MORRIS

PL-LEVALIFT
Chain Lever Hoist

OPERATOR HANDBOOK

CE

Models 750kg, & 1,1.5, 3, 6 Tonnes

This handbook contains all instructions necessary for operating the hoist correctly and safely. Users of the equipment are to read this handbook prior to using the hoist.

Preface

Levalifts are quality lever pull hoists.
To retain product integrity and safety, care should be taken in the operation of the unit and it should be regularly maintained and lubricated.
Before starting any maintenance or repair work on the hoist, study this handbook carefully and ensure that a complete understanding is obtained.
The use of lifting equipment in the U.K. must be in accordance with the Health and Safety at Work etc. Act,1974 and the Factories Act. Statutory regulations require that lifting equipment should be inspected and certified at prescribed intervals by a competent person (Factories Act, 1961 Section 27, Subsection 2). These regulations further prescribe that the equipment be properly maintained (Factories Act, Section 27, Subsection 1).
The Morris levalift is CE marked and conforms with the EU Machinery Directive.
A complete service, including Factories Act inspection, preventive maintenance, spares and repairs service, is available from the Morris world-wide distributor network.
Details of this service can be obtained from our Chain Hoist Division, at the address shown on the back of this publication.
Lubrication must be attended to before the hoist is put into service.

Safety

Morris Mechanical Handling Limited has taken all practical care with its products to ensure that they are safely constructed. The use of hoists presents certain hazards which cannot be prevented by mechanical means and are related to the manner in which hoists are used.
Operators should be competent, physically and mentally fit and properly trained in the safe operation of hoists and the handling of loads.
Anyone operating the hoist should read the following safety instructions to avoid operating hazards.
The safety instructions should form part of the safety rules for any plant where any hoist or other lifting equipment is being used, serviced or repaired.
It is the responsibility of the operator to anticipate and avoid any unsafe conditions. Especially relating to use not described in the operating instructions.
No machine is entirely safe unless it is properly maintained, therefore, it becomes important to practice a programme of periodic inspection and preventive maintenance.
See periodic inspection and lubrication sections of this handbook before use.

1.0 Safety Instructions

1. The operator must check the condition of the hoist before use, as described in the operating instructions.
2. Morris recommend that all chains, ropes and slings used for pulling or lifting must be continually inspected for damage or wear.
3. The operator must not engage in any practice which will divert his attention whilst operating the hoist. Do not use the hoist for lifting people.
4. Do not hoist any loads until safety is assured, especially relating to use not described in the operating instructions. Do not allow personnel to enter the area below suspended loads.
5. Loads must be securely attached and properly balanced before a lift is made.
6. When lifting or pulling, care must be taken to ensure the load is clear of all obstacles.
7. Do not leave the hoist unattended with a suspended load.
8. Do not depend on the brake to suspend the load unless the operator is in attendance.
9. Never exceed the rated capacity (safe working load) of the hoist.
10. When lifting or pulling a load near to the rated capacity of the hoist, the operator must test the brake each time by moving the load a short distance and then stopping.
11. To prevent increased loads on the hoist, do not operate to maximum or minimum chain extension.
12. Perform load chain checks weekly.

13. Check load hooks condition regularly. A hook that is cracked, bent or twisted must be replaced immediately.
14. The unit is designed for operation by hand, do not use extention tubes, or legs to overload the unit.
15. Do not allow the load chain to be obstructed on the corner of any other component.

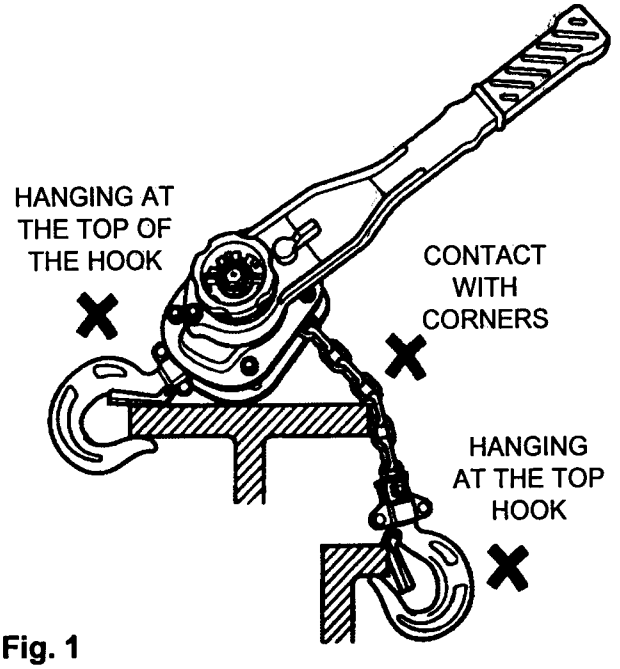

Fig. 1

16. Ensure the hook is correctly located with the safety catch in place.
17. Particular risks are encountered when using two hoists to lift a single load. If possible, the practice is to be avoided. If not, ensure the load is within the rated capacity of the hoists and evenly balanced between the two. Proceed to raise the load with extreme caution.
18. Do not use outside its temperature range of -10 °C to + 40 °C .
19. The equipment is designed for use with static loads. Do not subject to severe vibration and / or shock loads.
20. Do not carry out unauthorised modifications to the unit.
21. Do not use a faulty hoist. If any faults are discovered the unit must be checked and repaired.

WARNING

If a load hook has been distorted due to an overload of the hoist, then the hoist lifting unit will also be damaged. A hoist which has been overloaded must be withdrawn from use.

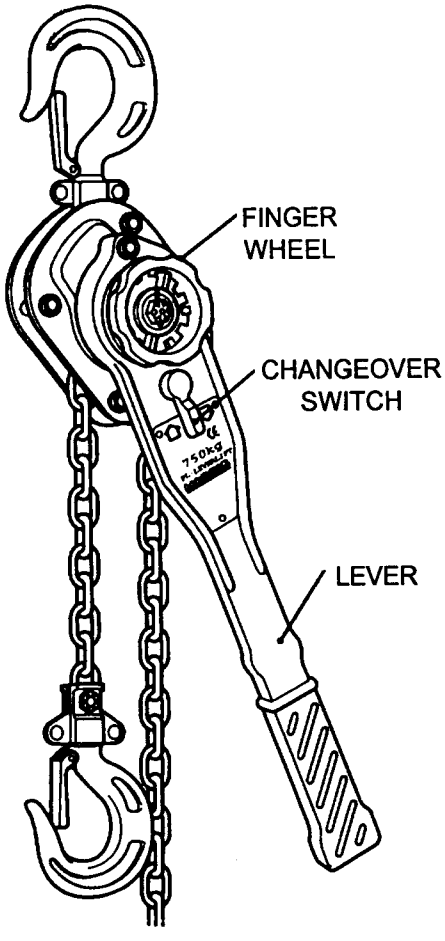

Fig. 2

2.0 OPERATION

2.1 Lifting, Lowering, Pulling and Securing

1. Attach the top hook to a suspension point or fixed object. The suspension point should be able to admit the tophook and allow it to rest properly on the hook's saddle with the safety catch closed.
2. To attach the hook to the load, set the changeover switch to IDLE . The chain can now be extended or shortened by either :

a) Winding the fingerwheel clockwise to shorten the chain or anti-clockwise to extend the chain.

b) Pull the chain gently through the hoist in either direction. If neither operation appears to function, a load greater than 3% of SWL may have previously been applied, or the load side chain may have been jerked excessively. These events automatically apply the brake. To release the brake, remove the load and turn the fingerwheel anti-clockwise (see fig 3).

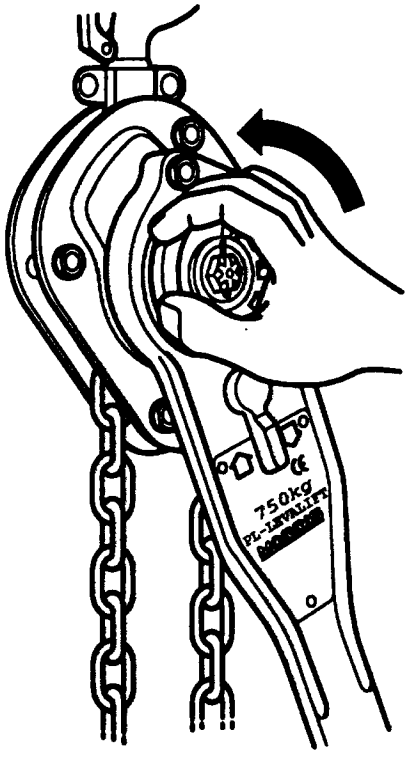

Fig. 3

If the brake still appears to be applied, set the changeover switch to DN and pull the lever to lower. Reset to IDLE if required. If the brake still appears to be applied ensure the chainwheel or fingerwheel are not obstructed.

3. To lift or pull the load, turn the changeover switch to UP and operate the lever clockwise. For ease and precision of operation we recommend that the clockwise loaded pull is always downwards. The return ratcheted stroke is upwards. As the loadchain becomes tensioned, check that no twists occur (see fig. 4 and fig. 5).
4. To lower or un-tension the load, turn the changeover switch to DN and operate the lever anti-clockwise. For ease and precision of operation we recommend the clockwise loaded pull is in the downwards direction.The return ratcheted stroke is in the upwards direction.

2.2 Prior to operation

1. Check for link damage in the load chain.
2. Lubricate the load chain (para. 3.1).
3. Correct any twist of load chains prior to lifting the load.

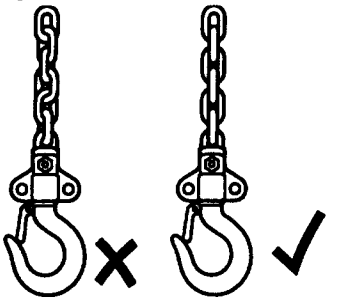

Fig. 4

4. Load chain twisting can happen when the lower hook passes through the chain. Confirm that the load chain is not twisted before starting operation. When the load chain is arranged correctly, chain links of the same orientation face in the same direction.

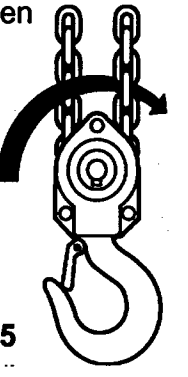

Fig. 5

5. Hang the ropes and slings in the middle of the hooks. Do not hang the load directly on the hook point, it will deform causing dangerous hook failure.

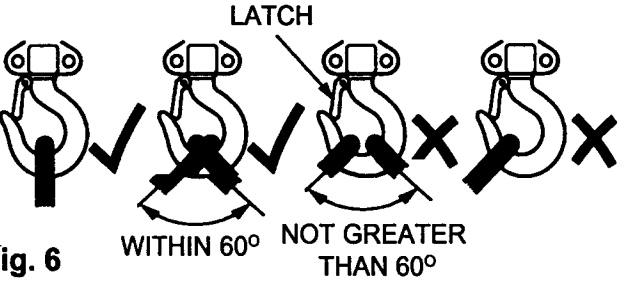

Fig. 6

6. When lifting or pulling, do not impede or deflect the natural line of load entry/exit from the lifting unit and/or bottom block.
7. Do not touch the load chain or perform any idle running operation when the load is applied.
8. Do not perform any operation which exceeds the hoist safe working load. The hand power available for the lever at the time of rated weight operation is shown in the following table.

Hand Operating Force And Effort		
Rated Load (t)	Hand Force (N)	Hand effort (Kgf)
0.75	216	22
1	284	29
1.5	305	31
3	373	38
6	383	39

CAUTION

Check brake during initial stage of operation:
Check brake operation by lifting / lowering load approximately 5 cm to confirm that the brake operates normally.

CAUTION

After operation:

1. Avoid damage. Do not throw or drag the hoist unit along the ground or otherwise misuse it.
2. Clean off any mud, moisture or foreign matter and lubricate.
3. Store the unit in a dry environment when not in use.
4. Do not leave the brake system locked. Once load removed set the lever to DN and operate to unlock the brake.

3.0 MAINTENANCE AND INSPECTION

3.1 Lubrication

Lubricate the neck of hook, suspension pin and chain anchor screw
Lubricate the load chains periodically to avoid any rust generation.
Lubricate the joining section between links.
Avoid lubricant splashing on the friction washers.

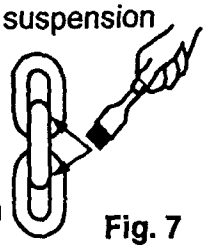

Fig. 7

3.2 Periodic Inspection

Care should be taken of the loadchain and the hook. An inspection must be carried out once a month.

Load chain Checks

Do not use the chain if the following conditions occur:

1. The chain is deformed.
2. The chain has a scar of more the 0.05mm in depth.
3. The chain has weld-sputtering, or has been excessively heated.
4. The chain pitch for 5 links exceeds the limit size stipulated.

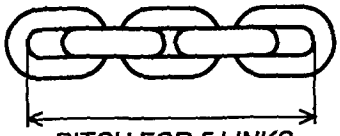

Fig. 8

Rated load (t)	Chain dia. (mm)	Pitch for 5 links (mm)	
		Standard size	Use limit size
0.75, 1t	5.6	85	86.7
1.5t	7.1	105	107
3, 6	9.0	135	138

Load Hook Checks (upper & lower)

Do not use the hook if the following conditions occur:

1. There is some bend or deformation visually.
2. There is a scar of more than 1mm in depth.
3. The opening size of the hook exceeds the use limit.

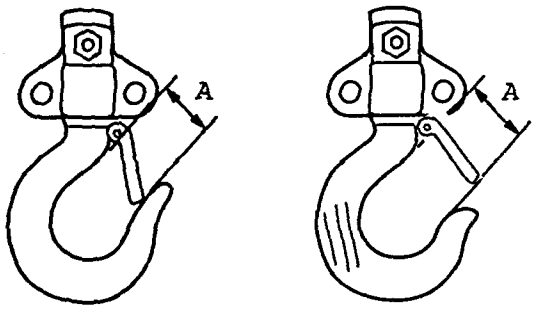

Fig. 9

The opening size of hook		
Rated load (t)	Standard size A (mm)	Use limit size
0.75	28	30
1	33	36
1.5	36	39
3	45	49
6	59	64

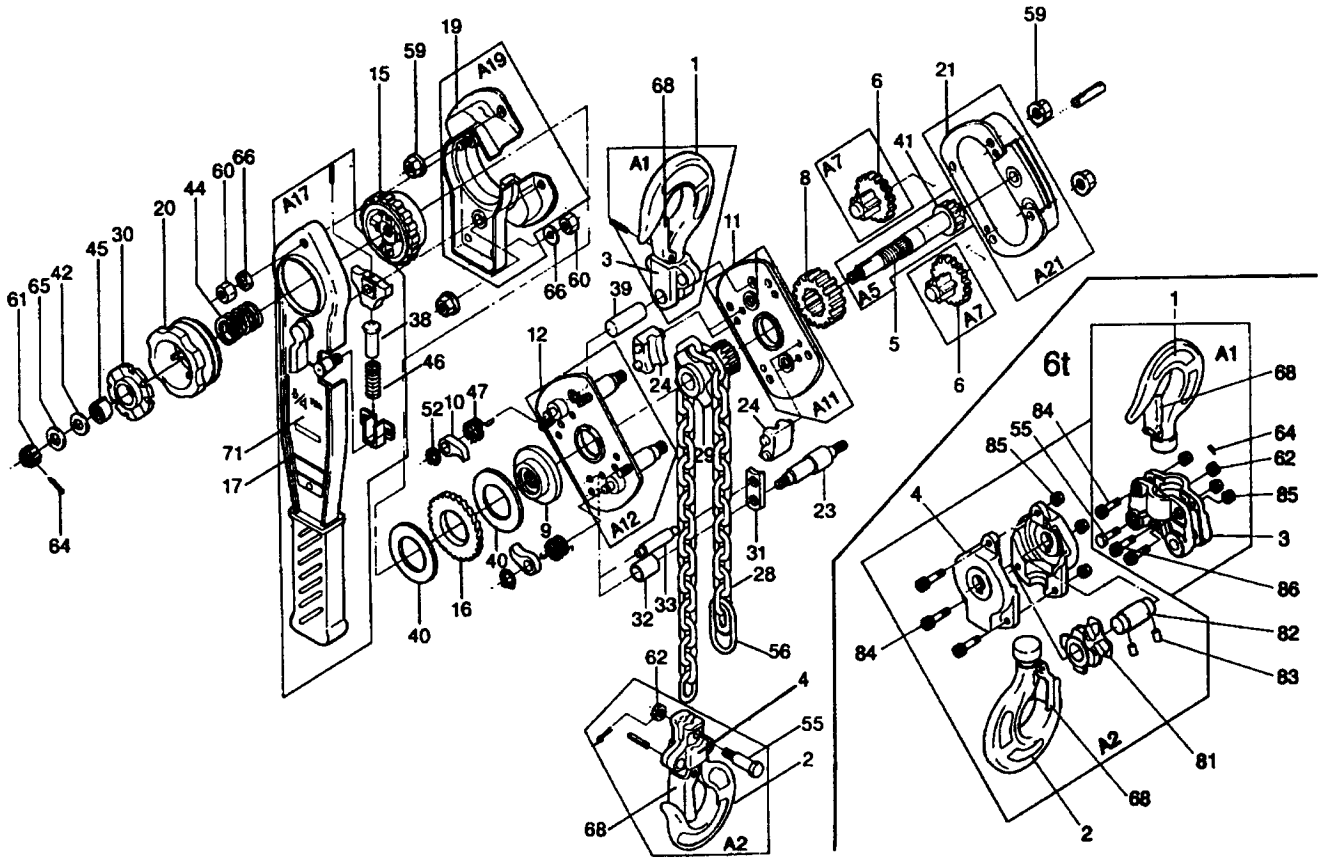

Fig. 10 Hoist assembly component diagram

4.0 Spare Components.

The adjacent table lists spares components available as assemblies.
When ordering spare parts, quote hoist serial number, hoist capacity, number of falls of chain, assembly/part number, description and quantity required.

The gear section should be assembled in such a way that the direction marks indicated as arrow heads engraved on the drive spur should be turned in the same direction for 0.75t, 1t, 3t, 6t units.
For the 1.5 t unit the arrow heads should be directing inward.

Spares assemblies

Assembly No.	Description
A1	Top hook assembly
A2	Bottom hook assembly
A5	Driveshaft assembly
A7	Spurwheel assembly
A11	Geared side plate
A12	Brakeside plate
A17	Lever assembly
A19	Brake cover assembly
A21	Gear cover assembly

Spares components

Part No.	Description
1	Top hook including sideplates except 6t
2	Bottom hook including sideplates except 6t
3	Top yoke
4	Bottom block sideplate
5	Drive shaft
6	Drive Spurwheel Assy
7	
8	Load Spur
9	Disc Hub
10	Pawl
11	Geared Sideplate
12	Brake Sideplate
14	
15	Changeover ratchet
16	Ratchet Ring
17	Lever
18	
19	Brake cover
20	Finger wheel
21	Gear cover
22	
23	Staybolt (stripper)
24	Chain guide
25	
26	
27	
28	Loadchain
29	Loadchain wheel
30	Return stop
31	Chain stripper
32	Chain stripper tube
33	Chain stripper pin
34	
35	

Part No.	Description
38	Plunger
39	Suspension pin
40	Friction washer
41	Thrust washer
42	Washer
43	
44	Spring
45	Return spring
46	Changeover spring
47	Pawl spring
48	
49	
52	Circlip (external)
53	
54	
55	Chain anchor screw
56	Chain end ring
57	
59	Nut
60	Thin nut
61	Slotted nut
62	Nut (self locking)
63	
64	Splitpin
65	Plain washer
66	Spring washer
68	Safety catch
69	Safety catch spring (not shown)
71	Nameplate
72	Nameplate rivet (not shown)
81	Bottom block wheel
82	Centre pin
83	Nib
84	Hex. socket head bolt
85	Nut
86	Hex. socket head bolt

50 Faults & Troubleshooting

Fault	Cause	Remedy
Brake does not hold the load.	• Friction washer is worn or broken. • The friction discs are contaminated with oil. • Braking unit is not properly assembled. • Overloaded Unit	• Replace friction washer. • Disassemble braking unit and wipe off oil entirely. • Reassemble it properly.
Abnormal sound is generated when lifting or lowering.	• Loadchain wheel or load chain is worn or deformed. • Worn gears or bearings.	• Replace by new one. • Disassemble and replace faulty parts.
Lever operation becomes too heavy in operation.	• Chain is at maximum or minimum length. • Sticking chain between load chainwheel and chain guide due to kinked or twisted load chain.	• Operate it in reverse direction. • Operate in reverse direction and untwist the chain or correct kink.
Idle running operation cannot be achieved.	• Return spring is not properly set. • Brake cover and part of lever is damaged.	• Turn return stop 90 degrees and reset. • Replace brake cover assembly.
Lever does not rotate.	• Brake is too tight.	• Load up once and perform lowering operation.

6.0 Disposal Instructions

The Morris Levalift comprises 95% Steel and as such is suitable for recycling. With care and maintenance the Morris Levalift should last for many years. However, once this equipment is no longer economic to overhaul or repair please dispose in a manner that is unlikely to adversely affect the environment.

Morris Mechanical Handling
P.O. Box 7, North Road, Loughborough,
Leicestershire, LE11 1RL, England
Telephone: 01509 643200
Fax: 01509 643303