

OPERATING MANUAL (ANSI/CSA)

# ARTICULATING BOOMS

MODELS SJ46AJ

169510AIA November 2018

SKYJACK

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# 3.0 Operation

This section provides the necessary information needed to operate the aerial platform. It is important that the user reads and understands this section before operating the aerial platform.

## 3.1 General

In order for this aerial platform to be in good working condition, it is important that the operator meets the necessary qualifications and follow the maintenance and inspection schedule referred to in this section.

### 3.1-1 Operator Qualifications

- Only trained and authorized personnel shall be permitted to operate an aerial platform.
- Safe use of this aerial platform requires the operator to understand the limitations and warnings, operating procedures and operator's responsibility for maintenance. Accordingly, the operator must understand and be familiar with this operating manual, its warnings and instructions, and all warnings and instructions on the aerial platform.
- The operator must be familiar with employer's work rules and related government regulations and be able to demonstrate the ability to understand and operate this make and model of aerial platform in the presence of a qualified/competent person.

### 3.1-2 Operator's Responsibility for Maintenance

**⚠ WARNING**

Maintenance must be performed by trained and qualified/competent personnel who are familiar with mechanical procedures.

Death or serious injury could result from the use of an aerial platform that is not properly maintained or kept in good working condition.

- The operator must be sure that the aerial platform has been properly maintained and inspected before using it.
- The operator must perform all the daily inspections and function tests found in Table 4.7, even if the operator is not directly responsible for the maintenance of this aerial platform.

### 3.1-3 Maintenance and Inspection Schedule

- The inspection points covered in Table 4.7 indicate the areas of the aerial platform to be maintained or inspected and at what intervals the maintenance and inspections are to be performed.
- The actual operating environment of the aerial platform may affect the maintenance schedule.

**⚠ WARNING**

Use original or manufacturer-approved parts and components for the aerial platform.

### 3.1-4 Owner's Inspections

It is the responsibility of the owner to arrange daily, quarterly (or 150 hours) and annual inspections of the aerial platform. Refer to Table 4.7 for recommended maintenance and inspection areas and intervals. A record of annual inspection is kept on a label located close to the base control console on the cowling. Refer to Table 4.3 in this manual.

**NOTE**

Inspection scheduling requirements may vary. Owners must comply with local standards and regulations.





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### 3.8-9 To Operate Using Emergency Power Switch at Base Control Console

This is a momentary-type switch. This switch allows all functions except the drive function to operate in the event of engine malfunction. Refer to Section 2.6 for the emergency lowering procedure.

**NOTE**
The emergency power unit has two-minute duty cycle.

**CAUTION**
Do not use emergency power unit continuously for more than two minutes.

### 3.8-10 To Activate Platform Control Console

1. In engine compartment, turn main power disconnect switch to "I" on position.
2. On base control console, turn off/base/platform (base/off/platform) key switch to " " platform position.
3. On base control console, pull out " " emergency stop button.

**WARNING**
Ensure that you maintain three points of contact to mount/dismount the platform.

**WARNING**
DO NOT operate any control on operator's control console without proper fall protection secured to the designated location in the platform. Failure to avoid this hazard could result in death or serious injury.

4. Enter platform and close gate.
5. Attach body harness lanyards of each occupant to fall protection anchorage points. Rated for one (1) person per anchorage.
6. On platform control console, pull out " " emergency stop button.
7. Push and hold " " start position from start/on/off switch until engine starts.

**WARNING**
DO NOT over crank the starter. If engine fails to start after multiple attempts, contact qualified/competent repair personnel.

**NOTE**
Engine will not start if you are pressing down on the footswitch.

8. Select desired engine RPM using throttle switch: " " high or " " low.

**WARNING**
DO NOT drive or steer the aerial platform when the platform position does not allow you a clear view of the base. Your area of operation should be cordoned from other personnel or equipment.

### 3.8-11 To Drive Forward or Reverse

**CAUTION**
When you are in the platform and positioned over an axle, the direction you are facing will be forward.

1. Depress and hold footswitch.
2. On platform control console, push and hold drive/steer controller in this direction " " to drive forward or " " to drive backward.
3. Release controller handle to stop.

**CAUTION**
The drive orientation can change when the turret is swung 90 degrees off center of the normal driving position (roughly when boom is swung past the rear tire). Drive re-orientation will not occur while driving and rotating until the joystick is released for 6 seconds or when the footswitch is released.



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## Table 4.2b Specifications and Features

| MODEL | | | | SJ 46AJ | |
|---|---|---|---|---|---|
| Engine - Deutz | Engine Type | | | Deutz D2.9 | Deutz D2011L03i |
| | Fuel Type | | | Diesel | |
| | Fuel Tank Capacity | | | 17 gal. (64 L) | |
| | Standard Oil Factory Fill | Ambient Temperature Limits | 0°F to 115°F (-18°C to +45°C) | SAE 15W-40 API CF/CG/CH-4 | |
| | Cold Lube Oil Option | | -20°F to 90°F (-29°C to +32°C) | SAE 5W-30 API CF/CG/CH-4 | |
| | Arctic Lube Oil Option | | -40°F to 115°F (-40°C to +45°C) | SAE 0W-40 API CF/CG/CH-4 | |
| | Approved Alternates | | - | See Engine Manual | |
| | Lube Oil Sump Capacity | | | 2.11 gal. (8 L) | 1.45 gal. (5.5 L) |
| | Radiator Capacity | | | 2.38 gal (9 L) | N/A |
| | Radiator Fluid Type | | | DELO ELC 50/50 | N/A |
| Engine - GM | Engine Type | | | 3.0L GM Dual Fuel | |
| | Fuel Type - Dual | | | Gasoline/Propane | |
| | Fuel Tank Capacity | | | 17 gal. (64 L) | |
| | Standard Oil Factory Fill | Ambient Temperature Limits | -40°F to 115°F (-40°C to +45°C) | SAE 5W-30 API SL | |
| | Approved Alternates | | - | See Engine Manual | |
| | Lube Oil Capacity | | | 1.19 gal. (4.5 L) | |
| | Standard Coolant | Ambient Temperature Limits | -20°F to 115°F (-29°C to +45°C) | GM 50/50 Extended Life Coolant | |
| | Arctic Coolant Option | | -40°F to 115°F (-40°C to +45°C) | GM 60/40 Extended Life Coolant | |
| | Coolant Capacity | | | 3.0 gal. (11.4 L) | |
| Engine - Kubota | Engine Type | | | 2.5L Kubota Dual Fuel | |
| | Fuel Type - Dual | | | Gasoline/Propane | |
| | Fuel Tank Capacity | | | 45 gal. (170.3 L) | |
| | Standard Oil Factory Fill | Ambient Temperature Limits | -40°F to 115°F (-40°C to +45°C) | SAE 5W-30 API SL | |
| | Approved Alternates | | - | See Engine Manual | |
| | Lube Oil Capacity | | | 2.5 gal. (9 L) | |
| | Standard Coolant | Ambient Temperature Limits | -20°F to 115°F (-29°C to +45°C) | Recochem 50/50 Extended Life Coolant | |
| | Arctic Coolant Option | | -40°F to 115°F (-40°C to +45°C) | Recochem 60/40 Extended Life Coolant | |
| | Coolant Capacity | | | 3.17 gal. (12 L) | |
| Hydraulic Oil | Recommended Oil | Type | | Shell Tellus T46 | |
| | | Operating and Oil Temperature Limits | Cold Start | Down to 11°F (-11°C) | |
| | | | Ambient Operation | 113°F (+45°C) | |
| | | | Max. Oil Temp. | 200°F (+93°C) | |
| | | Approved Alternates | | Chevron Rykon MV | |
| | | (Note: Cold weather starting temperatures can be improved with Skyjack options. Please consult your nearest Skyjack service center.) | | Mobilfluid 424 | |
| | | | | Esso Univis N46 | |
| | Hydraulic Tank Capacity | | | 24 gal. (91 L) | |



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## Table 4.6 Floor Loading Pressure

| MODEL (with Air Filled Tires) | Gross Aerial Platform Weight | | Total Aerial Platform Load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Wheel | | LCP | | OUP | |
| | lb. | kg | lb. | kg | psi | kPa | psf | kPa |
| SJ 46AJ | 13,800 | 6,260 | 7,100 | 3,220 | 120 | 830 | 200 | 9.6 |

| MODEL (with Foam Filled Tires) | Gross Aerial Platform Weight | | Total Aerial Platform Load | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Wheel | | LCP | | OUP | |
| | lb. | kg | lb. | kg | psi | kPa | psf | kPa |
| SJ 46AJ | 14,600 | 6,622 | 7,300 | 3,315 | 125 | 856 | 210 | 10.1 |

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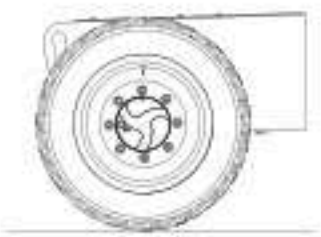
- Gross Aerial Platform Weight = Weight + platform capacity
- LCP – Locally Concentrated Pressure – is a measure of how hard the aerial platform tire tread presses on the area in direct contact with the floor. The floor covering (tile, carpet, etc.) must be able to withstand more than the indicated values above.
- OUP – Overall Uniform Pressure – is a measure of the average load the aerial platform imparts on the whole surface projected directly underneath it. The structure of the operating surface (beams, etc.) must be able to withstand more than the indicated values above.

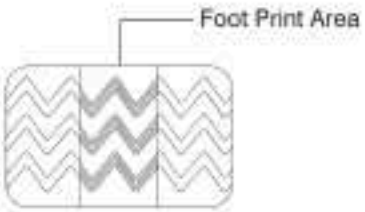
**NOTE:**
The LCP or OUP that an individual surface can withstand varies from structure to structure and is generally determined by the engineer or architect for that particular structure.

**Locally Concentrated Pressure (LCP):**

Foot Print Area identified by test.

$$LCP = \frac{\text{Wheel Load}}{\text{Foot Print Area}}$$

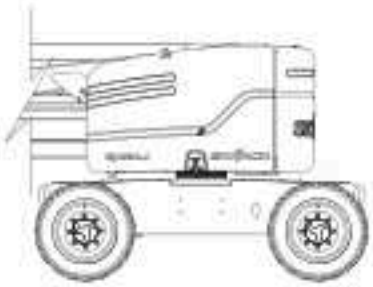


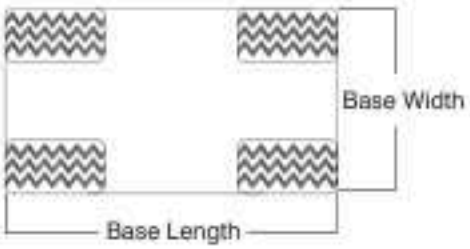



**Overall Uniform Pressure (OUP):**

Base Area = Length x Width

$$OUP = \frac{\text{Weight of MEWP + Capacity}}{\text{Base Area}}$$






**WARNING**

**Intermixing tires of different types or using tires of types other than those originally supplied with this equipment can adversely affect stability. Therefore, replace tires only with the exact Skyjack-approved type. Failure to operate with matched approved tires in good condition may result in death or serious injury.**



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## 3.9 Refueling Procedure

This section provides the operator with the procedure on how to refuel the engine with regular fuel and install the propane cylinder.

**WARNING**

**Follow all local and national regulations for propane handling.**

**WARNING**

**Failure to heed the following safety precautions could result in death or serious injury:**

- **Use extreme caution while refueling aerial platforms.**
- **Ensure engine and all systems are turned off before refueling.**
- **Refuel aerial platform only in a well ventilated area away from open flame and other sources of ignition, authorized by your employer and supervisor.**
- **Liquid propane gas fuel is a gas that is heavier than air. It settles in low spots. Any flame or spark could cause a fire that could cause serious injury.**
- **When changing liquid propane gas cylinder, check all connections for damage or missing parts. Never try to start an aerial platform if you smell gas.**
- **For gasoline engine models, use only unleaded gasoline with an octane rating 87 or higher.**

**WARNING**

**Do not smoke in an area where aerial platforms are stored or refueled.**

**CAUTION**

**When operating on a slope, ensure fuel level is above half to avoid a possible stall condition.**

**IMPORTANT**

**Before using the aerial platform ensure there is enough fuel to finish the job.**

### 3.9-1 Regular Fuel

1. Ensure engine and all systems are turned off and emergency stop buttons are depressed.
2. Open fuel compartment door and remove fuel cap.
3. Carefully pour fuel into tank ensuring that no spillage occurs.
4. Securely replace fuel cap.
5. Ensure there are no leaks in the fuel system.
6. Wipe up any spilled fuel.
7. Dispose of rags in an approved container.

### Protection of Environment from Chemical Dangers

**WARNING**

**Gasoline, diesel fuel, engine oil and hydraulic fluid are chemicals, which can contaminate the environment. If they are spilled during filling and reach the water, they can cause damage to the environment, e.g., death of fish. For such damage, the party responsible is liable! Therefore, gasoline, diesel fuel, engine oil or hydraulic fluid must not get into the sewage system, streams, rivers or other surface water. For that reason, immediately remove the dripped off or spilled gasoline, diesel fuel, engine oil or hydraulic fluid with appropriate means and dispose of these means according to the regulations.**



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