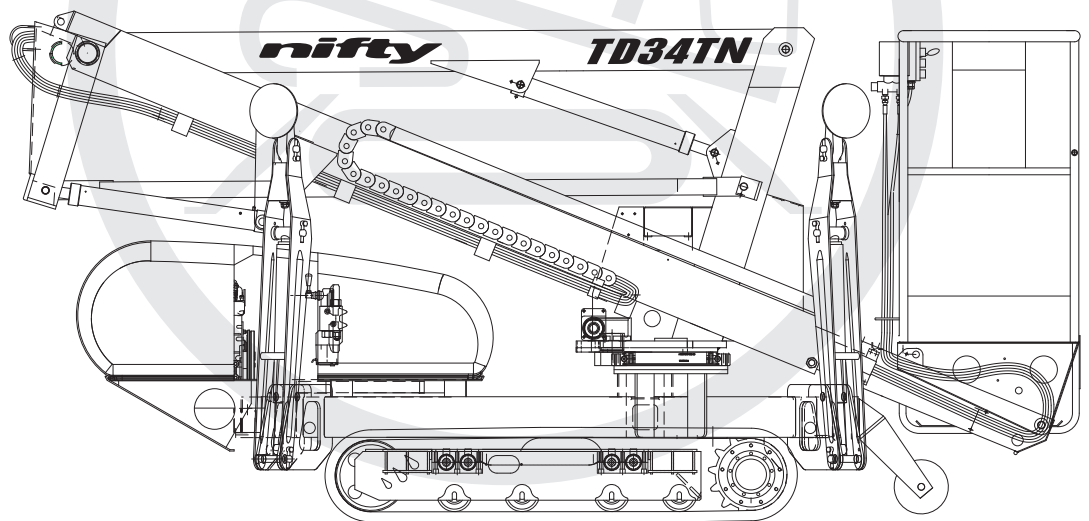


nifty

TrackDrive

Operating & Safety Instructions

MODEL TD34TN SERIES



niftylift.com
info@niftylift.com

M50411/02



Niftylift Limited
1525 S.Buncombe Road
Greer
SC 29651
USA

www.niftylift.com
e-mail: niftyusa@niftylift.com
Tel: 864-968-8881
Fax: 864-968-8836

Table of Contents

1	INTRODUCTION AND GENERAL INFORMATION	PAGE
1.1	Foreword	2
1.2	Scope	3
1.3	Introducing the Track Drive TD34TN (TD) Series	3
1.4	General Specification	4
1.5	Identification	5
1.6	EC Declaration of Conformity	6
2	SAFETY	
2.1	Mandatory Precautions	7-10
2.2	Environmental Limitations	10
2.3	Noise & Vibration	10
2.4	Test Report	11
3	PREPARATION AND INSPECTION	
3.1	Unpacking	12
3.2	Preparation for Use	12
3.3	Pre-Operational Safety Check Schedules	13-15
3.4	Placard, Decals and Installation	16-17
3.5	Torque Requirements	18
4	OPERATION	
4.1	Overview	19-24
4.2	Setting Up Procedures	25
4.3	Ground Control Operation	26-27
4.4	Basket Control Operation	28-31
4.5	Transporting, Craneage, Storage and Setting to Work	32-34
5	EMERGENCY CONTROLS	
5.1	General	35
5.2	Emergency Procedures - Incapacitated Operator	35
5.3	Emergency Procedures - Machine Failure	35
5.4	Incident Notification	35
6	RESPONSIBILITIES	
6.1	Changes in Ownership	36
6.2	Manual of Responsibilities	36
6.3	Inspection/ Service Check List	37-38

1 Introduction and General Information

1.1 FOREWORD

The purpose of these manuals is to provide the customer with appropriate 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 are 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 THAT 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 owner's/user's responsibility to know and comply with all applicable rules, regulations, laws, codes and any other requirements applicable to the safe use of this equipment.

1.2 SCOPE

These operating instructions contain all the necessary information required to allow the safe operation of the Niftylift TD34TN 'Narrow', mains electric (AC)/Diesel (D)

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 TD34TN.

1.3 INTRODUCING THE TD34TN TRACK DRIVEN (TD) 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, modify or improve its products without any obligations to install them on previously manufactured machines.

If you require further information after reading this manual, please do not hesitate to contact us.

Niftylift Inc, 1525 S. Buncombe Road, Greer, SC 29651 USA

Tel: **864 968 8881**

Fax: **864 968 8836**

Email: **niftyusa@niftylift.com**

The Niftylift TD34T (Track Drive) is an extremely versatile articulated boom basket of unique and simple design. It is capable of placing one man and his tools up to a height of 40ft or an outreach of 20ft 1in.

The booms are mounted via a 406⁰ powered swing mechanism on to a compact base mounted on rubber tracks. The fourth boom is telescopic, and when combined with the use of the articulating booms gives an outstanding working envelope. The powered tracks enable the machine to reach areas previously thought unattainable.

The four outriggers make a simple and swift set up possible. A unique pressure sensitive micro switch 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.

Standard build is four fully hydraulically operated outrigger legs, with integral load holding valves mounted on each outrigger cylinder.

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

Models include the following:


DAC: - DIESEL & AC ELECTRIC

D: - DIESEL ONLY

1.4 GENERAL SPECIFICATION

FEATURE		TD34TN
MAXIMUM HEIGHT - WORKING		40ft
MAXIMUM HEIGHT - BASKET		33ft 6in
MAXIMUM HEIGHT - STOWED		6ft 3in
MAXIMUM OUTREACH		20ft 1in
MAXIMUM WIDTH – TRANSIT (VARIABLE TRACKS)		3ft 10in
JACK SPREAD		9ft 7in
MAXIMUM LENGTH - STOWED		13ft
MAXIMUM CAPACITY	1 person cage	265lb
	2 person cage	500lb
TURRET ROTATION		406°
TURRET TAIL SWING		Zero
MAXIMUM TRAVEL SPEED		0.93 mph (High) 0.58 mph (Low)
BASKET SIZE - LENGTH X WIDTH		25in x 30in
CONTROLS		Full proportional hydraulic
HYDRAULIC PRESSURE		2900 psi
TRACKS		1745 x 250 Rubber
GRADEABILITY		60% (31°)
GROSS VEHICLE WEIGHT (MAXIMUM)		3,890lb
MAXIMUM GROUND PRESSURE		0.037kN/cm ²
		7,716lb/ft ²
POWER SOURCE		D (Diesel) models - Kubota 722E engine

1.5 IDENTIFICATION (USA PLATE)

	
NIFTYLIFT LTD. RINGLE DRIVE, STONEBRIDGE MILTON KEYNES MK13 0ER GREAT BRITAIN TEL (01144) 1908 223456 : FAX (01144) 1908 312733 e-mail : info@niftylift.com	
THIS WORK PLATFORM COMPLIES WITH ANSI STANDARD A 92-	
MODEL	
SERIAL NO	
YEAR OF MANUFACTURE	
CAPACITY RATING	LBS
PLATFORM HEIGHT	FEET
GROSS WEIGHT	LBS
MAXIMUM HYDRAULIC PRESSURE	PSI
MAXIMUM VOLTAGE	V
AMPS	A
ELEC. COT D	ISSUE
HYD. COT D	ISSUE
P114-97	

This manufacturer's 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.

1.6 EC DECLARATION OF CONFORMITY (Typical)



EC DECLARATION OF CONFORMITY

MANUFACTURER AND
PERSON RESPONSIBLE
FOR DOCUMENTATION:

**NIFTYLIFT LTD
MALCOLM NORTH**

ADDRESS:

**FINGLE DRIVE,
STONEBRIDGE,
MILTON KEYNES,
MK13 0ER,
ENGLAND.**

MACHINE TYPE:

MOBILE ELEVATING WORK PLATFORM

MODEL TYPE:

SERIAL NUMBER:

NOTIFIED BODY:

RWTUV Anlagentechnik GmbH

NOTIFIED BODY NUMBER: 0044

ADDRESS:

POSTFACH 10 32 61
D-45141 ESSEN
GERMANY

CERTIFICATE NUMBER:

APPLICABLE STANDARDS:

EN 280:2001+A2:2009
DIN EN 60204-1, 2006/42/EC

*We hereby declare that the above mentioned machine conforms
with the requirements of the Machinery Directive, 2006/42/EC
and EMC Directive 2004/108/EC*

SIGNED:

A handwritten signature in black ink that reads "M.D. North".

DATE: 14th December 2009

NAME: Malcolm North

POSITION: Engineering Manager

NOTE:

THIS DECLARATION CONFORMS WITH THE REQUIREMENTS OF ANNEX II-1.A OF THE COUNCIL DIRECTIVE 2006/42/EC. ANY MODIFICATIONS TO THE ABOVE MENTIONED MACHINE WILL INVALIDATE THIS DECLARATION, AND THE MACHINE'S APPROVAL.

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 Ltd.

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 basket to work. If in doubt, contact your local dealer or Niftylift Ltd (see front cover for address).



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 trained persons will be permitted to operate the 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 affect operational safety must be repaired prior to use of the basket, with specific regard to any safety components refer to the Parts Manual for part numbers and details. If in doubt, contact Niftylift Ltd (Details on page 3).
- 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 it is to be used for possible hazards such as, but not limited to, uneven ground drop-offs, holes, bumps, obstructions, debris, floor and overhead obstructions, high voltage conductors, wind and weather, unauthorised persons and any other possibly hazardous conditions.

Operating & Safety Instructions

- 2.1.8** Never exceed the maximum basket capacity, as indicated on the decals and machine serial plate.
- 2.1.9** Only operate the Niftylift on a firm level surface.
- 2.1.10** Never position any part of the Niftylift within the Minimum Approach Distances of any electrical power line, conductor, or similar stated in Occupational Safety and Health Administration Regulations for CFR 1910.333(c) for Minimum Approach Distance for electrical wires.
- 1910.333(c)(3)(i)(A)(1): For voltages to ground **50kV or below** - 10 feet (305 cm);
- 1910.333(c)(3)(i)(A)(2): For voltages to ground **over 50kV** - 10 feet (305 cm) plus 4 inches (10 cm) for every 10kV over 50kV.



THIS MACHINE IS NOT INSULATED.

If in doubt, contact the appropriate authorities.

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

- 2.1.13** Always remain standing within the basket. Do not attempt to increase your height or reach by standing and/or climbing on the basket guardrails or any other object. **KEEP YOUR FEET ON THE BASKET FLOOR.** Do not sit, stand or climb on the guardrail, 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.



- 2.1.13** To obtain the correct basket position above the ground when initially setting up the machine, use the base functions for booms and telescope to position the basket for safe entry.



THE BASKET FLOOR MUST BE WITHIN 400MM (16IN) OF THE GROUND WHEN ENTERING OR EXITING. DO NOT CLIMB IN OR OUT OF THE BASKET WITH THE BOOMS IN THE TRANSPORT POSITION.

- 2.1.14** Do not use the basket levelling system to artificially increase the outreach of the Niftylift. Never use boards or ladders in the basket to achieve the same result.
- 2.1.15** Do not use the Niftylift to lift overhanging or bulky items that may exceed the maximum capacity or carry objects that may increase the wind loading on the basket. (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 Niftylift Ltd in Great Britain approves the application in writing.
- 2.1.17** Always check the area below and around the basket before lowering or slewing to ensure that it 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 baskets operated in hazardous locations shall be approved and of the type required. (For the USA refer to ANSI/NFPA 505-1987.)
- 2.1.21** The operator shall immediately report to his supervisor any potentially hazardous location(s) (environment) which become evident during operation.
- 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 basket 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 basket.
- 2.1.27** Care should be taken to prevent rope, electric cords and hoses from becoming entangled in the aerial basket.
- 2.1.28** Batteries shall be recharged in a well-ventilated area free of flame, sparks or other hazards that 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 basket 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 basket, all personnel shall be removed from the basket safely before attempts are made to free the basket using ground controls.

Operating & Safety Instructions

- 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 that may cause fire or explosion. **PETROL (GASOLINE), LIQUID PROPANE AND DIESEL FUELS ARE FLAMMABLE.**

2.1.33



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

- 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 machines are limited to operation as previously described and any slopes must be adjusted by use of the outriggers. 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 such as freezers, food storage etc. and cooling limitations for high temperatures as oil temperature must remain between -23° and 93° Celsius.

Extended operation in dusty environments is not recommended and 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 also be removed.

All standard Niftylift machines are rated for a wind speed of 28mph or force 6 on the Beaufort scale. No attempt should be made to operate a Niftylift in wind strengths above this limit and if the operator has any doubts over the wind speed he / she should cease operation immediately until it can be established that the wind speed has fallen to a safe level.



DO NOT USE THE NIFTYLIFT IN ELECTRICAL STORMS

2.3 NOISE AND VIBRATION

The airborne noise emission on the TD34T range of machines does not exceed 85dB(A), measured at a perpendicular distance of 10m, 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/s².

2.4 TEST REPORT

All Niftylift machine models are subjected to a comprehensive 'type test' which duplicates all combinations of safe working load (SWL), overload, windage, inertia and pull force to assess the various safe stability criteria. Self propelled machines are also subjected to kerb and braking tests at the SWL to satisfy additional 'worse case' stability requirements.

Each individual machine is then subjected to static overload tests on flat level ground with 150% of the SWL, exceeding the requirements of EN280 for power operated MEWPs. Self propelled machines are also tested at the maximum working angle **plus** 0.5° with a test load of 125% of the SWL. Finally, on all machines, a functional test is performed with 110% of SWL.

All safety devices are checked for correct operation, operating speeds are checked against benchmark figures and the dynamic functions ensure that all acceleration and deceleration forces are within acceptable limits. All noted defects are rectified and recorded before the machine is permitted to enter into service.

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 hirer 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 basket is put into service.

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

*****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 Niftylift into service.



THIS IS NOT A REQUEST IT IS MANDATORY

To assist the user in this task you will find enclosed an Inspection Check List (see section 6.3), which must be filled out upon delivery/receipt of the machine.

Before the user carries out the Inspection Check List 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 PRE-OPERATIONAL SAFETY CHECK SCHEDULES

Before use at the beginning of the work shift, the aerial basket shall be given a visual inspection and functional tests including, but not limited to the following. It is recommended that these be performed at regular intervals as indicated on each checklist.

3.3.1 DAILY SAFETY CHECKS

- 1) Check that all labels (decals) are in place and legible.
- 2) Visually inspect the machine for damaged or loose components.
- 3) Check that battery is charged.
- 4) Check the fuel level (if applicable).
- 5) Check that canopies/covers and guards are in place and secure.
- 6) Check that the boom rest switch is operable (if applicable).
- 7) Check that control levers are secure and operate freely.
- 8) Check that operating buttons and emergency stop buttons function properly.
- 9) Check the operation of the manual hand pump.
- 10) Check that warning lights, beacons and sounders function correctly.
- 11) Visually inspect all hydraulic hoses and fittings for damage or leaks.
- 12) Check operation of the outrigger alarm.
- 13) Check that outrigger footpads are secure.
- 14) Check that the basket pivot pins and their tag bolts are secure.
- 15) Check security and operation of the boom clamp (if applicable).
- 16) Check the operation of the basket weigh system (If fitted). See section 4.5.3 for testing and verification procedure.

3.3.2 WEEKLY SAFETY CHECKS

- 1) Inspect tracks and wheels for damage and wear.
- 2) Check tracks for correct tension – see manufacturers' handbook.
- 3) Check battery fluid levels and specific gravity (after charging) and general condition.
- 4) Check hydraulic oil level, ISO Grade 32
- 5) Inspect the engine air filter and clean or replace if necessary.
- 6) Check operation and security of outrigger micro switches in conjunction with the alarm system.
- 7) Check operation of the tilt sensor.
- 8) Inspect hose track for damage or missing parts.

Operating & Safety Instructions

3.3.3 MONTHLY SAFETY CHECKS

- 1) Check the engine oil level (if applicable).
- 2) Inspect the engine fuel tank for damage or leaks.
- 3) Check the condition of the fuel filter and hydraulic oil filter.
- 4) Check hydraulic hoses for cracks, leaks, blistering and excessive abrasion.
- 5) Check outriggers for condition, security and operation.
- 6) Check that the boom rotation gearbox is secure and correctly in mesh. Clean and re-grease.
- 7) Grease the boom rotation gear ring.
- 8) Grease the knuckle and centre post.
- 9) Check telescopic boom wear pads and nylon studs (if applicable).
- 10) Check that the end cap on the main knuckle pin is secure and the roll pin is in place.
- 11) Lightly oil the outrigger pad ball joints, outrigger housings and locating pins.
- 12) Check and adjust if necessary the Nylatron studs around the telescope boom.
- 13) Every **Six** months perform a **thorough examination** in accordance with the 'Lifting Operation and Lifting Equipment Regulations' (LOLER) 1998, Regulation (9)(3)(a).

3.3.4 ANNUAL SAFETY CHECKS

- 1) Check that all pivot pins and their tag bolts are secure.
- 2) Inspect for any cracks or badly rusted areas on booms and chassis.
- 3) Change the hydraulic oil and the oil filters.
- 4) Check that boom rotation gear ring bolts are secure (torque 206ft lbs. 279Nm).
- 5) Check hydraulic pumps and motors for cracks and leaks, loss of operating speed, excessive heating of fluid and pressure loss.
- 6) Check hydraulic cylinders for drifting caused by fluid leak across the holding valve or piston, rod seal leakage, scored or nicked cylinder rods, dented barrel and unusual noises or vibration.

3.3.5 STRUCTURAL INSPECTION

A structural inspection is required to verify the structural integrity of critical components of the aerial platform and for its stability as originally manufactured in accordance with the Standard in effect at the time of manufacture.

It shall be performed **10** years after the date of manufacture and every **5** years thereafter or after any actual, suspected, or potential damage is sustained during an incident that could potentially affect the structural integrity or stability of the aerial platform. Such incidents can include electrical contact, shock loads, fall arrest, collision, or cases of overstressing or stability failure; and after a change of ownership, unless a complete service history is provided, including maintenance and inspection records.

The structural inspection shall be carried out under the direction of a professional engineer and must;

- a) consider the service history of the aerial platform in terms of hours of service, severity and number and variability of users;
- b) review the inspection and maintenance record of the aerial platform;
- c) verify the effectiveness of all operating controls;
- d) perform a visual inspection of the aerial platform; and
- e) consider recommendations of the manufacturer relevant to the aerial platform, including manufacturer's safety bulletins.

The structural inspection should use some or all of the following methods;

- a) visual inspection of structural welds;
- b) non-destructive testing of critical components; and
- c) stability tests where modification, alteration, or damage is suspected.

Visual weld inspection shall be performed and documented by a person qualified to the requirements of CSA W178.2 or by other persons qualified to the satisfaction of the authority having jurisdiction.

Critical, suspect areas and other inconsistencies identified shall be further examined by an appropriate non-destructive test method by a person(s) qualified to the requirements of CAN/CGSB-48.9712.

Operating & Safety Instructions**3.4 PLACARD, DECALS & INSTALLATION (UK/USA SPEC)**

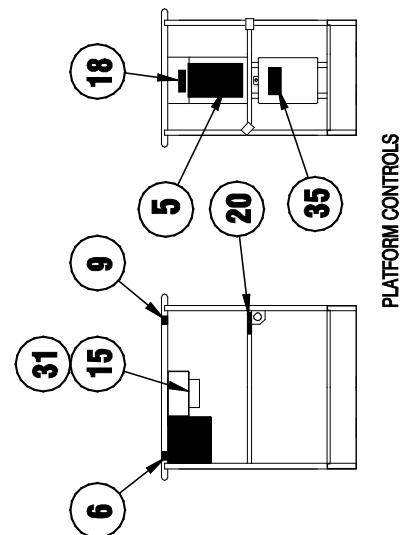
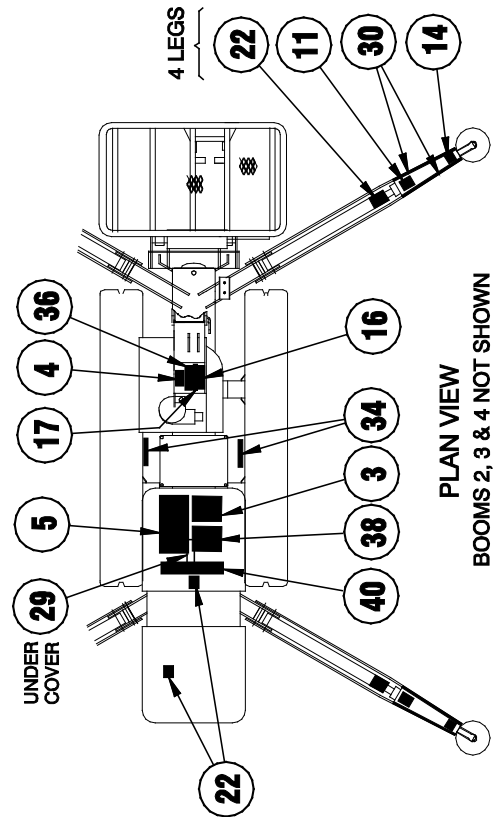
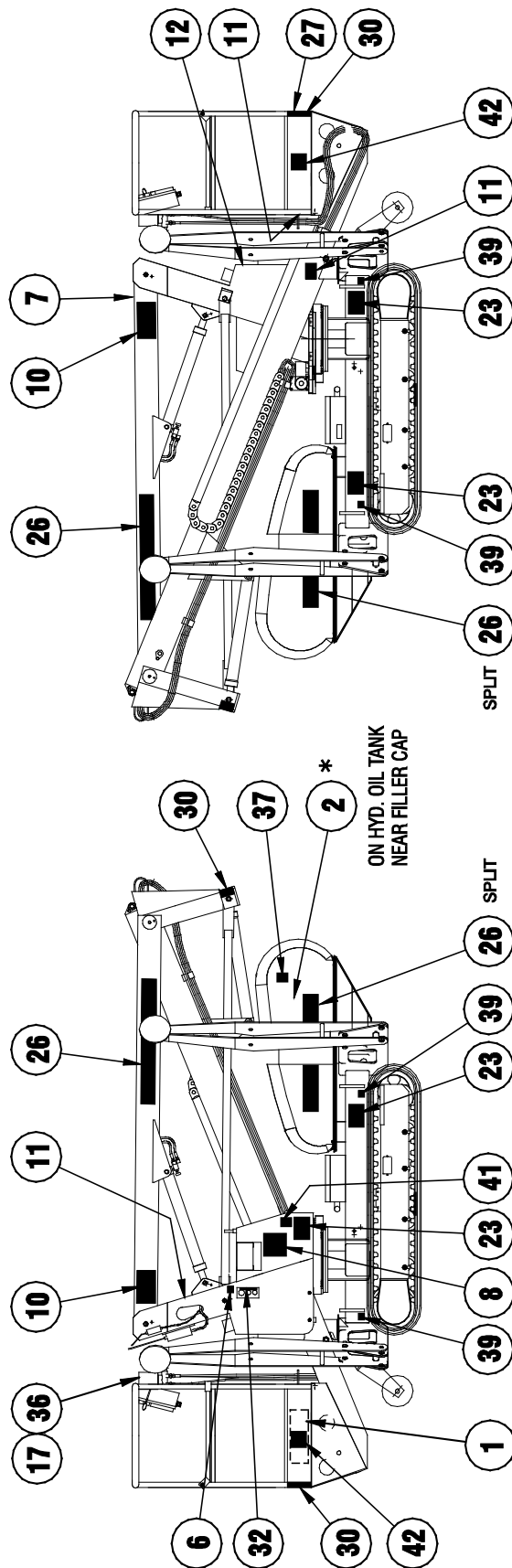
ITEM	DESCRIPTION	NUMBER	QTY
1	SWL 120kg/265lbs	P17245	1
	SWL 225kg/500lbs - 2 man cage	P17328	1
2	Hydraulic Oil	P14415	1
3	General Notice	P12941	1
4	Hydraulic Controls – 3 lever	P14926	1
5	General Warning	P21970	2
6	E-Stop Warning	P14864	2
7	Head Protection	P14921	1
8	Machine Plate	P15383	1
9	Basket Gate Warning	P18432	1
10	Rotating machinery	<i>USA Only</i> P15010	2
11	Crush Hazard	P14782	7
12	Diesel Fuel Only	P14414	1
14	Point Load 13kN	P14965	4
15	Hydraulic Controls – 5 lever	P14927	1
16	Manual Hand Pump	P19090	1
17	Outrigger Alarm	P18842	2
20	Harness Points	P14883	2
22	No Step	P14785	1
23	Outriggers	P14841	4
26	Nifty TDTD34TN	P17595	2
27	Niftylift.com	P14390	1
29	Tank Pressure	P16365	1
30	Black/Yellow Warning Stripes	N/A	A/R
31	Basket Levelling	P10853	1
32	Base Control	<i>Standard</i> P15881	1
		<i>Basket Weigh</i> P17219	1
34	Variable Width	P16366	1
35	Operating Instructions	P14892	1
36	Overload Warning	P18848	2
37	Noise Warning 85dB	P17124	1
38	Daily Safety Check List	P14908	1
39	Tie Down Point	P14958	4
40	Drive/Outrigger Recovery	P17569	1
41	Booms/Jacks changeover	P17571	1
42	Basket Tie-Down Warning	P21404	2

nifty

TD120TN/TD34TN Series

nifty TrackDrive (TD) Series

Operating & Safety Instructions



D81289/8

3.5 TORQUE REQUIREMENTS

SCREW QUALITY/SIZE		Tightening torque in ft lbs (Nm)		
Grade		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)
SLEW RING BOLTS	155ft lbs		210Nm	

4 Operation

4.1 OVERVIEW

4.1.1 CONTROL CIRCUIT COMPONENTS

CONTROL BOARD: - Situated under the canopy, the control board comprises a PCB (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.

KLAXON: - Also mounted on the base is a klaxon, which performs several functions: - Firstly, it can be used as a manual alert, by pushing the “Horn” button at the basket control position. Secondly, it is this device which sounds continuously is a jack goes light during operation, with the booms raised, warning the operator of this condition. It will also sound if the Ground Control Key switch is turned to “Basket” before the jacks are deployed properly.

BOOM-SWITCH: - Mounted on the side of Boom 2 near the knuckle and operated by contact with a cam on boom 3, this switch controls the changeover function between jacks and basket. The jack control function is not available unless this switch is engaged with the boom, ensuring that the machine must be stowed to operate the hydraulic jacks. It is also similarly linked into the basket control circuit, such that if the switch is not engaged with the booms, (i.e. machine is in operation) then the outrigger sensors are active and would warn the operator of an unsafe condition, should one of them loose contact with the ground. 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.

DIESEL ENGINE: - Generally a Kubota 722E engine, described in the maintenance section of the Workshop Manual, driving a single bodied pump with direct mounted pump dump valve.

CONTROL BOX: - Located adjacent to the Diesel engine, the control box combines all of the functions for Dual power operation (Bi-energy machines), as well as controlling the Diesel engine. 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.

LPG OPERATION: - On machines equipped for LPG operation (propane), the Honda engine will also have an LPG vaporiser, valve lock and micro-vac switch. 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 valve lock until the engine turns over, creating a vacuum on the inlet to the engine carburettor. The micro-vac switch then tells the valve lock 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 LPG, it should be ensured that all petrol is discharged from the carburettor bowl before changing to LPG, since the engine will not run satisfactorily if any petrol is in the carburettor bowl.

Operating & Safety Instructions

4.1.2 POWER SELECTION

The Kubota engine, AC power pack, hydraulic reservoir and starter battery are all packaged beneath a two-piece fibreglass canopy, sandwiched between the two front jacks. Cold-starting the engine (See section 4.3.1) is permissible from the side of the canopy, and once running, all controls are situated in the basket.

If the machine is to be used in an enclosed area, or within a domestic setting, the diesel engine can be switched off and AC power selected. The auxiliary motor is a 1.5 kW single-phase motor (refer to motor plate for voltage) driving a direct coupled 1,5cc gear pump. This can be manually selected to provide hydraulic flow to the Booms only.

Once plugged in, the electric motor will run whenever the basket Key switch is turned to the 'I' position. If the diesel engine is running, this will stop it. This interlock is there to prevent both power sources providing hydraulic flow at the same time. When the electric motor is running, hydraulic flow is available for switching to the Booms. This is achieved by using the same control system described previously. When directed to the Boom function, speeds are roughly the same as the diesel engine.

NB: If the diesel engine is needed for movement between work locations, it will be necessary to remove the mains plug from the socket, to allow the diesel engine to be started.

ALWAYS ALLOW THE ENGINE TO WARM UP BEFORE OPERATING.



4.1.3 MANOEUVRING

Once the engine is running, the operator can manoeuvre the machine from the basket. On entering the basket, the operator can now turn the selector to the right to enable the drive function. Pressing the green power button will energise the drive dump solenoids, at the same time bringing the diesel engine to full revs, if selected. If the drive paddles are moved up or down, the twin tracks will drive the machine in the desired direction. If the paddles are moved in opposition, the machine will turn. The control function of each control is fully proportional, in as much as the final speed will be dependant on how far the lever is moved. Two drive speeds are available, one being a 'fast' tick over and the other high throttle. This function is selectable from within the basket, but is also limited by the tilt transducer, such that high travel speeds become unavailable when excessive working angles are encountered. It is recommended that all ramp angles are approached at minimum revs, allowing the machine to climb at the best speed for controllability.

To halt the drive function, release either the Drive handles or the footswitch. The drive motors feature automatic braking for load holding on un-level ground, as well as flow control devices to prevent over-speed when driving down gradients.

If difficult terrain is to be tackled, the operator can walk alongside the machine in 'Pedestrian' mode and manoeuvre the machine whilst adjacent to the machine, simply by de-mounting the control panel. Two-travel speeds are available, the 'fast' mode being controlled by the on-board tilt transducer, which denies the use of high throttle when on an excessive slope. The Operator also has control of when high throttle is used, permitting the creep speed to remain under control. The drive system works from the panel mounted green button, controlling both the engine speed and the drive pump dump valve, for increased safety.

4.1.4 RAMPS AND INCLINES

The ability of the Track Drive machine to ascend and descend slopes of up to 60% (31 degrees) introduces a new level of complexity to the use and operation of the machine. The operator must now be additionally responsible for assessing the suitability of the terrain to be tackled. Although within the capabilities of the machine, some areas would be undesirable for access, and present a real danger to the operators themselves or other people around at the time. In order to ascend a slope safely, it is best if the incline is approached 'square-on' to the angle, in order to maximise the grip and ensure an even drive effort by both tracks. The operator can quickly judge the maximum permitted angle by comparing the maximum angle of the slope to the front angled plate on the machine. If the slope is steeper than the approach plate, then the angle is outside the capability of the machine. Under no circumstances should an excessive slope be attempted.

When driving up a slope, it is recommended that the machine drive forwards, when driving down a slope, again drive forwards down it. The operator should be aware of the response of the machine when reaching or departing the top of a slope. The machine will climb, or descend until the balance of the tracks places more of the weight beyond the point of contact with the ramp and the tracks. The machine will then topple forwards or backwards to meet the next level. If the operator is in the basket, this sudden change of level will cause a fast angular movement, which they will have to counteract. Ensure a firm grip is taken of the basket handrail, keep the legs loose and do not lock the knees, and release the drive joystick as the machine changes level. If the drive speed becomes erratic at any time, this can be due to operator-induced oscillations on the drive levers. In this case, release the levers, stabilise the machine and start driving again. Avoid sudden changes of drive lever position; a smooth driving action is much preferred.

When climbing steps, a further judgement will be needed as to whether the weight of the machine, or the traction required to climb or descend would cause damage. Many domestic installations feature soft edge strips or boards to provide the front edge of the step. These edging strips are unlikely to tolerate the action of climbing and might detach causing degradation of the steps themselves. More importantly, the edge reliability is critical to the tractive effort and if less than adequate might cause the machine to 'slew' sideways on a step rather than climb. The risks to the operator are obvious, whether in the basket or driving from the side. A stair built from flagstones or loose blocks is not likely to support the weight or accept the track movement over it. Loose ramps or ply sheets to spread the track forces can be used, but again must be securely anchored to prevent the tracks from 'gripping' the surface and shooting the boards out from under the machine.



The single greatest factor affecting the ability of the TD34T to attack any slope, incline or stair is **traction**.

If there is inadequate adhesion between the tracks and the surface to which the machine is presented **it will not climb**.

Operating & Safety Instructions

Driving across a slope is not recommended, but if this unavoidable then the outriggers legs can be used, if space permits. Deploying the downhill legs gives the operator a further protection against toppling, but with the additional risk of damage to the machine. Better safe than sorry.

4.1.5 VARIABLE WIDTH TRACK OPTION

It is recommended that whenever the machine is driven across a slope, or for added safety when climbing or descending, the tracks should be extended to their maximum width. To achieve this, the basket selector switch is left in the 'Track Drive' position, (i.e. to the right). Then using the variable width toggle switch with the green button, the tracks will extend to their maximum width and stay in this position. To change back to minimum travelling width, the toggle switch can be used in the reverse direction, again in conjunction with the green button. When minimum width is achieved, the tracks will again stay at this width. The Operator should make any adjacent personnel aware of the machine operation, particularly in respect of the extending tracks, and ensure that no one is close enough to the machine when the tracks are moving in or out. If a track 'digs in' whilst changing width the machine can slew slightly along its length and could cause injury.



Minimum width – Track in.



Maximum width – Track extended.

4.1.6 OUTRIGGERS

The four outriggers are deployed using the individual switches on the basket control box. Each lever controls the movement of an outrigger leg, their relative positions being indicated by their position on the control box. To allow the outrigger circuit to generate flow to the individual legs, the selector switch is moved to the left position. This diverts flow to the outrigger circuit and at the same time energises the boom/jack dump valve. If high throttle is selected, the engine will go to high revs, allowing the four outriggers to be deployed in the best possible time. As the feet reach the end of travel, the high throttle control can be turned 'off' allowing fine positioning of each leg and assisting in the levelling process. The machine should be levelled using the indicator mounted on the machine base, clearly visible between the outrigger controls and the basket edge. If necessary, each jack foot should have a spreader plate inserted beneath it to spread the foot load and prevent sinking. The machine must be set up level before the booms are elevated, on firm ground or with the working area adequately consolidated.

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



4.1.7 BOOM CONTROLS

As soon as all four outriggers are making contact with the ground, the four sensing switches will activate allowing the Booms to be elevated. If the Ground Station Key Switch is turned to the 'On' position, the adjacent green button will allow the Booms to be moved, using the Ground control levers. At the same time, the controls in the basket would be inoperable. Turning the Ground control Key Switch to the 'Off' position allows the Basket controls to be used to elevate the Boom using the basket controls. As soon as the Booms are raised sufficiently to clear the 'booms-down' switch, the outrigger controls are isolated, preventing any ground personnel from taking control of the outriggers, when elevated. At the same time, the drive control levers also become isolated.

The machine can now be manoeuvred through its entire working envelope, allowing the operator to ascend to a working height of 40' and an outreach of 20'. The boom rotation control gives an effective rotation angle of 406 degrees (203 each way from rest.) allowing the machine to project further over the nose of the machine. It is necessary to return back the opposite way to stow the machine before raising the outriggers.



When the machine is fully stowed, with the booms in-line with the major axis of the machine, the four outriggers can be raised, reversing the controls used previously. If the machine is being moved a short distance over a level surface, or for fine positioning of the outriggers themselves, the outriggers can be left down and the Drive function used at the same time. This imposes a greater level of responsibility on the operator to ensure that all areas are clear and particularly that any ground personnel are aware of the movement of the machine. Ideally the operating area should be coned off whilst this is achieved.

4.1.8 EMERGENCY CONTROLS

Emergency descent and/or machine recovery is achieved by the use of the standby hand pump, mounted on the base of Boom 1. This can accommodate all functions, although the drive system would require more flow than would be apparent.

The Ground controls are located primarily to permit the machine to be recovered if the operator is unable to manoeuvre the machine himself. The second key turns the ground station 'On' and the Basket controls 'Off' allowing the machine to be moved using the ground controls.

The Manual hand pump can be used to move the machine in all directions permitting recovery of the elevated booms and personnel. Attention should be given to the direction of recovery of the Niftylift, since the hand pump gives the ground operator the ability to manoeuvre the machine in all planes, including rotating towards or lowering into a potentially unstable area. It is always recommended to evaluate the nature of the emergency before recovery is attempted, and if appropriate, the machine can be moved to limit the projection of the booms in the prohibited direction.

Once stowed, the outriggers can be fully raised to enable the machine to be recovered for attention, although it might be desirable to leave the front outriggers deployed to permit the canopies to be removed. The over-ride levers, situated on the proportional control block are used in conjunction with the hand pump to operate the outriggers manually. The Manual hand pump does allow the drive controls to be operated, although minimal flow would be available in any event.

If the diesel engine requires 'jump' starting, external connection points are provided adjacent to the starter battery on the vehicle nearside. Connecting a separate 12V battery of adequate size to the terminals provided, positive-to-positive, negative-to-negative, will allow the Diesel Key switch to turn the engine over, even in the event of a dead on-board battery. Once started, the jump leads can be removed, the engine giving sufficient feed to the starter battery to recover and also power the control circuit. The diesel engine should not be allowed to stop until sufficient charge has been restored to the battery, otherwise another 'jump' start would be needed.

Shutting down all functions is possible by depressing the Emergency stops, positioned at both basket and ground control stations. The diesel engine can be stopped in a similar fashion, or by turning off the selector key in the basket or the diesel Key switch. Selection of the power source is only possible from the basket, effectively interlocking the two available options.

4.2 SETTING UP PROCEDURES

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



TRACK DRIVE MODELS ONLY

- 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 ground, bearing in mind range of boom movement so that any overhead obstructions or possible hazards such as, but not limited to, power cables, telephone lines, drains, manhole covers, etc. can be safely avoided
- 3) If the load bearing capacity of the ground is in any doubt the machine must **NOT** be used.
- 4) Levelling the machine using the hydraulic outriggers can accommodate a slope of up to 12 degrees, if necessary using suitable load bearing pads to support the downhill jacks. Do not elevate the platform unless the base can be corrected to within three degrees of level.
- 5) Cordon off area using appropriate cones, barriers and flags, (if applicable).
- 6) Check all red emergency stops are not engaged (i.e. fully out).
- 7) Ensure that the key switch at the ground control station is turned to the "Basket" position.
- 8) From the basket control station, turn the three position selector to the left 'Outrigger' position, press and hold the Green Button to give hydraulic power to the outriggers and select the appropriate control switches. Note: No power will be available if the booms are not fully stowed.
- 9) Using the four outrigger control switches, lower each outrigger onto a firm, level surface and level the machine base ensuring each outrigger foot is taking equal weight with the tracks clear of the ground.
- 10) Check that the base is level using the spirit level on the machine base.
- 11) Turn the three position selector to the centre 'Booms' position. The booms can now be operated from the basket or ground control station by use of the green button, or by depressing and holding the base green power button. Note: If no power is available, check that each outrigger is lowered and each footpad is taking equal weight.
- 12) Always lower booms fully before adjusting, raising, retracting or moving the outriggers in any way.
- 13) Never alter, modify or block any of the safety circuits on the Niftylift.



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

Operating & Safety Instructions

4.3 GROUND CONTROL OPERATION

ALWAYS ALLOW THE ENGINE TO WARM UP BEFORE OPERATING.



4.3.1 GROUND CONTROL INSTRUCTIONS

ALL MODELS

- 1) Check below, above and around the basket for any obstructions or hazards before operating any function.
- 2) Ensure all red emergency stops are out.
- 3) Turn the key switch at the ground control station to the “ON” position (i.e. clockwise).
- 4) Battery/Electric models go to step 11).

DIESEL ENGINE OR BI-ENERGY MODELS

- 5) Turn the main engine ignition switch, located on the side of the canopy through “ON”, to the “ST” (start) position and the engine will fire.
- 6) Go to step 11). Note – Unless the diesel engine is running, the TD34TN will automatically default to the primary power source (usually mains AC)

PETROL (GASOLINE) ENGINE OR PETROL (GASOLINE)/ELECTRIC MODELS

- 7) For a cold engine start go to step 8) or for a warm engine start go to step 9).
- 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.
- 10) Go to step 11). Note – Unless the petrol engine is running, the TD34TN will automatically default to the primary power source (usually mains AC)

ALL MODELS

- 11) Push and hold green power button.
- 12) Select the boom function required and operate hand levers in full accordance with manufacturers Operating and Safety manual.
- 13) When not in use return machine to stowed position, fully raise and stow all outriggers, turn the key to the “OFF” position (i.e. anti-clockwise) and remove key.

EMERGENCY PROCEDURES

- 1) Push in red emergency stop to shut down all functions.
- 2) Use manual hand pump to provide motive power and manoeuvre the machine as normal using the hand levers (Basket or Base).

4.3.2 BOOM FUNCTIONS

- A) Push and hold green power button.



- 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 Boom Rotation	UP for right	DOWN for left

** (If applicable, Ground control of telescoping is optional)



ALWAYS ENSURE THE NIFTYLIFT IS ON A FIRM 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.

Operating & Safety Instructions

4.4 BASKET CONTROL OPERATION



NEVER START THE NIFTYLIFT IF YOU SMELL PETROL (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.

*****FOR COLD START PROCEDURES SEE SECTION 4.3.1*****

ALWAYS ALLOW THE ENGINE TO WARM UP BEFORE OPERATING.

4.4.1 BASKET CONTROL INSTRUCTIONS

ALL MODELS

- 1) **NEVER** exceed the maximum basket capacity.
- 2) Check below, above and around the basket for any obstruction or hazards before operating any function.
- 3) Ensure all red emergency stops are out.
- 4) Remove the key from the ground control station (turn to “OFF” position) and turn the selector in the basket to “ON”.
- 5) Battery electric models go to step 8).

DIESEL ENGINE OR BI ENERGY MODELS ONLY

- 6) Ensure that the main engine ignition switch is “ON”. Turn the “Engine Start” switch on the basket control box clockwise and the engine will fire.
- 7) Go to step 8). Note – Unless the diesel engine is running, the TD34TN will automatically default to the primary power source (usually mains AC).

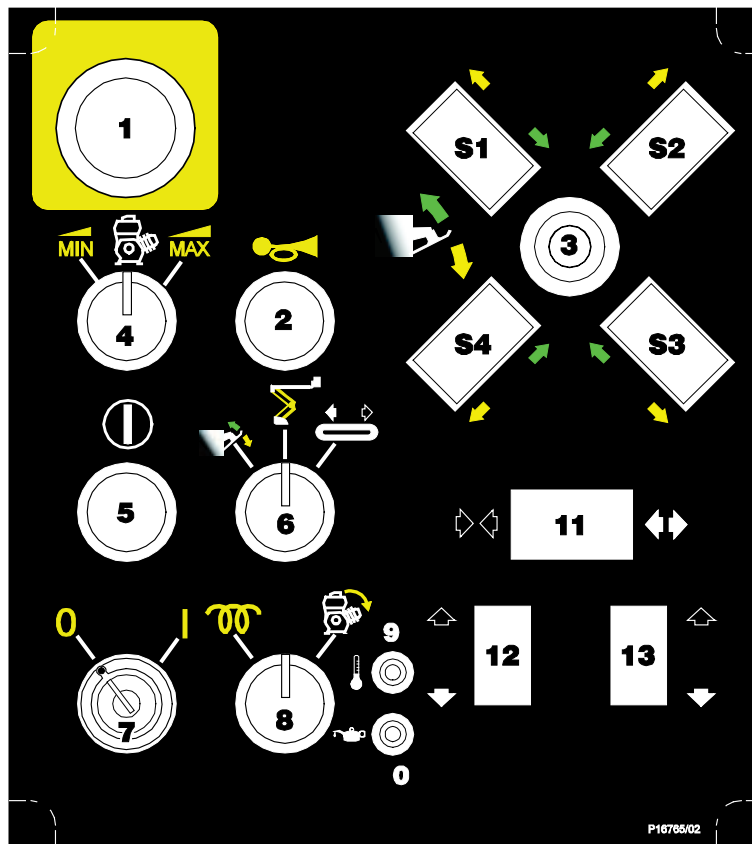
ALL MODELS

- 8) Push and hold green power button.
- 9) Select the boom function required and operate hand levers in full accordance with manufacturers Operating and Safety manual.
- 10) When not in use return machine to stowed position, fully raise and stow all outriggers, turn the key to the “OFF” position (anti-clockwise) and remove key.

EMERGENCY PROCEDURES

- 1) Push in red emergency stop to shut down all functions.
- 2) Use manual hand pump to provide motive power and manoeuvre the machine as normal using the hand levers (Basket or Base).

BASKET CONTROL STATION



- 1) **Emergency Stop Button** – Push to operate, twist knob to re-set to the ‘Out’ position.
- 2) **Horn** – Operates audible alarm.
- 3) **Tilt Alert** – Illuminates when excess drive angle is detected. High speed drive is lost until machine returns to level.
- 4) **Max RPM Selector** – Switches between the High and Low Rev setting on the engine. High speed is not available if booms are in operation or machine is driven on an excessive slope ($>10^\circ$).
- 5) **Power Control Button** – Press and hold Green button to enable machine.
- 6) **Duty Selector** – Three position control allows operator to select between:-
 - Left:** Jacks/ Outrigger operation
 - Centre:** Booms only
 - Right:** Track Drive and variable width control.
- 7) **Selector switch** – Turn to ‘On’ position to enable machine controls.
- 8) **Glow/Start Selector** – Turn to the left and hold for 3 – 4 seconds to energise the glow function before starting. Turn to the right to fire the engine, release when engine fires.
- 9) **Water Temperature** – Illuminates if coolant temperature is too high.

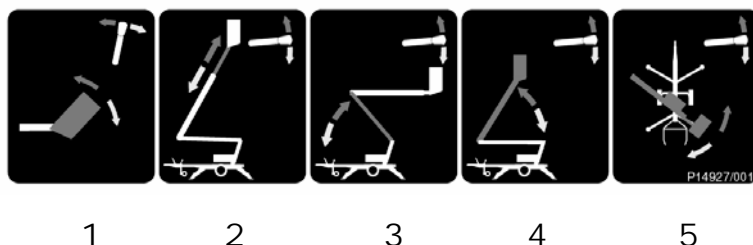
nifty TrackDrive (TD) Series

Operating & Safety Instructions

- 10) **Engine Oil Pressure** – Illuminates and buzzer sounds if pressure drops. Check oil level. Note; Will also activate when Selector (7) is turned 'ON', until engine has been started and run to achieve correct pressure.
- 11) **Track Width** – Increases or decreases width of tracks when used with Power Control Button.
- 12) **LH Track Direction** – Switches between Forward and Reverse.
- 13) **RH Track Direction** – Switches between Forward and Reverse.

4.4.2 BOOM FUNCTIONS

- 1) Push and hold green "Power Control" button



- 2) Select lever 1, 2, 3, 4 or 5 for desired function

1 Operates Basket Lev.	FWD for forward	BACK for back
2 Operates Telescope	UP for out	DOWN for in.
3 Operates Lower Boom	UP for up	DOWN for down
4 Operates Upper Boom	UP for up	DOWN for down
5 Operates Boom Rotation	UP for right	DOWN for left



IF ALARM SOUNDS, DESCEND IMMEDIATELY AND RE-LEVEL THE MACHINE BASE USING THE FOUR OUTRIGGER CONTROL LEVERS

4.4.3 PROPORTIONAL BLOCK

The proportional block and adjacent green button, serve to provide a manual override for the outrigger and variable width controls. This function permits a machine to be stowed for transport if the basket controls become inoperative for any reason. The Green button, situated inside the canopy, becomes operative only when the base control key switch is switched to the "ON" position and the basket selector is in the tracks position. If the canopy green button is depressed, the Base control green button is switched out, and vice-versa. Pushing and holding the green button energises the hydraulic circuit providing flow for the proportional block. Moving the selected lever forward or backwards allows individual control of each outrigger leg. Great care should be taken when using these controls to ensure that adjacent personnel and particularly the operator themselves are not in the vicinity of the leg being raised. Similarly, when using the variable width control, care should be taken when standing adjacent to the machine. Control of the drive function is not recommended, nor is it possible with the ground controls, due to the risk of entrapment.

When the control key switch is in the "OFF" position, the canopy green button is rendered inoperative, and the proportional control block is available only from the basket controls.

4.5 TRANSPORTING, CRANEAGE, STORAGE AND SETTING TO WORK

4.5.1 TRANSPORTING

If the Niftylift is to be moved over a longer distance, whether the machine is trailer mounted, vehicle mounted, self propelled or tracked, the following procedure should be read before restraints are attached to the machine. Cross loading is most frequently the cause of problems, as the method of loading is no longer in sight of our own personnel. The recommendations made herein should be passed on to subsequent carriers, such that the entire journey is carried out without incident.

- 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**.
- When loading or un-loading from the side of the vehicle, the use of the forklift pockets to retain one of the forks is recommended. (If fitted). Spread the forks to their widest capacity, with due regard to the components fitted to the machine. Never forklift or crane an entire machine under the booms, always lift beneath the spine or under the ends of the axle mountings in the case of a self-propelled unit. Ensure forklift is adequately rated for the load to be carried.
- Once positioned on the transport carrier ratchet straps should be used to secure the machine. The machine should be positioned to allow easy access around the machine in transit, and to ensure that 'creepage' during transport does not permit the machine to come into contact with other goods being shipped, or the container itself. Some movement of the machine structure might occur during transit, which could lead to fretting or other damage.
- If the machine is equipped with a transit device such as a boom clamp etc, this should be securely applied.
- Strap booms carefully to constrain them from sideways movement. When using straps or chains, adequate packing should be applied to stop any damage to the structure and paintwork. Due regard of the movement of the straps or chains must be taken into account.
- Where a machine has designated points for strapping, lifting or forking, these can be used for tie-down duty. When they are absent, the major structure of the Niftylift can be used, giving due consideration to the design and function of the area chosen. Where possible, use the spine of the machine or axle mounts over which to apply the holding down forces. Using a single plate, such as an outrigger or outrigger support plate might be unsuitable. If the component was clearly not designed to accommodate a side load, one should not be applied.
- Under no circumstances should straps or chains be applied over booms or through the basket support structure or the basket itself. The relative strength of the carrying structure is not conducive to the massive forces capable of being applied through ratchet chains or slings. Severe damage to the steelwork can be caused, as well as deformation to sensitive mechanisms such as basket weigh assemblies, which would render them useless. Such catastrophic damage to say, an electronic load cell would require the component to be replaced before the machine would function.

4.5.2 CRANEAGE

- 1) Observe all of the limitations relating to straps and chains stated above under 'Transporting'. (Section 4.6.1)
- 2) When utilising the designated lifting points never apply a 'snatch' load, i.e. lift slowly to take up the load before raising. Similarly, do not drop machine when positioning after lifting.
- 3) If the machine is to be lifted by crane, use the designated lifting points and observe the recommendations regarding spreader beams. Individual drawings are available for each machine type, on request. (See list below.)

D80932

TD34T

4.5.3 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 Niftylift is intended, an occasional "top-up" charge of the batteries will serve to equalise their charge level.
- 3) Leave diesel engine switch in the OFF position to prevent discharge of batteries through leakage.
- 4) If Niftylift is to be left on an incline, chock the track to prevent creep.
- 5) If the Niftylift is to be left out-of-doors or in a hostile environment, cover with suitable weatherproof media to prevent deterioration.

4.5.4 SETTING TO WORK

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

- 1) Check all lubrication points for adequate application of grease, oil etc.
- 2) Inspect all threads for ease of operation.
- 3) Check level and quantity of oil. Remove any contaminants - water, etc.
- 4) Check batteries for electrolyte and state of charge.
- 5) Check electrics for damage and 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.

- 9) On completion of an extended period of road transport, the machine might need additional inspection to identify any transit degradation, which could render the machine unsafe. Perform a P.D.I. inspection on the unit before it enters service. Record any faults found and rectify them immediately.
- 10) If left un-attended for an extended period, it is likely that the hydraulic basket levelling will become un-pressurised. Normal operation is then lost, with a noticeable delay in the forwards or backwards motion as the booms move. To restore normal function, the basket needs to be fully levelled forwards and backwards, using the basket-levelling lever whilst not standing in the basket (i.e. with the operator standing adjacent to the basket side whilst simultaneously operating the lever and green button to move the basket). Take care not to become trapped between the moving basket and a fixed object, and ensure those around you are clear of the moving basket. When the system has been charged in both directions, the basket levelling function should be restored. If the system operates but is 'jerky' in either direction, this indicates air in the system. Repeat the procedure as described above until the movements are smooth and un-interrupted. If in doubt, contact our Service Department for further advice.

Niftylift Limited is not liable for any third party damage caused during transport. Careful attention to correct procedures will prevent many of the small snags that can happen in transit. Re-work is both expensive and time consuming. A defective machine arriving at the place of work is a poor advertisement for our product, the company's reputation and those of our dealers and clients. The responsibility for safe and damage-free transport rests with the haulier or his representatives.

5 Emergency Controls

5.1 GENERAL

CHECKING THE OPERATION OF THE EMERGENCY CONTROLS EVERY DAY AND/OR BEFORE EACH SHIFT IS AN ESSENTIAL PART OF THE OPERATOR'S DUTIES



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 the key switch selector at ground control station to ground (i.e. fully down). Lower on ground controls as detailed under section 4.3 Ground Control Operation.

5.3 IN THE EVENT OF MACHINE FAILURE

Operate manual hand pump (located adjacent to the base controls) and lower basket to the ground using either basket or base controls. If initial movement of the machine allows the master alarm to reset, normal controls will be available. This is then the fastest method of lowering the basket to the ground.



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

5.4 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.

6.2 MANUAL OF RESPONSIBILITIES

You are required by ANSI/SIA 92.5 2006, to read and understand your responsibilities before you use or operate this Niftylift.

Please read the enclosed document, as failure to do so could result in death or serious injury.

Wherever any contradiction may appear, the Manual of Responsibilities shall take precedence over all other documents.

6.3 Inspection/Service/Pre-Hire Check list

MACHINE SERIAL NO _____

TOWING	PASS	FAIL	N/A
Machine secured on trailer			
Straps correctly positioned and tightened			
Machine chocked if necessary			
TRACK ASSEMBLY			
Tracks are complete and engaged with drive sprockets			
Track tension correct – grease in tensioner			
Machine climbs slope			
Brakes hold machine on slope			
BASE			
Operation of base control valve and buttons			
Operation of all booms over full range			
Wheel bearings OK			
Cylinders are silent			
Basket is level over full range			
Booms, levelling rods not damaged or distorted			
Booms levelling rods, cylinders not fouling			
Hoses not tight, kinked or fouled			
Operation of manual hand pump			
BOOM ROTATION			
Rotation assembly and motor are secure			
Gearbox mesh correct, no excessive wear			
No excessive back-lash			
Rotation gear wheel bolts secure			
Rotation gear guards secure			
BASKET			
Operation of control valve and buttons			
Levelling lock valve holds in both directions, lines vented			
Operation of all booms over full range			
Cylinders are silent			
Basket levelling over full range			
Boom rotation smooth over full range			
Operation of boom 4 over full range (if fitted)			
No excessive movement of boom 4 and boom 3			

Operating & Safety Instructions

TILT ALARM	PASS	FAIL	N/A
Machine driven on to excessive slope - drive disabled, siren tone constant			
Hi drive operation affected			
Return to level ground – Hi drive restored			
INTERNAL (POWER PACK)			
Power pack and all components secure			
All cables and terminals secure			
All hose connections secure			
Hoses not kinked or fouled			
Charger/control box secure			
Battery secure			
Electrolyte level and specific gravity			
Hydraulic oil level			
Engine/Gear box oil			
FINISH			
Pivot pin tag bolts			
Correct decals, all visible			
Canopy/bonnets			
Grease nipples (Feet, Knuckle, Centre Post)			
LEAK CHECK			
Cylinders (Lift, Jacks, Telescope, Levelling)			
Control valves			
Check valves			
Power pack/pump			
Boom rotation motor			
Hose connections			
Filter			
Tack Motors			

Comments, remedial work required etc:**INSPECTED BY:** _____**DATE:** / /