

Operation and Safety Manual for

Model
2033RS
Electric
Aerial
Work
Platform



## **FOREWORD**

The purpose of this manual is to provide users with the operating procedures essential for the promotion of proper machine operation for its intended purpose. It is important to over-stress proper machine usage. All information in this manual should be **READ** and **UNDERSTOOD** before any attempt is made to operate the machine. **YOUR OPERATING MANUAL IS YOUR MOST IMPORTANT TOOL** - keep it with the machine. REMEMBERTHAT ANY EQUIPMENT IS ONLY AS SAFE AS THE OPERATOR.

BECAUSE THE MANUFACTURER HAS NO DIRECT CONTROL OVER MACHINE APPLICATION AND OPERATION, PROPER SAFETY PRACTICES ARE THE RESPONSIBILITY OF THE USER AND ALL OPERATING PERSONNEL.

ALL INSTRUCTIONS IN THIS MANUAL ARE BASED ON THE USE OF THE MACHINE UNDER PROPER OPERATING CONDITIONS, WITH NO DEVIATIONS FROM THE ORIGINAL DESIGN. ANY ALTERATION AND/OR MODIFICATION OF THE MACHINE IS STRICTLY FORBIDDEN WITHOUT EXPRESS WRITTEN APPROVAL FROM MAYVILLE ENGINEERING COMPANY, INC.

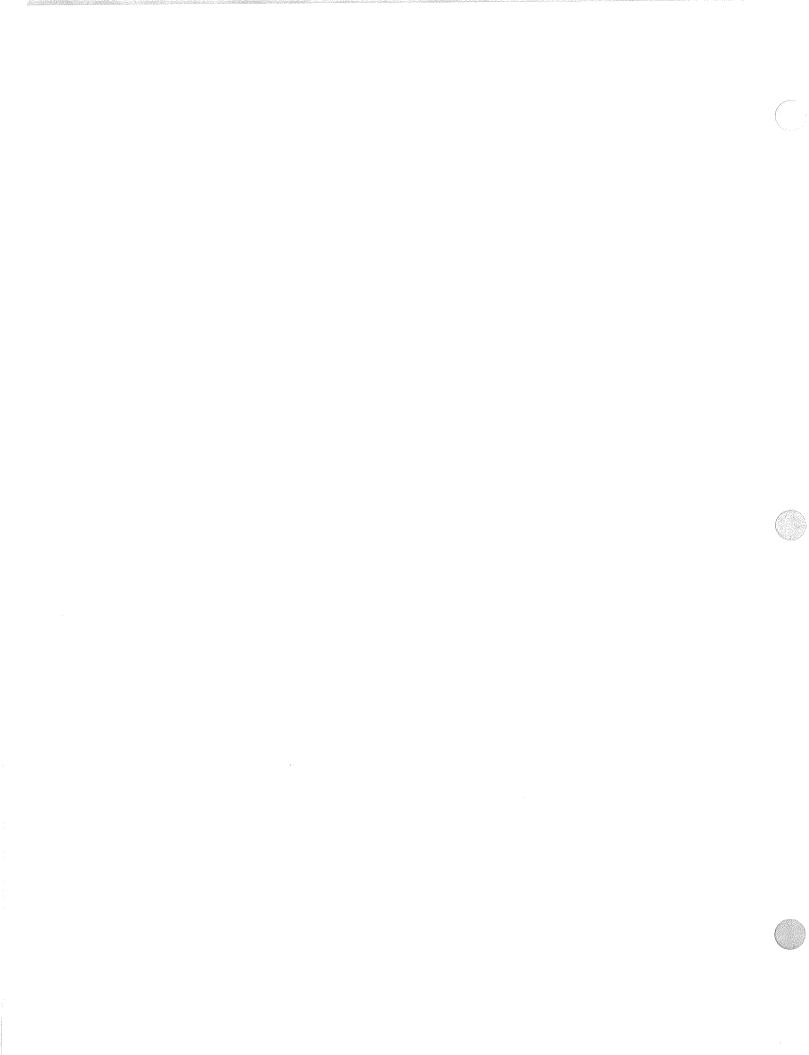
All procedures herein are based on the use of the machine under proper operating conditions, with no deviations from original design intent as per ANSI regulations.

## **Read and Comply**

The ownership, use, service and/or maintenance of this machine is subject to various federal, state and local laws and regulations. It is the responsibility of the owner/user to be knowledgeable of these laws and regulations and to comply with them. Owner/user/operator must be familiar with Sections 6, 7, 8, 9 and 10 of ANSI A92.6 Standard. These sections contain the responsibilities of the owners, users, operators, lessors and lessees concerning safety, training, inspection, maintenance, application and operation.



ANY MODIFICATION OF THIS MACHINE WITHOUT THE EXPRESS WRITTEN CONSENT OF THE MANUFACTURER IS PROHIBITED.



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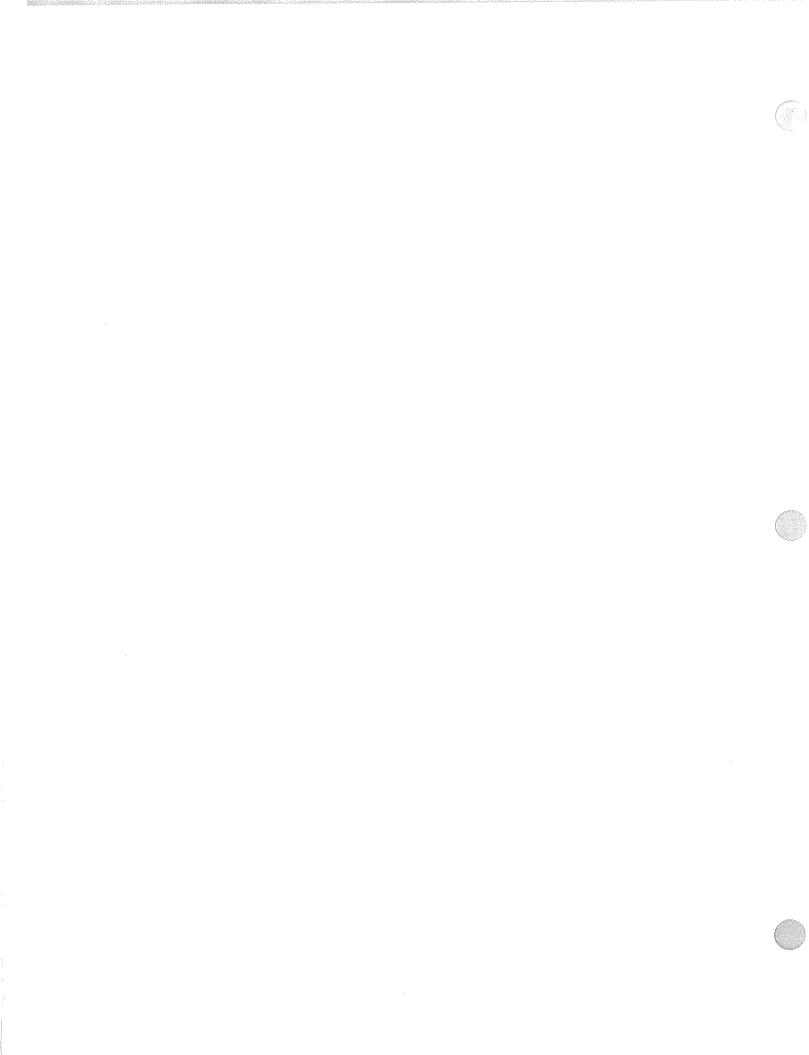
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## WARNING

DO NOT PERFORM PRELIMINARY INSTALLATIONS, OPERATE, SERVICE, REPLACE, ADJUST OR MAINTAIN EQUIPMENT ON THIS MACHINE UNTIL YOU HAVE THOROUGHLY READ AND UNDERSTOOD THE SAFETY SECTION OF THIS MANUAL, AND HAVE READ AND UNDERSTOOD ALL THE SECTIONS OF THIS MANUAL THAT APPLY TO THE JOB YOU ARE DOING ON THIS MACHINE.

FAILURE TO COMPLY WITH ALL WARNINGS POSTED ON THIS MACHINE AND WRITTEN IN THIS MANUAL, COULD CAUSE DEATH, SERIOUS INJURY OR PROPERTY DAMAGE.

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## — FALL PROTECTION NOTICE —

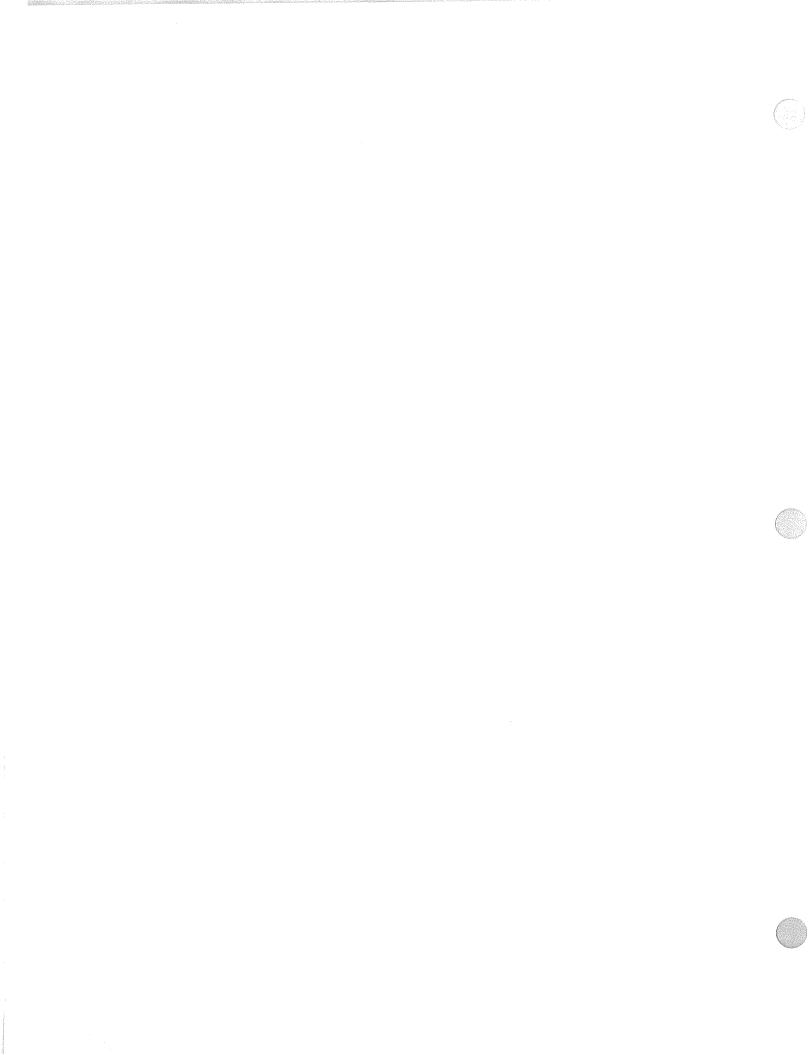
The **Guardrail** System around the perimeter of the platform is the **fall protection system** for self-propelled elevating work platforms per the American National Standards Institute ANSI/SIA A92.6 Standard. It is **prohibited** to use an Aerial Work Platform manufactured by Mayville Engineering Company, Inc. with any portion, or all, of the guardrails **removed**.

Lanyard anchorage points on this type of equipment are not required to conform to the applicable ANSI/SIA Standard.

However, if anchorage points for lanyard attachments are required by site authorities, or other regulations, the anchorage points on all equipment manufactured by Mayville Engineering Company, Inc. are recommended to be used for **work positioning restraints** of personnel only. Lanyard lengths are to be determined by operator/owner to restrict the operator to the confines within the **Guardrail** System.



USE OF FALL ARREST SYSTEMS ATTACHED TO ANCHORAGE POINTS ON MOBILE EQUIPMENT MAY CAUSE MACHINE TO TIP RESULTING IN SERIOUS INJURY OR DEATH.



## CHAPTER 1 SAFETY

#### **USE OF NOTES, CAUTIONS AND WARNINGS**

**NOTE** - Additional information to further explain instructions.

**CAUTION** - Indicates potentially hazardous situations which, if not avoided, may result in minor or moderate injury, or damage to equipment.

**WARNING** - Indicate *potentially* hazardous situations which, if not avoided, could result in death or serious injury.

**DANGER** - Indicates an *imminently* hazardous situation which, if not avoided, will result in death or serious injury.

## GENERAL OPERATING RULES, SAFETY AND LIMITATIONS

MEC designed the 2033RS work platform to be safe and reliable. It is rugged and maneuverable, but must be used only for purposes, and in ways, intended. That is to raise personnel and tools to overhead work areas.

- The owner/user/operator of the machine should not accept operation responsibility until this manual has been read and operation of the machine, under the supervision of an experienced and qualified operator, has been completed. Owner/user/ operator must be familiar with Sections 6, 7, 8, 9 and 10 of ANSIA92.6. These sections contain the responsibilities of the owner, users, operators, lessors and lessees concerning safety, training, inspection, maintenance, application and operation. If there is a question on application and/or operation, consult Mayville Engineering Co., Inc.
- Respect your machine; do not neglect/misuse it.
- Inspect your machine before using it. Do not use machine if it is not working properly in any way.
- Check job site for unsafe working conditions. Do not operate on uneven or soft terrain. Do not raise platform if machine is on an incline.

- Use machine only for purposes for which it was designed.
- Never take chances. Do not use machine if your physical or mental capabilities are limited due to illness or fatigue, or if you are taking over-thecounter or prescription drugs which might impair or limit your mental or physical capabilities.
- Do not exceed the load capacities of the platform.
- Do not smoke while charging the batteries.
- Do not enter or exit platform while machine is in motion.
- An operator of any type of work platform is subject to certain hazards that cannot be protected by mechanical means. It is therefore essential that operators be competent, careful, physically and mentally fit and thoroughly trained in safe operation of this machine.



DO NOT OPERATE MACHINE NEAR POWER LINES. THE PLATFORM AND ENCLOSURES ARE NOT INSULATED.

FAILURE TO FOLLOW THIS WARNING WILL CAUSE DEATH OR PERSONAL INJURY.

#### **OPERATOR QUALIFICATIONS**

All MEC aerial work platforms must be operated and maintained by qualified personnel only!

To qualify for operation and maintenance of this unit, an individual must read and thoroughly understand this manual and undergo training by a competent instructor. If a proposed operator or maintenance person fails to understand any segment of this manual, his or her

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supervisor can clarify the misunderstanding through written correspondence or a phone call to:

Mayville Engineering Co., Inc. Aerial Work Platforms 715 South Street Mayville, WI 53050 Phone: 414-387-4500

## SAFETY FEATURES

#### **Automatic Parking Brake**

The Automatic Parking Brake is a spring-actuated, normally-ON system. The brake is released during the drive cycle by hydraulic pressure built up in the drive circuit. A brake valve is used to maintain release during drive. When finished driving, an orifice is employed to control the braking function during deceleration.

## **Emergency Stop**

The Emergency Stop is a plunger-type switch and is located in two places — on the upper control boxes (Figure 1-1) on the platform and on the lower control panel (Figure 1-2) on the side of machine. The Emergency Stop is actuated by depressing the red cap which de-energizes power supplied to the control electrical circuits. To reactivate the circuits, turn the red cap approximately a quarter-turn clockwise until the cap "pops" back out. Another means to effect an emergency stop is to pull out the BATTERY DISCONNECT (1, Figure 4-5) which removes all power to the circuits.

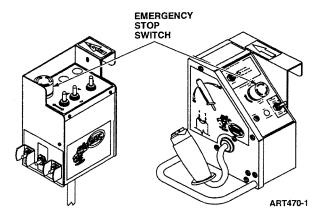


Figure 1-1. Emergency Stop - Upper Control Boxes

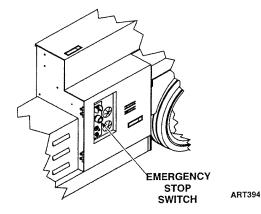


Figure 1-2. Emergency Stop -Lower Control Panel

## **Emergency Down (Figure 1-3)**

The Emergency Down controls, which are accessible by a person on the ground, are used to lower the raised platform if the platform will not respond to inputs by the operator at the upper control box. The Emergency Down controls are located on the main cylinder (1) and on the base in front of the left rear wheel (2). Both controls must be activated to lower the platform. Pull control to allow platform to slowly descend to the stowed position.

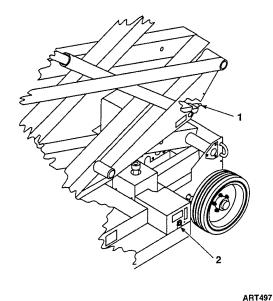


Figure 1-3. Emergency Down Controls

Safety MEC 2033RS

#### **Automatic Pothole Protection**

Pothole bars (Automatic Stabilizers) are a MEC original safety feature established in 1982. The concealed Pothole Protection system with positive lock is a standard feature of this unit. MEC Pothole Protection helps prevent tip-overs if a machine with the platform elevated is accidentally driven into some type of depression, opening or hole in the surface on which it is used.

The pothole bars (Figure 1-4) are located under each side of the base. The bars rotate downward 90 degrees to a vertical position as the platform raises. If either pothole bar encounters any obstruction that will not allow the bars to lock in place, interlock switches will not be actuated and the platform will not ascend. An interlock switch is mounted on one actuator lever of each bar and height interlock is mounted beneath the beams.

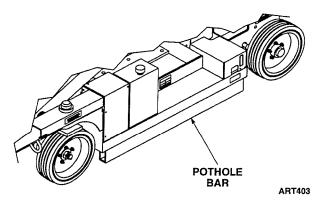


Figure 1-4. Pothole Bars

If the pothole bars cannot be fully deployed and the platform will not raise, lower the platform to the stowed position. Remove any obstruction and/or reposition the machine to a location clear of any pothole or depression. The pothole bars should deploy and the platform should raise to the desired height. Pothole bar operation can be tested by placing a 2X4 under the bars and raising the platform. Platform movement will cease when the platform reaches about 7 feet.

#### MAINTENANCE LOCKS USAGE AND STOWAGE



MAINTENANCE LOCKS MUST BE USED WHEN MAINTAINING OR SERVICING MACHINE WITH PLATFORM EXTENDED.

WORKING THROUGH BEAMS ON SCISSORS LIFTING DEVICE CREATES A HAZARDOUS SITUATION WHICH COULD CAUSE DEATH OR PERSONAL INJURY.

FOLLOW MAINTENANCE LOCKS PROCEDURE!

#### Maintenance Locks Usage

- Remove load from platform.
- 2. Place upper control box at right front corner of platform floor and use box controls to raise platform until a space of approximately 1-1/2 to 2 feet exists between ends of scissor beam pivot pins.
- Pull release pin ring on rear maintenance lock (Figure 1-5) and allow lock to swing down to vertical position so notched end of lock is directly above pivot pin collar.

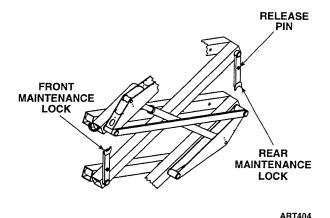


Figure 1-5. Maintenance Locks

## **MEC 2033RS**

- 4. Pull release pin ring on front maintenance lock and swing lock up to vertical position so notched end of lock is directly below pivot pin collar.
- 5. While holding front lock in position, slowly lower platform using upper control box until both locks fully engage pivot pin collars and weight of platform and scissor beams rest completely on both maintenance locks.

## Maintenance Locks Stowage

- 1. Using lower control panel, raise platform approximately 2 to 3 inches just far enough that each maintenance lock will clear pivot pin collars.
- Pull release pin ring on each maintenance lock and swing lock up parallel with scissor beam. Align release pin with receiving hole in beam and release ring so pin engages beam.
- 3. Lower platform to stowed position.

# CHAPTER 2 INTRODUCTION

#### PRODUCT DESCRIPTION

The Mayville 2033RS Aerial Work Platform is a twowheel drive, self-propelled, electric-over-hydraulicoperated unit designed for use on hard level surfaces such as concrete, asphalt or wood. The purpose of this unit is to raise personnel and tools to overhead work areas.

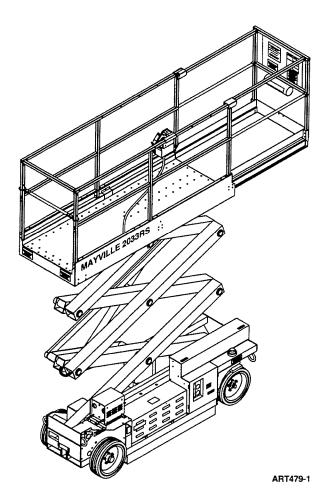


Figure 2-1. 2033RS Aerial Work Platform

The platform is raised and lowered by a hydraulic cylinder within a single beam scissors mechanism up to 20 feet. All units are steered by a hydraulic cylinder, which is controlled from the upper control box on the platform. Auxiliary lift controls are located at the lower control panel on the side of the unit.

A standard feature for the 2033RS, the torque increase feature is used to improve drive when traveling up inclines. An optional moveable sheet loading rear entrance raises to allow 4-foot-wide material to be loaded and unloaded.

Available options include a tilt sensor which signals with a warning light and buzzer when the platform is in an out-of-level condition, and a DC/AC converter which converts DC current to 110VAC current to power small tools and appliances. The converter is On/Off power activated and uses ground fault to protect operator. Other options are a battery charge indicator which is a meter that shows the approximate amount of charge left in the batteries and an hour meter which reflects the number of hours the unit has been operated.

#### **EQUIPMENT LITERATURE**

In addition to the Operation and Maintenance Manual, the unit is shipped with the following literature which is inserted in the manual tube located on the front rail of the platform.

- Material Safety Data Sheet (P/N 6535)
- 2033RS Operating and Safety Manual (P/N 8669)
- ANSI/SIA Manual of Responsibilities (P/N 7822)
- Battery Charger Operating Inst. (P/N 5545C)
- Safety Instruction Sheet (P/N 5615)
- Dealer Pre-delivery Inspection Form (P/N 7197)
- Warranty Registration Card (P/N 5524)
- EMI Safety Manual (P/N 7004)

Replacement literature can be ordered by contacting the factory. To help us serve you, please be prepared to provide the complete publication name and part number (P/N).

#### **DEALER INSPECTION**

### **Preliminary Unpacking Instructions**

 Remove all packing materials and inspect unit for possible damage during shipment. If any damage is found, please note it on the Freight Bill and report it to the carrier. MEC 2033RS Introduction

- 2. Perform a pre-delivery inspection.
- 3. Record any missing or incorrectly located Safety Decals. Order and install before use. All Safety Decals must be affixed to the unit in proper location. See decal layout, Figure 4-8.
- 4. Make any repairs that are needed before putting unit into service.
- **5.** Push in the Battery Disconnect to reenergize the system for operation.
- **6.** Reset both EMERGENCY STOP switches (Figures 1-1 and 1-2).
- 7. Press Circuit Breaker on lower panel to reset in case breaker has been tripped.
- **8.** Maintenance Locks must be engaged prior to inspecting or servicing the unit and when plaftorm is extended.

#### NOTE

File Warranty Claim according to the Policies and Procedures which are listed in Publication #5638.

### Loading and Unloading

- The equipment used to forklift MECAerial Platforms shall meet applicable ANSI/OSHA standards.
- 2. Forklift pockets are provided at the rear of the unit. Refer to Figure 2-2.
- The unit may be forklifted from the side. The operator shall watch balance points and the length of the forks to ensure that they reach the full width of the unit.

## Transporting the Unit (Figure 2-2)

- 1. The MEC 2033RS Aerial Work Platform may be towed, from the winch point, up to 1,000 ft. at a speed no greater than 5 mph.
- 2. To tow the unit, the Brake Lockout Lever must be raised when energizing a drive function and held until locked. If a drive function doesn't work, the two compression springs must be loosened by backing off the retaining bolts.
- 3. The Tiedown/Crane Loops are provided to secure the unit during transportation while on trailers or truck beds. The loops can be used to crane the unit to elevated levels. The equipment used for either of these two functions shall meet applicable State and Federal D.O.T. Regulations, and applicable ANSI/OSHA Standards.

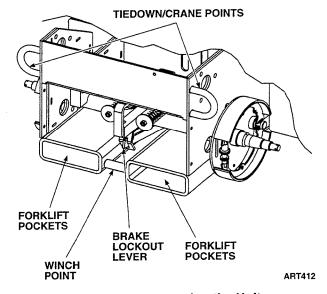


Figure 2-2. Transporting the Unit, Rear View - Front View Similar

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### **SPECIFICATIONS**

Important dimensional, capacity and capability information is provided for your information. The illustration below contains letter callouts which correspond to letters in the far right side of **Table 2-1. Measurements**, on the next page, to permit you to clearly identify selected significant dimensional data that you might require. Because we constantly strive to improve our products, we may make changes to these specifications without issuing a notice to you.

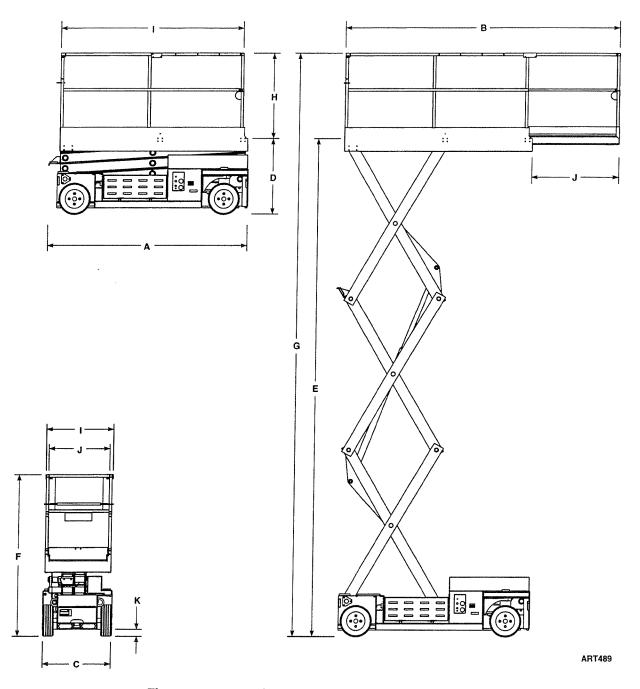


Figure 2-3. 2033RS Specification Attribute Identities

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Table 2-1. Measurements

Length	Extended Platform	Stowed	95" (2.41 m)		Α
J	Extended Platform	at Full Extension	137" (3.48 m)		В
	Overall		33" (0.84 m)		С
Width	Platform		32" (0.81 m)		
	Clearance on each	Side for Maintenance	16" (0.41 m)/Side		
	Stowed Position	Platform	36.8" (0.93 m)		D
		Top of Rails	7' 9" (2.36 m)	)	F
Height	Fully Extended	Platform	19' 10" (6.05 n	n)	E
		Top of Rails	23' 4" (7.11 m)	)	G
	NOTE: Add 10	" when sheet loading with	gate extended.		
	Rails		42" (1.07 m)		Н
	Kick Panel		6" (0.15 m)		
Work Space	Main Platform		28.2" (0.72 m) x 91" (2.31 m)		1
	Extended Platform		27.5" (0.70 m) x 42" (1.0 m)		J
Entrance Opening	Normal Operation		28.2" (0.72 m) x 37.5" (0.95 m)		
	Sheet Loading Ope	eration	27" (0.69 m) x 51" (1.30 m)		ļ
Lift Capacity	Platform	2 people	750 lbs. (340 kg) total		<u> </u>
	Extension	1 person	300 lbs.(136.08 kg)		
	NOTE: Do not	exceed 300 lbs. (136.08	kg) on extensior	n when extended.	
<b>Ground Clearance</b>	Platform in Stowed	Position	3.4" (8.64 cm)		K
	Platform Elevated		0.75" (1.91 cm)		<u> </u>
Weight			3350 lbs. (151	9.5 kg)	<u></u>
Turning Radius	Inside (A)		0"		<u>`</u> \
-	Outside (B)		88" (2.24 m)	BA	

Table 2-2. Speed

Lift From Base		25 seconds (fixed speed)
	From Platform	Slow: 45 seconds; Fast: 25 seconds
Lower	(from fully raised position)	28 seconds (fixed speed)
Drive	Platform raised above 7 feet	0.36 MPH (fixed speed)
	Platform below 7 feet	Slow: 1.6 MPH; High: 2.5 MPH
	In <b>Torque</b> mode	Slow: 0.8 MPH; High: 1.3 MPH

## Table 2-3. Electrical

		1480450-1-0-10-15			
		4 @ 6V Deep Cycle Golf Cart Battery			
		10.25" L x 7" W x 11.25" H			
Batteries (24 VDC)		BCI Group Size GC2			
		105 minutes @ 75 amps draw			
		218 amp hours @ 20 hour rating			
	NOTE				
	Replacement battery <b>MUST WEIGH AT</b> stability factor of the machine.	LEAST 60 POUNDS to maintain the			
Charger	Input	110 VAC, 60 Hz, 5.6 amp			
	Output	24 VDC, 15 amps tapering, timed			
		shutoff			
Electric Motor		24 VDC, 2 hp @ 82 amps, 3000 RPM			
		Continuous Duty			

## Table 2-4. Hydraulic

Hydraulic Reservoir Capacity		3 gallons (see Table 4-2)
Hydraulic Filter		10 micron cartridge (P/N 6156)
	Main Line	2750 PSI
Hydraulic Pressure	Lift	2200 PSI
Settings	Steering	800 PSI
	Counterbalance	450 PSI

## Table 2-5. Tires

Tire Size	16" diameter x 5" wide
	NOTE

Tires on the Mayville 2033RS must be replaced with manufacturer's replacement tires to maintain stability factor of the machine. **LUG NUTS TO BE TORQUED TO 75-85 FT. LBS. AND CHECKED WEEKLY.** 

## **Table 2-6. Torque Specifications**

Hydraulic Valve	Valve to Manifold (cartridge)	12 ft. lbs.
	Valve Nut to Valve	15 in. lbs.
Hydraulic Drive Mo	otor	300 ft. lbs. then next slot on castle nut and install cotter pin.
Rear Axle		Tighten to take play out of bearings and then next cotter pin slot. <b>Do not overtighten.</b>

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Table 2-7. Bolt Torque

Bolts	Grade 2	Grade 5	Grade 8
1/4-20	49 in. lbs.	76 in. lbs.	9 ft. lbs.
5/16-18	8 ft. lbs.	13 ft. lbs.	18 ft. lbs.
3/8-16	15 ft. lbs.	23 ft. lbs.	33 ft. lbs.
7/16-14	24 ft. lbs.	37 ft. lbs.	52 ft. lbs.
1/2-13	37 ft. lbs.	57 ft. lbs.	80 ft. lbs.

Grade markings for bolts grades 2, 5 and 8 are based on SAE J429. Markings may be raised or depressed (manufacturer's option).

## NOTE

Any bolt replacement should be of the same grade or greater than original bolt. Any questions, call factory for verification.

# CHAPTER 3 OPERATION

This chapter provides identification of all controls and indicators on the Model 2033RS Electric Aerial Work Platform and provides specific instructions on how to operate the unit.

#### NOTE

After reading this chapter, perform daily walkaround inspection contained in Chapter 4 **before** operating machine.

#### CONTROLS AND INDICATORS

All controls and indicators provided on the 2033RS units are identified by a number and pointed out in an illustration in this chapter. The name and a description of each control and indicator is provided after the number.

#### **Lower Control Panel (Figure 3-1)**

The lower control panel is located at the front right hand corner of the base just behind the right front wheel. The panel is used for initial start-up of the unit and during performance of the daily walk-around checks before operating the operating the machine.



BEFORE OPERATING THIS MACHINE, OPERATOR MUST CAREFULLY READ CHAPTER 1, SAFETY, AT THE BEGINNING OF THIS MANUAL. FAILURE TO FOLLOW SAFETY PRECAUTIONS THEREIN MAY RESULT IN DEATH OR SERIOUS INJURY.

DO NOT OPERATE MACHINE IF LIFT, DRIVE OR STEER CONTROLS DO NOT RETURN TO NEUTRAL POSITION OR MALFUNCTION IN ANY OTHER WAY.

DO NOT OPERATE MACHINE FROM LOWER CONTROL PANEL WITH PERSONNEL ON THE PLATFORM EXCEPT IN AN EMERGENCY.

#### 1. EMERGENCY STOP Switch.

Press red cap of switch to activate. All electrical power is turned off and all hydraulic power is shut-

down. To reset switch, turn red cap of switch approximately 1/4 turn clockwise until the cap "pops" out.

#### 2. UP/DOWN Switch.

Controls movement of platform. UP position energizes hydraulic system to raise platform. DOWN position energizes hydraulic system to lower platform. Switch will return to center or neutral position when released.

#### 3. ON/OFF Key Switch.

Controls electrical power to the switches and control circuits. ON position allows flow of electrical power. OFF position breaks the electrical circuit to stop power flow.

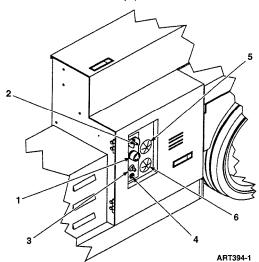


Figure 3-1. Controls and Indicators Lower Control Panel

## 4. CIRCUIT BREAKER Switch.

Provides circuit protection to engine electrical system. When pushed in, electrical power will flow. When "tripped" (switch sticking out), circuit is interrupted.

#### 5. Operation Hour Meter.

Optional meter records number of hours the unit has been operated.

### 6. Battery Charge Indicator.

Optional indicator shows the approximate amount of electrical charge contained in the batteries.

## **Toggle Upper Control Box (Figure 3-2)**

The toggle control box is located on the right hand platform rail and is the primary station used during normal operation of the unit. These controls may be used while on the unit or while walking along side of it.

## 1. TILT/TIP WARNING Light.

Optional light illuminates if unit is not level and platform is being raised.

#### 2. Tilt/Tip Alarm.

Optional alarm sounds if unit is not level and platform is being raised.

#### 7. STEERING Switch.

With the control box in the normal operating location (see decal on the top surface of the rail assembly) toggle the steering switch left to turn left while holding the motion switch at the same time. to stop turning, release the steering switch, For right turn, toggle the steering switch to the right while holding the motion switch. Release the steering switch to stop turning. The wheels will stay at the position turned to until turned back to a straight position. The steering function can be operated while stationary or while driving.

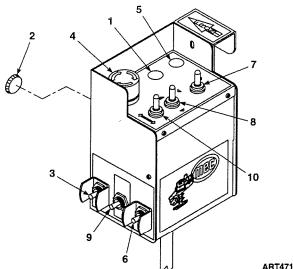


Figure 3-2. Controls and Indicators - Toggle Upper Control Box

## 3. TORQUE ON/OFF Switch.

ON position provides more power for driving, particularly for going up an incline. Ground speed is limited to 1-1/2 mph with TORQUE ON. Normal power in OFF position.

## 4. EMERGENCY STOP Switch.

Press red cap of switch to activate. All electrical power is turned off and all hydraulic power is shut down. To reset switch, turn red cap of switch approximately 1/4 turn clockwise until the cap "pops" out.

#### 5. HORN Button.

Optional - Press button to sound horn. Release button to stop horn sounding.

### 6. UP/DOWN SELECT Switch.

While holding the motion switch in either position, toggle the up/down switch up to raise the platform. To stop, release either one or both switches. To lower the platform, toggle the up/down switch down while holding the motion switch in either position. Release (either/or both) to stop.

#### 8. Direction Switch.

With the control box in the normal operation location (see decal on the top surface of the rail assembly), toggle the drive switch forward while holding the motion switch at the same time. To stop, release (either/or both) the motion and drive switch. For reverse, toggle the drive and motion switch to reverse and release to stop.

## 9. DRIVE/LIFT Speed Switch.

Controls drive and lift speeds, 2 speeds lift slow and fast, 3 speeds drive creep, slow, and fast. When platform is raised only slow speed is operational.

#### 10. MOTION Switch.

The motion switch is a two-position on/off switch with spring return to off position. This switch must be toggled and held (either direction) while activating function that results in motion to the platform, i.e., Drive, Steering, Lift/Lower.

## **Optional Joystick Upper Control Box (Figure 3-3)**

The optional control box is located on the right hand platform rail and is the primary station used during normal operation of the unit. These controls may be used while on the unit or while walking along side it.

#### 1. TILT/TIP WARNING Light.

Optional light illuminates if unit is not level and platform is being raised.

#### 2. Tilt/Tip Alarm.

Optional alarm sounds if unit is not level and platform is being raised.

#### 7. Steering Thumb Switch.

Controls steering angle of front wheels. Front wheels turn left when LEFT side of rocker switch is pressed. Front wheels turn right when RIGHT side of rocker switch is pressed. Switch will return to neutral position when released. Wheels remain in position until turned back to a straight position.

#### 8. Enable Bar.

Must be pressed to activate control capabilities of the joystick. If bar is released, movement of the unit (drive mode) will cease or movement of the platform (lift mode) will cease.

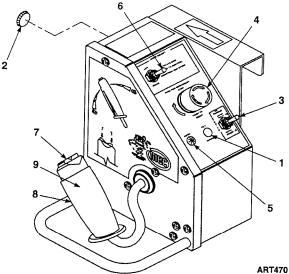


Figure 3-3. Controls and Indicators - Optional Joystick Upper Control Box

#### 3. DRIVE SPEED Switch.

UP (Torque) position provides more power for driving, particularly for going up an incline. Center position is Fast speed, and Down position is Creep speed.

#### 4. EMERGENCY STOP Switch.

Press red cap of switch to activate. All electrical power is turned off and all hydraulic power is shut down. To reset switch, turn red cap approximately 1/4 turn clockwise until the cap "pops" out.

#### 5. HORN Button.

Optional - Press button to sound horn. Release button to stop horn sounding.

#### 6. MODE SELECT Switch.

LIFT position allows joystick control handle to raise or lower platform. DRIVE position allows joystick control handle to control steering and propulsion of unit, such as moving the unit to another location.

#### 9. Joystick Control Handle - DRIVE.

Controls direction of movement with MODE SELECT switch in DRIVE position. Depressing enable bar and moving handle toward front of unit causes unit to move forward. Depressing enable bar and moving handle toward rear of unit causes the unit to move backwards. Handle returns to the center or neutral position when released.

#### Joystick Control Handle - LIFT.

Controls movement of platform with MODE SELECT switch in LIFT position. UP position energizes hydraulic system to raise platform. DOWN position energizes hydraulic system to lower platform. Switch will return to center or neutral position when released.

## Battery Charger Assembly (Figure 3-4)

The battery charger controls and indicators are located in the face of the battery charger assembly at the right rear corner of the unit.

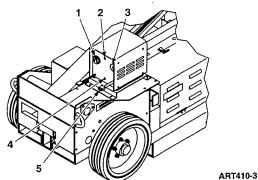


Figure 3-4. Battery Charger Controls

#### 1. Timer Switch.

Controls amount of time during which charging of the batteries will take place. Settings range from 1 hour to 16 hours.

### 2. Pilot Light.

Illuminates when timer switch is turned ON and stays until timer switch moves to OFF position.

#### 3. Charge Rate Ampere Meter.

Indicates the rate of charge to the batteries in amperes.

#### 4. Fuse

Provides charging system protection from electrical shorts.

## 5. Input AC Power Plug.

Power cable from source of charging electricity connects at this point of input to the charger and batteries. Input must be 115 Volt, 60 Hertz, 1 Phase.

#### **BATTERY SERVICE**



## WARNING

NEVER SMOKE OR USE OTHER COMBUSTIBLES NEAR BATTERY OR WHILE SERVICING BATTERY OR OTHER COMPONENTS. PROVIDE PLENTY OF VENTILATION AS PRESENCE OF HYDROGEN FUMES COULD LEAD TO EXPLOSION.

The Model 2033RS units are equipped with 4 heavyduty, deep-cycle batteries. Battery care and maintenance depends upon the frequency of their use. Battery wiring and water level should be checked daily. Check and fill batteries after every 15 hours of use or when recharging. Do not overfill batteries. Do not allow batteries to remain discharged. Do not run batteries dead. Put battery on charge when approximately 80% discharged. This is measured as a hydrometer reading of 1.155 at 80° F (26.6° C). A full charge is measured by a hydrometer reading of 1.265 at 80° F (26.6° C).

## **Checking and Filling Batteries**



## **CAUTION**

DO NOT OVERFILL. When battery cells are filled too full, battery fluid will expand as it warms from charging and will seep out of the battery. When water is then added, the solution is weakened and a loss of ampere hour capacity results.

NEVER add acid to battery. The solution is at its proper strength when the battery is manufactured. Use distilled water and maintain proper fluid level. If necessary, add water to battery AFTER charging, unless water level is below the top of the plates.

Check and fill batteries, after every 15 hours of use or when recharging, as follows:

- 1. Release latches (1, Figure 3-5) and pivot battery tray cover (2) open.
- 2. If there is any dirt or corrosion on battery, wash with a solution of 5 teaspoons baking soda per quart of warm water.

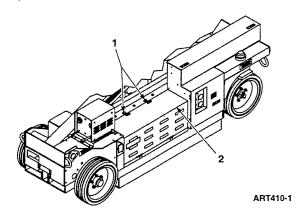


Figure 3-5. Battery Tray Cover

- 3. Remove battery caps and check fluid.
- 4. Fill, as needed, as follows:
  - a. Before charging, fluid must be above plates in battery.
  - After charging, fill to split ring. Do not overfill.
- **5.** Coat terminals with petroleum jelly or equivalent coating.

#### **Charging Batteries**



## WARNING

NEVER SMOKE OR USE OTHER COMBUSTIBLES NEAR BATTERY OR WHILE SERVICING BATTERY OR OTHER COMPONENTS. PROVIDE PLENTY OF VENTILATION AS PRESENCE OF HYDROGEN FUMES COULD LEAD TO EXPLOSION.

- 1. Release latches (1, Figure 3-5) and pivot battery tray cover (2) open.
- Remove battery caps, check fluid level and fill, if needed, to top of plates only.
- 3. Reinstall battery caps before charging.
- 4. Turn timer switch (1, Figure 3-4) to OFF position.
- Connect extension cord plug to 115V AC receptacle.
- Insert input AC power plug (5) of charger into receptacle of extension cord.
- 7. Turn timer switch (1) to ON position for a 16 hour charging period or to a lesser amount of time as desired. Pilot light (2) will illuminate and charge rate ampere meter (3) will indicate a charge rate. Charger will turn off automatically when timer runs out.
- 8. When charging is complete, place timer switch (1) in OFF position and disconnect power cable from input AC power plug (5).
- Remove battery caps, check fluid level and fill if needed, to split ring and reinstall caps.

#### **EXTENDED PLATFORM USAGE**



## **WARNING**

BEFORE OPERATING UNIT FROM PLATFORM:

- EXTENDED PLATFORM MUST BE LOCKED IN PLACE.
- SHEET LOADING REAR GATE MUST BE LOWERED AND LOCKED IN PLACE.
- SWINGING REAR MIDGATE MUST BE CLOSED.

FAILURE TO COMPLY WITH THESE REQUIREMENTS COULD CAUSE DEATH, PERSONAL INJURY OR PROPERTY DAMAGE.

ALWAYS USE "THREE POINT CONTACT" WHEN ENTERING OR EXITING THE PLATFORM (3 OUT OF 4 ARMS AND LEGS ARE IN CONTACT WITH THE MACHINE AT ALL TIMES DURING MOUNT AND DISMOUNT).

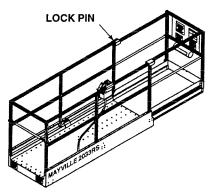
### **Extending Platform**

1. With your left hand, pull and hold platform lock pin (Figure 3-6) so pin disengages from locking holes in platform.

#### NOTE

Platform extends up to 42" and locking holes are spaced at 6" intervals to provide maximum flexibility.

2. With your right hand, grasp top rail and push platform out to desired position.



ART495

Figure 3-6. Platform Lock Pins

MEC 2033RS Operation

3. Release platform lock pin so it securely engages one of the locking holes in platform.

#### **Retracting Platform**

- 1. With your right hand, lift and hold platform lock pin (Figure 3-6) so pin disengages from locking holes in platform.
- 2. With your left hand, grasp top rail at area marked HAND GRIP AREA and pull platform back to retracted position.
- 3. Release platform lock pin so it securely engages one of the locking holes in platform.

# SHEET LOADING (DRYWALL) GATE OPERATION (Figure 3-7)

#### To Raise Gate

- 1. Pull out lock pin rings (1, Figure 3-7) located on rear gate rail and rotate 90°.
- 2. Slide upper section of gate (2) all the way up and align lock pins with rail holes.

3. Rotate lock pin rings (1) 90° so lockpins engage rail holes and pin rings fit down in slots.

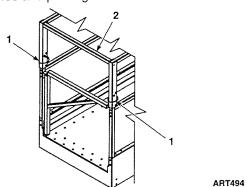


Figure 3-7. Sheet Loading Gate

#### **To Lower Gate**

- 1. Pull out lock pin rings (1, Figure 3-7) located on rear gate rail and rotate 90°.
- 2. Slide upper section of gate (2) all the way down and align lock pins with rail holes.
- 3. Rotate lock pin rings (1) 90° so lockpins engage rail holes and pin rings fit down in slot.



# CHAPTER 4 OPERATOR MAINTENANCE

This chapter contains information for the operator about the specific use of the equipment. Preventive maintenance information is presented first in the Walk-around Check for Model 2033RS Aerial Platform Units. Next, a schedule of operator level maintenance tasks is presented, followed by instructions for those operator tasks. Last, a schedule of maintenance activities, some of which should be performed by your dealer, is provided.

## MODEL 2033RS AERIAL WORK PLATFORM WALK-AROUND INSPECTION

The Walk-around check shall be performed by the operator prior to using the unit for the first time of the day or by a new operator even if the unit has been used during any part of the day. The Walk-around check is critical to ensuring the safe operation of the platform.

When performing the Walk-around check, visually inspect for obvious damage to the specific part of the unit including loose or missing fasteners; frayed, broken or leaking hydraulic lines; and worn, broken or frayed insulation on power cables. Also, check for bent

structural members (beams, frame, platform, etc.). A machine which has been overloaded will have bent structural members and fatigued pivot pins. Begin the check standing at the center of the rear of the unit. The number of the check in the listing matches a corresponding number in an illustration to help the operator understand and locate the check to be performed.

## 1. Capacity Decals on Rear of Platform.

Check that two decals are in place on rear edge of platform floor--one at each corner--and are intact and legible.

#### 2. Broken Welds on Scissor Pivot Collars.

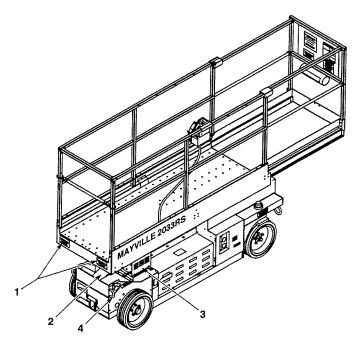
Check for broken welds on scissors where each pivot pin collar is attached.

## 3. Battery Charger Warning Label.

Check that decal is in place on top of battery charger case and is legible.

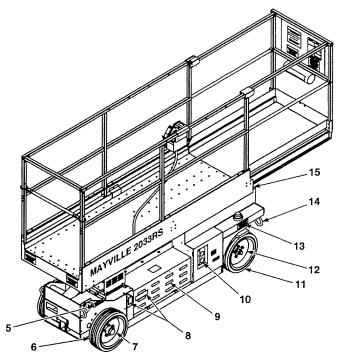
#### 4. Tiedown Ring.

Check for broken welds and secure attachment.



ART490-1

Figure 4-1. Walk-around Checks 1 Thru 4



ART490-2

Figure 4-2. Walk-around Checks 5 Thru 15

# 5. Tire Replacement and Lug Nut Torque Decal on Frame.

Check that decal is in place on frame above tire and is legible.

#### 6. Tire Condition.

Check for excessive wear and damage to tire.

## 7. Wheel Condition.

Check wheel for bent rim and loose or missing lug nuts.

Weekly -Torque nuts 75-85 ft.lbs. (102-115 N•m).

## 8. Battery Disconnect.

Connected and handle inside tube. Decal in place and legible on battery access panel.

## 9. Battery Water Level.

<u>Weekly</u> - Water should be up to the split ring. Use only distilled water.

## 10. Lower Control Panel.

Check for obvious damage to switches,

indicators and guards. Check that three decals are in place on the control box and are legible.

## 11. Tire Condition.

Check for excessive wear and damage to tire.

#### 12. Wheel Condition.

Check wheel for bent rim and loose or missing lug nuts.

Weekly -Torque nuts 75-85 ft. lbs. (102-115 N•m).

# 13. Tire Replacement and Lug Nut Torque Decal on Frame.

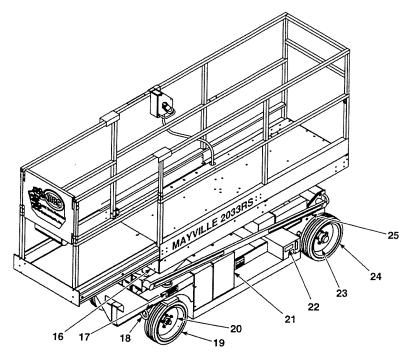
Check that decal is in place on frame above tire and is legible.

#### 14. Tiedown Ring.

Check for broken welds and secure attachment.

## 15. Broken Welds on Scissor Pivot Collars.

Check for broken welds on scissors where each pivot pin collar is attached.



ART490-3

Figure 4-3. Walk-around Checks 16 Thru 25

#### 16. Maintenance Lock.

Check lock for secure attachment to pivot pin with retaining ring and is not bent. Check receiver for damage. Check that decal is in place on side of lock and is legible. Check that storage pin is in place on lock and securely holds lock in stowed position.

## 17. Tire Replacement and Lug Nut Torque Decal on Frame.

Check that decal is in place on frame above tire and is legible.

#### 18. Tiedown Ring.

Check for broken welds and secure attachment.

#### 19. Tire Condition.

Check for excessive wear and damage to tire.

#### 20. Wheel Condition.

Check wheel for bent rim and loose or missing lug nuts.

Weekly -Torque nuts 75-85 ft. lbs. (102-115 •m).

#### 21. Hydraulic Fluid Level.

**Weekly** -Fluid should be visible inside the sight gauge on side of tank.

#### 22. Emergency Down Decal.

Check that emergency down decal is in place on frame in front of left rear tire and below EMERGENCY DOWN control and is legible.

#### 23. Wheel Condition.

Check wheel for bent rim and loose or missing lug nuts.

Weekly -Torque nuts 75-85 ft. lbs. (102-115 N•m).

#### 24. Tire Condition.

Check for excessive wear and damage to tire.

## 25. Tire Replacement and Lug Nut Torque Decal on Frame.

Check that decal is in place on frame above tire and is legible.

ART490-4

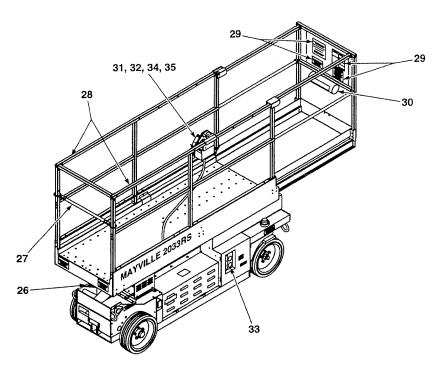


Figure 4-4. Walk-around Checks 26 Thru 35

#### 26. Maintenance Lock.

Check lock for secure attachment to pivot pin with retaining ring and is not bent. Check receiver for damage. Check that decal is in place on side of lock and is legible. Check that storage pin is in place on lock and securely holds lock in stowed position.

#### 27. Rear Gate.

Check rear gate for loose or missing fasteners and obvious damage. Check that latch is secure and operates properly.

#### NOTE

Perform checks 28 thru 32 while on the platform.

#### 28. Platform Railings.

Check all railings for secure and proper installation and obvious damage. Check that top rail is not bent.

#### 29. Decals on Panel on Front Rail.

Check that four decals are in place on panel of front platform railing and all four are intact and legible.

#### 30. Manual Tube.

Check that all documents listed in Chapter 2 are in tube on front railing.

## 31. Upper Control Box.

Check for obvious damage to switches, indicators and guards. Check that four decals are in place on the control box and are legible.

## 32. Press EMERGENCY STOP switch.

Turn red switch cap 1/4 turn clockwise until cap "pops" out.

## NOTE

Perform check 33 while off the platform.

# 33. Check Operation of EMERGENCY DOWN control using lower control panel:

- a. Turn ON/OFF key switch to ON position.
- b. Press EMERGENCY STOP switch. Turn red switch cap 1/4 turn clockwise until cap "pops" out.
- c. Place and hold UP/DOWN switch in UP position to raise platform 10-15 feet high. Release switch.
- d. Again, place and hold UP/DOWN switch in UP position to raise platform. Then press EMERGENCY STOP. Platform will stop upward movement quickly and completely. Release UP/DOWN switch.

Maintenance MEC 2033RS

- e. Turn red cap of EMERGENCY STOP switch 1/4 turn clockwise until cap "pops"
- f. Pull and turn 1/4 CCW cylinder release. Until it locks in locking position.
- **g.** Pull EMERGENCY DOWN control out and hold. Platform should lower all the way.
- **h.** After platform has fully lowered, release cylinder lock, reset it by turning 1/4 CW.

#### NOTE

Perform checks 34 and 35 while on the platform.

- 34. On a smooth, level surface, test upper control box assembly controls and indicators:
  - a. Steer left and right.
  - b. Drive forward/reverse at various speeds with TORQUE OFF.
  - While driving forward/reverse, check deceleration.
  - e. Drive forward/reverse at various speeds with TORQUE ON.
  - f. Raise platform 10-15 feet high. Drive forward to check fast drive speed cutout with platform raised.

# **WARNING**

ALL PIVOT AREAS OF SCISSORS AND LIFT CYLINDER MUST BE CHECKED FOR WEAR. A LOUD SCRAPING NOISE MEANS THE D.U. BEARINGS ARE DAMAGED AND NEED REPLACING. FAILURE TO DO SO WILL RESULT IN EXTENSIVE DAMAGE TO STRUCTURAL MEMBERS AND BUSHING WHICH WOULD CREATE A HAZARDOUS CONDITION AND COULD RESULT IN INJURY OR DEATH TO PERSONNEL.

- **g.** Raise platform to full extension at various speeds.
- h. Lower platform to full compression.
- i. While slowly driving forward or backward, press EMERGENCY STOP. Unit will stop quickly and completely.
- 35. Turn red cap of EMERGENCY STOP switch 1/4 turn clockwise until cap "pops" out.

#### **INSPECTION AND LUBRICATION**

#### Structural Inspection

#### NOTE

Refer to **Table 4-1. Quarterly Inspection Schedule,** located on the following page.

Check machine for bent structural members (beams, main frame, platform, pivot pins, etc.). Machines which have been overloaded could have bent members and fatigued pivot pins. Replace all bent members and pins to ensure a safe operating machine.

Check bushings in scissor beams for broken or cracked welds. Replace beams if bushing welds are cracked or if bushings are elongated.

#### Lubrication

#### NOTE

Refer to **Table 4-2. Lubrication Chart**, located on page 4-7.

The Mayville 2033RS is almost lubrication free. Pivot points within the scissors frame feature self-lubricating bearings. All other lubrication maintenance is performed annually or semiannually.



NEVER INSPECT HYDRAULIC HOSES WITH HANDS. ESCAPING FLUIDS UNDER PRESSURE CAN CAUSE SERIOUS INJURY. USE A PIECE OF CARDBOARD OR OTHER MATERIAL TO INSPECT FOR LEAKS. ESCAPING FLUID UNDER PRESSURE CAN BE INVISIBLE AND CAN PENETRATE THE SKIN, CAUSING SERIOUS INJURY.

IF ANY FLUID IS INJECTED INTO SKIN, SEEK MEDICAL ATTENTION IMMEDIATELY!

## Table 4-1. Quarterly Inspection Schedule

KEY: OK - Legible, Operational And/Or Physically Correct

N/O - Not Legible, Operational And/Or Physically Correct

R/P - Repairs Made To Unit Or Corrected

O	Κľ	V/O	R/P		OK	N/O	R/P	
Visual Inspection - Decals: *Quantities Listed [ ]		d [ ]	Railings					
Capacity: Rear of Platform [2], Front Rail [1]				Rails In Place / Not Damaged				
Operations and Safety: Front Rail [2]				Top Rail Not Bent				
Control Box [3]				Rear Gate In Place / Closes Freely				
Lower Control Station [1]				Rear Step In Place: Base & Platform				
Emergency Disconnect [1 or 2]				Proper Safety & Operational Manual With Unit				
Emergency Down [2]				Functions				
Tire Replacement [1]				Steer: Left / Right				
Battery Replacement				Drive: Forward / Reverse				
Battery Charging [1]				Speeds: Slow / Fast				
Electrical Hazard [1]				Hi Torque / Hi Speed				
Maintenance Locks [4]				Fast Speed Cutout When Platform Is Raised				
Operational And Visual Inspection				Emergency Down Functions Properly				
Any Structural Damage				Platform Raises To Full Extension				
Check Hydraulic Oil Level				Brakes Operational				
Battery Water				Emergency Stop Working Correctly				
Inspect For Any Leaks				Pothole Protection Operational				

* See Figures 4-1 through 4-4 for decal location.	
Comments:	
Signature / Inspectors:	Date:
Signature / Inspectors:	Date:
Signature / Inspectors:	Date:

Table 4-2. Lubrication Chart

		WEEKLY	SEMIANNUALLY	ANNUALLY
RAILS	Sheet Gate Slide Area		LIGHT GREASE	
SCISSORS	Platform Slides (4)	The state of the s	LIGHT GREASE	
	Base Slide		LIGHT GREASE	
STEERING	King Pins			BEARING GREASE
PIVOTS	Sprocket Pivots			90W GEAR OIL
REAR AXLE	Rear Hubs			BEARING GREASE
BATTERIES	Battery Water	DISTILLED WATER		
				STANDARD 10W
	Hydraulic Oil			NON-DETERGENT
		·		HYDRAULIC OIL
HYDRAULICS				
				10 MICRON
	Hydraulic Oil Filter			SPIN-ON
				(P/N 6156)

#### HYDRAULIC SYSTEM BLEEDING

The hydraulic system is self-bleeding. After the system has been drained, such as during the replacement of a hydraulic system component, actuate the platform completely up and down for six cycles and recheck the reservoir fluid level between each cycle. Fill as required.

### HYDRAULIC PUMP MOTOR SERVICING

Brush replacement is the most common maintenance required on DC motors. Brushes should be checked and replaced, if necessary (1/4" minimum length), along with commutator inspection, approximately every six months. Time spans will vary depending on how the machine is used and the condition of the batteries. It is highly recommended to keep batteries fully charged and in top condition to eliminate service problems in general, and to extend the life of the motor and brushes. Also, refer to Batteriers section in Chapter 3.

#### **CHECK AND FILL HYDRAULIC RESERVOIR**

#### NOTE

An accurate fluid level reading can be taken only if platform is fully down.

- 1. Lower platform all the way.
- Check hydraulic fluid level by looking at fluid level in sight gauge on hydraulic reservoir. Fluid should be clearly visible in gauge. If fluid is not visible, add fluid.
- 3. Remove filler cap by turning counterclockwise.
- **4.** Fill to desired level on sight gauge.
- 5. Replace filler cap.

#### **BATTERY REPLACEMENT**

# **A** WARNING

ELECTRIC SERIES MACHINES SPECIAL MAINTENANCE CONCERNS:

- TO MINIMIZE THE RISK OF FIRE, ELECTRIC SHOCK OR EXPLOSION, THE FOLLOWING MAINTENANCE PROCEDURES AND INSPECTIONS ARE PARTICULARLY IMPORTANT FOR ELECTRICALLY POWERED UNITS:
  - 1. KEEP MACHINE CLEAR OF LUBRICANTS AND OTHER COMBUSTIBLE MATERIAL.
  - 2. INSPECT WIRING REGULARLY FOR FRAYED OR DETERIORATED INSULATION. IMMEDIATELY REPLACE OR REPAIR A WIRE HARNESS OR INDIVIDUAL WIRE THAT HAS FRAYED OR DETERIORATED INSULATION.
  - 3. CHECK BRAKES AT THE RECOMMENDED INTERVALS, AND MAKE ADJUSTMENTS WHEN REQUIRED.
- NEVER SMOKE OR USE OTHER COMBUSTIBLES NEAR BATTERY OR WHILE SERVICING BATTERY OR OTHER COMPONENTS. PROVIDE PLENTY OF VENTILATION AS PRESENCE OF HYDROGEN FUMES COULD LEAD TO AN EXPLOSION.
- Install maintenance locks per procedure contained in Chapter 1.
- 2. Place ON/OFF Key switch (3, Figure 3-1) in the OFF position.
- 3. Pull BATTERY DISCONNECT (1, Figure 4-5) handle to remove batteries from all electrical circuits.

4. Unhook T-straps (2) and pivot battery access panel (3) out and down until panel rests on floor.

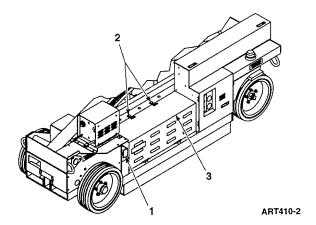


Figure 4-5. Battery Access Panel

- 5. Slide panel to the left or toward rear of unit and remove panel.
- 6. Note and record battery (1, Figure 4-6) positions and battery cable (2) connections by drawing a sketch and/or tagging all items to ensure proper installation of new batteries.
- 7. Disconnect all battery cables (2).
- 8. Loosen wing nuts (3) until hold down angle (4) can be pulled away from batteries and pivoted down.
- 9. Remove old batteries (1).

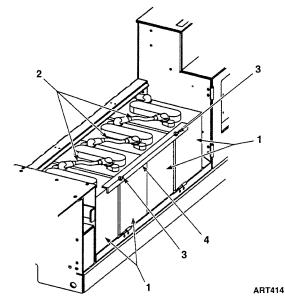


Figure 4-6. Battery Replacement

Maintenance MEC 2033RS

- **10.** Install new batteries (1) in proper locations referring to sketch and/or tags installed in step 6.
- **11.** Swing hold down angle (4) up and locate on front top corner of batteries. Tighten wing nuts (3).
- **12.** Securely connect all battery cables (2) to proper terminals referring to sketch and/or tags installed in step 6.
- Coat all battery terminals with petroleum jelly or equivalent coating.
- Position battery access panel (3, Figure 4-5) by batteries so pins will engage hinge holes. Slide panel to right.
- **15.** Pivot battery access panel (3) up over batteries and engage T-straps (2).
- Push BATTERY DISCONNECT (1) handle to connect unit electrical circuits to batteries.

#### **Charging Batteries**

Surrounding temperature has a considerable effect on the power reserve in a battery.

A battery 100% charged at 80° F (26.6° C):

- --drops to 65% at 32° F (0° C)
- --drops to 40% at 0° F (-32°C)

A battery 46% charged at 80° F (26.6° C):

- --drops to 32% at 31° F (-1° C)
- --drops to 21% at 0° F (-32° C)

Whenever the battery temperature reaches 125° F (93° C), the charging rate should be reduced or the battery taken off charge and cooled to room temperature.

Monthly equalizing charges of 25% over the regular charge are recommended. The equalizing charge must be delivered at a low rate to eliminate excessive gassing.

Bring batteries to a full charge as soon as possible after a period of continual use. A full charge is measured by a hydrometer reading of 1.265 at 80° F (26.6° C).

Lead plates in discharged batteries will harden and become sulfated, which will shorten battery life as much as overcharging. Sulfated batteries fail to deliver rated capacity or fully charge.

Several long, slow charges (at a low rate to avoid gassing) and fast discharges are then necessary to correct the sulfation and hardened plates.

Do not overcharge battery as this causes the battery to boil dry.

#### SPIN-ON OIL FILTER REPLACEMENT

The spin-on oil filter (Figure 4-7) in the hydraulic system should be changed yearly. Replace with filter part number 6156 only.

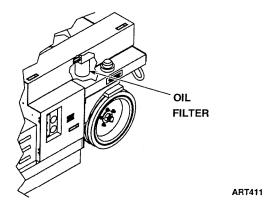


Figure 4-7. Spin-on Oil Filter

#### SERVICE HELPS

If unit is not functioning, check the following items BEFORE calling a service technician:

- 1. Battery disconnect is pushed in.
- 2. Key switch is turned to ON.
- Circuit breaker is reset.
- Emergency stop switch is ON (either on lower control panel or upper control box).
- **5.** 20 Amp ground fuse is operational.
- 6. Enable bar is being held in.

MEC 2033RS Maintenance

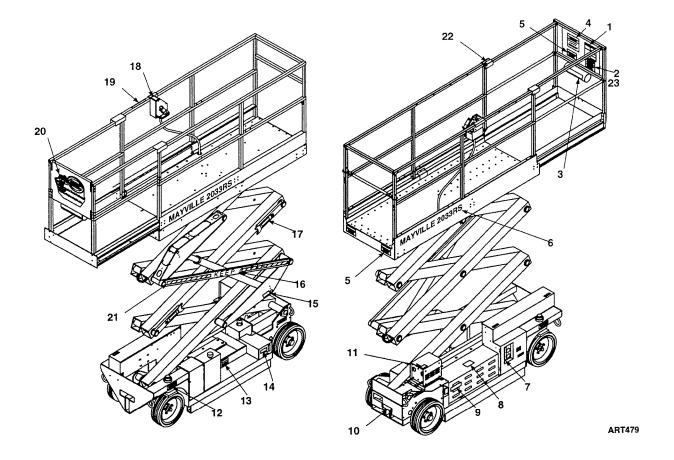


Figure 4-8. 2033RS Decal Locations

- 1. DANGER Electrical/Tip-Over Hazard
- 2. Lock Warning
- 3. Manual Case
- 4. CAUTION
- 5. 750 LB. CAPACITY
- 6. Model Number 2033RS
- 7. Control Base
- 8. WARNING Battery Replacement
- 9. Battery Disconnect
- 10. Fork Pockets
- 11. Battery Charger
- 12. WARNING Tire Replacement

- 13. Serial Number Plate
- 14. Emergency Down Procedure
- 15. Emergency Down Procedure
- 16. KEEP CLEAR
- 17. Maintenance
- 18. Platform Stops Short
- 19. Control Box
- 20. LOGO
- 21. Safety Stripe
- 22. Platform Lock
- 23. WARNING Slide Gate Lock

## **Limited Owner Warranty**

Mayville Engineering Company, Inc. (MEC) warrants its equipment to the original purchaser against defects in material and/or workmanship under normal use and service for one (1) year from date of registered sale or date the unit left the factory if not registered. MEC further warrants the structural weldments of the main frame and scissor arms as defined in MEC's current Warranty Policy & Procedures, to be free from defects in material or workmanship for five (5) years from date of registered sale or date unit left the factory if not registered. Excluded from such warranty is the battery(s) which carries a ninety (90) day warranty from described purchase date and prorated thereafter up to one (1) year. Warranty claims within such warranty period shall be limited to repair or replacement, at MEC's option, of the defective part in question and labor to perform the necessary repair or replacement based on MEC's then current flat rate, provided the defective part in question is shipped prepaid to MEC and is found upon inspection by MEC to be defective in material and/or workmanship. Mayville Engineering Company, Inc. shall not be liable for any consequential, incidental or contingent damages whatsoever. Use of other than factory authorized parts, misuse, improper maintenance or modification of the equipment voids this warranty. The foregoing warranty is exclusive and in lieu of all other warranties, express or implied. All such other warranties, including implied warranties of merchantability and of fitness for a particular purpose, are hereby excluded. No Dealer, Sales Representative, or other person purporting to act on behalf of MEC is authorized to alter the terms of this warranty, or in any manner assume on behalf of MEC any liability or obligation which exceeds MEC's obligations under this warranty.



# Mayville Engineering Co., Inc.

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