snorkel

S9031RT-HC
S9043RT-HC
S9056RT-HC
S9070RT-HC



CE

OPERATOR'S MANUAL

ANSI/CSA/CE/AS/NZS

Part Number 1442309
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Original Instructions

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Limited Warranty

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General Specifications – S9070RT-HC

Aerial Platform

Working height	76' (23.3 m)
Maximum platform height	70' (21.3 m)
Turning radius	
Inside	6' 8" (2.03 m)
Outside	17' 4" (5.28 m
Wheelbase	116" (2.95 m)
Ground clearance	8.7" (221 mm)
Maximum wheel load	6,890 lbs (3125 kg)
Maximum ground bearing pressure	119 psi (8.3 kg/cm²)
Floor load pressure	243 psf (1255 kg/m²)
Tread contact patch	58.1 in² (374.6 cm²)
Floor area	90.5 ft² (8.41 m²)
Maximum stabilizer load	3,000 lbs (1,361 kg)
Weight, EVW	
Approximate	20,550 lbs (9,321 kg)
Maximum allowable manual force (side pull)	
Outdoors	45 lb (200 N)
Maximum allowable manual force (side pull)	
Indoors	90 lb (400 N)
Stowed width	7' 6" (2.28 m)
Stowed length	12' 1" (3.68 m)
Stowed height	11' 3" (3.43 m)
With rails folded	8' 5" (2.5 m)

Platform

Dimensions	
Stowed	18' x 7' 4" (4.87 m x 2.24 m)
Deck extension length	4' 6" (1.37 m)
Single deck extended	17' 6" x 7' 4" (5.33 m x 2.24 m)
Dual deck extended	27' x 7' 4" (8.23 m x 2.24 m)
Guardrail height	39" (0.99 m)
Toeboard height	6" (15.2 cm)
Rated work load	
Total	3,000 lb (1,361 kg)
Maximum number of occupants	4 outdoors 4 indoors

Function Speed

Platform raise	55 seconds
Platform lower	50 seconds
High drive	
Platform stowed to 4' (1.21 m)	4.0 mph (6.4 km/h)
Mid drive	
Platform stowed to 4' (1.21 m)	1.0 mph (1.6 km/h)
Low drive	
4' (1.21 m) to full height	0.3 mph (0.48 km/h)

Drive System

Standard	Four-wheel drive
Gradeability	45%
Axle	front pivoting
Vertical wheel travel	9" (22.8 cm)
Maximum drive height	70' (21.3 m)

Drive/Lift Level Sensor Interlock

Side-to-side	1 degrees
Front-to-rear	3 degrees

Maximum Stabilizer Leveling

Side-to-side	12 degrees
Front-to-rear	7 degrees

Tires

Foam filled	355/55D625

Electrical System

Voltage	12 V DC negative chassis ground
Source	One - 12 V 1,000 CCA battery
Fluid recommended	distilled water

Hydraulic System

Maximum pressure	
System	3,000 psi (20,684 kPa)
Drive	5,000 psi (34,473 kPa)
Reservoir capacity	39 US gal (148 l)
System capacity	43 US gal (162.7 l)
Maximum operating temperature	160°F (71°C)
Hydraulic fluid recommended	
Above 10°F (-12°C)	ISO VG32
Below 10°F (-12°C)	ISO VG15

Engine

Diesel	Kubota V2403
Output	65 hp (48.6 kW)
Dual fuel	Kubota WG2503
Output – gasoline	61 hp (45.5 kW)
Output – LPG	61.7 hp (46 kW)

Fuel Tank Capacity

Diesel	45 US gal (170 l)
Dual fuel	
Gasoline	45 US gal (170 l)
LPG	43.5 lbs (19.7 kg)

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)

Sound Pressure Level

At work station	below 105 dB(A)

Group Classification

Light Duty – intended life	40,000 load cycles

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2. At the lower controls, pull the emergency stop switch outward to the on position. Place the control selector switch in the upper control position.

3. At the upper controls (refer to Figure 7.16), pull the emergency stop button outward.



Figure 7.16 – Upper Control Front

4. Hold the engine start switch downward until the engine starts, then release.

5. Let the engine warm to operating temperature.

⚠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 of the aerial platform while performing the prestart inspection.

⚠Warning

The potential for an accident increases when operating an aerial platform that is damaged or malfunctioning. Death or serious injury could result from such accidents. Do not operate the aerial platform if it is damaged or malfunctioning.

6. Test the interlock switch by moving the joystick without engaging the interlock switch.

   If movement occurs, the interlock is not functioning properly. Do not operate the machine until the problem is corrected.

7. Place the drive/lift selector switch in the drive position and test the operation of the joystick in both directions. The lift functions should not operate with the selector in the drive position.

   Squeeze and hold the interlock switch against the joystick. Test the steer switch in both directions using the steering switch.

   - 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.

8. Test the operation of the brakes while operating the aerial platform from the upper controls. The brakes are engaged when:

   - the joystick interlock is released.
   - the drive/lift selector switch is in the lift position.
   - the emergency stop button is pushed down.

   Placing the drive/lift selector in the drive position, engaging the interlock and moving the joystick, releases the brakes.

9. Place the drive/lift selector switch in the lift position and test the operation of the joystick in both directions. The drive functions should not operate with the selector in the lift position.

   Squeeze and hold the interlock switch against the joystick. Test the joystick in both directions.

   - To raise the platform, pull the joystick backward.
   - To lower the platform, push the joystick forward.

Emergency Stop

To test the emergency stop button from the upper controls:

1. Start the engine from the upper controls.
2. Push the emergency stop button inward to turn off electrical power.
3. Verify that the engine shuts off and the upper control functions do not operate.

Emergency Power

To test the emergency power system from the upper controls:

1. Turn the battery disconnect switch on.
2. At the lower controls, pull the emergency stop button outward and place the control selector switch in the upper control position.
3. At the upper controls (refer to Figure 7.16), pull the emergency stop button outward, start the engine and extend the extension deck(s).
4. Hold the engine/emergency power switch in the emergency power position, engage the joystick interlock and verify that the extension deck(s) retract.

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Annual Maintenance – Every 500 Hours

Item	Procedure	Information	P/F/R
Frequent Maintenance Checklist	Complete Frequent Maintenance		
Hydraulic System			
Hydraulic fluid condition	Drain, flush, and clean hydraulic system. Refill with new fluid.	Above 10°F (-12°C) ISO VG32 Below 10°F (-12°C) ISO VG15	
Return filter	Replace	Refer to Parts Manual for filter part number	
Pressures	Check system relief pressure	System Relief Pressure 3,000 psi (20,684 kPa)	
	Check drive relief pressure	Drive Relief Pressure 5,000 psi (34,473 kPa)	

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

Performed by:_____ Date:_____

Model:_____ Serial Number:_____

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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	Tip Over Hazard	Collision Hazard	Fall Hazard
			
THIS MACHINE IS NOT INSULATED!	**NEVER** elevate the platform or drive the machine while elevated unless the machine is on a firm, level surface.	**NEVER** position the platform without first checking for overhead obstructions or other hazards.	**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" 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" for details.

DISTRIBUTE all platform loads evenly on the platform.

NEVER operate the machine without first surveying the work area for stationary or moving obstacles and surface hazards such as holes, drop-offs, bumps, curbs, or debris; and avoiding them. **NEVER** strike or bump into stationary or moving obstacles while driving or raising, lowering, or extending the platform.

USE THREE POINTS OF SUPPORT when entering or exiting the platform. Grasp the handrails, not the doors, with one hand on each side. Use two hands and one foot on the step when climbing into and out of the platform.

PLATFORM passengers should watch their hands and fingers for pinch points while holding on the guardrails while the platform is moving.

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" 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! NEVER** exit or enter the platform when it is elevated.

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." 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.

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Minimum Safe Approach Distance – AS/NZS

Minimum safe approach distances to energized power lines and their associated parts must be observed while operating the aerial platform.

⚠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 national safety regulations.

AS/NZS 2550.10:2006 define minimum distances that must be observed when working near overhead power lines on poles and overhead power lines on towers. Refer to the clearance requirements decals on the machine to determine safe approach distances (refer to Figure 3.1).

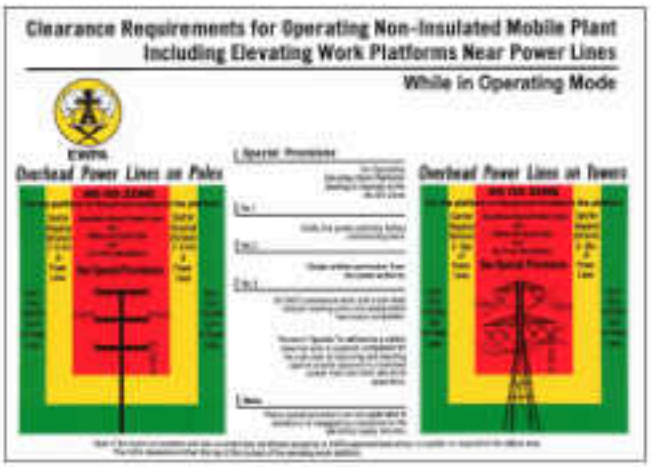


Figure 3.1 – Minimum Safe Approach Distance

Platform Capacity

The maximum unrestricted rated load capacity and the maximum number of occupants for the aerial platform are stated on machine decals, placards, and in the machine specifications in this manual.

⚠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 machine decals, placards, and in the machine specifications in this manual.

Manual Force

Manual force is the force applied by the occupants to objects such as walls or other structures outside the work 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 maximum allowable manual force indicated on the machine decals, placards, and in the machine specifications in this manual.

The maximum allowable manual force outdoors is limited to 45 lbs (200 N), with a maximum of 90 lbs (400 N) indoors.

Wind Speeds

Do not add anything to the aerial platform that will increase the wind loading such as billboards, banners, flags, etc.

⚠Danger

The aerial platform can tip over if it becomes unstable. Death or serious injury will result from a tip-over accident. Do not operate the machine in wind speeds of 28 mph (12.5 m/s) or greater.

Do not operate the aerial platform in windy conditions with wind gusts or steady wind speeds of 28 mph (12.5 m/s) or greater. Refer to Figure 3.2.

Prestart Inspection

Perform a prestart inspection before each shift as described in Chapter 8. Do not use the aerial platform on the job unless you are trained and authorized to do so.

Work Place Inspection and Practices

Do not use the aerial platform as a ground connection when welding.

- The welding ground clamp must be attached to the same structure that is being welded.
- Electrical current flow can be very intense, causing serious internal damage to some components.

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 3.2 – Beaufort Scale

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