

# Operator Manual

**SL20**

Serial No. 9300 to Current

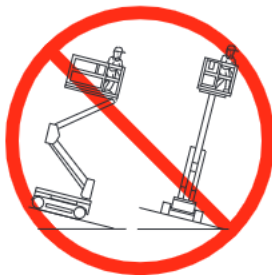
## WARNING

All personnel shall carefully read, understand and follow all safety rules, operating instructions, and the Scaffold Industry Association's **MANUAL OF RESPONSIBILITIES of ANSI A92.6-1999** before performing maintenance on or operating any UpRight Aerial Work Platform.

## Safety Rules



**NEVER** operate the machine within ten feet of power lines. **THIS MACHINE IS NOT INSULATED.**



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



**NEVER** sit, stand, or climb on guardrail or midrail

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

**NEVER** operate the machine if all guardrails are not properly in place and secured with all fasteners properly torqued.

**SECURE** chain across entrance after mounting platform.

**NEVER** use ladders or scaffolding on the platform.

**NEVER** attach overhanging loads or increase platform size.

**LOOK** up, down and around for overhead obstructions and electrical conductors.

**DISTRIBUTE** all loads evenly on the platform. See the back cover for maximum platform load.

**NEVER** use damaged equipment. (Contact UpRight for instructions. See toll-free phone number on back cover.)

**NEVER** change operating or safety systems.

**INSPECT** the machine thoroughly for cracked welds, loose hardware, hydraulic leaks, damaged control cable, loose wire connections and wheel bolts.

**NEVER** climb down elevating assembly with the platform elevated.

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

**NEVER** recharge battery near sparks or open flame; batteries that are being charged emit highly explosive hydrogen gas.

**AFTER USE** secure the work platform against unauthorized use by turning key switch off and removing key.

**NEVER** replace any component or part with anything other than original UpRight replacement parts without the manufacturer's consent.

## INTRODUCTION

This manual covers operation of the SL20 Self Propelled Elevating Work Platform. **This manual must be stored on the machine at all times.**

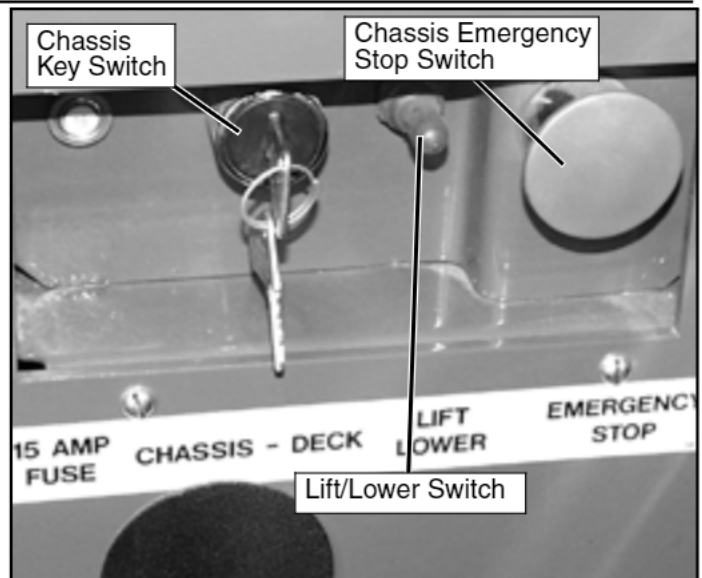
## PRE-OPERATION SAFETY INSPECTION (FIGURES 1, 2, AND 3)

Carefully read, understand and follow all safety rules, operating instructions, labels and the Scaffold Industry Association's MANUAL OF RESPONSIBILITIES. Perform the following steps each day before use.

1. Open module covers and inspect for damage, oil leaks or missing parts.
2. Check the level of the hydraulic oil with the platform fully lowered. Oil should be visible to full line on tank. Add hydraulic fluid if necessary.
3. Check that fluid level in the batteries is correct (See Battery Maintenance, page 7).
4. Verify that batteries are charged.
5. Check that AC extension cord has been disconnected from charger.
6. Check that all guardrails are in place with fasteners properly tightened.
7. Inspect the machine thoroughly for cracked welds, loose hardware, hydraulic leaks, damaged control cable, loose wire connections and wheel bolts.
8. Move the machine, if necessary, to an unobstructed area to allow for full elevation.
9. Pull Chassis Emergency Stop Switch to the ON position.
10. Pull Platform Emergency Stop Switch to the ON position.

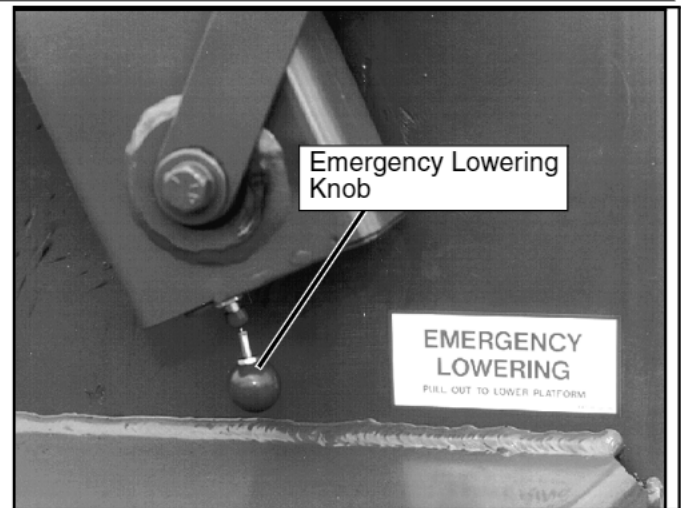
**Figure 1:** Chassis Controls

11. Turn and hold the Chassis Key Switch to CHASSIS. Push the Chassis Lift/Lower Switch to lift position and fully elevate the platform.
12. Visually inspect the elevating assembly, lift cylinder, cables and hoses for cracked welds, loose hardware, hydraulic leaks, loose wire connections and erratic operation. Check for missing or loose parts.
13. Verify that depression mechanism supports have fully rotated into position under each module.
14. Turn and hold the Chassis Key Switch to CHASSIS. Partially lower the platform by pushing the Chassis Lift/Lower Switch to LOWER, and check operation of the audible lowering alarm.
15. Pull out on the Emergency Lowering Knob to check for proper operation. Once the platform has lowered completely, release the knob.



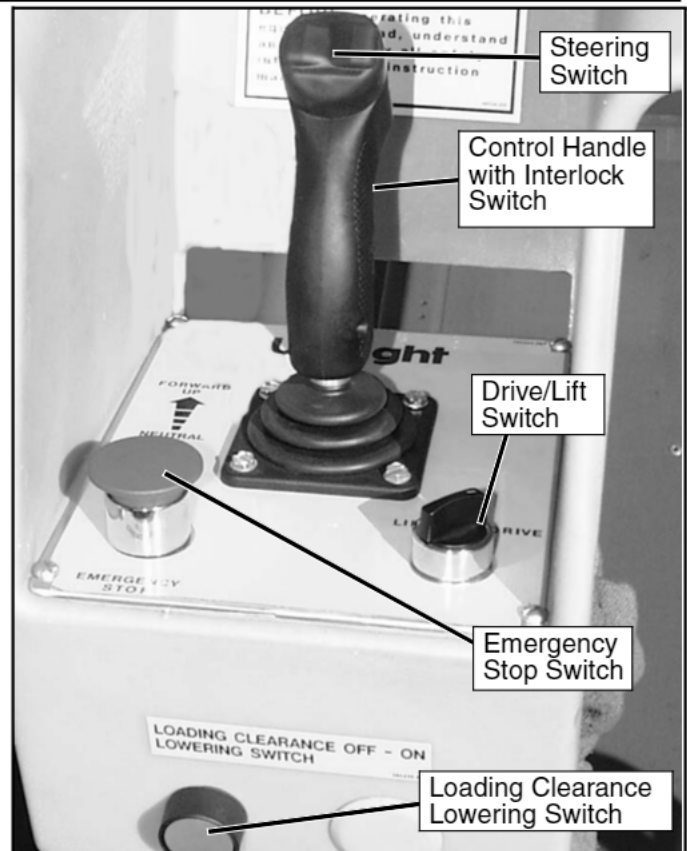
**Figure 2:** Emergency Lowering Knob

16. Turn the Chassis Key Switch to DECK.
17. Close and secure module covers.
18. Check that route is clear of obstacles (persons, obstructions, holes, drop-offs, bumps, and debris), is level, and is capable of supporting the wheel loads.
19. Mount the platform and properly close the entrance.



**Figure 3:** Platform Controls

20. **PLATFORM CONTROLS.** Turn the Drive/Lift Switch to DRIVE. While holding in the Interlock Switch, move the Control Handle to FORWARD, then REVERSE, to check for speed control.
21. Push the Steering Switch RIGHT, then LEFT, to check for steering control.
22. Turn the Drive/Lift Switch to LIFT. Grasp the Control Handle, depress the Interlock Switch and push it forward to check platform lift controls. Raise the platform to full elevation.
23. Pull back on the Control Handle. The platform should descend and the audible lowering alarm should sound.
24. The Platform will descend to the Loading Clearance Height, then stop. Check around the base of the platform to ensure that no one is in contact with the machine.
25. Press the Loading Clearance Lowering Switch and pull back on the Control Handle to lower platform completely.
26. Push the Platform Emergency Stop Switch button to check for proper operation. All the machine functions should be disabled. Pull out the Platform Emergency Stop Switch to resume.



## OPERATION

Before operating the work platform, ensure that the pre-operation safety inspection has been completed and that any deficiencies have been corrected. **Never operate a damaged or malfunctioning machine.** The operator must be thoroughly trained on this machine, and must read, fully understand, and follow this Operator Manual and Scaffold Industry Association's Manual of Responsibilities of ANSI A92.6-1999.

### PLATFORM EXTENSION

Figure 4: Platform Extension

1. Mount the platform and properly close the entrance.
2. Depress the foot lever located at the rear of the platform extension. Push the platform extension forward until the pin engages the front stop.
3. To retract the platform extension, depress the foot lever and pull the platform extension toward the rear of the machine until the pin engages the rear stop.



### TRAVEL WITH PLATFORM LOWERED

1. Check that route is clear of obstacles (persons, obstructions, holes, drop-offs, bumps, and debris), is level, and is capable of supporting the wheel loads.
2. Verify that the Chassis Key Switch is turned to DECK and that Chassis Emergency Stop Switch is on (pulled out).
3. Mount the platform and properly close the entrance.
4. Check clearances above, below, and to the sides of the platform.
5. Pull the Platform Emergency Stop Button out to the ON position.
6. Turn the Drive/Lift Switch to DRIVE.
7. Hold in the Interlock Switch and move the Control Handle to FORWARD or REVERSE to travel in the desired direction. The speed of the machine will vary depending on how far from center the Control Handle is moved.

### STEERING

1. Turn the Drive/Lift Switch to DRIVE.
2. While holding in the Interlock Switch, push the Steering Switch to RIGHT or LEFT to turn wheels in the desired direction. Observe the tires while operating the machine to ensure proper direction.

**NOTE: Steering is not self-centering. Wheels must be returned to the straight ahead position by operating the Steering Switch.**

### ELEVATING PLATFORM

1. Select a firm, level surface.
2. Turn the Drive/Lift Switch to LIFT.
3. While holding in the Interlock Switch, push the Control Handle forward.
4. If the machine is not level the tilt alarm will sound and the machine will not lift or drive. **If the tilt alarm sounds the platform must be lowered and the machine moved to a firm level surface before attempting to re-elevate the platform.**

**NOTE: Depression supports will deploy automatically as the platform elevates and will retract after the platform has been lowered completely and has been driven.**

## TRAVEL WITH PLATFORM ELEVATED

**NOTE:** The machine will travel at reduced speed when the platform is elevated.

1. Check that the route is clear of obstacles (persons, obstructions, holes, drop-offs, bumps, and debris), is level, and is capable of supporting the wheel loads.
2. Check clearances above, below and to the sides of platform.
3. Turn Drive/Lift Switch to DRIVE.
4. Hold in the Interlock Switch and move the Control Handle to FORWARD or REVERSE to travel in the desired direction. The speed of the machine will vary depending on how far from center the Control Handle is moved.
5. If the machine is not level the tilt alarm will sound and the machine will not lift or drive. **If the tilt alarm sounds the platform must be lowered and the machine moved to a firm, level surface before attempting to re-elevate the platform.**

## LOWERING PLATFORM

1. Turn Drive/Lift Switch to LIFT.
2. Hold in the Interlock Switch and pull back on the Control Handle to lower the platform. The Platform will descend to the Loading Clearance Height, then stop. Check around the base of the platform to ensure that no one is in contact with the machine.
3. Press the Loading Clearance Lowering Switch and pull back on the Control Handle to lower platform completely.

## EMERGENCY LOWERING

### **W A R N I N G**

If the platform should fail to lower, **NEVER** climb down the elevating assembly.

The Emergency Lowering Valve Knob is located at the front of the chassis (Figure 2).

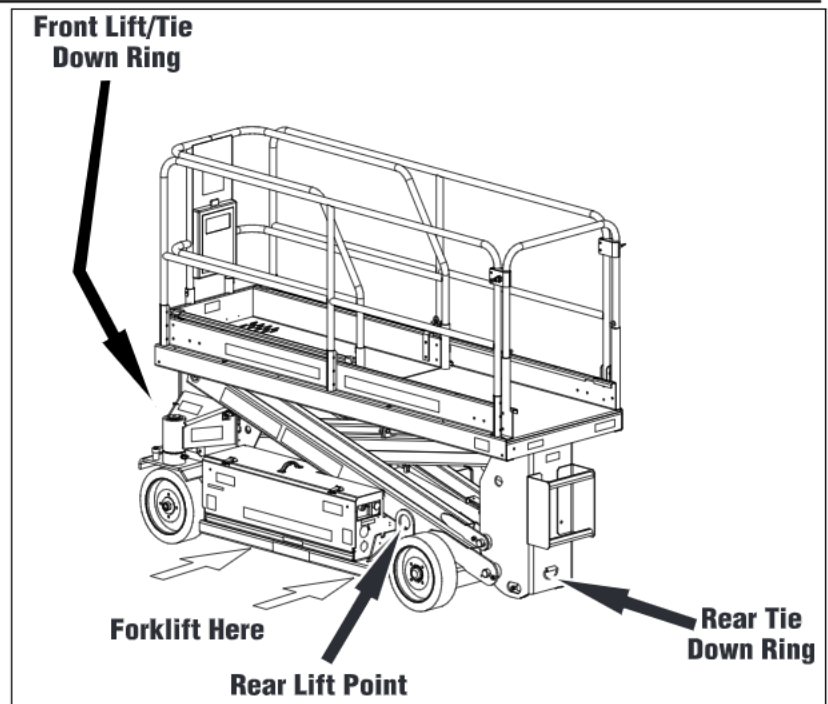
1. Open the Emergency Lowering Valve by pulling and holding the knob.
2. To close, release the knob. The platform will not elevate if the Emergency Lowering Valve is open.

## AFTER USE EACH DAY

1. Ensure that the platform is fully lowered.
2. Park the machine on a firm, level surface, preferably under cover, secure against vandals, children, and unauthorized operation.
3. Turn the key switch to **OFF** and remove the key to prevent unauthorized operation.

## TRANSPORTING THE WORK PLATFORM

Figure 5: Transporting the Work Platform



### BY FORKLIFT

#### **! DANGER !**

Forklifting is for transporting only.

See specifications for weight of work platform and be certain that forklift is of adequate capacity to lift work platform.

Forklift from the side by lifting under the chassis modules.

### BY TRUCK

1. Using the Control Handle, lift the platform above eight feet, then lower. The platform will stop lowering at the Loading Clearance Height.
2. Maneuver the work platform into transport position. Press the Loading Clearance Lowering Switch to fully lower the platform, then chock the wheels. The platform must be in the fully lowered position for transport.
3. Secure the work platform to the transport vehicle with chains or straps of adequate load capacity attached to the front and rear lift/tie down points on both sides of the chassis.

#### **! CAUTION !**

Overtightening of chains or straps through tie down lugs may result in damage to work platform.



## MAINTENANCE

### **! WARNING !**

Never perform service in the elevating assembly area while the platform is elevated without first blocking the elevating assembly.

**DO NOT** stand in elevating assembly area while deploying or storing brace.

**DO NOT** block elevating assembly with a load on the platform.

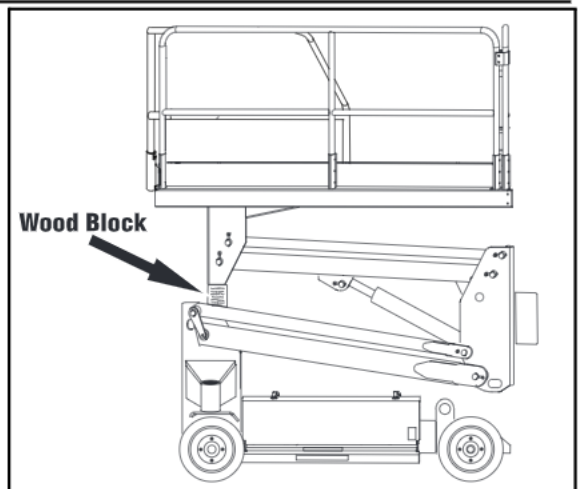
### **BLOCKING THE ELEVATING ASSEMBLY**

#### **BRACE INSTALLATION**

1. Park the work platform on firm, level surface.
2. Turn and hold the Chassis Key Switch to Chassis. Push the Lift/Lower Switch to LIFT and elevate the platform approximately two feet.
3. Place a 4 inch x 4 inch wood block as shown in Figure 6.
4. Turn and hold the Chassis Key Switch to CHASSIS. Push Chassis Lift Switch to LOWER and gradually lower the platform until the elevating assembly is supported by the wood block.

#### **BRACE REMOVAL**

1. Turn and hold the Chassis Key Switch to Chassis. Push the Lift/Lower Switch to LIFT and gradually raise the platform until the wood block can be removed.
2. Remove the wood block.
3. Turn and hold the Chassis Key Switch to CHASSIS. Push the Lift/Lower Switch to LOWER and completely lower platform.



*Figure 6: Blocking the Elevating Assembly*

### **BATTERY MAINTENANCE**

### **! WARNING !**

Hazard of explosive gas mixture. Keep sparks, flame, and smoking material away from battery.

Always wear safety glasses when working near batteries.

Battery fluid is highly corrosive. Thoroughly rinse away any spilled fluid with clean water.

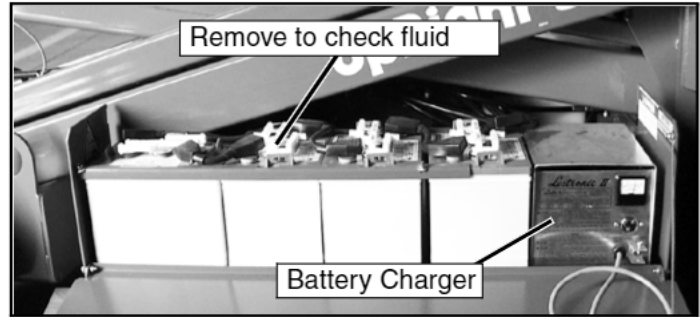
Always replace batteries with UpRight batteries or manufacturer approved replacements weighing 62 lbs. each.

- Check the battery fluid levels daily, especially if the work platform is being used in a warm, dry climate.
- If the electrolyte level is lower than 3/8 in. (10 mm) above the plates, add distilled water ONLY. Do not use tap water with high mineral content, as it will shorten battery life.
- The battery and cables should be inspected regularly for signs of cracks in the case, electrolyte leakage and corrosion of the terminals. Inspect cables for worn spots or breaks in the insulation and for broken cable terminals. Keep terminals and tops of batteries clean.
- Refer to the Service Manual to extend battery life and for complete service instructions.

## BATTERY CHARGING

Figure 7: Power Module

Charge the batteries at end of each work shift or sooner if batteries have been discharged.



### ! WARNING !

Charge batteries only in a well ventilated area.

Do not charge the batteries if the work platform is near a source of sparks or flames.

Permanent damage to the batteries will result if the batteries are not recharged immediately after discharging.

Never leave the battery charger operating for more than two days.

Never disconnect the cables from the batteries when the battery charger is operating.

Keep the battery charger dry.

1. Check battery fluid level. If electrolyte level is lower than 3/8 in. (10 mm) above plates add distilled water only.
2. Connect an extension cord to the battery charger plug at end of left module. Connect extension cord (12 gauge [1.5 mm<sup>2</sup>] minimum conductor diameter; 50 ft. [15m] maximum length) to properly grounded outlet of correct voltage and frequency.
3. The battery charger turns on automatically after a short delay.

**NOTE: The battery charger circuit must be used with a GFI (Ground Fault Circuit Interrupt) outlet.**

**DO NOT** operate the machine while charger is plugged in.



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## PREVENTATIVE MAINTENANCE

The complete inspection consists of periodic visual and operational checks, together with all necessary minor adjustments to assure proper performance. Daily inspection will prevent abnormal wear and will prolong the life of all systems. The inspection and maintenance schedule is to be performed at regular intervals. Inspection and maintenance shall be performed by personnel who are trained and familiar with mechanical and electrical procedures.

### **W A R N I N G**

Before performing preventative maintenance, familiarize yourself with the operation of the machine.

Always block the elevating assembly whenever it is necessary to enter the scissor assembly to perform maintenance while the platform is elevated.

The preventative maintenance table has been designed to be used primarily for machine service and maintenance repair. Please photocopy the following page and use the table as a checklist when inspecting the machine for service.

# PREVENTATIVE MAINTENANCE CHECKLIST

## PREVENTATIVE MAINTENANCE KEY

Interval

Daily=each shift or every day

50h/30d=every 50 hours or 30 days

250h/6m=every 250 hours or 6 months

1000h/2y=every 1000 hours or 2 years

Y=Yes/Acceptable

N=No/Not Acceptable

R=Repaired/Acceptable

## PREVENTATIVE MAINTENANCE REPORT

Date: \_\_\_\_\_

Owner: \_\_\_\_\_

Model No: \_\_\_\_\_

Serial No: \_\_\_\_\_

Serviced By: \_\_\_\_\_

Service Interval: \_\_\_\_\_

COMPONENT	INSPECTION OR SERVICES	INTERVAL	Y	N	R
Battery	Check electrolyte level	Daily			
	Check specific gravity	6m			
	Clean exterior	6m			
	Check battery cable condition	Daily			
	Clean terminals	6m			
Hydraulic Oil	Check oil level	Daily			
	Change filter	6m			
	Drain and replace oil	2y			
Hydraulic System	Check for leaks	Daily			
	Check hose connections	30d			
	Check hoses for exterior wear	30d			
Emergency Hydraulic System	Operate the emergency lowering valve and check for serviceability	Daily			
Controller	Check switch operation	Daily			
Control Cable	Check the exterior of the cable for pinching, binding or wear	Daily			
Platform Deck and Rails	Check fasteners for proper torque	6m			
	Check welds for cracks	Daily			
	Check condition of deck	Daily			
Tires	Check for damage	Daily			
	Check lug nuts (torque to 108 Nm [80 ft. lbs])	6m			
Hydraulic Pump	Wipe clean	30d			
	Check for leaks at mating surfaces	30d			
	Check for hose fitting leaks	Daily			
	Check mounting bolts for proper torque	6m			
Drive Motors	Check for operation and leaks	Daily			
Steering System	Check hardware & fittings for proper torque	6m			
	Grease pivot pins	30d			
	Oil king pins	30d			
	Check steering cylinder for leaks	30d			

COMPONENT	INSPECTION OR SERVICES	INTERVAL	Y	N	R
Elevating Assembly	Inspect for structural cracks	Daily			
	Check pivot points for wear	6m			
	Check mounting pin pivot bolts for proper torque	6m			
	Check elevating arms for bending	6m			
Chassis	Check hoses for pinch or rubbing points	Daily			
	Check component mounting for proper torque	6m			
	Check welds for cracks	Daily			
Lift Cylinder	Check the cylinder rod for wear	30d			
	Check mounting pin pivot bolts for proper torque	6m			
	Check seals for leaks	30d			
	Inspect pivot points for wear	6m			
	Check fittings for proper torque	6m			
Entire Unit	Check for and repair collision damage	Daily			
	Check fasteners for proper torque	6m			
	Check for corrosion-remove and repaint	6m			
	Lubricate	30d			
Labels	Check for peeling, missing, or unreadable labels & replace	Daily			

# SPECIFICATIONS

ITEM	SL20
<b>Platform Size (Inside toeboards)</b>	29" x 99.5" [.74 m x 2.53 m] Inside Toeboards
<b>Maximum Platform Capacity</b>	
Standard w/ Extension	750 lbs. [340 kg]
on Extension	250 lbs. [110 kg]
<b>Maximum Number of Occupants</b>	
Standard w/ Extension	2 People
on Extension	1 person
<b>Height</b>	
Working Height	26 ft. [7.92 m]
Maximum Platform Height	20 ft. [7.92 m]
Maximum Drivable Height	20 ft. [6.10 m]
<b>Dimensions</b>	
Weight, Standard	3,100 lbs. [1411 kg]
Overall Width	33 in. [.84 m]
Overall Height	79.0 in. [2.01 m]
Overall Length, Standard	107.5 in. [2.75 m]
<b>Drive Speed</b>	
Platform Lowered	2.3 mph [3.70 km/h]
Platform Raised	0.6 mph [1.13 km/h]
<b>Energy Source</b>	24 Volt Battery Pack (4-220 Amp Hour, 6 Volt Batteries, Minimum Weight 62 lbs. each), 4 HP DC Electric Motor
<b>System Voltage</b>	24 Volt DC
<b>Battery Charger</b>	25 AMP
<b>Hydraulic Tank Capacity</b>	4 Gallons [15.2 l]
<b>Maximum Hydraulic System Pressure</b>	3000 psi [251 bar]
<b>Hydraulic Fluid</b>	
Above 32° F [0° C]	ISO #46
Below 32° F [0° C]	ISO #32
Below 0° F [-17° C]	ISO #15
<b>Lift System</b>	Single Lift Cylinder
<b>Lift Speed</b>	14 seconds
<b>Control System</b>	Motor Control, Rotary Selector Switch, and Red Mushroom Emergency Stop Switch
<b>Drive System</b>	Dual Front Wheel Hydraulic Motors
<b>Tires</b>	15 in. [381 mm] Diameter Solid Rubber, non-marking
<b>Parking Brakes</b>	Dual - Spring Applied, Hydraulically Released
<b>Turning Radius (inside)</b>	25 in. [.64 m] Inside
<b>Maximum Gradeability:</b>	25% [14°]
<b>Wheel Base</b>	70 in. [1.78 m]
<b>Guardrails</b>	40 in. [1.02 m]
<b>Toeboards</b>	6 in. [152 mm]

\*Specifications are subject to change without notice. Hot weather or heavy use may affect performance.

Refer to the Service Manual for complete parts and service information

The SL20 meets or exceeds all applicable requirements of OSHA and ANSI A92.6-1999

**UpRight**

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