

NIFTYLIFT

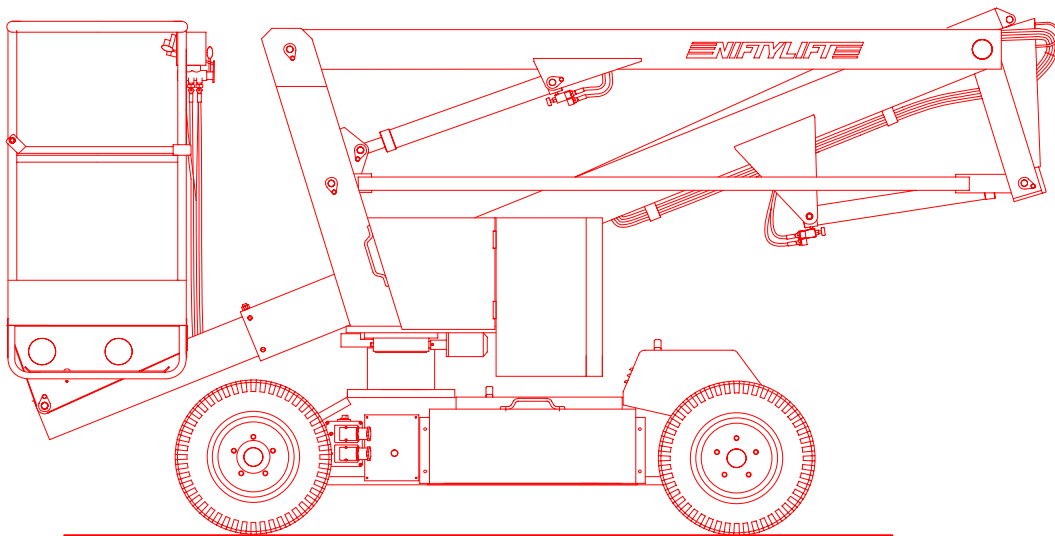
HEIGHT RIDER

OPERATING AND SAFETY MANUAL

MODEL HR10 & HR12 SERIES

STANDARD AND NARROW WIDTH

SELF PROPELLED (S.P)



Manufactured by:-

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FINGLE DRIVE
STONEBRIDGE
MILTON KEYNES
BUCKS. MK13 0ER
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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 HR 10 or HR 12, powered by 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 Niftylift Height Rider.

1.3 INTRODUCING THE "HEIGHT RIDER" S.P. (SELF-PROPELLED) 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 your nearest office.

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GREAT BRITAIN**

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Driven from the platform, the Niftylift "HEIGHT RIDER" S.P.(Self Propelled) series accommodates up to two men and their equipment, and offers a working height of up to 39ft 6in (12m) with a maximum capacity of 440 pounds (200kg).

The compact narrow base and tight turning circle combined with powered swing and good outreach ensure excellent manoeuvrability and maximum efficiency.

High traction tyres and powerful hydraulic wheel motors give unsurpassed performance with the option of fast drive speed when the booms are in the stowed position. Automatic braking and audible alarms activated by a five degree tilt sensor help to prevent the operator from working on unsafe terrain whilst elevated.

The Niftylift Height Rider provides a fast, safe, cost effective method of access, both inside and out, for a multitude of applications where overhead working is required.

MODELS INCLUDE THE FOLLOWING :-

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

SECTION 1.4


JULY 1995

GENERAL SPECIFICATION

FEATURE	HR 10 (& HR10 N)	HR 12 (& HR 12 N)	
MAXIMUM HEIGHT - WORKING	32 FT 9.8 M	39 FT 6 IN 12 M	
MAXIMUM HEIGHT- PLATFORM	26 FT 8 M	33 FT 6 IN 10.2 M	
MAXIMUM HEIGHT - STOWED	6 FT 3 IN 1.9 M	6 FT 3 IN 1.9 M	
MAXIMUM OUTREACH	14 FT 9 IN 4.5 M	20 FT 1 IN 6.1 M	
MAXIMUM WIDTH - STANDARD	4 FT 11 IN 1.5 M	5 FT 10 IN 1.787 M	
MAXIMUM WIDTH - NARROW - (N)	4 FT 7 IN 1.4 M	4 FT 11 IN 1.5 M	
MAXIMUM LENGTH - STOWED	14 FT 4.3 M	13 FT 3.96 M	
MAXIMUM CAPACITY	440 LBS 200 KGS	440 LBS 200 KGS	
WHEELBASE	5FT 11 IN 1.8 M	5 FT 11 IN 1.8 M	
TURNING RADIUS - OUTSIDE	10 FT 6 IN 3.15 M	10 FT 6 IN 3.15 M	
TURRET ROTATION	355 ⁰	355 ⁰	
TURRET TAILSWING	ZERO	ZERO	
TRAVEL SPEED - STOWED	0-2.1 MPH 0-3.5 KPH	0-2.1 MPH 0-3.5 KPH	
TRAVEL SPEED - RAISED	0-1 MPH 0-1.6 KPH	0-1 MPH 0-1.6 KPH	
PLATFORM SIZE - LENGTH x WIDTH	25 IN x 44 IN 0.65 M x 1.1 M	25 IN x 44 IN 0.65 M x 1.1 M	
CONTROLS	FULL PROPORTIONAL HYDRAULIC		
HYDRAULIC PRESSURE	200 BAR	200 BAR	
TYRES	FOAM FILLED		
GRADEABILITY	25%	25%	
GROUND CLEARANCE	6½ IN 165 MM	7¼ IN 185 MM	(5½ IN) (140 MM)
GROSS VEHICLE WEIGHT	5280 LBS 2400 KGS	5720 LBS 2600 KGS	(6490 LBS) (2950 KGS)
MAXIMUM GROUND PRESSURE	0.060 KN/cm ² 12500 Lb/ft ²	0.057 KN/cm ² 11875 Lb/ft ²	(0.063 KN/cm ²) (13125 Lb/ft ²)

SECTION 1

1.5 IDENTIFICATION

			
NIFTYLIFT LTD. ,FINGLE DRIVE ,STONEBRIDGE MILTON KEYNES MK13 0ER ENGLAND TELEPHONE 01908 223456 TELEFAX 01908 312733			
SERIAL No			
TYPE			
YEAR OF MANUFACTURE			
WEIGHT			kg
RATED LOAD	PERSONS	+	kg
MAXIMUM SAFE WORKING LOAD			kg
MAXIMUM PULL			N
MAXIMUM WIND SPEED			m/s
MAXIMUM ALLOWABLE INCLINATION			Deg
MAXIMUM HYDRAULIC PRESSURE			bar
NOMINAL POWER			kW
MAXIMUM VOLTAGE			V
AMPS			A

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 machines 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).



WARNING

THE MANUFACTURER HAS NO DIRECT CONTROL OVER THE MACHINE APPLICATION AND USE. THEREFORE CONFORMATION 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 and 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 440 lbs (200 kg), as indicated on the decals and machine serial plate.

2.1 MANDATORY PRECAUTIONS (CONTINUED)

2.1.9 Only operate the Niftylift on a firm, level surface.

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.

WARNING

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.

WARNING

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 swinging to ensure that the area is clear of personnel and obstructions. Care should be taken when swinging 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 Before and during driving while the platform is elevated the operator shall maintain a clear view of the path of travel, maintain a safe distance from obstacles, debris, drop offs, holes, depressions, ramps and other hazards to ensure safe elevated travel. Maintain a safe distance from overhead obstacles.

2.1 MANDATORY PRECAUTIONS (CONTINUED)

- 2.1.21 Under all travel conditions the operator shall limit travel speed according to conditions of ground surface, congestion, visibility, slope, location of personnel and other factors causing hazards of collision or injury to personnel.
- 2.1.22 The aerial platform shall not be driven on grades, side slopes or ramps exceeding those for which the aerial platform is rated by the manufacturer.
- 2.1.23 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 suitable for the duty.
- 2.1.24 The operator shall immediately report to his supervisor any potentially hazardous location(s) (environment) which become evident during operation.
- 2.1.25 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.
- 2.1.26 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.
- 2.1.27 The boom and platform of the Niftylift shall not be used to jack the wheels off the ground.
- 2.1.28 The Niftylift shall not be used as a crane.
- 2.1.29 The Niftylift shall not be positioned against another object to steady the platform.
- 2.1.30 Care should be taken to prevent rope, electric cords and hoses from becoming entangled in the aerial platform.
- 2.1.31 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.
- 2.1.32 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.
- 2.1.33 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.

2.1.34



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 MANDATORY PRECAUTIONS (CONTINUED)

2.1.35 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.

2.1.36



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

WARNING

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

2.1.38 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" Height Riders are limited to operation as previously described, not suitable for rough terrain work. 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 Height Rider range of machines does not exceed 79dB(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 on high throttle, and 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/s².

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.
- C) If the aerial platform is to be driven off, please ensure that the operator has read and fully understood all of this manual. Refer to the appropriate section for precise operating instructions.

*** 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

WARNING

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



WARNING - FAILURE TO COMPLETE THE INITIAL PRE-OPERATIONAL REPORT AND RETURN THE TOP COPY TO NIFTYLIFT RENDERS THE WARRANTY INVALID.

WARNING

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) Check operating and safety manuals are legible and located in their box within the platform.
- 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.
- 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 as stated on the machine plate.
- 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, located on each lift cylinder.
- 17) Check brakes and all lights.
- 18) Check tilt sensor/alarm horn and beacons.
- 19) Check high engine and/or high drive limit switches.
- 20) Check and refer to maintenance and workshop manual for further daily/periodic checks and inspections.

3.4 PLACARD, DECALS & INSTALLATION

			HR10	HR12
01.	SWL BLANK.	(P10799)	1	1
02.	200 (KG)	(P10803)	1	1
03.	40 (KG)	(P10804)	1	1
04.	IMPORTANT PART 'A'	(P10798)	2	2
05.	IMPORTANT PART 'B'	(P10889)	2	2
06.	BASE CONTROLS	(P10411)	1	1
07.	BASE KEY SWITCH	(P10413)	1	1
08.	CAGE CONTROLS	(P10610)	-	1
09.	CAGE INSTRUCTIONS	(P11084)	1	1
10.	TRIP SWITCH	(P10875)	2	2
11.	MUST NOT OPERATE	(P11542)	1	1
12.	HEAD PROTECTION	(P10383)	1	1
13.	BATTERY ACID	(P11543)	2	2
14.	HARNESS POINT	(P11554)	2	2
15.	HANDPUMP	(P12402)	1	1
16.	CAGE LEVELLING	(P10853)	-	1
17.	ISOLATOR SWITCH	(P11125)	1	1
18.	DIESEL FUEL	(P11441)	1	1
19.	BATTERY MANAGEMENT	(P11777)	1	1

3.4 PLACARD, DECALS & INSTALLATION, CONT:

			HR10	HR12
20.	CAGE CONTROL BOX	(P11828)	1	1
21.	BATTERY CHARGING	(P11568)	1	1
22.	COMPONENT STABILITY	(P11558)	1	1
23.	MACHINE PLATE	(P10805)	1	1
24.	FUELLING	(P11561)	1	1
25.	NO STEP (LARGE)	(P11569)	3	3
26.	WHEEL RELEASE	(P11571)	1	1
27.	"FWD" ARROW	(P11602)	1	1
28.	"REV" ARROW	(P11603)	1	1
29.	"LEFT" ARROW	(P11604)		2
2				
30.	"RIGHT" ARROW	(P11605)	2	2
31.	CAGE CONTROLS	(P10410)	1	-

D80157 - THREE VIEW DRAWING

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)
WHEEL NUTS	65ft lbs		86Nm	
WHEEL MOTOR NUTS	340ft lbs		460Nm	
SLEW RING BOLTS	155ft lbs		210Nm	

4 OPERATION

4.1 CONTROL CIRCUIT COMPONENTS

- 4.1.1** Control board:- Situated under the rear cover, the encapsulated 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 to all models, and contains functions which might not be utilised on your particular machine. A thermal trip switch is integral to the box, which protects the control circuit and components. If power is lost, the switch can be manually reset.
- 4.1.2** Tilt Alarm:- Fitted to the top of the control board box, the Tilt Alarm is a solid state sensor which monitors the inclination of the machine. It directly controls the B.R.V (Brake Release Valve) and when the platform is in use, i.e. Booms are raised, if the inclination exceeds the pre-set limit, it will disable the drive to the machine and sound the alarm. In order to recover the machine, the platform operation is unaffected, allowing the operator to restore drive when the machine is stowed. It is then possible to drive back onto level ground, fully restoring machine operation.
- 4.1.3** Sounder:- Situated beneath the P.C.B. is a small piezo electric sounder, which is used to provide an intermittent alarm whenever the machine is in operation. Pushing a green "power control" button, or depressing the foot switch in the cage (if fitted) will energise this sounder. This serves to warn personnel of the operation of the machine.
- 4.1.4** Klaxon:-Also mounted on the top of the control board box is a klaxon, which performs several functions:-
Firstly, it can be used as a manual alert, by pushing the "Horn" button at the Platform control position.
Secondly, it is this device which sounds continuously if the Tilt Alarm Sensor detects excessive inclination, with the booms raised.
Lastly, it is linked into the battery management system, such that when low battery state is reached the "pulsing" of the D.C. motors is mimicked by the Klaxon, re-enforcing the message to the operator to charge the machine.
- 4.1.5** Drive Control Valve:-(D.C.V) The motion control valve comprises several individual components all directly involved in the hydraulic supply to the wheel drive motors. Principle amongst these are the drive control valves, which electrically change the drive motor hydraulics supply from series flow to parallel, or vice versa. This control function is only available when the booms are lowered, and allows the operator to select "Hi" or "Lo" drive.
"Hi" drive gives fast speed of travel, but low gradeability, "Lo" drive gives best gradeability, but slow speed. "Lo" drive is used for climbing inclines and delicate positioning of the machine.
- 4.1.6** Brake Release Valve:-(B.R.V) The motion control valve also incorporates a solenoid operated dump valve which controls the brake function on the machine. This valve must be energised to allow the machine to move. If no voltage is present, the wheel motors will not be able to develop drive torque, whilst at the same time, the spring applied parking brakes will remain engaged. Only when a green "Power Control" push-button is being used (or the Platform Foot-switch is depressed) will the B.R.V. operate. If the Tilt Alarm Sensor detects an excessive inclination whilst the booms are raised it is the B.R.V. which is de-energised to isolate the machine. (At the same time the Klaxon tone changes to a continuous one to indicate this condition)

4 OPERATION

- 4.1.7** Boom-switch:- Mounted on the end of the machine counterbalance, and operated by the upper boom, this switch controls both the operation of the Tilt Alarm Sensor, and the speed control function. With the booms in the stowed position, the Tilt Alarm Sensor is by-passed, allowing the machine to negotiate slopes in excess of the permissible working angle, without isolating the drive function. At the same time, "Hi" drive is possible, as is fast throttle on activated, only slow speed operation is possible and only "Lo" drive is permitted. These control functions are of primary importance to safety of the machine and operator, under no circumstances should this control function be isolated or by-passed.
- 4.1.8** Battery Management:- Battery condition is permanently monitored by the control circuit, such that when available power has decreased to 80% of full charge, the battery status circuit begins to "chop" the power to the hydraulic power packs. This function causes the drive system to alternately stop & start, signalling to the operator that re-charging is necessary. At the same time the Klaxon will begin to sound intermittently re-enforcing the charge warning. At this point, sufficient power remains to drive to the nearest power point. Should the operator ignore the on-set of the discharge warning, the "chopping" will continue until the machine is rendered inoperative. Immediate charging will then be required. Under no circumstances should a machine be left fully discharged or severe battery damage can occur in a relatively short time.
- 4.1.9** Battery Isolator:- A battery disconnect switch is located beneath the centre bonnet section, 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.
- 4.1.10** 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.
- 4.1.11** Diesel Engine:- Generally a Kubota OC60 engine, described in the maintenance section of the Workshop Manual, driving a twin bodied pump with direct mounted pump dump valves (one per section), and integral relief valve on the rear pump. The arrangement allows two speed operation, fast throttle and automatic relief for ramp climbing.
- 4.1.12** 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.
- 4.1.13** 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. The engine is also equipped with a throttle solenoid for two speed operation.

4 OPERATION

4.1.14 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.

4.1.15 L.P.G. Operation:-On machines equipped for L.P.G. operation (propane) the Honda engine will be arranged for either vapour or liquid take off of the gas mixture. It is important to orientate the gas bottle in the correct direction to ensure the right supply for your machine. A label will indicate the appropriate direction for mounting.

Machines equipped for liquid take-off will 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 liquid 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 the carburettor bowl before changing to L.P.G., since the engine will not run satisfactorily if any petrol is in the carburettor bowl.

When turning on the gas, the bottle tap should be opened gradually so that the liquified gas does not freeze up the vaporiser on contact. Warming up the engine on petrol first will ensure that the vaporiser is already hot enough to begin the gas conversion. A frozen vaporiser will not allow the machine to run on gas.

Machines arranged for vapour take-off do not have a vaporiser, but still have the Valvelock and Microvac switch to control the flow of gas to the engine. The functions of the machine are as described above for the liquid take-off system.

4 OPERATION

4.2 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.

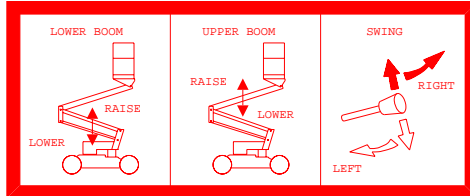
EMERGENCY PROCEDURES

- 14) Push in red emergency stop to shut down all functions.
- 15) Turn red release knob anti-clockwise on check valve and lower on hand lever controls. Always reset immediately after use.
- 16) To swing booms fit ½ inch drive socket to end of swing worm gear and crank round manually.

4.2.1 GROUND CONTROLS (CONTINUED)

Boom Functions

A) Push and hold green power button.

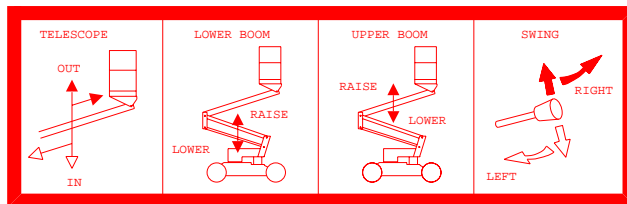


HR10 SERIES ONLY

1 2 3

B) Select lever 1, 2, or 3 for desired boom function.

- | | | |
|-----------------------|----------------|----------------|
| 1 Operates Lower boom | UP for up: | DOWN for down. |
| 2 Operates Upper boom | UP for up : | DOWN for down. |
| 3 Operates Swing | UP for right : | DOWN for left. |



HR12 SERIES ONLY

1 2 3 4

B) Select lever 1, 2, 3, or 4 for desired boom function.

- | | | |
|-----------------------|----------------|----------------|
| 1 Operates Telescope | UP for out: | DOWN for in |
| 2 Operates Lower boom | UP for up: | DOWN for down. |
| 3 Operates Upper boom | UP for up : | DOWN for down. |
| 4 Operates Swing | 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.

4.3 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.



4.3.1 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

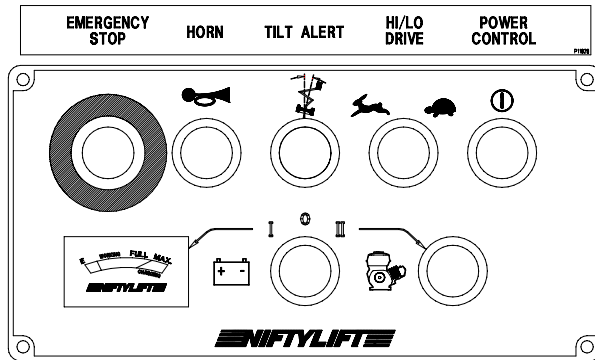
- 5) Turn duty selector in platform to BATT (Battery) or ENG (Engine).
- 6) If BATT (Battery) is selected go to Step 10).
- 7) If ENG (Engine) is selected, ensure the fuel tap is turned to the ON position and then go to Step 8) for cold engine or Step 9) for a warm engine.
- 8) COLD ENGINE (From the 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.

4.3 PLATFORM CONTROL OPERATION

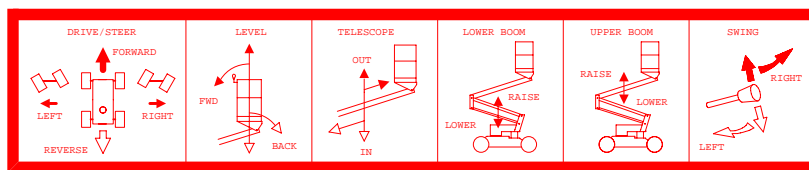
4.3.2 PLATFORM PUSHBUTTON CONTROLS STATION



(BI-ENERGY MODEL SHOWN)

Drive & Boom Functions

HR12 SERIES ONLY



1 2 3 4 5 6

Select lever 1, 2, 3, 4, 5 or 6 for desired function.

- | | | |
|--|---------------|----------------|
| 1 Operates Drive and Steer. (See explanation in section 4.4.1) | | |
| 2 Operates Platform Lev. | FWD for fwd: | BACK for back. |
| 3 Operates Telescope | UP for out: | DOWN for in. |
| 4 Operates Lower Boom | UP for up: | DOWN for down. |
| 5 Operates Upper Boom | UP for up: | DOWN for down. |
| 6 Operates Swing | UP for right: | DOWN for left |

(HR10 SERIES MACHINES HAVE LEVERS 1, 4, 5 & 6.)

ALL CONTROL FUNCTIONS REMAIN THE SAME.

4.3 PLATFORM CONTROLS

4.3.3 Starting the Engine from the Platform



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

WARNING

******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 both ground and platform EMERGENCY STOPS are not engaged (i.e. must be fully 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 start button located behind the main push button control station and the engine will now fire up.
- F) The engine will automatically rev up if the booms are in the stowed position and the green "Power Control" pushbutton, or the foot switch, if applicable, is depressed, thus allowing fast travel speed- when selected on Hi/ Lo selector.
- G) 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.

4.3.4. 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.

4.4 DRIVING CONTROLS

4.4.1 STOWED



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.

WARNING

- 1) Check proposed route for possible hazards, obstructions and personnel.
- 2) Depress foot switch located in platform floor (if applicable).
- 3) Use HI/LO selector on platform push button control station to determine speed. (see Section **4.2.2 Platform Push Button Controls Station.**)
 - High Drive - gives High speed and low gradeability.
 - Low Drive - gives Low speed and high gradeability.
- 4) Select drive joystick from handlever controls (see Section **4.3 Platform Control Operation**) and
 - A. up for FORWARDS
 - B. down for REVERSE
 - C. left for STEER LEFT
 - D. right for STEER RIGHT
- 5) All control levers give a fully proportional response therefore the more the lever is moved away from the centre (OFF) position the faster the function will become.
- 6) Maximum drive speed is only attainable when all booms are fully stowed and the HI/LO selector is in the HI position.
- 7) When driving with the booms fully stowed, the Tilt Alarm is bypassed to allow the Niftylift to be driven in areas where the slope exceeds the five degree working limit. In normal operation the drive is therefore unaffected when driven onto a slope in excess of five degrees, until the booms are raised, whereupon the drive would be disabled and the tilt alarm sounds continuously.
- 8) Under no circumstances should any Niftylift SP series machine be driven on slopes exceeding 25%, with the booms fully stowed.

4.4.2 DRIVING CONTROLS - ELEVATED



WARNING

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.

- 1) Check proposed route for possible hazards, obstructions and personnel.
- 2) Depress foot switch located in platform floor (if applicable).
- 3) Only Low speed will be attainable regardless of position of HI/LO selector.
- 4) Select drive joystick from handlever controls (see Section **4.3 Platform Control Station**).
 - A. up for FORWARDS
 - B. down for REVERSE
 - C. left for STEER LEFT
 - D. right for STEER RIGHT
- 5) Control levers give a fully proportional response therefore the more the lever is moved away from the centre OFF position the faster the function will become.



WARNING

ALL NIFTYLIFTS ARE FITTED WITH A TILT ALARM - PRE-SET IN THE FACTORY AT 5 DEGREES. ONCE ENERGISED (E.G. BY DRIVING ON A SLOPE GREATER THAN 5°) THE NIFTYLIFT WILL LOSE ALL POWER TO DRIVE FUNCTIONS AND A LOUD AUDIBLE ALARM WILL BE ACTIVATED.

TO DE-ACTIVATE, LOWER THE BOOMS FULLY TO STOWED POSITION AND RE-POSITION BASE ON FIRM, LEVEL GROUND.

IF ALARM SOUNDS - DESCEND IMMEDIATELY AND RE-LEVEL MACHINE BASE.

4.5 BOOM CONTROLS



WARNING

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.

- 1) Never exceed the maximum platform capacity of 440 lbs (200 kgs).
- 2) Check below, above and around platform for any obstruction or hazards before operating any function.
- 3) Depress the foot switch located in the platform floor (if applicable).
- 4) Select handlever controls marked 2, 3, 4, 5, 6 (see Section **4.3 Platform Control Operation**) and operate as described.



WARNING

IF ALARM SOUNDS - DESCEND IMMEDIATELY

THIS MACHINE IS NOT ELECTRICALLY INSULATED. DO NOT WORK WITHIN 10FT (3m) 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.

WARNING

- 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.

Please note all Niftylifts are fitted with a Battery Management System, which permanently monitors the condition of the batteries. When the batteries become discharged to 80% of their capacity the management system will begin to "shut down" the hydraulic power packs. This causes the drive system to alternately stop and start, signalling to the operator that re-charging is necessary. More than sufficient power remains, however, to drive slowly to the nearest charging point.

Should the operator ignore the onset of the battery discharge warning the "shut down" of the motors will continue, until the machine is rendered inoperative. Immediate charging will then be required.



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

WARNING

4.7 TRANSPORTING AND TOWING

4.7.1 TRANSPORTING

- * The maximum weight of a Niftylift HR 10 is 5280 lbs (2400kgs)
- * The maximum weight of a Niftylift HR 12 is 5720 lbs (2600kgs)
- * The maximum weight of a Niftylift HR 12N is 6490 lbs (2950kgs)
- * Always ensure the truck or trailer you are loading the Niftylift onto can carry it legally.
- * If loading by crane, lifting eyes are provided on the front and rear axles. 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 between the wheels of the Niftylift, and lift from the side with a forklift of adequate capacity.
- * Once positioned on the transport carrier a minimum of four ratchet straps should be used going front to back over the wheels
- * Strap booms carefully to constrain them from sideways movement.
- * Never lift any machine by its booms. Always secure chains or straps to the chassis.

4.7.2 TOWING

For towing the Niftylift in case of an emergency.

- 1) If parked on a slope securely chock all wheels.
- 2) Remove rear cover: locate brake release valve and turn anti-clockwise. The rear wheel motors are now free of the hydraulic circuit.
- 3) Remove middle cover: locate brake release lever and remove both springs. The front wheel hub brakes are now released.
- 4) The Niftylift can now be towed over short distances - maximum speed 5mph.



REMEMBER TO REPLACE SPRINGS AND RETURN HAND VALVE TO ORIGINAL POSITION BEFORE OPERATING THE NIFTYLIFT.

FAILURE TO DO SO WILL LEAVE THE MACHINE WITH NO HYDRO STATIC OR PARKING BRAKES AND NO DRIVE POWER.

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.

5. EMERGENCY CONTROLS

General



WARNING

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 **4.1 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.



WARNING

FOLLOWING AN EMERGENCY DESCENT RECOVERY OF THE PLATFORM, FULLY EXTEND AND RETRACT ALL CYLINDERS FROM GROUND CONTROL STATION BEFORE USING THE MACHINE.

- 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.