

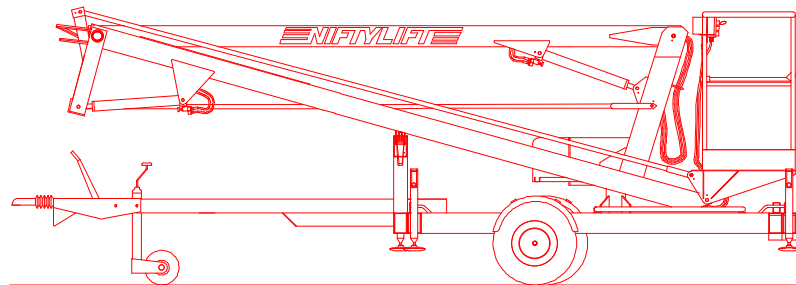
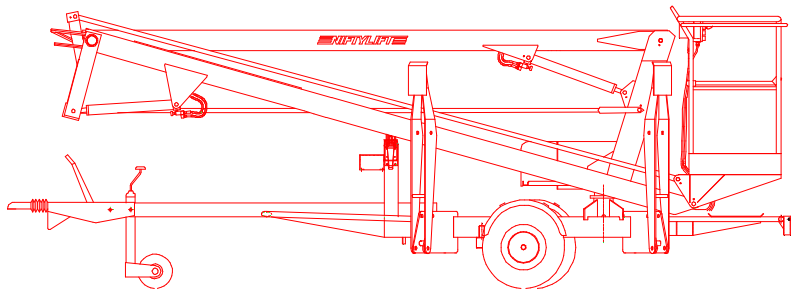
# NIFTYLIFT

## 120

### OPERATING AND SAFETY MANUAL

#### MODEL 120H & 120M SERIES

#### TRAILER MOUNTED (T.M)



Manufactured by:-



**NIFTYLIFT LIMITED**  
FINGLE DRIVE  
STONEBRIDGE  
MILTON KEYNES  
BUCKS. MK13 0ER  
ENGLAND.

**JULY 1995**  
120CE.DOC

TEL.: 01908 223456  
FAX : 01908 312733

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## 1.1 FOREWORD

The purpose of these manuals is to provide the customer with proper safety operating and maintenance instructions essential for proper machine operation.

All information in these manuals should be READ and fully UNDERSTOOD before any attempt is made to operate the machine. THESE MANUALS ARE VERY IMPORTANT TOOLS - Keep them with the machine at all times.

THE MANUFACTURER HAS NO DIRECT CONTROL OVER MACHINE APPLICATION AND USE, THEREFORE CONFORMANCE WITH GOOD SAFETY PRACTICES IS THE RESPONSIBILITY OF THE USER AND HIS OPERATING PERSONNEL.

ALL INFORMATION IN THESE MANUALS IS BASED ON THE USE OF THE MACHINE UNDER PROPER OPERATING CONDITIONS. ALTERATION AND/OR MODIFICATION OF THE MACHINE IS STRICTLY FORBIDDEN.

ONE OF THE MOST IMPORTANT FACTS TO REMEMBER IS THAT ANY EQUIPMENT IS ONLY AS SAFE AS THOSE WHO OPERATE IT.

### **DANGER, WARNING, CAUTION, IMPORTANT, INSTRUCTIONS AND NOTICE**

Any place these topics may appear, either in this manual or on the machine, they are defined as follows:

**DANGER:** IF NOT CORRECTLY FOLLOWED THERE IS A HIGH PROBABILITY OF SERIOUS INJURY OR DEATH TO PERSONNEL.

**WARNING OR CAUTION:** IF NOT CORRECTLY FOLLOWED THERE IS SOME POSSIBILITY OF SERIOUS INJURY OR DEATH TO PERSONNEL.



THE 'SAFETY ALERT SYMBOL' IS USED TO CALL ATTENTION TO POTENTIAL HAZARDS WHICH MAY LEAD TO SERIOUS INJURY OR DEATH, IF IGNORED.

**IMPORTANT AND INSTRUCTIONS:** DENOTES PROCEDURES ESSENTIAL TO SAFE OPERATION AND PREVENTION OF DAMAGE TO OR DESTRUCTION OF THE MACHINE.

**NOTICE:** INDICATES GENERAL SAFETY RULES AND/OR PROCEDURES RELATING TO THE MACHINE.

IT IS THE OWNERS/USERS RESPONSIBILITY TO KNOW AND COMPLY WITH ALL APPLICABLE RULES, REGULATIONS, LAWS, CODES AND ANY OTHER REQUIREMENTS APPLICABLE TO THE SAFE USE OF THIS EQUIPMENT.

## GENERAL INFORMATION

### 1.2 SCOPE

These operating instructions contain all the necessary information required to allow the safe operation of any Niftylift 120, powered by either electric DC, Diesel or Petrol engine or a combination of these.

For further technical information, circuit diagrams and specific instructions for all Maintenance which may need to be carried out by specialist trained personnel, see the associated Workshop and Parts manual for your model of 120 trailer.

### 1.3 INTRODUCING THE T.M. (TRAILER MOUNT) SERIES

Please note at the time of going to press all information, illustrations, details and descriptions contained herein are valid. Niftylift reserves the right to change, alter, modify or improve its products without any obligations to install them on previously manufactured machines.

After reading this manual if you require further information please do not hesitate to contact us at:

**Niftylift Ltd.,  
Fingle Drive  
Stonebridge  
Milton Keynes  
MK13 0ER  
GREAT BRITAIN**

**Tel: (011 44) 1908 223456  
Fax: (011 44) 1908 312733**

The Niftylift T.M. (Trailer Mount) is a range of extremely versatile articulated boom platforms of unique and simple design. Capable of placing two men and their tools up to a height of 40 ft (12.2 m) or an outreach of 16 ft 8 in (5 m).

The booms are mounted via a 360° powered swing mechanism on to a compact base balanced on a single axle. The fully articulating booms give an outstanding working envelope. The large pneumatic wheels and minimal weight make the unit light and simple to manoeuvre.

The four outriggers make a simple and swift set up possible. A unique pressure sensitive microswitch system fitted to each outrigger prevents operation of the machine until all outriggers have been correctly deployed and also provides a loud audible alarm warning of a possibly hazardous situation.

A simple, all-hydraulic proportional control system gives smooth, reliable movement of the platform and maximum reliability in the harshest environments.

#### MODELS INCLUDE THE FOLLOWING:-

E :- D.C. ELECTRIC	BE :- BI-ENERGY (DIESEL & BATTERY)
A.C:- A.C. ELECTRIC	PE - PETROL & BATTERY
D :- DIESEL	PG :- PETROL & L.P.G (PROPANE)
P :- PETROL	T:- TRI - ENERGY (PETROL, PROPANE & BATTERY)
A :- AIR	

SECTION 1.4

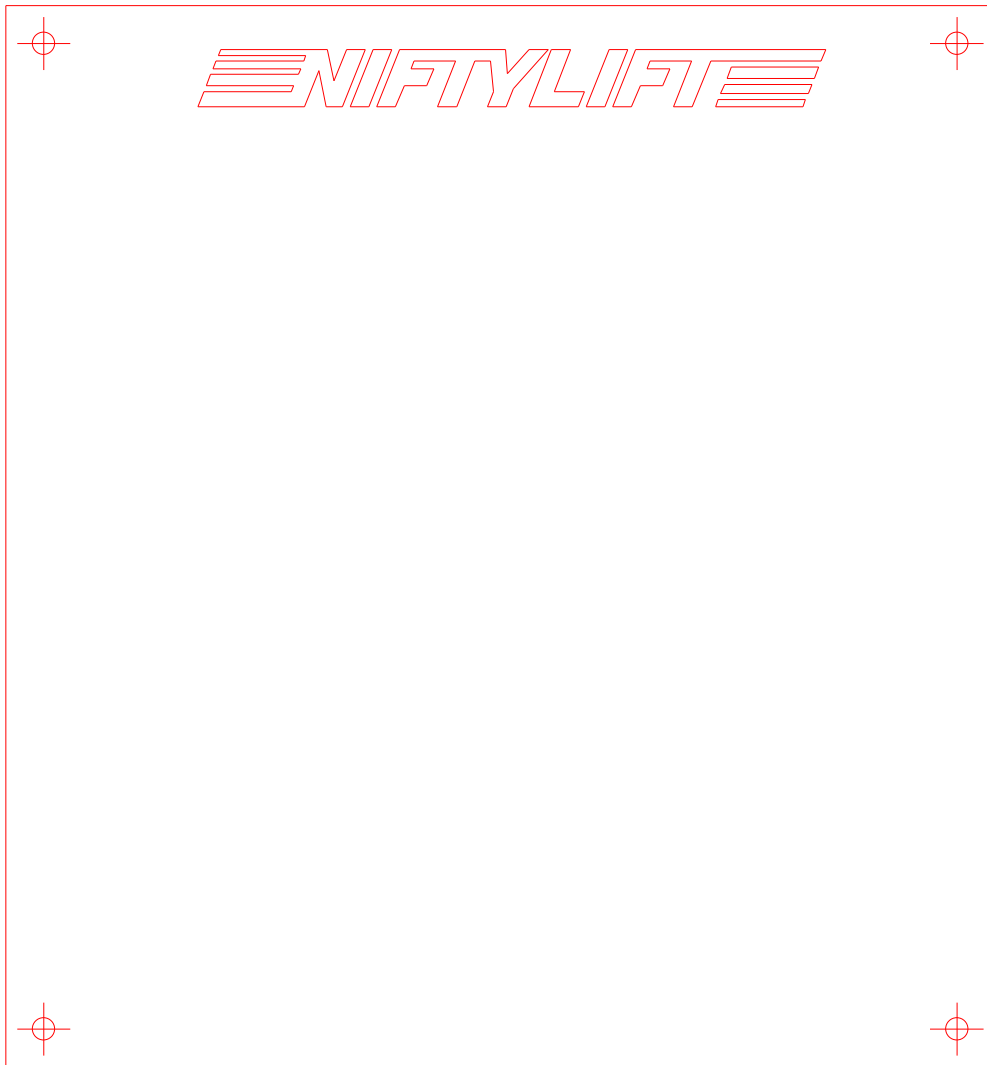
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GENERAL SPECIFICATION

FEATURE	N120
MAXIMUM HEIGHT - WORKING	40 FT 0 IN 12.3 M
MAXIMUM HEIGHT- PLATFORM	36 FT 0 IN 10.3 M
MAXIMUM HEIGHT - STOWED	6 FT 3 IN 1.9 M
MAXIMUM OUTREACH	16 FT 8 IN 5 M
MAXIMUM WIDTH - TOWING	5 FT 0 IN 1.5 M
JACK SPREAD	8 FT 11 IN <sup>2</sup> 2.7 M <sup>2</sup>
MAXIMUM LENGTH - STOWED	18 FT 0 IN 5.5 M
MAXIMUM CAPACITY	440 LBS 200 KGS
TURRET ROTATION	360°
TURRET TAIL SWING	ZERO
MAXIMUM TRAVEL SPEED	45 MPH 72 KMPH
PLATFORM SIZE - LENGTH x WIDTH	25 IN x 44 IN 0.65 M x 1.1 M
CONTROLS	FULL PROPORTIONAL HYDRAULIC
HYDRAULIC PRESSURE	200 BAR
TYRES	165 R13 86R 2.75 bar (40 psi)
GROUND CLEARANCE	8½ IN 21 CM
GROSS VEHICLE WEIGHT (MAXIMUM)	2794 LBS 1270 KGS
MAXIMUM GROUND PRESSURE	0.054 KN/cm <sup>2</sup> 11250 Lb/Ft <sup>2</sup>

**SECTION 1**

**1.5 IDENTIFICATION**



This manufacturers plate is attached to Boom 1 on each machine at the time of manufacture on every Niftylift. Please ensure all sections have been stamped and are legible.

## 2 SAFETY

### 2.1 MANDATORY PRECAUTIONS

When operating your Niftylift, your safety is of utmost concern. In order to fully appreciate all aspects of the machine's operation it should be ensured that each operator has read and fully understood the relevant manual covering machine use, maintenance and servicing. If any doubts exist concerning any points covered in your manual, contact your local dealer or Niftylift.

Before using any Niftylift, thoroughly inspect the machine for damage or deformation to all major components. Likewise, check the control systems for hydraulic leaks, damaged hoses, cable faults or loose covers to electrical components. At no time should damaged or faulty equipment be used - Correct all defects before putting the platform to work. If in doubt, contact your local dealer or Niftylift (see front cover for address).



**THE MANUFACTURER HAS NO DIRECT CONTROL OVER THE MACHINE APPLICATION AND USE. THEREFORE CONFORMANCE WITH GOOD SAFETY PRACTICES IS THE RESPONSIBILITY OF THE USER AND HIS OPERATING PERSONNEL. FAILURE TO UNDERSTAND AND FOLLOW ALL SAFETY RULES COULD RESULT IN SERIOUS INJURY OR DEATH.**

- 2.1.1 Only persons trained on the same or a similar model will be permitted to operate the aerial Niftylift.
- 2.1.2 Always operate the Niftylift in full accordance with the manufacturers operating & safety instructions for that model.
- 2.1.3 Before use each day and at the beginning of each shift the Niftylift shall be given a visual inspection and functional test including, but not limited to, operating and emergency controls, safety devices, personal protective clothing, including fall protection, air, hydraulic and fuel system leaks, cables and wiring harness, loose or missing parts, tyres and wheels, placards, warnings, control markings and operating and safety manuals, guards and guard rail systems and all other items specified by the manufacturer.
- 2.1.4 Any problems or malfunctions that effect the safety of operations shall be repaired prior to the use of the Niftylift.
- 2.1.5 Always ensure that all warning labels, instructions, placards, control markings and safety manuals are intact and clearly legible. If replacements are required contact your local dealer or Niftylift. Always observe and obey safety or operating instructions on such labels.
- 2.1.6 Do not alter, modify or disable in any way the controls, safety devices, interlocks or any other part of the machine.
- 2.1.7 Before the Niftylift is used and during use the user shall check the area in which the aerial platform is to be used for possible hazards such as, but not limited to, drop-offs, holes, bumps, obstructions, debris, floor and overhead obstructions, high voltage conductors, wind and weather, unauthorised persons and any other possibly hazardous conditions.

- 2.1.8** Never exceed the maximum platform capacity of 440lbs (200kg), as indicated on the decals and machine serial plate.
- 2.1.9** Only operate the Niftylift on a firm, level surface.

## 2.1 MANDATORY PRECAUTIONS (CONTINUED)

- 2.1.10** Never position any part of the Niftylift within 10ft (3m) of any electrical power line, conductor or similar above 450 volts.



**THIS MACHINE IS NOT INSULATED.**  
If in doubt, contact the appropriate authorities.

- 2.1.11** On entering the platform ensure that the drop down entry bar is closed afterwards.
- 2.1.12** Use of an approved safety belt and lanyard, hard hat and appropriate safety clothing is mandatory. Fasten harness to designated harness securing points within the platform and do not remove until leaving the platform whilst in the stowed position.

### 2.1.13



Always remain standing within the platform. Do not attempt to increase your height or reach by standing and/or climbing on the platform guard rails or any other object. **KEEP YOUR FEET ON THE PLATFORM FLOOR.** Do not sit, stand or climb on the guard rail, mid rail or boom linkage. Use of planks, ladders or any other devices on the Niftylift for achieving additional height or reach shall be prohibited.

- 2.1.14** Do not use the platform levelling system to artificially increase the outreach of the platform. Never use boards or ladders in the platform to achieve the same result.
- 2.1.15** Do not use the platform to lift overhanging or bulky items which may exceed the maximum capacity or carry objects which may increase the wind loading on the platform. (E.g. Notice boards, etc.)
- 2.1.16** The Niftylift shall not be operated from a position on trucks, trailers, railway cars, floating vessels, scaffolds or similar equipment unless the application is approved in writing by Niftylift Ltd in Great Britain.
- 2.1.17** Always check below and around the platform before lowering or slewing to ensure that the area is clear of personnel and obstructions. Care should be taken when slewing out into areas where there may be passing traffic. Use barriers to control traffic flow or prevent access to the machine.
- 2.1.18** Stunt driving and horseplay, on or around the Niftylift, shall not be permitted.
- 2.1.19** When other moving equipment and vehicles are present, special precautions shall be taken to comply with local ordinances or safety standards established for the work place. Warnings such as, but not limited to, flags, roped off areas, flashing lights and barricades shall be used.



**2.1.20** It shall be the responsibility of the user to determine the hazard classification of any particular atmosphere or location. Aerial platforms operated in hazardous locations shall be approved and of the type required.

**2.1.21** The operator shall immediately report to his supervisor any potentially hazardous location(s) (environment) which become evident during operation.

## **2.1 MANDATORY PRECAUTIONS (CONTINUED)**

**2.1.22** If an operator encounters any suspected malfunction of the Niftylift or any hazard or potentially unsafe condition relating to capacity, intended use or safe operation, he shall cease operation of the Niftylift and request further information as to safe operation from his management, or owner, dealer or manufacturer before further operation of the Niftylift.

**2.1.23** The operator shall immediately report to his superior any problems or malfunctions of the Niftylift, which becomes evident during operation. Any problems or malfunctions that affect the safety of operation shall be repaired prior to continued use.

**2.1.24** The boom and platform of the Niftylift shall not be used to jack the wheels off the ground.

**2.1.25** The Niftylift shall not be used as a crane.

**2.1.26** The Niftylift shall not be positioned against another object to steady the platform.

**2.1.27** Care should be taken to prevent rope, electric cords and hoses from becoming entangled in the aerial platform.

**2.1.28** Batteries shall be recharged in a well-ventilated area free of flame, sparks or other hazards which may cause explosion. Highly explosive hydrogen gas is produced during the charging process.

**2.1.29** When checking electrolyte levels great care should be taken to protect eyes, skin and clothing. Battery acid is highly corrosive and protective glasses and clothing is recommended.

**2.1.30**



When the machine is not in use always stow the booms correctly. **NEVER LEAVE THE KEYS IN THE MACHINE**, if it is to be left for any period of time. Use wheel chocks if leaving on an incline.

**2.1.31** If the platform or elevating assembly becomes caught, snagged or otherwise prevented from normal motion by adjacent structure or other obstacles, such that control reversal does not free the platform, all personnel shall be removed from the platform safely before attempts are made to free the platform using ground controls.

**2.1.32** The engine must be shut down while fuel tanks are being filled. Fuelling must be done in a well-ventilated area free of flame, sparks or any other hazard which may cause fire or explosion.  
**GASOLINE, LIQUID PROPANE AND DIESEL FUELS ARE FLAMMABLE.**

**2.1.33**



**NEVER START THE NIFTYLIFT IF YOU SMELL  
GASOLINE, LIQUID PROPANE OR DIESEL FUEL.**

**2.1.34** The operator shall implement means provided to protect against use by unauthorised persons.

**2.1.35** Never remove anything that may affect the stability of the machine such as, but not limited to, batteries, covers, engines, tyres or ballast.

## 2.2 ENVIRONMENTAL LIMITATIONS

All "Niftylift" Trailer Mounts are limited to operation as previously described., any slopes must be adjusted by use of the outriggers and jacks. Unless specifically configured otherwise, the machine will have short time rating for operation in extreme temperatures. I.e. Reduced battery cycle times for low temperatures, e.g. freezers, food storage etc., cooling limitations for high temperatures. I.e. oil temperature not to exceed -23 to 93° Celsius.

Extended operation in dusty environments is not recommended, frequent cleaning will be necessary. All dust, dirt, salt encrustation, excess oil or grease should be removed. Deposits of paint or bitumen, particularly on legends or labels should be removed.

## 2.3 NOISE & VIBRATION

The airborne noise emission on the 120 range of machines does not exceed 73dB(A), measured at a perpendicular distance of 4m, under equivalent continuous A-weighted sound pressure test conditions. This was based on a Diesel powered machine, working under load. All other models will exhibit significantly lower emissions than this figure, dependant on power option.

In normal operation the Vibration level to which the operator is subjected will not exceed a weighted root mean square acceleration value of 2.5 m/s<sup>2</sup>.

### 3 PREPARATION AND INSPECTION

#### 3.1 UNPACKING

Since the manufacturer has no direct control over the shipping or carriage of any Niftylift it is the responsibility of the dealer and/or owner and/or lessor to ensure the Niftylift has not been damaged in transit and a Pre-operational Report has been carried out by a qualified engineer before the aerial platform is put into service.

- A) Remove all ropes, straps and or chains used to secure the aerial platform during transit.
- B) Ensure any ramp, loading dock or fork lift used is capable of supporting or lifting the aerial platform.

**\*\*\* Carry out the Pre-operational Report before placing machine in service.**

#### 3.2 PREPARATION FOR USE

Whilst every effort has been made at the Niftylift factory to ensure your machine arrives in a safe and operable condition it is necessary to carry out a systematic inspection prior to putting the aerial platform into service.



**THIS IS NOT A REQUEST IT IS MANDATORY**

To assist the user in this task you will find enclosed a Pre-operational Report, which must be filled out upon delivery/receipt of the machine.

Before the user carries out a Pre-operational Report he must have read and fully understood all the contents of the Operating, Safety and Maintenance Manual.



**WARNING - DO NOT OPERATE A  
POTENTIALLY DEFECTIVE OR  
MALFUNCTIONING MACHINE.  
CORRECT AND REPAIR ANY DEFECTS  
BEFORE OPERATING YOUR NIFTYLIFT.**

### 3.3 DAILY SAFETY CHECK LIST

Before use each day and at the beginning of each shift the aerial platform shall be given a visual inspection and functional test including, but not limited to, the following:

- 1) Read and fully understand Operating and Safety Manual.
- 2) Check safety belts and hard hats.
- 3) Check all decals and placards to see if in place and legible.
- 4) Check platform is securely fastened to platform support.
- 5) Check wheels and tyres (tyre pressures N120 - 40 psi ).
- 6) Check outriggers (if applicable) for condition, microswitch operation and security.
- 7) Check batteries for condition, cleanliness, connections and electrolyte levels.
- 8) Check engine oil, fuel and coolant levels (if applicable).
- 9) Check installation of all guards, covers and boom clamps.
- 10) Check for loose, missing or damaged parts.
- 11) Check all hydraulic hoses and electrical cables and wiring.
- 12) Check hydraulic, fuel and air systems for leaks.
- 13) Do not exceed rated platform capacity 440 lbs (200kgs).
- 14) Check foot pedal for proper operation (if applicable).
- 15) Check all operating emergency controls - Select an area free from obstructions and hazards. Exercise extreme caution throughout the checking procedure especially when checking brakes.
- 16) Check emergency descent valves - Test individually.
- 17) Check brakes and all lights.
- 18) Check tilt sensor/alarm horn and beacons (if fitted).
- 19) Check high engine and/or high drive limit switches.
- 20) Check and refer to operating and safety manual for further daily/periodic checks and inspections.

**3.4 PLACARD, DECALS & INSTALLATION**

			<b>120</b>
01.	SWL BLANK.	(P10799)	1
02.	200 (KG)	(P10803)	1
03.	40 (KG)	(P10804)	1
04.	OUTRIGGER BEAMS	(P11547)	5
05.	TRAILER TOWING	(P11546)	3
06.	CONTROL	(P11498)	2
07.	BASE KEY OP	(P10413)	1
08.	EMERGENCY HANDPUMP	(P12402)	1
09.	PUSH & RELEASE	(P10380)	1
10.	IMPORTANT PART 'A'	(P10798)	2
11.	IMPORTANT PART 'B'	(P10889)	2
12.	OUTRIGGER ALARM	(P11538)	2
13.	HEAD PROTECTION	(P10383)	1
14.	BATTERY ACID	(P11543)	1
15.	BATTERY CHARGING	(P11568)	1
16.	MACHINE PLATE	(P10805)	1
17.	JOCKEY RELEASE	(P11997)	1
18.	CRUSH HAZARD	(P11540)	2
19.	MUST NOT OPERATE	(P11542)	2

**3.4 PLACARD, DECALS & INSTALLATION, CONT:**

			<b>120</b>
20.	BOOM CLAMP	(P11549)	2
21.	COUPLING INSTRUCTIONS	(P11550)	1
22.	HARNESS POINT	(P11554)	2
23.	COMPONENT STABILITY	(P11558)	1
24.	TYRE PRESSURE 40 P.S.I.	(P11562)	2
25.	NO STEP (LARGE)	(P11569)	1
26.	BATTERY DISCONNECT	(P12230)	1
27.	TYRE PRESSURE 65 P.S.I.	(P11560)	2
28.	BUTTON BOX	(P11616)	1
29.	BUTTON BOX (BE)	(P11804)	1
30.	FUELLING	(P11561)	1
31.	DIESEL FUEL ONLY	(P11441)	1
32.	ENGINE START	(P11445)	1

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OPERATING AND SAFETY INSTRUCTIONS

THREE VIEW DRAWING D80225



**3.5 TORQUE REQUIREMENTS**

SCREW QUALITY / SIZE	TIGHTENING TORQUE IN FT LBS (Nm)			
	8.8		10.9	
M 6	7.4	(10)	10	(14)
M 8	18.5	(25)	26	(35)
M 10	36	(49)	51	(69)
M 12	65	(86)	89	(120)
M 14	100	(135)	140	(190)
M 16	155	(210)	218	(295)
M 18	215	(290)	300	(405)
<b>SLEW RING BOLTS</b>	<b>155ft lbs</b>		<b>210Nm</b>	

## 4 OPERATION

### 4.1 CONTROL CIRCUIT COMPONENTS

- 4.1.1** Control board:- Situated under the canopy, the control board comprises a p.c.b. (printed circuit board) design which incorporates all of the relays to control the machine operation. The control board is common between models with the same power source, and will contain, where appropriate, discrete fuses for the circuits concerned.
- 4.1.2.** Klaxon:- Also mounted under the canopy is a klaxon, which is interlocked into the stabiliser control circuit. It is this device which sounds continuously if a jack goes light in operation, with the booms raised, warning the operator of this condition. It will also sound if the Ground Control Keyswitch is turned to "Platform" position before the jacks are deployed.
- 4.1.3** Battery Isolator:- A battery disconnect switch is located beneath the canopy, which allows the machine control and power circuits to be isolated from the batteries themselves. Under normal operation, the machine Key switch should be used to isolate the machine, with the Battery Isolator only being required for emergencies to disconnect the batteries in the event of a short circuit. The battery charging circuit is connected directly to the battery side, so charging is un-affected by use of this switch.
- 4.1.4** Duty Selector:- On multiple power option machines, one of the functions on the Platform control station will be a Duty Selector. This key switch allows the selection of either power option, i.e. from Diesel to Battery or Petrol to battery, or vice-versa. On other machines this same key switch serves as an "On-Off" control.
- 4.1.5** Diesel Engine:- Generally a Kubota OC60 engine, described in the maintenance section of the Workshop Manual, driving a single bodied pump with direct mounted pump dump valve.
- 4.1.6** Diesel Box:- Located adjacent to the Diesel engine, the Diesel box combines all of the functions for Dual power operation, (Bi-Energy machines), as well as controlling the Diesel engine itself. The relays in this box control Starting, High Throttle, Pump Dump, Duty Selector and Diesel Stop Timer. There is also an integral Thermal trip, which protects the Throttle solenoid and other functions.
- 4.1.7** Petrol Engine:- Generally a Honda GX 240 engine, described in the maintenance section of the Workshop Manual, driving a single body pump with direct mounted pump dump valve.
- 4.1.8** Petrol Box:- Located adjacent to the petrol engine, the Petrol Box combines all of the functions for dual power operation, as well as controlling the petrol engine itself. The relays in this box control Starting, High Throttle, Pump Dump, Duty Selector and Engine Stop. There is also an integral Thermal trip, which protects the Throttle solenoid and other functions.
- 4.1.9** L.P.G. Operation:-On machines equipped for L.P.G. operation (propane) the Honda engine will also have an L.P.G. vaporiser, Valvelock and Micro-vac Switch. The supply and regulation of the propane is governed by the installed Gas bottle and regulator. The vapour take-off system requires a vaporiser to convert the liquid gas into an airborne mixture. This is then held by the micro-vac switch and valvelock until the engine turns over, creating a vacuum on the inlet to the engine carburettor. The micro-vac switch then tells the valvelock to open, admitting the gas to the engine. If the engine is halted, the system returns to normal, holding the gas until a re-start is attempted. When running on Petrol, the main tap to the gas bottle should be securely closed, to prevent the engine from trying to run on a mixture of the two fuels. If starting to run on L.P.G., it should be ensured that all petrol is discharged from

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the carburettor bowl before changing to L.P.G., since the engine will not run satisfactorily if any petrol is in the carburettor bowl.

## 4 OPERATION

### 4.2 SETTING UP PROCEDURES



**FAILURE TO DEPLOY THE OUTRIGGERS CORRECTLY COULD  
RESULT IN DEATH OR SERIOUS INJURY.**

#### **All Models**

- 1) Read and fully comply with all safety precautions and operating instructions in the Operating and Safety manual and the warning decals on the machine.
- 2) Position Niftylift on firm, level ground. Never work with base across or adjacent to any slope. Use the manual jacks to level the base of the machine, if necessary using suitable load bearing pads to support the downhill jacks. A slope of up to 12 degrees can be accommodated in this fashion. Do not elevate the platform unless the base can be corrected to within 3 degrees of level.
- 3) Position Niftylift, bearing in mind range of boom movement so that any overhead obstruction or possible hazards such as, but not limited to, power cables, telephone lines, drains, man-hole covers, etc.
- 4) If the load bearing capacity of the ground is in any doubt the machine must not be used.
- 5) Apply handbrake; chock wheels and cordon off area using appropriate cones, barriers and flags.
- 6) Release boom travelling clamp.
- 7) Check all red emergency stops are not engaged i.e. fully out.
- 8) Hydraulic outriggers proceed to step 9. Manual outriggers proceed to step 16.
- 9) Ensure selector handvalve adjacent to ground control station is turned fully down to outrigger position.
- 10) Ensure key switch selector at ground control station is turned to ground position i.e. fully down.
- 11) From the outrigger control station depress and hold the green power button to give hydraulic power to the outriggers and select the appropriate control lever. Note: No power will be available if the booms are not stowed onto the boom rest.
- 12) Using the four outrigger control levers, lower each outrigger onto a firm, level surface and level machine base ensuring each outrigger foot is taking equal weight with the wheels clear of the ground. Deploy front two outriggers first to minimise the risk of damaging the jockey wheel.
- 13) Check base is level using spirit level adjacent to outrigger control station.
- 14) Change selector valve at ground control station to platform i.e. turn fully up.

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OPERATING AND SAFETY INSTRUCTIONS

NIFTYLIFT T.M. SERIES  
OPERATING AND SAFETY INSTRUCTIONS

- 15) The booms can now be operated from the ground control station by depressing and holding the green power button. Note: If no power is available check each outrigger is lowered and each footpad is taking equal weight.

Manual Outrigger Models

- 16) Leave ground control key in centre "OFF" position until jacks are deployed. Turning this key to "Platform" position will cause the Klaxon to sound, as the outriggers will detect that the jacks are not in contact with the ground.
- 17) All four outrigger beams must be fully extended and retaining pins engaged (dropped) and all jack feet screwed hard down onto a firm, level surface.
- 18) Level base using the two spirit levels mounted on the base.
- 19) To operate the booms from the ground turn the key switch selector at the ground control station to ground, i.e. fully down. Depress and hold green power button and select appropriate control lever. Note: if no power is available check each retaining pin has engaged (dropped) and each jack foot is screwed hard down onto a firm, level surface.
- 20) To operate the booms from the platform turn the key switch selector at the ground control station to platform i.e. fully up. Note: If alarm sounds return key to center off position and check each retaining pin has engaged (dropped) and each jack foot is screwed hard down onto a firm, level surface.

All Models

- 21) Always lower booms fully before adjusting, raising, retracting or moving the outriggers in any way.
- 22) Never alter, modify or block any of the safety circuits on the Niftylift.

## 4 OPERATION

### 4.3 GROUND CONTROL OPERATION



**ALWAYS ALLOW THE ENGINE TO WARM UP BEFORE OPERATING.**

#### **ALL MODELS**

- 1) Ensure all red emergency stops are out.
- 2) Turn key switch at ground control station to ground (i.e. fully down).
- 3) Ensure selector hand valve (if applicable) is turned to platform position i.e. fully up.
- 4) Battery electric models go to step 10).

#### **DIESEL ENGINE OR BI ENERGY MODELS**

- 5) Turn duty selector in platform to BATT (Battery) or ENG (Engine).
- 6) If BATT (Battery) is selected go to step 10).
- 7) if ENG (Engine) is selected go to step 8). for a COLD ENGINE or step 9). for a WARM ENGINE.
- 8) COLD ENGINE turn the main engine ignition switch (located beneath the front cover) through ON to GL. This engages the glow plug pre-heat system. Hold for 3-5 seconds then turn key fully to ST (start) position and the engine will fire.
- 9) WARM ENGINE turn the main engine ignition switch (located beneath the front cover) through ON to ST (start) position and the engine will fire.

#### **GASOLINE ENGINE OR GASOLINE/ELECTRIC MODELS**

- 5) Turn duty selector in platform to BATT (Battery) or ENG (Engine).
- 6) If BATT (Battery) is selected go to Step 10).
- 7) If ENG (Engine) is selected go to Step 8). for a COLD ENGINE or Step 9). for a WARM ENGINE.
- 8) COLD ENGINE turn the engine fuel tap on and engage the choke lever. Turn the main engine ignition through ON to ST (Start) and the engine will fire. Return the choke lever to its normal running position after the engine is started.
- 9) WARM ENGINE turn the engine fuel tap on and turn the main engine ignition through ON to ST (start) position and the engine will fire.

#### **ALL MODELS**

- 10) Push and hold green power button.
- 11) Select function and operate handlevers in full accordance with manufacturers operating and safety manual.
- 12) To return control to platform turn key fully clockwise to up position.
- 13) When not in use return machine to stowed position, fully raise and stow all outriggers, turn key to centre off position, remove key and chock wheels.

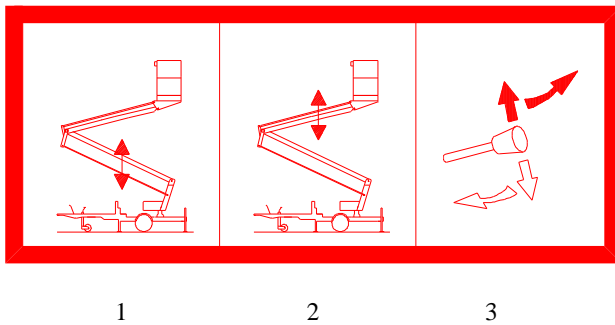
#### **EMERGENCY PROCEDURES**

- 14) Push in red emergency stop to shut down all functions.
- 15) If all machine power is lost, the Emergency Handpump can be used to provide the hydraulic power to manoeuvre the machine.  
Lower platform using handlever controls in platform or at ground control station.

### 4.3 GROUND CONTROLS (CONTINUED)

#### Boom Functions

A) Push and hold green "Power Control" button.



Select lever 1, 2, or 3 for desired function.

1 Operates Lower Boom  
2 Operates Upper Boom  
3 Operates Swing

UP for up:      DOWN for down.  
UP for up:      DOWN for down.  
UP for right:    DOWN for left.



**ALWAYS ENSURE THE AERIAL PLATFORM IS ON A FIRM LEVEL SURFACE AND THE AREA IS FREE OF ANY OVERHEAD OBSTRUCTIONS.**

**ENGAGING THE RED EMERGENCY STOP BUTTON WILL SHUT DOWN THE ENGINE, AND THE ELECTRIC CIRCUIT PREVENTING OPERATION OF ANY FUNCTION.**

#### 4.4 PLATFORM CONTROL OPERATION



**NEVER START THE NIFTYLIFT IF YOU SMELL GASOLINE, LIQUID PROPANE OR DIESEL. THESE FUELS ARE FLAMMABLE.**

**BEFORE OPERATING THE NIFTYLIFT ENSURE THAT EACH OPERATOR HAS READ AND FULLY UNDERSTOOD THE OPERATING MANUAL. FAILURE TO DO SO MAY RESULT IN DEATH OR SERIOUS INJURY.**

##### 4.4.1 PLATFORM CONTROLS

###### ALL MODELS

- 1) Ensure all red emergency stops are out.
- 2) Turn key switch at ground control station fully up to platform position.
- 3) Ensure selector hand valve (if applicable) is turned to platform position i.e. fully up.
- 4) Battery electric models go to step 10).

###### DIESEL ENGINE OR BI ENERGY MODELS ONLY

- 5) Turn duty selector in platform to BATT (Battery) or ENG (Engine).
- 6) If BATT (Battery) is selected go to Step 10).
- 7) If ENG (Engine) is selected go to Step 8) for cold engine or Step 9) for a warm engine.
- 8) COLD ENGINE Turn the main engine ignition switch (located beneath the front cover) through ON to GL, this engages the glow plug pre-heat system. Hold 3-5 seconds then turn key fully to ST (start) position and the engine will fire.
- 9) WARM ENGINE Turn the main engine ignition switch (located beneath the front cover) to ON. Push the BLACK start button located behind the main push button control station and the engine will fire.

###### GASOLINE ENGINE OR GASOLINE/ELECTRIC MODELS ONLY

- 5) Turn duty selector in platform to BATT (Battery) or ENG (Engine).
- 6) If BATT (Battery) is selected go to Step 10).
- 7) If ENG (Engine) is selected, ensure the fuel tap is turned to the ON position and then go to Step 8) for cold engine or Step 9) for a warm engine.
- 8) COLD ENGINE (From the ground only) turn the engine fuel tap on and engage the choke lever. Turn the main engine ignition through ON to ST (Start) and the engine will fire. Return the choke lever to its normal running position after the engine is started.
- 9) WARM ENGINE Ensure the main engine ignition switch is ON. Push the BLACK start button located behind the main push button control station and the engine will fire.

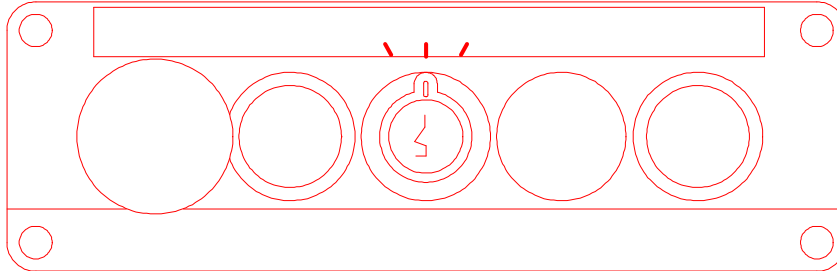
###### ALL MODELS

- 10) Ensure key switch selector is turned to ON or BATT (Battery) if applicable.
- 11) Depress foot switch or push and hold green power button.
- 12) Select function and operate hand levers in full accordance with manufacturers operating and safety manual.
- 13) When not in use return booms to stowed position. Fully raise and stow all outriggers. Turn key switch at ground control to centre off position, remove key and chock wheels.



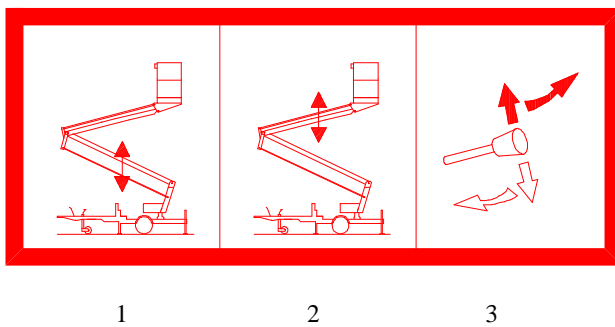
#### 4.4 PLATFORM CONTROLS

##### 4.4.2 PLATFORM PUSHBUTTON CONTROLS STATION



(BI-ENERGY MODEL SHOWN)

##### Boom Functions



Select lever 1, 2, or 3 for desired function.

- 1 Operates Lower Boom
- 2 Operates Upper Boom
- 3 Operates Swing

- UP for up: DOWN for down.
- UP for up: DOWN for down.
- UP for right: DOWN for left.

#### 4.4 PLATFORM CONTROLS

##### 4.4.3 Starting the Engine from the Platform



**NEVER START THE NIFTYLIFT IF YOU CAN SMELL GASOLINE, LIQUID PROPANE OR DIESEL. THESE FUELS ARE HIGHLY FLAMMABLE.**



**\*\*\*\*FOR COLD START PROCEDURES SEE SECTION 4.1.**

- A) Ensure main engine ignition located below front cover is turned to ON position.
- B) Ensure that all EMERGENCY STOPS are not engaged (i.e. must be out).
- C) Ensure the key switch selector located at the ground control station is turned to platform (i.e. fully up).
- D) Ensure the duty selector in the platform is in the ENG (Engine) position.
- E) Push the BLACK diesel start button located behind the main push button control station and the engine will now fire up.
- F) To shut down the engine from the platform simply turn the duty selector to OFF or BATT (Battery) or in an emergency depress the RED Emergency stop button.

##### 4.4.4. Power System Changeover

###### **Engine to Battery**

- 1) Engage any RED Emergency Stop button to shut down the engine.
- 2) Re-set RED Emergency Stop button.
- 3) Turn the duty selector in the platform to BATT (Battery).

###### **Battery to Engine**

- 1) Ensure all RED Emergency Stops are out.
- 2) Ensure main engine ignition switch located at the ground is turned to ON.
- 3) Turn the duty selector in the platform to ENG (Engine).
- 4) Push the BLACK START button located behind the main push button control station and the engine will fire.

###### **Petrol to Gas**

- 1) Locate petrol shut-off valve on carburettor, and turn petrol to OFF position.
- 2) Run engine until all of the Petrol is exhausted, i.e. engine stops.
- 3) Open valve on gas bottle, introducing supply to the vaporiser.
- 4) Turn engine over until it fires, allow vaporiser to achieve running temperature before using machine. If engine runs erratically, check that all petrol has been used from bowl.

###### **Gas to Petrol**

- 1) Turn gas off by shutting valve on the bottle - ensure that it is fully closed.
- 2) Open fuel shut-off valve on engine carburettor, and allow it to fill with petrol.
- 3) Turn engine over until it fires.

#### 4.5 BOOM CONTROLS



**DO NOT OPERATE THE NIFTYLIFT WHILST ELEVATED UNLESS ON A FIRM, LEVEL SURFACE FREE FROM ANY POSSIBLE OBSTRUCTIONS OR HAZARDS BOTH AT GROUND LEVEL AND OVERHEAD.**

#### **IF ALARM SOUNDS - DESCEND IMMEDIATELY.**

- 1) Never exceed the maximum platform capacity of 440lbs (200kgs).
- 2) Check below, above and around platform for any obstruction or hazards before operating any function.
- 3) Depress the green power button or the foot switch located in the platform floor (if applicable).
- 4) Select handlever controls marked 1, 2, 3.

Control 1 - Operates lower boom - up for up  
down for down

Control 2 - Operates upper boom - up for up  
down for down

Control 3 - Operates swing - up for right  
down for left



**THIS MACHINE IS NOT ELECTRICALLY INSULATED. DO NOT WORK WITHIN 10FT OF OVERHEAD CABLES EXCEEDING 415 VOLTS.**

#### 4.6 BATTERIES AND CHARGING



**BATTERIES SHALL BE RECHARGED IN A WELL VENTILATED AREA FREE OF FLAME, SPARKS OR OTHER HAZARDS WHICH MAY CAUSE EXPLOSION. HIGHLY EXPLOSIVE HYDROGEN GAS IS PRODUCED DURING THE CHARGING PROCESS.**

- 1) Recharge batteries at the end of every working day or shift.
- 2) Plug charger into suitable power supply, either 240 volts or 110 volts AC.
- 3) Indicators are provided:
  - a) Red light means batteries are charging.
  - b) Pulsing Green light means the charge is equalising.
  - c) Constant Green light means the batteries are fully charged.
- 4) To avoid damage to charger disconnect from mains supply before using machine.

**Please note:**

If the charger is reconnected to the power supply shortly after it has gone through its full charging cycle the Red LED may come on although the batteries may be fully charged. The charger would then go through its complete cycle again at an accelerated rate, depending on the time difference between connection, reconnection and level of battery charge.



**UNDER NO CIRCUMSTANCES SHOULD A MACHINE BE LEFT FULLY DISCHARGED AS SEVERE BATTERY DAMAGE CAN OCCUR IN A RELATIVELY SHORT TIME.**

## **4.7 TRANSPORTING AND TOWING**

### **4.7.1 TRANSPORTING**

- \* The maximum weight of a Niftylift N120 is 2794 lbs (1270 kgs)
- \* Always ensure the truck or trailer you are loading or towing the Niftylift with can carry it legally.
- \* If loading by crane, the use of shackles and an adequately rated spreader beam, with four leg slings, is MANDATORY.
- \* If loading by forklift spread the forks to the widest extent and lift from the side with a forklift of adequate capacity.
- \* Once positioned on the transport carrier ratchet straps should be used to secure the machine.
- \* Strap booms carefully to constrain them from sideways movement.
- \* Never lift any machine by its booms. Always secure chains or straps to the chassis taking care to avoid the brake cables

#### 4.7.2 TOWING



**THE MAXIMUM TOWING SPEED OF A NIFTYLIFT IS 45 MPH (72 KMPH) WITH A VEHICLE THAT COMPLIES WITH ALL ROAD TRAFFIC REGULATIONS. SPEEDING MAY RESULT IN DEATH OR SERIOUS INJURY.**

It is recommended that the maximum towing speed of 45mph (72kmph) be adhered to for the greatest safety. In other than perfect conditions it is sensible to further reduce your speed in order to ensure full control over your vehicle and trailer. The importance of the suitability of your towing vehicle must be stressed. The manufacturers' details concerning each model will give you recommended Gross Vehicle Weights (GVW) or Gross Train Weights (GTW) neither of which should be exceeded.

**POSITION TOWING VEHICLE AND TRAILER ON LEVEL GROUND BEFORE ATTEMPTING TO COUPLE/DE-COUPLE.**

#### **Coupling Instructions**

- 1) Depress the trigger on the lever mechanism and lift the handle upwards and forward.
- 2) Place the unlocked coupling head onto the towing ball and apply slight downward pressure. The head will automatically lock onto the ball.
- 3) Ensure that the trigger has returned to its free position before attempting to tow, and that the coupling head is securely on the towing ball.
- 4) Connect the breakaway cable/chain to the towing vehicle hitch - not to the tow ball itself.
- 5) Connect the lighting plug to the vehicle and check the light functions.
- 6) Raise the jockey wheel to its stowed position and secure for transit.

#### **De-coupling Instructions**

- 1) Apply trailer handbrake and chock wheels.
- 2) Lower the jockey wheel to the ground. Disconnect the breakaway cable/chain and lighting plug.
- 3) Operate the handle by depressing the trigger and manually lift the coupling head clear of the towing ball or screw down the telescopic jockey wheel to achieve the same effect.

#### **Handbrake Operation**

- 1) To operate the trailer parking brakes pull the handbrake lever upwards and backwards. The spring loaded mechanism will engage and stay in the operated position until re-set.
- 2) To dis-engage the parking brakes, firmly grasp the handbrake lever and pull upwards. Depress the ratchet release button in the end of the handbrake lever and return the lever to the horizontal position. Care should be taken when operating the handbrake lever due to the forces involved in engaging the ratchet mechanism.

#### 4.7.3 STORAGE

If being stored for any length of time without use, then the machine should be thoroughly inspected for the following:-

- 1) Grease all bearings /slides, worm drives, etc.
- 2) Check batteries for electrolyte levels, state of charge, damage, dirt, etc. Never leave in a state of discharge for any length of time. If no use of the platform is intended, an occasional "top-up" charge of the batteries will serve to equalise their charge level.
- 3) Leave battery disconnect switch in OFF position to prevent discharge of batteries through leakage.
- 4) If machine is to be left on an incline, chock wheels to prevent creep.
- 5) If machine is to be left out-of-doors or in a hostile environment, cover with suitable weatherproof media to prevent deterioration.

#### 4.7.4 SETTING TO WORK

If your machine has arrived direct from the factory or via a dealer, then it may safely be put straight to work. However, if the machine has been in storage or if unsure about the machine's recent history then a full safety check should be made:-

- 1) Check all lubrication points for adequate application of grease, oil etc.
- 2) Inspect all threads for ease of operation - especially descent valves, brake release valve etc.
- 3) Check level and quantity of oil. Remove any contaminants - water, etc.
- 4) Check batteries for electrolyte & state of charge.
- 5) Check electrics for damage & insulation.
- 6) Using base controls, cycle machine over complete envelope in accordance with the Operating Instructions. Cure any defects.
- 7) Ensure that all safety devices and controls operate in accordance with the instructions.
- 8) If necessary, perform a load test to establish the machine stability before putting the machine to work.

NIFTYLIFT T.M. SERIES  
OPERATING AND SAFETY INSTRUCTIONS



## 5 EMERGENCY CONTROLS

### General



**CHECKING THE OPERATION OF THE EMERGENCY CONTROLS EVERY DAY AND/OR BEFORE EACH SHIFT IS AN ESSENTIAL PART OF THE OPERATORS DUTIES.**

- 5.1** The operator and all ground personnel must be thoroughly familiar with the location and operation of the **EMERGENCY CONTROLS**.
- 5.2. IN THE EVENT OF AN INCAPACITATED OPERATOR.**  
Turn key switch selector at ground control station to ground (i.e. fully down).  
Lower on ground controls as detailed under section **4.2 GROUND CONTROL OPERATION**.
- 5.3. IN THE EVENT OF MACHINE FAILURE.**  
If all machine power is lost, the Emergency Descent Valves, located on each lift cylinder, can be used to lower the main booms.  
Turn the release valve anti-clockwise and lower platform using handlever controls in platform or at ground control station.  
Ensure that the valves are closed again after completing the descent.
- 5.4 TO ROTATE PLATFORM IN AN EMERGENCY.**  
Fit 1/2 inch drive socket on to end of swing worm gear and crank round manually.
- 5.5 INCIDENT NOTIFICATION**  
It is a mandatory requirement that any accident or incident involving a Niftylift, regardless of whether any party received injury or property was damaged, be reported by telephone directly to Niftylift. Failure to do so may render any warranty on the machine void.

## **6 RESPONSIBILITIES**

### **6.1 CHANGES IN OWNERSHIP**

When a change of ownership of a Niftylift occurs, it shall be the responsibility of the seller to notify Niftylift direct of the unit, model and serial number and the name and address of the new owner within 60 days. This important step is required so that all future Technical Bulletins are able to reach the registered owner of each machine without delay. Please note warranties are not transferable.