snorkel

2100SJ



CE

OPERATOR'S MANUAL

ANSI/CSA/CE/AS/NZS
Serial number 000001 and after
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Original Instructions – English

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Limited Warranty

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General Specifications

Aerial Platform	
Working height	216' (66 m)
Maximum platform height	210' (64.0 m)
Horizontal reach	115' (35.1 m)
Main boom	
Articulation	-2° to +79°
Extension	133' 8" (40.7 m)
Jib boom	
Articulation	-55° to +73°
Length, extended	36' 2.5" (11.0 m)
Turntable rotation, continuous	360° continuous
Turning radius, inside	
Axles retracted	10' (3.0 m)
Axles extended	8' 6" (2.6 m)
Turning radius, outside	
Axles retracted	16' 4" (5 m)
Axles extended	21' (6.4 m)
Tail swing	
Axles retracted	8' 10" (2.7 m)
Axles extended	0
Wheelbase	16' 1" (4.9 m)
Ground clearance	14" (355 mm)
Maximum wheel load	50,000 lbs (22,680 kg)
Level sensor setting	
Boom angle less than 50 degrees	5 degrees
Boom angle greater than 50 degrees	3.5 degrees
Weight, EVW	
Approximate	93,680 lbs (42,493 kg)
Maximum allowable manual force (side pull)	
Indoors	90 lb (400 N)
Outdoors	90 lb (200 N)
Width	
Axles retracted	8' 2" (2.5 m)
Axles extended	18' (5.5 m)
Stowed length	72' (23 m)
Transport length	51' (15.5 m)
Stowed height	10' (3.0 m)
Platform	
Dimensions	8' x 3' (2.4 m x 0.9 m)
Rated work load, standard unrestricted	770 lb (349 kg)
Rated work load, restricted	1,000 lb (454 kg)
Rotation	160 degrees
Maximum number of occupants	2 people
Optional AC generator	110 V/208 V

Function Speed	
Chassis/Axles	
Transform, operational	35 to 40 seconds
Transform, transport	35 to 40 seconds
Turntable rotation, booms stowed	140 to 150 seconds
Main boom	
Raise, booms retracted	150 to 170 seconds
Lower, booms retracted	150 to 170 seconds
Extend, booms horizontal	75 to 85 seconds
Retract, booms horizontal	75 to 85 seconds
Jib Boom	
Raise, jib fully retracted	55 to 65 seconds
Lower, jib fully retracted	55 to 65 seconds
Extend	25 to 35 seconds
Retract	25 to 35 seconds
Transform, operational	50 to 70 seconds
Transform, transport	50 to 70 seconds
Platform	
Rotate	10 to 15 seconds
Level, up	15 to 21 seconds
Level, down	15 to 21 seconds
Drive	
High, booms stowed	2.5 mph (4.0 km/h)
Low, booms stowed	0.5 mph (0.8 km/h)
Ultra low, boom up and or extended	0.1 mph (0.16 km/h)
Steer	
Full left to right	15 to 20 seconds

Drive System	
Maximum drive height	210' (64.0 m)
Standard	Four wheel drive
Gradeability	35%

Maximum Slope Sensor Alarm Setting	
Boom angle less than 50 degrees	
Side-to-side	5 degrees
Front-to-rear	5 degrees
Boom angle greater than 50 degrees	
Side-to-side	3.5 degrees
Front-to-rear	3.5 degrees

Tires	
Foam filled	445/50-710, 24 ply
Mass	1,230 lbf (559 kg)

Electrical System	
Voltage	12 V DC negative chassis ground
Source	Five - 12 V 1,000 CCA batteries
Fluid recommended	distilled water

Hydraulic System	
Pressure	
Function circuit maximum	3,250 psi (22,400 kPa)
Drive circuit maximum	6,000 psi (41,370 kPa)
Reservoir capacity	180 US gal (681.3 l)
System capacity	230 US gal (870.6 l)
Maximum operating temperature	180°F (82°C)
Hydraulic fluid recommended	
Above 10°F (-13°C)	ISO VG32
Below 10°F (-13°C)	ISO VG15

Engine	
Diesel	Kubota V3800 Tier 4 Final/EU Stage 5
Output	115 hp (86.4 kw)

Fuel Tank Capacity	
Diesel	50 US gal (227.3 l)

Ambient Air Temperature Operating Range	
Fahrenheit	0°F to 110°F
Celsius	-18°C to 43°C

Maximum Wind Speed	
Gust or steady	28 mph (12.5 m/s)

Vibration	
Hand/arm	less than 2.5 m/sec²
Body	less than 2.5 m/sec²

Group Classification	
Heavy Duty – intended life	100,000 load cycles

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⚠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 turntable and on the upper control panel in the platform.
- Controls to drive the aerial platform are located on the upper control panel only.

Battery Disconnect Switch

The battery disconnect is located behind the door on the right side of the turntable in front of the batteries (refer to Figure 6.1).

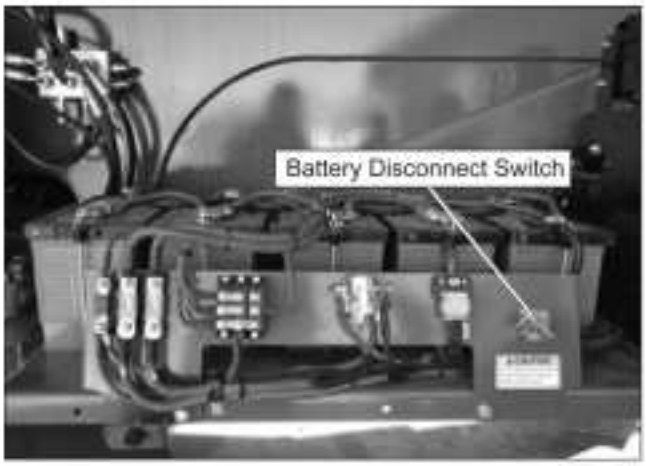


Figure 6.1 – Battery Disconnect Switch

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 6.2) are located on the left side of the turntable. Boom and platform functions can be operated from the lower controls. The following are located on the lower control panel.

- Master switch
- Start/emergency power/ground operation switch
- Emergency stop button
- Controls selector switch
- Axle switch
- Rotation switch
- Boom elevation switch
- Boom extension switch
- Jib articulation switch
- Jib extension switch
- Jib rotation switch
- Platform level switch
- Platform rotation switch
- Diagnostic center display

Master Switch

The master switch (refer to Figure 6.2) is used to supply electrical power to the lower control panel. Turn the switch to the on (green) position to supply power to the lower controls. In the off position, the key may be removed to help prevent unauthorized machine operation.

Start/Emergency Power/Ground Operation Switch

This switch (refer to Figure 6.2) is used to operate three machine functions. Engine start, activation of the emergency power system, and enable of the machine functions from the lower controls are all controlled with this switch.

Engine Start

The start switch (refer to Figure 6.2) function is similar to an automobile ignition switch.

An alarm sounds when the master switch is turned on to warn others that the machine engine is being started.

- Hold the switch downward until the engine starts, then release it to on.
- If the engine dies, release the switch and hold it downward until the engine starts, then release it to on.

Emergency Power

The emergency power function is used to operate turntable, boom, and platform functions using the emergency power system when the engine is off/disabled. The switch is spring returned to the engine position for aerial platform engine operation.

⚠Caution

The emergency power system is for emergency lowering and stowing only. The length of time the pump can be operated depends on the capacity of the batteries. Do not use this system for normal operation.

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Annual Maintenance – Every 500 Hours

Item	Procedure	Information	P/F/R
90 day or 150 hour maintenance	Perform maintenance per schedule	Retain copy of checklist	
Hydraulic oil reservoir	Clean and replace fluid	Above 10°F (-13°C) ISO VG32 Below 10°F (-13°C) ISO VG15	
Hydraulic return filter	Replace	After first 50 hours, then at recommended interval	
Hydraulic reservoir suction filter	Clean and reinstall		
Hydraulic pressures	Pump system relief setting	Hydrostatic Drive: 5,950 - 6,050 psi Boom Function: 3,200 - 3,300 psi	
	Function pressures	Boom up: 3,200 - 3,300 psi	
		Boom down: 3,200 - 3,300 psi	
		Steer: 1,950 - 2,050 psi	
		Platform Level: 3,200 - 3,300 psi	
		Extend: 2,450 - 2,550 psi	
		Retract: 3,200 - 3,300 psi	
Gear hubs	Replace fluid	Gear Lubricant SAE Grade 80W-90	
Swing drives	Replace fluid	Gear Lubricant SAE Grade 80W-90	
Engine coolant	Check condition	See engine owner's manual	
Front wheel bearings	Clean and repack	Extreme Pressure Grease Above 10° F NLGI Grade 2 Below 10° F NLGI Grade 1	

Maintenance Table Key: P = Pass, F = Fail, R = Repaired

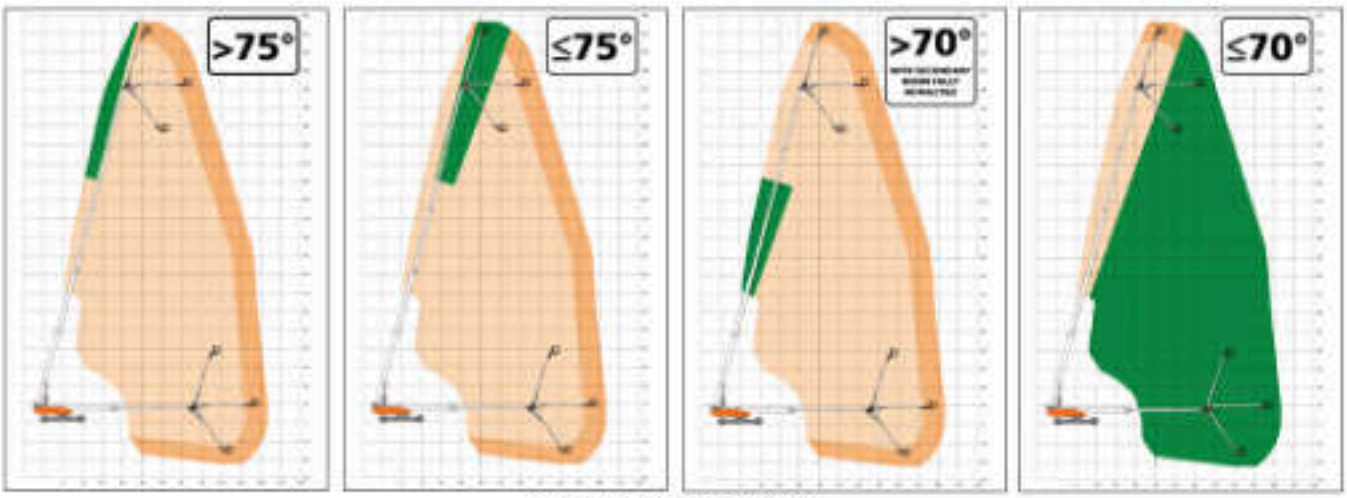
Performed by:_____ Date:_____

Model Number:_____ Serial Number:_____

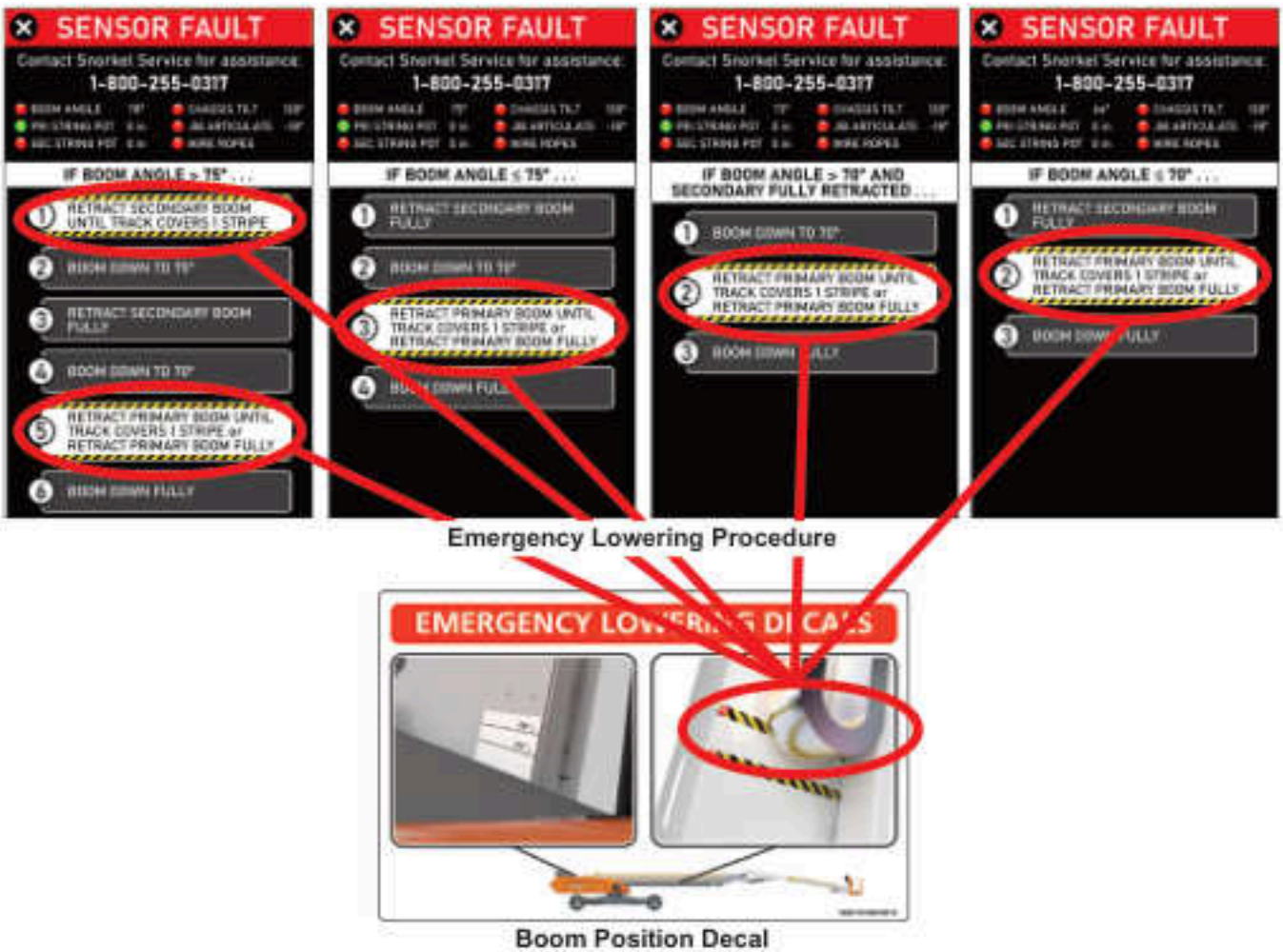
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Sensor Fault Indicating Boom Angle



Unique Boom Position



Emergency Lowering Procedure

Boom Position Decal

Figure 10.8 – Emergency Lowering Procedure for Each Unique Boom Position

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When operating on slopes up to 3.5 degrees with a platform capacity between 770 lb (349 kg) and 1,000 lb (454 kg), the jib must be fully retracted. The platform may be positioned within the restricted range of the envelope for the higher platform capacity (refer to Figure 5.17).

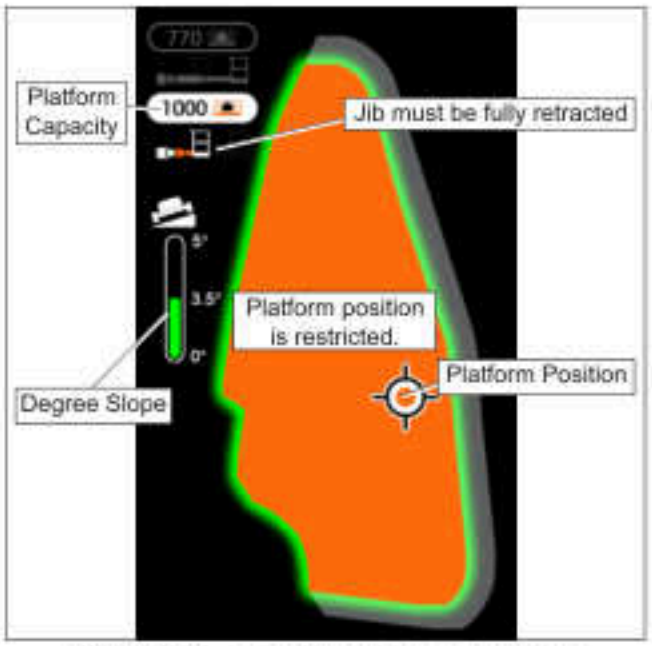


Figure 5.17 – Restricted Use of Envelope 1,000 lb Capacity with 3.5 Degree Slope

When operating on slopes above 3.5 degrees up to 5 degrees with a platform capacity between 770 lb (349 kg) and 1,000 lb (454 kg), the jib must be fully retracted. The platform position is restricted to the bottom portion of the envelope (refer to Figure 5.18).

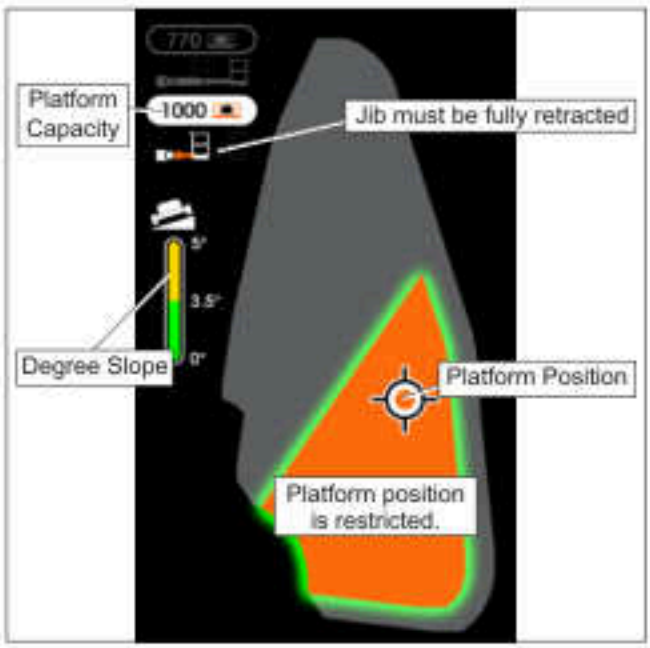


Figure 5.18 – Restricted Use of Envelope 770 lb Capacity with 3.5 to 5 Degree Slope

Envelope Boundaries

The outside edge, or boundary, of the working envelope is solid green when the platform is positioned within that area (refer to Figure 5.19). The green border defines the safe boundary that the platform may be positioned in.

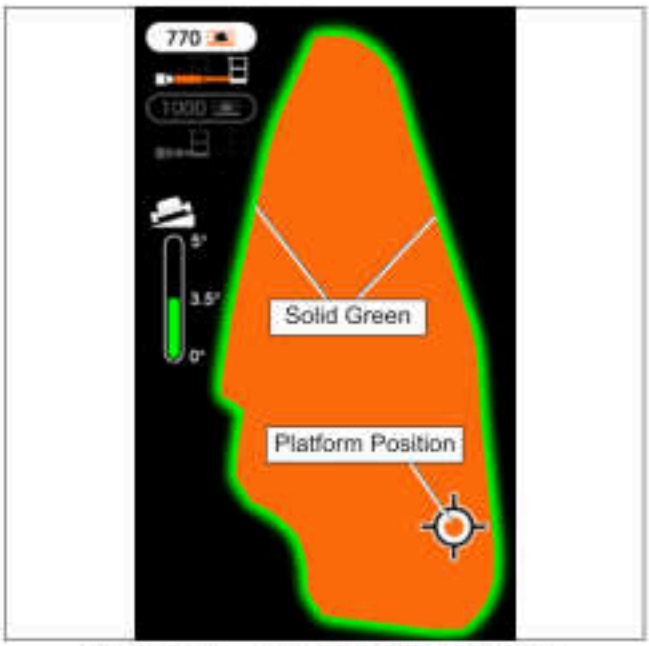


Figure 5.19 – Envelope Safe Boundary

If the platform is positioned too close the boundary, breaching the allowable boundary tolerance, the border color changes to white (refer to Figure 5.20) and flashes to visually warn the operator that the outside limit of the envelope is being approached.

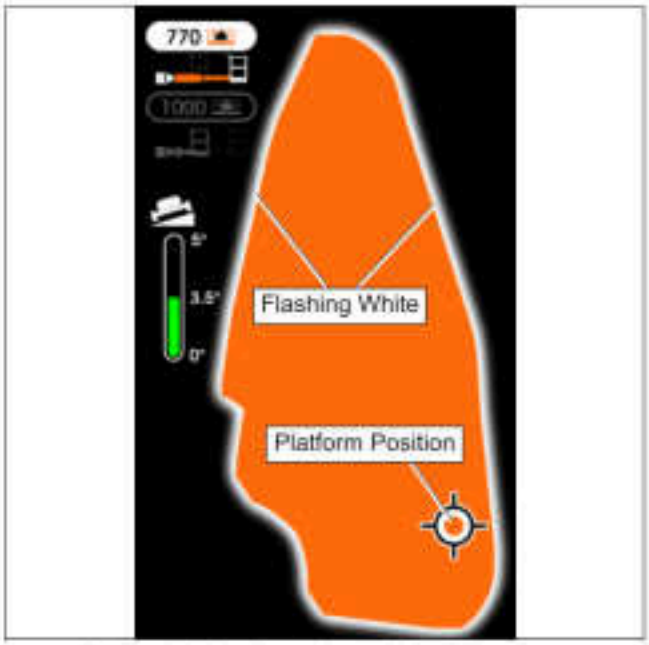


Figure 5.20 – Envelope Safe Boundary

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