OPERATING MANUAL

15VM

SERIAL No
DATE OF MANUFACTURE:

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CONTENTS OF MANUAL

SECTION 1

TECHNICAL SPECIFICATION

15VM VAN MOUNT

GENERAL

This is our multi-purpose 15m maximum working height access platform mounted onto a free issue vehicle of 5200kg GVW and approximately 3.3m wheelbase. (Exact details of vehicle to be agreed prior to an order).

The zero tail-swing plus two independently operated booms and telescope arrangement gives excellent controllability when manoeuvring.
The design concept includes for oversized structural elements coupled to sensitive, direct hydraulic, controls making the machine feel safer and simpler than its contemporaries when being operated whilst requiring the minimum of maintenance.

The unit is generally as shown on our enclosed LEAFLET
but specifically as described below:

PERFORMANCE

SWL	230kg
Max working height	14.5m
Max platform height	12.5m
Max. working outreach	7.7m
Cage dimensions	0.8m x 1.3m x 1.1m high
Closed height	3.5m
Closed width	vehicle width
Travelling length	7.4m
Weight of unit	3700kg including vehicle (approx.)

CAGE

Generously proportioned for two men plus tools working, the cage is formed from GRP, complete with a molded finger guard around the upper edge and fitted with safety harness anchor points.
An access/ egress aperture is provided on the kerb-side of the unit.
Basket insulation will be provided and a Certificate of Testing for safe use at 1000v will be provided.
The cage features a 150mm high kickboard and a non-slip floor.

BOOMS

Two independently operated booms and a telescope section are featured, fabricated from structural steel channels seam welded sections. Both booms assemblies have their movement restricted by mechanical stops fitted into the hydraulic lift cylinders thereby eliminating the need for limit switch mechanisms. The telescoping boom is fitted with an outreach limiting device A robust hook provides a solid location for boom stowing whilst traveling.

TURRET

A pedestal mounted turret platform is provided. Formed from a thick walled structural circular hollow section.
An oversized pin sits between the booms and the turret.
A large slewing ring, driven by a hydraulic worm gearbox and pinion connects this unit to the chassis.

CHASSIS

Formed into a ladder frame from deep hollow sections, this unit features a low pedestal providing a connection point for the turret.
Two inclined jacks are incorporated in the assembly. Pockets in the chassis house the hydraulic components.

CONTROLS

The machine is fitted with inclined jacks that are controlled from the vehicle cab. The jacks are fail safe in principle preventing the platform from operating unless both are in firm contact with the supporting surface.

Basket controls of the direct hydraulic proportional type, give very smooth control of the platform throughout its operating range.
Engine start/stop is provided at each operating location.

EMERGENCY CONTROLS

A DC power pack is provided in case of engine failure. Driven via the vehicle battery there is enough capacity to return the platform and outriggers to the transport position.
Manual rotation and boom down can be effected at both the cage and the base.

INTERLOCKS

- Booms cannot be raised until jacks are correctly deployed.
- Jacks cannot be operated unless booms are in transport position.
- PTO cannot be engaged unless handbrake is on.
- If engine is running starter cannot be engaged from the platform.
- Emergency power-pack operation will automatically shut down the vehicle engine.

In addition to the above warning lights are provided indicating:

- Booms not stowed.
- Jacks not stowed.
- PTO on.

HYDRAULICS

The hydraulic system is of failsafe design throughout with direct mounted load control valves fitted to all cylinders as a precaution against hose failure.
The hydraulic power take off on the vehicle draws from a large capacity hydraulic oil tank.
Filters are provided for suction and return lines. Pressure limiting valves are provided where appropriate.

SAFETY

The machine is designed in accordance with the requirements of the European machinery directive and will be provided with a “CE” mark.
Testing of the unit will include a 150% overload test with the machine set up in its most unfavorable condition and a witness certificate provided.

STEELWORK PROTECTION

All steelwork will be shot-blasted prior to painting primer/undercoat and gloss finish. Typical paint thickness 90 to 110 microns.

PINS, BUSHES AND FITTINGS

All pins are stainless steel running in bushes that can be greased. All fittings, nuts and bolts are plated against corrosion.

SECTION 2
SAFETY SECTION

THIS SECTION OF THE MANUAL CONTAINS GENERAL SAFETY INFORMATION FOR ALL PERSONS WHO HAVE ACCESS TO THE MACHINE (MACHINE OPERATIVES, MAINTENANCE PERSONNEL, ETC).

TO ALL PERSONNEL:

Before the machine is unloaded from the transportation and unpacked, and before it is released into service, ASCENDANT ACCESS LTD recommend that this safety section should be read and fully understood by all individuals involved.

GENERAL SAFETY COMMENTS

THE OPERATOR

- Must be medically fit and have good eyesight and hearing. Any medical condition that may effect the safe use of this access platform must be reported e.g. epilepsy heart disease etc.
- Must have a good head for heights.
- Must have been trained in the safe use of access platforms, hold a current certificate and be fully conversant with the content of this manual.
- Must be very aware of the safety requirements concerning the persons working with them and the persons in the general vicinity of the access platform.
- Must not use this piece of equipment for any purpose other than that for which it was intended
- Must carry out the necessary pre-start checks as described in section of this manual and must not operate the platform should it not be in first class condition.

Warnings

DO NOT operate this platform:

- On surfaces that are sloping, not hard standing or slippery without adequately supporting the platform. The 15VM has been designed to work on surfaces with a minimum bearing strength of 25N/cm^2
- With items likely to increase the wind loading on the platform above acceptable levels e.g. notice boards etc.
- With any equipment in the cage likely to increase the working height or outreach e.g. ladders.
- For any special purpose that may produce special loads or forces. Any such application must be discussed with the manufacturer and their approval given.
- Near or close to live electrical conductors. The minimum safe distance for the KV11 is 21.3m measured from the centre of rotation of the platform to the power lines. It is the operator's responsibility to ensure this safe distance is maintained.
- Should it be necessary to work closer to the power lines then the operator must ensure that the power has been switched off before attempting to work, a written permit to work must be obtained from owners of the power cables or the responsible Persons.
- Unless there is a current certificate of safe use of the platform issued by a competent person.
- Into the path of oncoming traffic when working on a public highway.

MAXIMUM WIND SPEED

BEAUFORT WIND SPEED SCALE

The Beaufort wind speed scale is accepted internationally and is used in communicating weather conditions. It consists of numbers 1 to 17 each representing a certain velocity of wind at 10m above the ground in open conditions.

DESCRIPTION OF WIND	SPECIFICATION FOR USE ON LAND	SPEED (m/s)
0 CALM	Calm, smoke rises vertically	0-0.5
1 LIGHT AIR	Direction of wind indicated by smoke but not by weather vanes	0.6-1.5
2 LIGHT BREEZE	Wind felt on face, leaves rustle, ordinary vanes moved by wind.	1.6-3.0
3 GENTLE BREEZE	Leaves and small twigs in constant motion, wind extends light flag.	3.5-5.0
4 MODERATE BREEZE	Raises dust and loose paper, small branches are moved.	6.0-8.0
5 FRESH BREEZE	Small trees in leaf begin to sway, wavelets form on inland waterways.	9.0-10.0
6 STRONG BREEZE	Large branches in motion, umbrellas used with difficulty.	11.0-13.0
7 NEAR GALE	Whole trees in motion, inconvenience felt when walking into wind.	14.0-17.0
8 GALE	Breaks twigs off trees, generally impedes progress.	18.0-21.0
9 STRONG GALE	Slight structural damage occurs. (chimney pots and slates removed).	22.0-24.0

Approximate corrections for wind speeds at other heights: 2m subtract 30%, 3m subtract 20%, 6m subtract 10% 15m add 10% and 30m add 30%

The maximum wind speed for safe operation of 15VM is 12.5m/s (Beaufort scale 6)

SECTION 3
OPERATOR GUIDE

SAFETY

Please read Section 2 (SAFETY) of this manual.

1. PRE-START CHECKS

The following pre-start checks must be carried out before operating the platform.

- Hydraulic fluid
  The oil level in the tank must be full when the platform is in the transport position.

- Cut out switches
  All cut-out and safety switches must be working correctly.

- Emergency stops
  Check that the emergency stops are operating correctly and that they are all in the run condition.

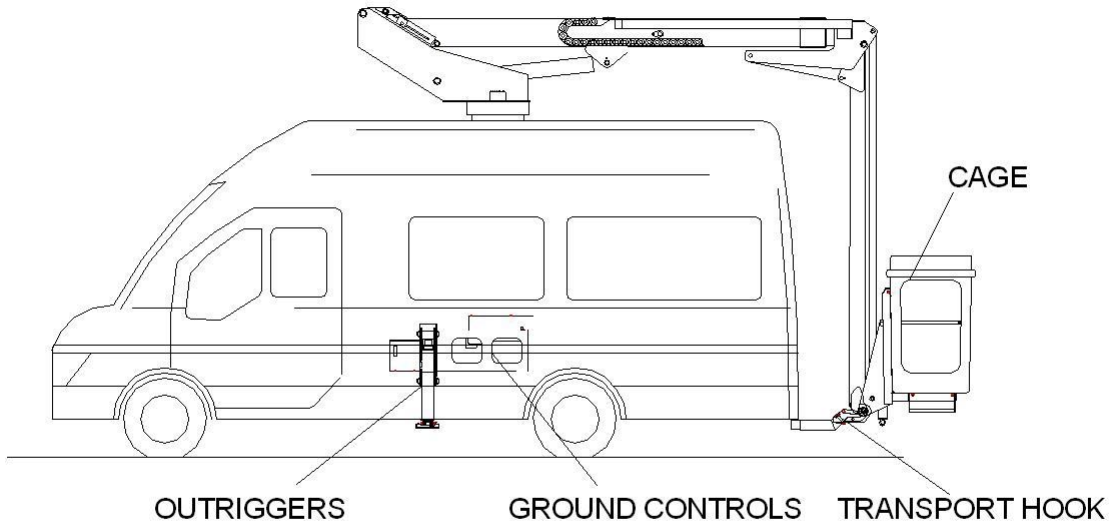
- Damaged/loose fittings
  Inspect the machine to ensure there are no signs of damage or loose hoses and fittings.

- Vehicle
  Check that there is enough fuel in the vehicle for a full shifts work.

∞ Outreach limiting device
With the machine set up.

1. Telescope out until the boom stops. It should stop after approximately 300mm of travel with the main boom horizontal. It should be possible to telescope back in or raise the main boom.
2. With the telescope in this position raise the main boom approximately 45Deg. It should be possible to telescope out further. With the telescope out at this point it should not be possible to lower the main boom past 45Deg without telescoping back in.

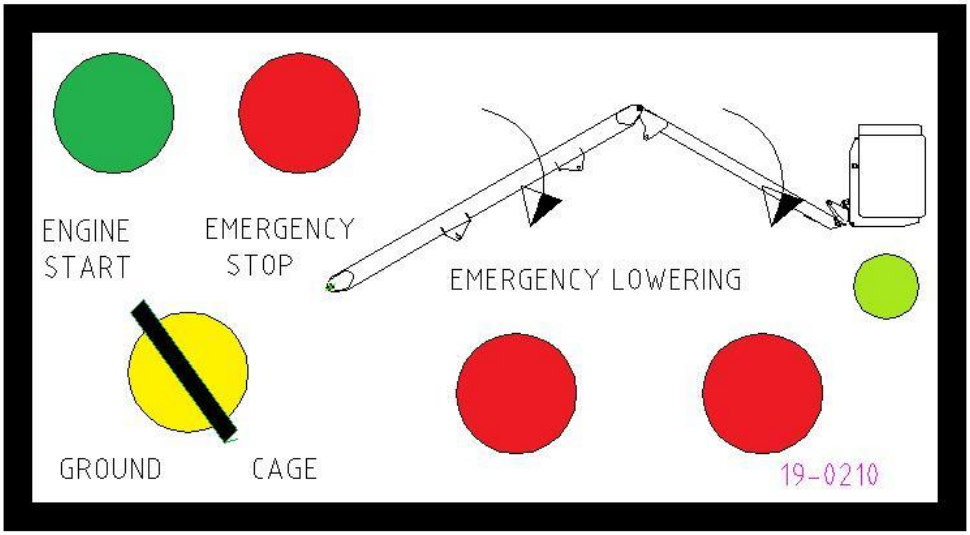
If the above sequence of operation is not possible do not use the machine as there is a fault.



2. SETTING UP

Do not attempt to set up the machine on steep slopes, ramps or soft ground.

- Park the vehicle in an appropriate location, remove from gear and apply the handbrake
- . Ensure that the working area of the platform is coned off.
- Depress the clutch and “pull on” the PTO (located on the left hand side of the driver’s seat).
  The “PTO ON lamp” should light up.
- Release the clutch.
- Ensure that the platform is switched on



GROUND CONTROL BOX

- Push, simultaneously, both levers down on the outrigger controls (situated on the vehicle bulkhead between the seats) until outrigger feet are in firm contact with the ground, the vehicle is lifted off its suspension and the platform is level.

- Check that the feet are in firm contact with the ground.

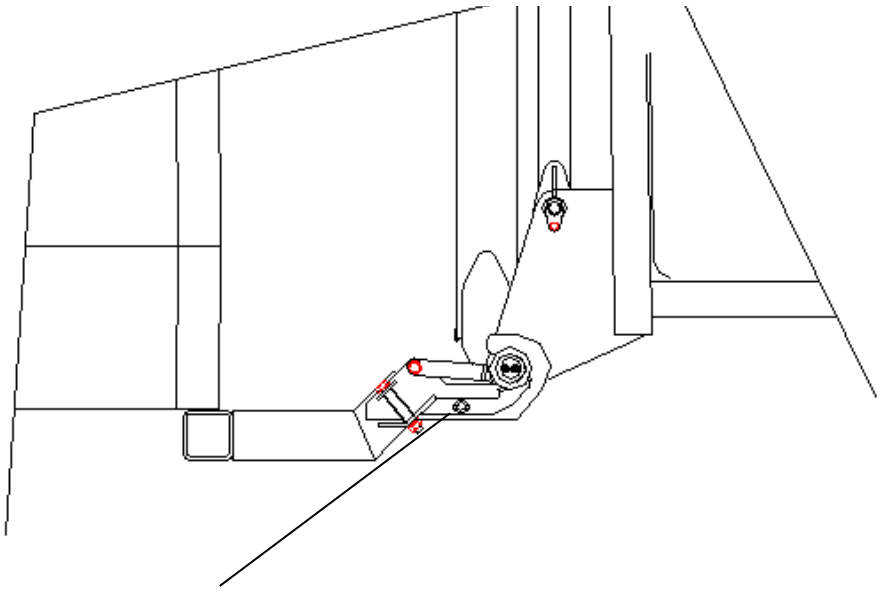
- Please note that the machine has been designed to operate on a slight fore and aft slope (approximately 5degrees). Side to side must be level
- **At all times the vehicle wheels should be in slight contact with the ground when operating.** This will prevent the machine from “rocking” on its outriggers as the boom is rotated.

- Remember the maximum load **(38KN)** that will be imposed by the platform foot and be sure the surface you have set it up on can support it.

3. OPERATING THE PLATFORM.

- Flip back the transport lock situated on the boom stowing hook

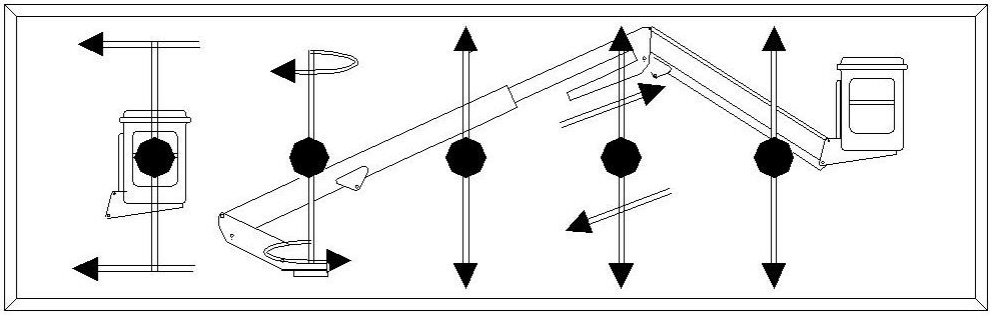
BOOM STOWING HOOK



TRANSPORT LOCK

- ASCENDANT ACCESS LTD recommends the use of a safety harness. Harness anchor points are located in the cage.

- The platform may now be operated from the cage



CAGE CONTROLS

IMPORTANT: To undock the booms, first lower the FLY BOOM fully to release the booms from the transport hook then raise the MAIN BOOM clear of the hook.

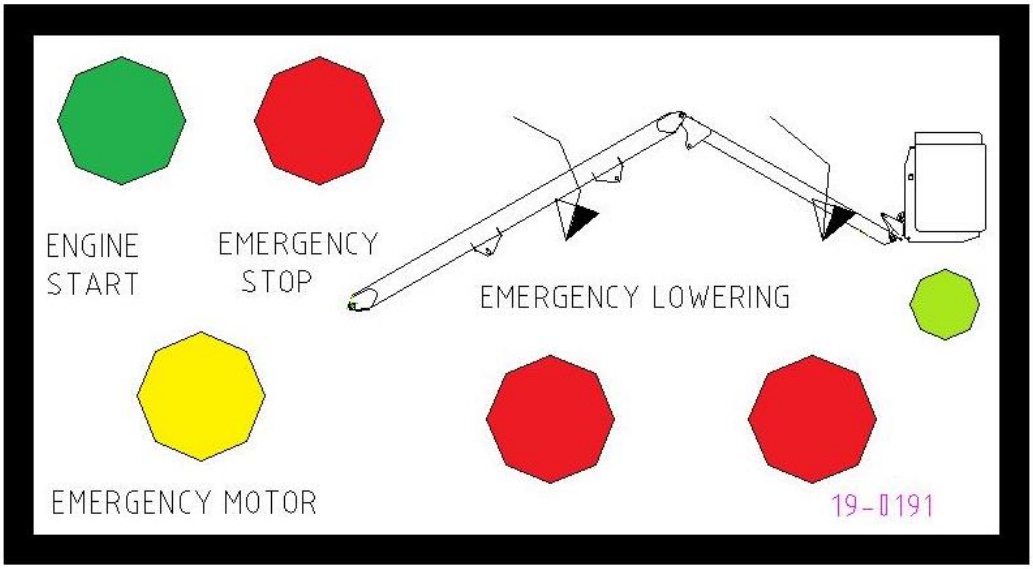
The booms can now be operated freely by using the appropriate control lever.

WARNING Before raising. Ensure that there are no overhead obstructions.

- Vehicle engine remote start button is provided in the cage.

4. EMERGENCY CONTROLS

- Red emergency stop buttons are located on the platform in the cage and at the base to stop the platform in an emergency.
- An emergency battery power pack is also provided should the vehicle suffer an engine failure.



CAGE CONTROL BOX

- By simultaneously depressing the emergency power pack button and operating the appropriate control lever the platform may be returned to the transport position. *This feature is only to be used in the event of engine failure to return the platform to the ground it is not intended for use as a normal control.*

- Emergency lowering of the booms can be affected by pressing the buttons either at the cage or the ground whilst simultaneously operating the appropriate lever.

- Emergency rotate can be achieved by indexing the rotate gearbox with an appropriate ratchet and socket.

5. STOWING.

- Line up the boom stowing pin with the stowing hook and fully lower the fly boom. Fully lower the main boom until the pin is in an appropriate position on the hook. Raise the fly boom until the pin is engaged in the hook. Leave the cage.

- Engage the transport latch and move to the cab.

- Fully raise the outriggers.

- Check that the booms not stowed and outriggers not stowed lights are out on the vehicle dash.

- Disengage the PTO.

- The vehicle is ready to drive away.

SECTION 4

MAINTENANCE

4.1 GENERAL

Before the PLATFORM is accessed for maintenance purposes, the operator should be informed of the intended action and suitable warning signs erected.

General tidiness should be considered a priority. Fluid spillage and debris should be cleaned up immediately to minimise the risk of slip, trip and / or fall. If the Platform is kept clean, it will make it easier to detect and rectify any faults that may occur.

For the long-term, efficient operation of this Platform to be a practical possibility, it is suggested that a planned maintenance scheme is adopted.

4. 2 MAINTENANCE AND LUBRICATION SCHEDULE

The following page shows the recommended service schedule for the ASCENDANT 15VM work platform.
Explanation notes, where appropriate (marked thus*) follow the schedule. These notes must be read and understood.

Ascendant Access Ltd recommends that this inspection/ service work be carried out by competent personnel.

GENERAL MAINTENANCE

Daily Checks

- Hydraulic fluid. Top up the fluid level with the machine in the transport condition and on level ground. Use SHF 22 (ISO) or equivalent.
- Safety checks on platform control circuit (see below)
- Outreach limiting device.

Weekly checks

- Apply grease to slew bearing and all grease nipples.
- Check boom pins/tie rods etc for damage.
- Check limit switch integrity.
- Check hoses and fittings for leaks/damage.

6-monthly

A full technical inspection is to be carried out in accordance with the requirements of LOLER by a competent person and a certificate of safe use obtained.

15VM SERVICE SCHEDULE

Description	Servicing Interval			
	Daily	**weekly**	**monthly**	**Six monthly**
Sub-frame to vehicle fastenings*				**x**
Outriggers*				**x**
Slew drive*				**x**
Pins. Bushes and fastenings*				**x**
Levelling system*				x
Cage and attachments*	x	x	x	x
Instructions, warning labels	x	x	x	x
Oil level	x	x	x	x
Control boxes*			x	x
Outreach limiting system*	x	x	x	x
Grease all points			x	x
Warning lights	x	x	x	x
Engine stop start	x	x	x	x
Emergency stops	x	x	x	x
Emergency pack	x	x	x	x
Booms/ wear pads etc*				x
Limit switches			x	x
All interlocking functions*	x	x	x	x
Hydraulic oil level	x	x	x	x
Change all filters	initial after three months then every year			
Change hydraulic oil	every year			
Slew gearbox oil	initial after three months then every fifth year			
Hyd hoses and fittings			x	x
Electric cables			x	x

∞ **Sub-frame to vehicle mounting;**

Check integrity of all connections for tightness, corrosion, cracking etc

∞ **Outriggers;**

Check: Hose / cable runs for leaks and chaffing.
When deployed check for cracking etc at joints.
Pins
Limit switches for functionality

∞ **Slew drive;**

Check: General condition of driving and driven gears
Gearbox oil level
Slew holding down bolts have not stretched (if they have then all bolts must be replaced immediately by units provided by Ascendant Access).
Re-torque holding down bolts. **Torque setting 100Nm.**
Check wear on slew bearing by gently lowering the cage frame onto a support with the boom telescoped out a little. Keep lowering gently whilst watching at the bearing for any "rocking". Total movement at the front of the bearing is allowed to be 2 mm or less. Any more than this then the bearing should be refurbished or replaced.

∞ **Pins, bushes and fastenings.**

Check; All pins for freedom of movement, corrosion, lubrication, fastening etc.
All bushes for signs of wear or damage.

∞ **Leveling system.**

Check: The cage remains horizontal automatically whilst raising and lowering the main boom.
Check trimming controls move the cage smoothly and slowly.
With a load in the cage switch off the platform and operate the trimming valves. The cage should remain stationary.
The cylinders, hoses for signs of corrosion, wear etc.

∞ **Cage and attachments**

Check; General condition of cage, access bar, floor and attachment to boom, especially the condition of all welded joints.

∞ **Booms, wear pads etc.**

Check; General condition of all welded seams.
Any signs of damage or distortion.
With the booms telescoped out fully, horizontally, check for signs of distortion particularly at the boom junctions.
Wear pads for excessive wear.
Remove the rear cover and check the condition of all internal wear pads etc. Check the condition of the cat-track and guides. Check that there is sufficient grease on the internal surfaces.

∞ **All interlocking functions.**

All limit switches installations must be checked for integrity. The following functional checks should then be carried out

SAFTEY CHECKS ON PLATFORM CONTROL CIRCUIT

With the vehicle parked, engine running, platform switched on and the platform in transport position check.

- Booms not stowed light is not on.
- Outriggers not stowed light is not on.

Engage the PTO.

Leave the cab and move to the boom controls (turret and cage).

- It should not be possible to operate the booms using the appropriate controls.

Move to the outrigger controls.

- The outriggers stowed light should be on.

Jack up the machine as described in the operating instructions.

- Check that it is possible to operate the booms from both locations.
- Lift the boom out of the stowing hook.
- Telescope out until the boom stops. It should stop after approximately 300mm of travel with the main boom horizontal. It should be possible to telescope back in or raise the main boom.
- With the telescope in this position raise the main boom approximately 45Deg. It should be possible to telescope out further. With the telescope out at this point it should not be possible to lower the main boom past 45Deg without telescoping back in.
  If the above sequence of operation is not possible do not use the machine as there is a fault.
- Check the proximity switches at the rear of the boom pack adjacent to the main pivot on the turret and the at the mouth of the telescope section for any damage, wear etc;

Depress the emergency power pack button.

- The vehicle engine should stop.
- The controls should work with the button depressed, albeit slowly.

Restart the engine.

Depress the emergency stop.

- It should not be possible to operate anything.
- The vehicle engine should stop

Release the stop.

With the booms lifted out of the stowing hook.

- Check that it is not possible to operate the outrigger jacks.
- Check that the booms not stowed light is on in the vehicle cab.

4.3 Six Monthly Thorough Examination Inspection Schedule

Vehicle Mounted

Owner_____ Location_____ Date_____

Machine type_____ Serial No_____

Hour clock _____

ITEM	CHECK	S	U/S
Chassis			
Main frame/mountings	security / cracks / corrosion		
Outriggers	security / cracks / distortion		
	no hydraulic leaks		
	wear pad clearances		
	creep within specified limits		
PTO / engine / pump	mounting security and condition		
	no oil or fuel leaks		
	electrical cables and battery		
Cab/outrigger controls	mounting secure		
	all controls function correctly		
	all decals present & legible		
	warning lights operational		
	no hydraulic leaks		
	electrical cable installation		
Platform			
Boom Sections	no cracks / corrosion / damage		
Cage boom	" " "		
Turntable	" " "		
Cage	" " "		
	attachment points		
	Access bar self closes		
	safety harness anchor points - security		
Pins / bushes/bearing	all locking devices secure		
	excessive wear		
	evidence of correct lubrication		
Wear pads	" " "		
Boom & tele cylinder's	Security / condition / no leaks / creep within limits		
Slew ring	all mounting bolts present and secure		
	bearing wear within limits		
	evidence of correct lubrication		
Slew motor	mounting / backlash / gear teeth condition		

Six Monthly Thorough Examination Inspection Schedule cont'd
Vehicle mount

ITEM	CHECK	S	U/S
Control Centres			
Cage and ground	enclosure condition & mountings secure		
	safety & operational decals presence & legible		
	warning lights operational		
	all controls function correctly		
Emergency Stop's	operate correctly & buttons latch in		
Cage levelling	automatic leveling system works correctly		
	manual system works correctly		
Emergency pump	operates all functions		
Safety Interlocks	check operation of all systems		
	outriggers stowed – legs up		
	individual outrigger ground pressure		
	boom raised interlock with outriggers operates		
Outreach limiter	condition of mechanical components & all switches		
	outreach correct		
Hydraulic hoses	visual external inspection - no leaks or damage		
Hydraulic oil level	correct and condition of filler cap		
Electrical cables	visual external inspection		
Covers	condition and security		
Flashing lights	Presence and operate –		

NOTES:
All visual examinations carried out by opening the appropriate inspection covers.
Slew ring bolt security - visual check only.
(torque settings to be checked in accordance with the service manual)

S = serviceable
U/S = requires attention.
N/A = not applicable

Six Monthly Thorough Examination Inspection Schedule cont'd
Vehicle mount

Description of defects / comments

ITEMS	DESCRIPTION / COMMENTS	RECTIFIED

Inspection carried out by _____ Print

_____ Sign

Inspection authenticated _____

SECTION 5

TROUBLE SHOOTING

It is recommended that faultfinding be only carried out by technically competent personnel.
Whilst every effort has been made to ensure that these procedures are comprehensive they will not cover every eventuality

- Vehicle engine wont start
    - Check all emergency stops are in the platform run condition.
    - Refer to vehicle manufacturer trouble shooting guide.
- Outrigger legs will not operate
    - Check that booms stowed limit switch has not malfunctioned (located on transport hook).
    - Check solenoid diverter valve is operating correctly. (located in valve manifold in platform subframe.
- Booms will not operate
    - Check platform is switched on at base. (located at ground control box in platform subframe).
    - Check that outriggers are correctly deployed (i.e. in firm contact with the ground).
    - Check outrigger limit switches are operating correctly.
    - Check diverter valve is operating correctly. (located in valve manifold in platform subframe.

SECTION 6
INSPECTION RECORDS

INSPECTION RECORDS

Description of defects / comments

DATE	DESCRIPTION / COMMENTS	RECTIFIED

INSPECTION RECORDS

Description of defects / comments

DATE	DESCRIPTION / COMMENTS	RECTIFIED