to a loss in control of the load.
- Cross pull or side pull may affect on monorail beam flanges, the beam web may deflect / distort, and beam flanges may wear causing uneven sides of beam.

- Preventing side pulls could lead to increases in both the safety and the lifetime of the components, customer should be educated at every interaction opportunity.
- The unfortunate prevalence of cross pulling-related accidents and maintenance needs repeated replacement of parts like chain guider roller, chain stripper, hook latch assembly, rope guide related parts i.e set of rope guide ring, spring and rope guide joining bracket.

Operational Note:

- Please be aware that as a safety feature, this rope guide ring is designed to snap in the event of the wrong usage of the rope hoist. As per IS 3938-2005 the angular lifting / pulling of dead weight is not allowed in wire rope hoist. If any user puts the rope hoist to such an application, the rope guide ring will not allow to perform the lifting. The rope guide ring will break if the fleet angle is more than 5 Deg. including angle between point of lift and dead weight kept on floor.
- The specific instruction in Do's and Don'ts is given hoist operating and maintenance manual. Those guidelines are based on past experience and safety standards of operation.
- The hoist in tandem application cannot be used because the load lifting speed and effort are not balanced in manual hoisting operation. Most important is load required to be cantered under hoist and load line of trolley centre and hook seating diameter centre should match. The hoists are designed for lifting load vertically. This phenomenon is applicable for all hoisting equipment's.

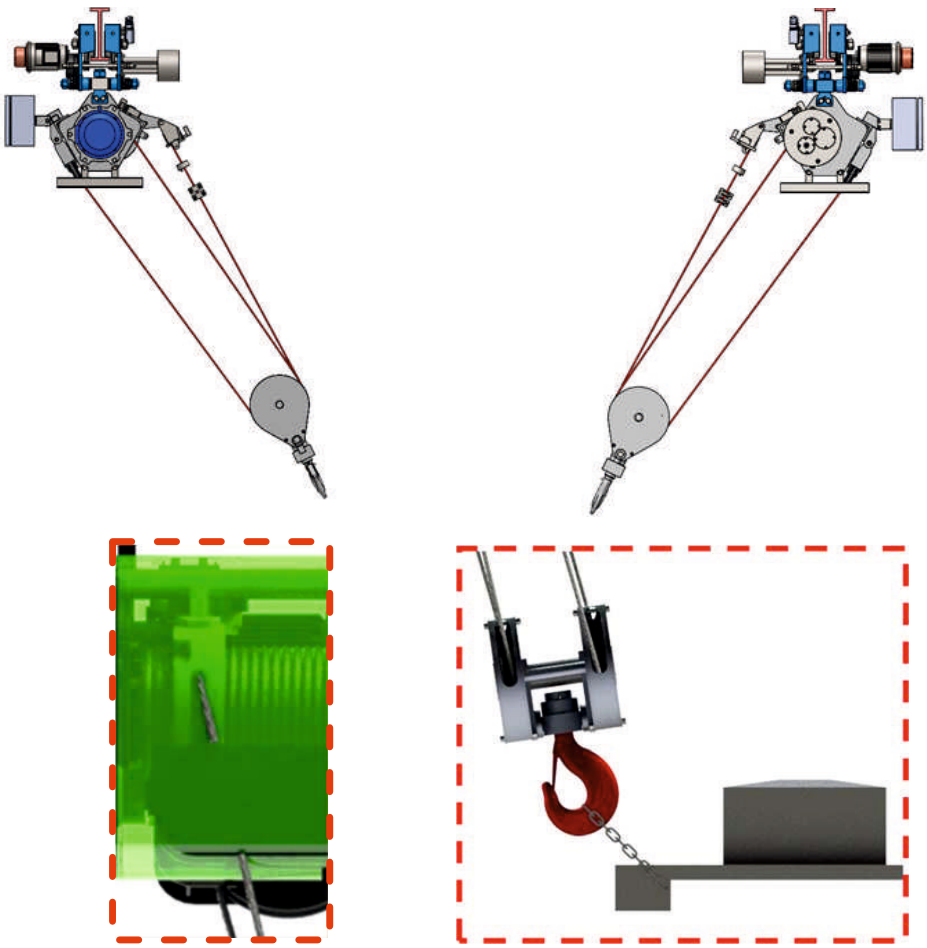
If hoist not used in proper way as mentioned above the warranty claims will not be accepted.
Indicative list of parts not covered under warranty.

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

Indicative list of parts not covered under warranty:

1	Hoist Motor Winding
2	Wire Rope
3	Safety Latch assembly
4	Brake Disc – Hoist and Trolley
5	Brake Coil – Hoist and Trolley
6	Hoist and Cross Travel Limit Switch
7	Trolley Motor Winding
8	Pendent control
9	Relay and Fuse
10	Control Transformer
11	Rope Guide
12	Special Control Switchgears

This can cause damage to hoist



Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

COMMISSIONING CHECK LIST (WRH)

1. **Limit Switch:** Check all limit switches like over hoisting, over lowering, right & left & emergency Check the direction of motions w.r.t. Pendent buttons change phase sequence if required. This is very important safety requirement.

2. **Sufficiency of lift:** Set the bottom Limit switch so that hook touches the floor & no further Loosening of wire rope takes place. Set the top limit switch so that safe headroom is maintained between hoist body and lower block. Ensure that rope is not rubbing between L.B.

3. **Angular Loading:** Check that equipment is not subjected to angular loading. Ensure that equipment is installed at proper place proper hook approaches are used to prevent this.

4. **Counter weight assembly:** Ensure that counter weights are correctly assembled for balancing of trolley bolts are properly locked & tightened.

5. **Noise level:** Observed that there is no abnormal noise in Hoist and travel motion.

6. **Greasing:** Apply grease to the rope for full length & rope guide & ensure free movement

7. **Name plate data:** Note hoist, motor nos & record them on Instruction manual for future use.

8. **Abnormal factors:** Excessive dust, temp, humidity, chemical fumes, leakages etc. Report them.

9. **Brake setting:** Ensure that brake operation is not sluggish & load is not slipping.
   This is to certify that equipment is commissioned on and found satisfactory for use.

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

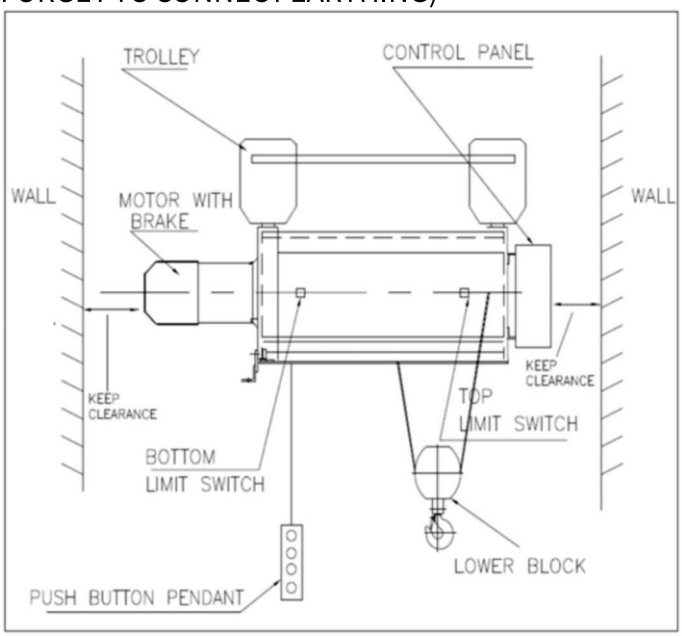
ERECTION & COMMISSIONING

Hoist has been designed for ease of erection. After removing side and top frames of wooden box you will find Hoist is bolted on the wooden bottom frames like pallet which can be lifted by fork lift truck.

Before erection of hoist adjust flange width of trolley to suit beam size providing equal numbers of washers on both sides between trolley side plate and suspension of hoist.

Check the distance between the wheel flanges. It should be 3 to 8mm more than the width of runway beam flange.
After adjusting the flange width check gear box, oil level, greasing of wire rope, trolley gears and pinions and then install the hoist on beam and remove wooden frame and packing girders.
Contact the hoist to 415 v, 3 phase power supply with 2.5mm sq. copper cable.

(CAUTION – DO NOT FORGET TO CONNECT EARTHING)



Now, cautiously operate Hoisting push button (see fig. 1) and observe Lower Block movement. In case. It is coming down then interchange phase sequence.

Recheck the directions cautiously and operation of Top And Bottom Limit Switches. Adjust limit switches If required.

When everything is set observe movement from top to bottom of lower block without load. Then lift the load by few Cms. And observe that Brake is holding the load.

Now operate cross travel motion and fix proper end stoppers / LS actuation / Buffer on beam so that proper clearance is maintained with motor, Gear box and wall.

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

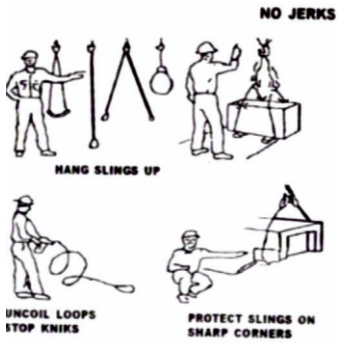
TROUBLE SHOOTING

TROUBLE	CAUSE	HOW TO SET RIGHT
Hoist does not start No contractor operates.	Phase sequence wrong or one phase failed or limit switch operated.	Change to phases of main supply. Check with lamp. Check movement of limit switch levers.
Hoist does not start Contractors are working.	Brake not opening or motor defect or overloaded.	Remove brake cover and see movement of brake plate. Check without load
Operation interrupted. Chattering of contractors.	Loose connection or wire broken, current collector contact poor.	Tighten all connections. Check wires. Check sitting of shoe & free movement of arm
Push button gets stuck.	Push button sections shifted	Tighten the housing screw.
Braking time too long.	Brake liner is worn.	Adjust brake as per Instructions.
Brake & motor overheats.	Brake not properly opening incorrect air-gap.	Check brake air gap (see the instructions).

Oil for Gear Box		ENKLO 68 (M1-18-J-754)
Oil quantity without creep speed		For hoists with class 'F' insulation; which are exposed to higher temp. or for hoist with 3000 RPM motors use oil ENKLO 68 or equivalent.
WRH II	2.5 litre	

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

SAFE OPERATING PROCEDURES FOR OVERHEAD CRANES / HOISTS & SLINGS

DO Not	CAUTIONS WHENEVER LEAVING OR PARKING ANY HOIST OR CRANE	DO
• Lift more than rated capacity of Hoist. • Operate Hoist with twisted, kinked or damaged hoist-rope • Operate if rope is not seated in drum or sheave grooves. • Lift unless load slings are centered on hook. • Lift people or travel with people on load. • Make side pulls which misalign rope with hoist. • Operate unless all travel limit devices are functioning. • Lower below point where less than two full wraps of rope remain on hoist drum. • Use upper limit switch to stop hoist limit which is emergency stop only. • Leave operating position with suspended load on hook. • Permit load to contact obstacles. • Exceed recommended duty cycle. • Use Hoist Rope or chain as a sling or as an earthing for welding. • Divert his attention while operating. • Remove or obliterate warning label • Exceed fuse rating.	• Raise all hook to-but not through-limit switches. • Place all controls in off position • Place main power switch in off position. • Make visual check for any dangerous condition & report any defect immediately. • Report to supervisor when Hoist is not in operation. • Take up slacks, than start load slowly. • Keep chains free from twists, knots & knits. • Lift form Center of hooks. Avoid lifting form points. • Distribute load evenly on all legs. • Inspect chain regularly. Remember elongation of links is a sign of overloading. • A sharp edge can cut the lift of your sling. Use blocking padding or a corner saddle. • Remove knots large enough for the load. • Don't jerk loads- jerking may double the stress in your sling. Lift load gradually  	• Test hoist & travel limit devices at a start of each shift. • Position the Hoist so that lifting appliance is directly over the load. • Take load gently & avoid shock loads. • Ensure the travel path is clear before traveling. • Sound warning single when approaching personnel. • Balancer the loading sling before lifting more than few inches. • Test hoist brakes whenever lifting load approaching rated load capacity. Lift load a few inches & test hoist brakes before making complete lift. • Make visual checks on equipment at reasonable intervals & report the defects immediately. • Use controller to "stop" hoist not limit switch. • Watch for proper rigging on load before lifting. • Know standard hand signals. • Check Lubricants. • Check for proper phasing. • Always anchor outdoor hoists when not attended. • Keep load block safely overhead when not in use.

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

WIRE ROPE AND ROPE GUIDE RING ASSEMBLY

If wire rope shows broken wires on its length more than 10% or considerable plastic wear, severe corrosion, Kinks, loose strands, then it should be replaced with original rope as suggested by supplier.

For removing and assembling rope guide ring nut (halves), distance beam (A) need to be positioned as shown in Fig. 8 before starting the rope unwinding/winding on the drum by removing one bolt (c) from each side and

Loosening other bolts.

ASSEMBLY PROCEDURE:

Step1: Clamp wire rope end with 2 Nos. clamping washer (B) firmly on drum. Then wind at least 10 turns with grease on the rope and drum, pulling the rope by hand, so that rope is not loose on the drum.

Step2: Keep the rope in tension by pulling or clamping and at the same time assemble rope guide Ring (part Z) on drum from bottom of the drum so that thread of part Z will come in adjacent groove (i.e. 11th groove).

Step3 : While putting the spring over rope, to ensure rope is not getting loose, lock the part Z by Wedge (E) as shown in Fig. 8.

Step4: After ensuring above, assemble spring (D) on top of wound rope through groove in rope guide Ring and entangle its end (use 2 Nos. of cord or wires for pulling springs in opposite direction For assembly pf spring ends). Close spring ends properly by using plier so that ends do not Entangle with rope.

Step5: Remove wedge and push the part (Z) of rope guide at top so that part (Y) of rope guide can also Be assembled from bottom side of the drum.

Step6: Then assemble rope guide ring joining brackets (F) & (G) as shown in Fig. 9. (Ensure that bolt Length is not more, causing pressing of rope).

Step7: Assemble distance beam (A) in position as shown in Fig. 9.

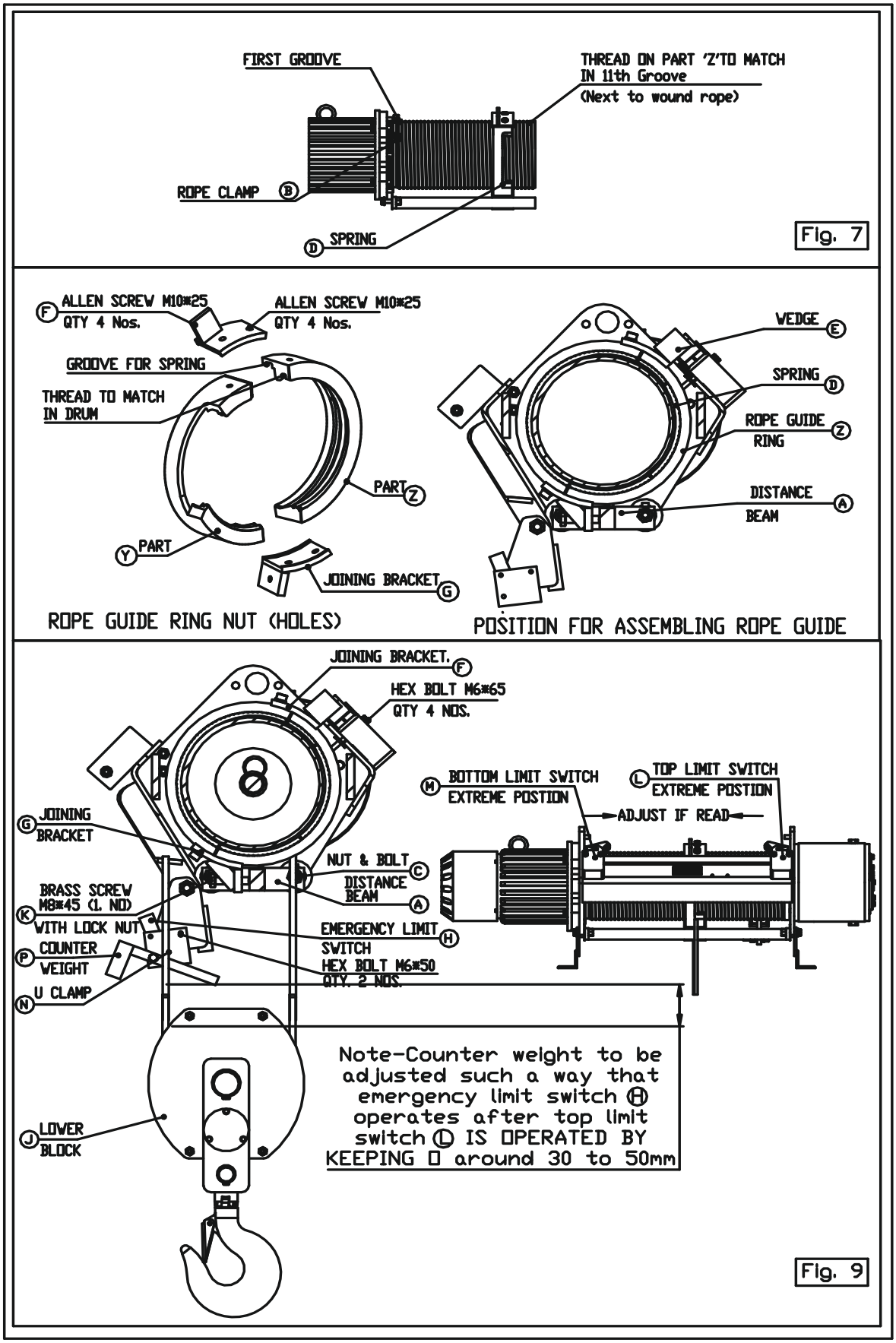
Step8: Now wind the entire rope length such that 2 grooves are empty at the end of drum and Proper Head room is maintained after Top Limit Switch (L) is actuated. (Adjusted counter weight (P) by Maintaining (Q) dimension as per guidelines given in Fig. 8).

Step9: Now adjust brass screw (K) such that actuator/joining bracket (F) operates Top Limit Switch (L) While hoisting and Bottom Limit Switch (L) is actuated. (Adjust counter weight (P) by Maintaining (Q) dimension as per guideline given in Fig. 8).

Step10: Now set the limit Switch (L) & (M) by moving them axially to restrict upper and lower limits If required by application.

Step11: Ensure that 'U' Clamps (N) are assembled properly as shown in Fig. 9.

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice



Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

RECOMMENDED INSPECTION AND MAINTENANCE SCHEDULE

TIME INTERVAL	INSPECTION OR MAINTENANCE
Daily or start of each shift (visual)	■ Check operation of all functional mechanisms including limit switch operation, brakes and control. Report any defect found to properly authorized supervisor & notify the next operator of the defects at the change of the shift. ■ Visually inspect each component of the crane normally used in lifting the load, travelling or lowering the load. This inspection should include, but not be limited to, the items as follow : a. Wire Rope: Inspect for kinks or broken wire or evidence of improper spooling on drum & replace seriously damaged ropes immediately. b. A functional operating mechanisms such as sheaves, drums & brakes. c. Visually inspect entire crane for the sings of damage which might cause unsafe immediately. d. All limit switches of hoisting, Lowering, Cross Travel or swivelling. e. Inspect hooks, lower blocks, and all load bearing components for damage.
1 - 3 Months	■ The result of monthly inspection should be carefully recorded in the suitable log book, in full details, & should be details, & should be dated signed by the inspector. ■ The purpose of the monthly inspection is to find & correct any wear, damage, or defect, which should affect the safe operation of the machine. This should include the items listed under the daily inspection as well as the following: Inspect the Electrical Controls. a. Check hoist gearbox oil level. b. Inspect the entire crane or hoist for structural damages. c. Inspect for cracked or worn sheave, drums, wheels, rails. d. Inspect for worn, cracked or distorted components such as pins, bearing, shaft & gears. e. The current collector system should be thoroughly checked & maintained. The contact tips & case of DSL systems should be checked & cleaned regularly.

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

RECOMMENDED INSPECTION AND MAINTENANCE SCHEDULE

TIME INTERVAL	INSPECTION OR MAINTENANCE
	f. Inspect for excessive wear on brake system parts, linings, pawls, & ratchets. Be sure pawls & ratchets operate correctly, are in good condition & are properly lubricated. Check the conditions of the fire extinguisher, if furnished.
	g. Inspect all motors, controls, & conductor systems which might in any way affect the safety of the machine.
	h. Entire crane or hoist structure, especially surrounding the drive should be thoroughly cleaned.
6 Months	■ Lower Block
	■ Rope Guide
	■ Lubricate hoist wire rope, Lower block, outboard bearing cartridge at grease fitting.
ANNUALLY	At least annually, the crane hook should be inspected for check by magnetic particle or other suitable crack testing inspection method, to determine that no cracks are discernible. A 15% increase in the throat measurement of hook or a 10% bend in the hook shall be considered cause for replacement.

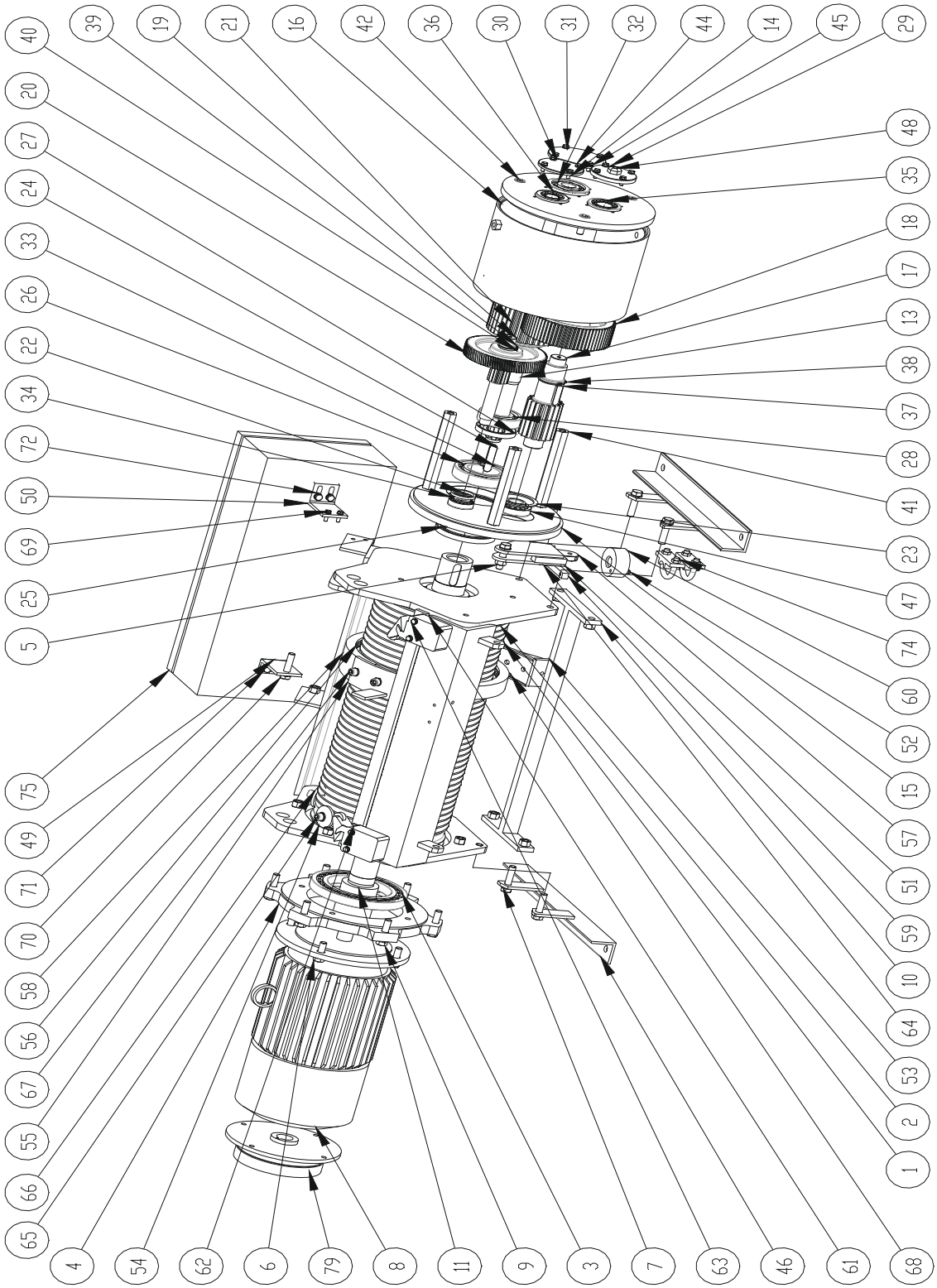
The above visual & operational checks will take only a few minutes at the beginning of each shift, & are absolutely necessary to ensure safe operation.

*** Complete inspection, disassembly and maintenance required. It is recommended that your HERCULES HOISTS LIMITED repair Station be contacted for this service.**

INSPECTION WHEN REQUIRED :
The third type of inspection concerns individual incidents which apply sudden & unusual stress, or possible damage due to any cause. All such incidents which might affect the safe operation of crane should be followed by an immediate & thorough inspection of the crane, using all necessary non-destructive test methods. All repairs found necessary should be made before the machine is returned to service.

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

MAINS SPARE PART LIST – 2 FALL



Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

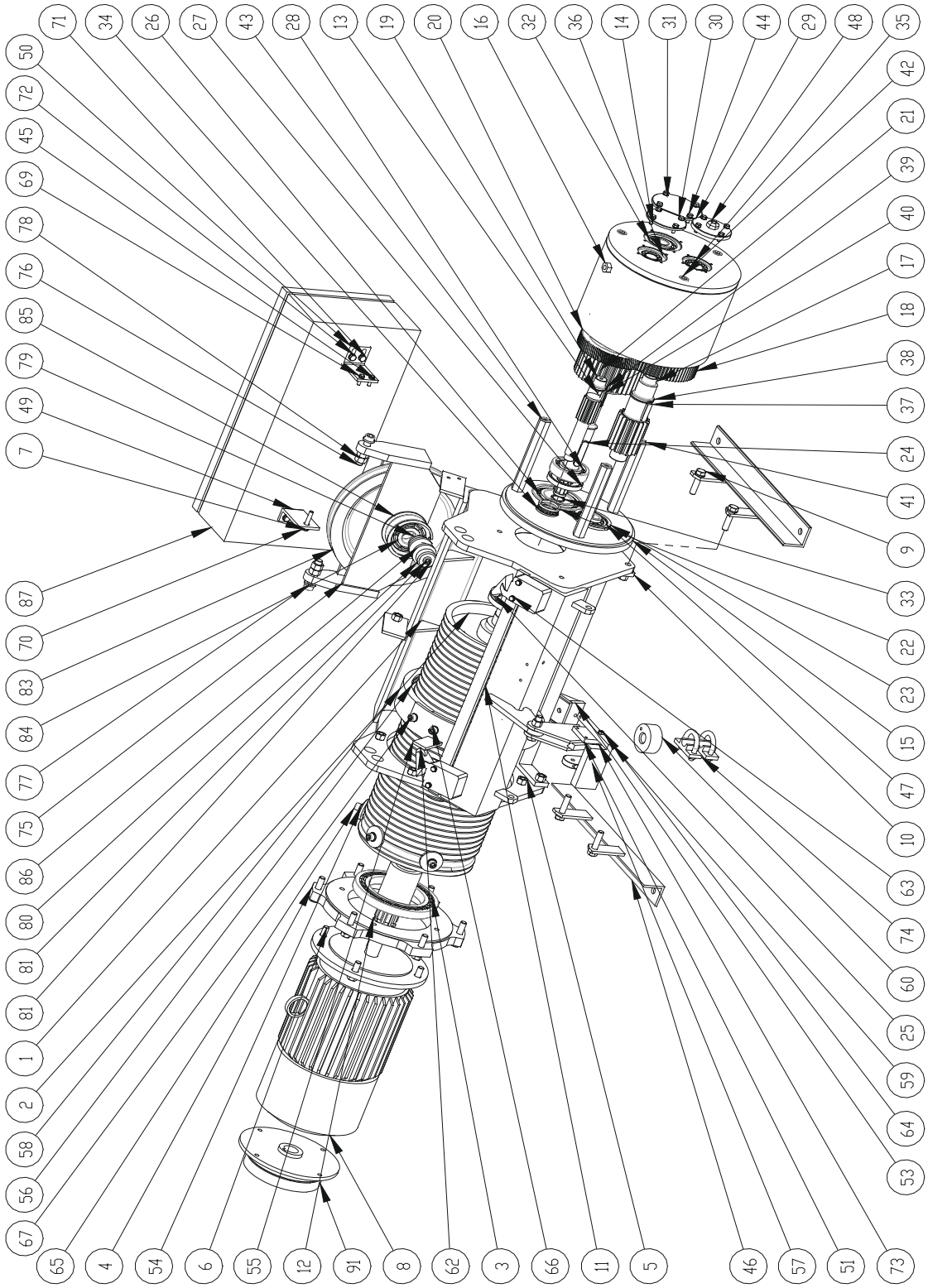
PART NO.	PART CODE	DESCRIPTION	QTY.
1	PGAA133400A	HOUSING COMPLETE (LIFT 6.6 MTRS)	1
	PGBA133400A	HOUSING COMPLETE (LIFT 11.4 MTRS)	
	PGDA133400A	HOUSING COMPLETE (LIFT 19.2 MTRS)	
2	PGAA133001B	DRUM COMPLETE (LIFT 6.6 MTRS)	1
	PGBA133001B	DRUM COMPLETE (LIFT 11.4 MTRS)	
	PGDA133001B	DRUM COMPLETE (LIFT 19.2 MTRS)	
3	BBR160240000	BALL BEARING 16024	1
4	PBCA023030B	END SHIELD MOTOR SIDE	1
5	HNMM012000YZ	HEX NUT M12	12
6	HBHM12035088	HT HEX BOT	4
7	FLSPWB120000	FLAT SPRING WASHER	16
8	XMRP002000BBL	HOIST MOTOR	1
9	HBHM12050088	HT HEX BOLT	11
10	PGAA133047A	DISTANCE BEAM (LIFT 6.6 MTRS)	1
	PGBA133047A	DISTANCE BEAM (LIFT 11.4 MTRS)	
	PGDA133047A	DISTANCE BEAM (LIFT 19.2 MTRS)	
11	PGAA133050C	INTERMEDIATE AXLE (LIFT 6.6 MTRS)	1
	PGBA133050C	INTERMEDIATE AXLE (LIFT 11.4 MTRS)	
	PGDA133050C	INTERMEDIATE AXLE (LIFT 19.2 MTRS)	
12	PACA823612A	BUSH	1
13	PGCA813021A	MAIN SHAFT	1
14	PBCA053027B	GEAR BOX PLATE OUTSIDE	1
15	PBCA053028B	GEAR BOX PLATE INSIDE	1
16	PBCA123029A	GEAR BOX CASING TUBE	1
17	PBCA812231B	2ND BACK GEAR PINION	1
18	PBCA372232B	2ND BACK GEAR	1
19	PBCA812221B	1 BACK GEAR PINION	1
20	PBCA812222C	1 ST BACK GEAR WHEEL	1
21	PGCA813024B	DRUM GEAR	1
22	PBCA833282A	DISTANCE RING	1
23	PCCA833282A	BALL BEARING DISTANCE RING	1
24	KB1400900450	KEY - BER 14*9*45	1
25	OS0801101000	OIL SEAL 100*80*10	1
26	BBR062120000	BALL BEARING 6212	1
27	OS0350751000	OIL SEAL 35*75*10	1
28	BBR063070000	BALL BEARING 6307	1
29	PBCA833271A	CAP FOR GEAR BOX PLATE	1
30	PBCA833272A	CAP FOR GEAR BOX PLATE	1
31	PBCA833273A	CAP FOR GEAR BOX PLATE	1
32	BBR064050000	BALL BEARING 6405	1
33	EXCRA0250000	(A) EXTERNAL CIRCLIP A 25	1
34	BTR302040000	TAPER ROLLER BEARING 30204	1
35	BTR302060000	TAPER ROLLER BEARING 30206	1
36	BTR303050000	TAPER ROLLER BEARING 30305	1
37	KO1400900450	KEY - OER 14 X 9 X 45	1
38	EXCRA0450000	EXTERNAL CIRCLIP A45	1
39	EXCRA0320000	EXTERNAL CIRCLIP A32	1
40	KB0800700270	KEY - BER 8*7*27	1
41	PBCA943025A	GEAR BOX BOLT *P200 -25	3
42	ASFM12030000	ALLEN SCREW (SHCS) M 12*30	3

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

PART NO.	PART CODE	DESCRIPTION	QTY.
43	SQSPW0120000	SSQAURE SRING WASHER M8	3
44	HBHM06016088	HEX BOLT M6*16	12
45	FLSPWB060000	FLAT SPRING WASHER B6	20
46	PBCA133077A	PACKING GIRDER*P200-N77	2
47	BTR303070000	TAPER ROLLER BEARING 30307	1
48	PACE173301A	OIL LEVEL INDICATOR 3/8 BSP	1
49	PGCA852503A	PANEL MOUNTING BRACKET	1
50	PGCA852504A	PANEL MOUNTING BRACKET	1
51	PGCA133070A	ROPE SUSPENSION WITH E.S.MOUNTING	1
52	PECA253707A	CLAMP(FOR 2DIA. WIRE ROPE)	1
53	PGCA132840A	R.H.ROPE GUIDE RING JOINING BRACKET	1
54	PGCA133014A	ROPE CLAMP	3
55	PGCA133084A	R.H.ROPE GUIDE RING JOINING BRACKET	1
56	PGCA243830A	TENSION SPRING	1
57	PGCA863074A	ROPE SUSPENSION KEY	1
58	PGCA683083A	ROPE GUIDE RING (R.H.S)	1
59	PECA133702A	ACTUATOR LEVER	1
60	PECA023705A	COUNTER WEIGHT	1
61	PNCA833091A	LIMIT SWITCH CLAMP	2
62	XLSP0070SLZ	LIMIT SWITCH	2
63	HBHM06065088	HEX BOLT M6*65	4
64	HNMM006000YZ	HEX NUT M6	7
65	ASHM10045000	ALLEN SCREW (SCHS) M 10*45	3
66	FLSPWB100000	FLAT SPRING WASHER B10	7
67	ASFM10025000	ALLEN SCREW M10*25	4
68	HBHM06035088	HT HEX BOLT 6*35	1
69	HBHM06020088	HT HEX BOLT M6*20.	2
70	HBHM12050088	HT HEX BOLT M12*50	1
71	FLSPWB080000	FLAT SPRING WASHER B-8	4
72	HBHM08020088	HT HEX BOLT 8*20	4
73	HBHM06020088	HT HEX BOLT M6*20	1
74	BDG100000000	BULL DOG GRIB	2
75	0221608B	CONTROL PANEL	1
79	XBAP0020SYT	HOIST BRAKE	1
80	WRF011060370	WIRE ROPE (LIFT 6.6 MTRS)	19.5 M
		WIRE ROPE (LIFT 11.4 MTRS)	30.1 M
		WIRE ROPE (LIFT 19.2 MTRS)	46.1 M

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

MAINS SPARE PART LIST – 4 FALL



Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

PART NO.	PART CODE	DESCRIPTION	QTY.
1	PGAA13340 1A	HOUSING COMPLETE (LIFT 3.3 MTRS)	1
	PGBA13340 1A	HOUSING COMPLETE (LIFT 5.7 MTRS)	
	PGDA13340 1A	HOUSING COMPLETE (LIFT 9.6 MTRS)	
2	PGAA133001 B	DRUM COMPLETE (LIFT 3.3 MTRS)	1
	PGBA133001 B	DRUM COMPLETE (LIFT 5.7 MTRS)	
	PGDA133001 B	DRUM COMPLETE (LIFT 9.6 MTRS)	
3	BBR160240000	BALL BEARING 16024	1
4	PBCA023030B	END SHIELD MOTOR SIDE	1
5	HNMM012000YZ	HEX NUT M12	12
6	HBHM12035088	HT HEX BOT M12*35	4
7	FLSPWB120000	FLAT SPRING WASHER B12	16
8	XMRP002000BBL	HOIST MOTOR	1
9	HBHM12050088	HT HEX BOLT M12*50	11
10	PGAA133047A	DISTANCE BEAM (LIFT 3.3 MTRS)	1
	PGBA133047A	DISTANCE BEAM (LIFT 5.7 MTRS)	
	PGDA133047A	DISTAN CE BEAM (LIFT 9.6 MTRS)	
11	PGAA133050 C	INTERMEDIATE AXLE (LIFT 3.3 MTRS)	1
	PGBA133050 C	INTERMEDIATE AXLE (LIFT 5.7 MTRS)	
	PGDA133050 C	INTERMEDIATE AXLE (LIFT 9.6 MTRS)	
12	PACA823612B	BUSH	1
13	PGCA813021A	MAIN SHAFT	1
14	PBCA053027B	GEAR BOX PLAT E OUTSIDE	1
15	PBCA053028B	GEAR BOX PLATE INSIDE	1
16	PBCA123029A	GEAR BOX CASING TUBE	1
17	PBCA812231B	2ND BACK GEAR PINION	1
18	PBCA372232B	2ND BACK GEAR	1
19	PBCA812221B	1 BACK GEAR PINION	1
20	PBCA812222C	1 ST BACK GEAR WHEEL	1
21	PGCA813024B	DRUM GEAR	1
22	PBCA833282A	DISTANCE RING	1
23	PCCA833282A	BALL BEARING DISTANCE RING	1
24	KB1400900500	KER-BER 14*9*50	1
25	OSO801101000	OIL SEAL 100*80*10	1
26	BBR062120000	BALL BEARING 6212	1
27	OSO350751000	OIL SEAL 35*75*10	1
28	BBR063070000	BAL L BEARING 6307	1
29	PBCA833271A	CAP FOR GEAR BOX PLATE	1
30	PBCA833272A	CAP FOR GEAR BOX PLATE	1
31	PBCA833273A	CAP FOR GEAR BOX PLATE	1
32	BBR064050000	BALL BEARING 6405	1
33	EXCRA0250000	(A) EXTERNAL CIRCLIP A 25	1
34	BTR302040000	TAPER ROLLER BEAR ING 30204	1
35	BTR302060000	TAPER ROLLER BEARING 30206	1
36	BTR303050000	TAPER ROLLER BEARING 30305	1
37	KO1400900450	KEY - OER 14 X 9 X 45	1
38	EXCRA0450000	EXTERNAL CIRCLIP A45	1
39	EXCRA0320000	EXTERNAL CIRCLIP A32	1
40	KB0800700270	KEY - BER 8*7* 27	1
41	PBCA943025A	GEAR BOX BOLT	3
42	ASFM12060000	ALLEN SCREW (SHCS) M 12*30	3

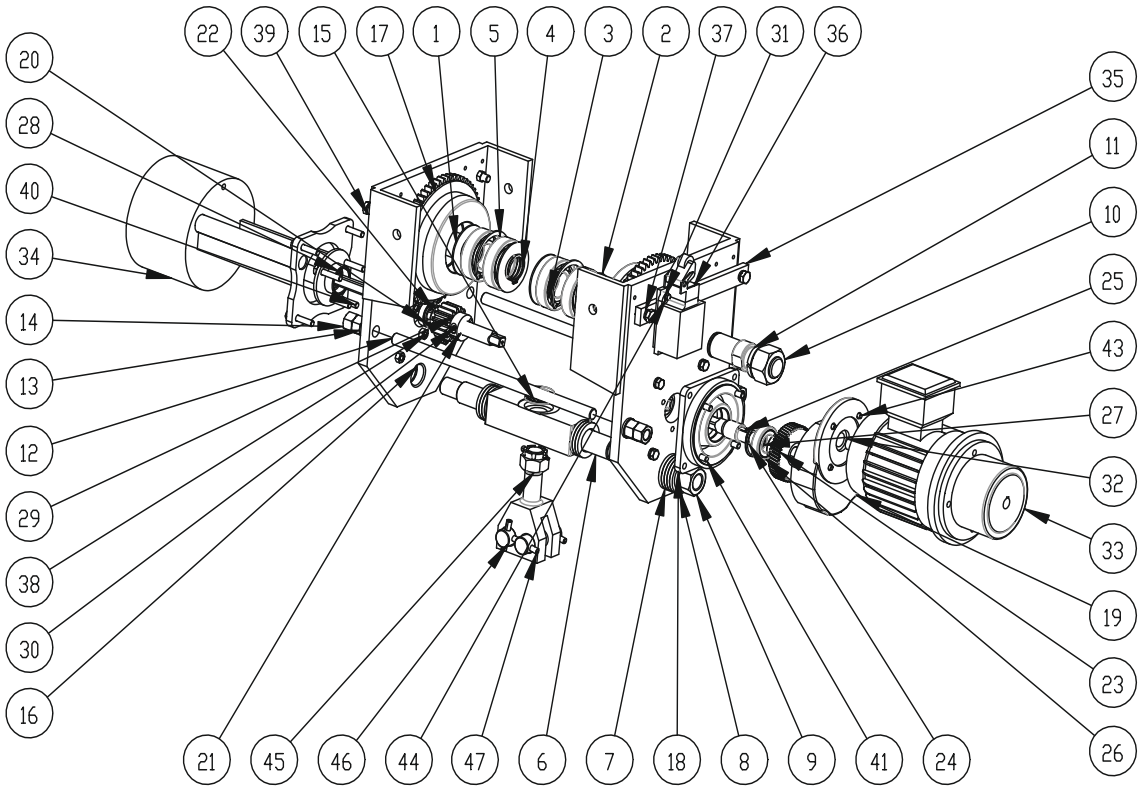
Indef Manufacturing Limited © 2024

Note :- Due to continuous development and improvement specification listed above may be changed without notice

PART NO.	PART CODE	DESCRIPTION	QTY.
43	SQSPW0120000	SSQAURE SRING WASHER M8	3
44	HBHM06016088	HEX BOLT M6 * 16	12
45	FLSPWB060000	FLAT SPRING WASHER B6	20
46	PBCA13307 7A	PACKING GIRDER	2
47	BTR303070000	TAPER ROLLER BEARING 30307	1
48	PACE173301A	OIL LEVEL INDICATOR 3/8 BSP	1
49	PGCA852503A	PANEL MOUNTING BRACKET	1
50	PGCA852504A	PANEL MOUNTING BRACKET	1
51	PGCA133070A	ROPE SUSPENSION WITH E.S. MOUNTING	1
52	PECA253707A	CLAMP	1
53	PGCA132840A	R.H.ROPE GUIDE RING JOINING BRACKET	1
54	PGCA133014A	ROPE CLAMP	3
55	PGCA133084A	R.H.ROPE GUIDE RING JOINING BRACKET	1
56	PGCA243830A	TENSION SPRING	1
57	PGCA863074A	ROPE SUSPENSION KEY	1
58	PGCA 683083A	ROPE GUIDE RIN G (R.H.S)	1
59	PECA133702A	ACTUATOR LEVER FOR GR.ACT.L.SWITCH	1
60	PECA023705A	COUNTER WEIGHT	1
61	PNCA833091A	LIMIT SWITCH CLAMP	2
62	XLSP0070SLZ	LIMIT SWITCH	2
63	HBHM06065088	HEX BOLT M6*65	4
64	HNMM006000YZ	HEX NUT M6	7
65	ASHM10045000	ALLE N SCREW (SCHS) M 10*45,	3
66	FLSPWB100000	FLAT SPRING WASHER B10	7
67	ASFM100250000	ALLEN SCREW M10*25	4
68	HBHM06035088	HT HEX BOLT 6*35	1
69	HBHM06020088	HT HEX BOLT M6*20	2
70	HBHM08040088	HT HEX BOLT M8*40	1
71	FLSPWB080000	FLAT SPRING WASHER B-8	4
72	HBHM08020088	HT HEX BOLT M 8 * 20	4
73	HBHM06020088	HEX BOLT M6*30	1
74	BDG100000000	BULL DOG GRIB	2
75	PGCK133024A	GUIDE PULLEY HOUSING	1
76	ASHM14060000	ALLEN SCREW (SCHS) M14 * 60,	2
77	FLSPWB140000	FLAT SPRING WASHER B14	2
78	HNMM01400 0YZ	HEX NUT M14	4
79	PBCK823022A	AXLE FOR PULLEY	1
80	PACJ833013A	BUSH FOR LOWER BLOCK	1
81	ASHM10200000	ALLEN SCREW M10*20	1
82	SQSPW0100000	SSQAURE SRING WASHER M8	1
83	PBCK013021A	GUIDE PULLEY	1
84	BBR064060000	BALL BEARING 6406	1
85	INCRB090000 0	INTERNAL CIRCLIP B90	2
86	PBCK113221A	SPACER RING 50*30.5	2
87	0221608B	CONTROL PANEL	1
91	XBAP0020SYT	HOIST BRAKE	1
92	WRF011060370	WIRE ROPE (LIFT 3.3 MTRS)	22.4 M
		WIRE ROPE (LIFT 5.7 MTRS)	32 M
		WIRE ROPE (LIFT 9.6 MTRS)	48 M

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

ELECTRIC TROLLEY



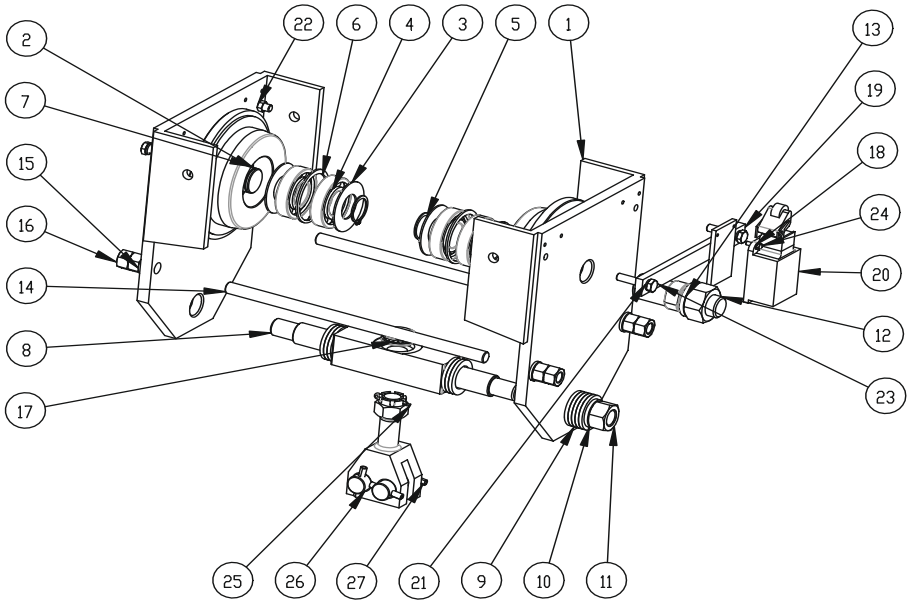
PART NO.	PART CODE 2 FALL	PART CODE 4 FALL	DESCRIPTION	QTY. 2 FALL	QTY. 4 FALL
1	PBCG823015A	PBCF823015A	WHEEL AXLE WITH M30 HEX.NUT	2	2
2	TQCM113022A	PBCF113016A	BEARING COVE R	4	2
3	BBR06207ZZ00	BBR063070000	BALL BEARING 6207 -ZZ/2RS	4	4
4	EXCRA0350000	EXCRA0350000	EXTERNAL CIRCLIP A35	2	2
5	INCRB0720000	INCRB0800000	INTERNAL CIRCLIP A 72	2	2
6	PACN843064A	PBCN053064A	LOAD AXLE FOR TROLLEY BOGIE TROLLEY WITH M24 NUT	1	1
7	PACF113023A	PCCF113252A	SPACER 33 I.D. *50*5	16	29
8	FLSPWB240000	FLSPWB240000	FLAT SPRING WASHER B24	2	2
9	HNMM024000YZ	HNMM024000YZ	HEX BOLT M24	2	2
10	HNMM030000YZ	HNMM030000YZ	HEX NUT M30	2	2
11	FLSPWB300000	FLSPWB300000	FLAT SPRING WASHER B30	2	4
12	PCCF833027A	PCCF833027A	DISTANCE BOLT	2	2
13	FLSPWB160000	FLSPWB160000	FLAT SPRING WASHER B16	4	4
14	HNMM016000YZ	HNMM016000YZ	HEX NUT M16	8	8
15	BTB511050000	BTB511080000	THRUST BEARING 51105	1	1

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

PART NO.	PART CODE 2 FALL	PART C ODE 4 FALL	DESCRIPTION	QTY. 2 FALL	QTY. 4 FALL
16	PACF053011B	PBCF133001B	SIDE PLATE GT	2	2
17	PACG013013A	PBCG013013A	GEARED WHEEL	2	2
18	PACF013028A	PACF013028A	GEAR BOX COVER	1	1
19	PACF023029B	PACF023029B	GEAR BOX HOUSING	1	1
20	BBR06003ZZ00	BBR06003ZZ00	BALL BEARING 6003 -ZZ/2RS	2	1
21	PBCF823018B	PBCF823018B	PINION SHAFT (SQ. SECTION)	1	1
22	PACF823017C	PACF823017C	WHEEL PINION (SQ. HOLE)	2	2
23	PACF813031A	PACF813031A	GEAR WHEEL	1	1
24	PACF813022C	PACF813022B	DRIVE S HAFT (SQ. SECTION)	1	1
25	KB1400900500	KB0600600180	KEY BER 14*9*50	1	1
26	BBR060050000	BBR060050000	BALL BEARING 6005	1	1
27	INCRB0470000	INCRB047000	INTERNAL CIRCLIP B47	1	1
28	PACF833021B	PACF833021B	BEARING HOUSING	1	1
29	PACF833020B	PACF833020C	CLAMPING WASHER	1	1
30	ASFM05016000	ASFM05016000	ALLEN SCREW 5*16	1	1
31	FLSPWB050000	FLSPWB050000	FLAT SRING WASHER B5	3	3
32	XMRP026000REM	XMRP028000REM	TROLLEY MOTOR	1	1
33	XBAP0050SYT	XBAP0050SYT	TROLLEY BRAKE	1	1
34	PNC4133069A	PNC4133069A	COUNTER WEIGHT	1	1
35	PACF133650A	PACF133651A	LIMIT SWITCH MOUNTING BRACKETR.H.	1	1
36	XLSP0090SLZ	XLSP0090SLZ	LIMIT SWITCH	1	1
37	FLSPWB080000	FLSPWB080000	FLAT SPRING WASHER B -8	19	17
38	HNMM00800YZ	HNMM00800YZ	HEX NUT M8	15	15
39	HBHM08040088	HBH M08016088	HEX BOLT M8*40	4	3
40	HBHM08035088	HBHM08035088	HEX BOLT 8*35	11	11
41	ASFM08030000	ASFM08030000	ALLEN SCREW M8*30	4	4
42	FLSPWB060000	FLSPWB060000	FLAT SPRING WASHER B6	4	4
43	HBHM06016088	HBHM06016088	HEX BOLT M6 * 16	4	4
44	HBHM05016088	HBHM05016088	HT HEX BOLT M5 * 16	2	2
45	PGCF863602A	PGCF863604B	SUSPENSION FOR HOIST	1	1
46	PGCF823611B	PGCF823612A	SUSPENSION BOLT	2	2
47	DSP080045000	DSP080045000	DOWEL SPRING PIN 8*45	4	6

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

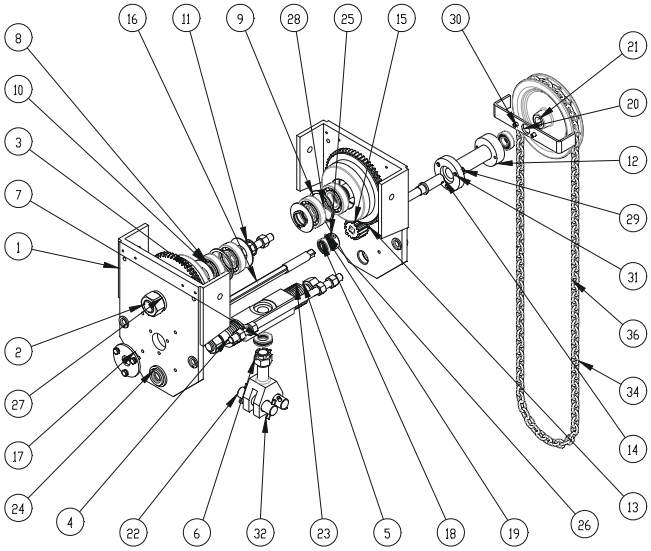
PLAIN TROLLEY



PAR T NO.	PART CODE 2 FALL	PART CODE 4 FALL	DESCRIPTION	QTY. 2 FALL	QTY. 4 FALL
1	PACF053012B	PBCF133010A	SIDE PLATE PT	2	2
2	PBCG823015A	PBCF823015A	WHEEL AXLE WITH M30 HEX.NUT	2	2
3	TQCM113022A	PBCF113016A	BEARING C OVER	4	2
4	BBR06207ZZ00	BBR063070000	BALL BEARING	4	4
5	EXCRA0350000	EXCRA0350000	EXTERNAL CIRCLIP	2	2
6	INCRB0720000	INCRB0800000	INTERNAL CIRCLIP	2	2
7	PACG013014A	PBCG013014A	PLAIN WHEEL	2	2
8	PACN843064A	PBCN053064A	LOAD AXLE FOR TROLLEY BOGIE T ROLLEY	1	1
9	PACF113023A	PCCF113252A	SPACER	16	24
10	FLSPWB240000	FLSPWB300000	FLAT SPRING WASHER	2	2
11	HNMM024000YZ	PBCN053064A	HEX BOLT M24	2	2
12	HNMM030000YZ	HNMM030000YZ	HEX NUT M30	2	2
13	FLSPWB300000	FLSPWB300000	FLAT SPRING WASHER B30	2	2
14	PCCF833027A	PCCF833027A	DISTANCE BOLT	2	2
15	FLSPWB160000	FLSPWB160000	FLAT SPRING WASHER B16	4	4
16	HNMM016000YZ	HNMM016000YZ	HEX NUT M16	8	8
17	BTR511050000	BTB511080000	TAPER ROLLER BEARING 51105	1	1
18	FLSPWB050000	FLSPWB050000	FLAT SRING WASHE R B5	2	2
19	PACF133651A	PACF133650A	LIMIT SWITCH MOUNTING BRACKET LH SIDE	1	1
20	XLSP0090SLZ	XLSP0090SLZ	LIMIT SWITCH	1	1
21	FLSPWB080000	FLSPWB080000	FLAT SPRING WASHER B -8	4	4
22	HNMM00800YZ	HNMM00800YZ	HEX NUT M8	4	4
23	HBHM08040088	HBHM080400 88	HEX BOLT M8*40	4	4
24	HBHM05016088	HBHM05016088	HT HEX BOLT M5 * 16 GR:8.8	2	2
25	PGCF863602A	PGCF863604B	SUSPENSION FOR HOIST	1	1
26	PGCF823611B	PGCF823612A	SUSPENSION BOLT	2	2
27	DSP080045000	DSP080045000	DOWEL SPRING PIN	4	6

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

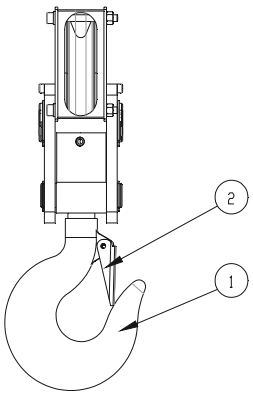
GEARED TROLLEY



PART NO.	PART CODE - 2 FALL	PART CODE - 4 FALL	DESCRIPTION	QTY.
1	PACF053011B	PBCF133001B	SIDE PLATE GT	2
2	PACG823015A	PBCF823015B	WHEEL AXLE	2
3	PACG013013A	PBCG013013A	GEARED WHEEL	2
4	PCCF833027A	PCCF833027A	DISTANCE BOLT	2
5	PACN843064A	PBCN053064A	LOAD AXLE	1
6	PGCF863602A	PGCF863604A	SUSPENSION	1
7	BTB511050000	BTB511080000	THRUST BEARING 51105	1
8	BBR06207ZZ00	BBR063070000	BALL BEARING 6207 -ZZ/2RS	4
9	INCRB0720000	INCRB0800000	INTERNAL CIRCLIP B72	2
10	TQCM113022A	PBCF113016A	BEARING COVER	4
11	EXCRA0350000	EXCRA0350000	EXTERNAL CIRCLIP A 35	2
12	PACG133028A	PACG133028A	DRIVE SHAFT HOUSING	1
13	BBR06004ZZ00	BBR06004ZZ00	BALL BEARING 6004ZZ	2
14	PACG823022D	PACG823022D	DRIVE SHAFT	1
15	PACF823017 C	PACF823017C	WHEEL PINION	2
16	PBCF823018C	PBCF823018C	PINION SHAFT	1
17	PACF833021B	PACF833021B	BEARING HOUSING	1
18	BBR06003ZZ00	BBR06003ZZ00	BALL BEARING 6003 -ZZ/2RS	1
19	PACF833020B	PACF833020B	CLAMPING WASHER	1
20	PACG852024A	PACG852024A	HAND CHAIR GUIDE	1
21	MECM023022A	MECM023022A	HAND CHAIN WHEEL	1
22	PGCF823612A	PGCF823612A	HOIST SUSPENSION BOLT	2
23	PACF113023A	PACF113023A	SPACER 33 I.D * 50 * 5	18
24	FLSPWB240000	FLSPWB300000	FLAT SPRING WASHER B24	2
25	FLSPWB050000	FLSPWB050000	FLAT SPRING WASHER B -5	1
26	ASHM05020000	ASFM05016000	ALLEN SCREW M5*20	1
27	FLSPWB300000	FLSPWB300000	FLAT SPRING WASHER B30	2
28	FLSPWB160000	FLSPWB160000	FLAT SPRING WASHER B16	8
29	FLSPWB080000	FLSPWB080000	FLAT SPRING WASHER B8	8
30	HBHM08016088	HBHM08016088	HEX BOLT M8*16	5
31	HBHM08020088	HBHM08020088	HT HEX BOLT 8*20 GRADE 8.8	3
32	DSP080045000	DSP080045000	DOWEL SPRING PIN 8*45	4
33	DSP060040000	DSP060040000	DOWEL SPRING PIN 6*40	1
34	CHHYN0601804	CHHYN0601804	HAND CHAIN 6 * 19	as per req
36	CHJL060180YZ	CHJL060180YZ	JOINING LINK	1

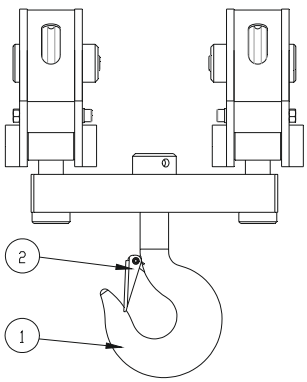
Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

LOWER BLOCK – 2 FALL



PART NO	PART CODE	DESCRIPTION	QTY
1	1470601P	2T/2.5T LOWER BLOCK ASSLY	
2	PBCJ000101B	HOOK WITH SAFETY LATCH ASSLY	1
3	CAAS003140A	HOOK LATCH ASSLY	1

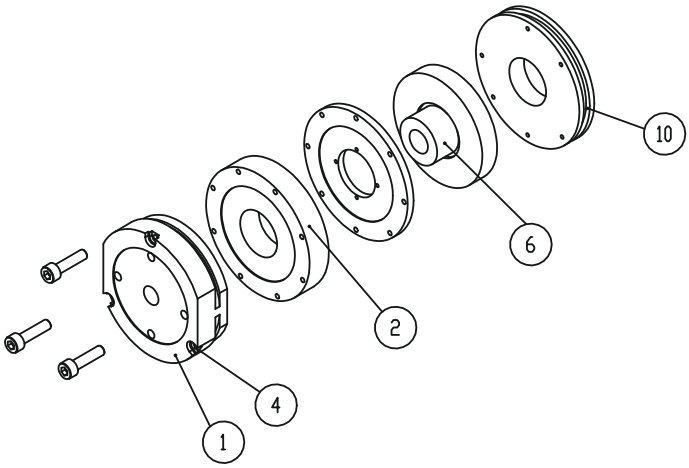
LOWER BLOCK – 4 FALL

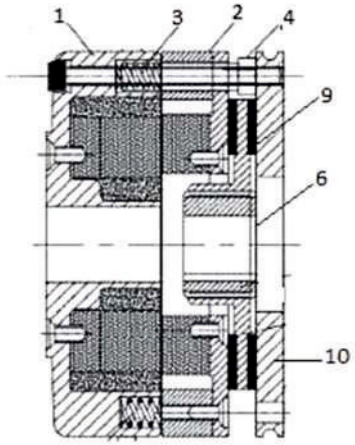


PART NO	PART CODE	DESCRIPTION	QTY
1	0220602P	4T/5TLOWER BLOCK ASSLY	
2	PBCK000101B	HOOK WITH SAFETY LATCH ASSLY	1
3	CCBS00312ZB	HOOK LATCH ASSLY	1

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

TROLLEY & HOIST BRAKE SPARE PART LIST





TROLLEY BRAKE SPARE PARTS

PART NO.	PART CODE	DESCRIPTION
	XBAP0050SYT	MAIN BRAKE
1	XBAP01610SSYT	STATOR
2		ARMATURE ASSEMB LY
3		TUBULAR SPRING EACH SET
4	XBAP87210SSYT	MOUNTING FLANGE ASSLY
6		BRAKE DISC & BRAKE LINER (ROTOR / GEAR HUB)
10	XBAP00510SYT	MOUNTING FLANGE

HOIST BRAKE SPARE PARTS

PART NO.	PART CODE	DESCRIPTION
	XBAP2240SYT	MAIN BRAKE
1	XBAP02370SSYT	STATOR
2		ARMATURE ASSEMBLY
3		TUBULAR SPRING EACH SET
4	XBAP54170SSYT	MOUNTING FLANGE ASSLY
6		BRAKE DISC & BRAKE LINER (ROTOR / GEAR HUB)
10	XBAP00520SYT	MOUNTING FLANGE

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

TROLLEY & HOIST BRAKE MAINTENANCE / REPAIR

Trouble	Possible cause	Required action
Break does not apply No braking action	No mains voltage. Stator (coil) open.	Check supply voltage.
	Armature plate Jammed (without moment)	Brake coil resistance to be checked as per the technical data.
		Springs, guide bushes must be checked and overhauled (cleaned properly).
Brake action too slow, insufficient braking effect	Oil or grease on the friction lining	Replace rotor, prevent oil/grease from coming in contact with friction liner.
	Spring are present/broken	Dismantle brake, loosen sleeves insert new springs.
	Brake limning worn-out	Replace rotors (armature plate and flange if very badly worn-out).

To ensure safe & trouble free operation, Spring Loaded Brakes must be checked and maintained at regular intervals. SYTCO Spring Loaded Brakes are wear – resistant and designed for trouble free longer life. The Friction Liners are subject to function -related wear. The Brakes must be checked and readjusted at regular intervals & if necessary, it should be replaced.

PRINCIPLE OF OPREATION : This type of brake consists of stator, Armature, Rotor & Mounting flange. Current is given to stator (coil), the armature plate is attracted to the stator against the spring force thus releasing the rotor. When current is off, strong compression springs push the armature plate back to its position thus clamping the rotor in between armature & mounting flange and providing necessary braking torque.

INSTALLATION : Mounting flange (10) has to be mounted on motor/machine body which should at right angle to the motor/machine shaft as well as cantered internally and externally may be with the help of spigot. The hub (6) has to be fitted on shaft with the help of key and axial retainer (circlip) and Rotor (9) on that. Stator (1) with Armature Assembly (2) has to be fitted on the Mounting flange (10) with the help of provided Allen bolt (8) through adjustment Hollow Bushes (4). The air gap should be adjusted by adjustable Hollow Bushes. To reduce air gap, rotate all bushes equally clockwise. Air gap should be within limits as per following table, initially it should be nominal.

Brake size	05	10	20	40	70	90	160	250
Nominal air gap mm	0.2	0.3	0.3	0.3	0.3	0.4	0.5	0.5
Maximum air gap mm	0.5	0.7	0.7	0.7	0.8	1.0	1.0	1.0

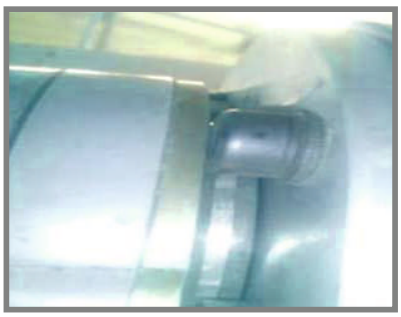
Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

MAINTANENCE : SYTCO Fail Safe Brakes are almost maintenance free. For this periodicity depends on application to application, operating frequency, system inertia to be stopped etc. air gap can be adjusted by rotating adjustable Hollow Bushes to reduce air gap. Rotate all bushes anti-clockwise and check from all sides by filler gauge and vice-versa.

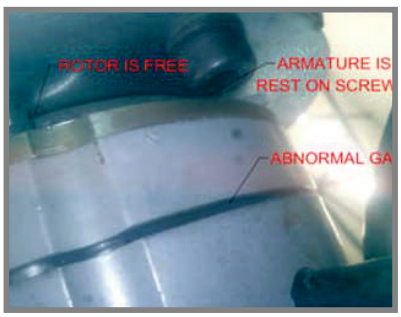
Typical cases of wrong fitment

Typical case of uneven air gap in brake disc: This should be noticed and avoided during preventive maintenance.

Typical case of stator resting bolt head, which will restrict the stator lateral movement of brake disc: This should be noticed and avoided during preventive maintenance.



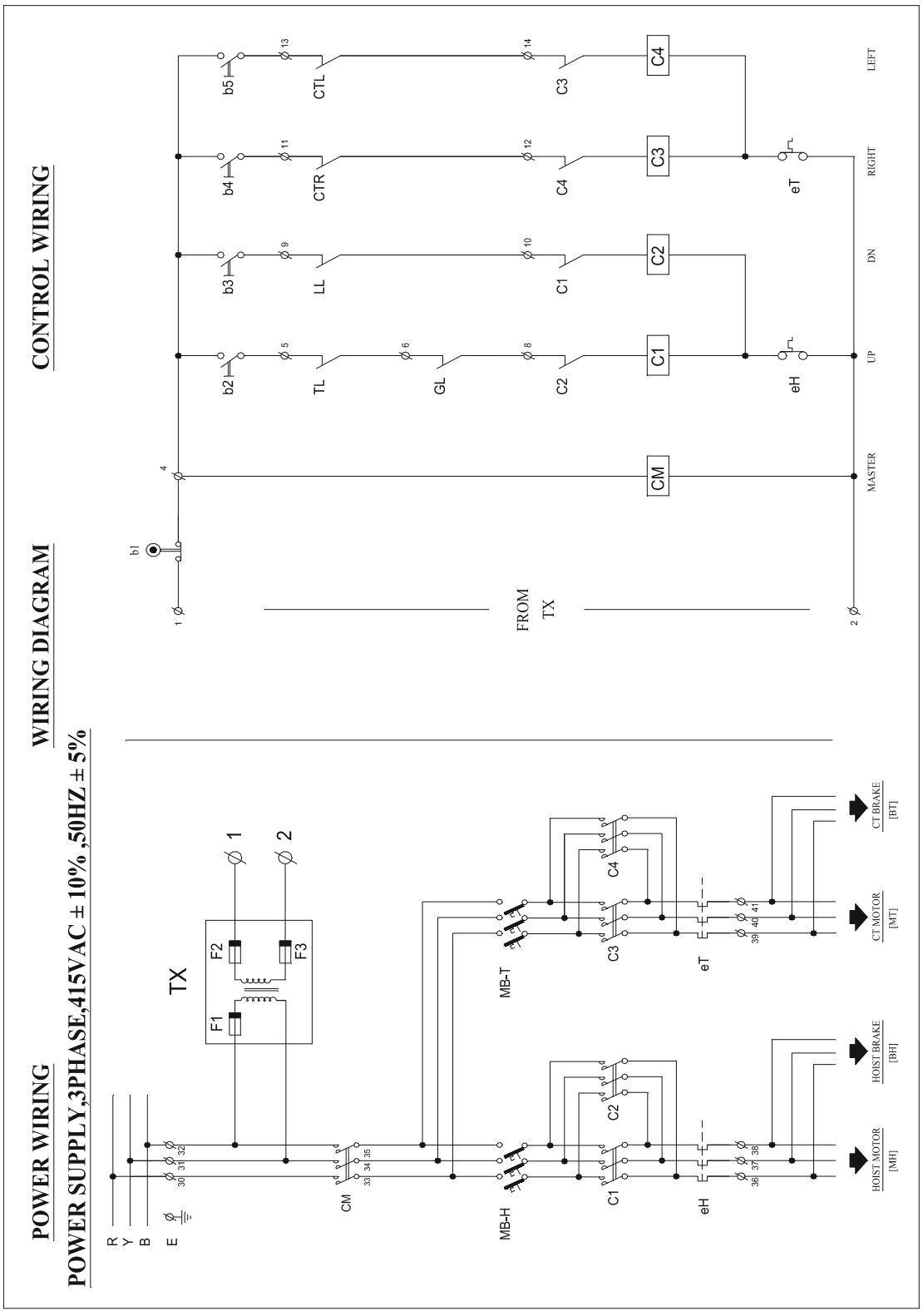
Typical case of stator fitting, the half-moon slot is to clear the bolt head, brake housing fitment wrong, which will obstruct the stator lateral movement of brake disc: This should be noticed and avoided during preventive maintenance.



Typical case of wrong wiring : The RYB colour code of connecting cables to be maintained and wiring connections to be followed accordingly. The supply voltage is 415+/-10% for all AC brakes. The power supply fluctuations will have effect on brake coil first than motor as coil are more sensitive than motor windings.

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

WIRING DIAGRAM



Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

ELECTRICAL SPARE PARTS – ET 2T

Item Co de	Description	Qty.
XCPP124000A	Enclosure for Baseplate XCPP124001A Size 560X260X150 mm	1
XCPP124001A	Baseplate for Enclosure XCPP124000A Size 490X220X2 mm	1
XCTP0001AVA	Avetronics/Prince Make Control Transformer Primary 415VAC ± 5%, ± 10% & Secondar y 24VAC,50VA	1
XMCP0060MDA	Schneider Make MCB 3P 20A Cat No A9N3P20D - Hoist Motor	1
XMCP0010MDA	Schneider Make MCB 3P 2A Cat No A9N3P02D - ET Motor	1
XACP0630SMA	Schneider Make Contactor 18A/24VAC Cat No LC1D18 B7 - Master, Hoist Motor	3
XACP0620SMA	Schneider Make Contactor 9A/24VAC Cat No LC1D09 B7 - ET Motor	2
XORE0140SMA	Schneider Make Overload Relay 7 -10A Cat No LRD14 - Hoist Motor	1
XORE0110SMA	Schneider Make Overload Relay 0.63 -1A Cat No LRD05 - ET Motor	1
XLSP0060SLZ	Indef Make Limit Switch in Standard Housing, Without Roller 1NO+1NC, Normal Action, Rating 10A/500V C at No. SL609N	1
XLSP0070SLZ	Indef Make Limit Switch in Standard Housing, Angular Roller Lever 1NO+1NC, Normal Action, Rating 10A/500V Cat No. SL609N	2
XLSP0090SLZ	Indef Make L imit Switch in Oil Tight Housing, Normal Roller Lever 1NO+1NC, Normal Action, Rating 10A/500V Cat No.SL603N	2
XPBP0003HHL	Indef Make 5 Way Pendant (Emergency Stop,Hoist/Low Single Speed, Right/Left Single Speed)	1

ELECTRICAL SPARE PARTS – ET 5T

Item C ode	Description	Qty.
XCPP124000A	Enclosure for Baseplate XCPP124001A Size 560X260X150 mm	1
XCPP124001A	Baseplate for Enclosure XCPP124000A Size 490X220X2 mm	1
XCTP0001AVA	Avetronics/Prince Make Control Transformer Primary 415VAC ± 5%, ± 10% & Seconda ry 24VAC,50VA	1
XMCP0060MDA	Schneider Make MCB 3P 20A Cat No A9N3P20D - Hoist Motor	1
XMCP0120MDA	Schneider Make MCB 3P 4A Cat No A9N3P04D - ET Motor	1
XACP0630SMA	Schneider Make Contactor 18A/24VAC Cat No LC1D18 B7 - Master, Hoist Motor	3
XACP0620SMA	Schneider Make Contactor 9A/24VAC Cat No LC1D09 B7 - ET Motor	2
XORE0140SMA	Schneider Make Overload Relay 7 -10A Cat No LRD14 - Hoist Motor	1
XORP0350TMA	Schneider Make Overload Relay 1 -1.6A Cat No LRD06 - ET Motor	1
XLSP0060SLZ	Indef Make Limit Switch in Standard Housing, Without Roller 1NO+1NC, Normal Action, Rating 10A/500V Cat No. SL609N	1
XLSP0070SLZ	Indef Make Limit Switch in Standard Housing, Ang ular Roller Lever 1NO+1NC, Normal Action, Rating 10A/500V Cat No. SL609N	2
XLSP0090SLZ	Indef Make Limit Switch in Oil Tight Housing, Normal Roller Lever 1NO+1NC, Normal Action, Rating 10A/500V Cat No.SL603N	2
XPBP0003HHL	Indef Make 5 Way Pendant (Emergency Stop,Hoist/Low Single Speed, Right/Left Single Speed)	1

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

ELECTRICAL SPARE PARTS – GT/PT

Item Code	Description	QTY
XCPP123000A	Enclosure for Baseplate XCPP123001A Size 440X260X150 mm	1
XCPP123001A	Baseplate for Enclosure XCPP123000A Size 370X220X2 mm	1
XCTP0001AVA	Avetronics/Prince/Powerex Make Control Transformer Primary 415VAC ± 5%, ± 10% & Secondary 24VAC,50VA	1
XMCP0060MDA	Schneider Make MCB 3P 20A Cat No A9N3P20D - Hoist Motor	1
XACP0630SMA	Schneider Make Contactor 18A/24VAC Cat No LC1D18 B7 - Master, Hoist Motor	3
XORE0140SMA	Schneider Make Overload Relay 7 -10A Cat No LRD14 - Hoist M otor	1
XLSP0060SLZ	Indef Make Limit Switch in Standard Housing, Without Roller 1NO+1NC, Normal Action, Rating 10A/500V Cat No. SL609N	1
XLSP0070SLZ	Indef Make Limit Switch in Standard Housing, Angular Roller Lever 1NO+1NC, Normal Action, Rating 10A/500V Cat No. SL609N	2
XPBP0001HHL	Indef Make 3 Way Pendant (Emergency Stop,Hoist/Low Single Speed)	1

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

MAINTENANCE AND HANDLING

Lubrication

Wire Rope:

- For proper performance the Wire Rope must be maintained in a clean and well lubricated condition.
- The rope should be lubricated every 3 months (more frequently for heavier usage or severe conditions).
- To lubricate the rope, first remove any dirt, grime, moisture or other accumulations of contaminates. Then coat the Wire Rope with ENKLO 68 (M1-18-J-754) oil or equivalent. Ensure that the lubricant is applied to the entire surface of the rope over its entire length.
- For dusty environments, dry lubricants are suggested.
- For conditions not permitting lubricant to fall off the wire rope, consider using non-dripping motorcycle drive chain lubricant.

Wire Rope Drum, Hook Block and Sheaves:

- The drum, hook block and sheaves should be lubricated every 3 months (more frequently for heavier usage or severe conditions).
- Lubricate the Drum, Hook Block and Sheaves with ENKLO 68 (M1-18-J-754) or MP GREASE 3 (SI-18-M-211) grease.
- For dusty environments, dry lubricants are suggested.
- For conditions not permitting lubricant to fall off the drum, hook block and sheaves, consider using non-dripping motorcycle drive chain lubricant.

Trolley Wheels and Gears:

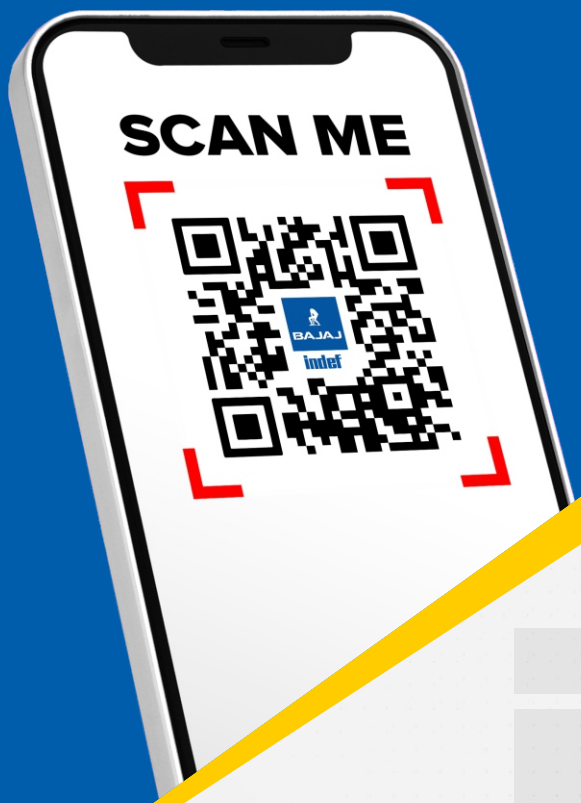
- The Trolley Wheels and Gears should be lubricated every 3 months (more frequently for heavier usage or severe conditions).
- Lubricate the Trolley Wheels and Gears with MP GREASE 3 (SI-18-M-211) grease.
- For dusty environments, dry lubricants are suggested.
- For conditions not permitting lubricant to fall off the trolley wheels and gears, consider using non- dripping motorcycle drive chain lubricant.

Hoist and Trolley Gearboxes – The hoist and trolley gearboxes are lubricated for life and should not need any lubricant replacement.

Indef Manufacturing Limited © 2024
Note :- Due to continuous development and improvement specification listed above may be changed without notice

From harbouring a simple dream of becoming a provider of high-quality, truly Indian material handling solutions to becoming the national market leaders, Bajaj Indef has journeyed far and long. Right from our incorporation in 1962 till the present day, innovation, excellence, service and customer focus have been some of the key pillars that have carried us thus far and we only aim to take this legacy forward.

© 2024 Indef Manufacturing Ltd. All rights reserved.



BAJAJ
indef

www.indef.com | enquire@indef.com | +91 (22) 489-33303

Office No. 501-504, Shelton Cubix, Plot No. 87, Sector-15, CBD-Belapur,
Navi Mumbai - 400 614, India.

CODE NO: 41 : DO : 1707/MAN/WRH-II/09-2024