



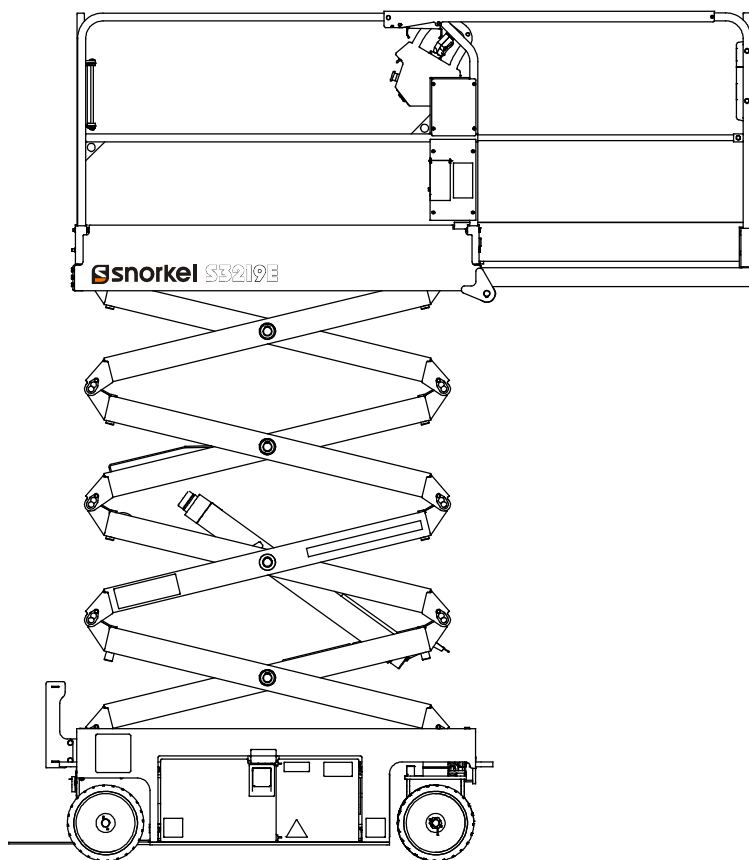
S3219E

S3220E

S3226E

S4726E

S4732E



CE

# OPERATORS MANUAL

Part Number 1500842  
November 2015

Serial number 000000 and after  
Replaces 1500842 October 2015



**Table of Contents**

EC Declaration of Conformity .....	2	Platform .....	12
Safety Rules .....	3	Raising and Lowering .....	13
Fall Restraint Lanyard Anchor Points .....	4	Lowering Interrupt .....	13
Introduction .....	5	Overload Protection .....	13
Component Identification .....	5	Extending .....	13
Special Limitations .....	6	Driving and Steering .....	13
Platform Capacity .....	6	Drive Range Switch	
Manual Force .....	6	S3226E/S3220E/S4726E/S4736E .....	14
Drive/Lift Pothole Protector Interlock .....	6	Drive Speeds .....	14
Drive/Lift Level Sensor Interlock .....	6	Drive/Lift Level Sensor Interlock .....	14
Lowering Alarm .....	6	Fold Down Guardrails .....	14
Lowering Interrupt .....	6	Swing-Out Trays .....	15
Overload Protection .....	6	Emergency Lowering .....	15
Beaufort Scale .....	7	Transporting the Machine .....	16
Controls and Indicators .....	8	Preparing for Transportation .....	16
Battery Disconnect Switch .....	9	Transporting .....	16
Lower Controls .....	9	Lifting With a Forklift .....	16
Emergency Stop Button .....	9	Winching .....	16
Control Selector/Ground Operation Switch .....	9	Driving .....	17
Platform Raise/Lower Switch .....	9	Hoisting .....	17
Upper Controls .....	9	Storage .....	17
Emergency Stop Button .....	10	Maintenance .....	18
Drive/Lift Selector Switch .....	10	Hydraulic Fluid .....	18
Joystick .....	10	Check Hydraulic Fluid .....	18
Interlock Switch .....	10	Battery Maintenance .....	18
Steer Switch .....	10	Battery Charging .....	18
Drive Range Switch		Inspection and Maintenance Schedule .....	19
S3226E/S3220E/S4726E/S4736E .....	10	Daily Preventative Maintenance Checklist .....	20
Horn Button .....	10	Preventative Maintenance Report .....	20
Battery Condition Indicator .....	10	Specifications – S3219E .....	21
Pre-Operation Safety Inspection .....	10	Specifications – S3220E .....	22
System Function Inspection .....	11	Specifications – S3226E .....	23
Operation .....	12	Specifications – S4726E .....	24
Preparing for Operation .....	12	Specifications – S4732E .....	25
Lower Controls .....	12		
Upper Controls .....	12		



**Model** \_\_\_\_\_  
Modell  
Modelo  
Modelo

Modello  
Verticaal model  
Malli

SXXXXE

**Serial number** \_\_\_\_\_  
Matricola  
Sarajanumero

Serienummer  
Numero de serie  
Matricola


SXXXXE-04-XXXXXX

**Notified body**  
Notifizierte Stelle  
Organisme notife  
Organismo notificado  
Aangemeide instantie  
Myndighet  
Avende harmoniserte standarder  
Udpeget organ  
Asiasta on tehty ilmoitus seuraaville tahoille  
Ente Notificatore

**Powered Access**  
Certification Ltd (PAC)  
Applethwaite Lodge, The Common  
Windermere  
Cumbria  
LA23 1JQ  
United Kingdom  
Notified body number 0545

**EC Type Examination Certificate number** \_\_\_\_\_

EC-Typenprüfung Zertifikat-Nr  
Examen type CE Numero de Certificat  
Inspeccion tipo CE Numero de certificado  
Attestato di certificazione CE nr  
Onderzoek van het type EC Certificaatnummer  
EU tykkontroll Certifieringsnummer  
EF-typeproving Serifikatnummer  
EF-typegodkendelse Nummer pa typeattest  
EU-tyyppitarkastuksen nr.

**Signed for Snorkel**  
  
**Manufacturing Quality Manager**

Gary Bradbury  
Powered Access  
Vigo Centre  
Washington  
Tyne and Wear  
NE38 9DA  
England

Date

EC Declaration of Conformity of Machinery 2006/42/EC  
EC-Konformitätserklärung für Maschinen 2006/42/EC  
Declaration De Conformite CE pour les Machines 2006/42/EC  
Declaracion De Conformidad CE Para Maquinaria 2006/42/EC  
Dichiarazione Di Conformità CE Per Le Macchine 2006/42/EC  
CE Conformiteitsverklaring voor Machinerie 2006/42/EC  
EU Deklaration Avseende Överensstämme Föör Maskinutrustning  
2006/42/EC

EF-Samsvarserklæring For Maskiner 2006/42/EC  
EF-Overensstemmelseserklæring for Maskiner 2006/42/EC  
EU Vaatimustenmukaisuusvakuutus 2006/42/EC

**Manufacturer**  
Hersteller  
Fabricant  
Fabricante  
Fabbricante

**Snorkel,**  
Vigo Centre, Washington,  
Tyne and Wear, England  
Tel: +44 (0) 845 1557 755  
Fax: +44 (0) 845 1557 756

Fabrikant  
Tillverkare  
Produsent  
Valmistaja

**Authorized Representative**

Autorisierte Vertretung  
Representant autorise  
Representante autorizado  
Mandatario  
Erkend vertegenwoordiger  
Auktoriserad representant  
Autorisert representant  
Represenatant  
Valtuutettu edustaja

**Description**

Bezeichnung  
Description  
Descripcion  
Descrizione  
Beschrijving  
Beskrivning  
Beskrivelse  
Kuvaus

**Aerial Work Platform**

Arbeitsbühne  
Plate-forme elevatrice de personnel  
Plattforma aerea de trabajo con motor  
Piattafoma di sollevamento motorizzata  
Mechanisch aangedreven werkplatform  
Höj-och sänkar arbetsplattform  
Selvgående arbetsplattform  
Motordrevet loftepattform  
Konevoimalla toimiva nostolava  
Selvgående personarbetslift



# SAFETY RULES

## ⚠Warning

All personnel shall carefully read, understand and follow all safety rules and operating instructions before operating or performing maintenance on any Snorkel aerial work platform.

### Electrocution Hazard



**THIS MACHINE IS NOT INSULATED!**

### Tip Over Hazard



**NEVER** elevate the platform or drive the machine while elevated unless the machine is on a firm, level surface.

### Collision Hazard



**NEVER** position the platform without first checking for overhead obstructions or other hazards.

### Fall Hazard



**NEVER** climb, stand, or sit on platform guardrails or midrail.

**USE OF THE AERIAL WORK PLATFORM:** This aerial work platform is intended to lift persons, their tools and materials used for the job. It is designed for repair, assembly, stockpicking jobs, etc., and assignments at workplaces above head height (ceilings, cranes, roof structures, buildings, shelving, etc.). All other uses of the aerial work platform are prohibited and the rules below must be adhered to!

**THIS AERIAL WORK PLATFORM IS NOT INSULATED!** Refer to applicable national standards for safe approach distances.

Exceeding the specified permissible maximum load **is prohibited!** See "Platform Capacity" on page 6 for details.

The use and operation of the aerial work platform as a lifting tool or a crane **is prohibited!**

**NEVER** exceed the manual force allowed for this machine. See "Manual Force" on page 6 for details.

**DISTRIBUTE** all platform loads evenly on the platform.

**NEVER** operate the machine without first surveying the work area for surface hazards such as holes, drop-offs, bumps, curbs, or debris; and avoiding them.

**OPERATE** machine only on surfaces capable of supporting wheel loads.

**NEVER** operate the machine when wind speeds exceed this machine's wind rating. See "Beaufort Scale" on page 7 for details.

Do not operate the aerial platform in windy or gusty conditions. Do not add anything to or take anything into the aerial platform that will increase the wind loading such as billboards, banners, flags, etc.

**IN CASE OF EMERGENCY** push EMERGENCY STOP switch to deactivate all powered functions.

**IF ALARM SOUNDS** while platform is elevated, STOP, carefully lower platform. Move machine to a firm, level surface.

Climbing up the railing of the platform, standing on or stepping from the platform onto buildings, steel or prefab concrete structures, etc., **is prohibited!**

Dismantling the entry gate or other railing components **is prohibited!** Always make certain that the entry gate is closed!

**It is prohibited** to keep the entry gate in an open position when the platform is raised!

To extend the height or the range by placing of ladders, scaffolds or similar devices on the platform **is prohibited!**

**NEVER** perform service on machine while platform is elevated without blocking elevating assembly.

**INSPECT** the machine thoroughly for cracked welds, loose or missing hardware, hydraulic leaks, loose wire connections, and damaged cables or hoses before using.

**VERIFY** that all labels are in place and legible before using.

**NEVER** use a machine that is damaged, not functioning properly, or has damaged or missing labels.

To bypass any safety equipment **is prohibited** and presents a danger for the persons on the aerial work platform and in its working range.

**NEVER** charge batteries near sparks or open flame. Charging batteries emit explosive hydrogen gas.

Modifications to the aerial work platform **are prohibited** or permissible only at the approval by **Snorkel**.

**AFTER USE**, secure the work platform from unauthorized use by turning the keyswitch off and removing key.

The driving of MEWP's on the public highway is subject to national traffic regulations.

Certain inherent risks remain in the operation of this machine despite utilizing proper design practices and safeguarding.

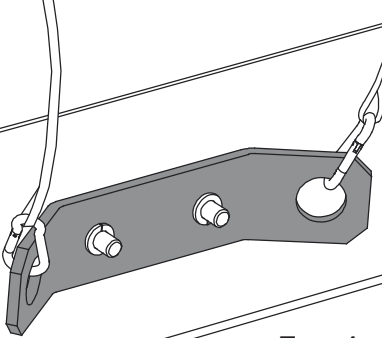
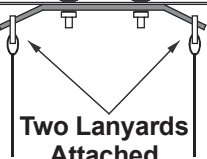
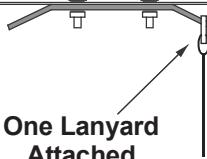
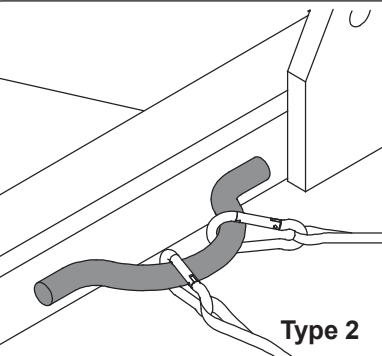
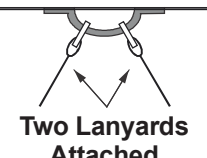

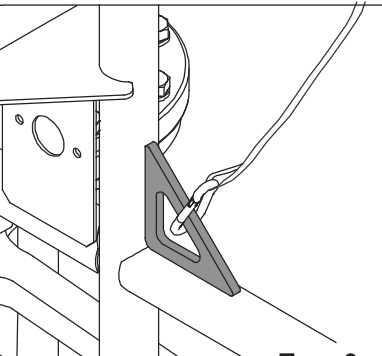
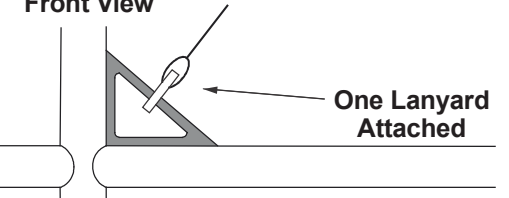
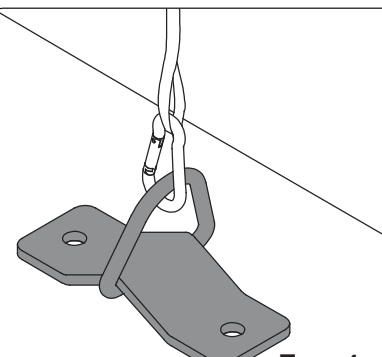
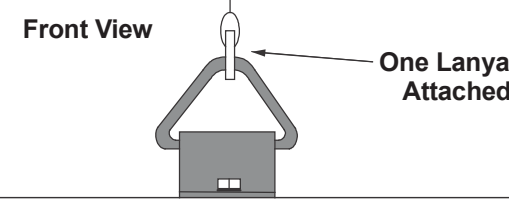
Care must be taken to ensure that the machines meets the requirements of stability during use, transportation, assembly, dismantling when out of service, testing, or foreseeable breakdowns.

In the event of an accident or breakdown see "Emergency Lowering" on page 15, do not operate the aerial platform if it is damaged or not functioning properly. Qualified maintenance personnel must correct the problem before putting the aerial platform back into service.

## Fall Restraint Lanyard Anchor Points

All fall restraint lanyard anchor points on Snorkel aerial work platforms have been tested with a force of 61.3 KN (3,650 lbs) per person.

See below examples of anchor points used on Snorkel machines with their corresponding per person rating.

 <p style="text-align: right;"><b>Type 1</b></p>	<p>Anchor point Type 1 is rated for one lanyard attachment per loop. Refer to machine "Specifications" and platform decals for maximum number of platform occupants.</p>	
	<p style="text-align: center;"><b>Top View</b></p>  <p style="text-align: center;"><b>Two Lanyards Attached</b></p>	<p style="text-align: center;"><b>Top View</b></p>  <p style="text-align: center;"><b>One Lanyard Attached</b></p>
 <p style="text-align: right;"><b>Type 2</b></p>	<p>Anchor point Type 2 is rated for two lanyard attachments per loop. Refer to machine "Specifications" and platform decals for maximum number of platform occupants.</p>	
	<p style="text-align: center;"><b>Top View</b></p>  <p style="text-align: center;"><b>Two Lanyards Attached</b></p>	<p style="text-align: center;"><b>Top View</b></p>  <p style="text-align: center;"><b>One Lanyard Attached</b></p>
 <p style="text-align: right;"><b>Type 3</b></p>	<p>Anchor point Type 3 is rated for one lanyard attachment per loop. Refer to machine "Specifications" and platform decals for maximum number of platform occupants.</p>	
	<p style="text-align: center;"><b>Front View</b></p>  <p style="text-align: right;"><b>One Lanyard Attached</b></p>	
 <p style="text-align: right;"><b>Type 4</b></p>	<p>Anchor point Type 4 is rated for one lanyard attachment per loop. Refer to machine "Specifications" and platform decals for maximum number of platform occupants.</p>	
	<p style="text-align: center;"><b>Front View</b></p>  <p style="text-align: right;"><b>One Lanyard Attached</b></p>	

NOTE: There can be more anchor points in the platform than the maximum number of occupants allowed in the platform. Refer to the machine specifications for the correct occupancy rating before use.

**Introduction**

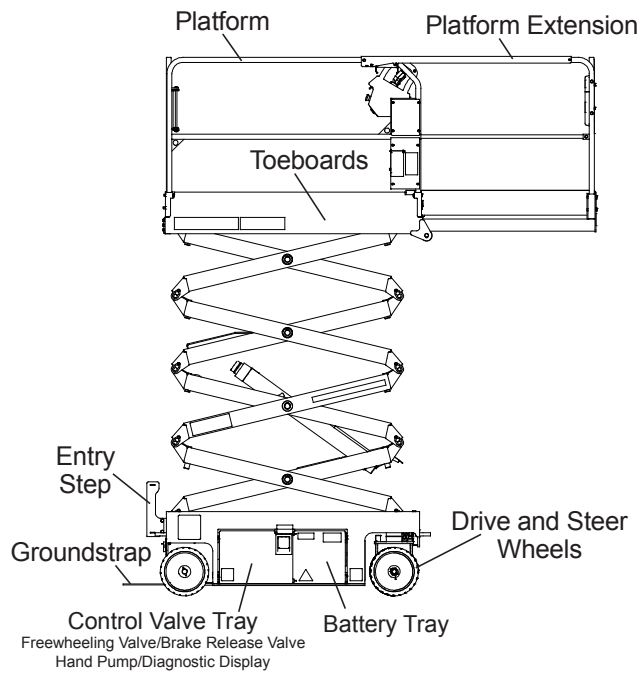
This manual covers the S3219E, S3220E, S3226E, S4726E, and S4732E Aerial Work Platforms.

This manual must be stored on the machine at all times.

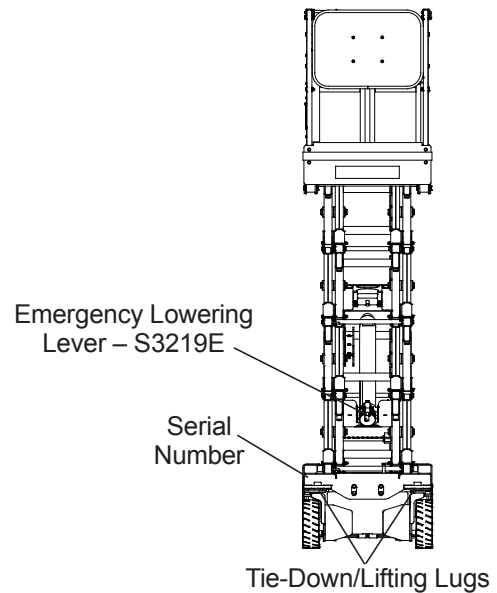
Read, understand and follow all safety rules and operating instructions before attempting to operate the machine.

When contacting Snorkel for service or parts information, be sure to include the MODEL and SERIAL NUMBERS from the equipment nameplate. Should the nameplate be missing, the SERIAL NUMBER is also stamped on the front of the chassis.

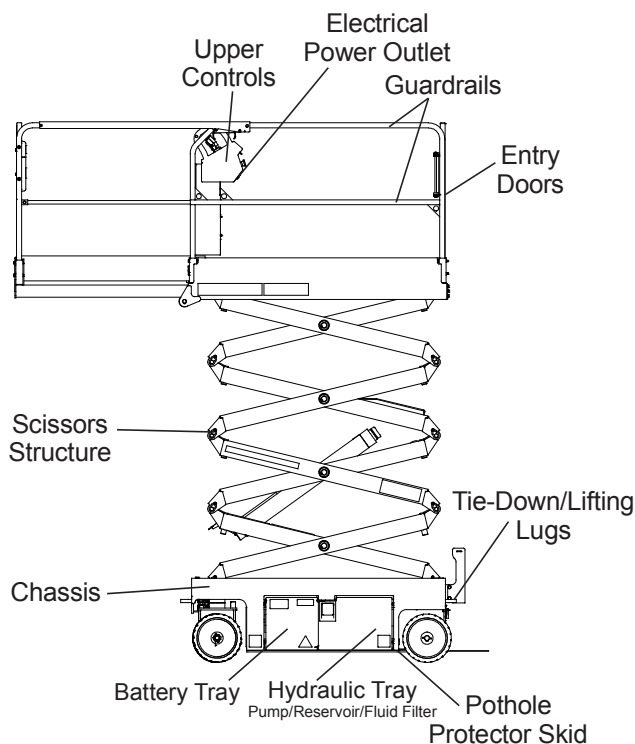
**Component Identification**



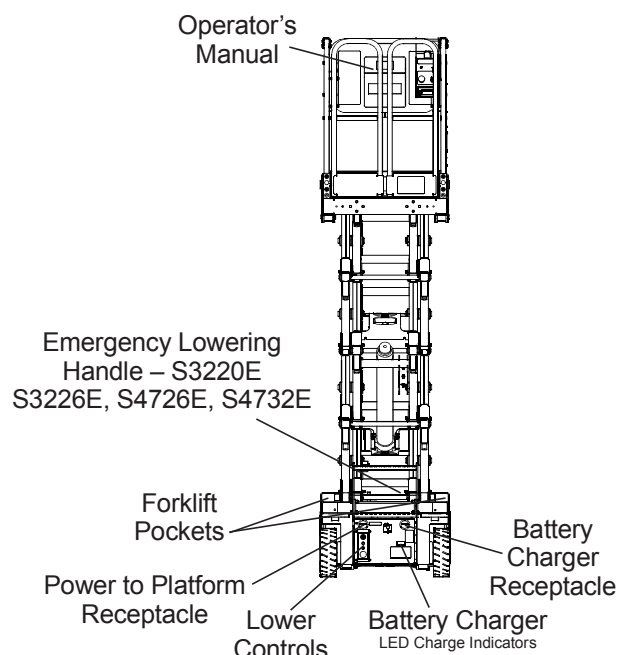
**Right Side**



**Front**



**Left Side**



**Rear**

## Special Limitations

---

### Special Limitations

Travel with the platform raised is limited to creep speed range. Elevating the platform is limited to firm, level surfaces only.

#### **Danger**

The elevating function shall **ONLY** be used when the work platform is level and on a firm surface.

The work platform is **NOT** intended to be driven over uneven, rough, or soft terrain.

### Platform Capacity

The maximum platform capacity for the aerial platform is stated in the "Specifications" on pages 21-25.

#### **Danger**

**DO NOT** exceed the maximum platform capacity or the platform occupancy limits for this machine.

### Manual Force

Manual force is the force applied by the occupants to objects such as walls or other structures outside the work platform.

Refer to the platform capacity decal on the machine for specific maximum allowable manual force information.

The maximum allowable manual force varies depending on wind speed. The maximum allowable wind speed is 12.5 m/s (28 mph).

#### **Danger**

**DO NOT** exceed the maximum amount of manual force for this machine.

### Drive/Lift Pothole Protector Interlock

The aerial platform drive and lift functions are interlocked through a limit switch inside the chassis that senses whether or not the pothole protection linkage is locked into position. The drive/lift pothole interlock operates when the platform is elevated approximately 1.8 m (6').

If an obstruction under the skids, or some other impairment prevents the skids from locking into position, the drive and steer functions will not operate and an alarm will sound.

Lower the platform and remove the obstruction when the drive/lift pothole protector interlock alarm sounds.

### Drive/Lift Level Sensor Interlock

The aerial platform drive and lift functions are interlocked through a level sensor system. The drive/lift level sensor interlock operates when the platform is elevated approximately 1.8 m (6').

If the chassis is tilted too far out of level, the drive and lift functions will not operate and an alarm will sound. Refer to the machine specifications for the level sensor factory setting.

Lower the platform and drive to a level surface when the drive/lift level sensor alarm sounds.

The drive/lift level sensor system is for added protection and does not justify operating on anything other than firm, flat, level surfaces.

### Lowering Alarm

When the joystick is moved out of neutral to lower the platform, the alarm emits a loud beeping sound to warn personnel in the work area to stand clear.

#### **Danger**

**Pinch points exist on the scissors structure. Death or serious injury will result if the scissors structure lowers onto personnel within the scissors arms or under the raised platform. Stand clear while raising and lowering the platform.**

Be careful when lowering the platform. Keep hands and fingers away from the scissors structures components.

### Lowering Interrupt

When the platform is lowered to about 1.8 m (6') lowering stops. The platform will not lower for five seconds regardless of the control position to allow personnel to clear the area of the scissors before the platform completely lowers.

Center the control in neutral to reset the lowering function, then continue to lower the platform.

When the platform is below 1.8 m (6') and the control is moved to lower the platform, there is a 1.5 second delay before movement begins.

### Overload Protection

When the load in the platform is near or at rated capacity, an alarm will sound and the red light on the lower controls will flash.

The alarm and light warn the operator that the platform is close to becoming overloaded. All functions remain fully operational.

#### **Danger**

**The aerial platform can tip over if it becomes unstable. Death or serious injury will result from a tip-over accident. Do not exceed the capacity values indicated on the platform rating placard.**

If the platform is fully lowered and is overloaded, when it is elevated just past 1.8 m (6'), a control module will stop the lift and drive functions and the alarm will sound and the warning light will flash. The platform can still be lowered to remove the excess load.

If the platform is elevated just past 1.8 m (6') and material is added to the platform overloading it, a control module will stop the lift, drive and lower functions and the alarm will sound and the warning light will flash. In this case, remove the load in excess of rated capacity and cycle



the emergency stop button at the upper controls to return to normal operation.

### Beaufort Scale

Never operate the machine when wind speeds exceed 12.5 m/s (28 mph) [Beaufort scale 6]. Refer to Figure 1.

BEAUFORT RATING	WIND SPEED				GROUND CONDITIONS
	m/s	km/h	ft/s	mph	
3	3,4~5,4	12,25~19,4	11.5~17.75	7.5~12.0	Papers and thin branches move, flags wave.
4	5,4~8,0	19,4~28,8	17.75~26.25	12.0~18	Dust is raised, paper whirls up, and small branches sway.
5	8,0~10,8	28,8~38,9	26.25~35.5	18~24.25	Shrubs with leaves start swaying. Wave crests are apparent in ponds or swamps.
6	10,8~13,9	38,9~50,0	35.5~45.5	24.5~31	Tree branches move. Power lines whistle. It is difficult to open an umbrella.
7	13,9~17,2	50,0~61,9	45.5~56.5	31.~38.5	Whole trees sway. It is difficult to walk against the wind.

Figure 1 – Beaufort Scale

## Controls and Indicators

### Controls and Indicators

The operator shall know the location of each control and indicator and have a thorough knowledge of the function and operation of each before attempting to operate the machine.

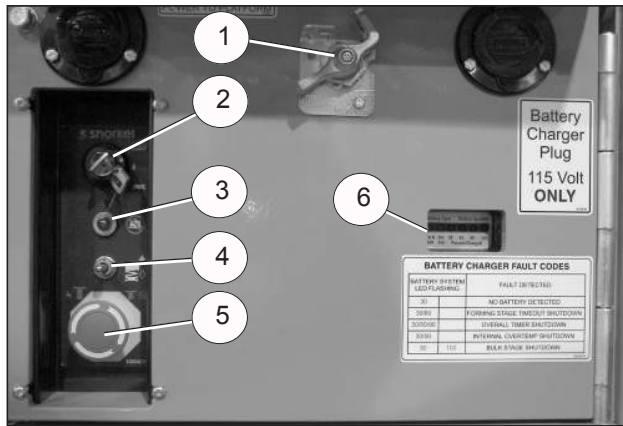


Figure 2 – Rear of Chassis

1. Battery disconnect switch
2. Control selector/ground operation switch
3. Platform overload protection light
4. Platform raise/lower switch
5. Emergency stop button
6. Battery charger codes
7. Battery condition indicator
8. Interlock switch
9. Joystick
10. Steer switch
11. Drive range switch – S3220E/S3226E/S4726/S4732E
12. Drive/lift selector switch
13. Horn button

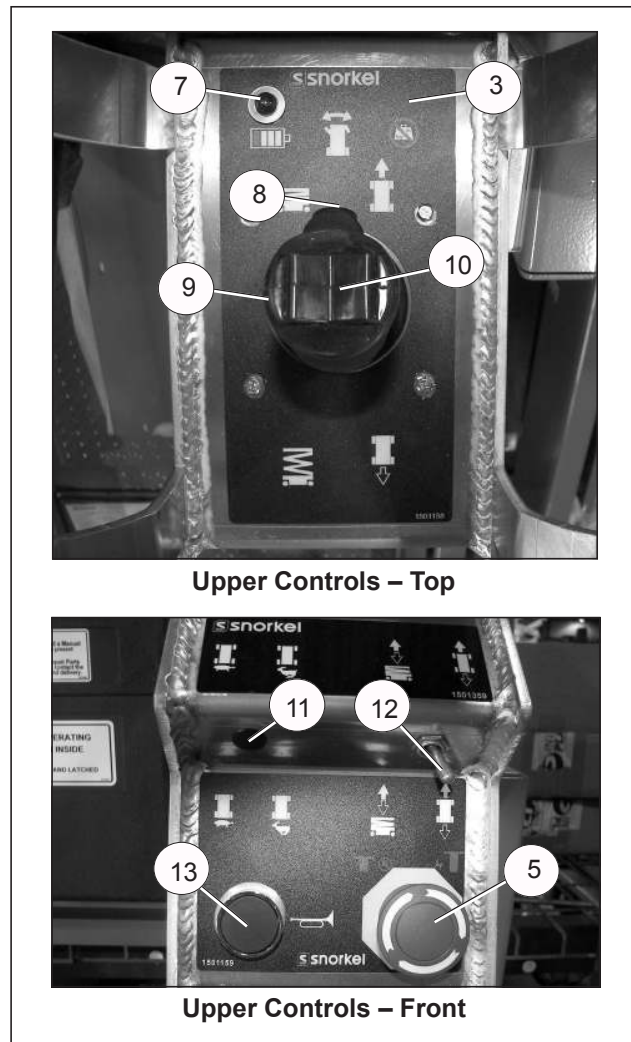


Figure 3 – Upper Controls and Indicators

### **⚠ Danger**

Pinch points may exist between moving components. Death or serious injury will result from becoming trapped between components, buildings, structures, or other obstacles. Make sure all personnel stand clear while operating the aerial platform.

- Controls to position the platform are located on the lower control panel on the chassis and on the upper control panel in the platform.
- Controls to drive the aerial platform are located on the upper control panel only.

The diagnostic center LCD display is located in the hydraulic tray next to the fluid reservoir (refer to Figure 4).

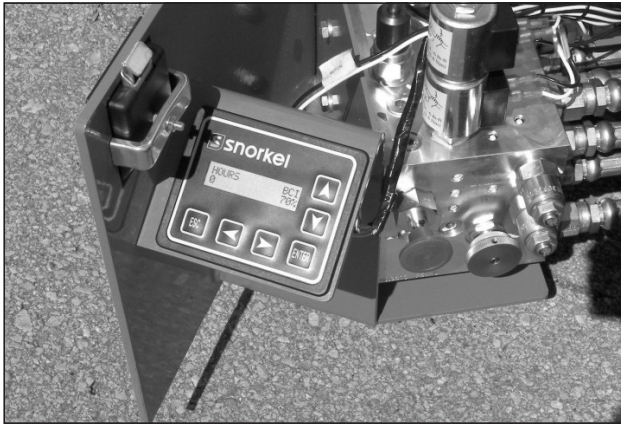


Figure 4 – Diagnostic Center LCD Display

The LCD display shows the accumulated aerial platform operating time and the available battery power to operate the machine, when the battery disconnect and emergency stop switch are in the on position.

### Battery Disconnect Switch

The battery disconnect switch is located at the rear of the chassis (refer to Figure 2).

The battery disconnect removes electrical power from all electrically controlled functions when in the off position.

- Place the switch in the on position to electrically connect the battery to the electrical system.

### **⚠Caution**

**Only authorized personnel should operate the aerial platform. Unqualified personnel may cause injury to coworkers or property damage. Lock the battery disconnect switch in the off position before leaving the aerial platform unattended.**

- Lock the battery disconnect switch in the off position to prevent unauthorized use of the aerial platform.

### Lower Controls

The lower controls (refer to Figure 2) are located at the rear of the chassis. Only platform functions can be operated from the lower controls.

The following are located on the lower control panel:

- Emergency stop button
- Control selector/ground operation switch
- Platform raise/lower switch
- Platform overload protection light

### Emergency Stop Button

The emergency stop is a two-position red push button.

- Push the button inward to disconnect power to all control circuits.
- Twist the button to restore power.

### Control Selector/Ground Operation Switch

Insert the key into the control selector/ground operation switch.

- In the upper position, aerial platform functions will not operate from the lower or upper controls.
- Turn the switch to the upper controls position to operate the aerial platform functions from the upper controls.
- Hold the switch downward continually in the lower controls position to enable the platform raise/lower switch functions. The switch is spring returned to the off position.

The upper controls will not operate while the control selector is in the lower position.

### Platform Raise/Lower Switch

The platform raise/lower switch is used to raise or lower the platform. The switch is spring returned to the center off position.

- Hold the switch upward to raise the platform.
- Hold the switch downward to lower the platform.
- An alarm will sound as the platform lowers.

### Upper Controls

The upper controls (refer to Figure 3) are located on the control panel at the platform. Platform and drive functions can be operated from the upper controls.

### **⚠Warning**

**The potential for an accident increases from improperly driving or steering the aerial platform. Death or serious injury could result from such accidents. Make sure the upper control panel is securely fastened inside the platform and facing the front of the machine.**

Avoid driving the platform with the upper controls facing the rear or side of the machine. In this position the machine is difficult to control because the drive and steer control movements and their resulting machine movements will not correspond.

Only operate the upper controls when the upper control panel is securely fastened inside the platform and facing the front of the machine.

The following are located on the upper control panel:

- Emergency stop button
- Drive/lift selector switch
- Drive range switch – S3220E/S3226E/S4726/S4732E
- Joystick to control platform lift, drive, and steer
- Horn button
- Battery condition indicator
- Platform overload protection light

## Pre-Operation Safety Inspection

---

### Emergency Stop Button

The emergency stop (refer to Figure 3) is a two-position, red push button on the front of the upper control panel.

- Push the button inward to disconnect power from all control circuits at the upper controls.
- Twist the button to restore power.
- Push the emergency stop button inward when the upper controls are not in use to protect against unintentional operation.

#### Note

*The lower controls override the upper controls. If the upper control emergency stop is engaged the lower controls can still be used to operate the aerial platform.*

### Drive/Lift Selector Switch

The drive/lift selector switch (refer to Figure 3) is used to select either machine drive or lift functions. Both functions can not be operated at the same time.

- Place the drive/lift selector switch in the drive position to drive the aerial platform using the joystick. The platform will not raise or lower while driving.
- Place the drive/lift selector switch in the lift position to raise and lower the platform using the joystick.

### Joystick

Use the joystick (refer to Figure 3) to operate the following functions:

- Aerial platform steering
- Aerial platform drive and speed
- Platform raise/lower and speed

Movement of the joystick in a given direction produces a corresponding movement of the aerial platform. The steering and drive functions may be operated separately or simultaneously.

### Interlock Switch

The joystick has an interlock switch in the handle (refer to Figure 3).

- Engage the interlock by grasping the joystick and pulling the switch toward the handle.
- Engage the interlock to activate the steering, drive, or lift functions.

### Steer Switch

The steer switch (refer to Figure 3) is a momentary contact, rocker switch on top of the drive joystick. This switch controls the two front wheels to steer the aerial platform.

- To steer to the right, engage the interlock switch on the joystick and hold down the right side of the steer switch.

- To steer to the left, engage the interlock switch on the joystick and hold down the left side of the steer switch.

#### Note

*The steering wheels are not self-centering. Set the steering wheels straight ahead after completing a turn.*

### Drive Range Switch

#### S3220E/S3226E/S4726E/S4732E

The drive range switch (refer to Figure 3) has two positions to select drive wheel operation:

- High (Rabbit) – for normal driving conditions
- Low (Turtle) – for driving on grades up to 25 percent that require low speed and high torque operation, where high range is not sufficient to climb the grade.

### Horn Button

The horn button (refer to Figure 3) is on the front of the upper control panel.

Press the button to sound the horn.

### Battery Condition Indicator

The battery condition indicator (refer to Figure 3) is located on the top of the upper control panel. When the light comes on, the lift function is cut out and drive speed is reduced to slow.

## Pre-Operation Safety Inspection

#### Note

*Carefully read, understand and follow all safety rules, operating instructions, labels and National Safety Instructions/Requirements. Perform the following steps each day before use.*

1. Open the trays and inspect for damage, fluid leaks or missing parts.
2. Check the level of the hydraulic fluid with the platform fully lowered. The fluid level must be between the full and add marks. Add recommended hydraulic fluid if necessary. See "Specifications" on pages 21-25.
3. Check that the fluid level in the batteries is correct. See "Battery Maintenance" on page 18.
4. Verify that the batteries are charged.
5. Check that the AC extension cord has been disconnected from the outlet on the side of the chassis.
6. Check that all guardrails are in place and all fasteners are properly tightened.
7. Inspect the machine thoroughly for cracked welds and structural damage, loose or missing hardware, hydraulic leaks, damaged control cable and loose wire connections.

**System Function Inspection**

Refer to “Controls and Indicators” on page 8 for the locations of various controls and indicators.

**▲Warning**

**STAND CLEAR** of the work platform while performing the following checks.

**Before operating the machine, survey the work area for surface hazards such as holes, drop-offs, bumps and debris.**

**Check in ALL directions, including above the work platform, for obstructions and electrical conductors.**

1. Move the machine, if necessary, to an unobstructed area to allow for full elevation.
2. Twist the Lower Control Emergency Stop Switch to the ON position.
3. Twist the Upper Control Emergency Stop Switch to the ON position.
4. Visually inspect the elevating assembly, lift cylinder, and hoses for cracked welds and structural damage, loose hardware, hydraulic leaks, loose wire connections, and erratic operation. Check for missing or loose parts.
5. Hold the ground operation switch downward. Test each machine function from the lower control station (refer to Figure 2).
6. Test the emergency lowering system for proper operation.
7. Push the Lower Control Emergency Stop Button to check for proper operation. All machine functions should be disabled. Twist the Lower Control Emergency Stop Button outward to resume.
8. Enter the platform and close the gate.
9. Check that the route is clear of obstacles (persons, obstructions, debris), is level, and is capable of supporting the wheel loads.
10. Test each machine function from the upper control station by engaging the interlock and operating the function controls (refer to Figure 3).
11. Push the Upper Control Emergency Stop Button to check for proper operation. All machine functions should be disabled. Twist the Upper Control Emergency Stop Button to resume.

## Operation

---

### Operation

The aerial platform may be operated from either the lower or upper controls.

#### **Danger**

**The aerial platform is not electrically insulated. Death or serious injury will result from contact with, or inadequate clearance from, an energized conductor. Do not go closer than the minimum safe approach distance as defined by ANSI or national safety regulations.**

**Pinch points may exist between moving components. Death or serious injury will result from becoming trapped between components, buildings, structures, or other obstacles. Make sure there is sufficient clearance around the machine before moving the chassis or platform. Allow sufficient room and time to stop movement to avoid contact with structures or other hazards.**

**The aerial platform can tip over if it becomes unstable. Death or serious injury will result from a tip-over accident. Operate the aerial platform on a firm, flat, level surface. Avoid travel speeds and/or rough terrain that could cause sudden changes in platform position. Do not drive or position the aerial platform for elevated use near any drop-off, hole, slope, soft or uneven ground, or other tip-over hazard. Do not operate the aerial platform in unapproved locations or wind conditions.**

The platform rated work load is the total weight of the personnel and equipment that may be lifted in the platform.

The work loads are stated on the platform rating placard at the entrance to the platform.

#### **Danger**

**The aerial platform can tip over if it becomes unstable. Death or serious injury will result from a tip-over accident. Do not exceed the capacity values indicated on the platform rating placard.**

Capacity values indicate the rated lifting capacity and do not indicate aerial platform stability.

The operator bears ultimate responsibility for ensuring that the aerial platform is properly set up for the particular conditions encountered.

### Preparing for Operation

Use the following procedure to prepare the aerial platform for operation:

1. Perform a pre-operation safety and system function inspection.
2. Close and latch the control valve, hydraulic, and battery trays.
3. Place the battery disconnect switch in the on position.

### Lower Controls

Only the platform raise and lower functions may be operated from the lower controls. The lower controls may be used for initial set up of the aerial platform, and for testing and inspection.

Use the following procedure to raise or lower the platform using the lower controls.

1. Twist the emergency stop button (refer to Figure 2).
2. Insert the key into the control selector/ground operation switch and turn the switch to the lower controls position. Hold the switch in the lower controls position.
3. Hold the platform raise/lower toggle switch up to raise the platform and down to lower it.
4. Release the toggle switch to stop movement.

### Upper Controls

The upper controls may be used for driving and positioning the aerial platform while on the job.

Before operating the upper controls, properly set up the aerial platform as described under Preparing for Operation.

Use the following procedure to operate the aerial platform from the upper controls:

1. From the lower controls, twist the emergency stop button to restore power (refer to Figure 2).
2. Insert the key into the control selector switch and turn the switch to the upper controls position.

#### *Note*

*The upper controls will not operate while the control selector is in the lower position.*

3. Enter the platform and secure the gate.
4. From the upper controls, twist the emergency stop button to restore power (refer to Figure 3).
5. The aerial platform may be driven and the platform may be raised and lowered from the upper controls.

### Platform

Use care when entering and exiting the platform to avoid slipping and/or falling. Securely close the safety gate when the platform is occupied.

#### **Danger**

**The potential for an accident increases when the fold down rails are lowered. Death or serious injury can result in such accidents. Do not elevate the platform with the fold down rails lowered. Use extreme care when moving the aerial platform while the fold down rails are lowered.**

Be sure the fold down guardrails are up and the hardware is securely tightened, anytime the machine is not being transported.

### Raising and Lowering

The raise speed is proportional to the joystick position. The farther the joystick is moved, the faster the platform raises. There is only one lowering speed.

1. Place the drive/lift selector switch (refer to Figure 3) in the lift position.
2. Squeeze and hold the interlock switch against the joystick.
  - To raise the platform, slowly pull the joystick backward, until the desired height is reached.
  - To lower the platform, push the joystick forward.

### Lowering Interrupt

When the platform is lowered to about 1.8 m (6') lowering stops. The platform will not lower for five seconds regardless of the joystick position.

Center the control in neutral to reset the lowering function, then continue to lower the platform.

When the platform is below 1.8 m (6') and the control is moved to lower the platform, there is a 1.5 second delay before movement begins.

### Overload Protection

When the load in the platform is near or at rated capacity, an alarm will sound and the red light on the upper controls will flash.

The alarm and light warn the operator that the platform is close to becoming overloaded. All functions remain fully operational.

## Danger

**The aerial platform can tip over if it becomes unstable. Death or serious injury will result from a tip-over accident. Do not exceed the capacity values indicated on the platform rating placard.**

If the platform is fully lowered and is overloaded, when it is elevated just past 1.8 m (6'), a control module will stop the lift and drive functions and the alarm will sound and the warning light will flash. The platform can still be lowered to remove the excess load.

If the platform is elevated just past 1.8 m (6') and material is added to the platform overloading it, a control module will stop the lift, drive and lower functions and the alarm will sound and the warning light will flash. In this case, remove the load in excess of rated capacity and cycle the emergency stop button at the upper controls to return to normal operation.

### Extending

The platform can be extended and securely locked into position.

Use the following procedure to extend the platform:

1. Enter the platform and close the gate.

## Caution

**The extension deck is free to move when the extension handle locks are disengaged. Personal injury may result from accidentally extending or retracting the deck. Make certain both extension handle locks are fully engaged when the deck is extended in the working position and when it is stowed. Do not attempt to extend or retract the platform unless the aerial platform is on a level surface.**

2. While facing the front of the platform, grasp the platform extension handles, raise them and push the extension deck forward to extend the deck. Fully lower the handles at the mid or front position and ensure they are locked in their lowered position.
3. Try to move the rails back and forth to make sure the platform extension deck is locked in position.

Use the following procedure to retract the platform:

1. Enter the platform and close the gate.

## Caution

**The extension deck is free to move when the extension handle locks are disengaged. Personal injury may result from accidentally extending or retracting the deck. Make certain both extension handle locks are fully engaged when the deck is extended in the working position and when it is stowed. Do not attempt to extend or retract the platform unless the aerial platform is on a level surface.**

2. While facing the front of the platform, grasp the platform extension handles, raise them and pull the extension deck backward to retract the deck. Fully lower the handles at the stowed position and ensure they are locked in the lowered position.
3. Try to move the rails back and forth to make sure the platform extension deck is locked in position.

### Driving and Steering

## Danger

**The aerial platform can tip over if it becomes unstable. Death or serious injury will result from a tip-over accident. Do not drive an elevated aerial platform on soft, uneven, or sloping surfaces. Do not drive on grades that exceed 25 percent.**

## Operation

A fully stowed machine may be operated on grades up to 25 percent. A grade of 25 percent is a 0.76 m (30") vertical rise in 3.05 m (10') horizontal length.

### Warning

**Death or serious injury could result from improperly driving or steering the aerial platform. Read and understand the information in this manual and on the placards and decals on the machine before operating the aerial platform on the job.**

Use the following procedure to operate the drive and steer functions.

1. Place the drive/lift selector switch (refer to Figure 3) in the drive position.
2. Push the drive joystick forward to move the chassis forward. Pull the joystick backward to move the chassis backward. The drive speed is proportional to the joystick position.
3. To stop drive motion, return the joystick to neutral.

#### Note

*To make an emergency stop push the emergency stop button inward to apply the parking brakes.*

4. The steer switch is a momentary contact, rocker switch on top of the drive joystick. This switch controls the two front wheels to steer the aerial platform.
  - To steer to the right, hold down the right side of the steer switch.
  - To steer to the left, hold down the left side of the steer switch.

#### Note

*Holding the steer switch down too long may result in a sharp turn. This is especially true when driving and steering at the same time. It may be easier to turn the wheels in small increments using a series of quick taps on the steer switch.*

5. Set the steer wheels straight ahead after completing a turn. The steering wheels are not self-centering.

### Drive Range Switch

#### S3220E/S3226E/S4726E/S4732E

The drive range switch has two positions to select drive wheel operation:

- High (Rabbit) – for normal driving conditions.
- Low (Turtle) – for driving on grades up to 25 percent that require low speed and high torque operation, where high range is not sufficient to climb the grade.

In high the machine will travel up to 3.2 km/h (2 mph) when the platform is raised less than 2.4 m (8') and up to 0.6 km/h

(0.4 mph) when the platform is raised above 2.4 m (8'). Place the drive range switch in high for normal machine operation.

### Caution

**The extension deck is free to move when the extension handle locks are disengaged. Personal injury may result from accidentally extending or retracting the deck. Make certain both extension handle locks are fully engaged when the deck is extended in the working position and when it is stowed. Do not attempt to extend or retract the platform unless the aerial platform is on a level surface.**

Place the drive range switch in low, with the platform fully lowered and the extension deck securely pinned, before driving up a ramp to load the machine for transport.

### Drive Speeds

The drive speed is proportional to the joystick position. The farther the joystick is moved, the faster the travel speed.

Always slow down before traveling over rough terrain or any sloped surface.

Drive speed ranges are interlocked through limit switches that sense the platform position.

- When the platform is elevated below approximately 1.8 m (6') the aerial platform may be driven with the full range of drive speeds.
- When the platform is elevated above 1.8 m (6') only the slowest drive speed will work.

### Warning

**The potential for an accident increases when safety devices do not function properly. Death or serious injury could result from such accidents. Do not alter, disable, or override any safety device.**

Do not use the aerial platform if it drives faster than 0.6 km/h (0.4 mph), which is 5.3 m (7' 7") in 30 seconds, when elevated above 1.8 m (6').

### Drive/Lift Level Sensor Interlock

When the platform is elevated above 1.8 m (6'), lift and drive functions are interlocked through a level sensor system. If the chassis is tilted more than specified side-to-side or front-to-rear (refer to "Specifications" on pages 21-25), platform raise and drive functions are disabled and an alarm sounds when those controls are activated.

If the drive/lift level sensor interlock shuts off the platform raise and drive functions, lower the platform and drive to a level surface.

### Fold Down Guardrails

The platform guardrails may be folded down to pass the machine under low height obstructions.