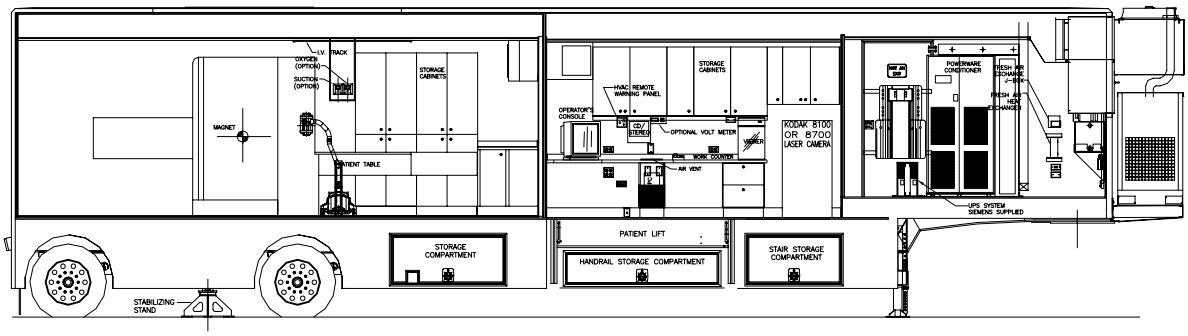
OSHKOSH SPECIALTY VEHICLES

Operator and Service Manual

SIEMENS ESPREE 1.5T
Mobile MRI System
48’ L x 8’-6” W x 13’-6” H USA Unit



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IMPORTANT The trailer suspension system must be strictly maintained in accordance with the Siemens Magnet Technology Specification MS001. Failure to do so could result in invalidating the Siemens Magnet Technology warranty.

IMPORTANT Due care must be exercised to avoid severe operating environments that endanger the system equipment. Failure to do so could result in invalidating the Siemens Magnet Technology warranty.

IMPORTANT Failure to comply with OSV procedures, regulations, and system maintenance requirements may result in invalidating the Siemens Magnet Technology warranty.

IMPORTANT Disobeying posted speed limits, driving dangerously, driving while under the influence of alcohol or drugs, driving without a valid operators license, or insurance or driving without due care or any illegal action by the driver may result in invalidating the Siemens Magnet Technology warranty.

IMPORTANT Due care must be exercised to use the lowest speeds possible when docking and undocking the trailer. Failure to do so could result in invalidating the Siemens Magnet Technology warranty.

IMPORTANT The owner/operator must notify Siemens Magnet Technology within one (1) day of any instance that causes the shock logger alarm to sound. Failure to do so could result in invalidating the Siemens Magnet Technology warranty. Contact the local Siemens Medical Systems Representative.

As part of Oshkosh Specialty Vehicles' on-going program to improve its products and service, (and their effectiveness in enhancing safety, reliability, performance, productivity, and the useful service life of the equipment) Oshkosh Specialty Vehicles reserves the right to implement product changes and disseminate changes in design and service information without notice or recourse.

OSHKOSH SPECIALTY VEHICLES

List of Revisions & Warnings

Revisions

00	New Release	December 2006

Notice

In accordance with our policy of product development, Oshkosh Specialty Vehicles reserves the right to make changes in the equipment, design, specifications, and materials of the product described herein. If there are any inconsistencies between this manual and the mobile unit that inhibit serviceability, please contact Oshkosh Specialty Vehicles for assistance.

This manual is one of two (2) information documents provided in the mobile unit. The documentation package consists of:

1. Volume I – Site Guide, Operators/Service Manual, and associated drawings
2. Volume II – Vendor Information

These volumes should be kept in the mobile unit at all times.

Any problems or questions related to the components or systems covered in this manual may be directed to:

Oshkosh Specialty Vehicles
16745 South Lathrop Avenue
Harvey, Illinois
60426
USA

(001) 800.839.0630 (24 hour service)
(001) 708.596.2480 (fax)

http://www.oshkoshsv.com/

Warnings & Safety Alert Conventions

The following terms define the various precautions and notices used in this manual:

NOTE: **Whenever information exists that requires additional emphasis beyond the standard textual information, the term "NOTE" is used.**

Whenever information exists that requires special attention to procedures to ensure proper operation of the equipment or to prevent its possible failure, the term "IMPORTANT" is used.

Whenever potential damage to equipment exists, requiring correct procedures / practices for prevention, the term "CAUTION" is used.

Whenever potential personal injury or death situations exit, requiring correct procedures / practices for prevention, the term "WARNING" is used.

Whenever immediate hazards exist that could result in personal injury or death that cannot be eliminated by design safeguards, the term "DANGER" is used.

This safety alert symbol indicates important safety messages in the manual. When you see this symbol, carefully read the message that follows and be alert to the possibility of personal injury or death.

Electrical, mechanical, pneumatic, and hydraulic safety devices have been installed on this vehicle to help protect against personal injury and / or damage to equipment. Under no circumstances should any attempt be made to disconnect or in any way render any of these devices inoperative. If a malfunction of any safety device is discovered to exist, DO NOT operate the vehicle, but immediately notify appropriate maintenance personnel.

Oshkosh Specialty vehicles shall have no liability with respect to: . . . . . REPAIRS IMPROPERLY PERFORMED OR REPLACEMENTS IMPROPERLY INSTALLED (or) USE OF REPLACEMENT PARTS OR ACCESSORIES NOT CONFORMING TO Oshkosh SPECIALTY VEHICLE'S SPECIFICATIONS, WHICH ADVERSELY AFFECT PERFORMANCE OR DURABILITY (or) ALTERATIONS OR MODIFICATIONS NOT RECOMMENDED OR APPROVED IN WRITING BY Oshkosh SPECIALTY VEHICLES (or) FOR EQUIPMENT DAMAGE OR PERSONAL INJURY OR DEATH AS A RESULT OF RENDERING ANY SAFETY DEVICE INOPERABLE.

Certain inherent risks are associated with heavy trailers due to the nature of their use. Personnel working in the area of these trailers are subject to certain hazards that cannot be met by mechanical means but only by the exercise of intelligence, care, and common sense. It is therefore essential for the owner of this equipment to have personnel involved in the use and operation of these trailers who are competent, careful, physically and mentally qualified, and trained in the safe operation of this equipment.

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Section 1: Introduction

WARNING This manual is intended to instruct and assist personnel already qualified in the proper installation of the mobile unit. This manual is not intended to enable persons unfamiliar with the mobile unit to perform the setup and transport procedures.

This manual contains the basic information needed to setup, transport, and service the mobile unit. This mobile unit was designed to operate within certain limitations and specifications. When performing the setup or transport procedures for the mobile unit, follow the proper logical steps that have been outlined in this manual. The drawings in this manual are representative of this product. In accordance with our program of continued product development, designs and specifications are subject to change without notice.

Figure 1: The Siemens Espree Mobile MRI System

As part of Oshkosh Specialty Vehicles' on-going program to improve its products and service, (and their effectiveness in enhancing safety, reliability, performance, productivity, and the useful service life of the equipment) Oshkosh Specialty Vehicles reserves the right to implement product changes and disseminate changes in design and service information without notice or recourse.

For questions regarding the Operation or Service of this unit call Oshkosh Specialty vehicles at 800-839-0630.

Section 2: Safety Guidelines

WARNING Use and follow the appropriate Lockout/Tagout procedures as required by OSHA Standard 1910.147 when performing maintenance or servicing any electrical, hydraulic or pneumatic systems. See Appendix E for Lockout/Tagout procedures.

WARNING It is the operator's responsibility to verify that the shore power receptacle is of the same type and voltage as the connection that is supplied by Oshkosh Specialty Vehicles. Failure to do this can result in injury or death to the operator of the mobile unit as well as irreparable damage to the mobile unit.

WARNING Make sure that all electrical parts are serviced only by a certified electrician or qualified personnel. Dangerous voltages are present which could result in injury or death.

WARNING Always make sure that eyes are protected while servicing the unit. Wear safety goggles when prying, drilling, grinding, or working with batteries. Wear safety goggles over regular prescription glasses unless the lenses are made of hardened glass and can serve as safety goggles.

WARNING Be certain to disconnect the power before working on any of the electrical systems.

IMPORTANT When servicing the unit be certain that a first aid kit and fire extinguisher are within reach at all times.

This safety section contains important information in regards to general safety guidelines that should be followed. Before attempting to service the mobile unit, read this safety section as well as all other safety sections found in applicable manufacturers' manuals in the component literature binder.

2.1 General Safety Precautions

1. Make sure the work area is well ventilated.
2. Disconnect the electrical power to prevent the possibility of electrical shock when servicing all electrical equipment.
3. Follow all manufacturers' directions and request material data sheets where applicable.
4. Always keep tools clean and free of grease.
5. Do not stand on chairs inside of the mobile unit under any circumstances.
6. Follow all safety precautions found in the documentation package that is included with the mobile unit.

2.2 Magnet Safety

A magnetic shielding system has been installed on each sidewall opposite of the magnet, and on the rear wall of the mobile unit. The magnetic shielding system is extremely effective, and designed to meet or exceed the Mobile MRI site plan requirements of the medical equipment manufacturer. This system is proprietary.

1. All personnel with pacemakers, metal implants and neurostimulators should avoid entering the exclusion zone of the magnetic field. The medical equipment manufacturer defines the exclusion zone of the magnetic field.
2. Do not bring ferrous materials into the exclusion zone. These items may become projectiles and cause serious injury, and / or property damage.
3. Watches can be damaged and credit cards can be erased if brought into the exclusion zone.

2.3 Chemical Safety

1. When working in the presence of liquid helium, make sure the work area is well ventilated.
2. Inhalation of helium or nitrogen can cause rapid suffocation. If any personnel inhale gas, quickly move them to fresh air and seek medical attention at once.
3. The gases used in mobile MRI units to cool the magnet can cause severe frostbite. If frostbite occurs, seek medical attention at once.
4. Liquid or gas can freeze air inside of vent lines. Check periodically to be certain that the vent screen is open.

2.4 Electrical Safety

WARNING Use and follow the appropriate Lockout/Tagout procedures as required by OSHA Standard 1910.147 when performing maintenance or servicing any electrical, hydraulic or pneumatic systems. See Appendix E for Lockout/Tagout procedures.

WARNING Before connecting or disconnecting from shore power, it is imperative that the shore power connections be moved to the “OFF” position. Failure to do this can result in injury or death to the operator of the mobile unit.

WARNING It is the operator’s responsibility to verify that the shore power receptacle is of the same type and voltage as the connection that is supplied by Oshkosh Specialty Vehicles. Failure to do this can result in injury or death to the operator of the mobile unit as well as irreparable damage to the mobile unit.

CAUTION Always inspect the power cable, connectors, and fasteners prior to usage. If during inspection, it is suspected that either internal or external damage has occurred, have a certified electrician inspect and repair the damage before using.

When working with the electrical system for the mobile unit. Follow the warnings and cautions listed above.

2.5 Transportation Safety

CAUTION

Check the tires before every trip for wear, cuts breaks, cracks, defects, objects caught or penetrating the tire carcass and for proper inflation. Check tire pressure when the tires are cool and maintain the pressure molded into the sidewall. Do not operate a trailer with tires that have the internal reinforcing wires or belt showing or less than 2/32" tread depth, when measured at a major tread groove. See 49 CFR Sec. 570.9(a).Replacement tires MUST BE Radial.

1. Walk around the unit to make certain that all doors are closed and locked and that the Platform Lift is seated in the retaining cradles with the transport pins installed.
2. If any of the warning lights are illuminated, do not move the mobile unit.
3. Before moving the mobile unit, verify that all marker and running lights are working properly.
4. Consult with the local DMV to determine if there are any travel restrictions or routes.

IMPORTANT

Due care must be exercised to avoid severe operating environments that endanger the system equipment. Failure to do so could result in invalidating the Siemens Magnet Technology warranty.

IMPORTANT

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IMPORTANT

Due care must be exercised to use the lowest speeds possible when docking and undocking the trailer. Failure to do so could result in invalidating the Siemens Magnet Technology warranty.

IMPORTANT

The owner/operator must notify Siemens Magnet Technology within one (1) day of any instance that causes the shock logger alarm to sound. Failure to do so could result in invalidating the Siemens Magnet Technology warranty. Contact the local Siemens Medical Systems Representative.

Section 3: Mobile Unit Overview

The components of the mobile unit have been divided into alphabetical order. With each component a picture and description will be found to better illustrate the components of the mobile unit. Additional components of the mobile unit can be found within the remaining chapters.

3.1 Air Ride Control Valves

CAUTION The air ride control valves must be in the normal ride position before the mobile unit can be transported. If the air ride control valves are not in the normal ride position, irreparable damage may occur to the mobile unit.

The air ride control valves adjust the rear air suspension bags. When the mobile unit is being transported, the air ride control valves must be in the normal ride position.

Figure 2: Air Ride Control Valves

3.2 Canopy (optional)

This retractable canopy is positioned above the Platform Lift to provide shelter from the elements. The handle used to deploy the unit is neatly stowed in Equipment Room during transit.

Figure 3: Canopy

3.3 Control Room Overall

Control Room houses the controls for the technician. The internal environment of the mobile unit can be monitored from Control Room.

Figure 4: Control Room Overall

3.4 Cryogen Compressor

The cryogen compressor is supplied by Siemens. For information regarding the cryogen compressor, please refer to the manuals supplied by Siemens.

Figure 5: Cryogen Compressor Switch

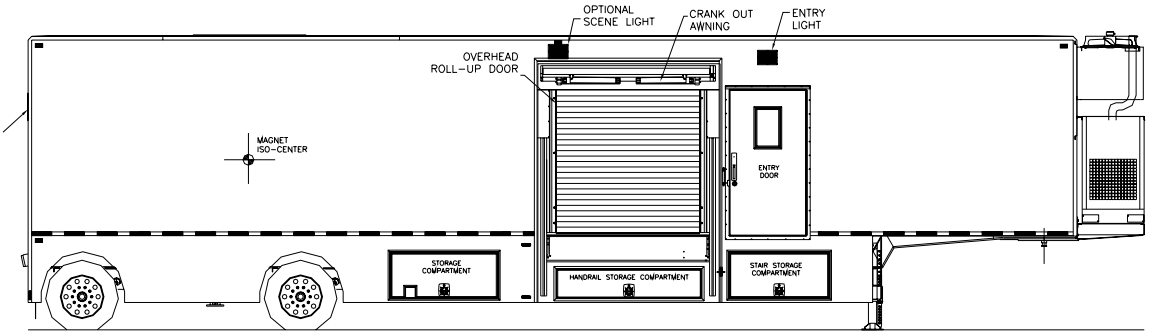
3.5 Equipment Room Overall

Equipment Room houses the system components that support the medical system, such as the humidifier and water tank, and the main electrical panels

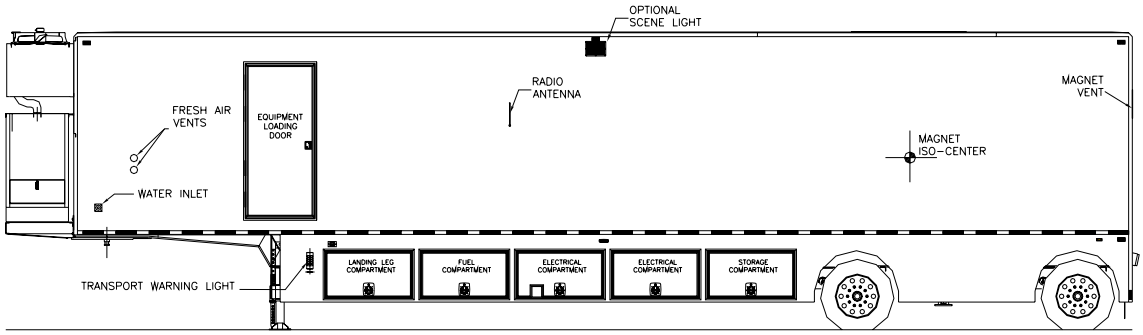
Figure 6: Equipment Room Overall

3.6 Exterior Overall

In these pictures the Platform Lift, the staff entry door, the generator housing, HVAC Units and the emergency exit / service entry door to Equipment Room can be seen.



Right Side



Left Side

Figure 7: Exterior Overall

3.7 Exterior Staff Entry Door

A 44” inch wide, high quality, steel, positive latching, double gasket, insulated main entry door with door closer and tinted glass window is installed on the mobile unit. The door is fitted with hospital grade emergency exit bar and an adjustable privacy blind on the window.

Figure 8: Exterior Staff Door

3.8 Fuel Compartment

The fuel compartment stores the fuel tank, fuel gauge, fuel pump, and fuel separator.

Figure 9: Fuel Compartment

Fuel Gauge:	The fuel gauge is push button activated and will give an accurate reading of the available fuel supply.
Fuel Pump (not shown):	The fuel pump pumps the fuel from the fuel tank to the generator.
Fuel Separator (not shown):	The fuel separator removes debris from the fuel supply.
Fuel Tank:	The fuel tank stores and supplies fuel to the generator. The capacity of the fuel tank is 70 US gallons. Only use diesel fuel.

3.9 Glad-hand Connections

The glad hands are the connection point between the tractor and the mobile unit. All connections must be made before moving the mobile unit. Failure to make all connections can result in damage to the mobile unit.

Figure 10: Glad Hand Connections

Emergency Airline:	Backup airline in the event that the main airline fails.
Key Lock Box: (Forward left side, not shown)	A combination lock that holds a key to the mobile unit.
Service Airline:	The main airline for the mobile unit.
Standard Electrical Service:	The main electrical connection for the mobile unit.

3.10 Hubbell All Weather Phone Cables

Hubbell all weather phone cables are required for use with the Hubbell all weather phone connections.

Figure 11: Hubbell All Weather Phone Cables

3.11 I.V. Track Rail

A ceiling mounted I.V. track rail has been installed in Scan Room.

Figure 12: I.V. Track

3.12 Levels

The levels allow the mobile unit to be leveled both front to back and side to side. It is imperative that the unit be leveled prior to use.

Bubble Levels

Figure 13: Levels

3.13 Mobile Unit Controls

Located inside of the mobile unit are the various controls that are used for operating such items as the interior and exterior lights, the Platform Lift, warning lights, emergency stop buttons, fire alarms, and emergency equipment.

Scan Room Lighting and Magnet Quench Controls

Control Room Lighting and E-Stop

Roll Door Controls and Platform Lift “UP” light

Scan Room E-Stop and Magnet Quench Controls

Air Conditioning Trouble Light & Alarm

Figure 14: Mobile Unit Controls

Control Room Light Switches:	ON / OFF light switch for Control Room fluorescent lights.
Exterior Light Switch:	ON / OFF light switch for the exterior lights.
MRI Emergency OFF Button (E-Stop):	The emergency stop button for the MRI system will stop all medical components. This will not stop the HVAC system. This is also commonly referred to as the A-1 Stop Button.
Roll Door Controls:	Controls the movement of the roll door.
Platform Lift Warning Light:	Notifies the operator of the Platform Lift status. Whether it is raised or lowered.
Scan Room Light Switches:	ON / OFF light switch for Scan Room.
Halogen Lights:	ON / OFF light switch for the halogen lighting.

3.14 Phone & Data Line Connections

The phone and data connections are located in the underbody compartments. The connections are used to connect the mobile unit to the shore facility. The telephone connections utilize a Hubbell all weather connection, while the data lines utilize an RJ-45 connection and CAT-5E cabling.

Figure 15: Phone & Data Line Connections

Hubbell All Weather Phone Connections	The Hubbell all weather phone connections are to be used with the provided Hubbell all weather telephone cable.
Data Connections	The data connections that are utilized are RJ-45's. The connections utilize CAT-5E cable and can be connected directly to the facility

3.15 Scan Room Overall

Scan Room houses the medical equipment system. Also located in this room are storage compartments for the medical equipment. Placed above the storage compartment countertop, the magnet quench button and emergency stop button can be found. See below.

Figure 16: Scan Room Overall

3.16 Magnet Room

The Magnet Room is located at the rear of the magnet and is accessible from the rear service entrance door. This room is provided as a service area at the rear of the magnet. The Quench Button is located on the right side wall and the E-Stop Button is located next to the rear door on the left side wall.

Left side wall behind magnet

Figure 17: Magnet Room E-Stop & Quench Buttons

3.17 Stabilizing Stands

The stabilizing stands are placed underneath the rear of the mobile unit when the medical system is in use. These stands help to level the mobile unit and decrease vibration, which can affect scan quality.

Figure 18: Stabilizing Stands

3.18 Stair Assembly

The stairs allow access to the interior of the mobile unit through the staff door. When assembling the stairs, please refer to the following illustrations.

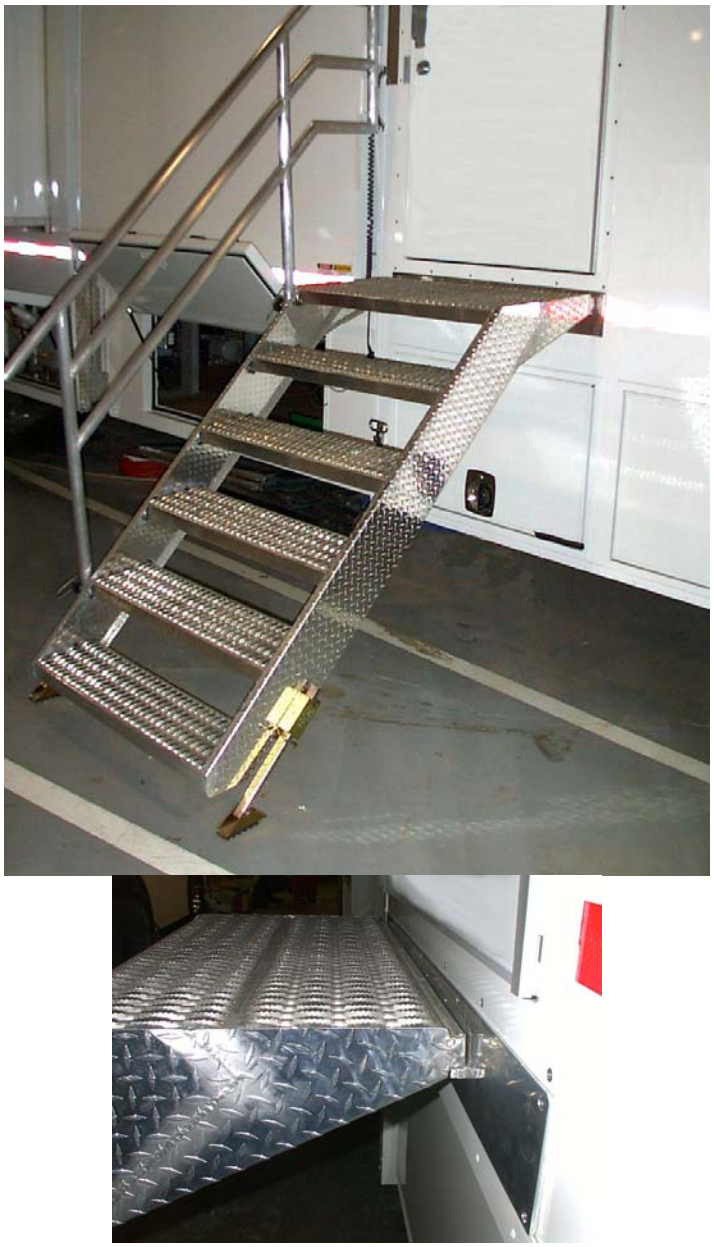


Figure 19: Stair Assembly (standard)

3.19 Fresh Water Connection

The fresh water connection is located on the forward left side of the mobile unit please refer to the following illustration.

Figure 20: Fresh Water Connection

Section 4: Safety Systems

This safety section contains important information about the safety systems that have been built into the mobile unit to protect all personnel and equipment. Before attempting to service the mobile unit, read this safety section as well as all other safety sections found in applicable manufacturers' manuals in the component literature binder.

Figure 21: Interlocks

4.1 Door Interlock System

Scan Room and Magnet Room are shielded from radio frequency interference. If doors that lead to these rooms are opened, radio frequencies can interfere with the scan image. A door interlock system has been incorporated into the mobile unit to ensure that proper scanning can take place. This system provides a constant monitoring of the doors that have the interlock system. If one of these doors is opened, the technician will see a notification appear at the console stating that an RF door has been opened. All doors must be closed for scanning to take place. If a door is opened during a scan, scanning operations will be stopped. The door interlocks can be found at the following locations.

- On the interior door that leads into Scan Room.
- On the exterior door that leads into Magnet Room.

4.2 Emergency Exit / Service Door Equipment Room

An emergency exit / service door has been installed on the street sidewall of the mobile unit. In the event of an emergency, this door can be used as an exit. When needed, this door can also be used when servicing the mobile unit.

Figure 22: Emergency Exit / Service Door

4.3 Emergency Lighting

In the event that the main AC power fails, three dual beam emergency lights are provided. These lights will automatically illuminate when the main AC power is lost. They are located in the Control Room, Gantry Room, and Equipment Room. The emergency lighting system is wired into a 120V AC electrical system that allows the lights' internal circuitry to keep its batteries at 100% charge. The emergency lights will illuminate the exit doors and last for approximately 90 minutes.

Figure 23: Emergency Lighting

4.4 Fire Suppression (manual)

Two fire extinguishers are supplied with the mobile unit. They are located in Control Room and Equipment Room. Instructions for operation are clearly printed on the canister of the fire extinguisher. The fire extinguisher meets the following standards.

1. It is a class A/B/C 1211 hand held unit.
2. It has a charged weight of 2 lbs., 8 oz.
3. It is U.L. listed.
4. It meets D.O.T. requirements.

It is in accordance with N.F.P.A. Standard No. 10, "Portable Fire Extinguisher".

Figure 24: Fire Extinguisher

4.5 Fire Detection System (optional)

The fire alarm control panel is responsible for monitoring the fire alarm system. Located on the interior of the fire control panel is a brief list of instructions that explain how to use the system control buttons to test, reset, and silence the alarm. Please refer to the product manual located in Volume II of the literature provided by Oshkosh Specialty Vehicles.

A standard fire detection system is installed in the mobile unit.

The fire detection system works via photoelectric smoke detectors located on the ceiling panels in each room of the mobile unit. In the event of a fire being detected, a horn will sound and a strobe light will flash.

The smoke detector is responsible for detecting smoke for use with both the standard fire alarm system as well as the optional fire suppression system.

Figure 25: Smoke Detector

Figure 26: Fire Alarm Control Panel

Reset Button:	The reset button resets the system after it has been activated
Trouble Silence Button:	The trouble silence button will silence the horns that are activated after the alarm has been tripped.
Disable Button:	The disable button will shut the alarm system down for maintenance.

System Operation

During normal operation, the control unit remains in a supervisory mode. If one smoke detector goes into alarm, it will trigger the following actions.

1. The fire horn will sound continuously.
2. A (RED) alarm LED located on the front cover of the fire system control panel will illuminate.
3. The strobe light will flash.
4. The HVAC units will shutdown.

Pull Station

A pull station is located next to the staff door in Control Room. When the pull station has been pulled, the steps outlined above will occur.

Figure 27: Fire Alarm Pull Station

Power Backup System

Primary 120V AC power to the fire system control panel is supplied from the 480V AC service panel. When the primary power is lost, on-line emergency batteries built into the system will provide 24 hours of supervisory power.

- When primary power is lost, both the green “POWER” LED and the yellow “TROUBLE” LED will flash.
- The “SYSTEM TROUBLE” and “POWER TROUBLE” LED’s will also begin to illuminate.
- The audible alert located inside of the system control panel will begin to BEEP.

The emergency batteries are rechargeable gel celled. They are also float charged to provide quick recovery after primary power is restored.

4.6 Fire Suppression System (optional)

An optional fire suppression system is available for the mobile unit. This fire suppression system uses a dispersant to extinguish the fire. The dispersant used is a gas that removes the oxygen from the interior of the mobile unit. Without oxygen, the fire cannot survive. This method provides the means to allow both personnel and property to escape the damage from the fire virtually unharmed. When the fire suppression system has been triggered, it will automatically shut down the medical system, and the HVAC system.

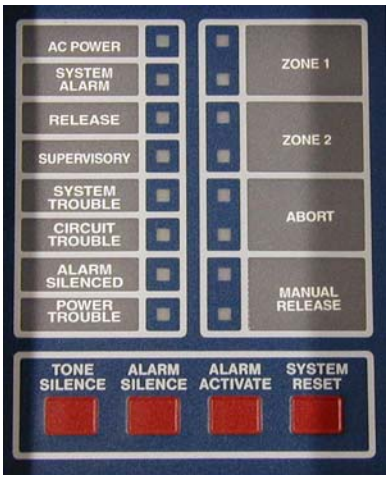


Figure 28: Fire Suppression Components

System Operation

During normal operation, the fire suppression system control panel remains in a supervisory mode. In order for the fire suppression system to discharge the dispersant, a number of events must first occur. When these events begin to occur, the fire suppression system control panel enters into what is called a “counting mode”.

If one smoke detector goes into alarm, the following steps will occur.

1. The bell will sound continuously.
2. The red LED marked “Zone 1” and “Zone 2” located on the front cover of the fire suppression system control panel will illuminate.
3. The HVAC system will shutdown.
4. The roll door will close (if applicable).
5. The “System Alarm” LED will illuminate.

If no other smoke detector goes into alarm, the fire system control panel will remain in alarm condition until the control panel is manually reset. To reset the control panel, open the front cover, and depress the system reset button.

If a second smoke detector goes into alarm, the following steps will occur in addition to the previously mentioned steps.

1. Both red LED’s marked “Zone 1” and “Zone 2” located on the front cover of the fire suppression system control panel will now be illuminated.
2. The horn will pulse (on-off-on-off, etc.).
3. The bell will silence.
4. The strobe light will begin to flash.
5. A 30 second time delay will begin.
6. After 20 seconds have passed, the dispersant will be discharged. (Total discharge time is normally less than 10 seconds.)
    a. The LED marked “RELEASE” located on the front cover of the fire suppression system control panel will illuminate.
    b. The horn will sound continuously indicating that the dispersant is being discharged.
    c. The medical system will shutdown.
    d. The rear service exhaust fan will shutdown.
    e. The fire remote contacts located in the remote box in the underbody compartment will state.

Pull Station

A pull station is located next to the staff door in the Control Room. When this pull station is activated, the system discharges immediately.

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Manual Release

In the event that the control panel is not receiving power, a manual release has been provided on the dispersant tank. To activate, pull the safety pin, and then pull the release flap. If the above steps have been performed, all personnel must vacate the mobile unit as soon as possible.

Abort Switch

WARNING The abort switch will not stop the dispersant from discharging indefinitely. The abort switch only postpones the discharge, by resetting the 60-second counter. All personnel must be out of the unit before the dispersant is discharged.

An abort switch is located next to the staff door in Control Room. When this switch has been activated, the 20-second timer will be reset.

The system will stay in the reset mode as long as the reset switch is held in position.

Once the reset switch has been released, the timer will resume the countdown starting at 20 seconds.

If for some reason the dispersant must be shortly postponed from discharging, use the abort switch.

Figure 29: Abort Switch

Maintenance Switch

IMPORTANT

After all service work has been completed on the mobile unit, all smoke must be cleared from the mobile unit before arming the system.

IMPORTANT

If the key switch is in the active position and the red LED is illuminated, a trouble condition exists somewhere in the system. Refer to the system control panel for information.

When the maintenance switch is in the Normal position, the system is armed.

When the maintenance switch is in the Lock OFF position, the system is unarmed. At this time, maintenance can be performed on the mobile unit as required.

The RED Light indicates that the system fire suppression has been aborted

Figure 30: Maintenance Switch

4.7 Gauss Lines

WARNING

The magnetic field created when the magnet is up to full filed attracts objects containing iron, steel, nickel, and cobalt. Such objects must not be brought into the exclusion zone area. Large objects will not be able to be restrained. Persons with implants or prosthetic devices must not enter this area. Pacemakers may be disabled. Data on credit cards and magnetic storage media can be erased. Watches, cameras, and instruments can be damaged.

IMPORTANT

The exclusion zone is restricted to within 8” of the outside walls of the trailer.

A magnet produces magnetic fields. The measured intensity of these fields, at specified distances from the magnet, are referred to as gauss lines.

Any stationary or moving ferrous objects within the magnetic field have a definite impact on the homogeneity of the magnetic field.

The magnetic filed also has a definite impact on any ferrous material that enters it.

In order to maintain the uniformity of the magnetic filed, and for the protection of all personnel in proximity of the magnetic field, warning signs are posted on the staff door of the mobile unit, on the access door to Magnet Room, and on the sides of the mobile unit.

4.8 Platform Lift

There are multiple safety features for the Platform Lift. For a full list of the safety features, please refer to **Section 10: Platform Lift**.

4.9 Magnet Field Warning Indicator

The magnetic field created when the magnet is up to full field attracts objects containing ferrous materials (i.e. iron, steel, nickel, cobalt, etc.). Such objects must not be brought into the exclusion zone area. Large objects will not be able to be restrained. Persons with implants or prosthetic devices must not enter this area. Pacemakers may be disabled. Data on credit cards and magnetic storage media can be erased. Watches, cameras, and instruments can be damaged.

Because of certain precautions that are need to be taken when nearing a magnet, a magnet field warning system has been incorporated into the unit. A decal stating *Magnet ON*, has been placed on the frame of the entry door to Scan Room in order to alert all personnel nearing the room. An optional light can be provided. The light is labeled *Magnet* ON and is located next to the entry door to Scan Room.

4.10 Marker Lights

L.E.D. type marker and side turn signal lights are installed on the trailer body to assist the driver with maneuvering the mobile unit.

4.11 Roll Door

Controls for the roll door are located both inside and outside of the mobile unit. On the exterior of the mobile unit, the controls can be found alongside the controls for the Platform Lift. On the interior, the controls can be found next to the staff door. A green indicator light is located next to the controls ands will illuminate when the Platform Lift is in the raised position and the door can be safely opened.

In the event the power supply is lost, the mobile unit has been provided with a manual override (emergency release) for the roll door. Once the disconnect lever is pulled, the roll door can be moved manually either up or down.

Figure 31: Roll Door Emergency Release

4.12 System Shutdowns

There are different types of shutdowns that can take place on the mobile unit. Of the different types, both manual and automatic shutdowns exist. All shutdowns refer only to the medical system and not the HVAC system unless otherwise noted.

Scan Room

Control Room

Guarded Magnet Quench Buttons are located in the Magnet Room, Scan Room and Control Room. See **Figure 17: Magnet Room E-Stop & Quench Buttons** for Magnet Room.

Scan Room

Control Room

Emergency Off Buttons are located in the Magnet Room, Scan Room and Control Room.

Emergency Off button, Control Room, next to Entry Door

Figure 32: Emergency Shutdown Buttons

Fire Detection System (optional)

When smoke is detected, the fire detection control panel will trigger the following events.

1. The fire horn will sound continuously.
2. The strobe light will flash.
3. The HVAC units will shutdown.

Fire Suppression System (optional)

If one smoke detector goes into alarm, the following steps will occur.

1. The bell will sound continuously.
2. The red LED marked “Zone 1” and “Zone 2” located on the front cover of the fire suppression system control panel will illuminate.
3. The HVAC system will shutdown.
4. The roll door will close (if applicable).
5. The “System Alarm” LED will illuminate.

If no other smoke detector goes into alarm, the fire system control panel will remain in alarm condition until the control panel is manually reset. To reset the control panel, open the front cover, and depress the system reset button.

If a second smoke detector goes into alarm, the following steps will occur in addition to the previously mentioned steps.

1. Both red LED’s marked “Zone 1” and “Zone 2” located on the front cover of the fire suppression system control panel will now be illuminated.
2. The horn will pulse (on-off-on-off, etc.).
3. The bell will silence.
4. The strobe light will begin to flash.
5. A 30 second time delay will begin.
6. After 20 seconds have passed, the dispersant will be discharged. (Total discharge time is normally less than 10 seconds.)
    f. The LED marked “RELEASE” located on the front cover of the fire suppression system control panel will illuminate.
    g. The horn will sound continuously indicating that the dispersant is being discharged.
    h. The medical system will shutdown.
    i. The rear service exhaust fan will shutdown.
    j. The fire remote contacts located in the remote box in the underbody compartment will state.

Guarded Magnet Quench Button (Emergency Rundown Unit)

This *WILL* drop the magnet. Depressing the Quench Button will rapidly deplete the magnetic field. The magnet located inside of Scan Room is cooled by liquid helium. When the magnet quench button is depressed, the helium will be quenched from the magnet. This must only be done when there is an emergency related to the magnetic field.

Once this button has been depressed, the helium will be quenched and the MRI System must be serviced before it can be used again.

The guard must be lifted before the button can be depressed. Once the button has been depressed, the magnet will begin quenching while all the other systems continue to work normally.

Manual Shutdown (Emergency Stop / A1 Stop)

This *WILL NOT* drop the magnet. Depressing the Quench Button, only, will rapidly deplete the magnetic field. Depressing the E-Stops or A1 Stop buttons will not deplete the magnetic field. Manual shutdowns are those that require the operating personnel to depress “Emergency OFF” buttons in the event of an emergency. The “Emergency OFF” buttons are located in Control Room and Scan Room aboard the mobile unit. When these buttons are depressed, only the medical system will be shutdown. The trailer systems will still be operational.

4.13 Warning Lights

Warning lights have been provided to keep the operator and technician aware of the status of the mobile unit at all times. A description of each of the warning lights and their location can be found below. If any of the warning lights are illuminated, please refer to **Appendix B: Troubleshooting**, for additional information.

Power Warning Light

The Power Warning Light is located on the exterior left side of the mobile unit and will illuminate when the mobile unit is receiving power. The mobile unit must have power at all times.

Transport Warning Light

⚠CAUTION If the Transport Warning Light is on, the mobile unit must not be moved. If the mobile unit is moved while this light is on, irreparable damage can occur to the mobile unit.

The Transport Warning Light is located on the exterior left side of the mobile unit and will illuminate when the Platform Lift is not in the proper transport position.

Section 5: Mobile Unit Setup Procedure

CAUTION The Siemens medical system requires the HVAC system to be supplied power at all times when the unit is in the parked position via shore power.

CAUTION The landing / stabilizing legs and rear suspension are not to be used to raise the mobile unit off the ground. The legs are meant only to level the unit and place it in a parked position. If the legs are used in an attempt to raise the mobile unit from the ground, serious damage may occur to the mobile unit.

IMPORTANT A checklist can be found in Appendix A that may be used as a guideline for the following procedure.

IMPORTANT **Due care must be exercised to avoid severe operating environments that endanger the system equipment. Failure to do so could result in invalidating the Siemens Magnet Technology warranty.**

IMPORTANT **Disobeying posted speed limits, driving dangerously, driving while under the influence of alcohol or drugs, driving without a valid operators license, or insurance or driving without due care or any illegal action by the driver may result in invalidating the Siemens Magnet Technology warranty.**

IMPORTANT **Due care must be exercised to use the lowest speeds possible when docking and undocking the trailer. Failure to do so could result in invalidating the Siemens Magnet Technology warranty.**

IMPORTANT **The owner/operator must notify Siemens Magnet Technology within one (1) day of any instance that causes the shock logger alarm to sound. Failure to do so could result in invalidating the Siemens Magnet Technology warranty. Contact the local Siemens Medical Systems Representative.**

5.1 Park the Mobile Unit

In order to join the mobile unit to the facility, place the unit on the pad per the site-planning guide.

5.2 Lower the Landing / Stabilizing Legs

After the mobile unit has been parked on the pad per the site-planning guide, the landing / stabilizing legs must be lowered to stabilize the mobile unit before it can be used. Refer to **Figure 49: Landing / Stabilizing Leg Assembly** for the following procedure.

1. Move and hold the pump switch in the “Pump ON” position.
2. Pull the levers towards you to extend the landing / stabilizing legs to their extended position.
3. Extend the legs far until the front of the unit has been raised high enough to clear the fifth wheel.
4. Release the pump switch. The switch should automatically retract to the “Pump OFF” position.
5. Set the Trailer Parking brake before disconnecting the tractor.

5.3 Disconnect the Tractor

After the landing / stabilizing legs have been lowered, the tractor must be removed from the mobile unit.

1. Verify that the mobile unit has been raised high enough to clear the fifth wheel.
2. Leave the air and electrical lines attached and disconnect the tractor from the mobile unit.

5.4 Install the Rear Stabilizing Stands

After the front landing / stabilizing legs have been lowered into position and the tractor has been disconnected from the mobile unit, the rear stabilizing stands can be installed. The rear stabilizing stands must be installed prior to use of the medical system. Refer to **Figure 2: Air Ride Control Valves** and **Figure 18: Stabilizing Stands** for the following procedure.

1. Release the Trailer Parking Brake.
2. Open the left side rear underbody compartment door to gain access to the air ride controls.
3. To raise the unit, turn the switch “ON” and place the lever in the “UP” position.
4. Raise the mobile unit high enough to insert the stabilizing stands. Move the switch to the “OFF” position.
5. Install the stands under the stand supports.
6. After the stands have been installed, turn the switch “ON” and place the lever in the “DOWN” position to deflate the air bags.
7. Continue to lower the mobile unit, until the supports are resting on the stabilizing stands.
8. Verify that the unit is level by checking the levels.

5.5 Re-level the Mobile Unit

After the preceding steps have been completed, the mobile unit may no longer be level. Re-level the unit if necessary using the levels that have been provided. Refer to **Figure 13: Levels** if needed. Set the Trailer Parking Brakes.

5.6 Disconnect the Tractor Air and Electrical Lines

⚠CAUTION Failure to completely exhaust the suspension before uncoupling the air lines may result in damage to the suspension of the mobile unit.

After the mobile unit has been re-leveled, the tractor air and electrical lines can safely be removed. Refer to **Figure 10: Glad Hand Connections**.

5.7 Lower the Auxiliary Support Legs

After the preceding steps have taken place, the auxiliary support legs can now be lowered. Refer to **Figure 49: Landing / Stabilizing Leg Assembly** for the following procedure.

1. Remove the pin that is currently holding the safety leg in the transport position.
2. Lower the auxiliary support leg to within ½” of the sand shoe and insert the pin into the highest available hole to lock the leg in position.

5.8 Install the Stair Assembly

There are two different options for the stair assembly. The first option is to attach the stairs directly to the mobile unit while the second option is to utilize the supplied platform as well. Both options can be setup easier with two people. The instructions are covered below. Please refer to **Figure 19: Stair Assembly (standard)** and follow the appropriate set of instructions for your unit.

Standard Stair Assembly

1. Remove the stair assembly from the underbody compartments.
2. Close the door to the underbody compartment.
3. Install the clip of the stair assembly into the channel located underneath the staff door.
4. Adjust the height of the stair legs as necessary to in order to level and secure the stairs.
5. Install the handrail into its operating position and secure in place with the hardware provided.

Stair Assembly with the Platform (optional)

1. Remove the stair assembly from the underbody compartments.
2. Close the door to the underbody compartment.
3. Having one person on each side of the platform, lift the platform and place the clip of the platform in the channel located beneath the staff entry door.
4. While one person holds the platform in place, the other person should insert the adjustable legs into position to support the platform.
5. Adjust the legs as necessary in order to ensure the platform is both level and secure.
6. After the platform has been supported, the slip of the stair assembly can be safely placed into the channel located on the platform.
7. Insert the adjustable legs for the stair assembly at the base of the stairs.
8. Adjust the legs as necessary in order to ensure the stair assembly is both level and secure.
9. Place the handrails in their operating positions and secure them with the hardware provided.

5.9 Platform Lift Deployment

After the stair assembly has been installed, the Platform Lift can be deployed for use. Please refer to **Section 10: Platform Lift** for the following procedure.

1. Open the underbody compartment doors.
2. Remove the handrails and lift pendent, and place them to the side for now.
3. Close the underbody compartment door.
4. Located next to the roll door, are the controls for the Platform Lift. Insert the connector from the lift control pendent into the receptacle that is located on this control panel.
5. Remove the Lift Transport Restraining cable.
6. Remove the transport pins from each side of the lift.
7. Using the remote, raise the lift high enough to clear the cradles.
8. Carefully pull down the platform until it is parallel with the ground. A torsion bar is located within the Platform Lift hardware that will enable one person to move the lift into operating position.
9. Using the lift control pendent, lower the platform to the ground.
10. Once the platform has been lowered, install the handrails and secure them with the hardware provided.

5.10 Connect to Shore Power

WARNING Before connecting or disconnecting from shore power, it is imperative that the shore power connections be moved to the “OFF” position. Failure to do this can result in injury or death to the operator of the mobile unit.

WARNING It is the operator’s responsibility to verify that the shore power receptacle is of the same type and voltage as the connection that is supplied by Oshkosh Specialty Vehicles. Failure to do this can result in injury or death to the operator of the mobile unit as well as irreparable damage to the mobile unit.

CAUTION Always inspect the power cable, connectors, and fasteners prior to usage. If during inspection, it is suspected that either internal or external damage has occurred, have a certified electrician inspect and repair the damage before using.

The unit must first be switched to shore power before the medical system can be used. Refer to **Figure 35: Shore Power Connection**, for the following procedure.

1. Verify that the shore power disconnect is in the “OFF” position.
2. Open the underbody compartment door and remove the power cable from the underbody compartments of the mobile unit.
3. Insert the trailer connector into the shore power receptacle and spin the lock ring clockwise to secure the connection.
4. Move the shore power disconnect to the “ON” position.
5. Close the underbody compartment door; making sure that the access flap for the power cable has been released.

5.11 Switch from Generator Power to Shore Power

CAUTION

When switching from generator power to shore power the “480V AC FAULT” may illuminate and flicker. If the “480V AC FAULT” stays illuminated, reconnect to generator power and call a certified electrician before attempting to reconnect to shore power.

CAUTION

When turning the power selector switch for the incoming power, from one position to another, the selector must be paused for a minimum of five seconds, in the “OFF” position between selections. Failure to do so can result in damage to the equipment.

1. Open the left Side Center Lower Compartment door to access the power source controls.
2. Turn the unit power selector from “Generator” to “Line”. Be certain to pause for five seconds in between selections.
3. The two indicators on this panel will illuminate according to the power that is received.
    a. If the supply of power is good, the green indicator labeled “480V AC OKAY” will illuminate.
    b. If the supply of power is experiencing problems, such as being out of phase, the red indicator labeled “480V AC FAULT” will illuminate.
4. Since minor fluctuations in power are common, the “480V AC FAULT” may briefly flicker. This is to be expected. If the “480V AC FAULT” indicator light stays illuminated, switch back to generator power and contact a qualified electrician before operating the medical system.
5. If the power supply is good, the selector for the generator can be moved to the “STOP” position. Once this has been done, the generator will enter into a cooling phase and continue running for approximately five minutes. Do not continue to move the selector switch during this time, the generator will shut down automatically when this stage has completed.
6. Turn the Generator selector switch to the “OFF” position. Be certain to pause for five seconds in between selections.

5.12 Connect the Phone and Data Lines

The phone and data lines can be found in the underbody storage compartments. Both the phone and data lines can now be connected from the outlets located in the underbody compartments to the receptacles located at the shore site.

The phone lines make use of Hubbell all weather connections. The data lines make use of CAT-5E cable and RJ-45 connections. Refer to **Figure 15: Phone & Data Line Connections**.

5.13 Connect the Water / Waste Hoses

Humidifier Water Fill

The mobile unit contains a water storage tank for the humidifier. This tank is located in the equipment room and must always contain water to insure the specified humidity level remains constant. There are two options for filling the tank.

- A ¾" G.H.T. male threaded hose connection is located under the front kick of the mobile unit, below the air conditioning units.
- A fill port is located on the water tank itself for manual fill capability.
    1. Remove the cap that covers the connection.
    2. Attach the supplied water hose to this connection.
    3. Attach the other end of the hose to facility provided faucet.
    4. Turn on the water at the faucet.
    5. This will fill the water tank for the mobile unit.
    6. In the event that the water tank is overfilled, an overflow drain has been provided that exits outside of the mobile unit.

Fresh Water Supply Requirements (Optional)

The mobile unit will be supplied with a ¾" diameter, 20'-0" long hose terminated with a ¾" G.H.T. male threaded hose connector located on the left side of the mobile unit. Refer to **Figure 20: Fresh Water Connection**. The facility must provide a ¾" female connecter and a water supply that meets the following specifications:

- A flow rate of 5 gallons per minute.
- 45-60 PSI.
- A maximum temperature of 70°F.

Waste Water Connections (sink option)

A 1½" IPS male connection is required to sink wastewater.

Any pipes and drains within 20'-0" of the magnet isocenter should be of non-ferrous materials such as PVC, copper, or brass. All plumbing must comply with all applicable codes.

The mobile unit is supplied with a 20'-0" long 1" diameter hose that is terminated with a 1" male threaded connector for sanitary wastewater drainage located on the left side of the mobile unit. The facility must provide means of sanitary wastewater drainage from the system, which complies with all local applicable codes.

5.14 Remove Restraining Hardware

There are two types of restraints that need may need to be removed prior to using the medical system. They are as follows.

The first type deals with the restraints that are used by the medical equipment manufacturer. Follow all instructions provided by the medical equipment manufacturer when adding or removing restraints from the medical equipment. These instructions can be found in the system manuals provided by the medical equipment manufacturer.

The second type deals with the restraints that are used by the mobile unit manufacturer. Various items may be secured while the unit is being transported. These items may consist of chairs, monitors, door, cabinets, cameras, and printers. Remove all restraining equipment prior to usage of the medical system.

5.15 Prepare the Medical System per OEM Instructions

The medical system can now be prepared for use. Follow the OEM instructions posted on the wall of the scan room in order to prepare the system.

5.16 Canopy Deployment (if applicable)

If the canopy option has been installed on the mobile unit, it can now be deployed. Please follow the instructions below and refer to **Figure 3: Canopy**.

1. Remove the handle from Equipment Room.
2. Insert the hook of the handle into the hole of the canopy crank mechanism.
3. Turn the handle in order to deploy the canopy.
4. After the canopy has been deployed, return the handle to its storage position inside of Equipment Room.

OSHKOSH SPECIALTY VEHICLES

Section 6: Mobile Unit Transport Procedure

CAUTION The Siemens medical system requires the HVAC system to be supplied power at all times when the unit is in the parked position via shore power.

CAUTION The landing / stabilizing legs and rear suspension are not to be used to raise the mobile unit off the ground. The legs are meant only to level the unit and place it in a parked position. If the legs are used in an attempt to raise the mobile unit from the ground, serious damage may occur to the mobile unit.

CAUTION Before transporting the mobile unit, check to verify all warning lights as well as all exterior marker lights are working correctly.

IMPORTANT A checklist can be found in Appendix A that may be used as a guideline for the following procedure.

CAUTION Check the tires before every trip for wear, cuts breaks, cracks, defects, objects caught or penetrating the tire carcass and for proper inflation. Check tire pressure when the tires are cool and maintain the pressure molded into the sidewall. Do not operate a trailer with tires that have the internal reinforcing wires or belt showing or less than 2/32” tread depth, when measured at a major tread groove. See 49 CFR Sec. 570.9(a).Replacement tires MUST BE Radial.

IMPORTANT **Due care must be exercised to avoid severe operating environments that endanger the system equipment. Failure to do so could result in invalidating the Siemens Magnet Technology warranty.**

IMPORTANT **Disobeying posted speed limits, driving dangerously, driving while under the influence of alcohol or drugs, driving without a valid operators license, or insurance or driving without due care or any illegal action by the driver may result in invalidating the Siemens Magnet Technology warranty.**

IMPORTANT **Due care must be exercised to use the lowest speeds possible when docking and undocking the trailer. Failure to do so could result in invalidating the Siemens Magnet Technology warranty.**

IMPORTANT **The owner/operator must notify Siemens Magnet Technology within one (1) day of any instance that causes the shock logger alarm to sound. Failure to do so could result in invalidating the Siemens Magnet Technology warranty. Contact the local Siemens Medical Systems Representative.**

6.1 Canopy Retraction (if applicable)

If the canopy option has been installed on the mobile unit, it can now be retracted. Please follow the instructions below and refer to **Figure 3: Canopy**.

1. Remove the handle from Equipment Room.
2. Insert the hook of the handle into the hole of the canopy crank mechanism.
3. Turn the handle in order to retract the canopy.
4. After the canopy has been retracted, return the handle to its storage position inside of Equipment Room.

6.2 Return the Platform Lift to the Transport Position

Please refer to **Section 10: Platform Lift**, and follow the procedure outlined below.

1. Lower the Platform Lift to the ground.
2. Remove the restraining hardware and handrails and temporarily place them to the side.
3. Raise the lift to a maximum height and fold the lift upwards to a vertical position. A torsion bar is located within the Platform Lift hardware that will enable one person to move the lift into the transport position.
4. Lower the lift so that it rests securely in the retaining cradles. Make sure that the micro switch is actuated.
5. Insert the transport pins into their transport positions. Make sure that the micro switches are actuated.
6. Remove the remote control pendent from the socket and lock the access door to the Platform Lift controls.
7. Insert the Transport Pins and connect the Lift Transport Restraining Cable securely in place.
8. Open the underbody compartment door and store the remote control pendent and handrail assembly in the underbody storage compartment.

6 3 Secure all Equipment

Two types of restraints need to be supplied before transporting the mobile unit. They are as follows:

The first type deals with the restraints that are used by the medical equipment manufacturer. Follow all instructions provided by the medical equipment manufacturer when applying restraints to the medical system. These instructions can be found in the system manuals provided by the medical equipment manufacturer.

The second type deals with the restraints that are used by the mobile unit manufacturer. Various items must be secured prior to transporting the mobile unit. Such items may consist of chairs, monitors, doors, cabinets, cameras, and printers. Use the supplied restraining hardware to secure these items before transporting the mobile unit.

6.4 Switch from Shore Power to Generator Power

CAUTION

When switching from generator power to shore power the “480V AC FAULT” may illuminate and flicker. If the “480V AC FAULT” stays illuminated, reconnect to generator power and call a certified electrician before attempting to reconnect to shore power.

CAUTION

When turning the power selector switch from one position to another, the selector must be paused for a minimum of five seconds between selections. Failure to do so can result in damage to the equipment.

Please refer to **Section 8: Generator**, for the following procedure.

1. Open the left Side Center Lower Compartment Door to access the power source controls.
2. Move the Generator Sop / Start selector switch to the “Start” position.
3. Allow the generator to run for approximately five (5) minutes.
4. Move the Unit Power Selector switch to the “GEN” position. Be certain to pause for five seconds in the “OFF” position between selections.
5. Close the Equipment Room door.

6.5 Remove and Store the Stair Assembly

Before removing the stair assembly, check the interior of the unit one last time to verify that all equipment is secure and ready for transport.

There are two different options for the stair assembly. The first option is to attach the stairs directly to the mobile unit while the second option is to utilize the supplied platform as well. Both options can be taken down easier with two people. The instructions are covered below.

Standard Stair System

1. Close and lock the staff door with the key that is provided.
2. Open the door to the underbody storage compartment.
3. Loosen the hardware holding the handrails in place. Remove the handrails from the stair assembly.
4. Lift the clip of the stair assembly up and away from the channel that is located underneath the staff door.
5. Place the stair assembly on the ground.
6. Using the sole of your shoe, step on the spring loaded release to retract the adjustable legs on each side of the stair assembly.
7. Place the stair assembly and handrail inside of the underbody storage compartment and close the compartment door.

Stair Assembly with the Platform (Optional)

1. Close and lock the staff door with the key that is provided.
2. Open the door to the underbody compartment.
3. Release the handrails from their operating positions by loosening the hardware provided. Place the handrails to the side.
4. After the handrails have been removed, the stair assembly can be safely removed from the channel located on the platform.
5. Place the stair assembly to the side.
6. Remove the adjustable legs that were used with the stair assembly.
7. While one person holds the platform in place, another person should remove the adjustable legs that were used to support the platform. Place the adjustable legs to the side.
8. Both people should lift the clip of the platform from the channel located beneath the staff entry door.
9. Place the platform inside of the underbody compartments.
10. Place the stair assembly into the underbody compartments.
11. Place the handrails into the underbody compartments.
12. Close the underbody compartment door.

6.6 Remove the Shore Power Connection

WARNING Before connecting or disconnecting from shore power, it is imperative that the shore power connections be moved to the “OFF” position. Failure to do this can result in injury or death to the operator of the mobile unit.

Please refer to **Figure 35: Shore Power Connection**, for the following procedure.

1. Open the underbody compartment door where the power cable is to be stored.
2. Move the shore power disconnect into the “OFF” position.
3. Unthread the lock ring that is securing the connection.
4. Remove the connector from the receptacle.
5. Return the power cable to the underbody storage compartment.
6. Before closing the compartment door, verify that the power cable access door is closed and latched.

6.7 Disconnect the Water / Waste Hoses

On the left side exterior of the mobile unit a water connection can be found. Be sure to fill the fresh water tank prior to disconnecting the fresh water supply. The fresh water tank must be filled on a daily basis.

1. Verify that the fresh water tank is full.
2. Turn off the water supply at the facility provided faucet.
3. Disconnect the hose from the faucet.
4. Remove the hose from the connection on the mobile unit.
5. Using the provided cap, cover the connection on the mobile unit.
6. Coil the hose and store in the underbody compartments.
7. With the wastewater hose still connected, drain the wastewater tank.
8. After the tank has drained, close the valve located in the underbody compartment above the wastewater connection.
9. Coil the wastewater hose and store in the underbody compartment.

6.8 Disconnect Phone and Data Lines

Please refer to **Figure 15: Phone & Data Line Connections**, for the following procedure.

1. Disconnect any phone and data lines that are currently attached to shore receptacles.
2. Open the compartment door and disconnect any phone and data lines that are connected in the underbody storage compartment.
3. Store the phone and data lines in the underbody storage compartment and close the compartment door.

6.9 Raise the Auxiliary Support Legs

Please refer to **Section 12: Landing / Stabilizing Legs**, for the following procedure.

1. Remove the pins holding the auxiliary support legs in the locked positions.
2. Lift the auxiliary support legs high enough for the pin to be inserted into the lowest available hole, thereby holding the leg as high as possible.
3. Make sure this has been done for both auxiliary support legs. Failure to do this can damage the stabilizing legs when they are retracted.

6.10 Connect the Tractor Air and Electrical Lines

In order to remove the rear stabilizing stands, the air and electrical lines must first be connected from the tractor to the mobile unit. Please refer to **Figure 10: Glad Hand Connections** and follow the steps outlined below.

1. Back up the tractor to the mobile unit, but do not back under it at this time.
2. Attach the air and electrical lines from the tractor to the mobile unit. Do not set the trailer brakes

6.11 Remove the Rear Stabilizing Stands

1. Open the underbody compartment door that stores the rear stabilizing stands.
2. Open the left rear underbody compartment where the control panel that contains the switch and lever that controls the air suspension air bags is found.
3. Move this switch to the “ON” position and the lever to the “UP” position.
4. The rear air suspension system will automatically inflate and the mobile unit will rise to enable removing the stabilizing stands.
5. Remove the rear stabilizing stands. Place the stands in the rear underbody storage compartments.
6. Move the switch to the “OFF” position and the lever to the ”DOWN” position inflate the bags for normal ride.
7. Close the underbody storage compartment doors.

6.12 Connect the Tractor to the Mobile Unit

Before connecting the tractor to the mobile unit, be certain that enough clearance has been left for the fifth wheel. If the fifth wheel cannot fit underneath the mobile unit, the front end must be raised. Please refer to **Section 12: Landing / Stabilizing Legs**, for the following procedure.

1. Move and hold the pump switch in the “ON” position.
2. Pull the levers towards you to extend the legs. This will lift the front end of the mobile unit.
3. Extend the legs high enough to clear the fifth wheel only.
4. Release the pump switch. The pump switch should automatically retract to the “Pump OFF” position.
5. Check to verify that enough room has been made for fifth wheel clearance and proceed with caution to connect the tractor to the mobile unit.
6. Verify that the fifth wheel is locked into position.

6.13 Raise the Landing / Stabilizing Legs

After the tractor has successfully connected to the mobile unit, the stabilizing legs can be raised. Refer to **Figure 49: Landing / Stabilizing Leg Assembly** for the following procedure.

1. Move and hold the pump switch in the “ON” position.
2. Push the levers away from you to retract the legs. This will lower the front end of the mobile unit.
3. Retract the legs to their transport positions.
4. Release the pump switch. The pump switch should automatically retract to the “Pump OFF” position.

6.14 Verify that the Mobile Unit is ready for Transport

Before the mobile unit can be transported, a final check of all components is necessary. Please refer to the following when checking the mobile unit.

1. Have the chairs, monitors, doors, cabinets, cameras, and printers been secured? Is the Scan Room door closed and locked? Make sure that all of these items have been secured with the supplied hardware prior to transporting the mobile unit.
2. Are all exterior doors closed and locked? If not, make sure that all exterior doors are closed and locked.
3. Is the Platform Lift in the transport position, fully seated in its retaining cradle? If not, make sure that the Platform Lift is in the transport position, fully seated in the cradle, the transport pins are inserted, and all micro switches are actuated and the Lift Transport Restraining Cable is in place and securely connected.
4. Are all running & marker lights working correctly? If not, replace any LED lights that are not working before transporting the mobile unit.
5. Are any warning lights illuminated? If so, check to find the cause of the warning. Do not move the mobile unit if any warning lights are illuminated or strobe lights are flashing. If further assistance is needed, refer to the Oshkosh Specialty Vehicles VOL II Vendor Information binder for the product manual, the Oshkosh Specialty Vehicles VOL I Service/Operation Manual binder for a list of local service representatives, or call Oshkosh Specialty Vehicles for further assistance.
6. Is the fuel tank full? Check the fuel gauge, located in the underbody compartment, and fill the fuel tank if necessary.
7. Verify that the air suspension system is fully inflated and at the proper ride height. The lowest point of the trailer sidewall should be approximately 15” above ground level.

Section 7: Electrical System

WARNING Use and follow the appropriate Lockout/Tagout procedures as required by OSHA Standard 1910.147 when performing maintenance or servicing any electrical, hydraulic or pneumatic systems. See Appendix E for Lockout/Tagout procedures.

WARNING Before connecting or disconnecting from shore power, it is imperative that the shore power connections be moved to the “OFF” position. Failure to do this can result in injury or death to the operator of the mobile unit.

WARNING It is the operator’s responsibility to verify that the shore power receptacle is of the same type and voltage as the connection that is supplied by Oshkosh Specialty Vehicles. Failure to do this can result in injury or death to the operator of the mobile unit as well as irreparable damage to the mobile unit.

IMPORTANT Snubbers have been added to various electrical sub-systems in order to eliminate scanner image problems.

The entire electrical system is installed in conformance with the National Electric Code.

The system is completely installed in the factory. Service access is gained through the underbody compartments of the mobile unit with thin wall conduit and/or wire-mold sized to accept the required service entrance conductors used throughout the mobile unit.

All electrical materials, devices, appliances, fittings, and other equipment are approved and listed by Underwriters’ Laboratories, Inc. (UL).

All required tags, labels and rating nameplates are permanently installed in their proper locations before the mobile unit leaves the factory.

There are three panels used in the electrical system.

1. One 480V AC electrical panel that is located in the Equipment Room of the mobile unit. This panel is responsible for the distribution of all incoming power.
2. One 120V / 208V AC electrical panel that is located in Equipment Room of the mobile unit. This panel is responsible for the components aboard the mobile unit.
3. One A1 Panel used for distribution of power to the medical system.

7.1 120/208V AC Electrical Panel

The 120/208V AC electrical panel is responsible for the power supplies to the equipment aboard the mobile unit. If a problem exists with the equipment, or the power supply to them, a circuit breaker will trip in order to prevent damage. On the inside of the panel access door, a listing of all the circuit breakers can be found.

Figure 33: 120/208V AC Electrical Panel

7.2 480V AC Electrical Panel

WARNING Make sure that all electrical parts are serviced only by a certified electrician or qualified personnel. Dangerous voltages are present which could result in injury or death.

The 480V AC electrical panel is responsible for all incoming exterior power supplied to the mobile unit. . If a problem exists with the equipment, a circuit breaker will trip in order to prevent damage. On the inside of the panel access door, a listing of all the circuit breakers can be found.

Figure 34: 480V AC Electrical Panel

7.3 Facility Power Connection

Although the shore power connection in not an actual physical feature of the mobile unit, it is an integral part of the daily operations.

Circuit Breaker	
Manufacturer:	Facility provided
Ampere Rating:	200 A disconnect

Receptacle	
Manufacturer:	Russellstoll
Model:	DF 2504 FRAB 0
Ampere Rating:	200 A

Figure 35: Shore Power Connection

Oshkosh Specialty Vehicles Connector:	The plug that is provided by Oshkosh Specialty Vehicles for connection to the shore power receptacle.
Connector Lock Ring:	Secures the connections.
Power Cable:	The cable that runs between the shore power connections and the 480V AC electrical panel.
Shore Power Disconnect:	The shore power disconnect terminates the power to the receptacle. This must be in the “OFF” position when connecting to the receptacle.
Shore Power Receptacle Outlet:	The receptacle outlet that the shore facility has installed for use with the Oshkosh Specialty Vehicles connector and power cable.
Shore Power Unit:	The complete shore power assembly.

7.4 Power Cable

Descriptions:	Specifications
Service Amps:	200 A
Plug:	Russellstoll; DF 2504 MP000/DF2032, 600V AC, 200 A
5 Wire:	5 pole
Cord:	200 A, a #3/0 4 conductor type G, 600V – 2000V, 90° C, 50'-0" long

Figure 36: Power Cable

7.5 Special Grounding Note:

The unit must have an earth driven ground rod within five (5) feet of the hospitable power receptacle. A grounding cable of a minimum #3/0 AWG must be connected between the grounding rod and the grounding pin of the hospital power receptacle. If required by local codes, another cable, to be kept as short as possible, may also be connected between the ground stud on the Incoming Power Distribution Panel and an earth driven ground rod.

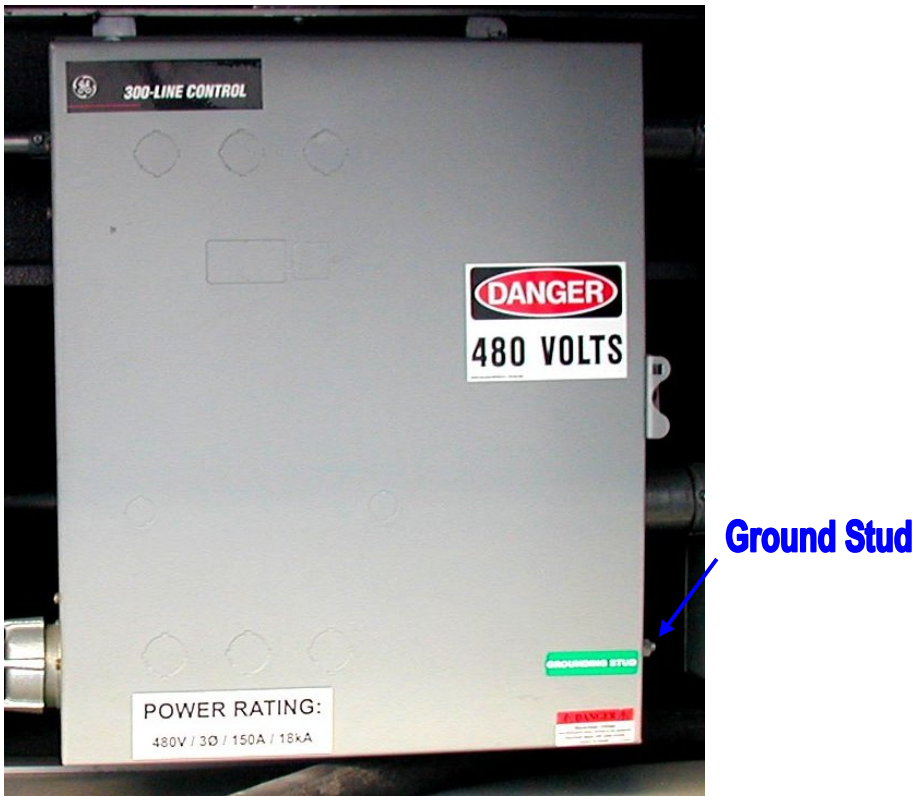

Figure 37: Ground Connection

OSHKOSH SPECIALTY VEHICLES

Section 8: Generator

WARNING Make sure that all electrical parts are serviced only by a certified electrician or qualified personnel. Dangerous voltages are present which could result in injury or death.

WARNING Always make sure that eyes are protected while servicing the unit. Wear safety goggles when prying, drilling, grinding, or working with batteries. Wear safety goggles over regular prescription glasses unless the lenses are made of hardened glass and can serve as safety goggles.

WARNING Be certain to disconnect the power before working on any of the electrical systems.

WARNING Before connecting or disconnecting from shore power, it is imperative that the shore power connections be moved to the “OFF” position. Failure to do this can result in injury or death to the operator of the mobile unit.

WARNING It is the operator’s responsibility to verify that the shore power receptacle is of the same type and voltage as the connection that is supplied by Oshkosh Specialty Vehicles. Failure to do this can result in injury or death to the operator of the mobile unit as well as irreparable damage to the mobile unit.

CAUTION When switching from generator power to shore power the red “480V AC FAULT” may illuminate and flicker. If the red “480V AC FAULT” stays illuminated, reconnect to generator power and call a certified electrician before attempting to reconnect to shore power.

CAUTION When turning the power selector switch from one position to another, the selector must be paused for a minimum of five seconds between selections. Failure to do so can result in damage to the equipment.

CAUTION Always inspect the power cable, connectors, and fasteners prior to usage. If during inspection, it is suspected that either internal or external damage has occurred, have a certified electrician inspect and repair the damage before using.

CAUTION The medical system requires the HVAC system to be supplied power at all times. Generator power is used while the mobile unit is being transported, and shore power can be used while the mobile unit is in the parked position.

IMPORTANT When servicing the unit be certain that a first aid kit and fire extinguisher are within reach at all times.

The mobile unit is equipped with a generator that is mounted on the front of the unit in its own housing compartment. The generator supplies power to the unit during transport. Unless the full support generator has been selected, the generator cannot be used for performing medical procedures aboard the mobile unit. The power selector switch is located on the power supply control panel. The control panel can be found in the interior of the mobile unit inside of a cabinet.

If the full support generator has been selected, then the generator will also be able to power the medical system so the medical procedures can take place when shore power is unavailable.

Refer to the Generator Manual for the Generator Service Schedule. The number of hours the generator has been in operation can obtained by checking the microprocessor located on top of the staging unit in the generator compartment.

For additional information, refer to the Oshkosh Specialty Vehicles VOL II Vendor Information binder for the product manual, the Oshkosh Specialty Vehicles VOL I Service/Operation Manual binder for a list of local service representatives.

Figure 38: Generator

120V AC Power Outlet:	An additional outlet has been provided for the operator of the mobile unit to be used if needed.
Air Filter:	The air filter is responsible for removing all contaminants from the generators air supply.
Battery:	The battery is used to start the generator.
Fuel Filter:	The fuel filter is responsible for removing all contaminants from the fuel supply.
Fuel Pump:	Supplies the generator with fuel from the fuel tank.
Generator Motor:	The actual motor of the generator.
Microcomputer:	The microcomputer provides the operator with information that is needed for service purposes.
Oil Filter:	The oil filter is responsible for removing all contaminants form the oil supply.

8.1 Generator Stop / Start Selector

The selector switch that controls the “Stop” and “Start” settings of the generator can be found on the power supply control panel. The control panel can be found in the left side center lower compartment of the mobile unit.

When the generator is to be started, the selector switch must be in the “Start” position. The generator cannot take the full load of the mobile unit until it has been allowed to run briefly. Do not move the Unit Power Selector switch to the “GEN” position until the generator has run for approximately five (5) minutes.

When the generator is to be stopped, the selector switch must be in the “Stop” position. Once the selector has been moved to the “Stop” position, the generator will enter into a five (5) minute cooling phase. When the phase has completed, the generator will stop. Do not attempt to stop the generator by repeatedly moving the selector to the “Stop” position.

8.2 Unit Power Selector

CAUTION

The medical system requires the HVAC system to be supplied power at all times. Generator power is used while the mobile unit is being transported, and shore power can be used while the mobile unit is in the parked position.

CAUTION

When turning the selector from one position to another, the selector must be paused for a minimum of five seconds, in the “OFF” position, between selections. Failure to do so can result in damage to the equipment.

The Unit Power Selector is located on the power supply control panel. The control panel can be found in the left side center lower compartment of the mobile unit.

- The selector should be moved to the “LINE” selection when the mobile unit is going to receive power from a shore facility, such as a hospital.
- The “OFF selection should only be used when the mobile unit is being serviced and only by qualified service personnel, as the mobile unit is to have power at all times.
- The selector should be moved to the “GEN” selection when the mobile unit is to receive power from the onboard generator.

8.3 480V AC FAULT Indicator Light

This indicator light is located on the power supply control panel. The control panel can be found in the interior of the mobile unit inside of a cabinet. The “480V AC FAULT” indicator light will illuminate if the incoming power source is experiencing any of the following problems:

- The power to the mobile unit is out of phase.
- The power to the mobile unit is subject to low voltage.
- The power of the mobile unit has one or more phase leg problems.

If the “480V AC FAULT indicator light illuminates, please refer to **Appendix B: Troubleshooting**.

Section 9: HVAC System

CAUTION

The HVAC system is critical to the operation and life of the medical system. The medical system operates within strict specifications regarding temperature and humidity. All aspects of the HVAC system such as damper settings, venting, component set points, and sensor placement are adjusted for optimum operation. Under no circumstances should these settings be altered.

CAUTION

The Siemens medical system requires the HVAC system to be supplied power at all times when the unit is in the parked position via shore power.

Figure 39: A/C Unit

Located in the illustration above, the following can be seen.

Combination A/C and Chiller Unit	This A/C unit is responsible for the environments in Scan Room, Magnet Room, Control Room and Equipment Room. The Chiller supplies chilled liquid to the magnet shield cooler compressor.

9.1 Air Conditioning & Chiller

A common unit supplies air conditioning and chilled liquid. Conditioned air is discharged into the Equipment Room, Control Room, and Scan Room at a steady temperature. If necessary, the air is heated by an in-duct heater prior to discharge. Sensing bulbs located in the return-air stream control the heaters, and sensors in the supply ducts control the A/C unit.

Chilled liquid is supplied to the magnet shield cooler compressor through a common circuit. The reservoir tank and pump are located inside the Equipment Room below the Air Conditioner. The liquid is a 50/50 mix of water and ethylene glycol (CBM). The level can be checked and adjusted at the reservoir tank.

Figure 40: A/C / Chiller Control Panel

The A/C-Chiller's main control panel is located on the front wall of the equipment room. This panel is used to control the operation, temperature settings and display fault lights. Refer to the manufacturer's manual for information on fault lights. **The factory settings provide the proper environment for the MR system, and should not be adjusted.**

A remote alarm panel is located in the control room near the operator's workstation. This panel has a light and an audible alarm for notification of an A/C-Chiller fault. The switch on the panel can be used to silence the audible alarm. In the event of a fault, refer to the main control panel for specific fault information.

Figure 41: A/C / Chiller Alarm Panel

In order to ensure proper operation of the HVAC system at all times, refer to **Section 14: General Maintenance** and **Section 15: Specific Maintenance**.

9.2 System Specifications and Descriptions

- The HVAC system utilizes forced air.
- The HVAC utilizes electricity as the source of power.
- Air conditioning and heating registers are installed in accordance with the approved plans.
- All warning and identification labels as required are installed at the factory.
- All aspects of the HVAC system such as damper settings, venting, component set points, and sensor placement are adjusted for optimum operation. Under no circumstances should these settings be altered.
- The air conditioning ductwork is lined with a sound absorbent material for reduced noise and operator and patient comfort.

9.3 Exterior HVAC Specifications

The HVAC system is designed to work within certain limitations. The ambient exterior temperatures must be within the range of -20°F to 110°F.

9.4 HVAC Humidifier System

CAUTION
All settings for the humidity system are preset at the factory. Under no circumstances should factory presets be altered.

CAUTION
Proper humidity levels must be maintained to protect sensitive electronic equipment.

The humidifier is responsible for maintaining the humidity levels within the mobile unit. The settings for the humidifier are set to meet the medical system manufacturer's specifications. Under no circumstances should the settings of the humidifier be altered. In order for the humidifier to function properly, the water tank level must be maintained at all times.

Figure 42: Humidifier Tank

Exterior Fill:	The exterior fill connection must be used to allow the mobile unit water supply tank to be filled.
Humidifier:	The humidifier is integral to the HVAC system and provides the required humidity to the mobile unit per the medical manufacturer's requirements.
Humidity Controller:	The internal humidity of the mobile unit is controlled as part of the HVAC system. The setting is preset at the factory to comply with the medical system manufacturers requirements.
Humidity Sensor:	Maintains an accurate reading of the humidity levels inside of the mobile unit.
Overflow Drains:	If by chance the water tank is over filled, overflow drains are provided. The drains lead through the floor to the exterior of the mobile unit.
Water Supply Tank:	The water tank stores water for the humidifier.

9.5 System Operation

The humidifier is an integral part of the HVAC System. The humidifier system is capable of producing up to 12 pounds of steam per hour, at 15 amps. A sensor continually monitors the interior of the mobile unit for relative humidity. This sensor is located in the HVAC return duct and is programmed to keep the relative humidity at 50%. If the humidity drops below the set point, the humidifier is signaled to emit more steam. The humidifier creates steam when electrodes in the steam cylinder of the humidifier vaporize the supplied water. The steam then travels through a hose to a distribution pipe located in the return air duct of the HVAC system. Since the steam is injected into the return duct of the HVAC system, both A/C units are supplied with humidified air for distribution throughout the interior of the mobile unit. If for any reason the airflow is disrupted, the humidifier will shut down. When the sensor detects that relative humidity has been reached, a signal is sent to the humidifier to stop it from creating more steam. The “Humidity Warning” light will illuminate on the system panel if the humidity inside of the mobile unit becomes too high or too low. If this happens, please refer to **Appendix B: Troubleshooting** of this manual.

9.6 Water Supply

Water is supplied to the humidifier by means of an onboard water supply tank. The water supply tank can only be filled from the outside of the mobile unit. Plumbing connections at the humidifier are as follows:

1. A ¾” G.H.T. male threaded hose connection is located under the front kick of the mobile unit, below the air conditioning units.
2. One 0.5” outer diameter PVC drain line from the steam cylinder for automatic drain cycles. The drain penetrates the floor of the mobile unit in order to empty to the exterior.
3. One 0.5” outer diameter PVC drain line from the humidifier cabinet. The drain penetrates the floor of the mobile unit in order to empty to the exterior.
4. One 0.5” outer diameter PVC overflow drain from the water supply tank. The drain penetrates the floor of the mobile unit in order to empty to the exterior.

Figure 43: Humidifier External Water Connection

9.7 Humidity Controller

CAUTION All settings for the humidity system are preset at the factory. Under no circumstances should factory presets be altered.

The humidity controller is located in Equipment Room as part of the Chiller Control Panel. The relative humidity setting for the mobile unit is 50%. The humidifier must not be altered from its factory setting.

9.8 Humidity Settings

CAUTION All settings for the humidity system are preset at the factory. Under no circumstances should factory presets be altered.

The humidity low set point is 30% RH (relative humidity).

The humidity high set point is 60% RH (relative humidity).

9.9 Electrical Connections

Electrical connections at the humidifier are located on a terminal rail behind the cover of the humidifier.

The distribution panel supplies the required 480V AC power via a 15 amp, 3-phase breaker.

9.10 Instructions

The HVAC system along with the humidifier is set to the required settings per the medical equipment manufacturers' specifications before leaving the factory. Under no circumstances should the settings be altered from their factory specifications.

For additional information, refer to the Oshkosh Specialty Vehicles VOL II Vendor Information binder for the product manual.

9.11 Interior HVAC Specifications

A single air conditioning unit is mounted high on the front wall of the trailer. The size of the unit is dependent upon the system level. Refer to the Northern Air Service information provided in the Oshkosh Specialty Vehicles VOL II Vendor Information binder for the product manual. The condensing coils are directed up to prevent damage during transport. All internal components are commercial grade, and are vibration isolated from the system housing. The system housing is mounted as an integral part of the front wall to prevent water leakage. Discharge temperature in the scan and control rooms is controlled to reduce temperature fluctuations.

The HVAC filters are located in the Equipment Room in the overhead ductwork and can be accessed as shown below.

HVAC Vents Discharge

HVAC Filter Access

Downstream Blower Filter Access

Figure 44: HVAC Components

9.12 Underbody Compartment Heater

The cryogen compressor and the compartment heater are located in the right side compartment. This heater provides 1.5KW of heat. The compartment heater will activate when the temperature drops below 40°F and will deactivate when the temperature rises above approximately 45°F.

An optional cold weather kit is also available. This kit is designed for mobile units that endure cold weather climates. It includes an additional compartment heater installed in the fuel compartment, and additional foam insulation sprayed on the underbody of the mobile unit.

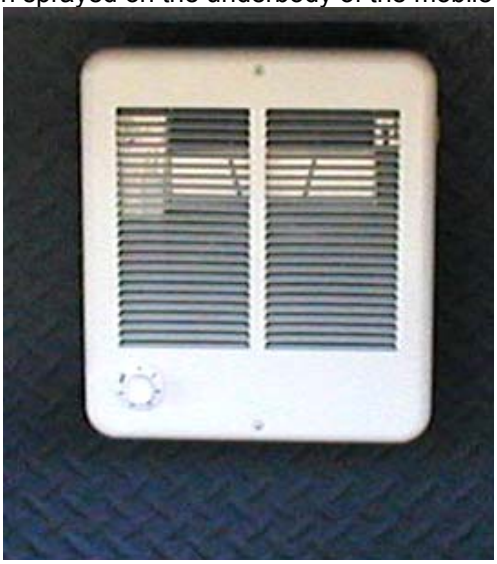

Figure 45: Heater

Section 10: Platform Lift

The mobile unit contains a Platform Lift that is used to move personnel and equipment from the ground level to the floor level of the mobile unit. The Platform Lift has a maximum capacity of 2000 pounds and a maximum height of 53” inches.

In the illustrations below, the Platform Lift can be seen in various stages.

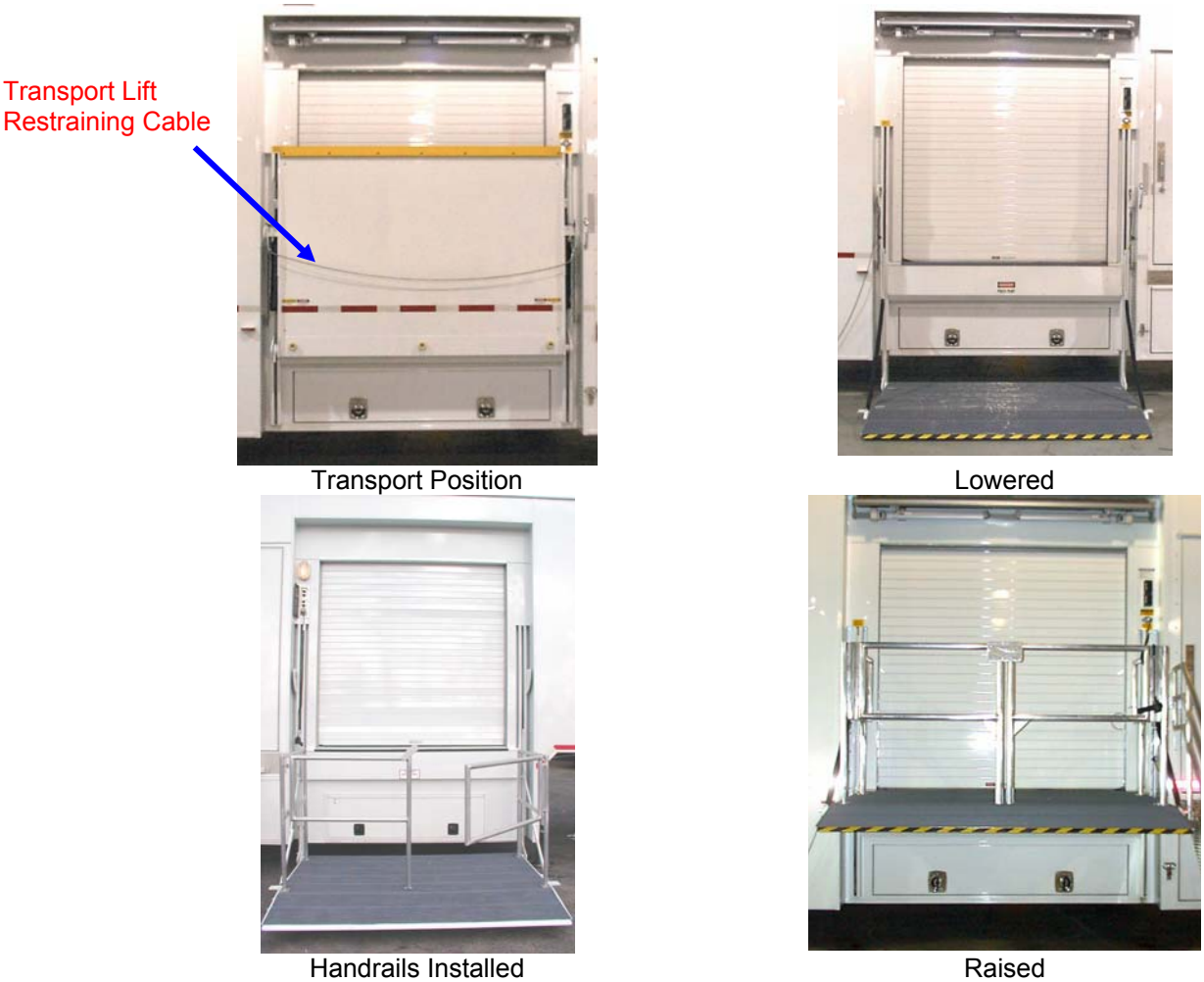

Figure 46: Platform Lift

In the illustrations below, the retaining cradle is shown. In the illustration, the transport pins can also be seen. The transport pins are to be used when transporting the mobile unit. The transport pins will prevent the Platform Lift from leaving the retaining cradles during transport. Failure to use the transport pins can result in damage to the mobile.

In the following illustrations, the lift pocket micro switch can also be seen. The Transport Pin micro switches cannot be seen. The micro switches are connected in series to a Control Relay (CR#). If CR# is not energized the transport warning light will illuminate and a strobe light will flash if emergency air is connected to the trailer. These devices are used to notify the operator of the Platform Lift status during transport. CR# also removes power from the lift hydraulic system when all three micro switches are actuated.

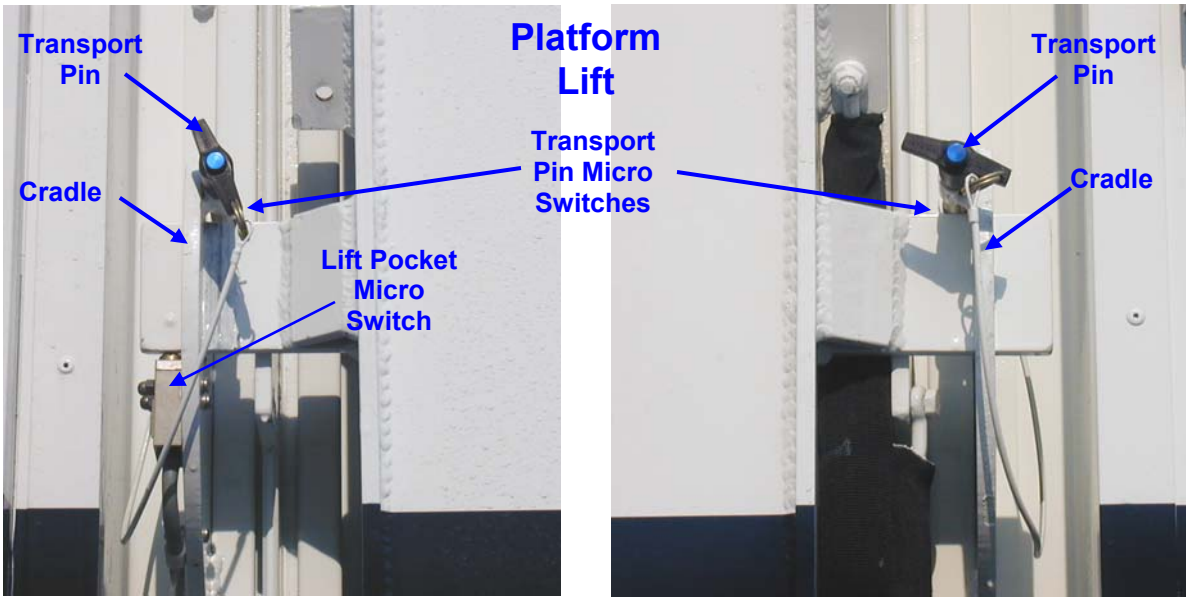

Figure 47: Platform Lift Retaining Cradles

10.1 Safety Features

The Platform Lift has several built in safety features that are designed to provide worry free operation and transportation.

Transport Pins

CAUTION Failure to release the transport pins for the Platform Lift can result in structural damage to the mobile unit.

Transport pins have been provided for use with securing the Platform Lift. These pins must be used when the mobile unit is being transported. Failure to use these pins could result in structural damage to the mobile unit.

Lift Controls

The Platform Lift controls are located on the exterior of the mobile unit next to the roll door. The lift controls, including the remote control pendent, operate with open contacts. This means that in order for the Platform Lift to be moved upwards or downwards, the control must be held in the desired position.

Handrails

The Platform Lift is supplied with handrails designed to provide an additional margin of safety for personnel being raised or lowered by the lift. The handrails must be installed and properly latched in place prior to raising or lowering personnel on the lift.

WARNING It is the Operator's responsibility to ensure that the handrails are properly installed and latched in place prior to raising or lowering personnel on the lift. Failure to do so could result in serious personal injury or death.

Lift Up Indicator Light

On the control panel located inside of the mobile unit, a separate set of controls can be found to operate the roll door. On this panel is a small green indicator light. When the lift is in the raised position the indicator light will illuminate.

WARNING It is the Operator's responsibility to ensure that the roll door is not opened unless the lift is in the raised position. Failure to do so could result in serious personal injury or death.

The roll door should not be opened unless this light is on. This light is designed to prevent the operator or other personnel from inadvertently stepping out of the roll door when the Platform Lift is not raised.

Remote Control Pendent

A remote control pendent is included for use with the Platform Lift. The pendent plugs into a jack located between the staff entry door and the Platform Lift roll door behind the lift control panel. The pendent has an expandable cord that allows the operator to be on or near the Platform Lift while it is in operation. The remote control pendent works off the 12V DC power system.

Transport Warning Light

WARNING If the Transport Warning Light is on, the mobile unit must not be moved. If the mobile unit is moved while this light is on, irreparable damage to the mobile unit, serious injury or death can occur.

The Transport Warning Light is located on the exterior left side of the mobile unit and will illuminate when the Platform Lift is not in the proper transport position or if the Generator Vibration Isolation Mounts are unlatched. It is the Operator's responsibility to ensure that the Transport Warning Light is functioning properly and that the bulb element is in working order. Please refer to the Oshkosh Specialty Vehicles VOL II Vendor Information binder for the product manual, the Oshkosh Specialty Vehicles VOL I Service/Operation Manual binder for a list of local service representatives, or contact Oshkosh Specialty Vehicles for service.

Transport Warning Strobe Light

If the Transport Warning Strobe Light is flashing the mobile unit must not be moved. If the mobile unit is moved while this light is flashing, irreparable damage to the mobile unit, serious personal injury or death can occur.

The Transport Warning Strobe Light is located on the exterior left side of the mobile unit and will illuminate when the Platform Lift is not in the proper transport position. It is the Operator's responsibility to ensure that the Transport Warning Light is functioning properly and that the bulb element is in working order. Please refer to the Oshkosh Specialty Vehicles VOL II Vendor Information binder for the product manual, the Oshkosh Specialty Vehicles VOL I Service/Operation Manual binder for a list of local service representatives, or contact Oshkosh Specialty Vehicles for service.

Lift Transport Restraining Cable

The lift Transport Restraining Cable, when installed and connected securely, is designed to provide a stop gap measure to prevent the lift from falling to the horizontal position should the lift be improperly stowed.

10.2 Hydraulic System

An internal hydraulic cylinder controls the movement of the Platform Lift. The cylinder is located in the compartment below the roll door.

Operation

When the "UP" function has been selected for the Platform Lift, the pump is activated and fluid is moved from the reservoir through the valve block to the hydraulic cylinder. This causes the lift to move upward. When the "DOWN" function has been selected for the Platform Lift, the pump is not activated, but the fluid is moved from the hydraulic cylinder through the valve block to the reservoir. This causes the Platform Lift to descend.

10.3 Platform Lift Operation

The Platform Lift can be operated with the remote control pendent or the exterior lift controls. The lift can be raised or lowered with these controls. In order to deploy the Platform Lift when setting up the mobile unit, or to place the Platform Lift in its storage position for transporting the mobile unit, refer to the steps outlined below. This same information can also be found under the setup and transport procedures for the mobile unit.

Deploying the Platform Lift for use with the Mobile Unit

After the stair assembly has been installed, the Platform Lift can be deployed for use.

1. Open the underbody compartment doors.
2. Remove the handrails and lift pendent, and place them to the side for now.
3. Close the underbody compartment door.
4. Insert the connector from the lift control pendent into the receptacle located behind the access door to the Platform Lift controls.
5. Remove the Transport Lift Restraining Cable.
6. Remove the transport pins.
7. Using the remote, raise the lift high enough to clear the cradles.
8. Carefully pull down the platform until it is parallel with the ground. A torsion bar is located within the Platform Lift hardware that will enable one person to move the lift into operating position.
9. Using the lift control pendent, lower the platform to the ground.
10. Once the platform has been lowered, install the handrails and secure them with the hardware provided.

Storing the Platform Lift for Transport of the Mobile Unit

1. Lower the Platform Lift to the ground.
2. Remove the restraining hardware and handrails and temporarily place them to the side.
3. Raise the lift to a maximum height and fold the lift upwards to a vertical position. A torsion bar is located within the Platform Lift hardware that will enable one person to move the lift into the transport position.
4. Lower the lift so that it rests securely in the retaining cradles. Make sure that the micro switch is actuated.
5. Insert the transport pins into their transport positions. Make sure that the micro switches are actuated.
6. Connect the Transport Lift Restraining Cable securely in place.
7. Remove the remote control pendent from the socket and lock the access door to the Platform Lift controls.
8. Open the underbody compartment door and store the remote control pendent and handrail assembly in the underbody storage compartment.

Section 11: Intrusion Alarm (optional)

An optional intrusion alarm is available for the mobile unit. This alarm is designed to divert would be intruders from theft, vandalism, or unauthorized entrance of the mobile unit.

Figure 48: Intrusion Alarm Keypad

11.1 Operation

The alarm is operated via a keypad located by the staff door. When entering the mobile unit, the operator keys in a code to deactivate the alarm. When leaving the mobile unit, the operator keys in a code to activate the alarm. If either the staff entry door or the compartment doors are opened while the alarm is activated, a siren will sound. The Rear Magnet Room Door, Equipment Room Service Door, and Staff Entry Door are equipped with sensors to activate the alarm. The underbody compartments and Control Room also utilize motion detectors to activate the alarm.

For additional information, please refer to the OEM supplied literature. The literature can be found in the product information binders that have been included with the mobile unit.

Section 12: Landing / Stabilizing Legs

CAUTION

Under no circumstances should the stabilizing legs and the rear air suspension be used to lift the mobile unit from the ground. If any attempt is made to raise the unit from the ground using the only the stabilizing legs and the rear air suspension, serious damage can occur to the suspension system of the mobile unit.

Both the stabilizing legs and the auxiliary support legs can be found at the front of the unit. The stabilizing legs installed on this mobile unit are only for the purpose of parking and stabilizing the mobile unit. For additional information, please refer to the OEM supplied literature. The literature can be found in the product information binders that have been included with the mobile unit.

Figure 49: Landing / Stabilizing Leg Assembly

Stabilizing Leg Controls:	The control box houses the stabilizing leg controls.
Stabilizing Leg:	Allows the mobile unit to be parked without the tractor being attached to the unit.
Digital Levels:	Allows the mobile unit to be leveled both front to back and side to side.
Lever Right Leg:	Controls the Front right side leg.
Lever Left Leg:	Controls the Front left side leg.
Pump ON / OFF Switch	The switch must be held in the ON position when extending or retracting the legs.
Auxiliary Support Legs:	The auxiliary support legs provide a fixed leg for use as a backup in case the stabilizing legs fail.
Sand Shoe:	Helps prevent the stabilizing legs from sinking due to weight.

12.1 Stabilizing Stands

The stabilizing stands are inserted beneath the rear supports of the mobile unit, and allow the mobile unit to be stabilized for all medical procedures. The stands are stored in the rearmost underbody compartments. When in use, the stands must be centered underneath the rear supports of the mobile unit.

12.2 Rear Air Suspension System Controls

⚠CAUTION If the rear air suspension is not functioning properly the mobile unit must not be moved. If the mobile unit is moved, irreparable damage can occur to the medical system and the mobile unit itself.

RAISE: (to install Stands)

When the switch is in the “ON” position and the lever is in the “UP” position, the rear air suspension will inflate and raise the rear of the unit. This must be done to insert the stabilizing stands.

DEFLATE: (For Set up only)

When the switch is in the “ON” position, and the lever is in the “DOWN” position, the rear air suspension will deflate and the mobile unit will lower. Prior to placing the selector in this position, the rear stabilizing stands must be inserted.

NOTE: With the tractor air lines disconnected, turn the switch “OFF” after deflating the air bags.

NORMAL RIDE: (For Transport)

When the switch is in the “OFF” position, and the lever is in the “DOWN” position, the rear suspension will inflate and the mobile unit will automatically rise to transport height. Failure to turn the selector to the “OFF” position with the lever in the “DOWN” position, prior to transporting the mobile unit, can cause irreparable damage to both the mobile unit and medical system.

Figure 50: Air Bag Controls

Section 13: Lighting System

The lighting provided for the mobile unit can be divided into either interior lighting, or exterior lighting. Explanations are listed below concerning the lighting systems installed on this mobile unit.

13.1 Emergency Lighting

In the event that the main AC power fails, three dual beam emergency lights are provided. These lights will automatically illuminate when the main AC power is lost. They are located in the Control Room, Gantry Room, and Equipment Room. The emergency lighting system is wired into a 120V AC electrical system that allows the lights' internal circuitry to keep its batteries at 100% charge. The emergency lights will illuminate the exit doors and last for approximately 90 minutes.

Figure 51: Emergency Dual Beam Lighting

13.2 Exterior Lighting

IMPORTANT All warning lights are located on the left side of the mobile unit.

The exterior lighting system can be divided as follows. For additional information of the warning lights, please refer to **Appendix B: Troubleshooting**.

Underbody Compartment Lighting

Located inside of the underbody compartments there are wall mounted halogen lights connected to timers. The timers allow the lights to be set for up to 30 minutes before automatically turning off. There is one light provided on each side of the underbody.

Figure 52: Compartment Light

In addition, since the fuel compartment is sealed off from the others, a push button dome light has been included in this compartment.

Service Lighting

Figure 53: Drop Light

A cord-o-matic drop light with a 50'-0" cable is supplied with the mobile unit. The droplight aboard the mobile unit can be found in Equipment Room. The light is generally used during service applications when additional light is required. The light is plugged into a nearby miscellaneous 120V AC outlet.

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Staff Door Lighting

An exterior light is located in between the roll door and staff door above the Platform Lift controls. This provides for additional illumination of the Platform Lift and the stairs when the facility provided lighting is insufficient. The switch for this light is located inside of the mobile unit on the raceway next to the staff door.

Figure 54: Staff Door Lighting

Marker & Running Lights

When the mobile unit is in transit, federal law requires specific illumination characteristics. The mobile unit meets and exceeds these standards as outlined in Motor Vehicle Safety Standards Guide, Federal Safety Standard No. 108-4.

All lights are 12V DC, and are powered by the tractor. All wiring is run through the underbody wire harnesses. The top marker lights are wired through a 0.5” loom pipe that is run through the sidewalls of the mobile unit. The wires terminate at the glad-hands which are located in the front of the mobile unit for tractor hookup.

13.3 Interior Lighting

The interior lighting system can be divided as follows.

Equipment Room

The light controls for the lighting in Equipment Room are located just inside the Staff Entry door to that leads into Control Room. Recessed light fixtures are located in the ceiling panels and have been strategically placed for effective illumination of the equipment both during operation and while being service.

Figure 55: Equipment Room Lighting

Control Room

There are two different lighting systems for Control Room. They are as follows.

Three switches located next to the staff door control the lighting located in the Control Room ceiling panels, Equipment Room ceiling panels, and Exterior Entry lighting.

Another switch controls the Control Room halogen lighting.

Figure 56: Control Room Lighting

Scan Room

There are two different lighting systems for Scan Room. The systems are as follows.

Two switches located next to the Scan Room door controls the halogen lighting located in the ceiling panels

The center mounted patient prep light is located directly above the patient table and is controlled by another switch located next to the Scan Room door.

Figure 57: Scan Room Lighting

Magnet Room

Magnet Room Lighting

There are two halogen light fixtures located in Magnet Room. These lights are for illuminating the rear of the magnet. Another switch located next to the Scan Room door controls these two fixtures.

Figure 58: Scan Room / Magnet Room Lighting and Switches

13.4 Warning Lights

AC Power Warning Light and Transport Warning Light
Figure 59: Warning Lights

Warning lights have been installed on the exterior left side of the mobile unit in order to provide the operator and technician of the status of the mobile unit at all times during transit or while in the parked position. A description of each of the warning lights and their location can be found below. If any of the warning lights are illuminated, please refer to **Appendix B: Troubleshooting** for additional information.

Power Warning Light

CAUTION The Siemens medical system requires the HVAC system to be supplied power at all times when the unit is in the parked position via shore power.

The Power Warning Light is located on the exterior left side of the mobile unit and will illuminate when the mobile unit is receiving power. When it is not illuminated, it signifies to the operator that power is not applied to the system. A qualified electrician should be called immediately to look at the electrical system. Refer to **Appendix B: Troubleshooting** for more information.

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Transport Warning Light

CAUTION If the Transport Warning Light is on, the mobile unit must not be moved. If the mobile unit is moved while this light is on, irreparable damage can occur to the mobile unit.

The Transport Warning Light is located on the exterior left side of the mobile unit and will illuminate when the Platform Lift is not in the proper transport position. . Before the mobile unit can be transported, this light needs to be off. Please refer to the Oshkosh Specialty Vehicles VOL II Vendor Information binder for the product manual, the Oshkosh Specialty Vehicles VOL I Service/Operation Manual binder for a list of local service representatives, or contact Oshkosh Specialty Vehicles for service. Refer to **Appendix B: Troubleshooting** for more information.

Transport Warning Strobe Light

WARNING If the Transport Warning Strobe Light is flashing the mobile unit must not be moved. If the mobile unit is moved while this light is flashing, irreparable damage to the mobile unit, serious personal injury or death can occur.

The Transport Warning Strobe Light is located on the exterior left side of the mobile unit and will illuminate when the hydraulic platform lift is not in the proper transport position. It is the Operator's responsibility to ensure that the Transport Warning Light is functioning properly and that the bulb element is in working order. Please refer to the Oshkosh Specialty Vehicles VOL II Vendor Information binder for the product manual, the Oshkosh Specialty Vehicles VOL I Service/Operation Manual binder for a list of local service representatives, or contact Oshkosh Specialty Vehicles for service.

Figure 60: Lift Transport Warning Strobe

Section 14: General Maintenance

WARNING Use and follow the appropriate Lockout/Tagout procedures as required by OSHA Standard 1910.147 when performing maintenance or servicing any electrical, hydraulic or pneumatic systems. See Appendix E for Lockout/Tagout procedures.

WARNING Make sure that all electrical parts are serviced only by a certified electrician or qualified personnel. Dangerous voltages are present which could result in injury or death.

WARNING Always make sure that eyes are protected while servicing the unit. Wear safety goggles when prying, drilling, grinding, or working with batteries. Wear safety goggles over regular prescription glasses unless the lenses are made of hardened glass and can serve as safety goggles.

WARNING Be certain to disconnect the power before working on any of the electrical systems.

IMPORTANT When servicing the unit be certain that a first aid kit and fire extinguisher are within reach at all times.

IMPORTANT **Failure to comply with OSV procedures, regulations, and system maintenance requirements may result in invalidating the Siemens Magnet Technology warranty.**

14.1 Daily Maintenance

1. Water tanks should be checked for proper water levels.
2. Fuel tank should be checked for proper fuel levels.
3. During cold weather, verify that all underbody heaters are operational.
4. Keep the air intake grills on the computer cabinets for the medical system free and clear of obstructions.
5. Keep the A/C grills clean and free of debris.
6. Check and verify that no warning lights are illuminated.
7. Check the tires before every trip for wear, cuts breaks, cracks, defects, objects caught or penetrating the tire carcass and for proper inflation. Check tire pressure when the tires are cool and maintain the pressure molded into the sidewall. Do not operate a trailer with tires that have the internal reinforcing wires or belt showing or less than 2/32” tread depth, when measured at a major tread groove.

14.2 Weekly Maintenance

1. Clean RF door trim with a mild cleaning solvent and wipe with a clean cloth.
2. Lubricate the Platform Lift side rails and pivot points with an ample amount of ZEP 2000 OSV Part Number 6100811.
3. Check the primary and downstream blower A/C filters. Clean and replace if necessary. A/C must be “OFF” to check and replace filters. Refer to **Figure 44: HVAC Components** for location.
4. Check the oil and water levels in the generator and refill if necessary.
5. Check the electrolyte levels in the DC batteries and fill if necessary using only distilled water.
6. Check all running lights, marker lights, brake lights, and turn signals.
7. Check tire pressure and verify that all wheels are within 2 psi of the pressure specified by the tire manufacturer.

   CAUTION

   Check the tires before every trip for wear, cuts breaks, cracks, defects, objects caught or penetrating the tire carcass and for proper inflation. Check tire pressure when the tires are cool and maintain the pressure molded into the sidewall. Do not operate a trailer with tires that have the internal reinforcing wires or belt showing or less than 2/32” tread depth, when measured at a major tread groove. See 49 CFR Sec. 570.9(a).Replacement tires MUST BE Radial.
8. Check the fluid level in the hydraulic reservoir using the site glass. Add fluid if necessary. Use only AWF all weather fluid Automatic Transmission Fluid.

14.3 Monthly Maintenance

1. Lubricate the side rails of the roll door with Mobil – Mobilith AW2 heavy duty multipurpose industrial grease.
2. Lubricate all RF interlock switches.
3. Put a few drops of 20W oil, or similar graphite oil, on the swivel pin of all door hinges. Only use dry graphite on key openings of all door locks.
4. Check the operation of the smoke detectors and vacuum internally.
5. Check the fire extinguisher gauges for safe charges.
6. Inspect the power cables for any damage.
7. Check the cable tie downs.
8. Check for cut, damaged, or loose wire connections.
9. Check and verify that all connector bolts are tight and secure.
10. A qualified A/C technician must check the A/C condensers every month. Refer to the Air Conditioning Owner's Manual for more information.
11. Lubricate the front landing / stabilizing legs.
12. Check the refrigerant level in the water chiller unit.
13. Have a qualified technician check wheel lug nuts with torque wrench and verify that all inner and outer wheels, both the front and rear, are tightened to 450-500 foot pounds. This must be done after every 500 miles of driving. In accordance with torque procedure, lugs and nuts must be installed dry. Do not use any type of lubricant.

14.4 Quarterly Maintenance

1. Have a qualified technician check wheel lug nuts with torque wrench and verify that all inner and outer wheels, both the front and rear, are tightened to 450-500 foot pounds. This must be done after every 500 miles of driving. In accordance with torque procedure, lugs and nuts must be installed dry. Do not use any type of lubricant.

The following Preventive Maintenance Checklist must be completed each quarter. Oshkosh Specialty Vehicles has included in the Oshkosh Specialty Vehicles VOL I Service/Operation Manual binder, a Preventive Maintenance Checklist and Serial Number Chart in order to assist in organizing records of maintenance performed on your new OSV Vehicle. We believe that with proper maintenance performed on a regular basis, your vehicle will last longer and provide you with more up time.

A copy of your vehicles completed quarterly Preventive Maintenance Checklist may be required for warranty reimbursement.

Oshkosh Specialty Vehicle's Service department has certified technicians, genuine parts and the information technology needed for your assistance. Please call OSV service for you're servicing needs.

Thank you for choosing Oshkosh Specialty Vehicles. If you have any questions call us toll free at 1-800-839-0630. We'll be happy to assist you.

OSHKOSH SPECIALTY VEHICLES

Preventive Maintenance Checklist

Trailer ID # :	Date	Date	Date	Date	
HVAC	**3M**	**6M**	**9M**	**12M**	**Comments**
Inspect/change filters					
Inspect Thermostats					
Verify heat strip operation					
Inspect/clean evaporator coil					
Clean/inspect condenser coils					
Inspect electrical contactors					
Verify refrigerant pressures					
Inspect refrigeration piping abrasion					
Lubricate fan motors if applicable					
Inspect covers/fasteners					
Verify compressor amp draw					
Verify condensate pans/drains					
Verify Condenser motor operation					
Chiller	**3M**	**6M**	**9M**	**12M**	**Comments**
Inspect electrical contactors					
Verify refrigerant pressures					
Inspect refrigeration piping abrasion					
Inspect pump seal					
Lubricate motors					
Clean/replace aluminum filters					
Inspect covers/fasteners					
Verify operating/alarm controls					
Verify CW supply temp 45-75 F					
Inspect/replace glycol filter					
Clean/ inspect condensing coils					
Verify/adjust glycol level					
Verify Condenser motor operation					
Trailer	**3M**	**6M**	**9M**	**12M**	**Comments**
Test/inspect lift gate					
Inspect rails/ pins					
Inspect lift fittings/pivot points					
Clean / lubricate slide rails					
Verify lift switches and remote					
Load test van battery (lift)					
Verify hydraulic fluid level					
Verify van battery charger					
Verify roll door controls					
Inspect roll door mounting bolts					

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Trailer Continued	3M	6M	9M	12M	Comments
Inspect roll door clutch/hardware					
Inspect roll door side track rails					
Inspect roll door key way					
Inspect awning					
Inspect bay door shocks/hardware					
Verify bay light operation					
Inspect clean and RF door gasket. Verify RF door operation					
Verify RF door lock and the handle operate correctly					
Check RF door for binding and loose hardware.					
Check door hinges/stops/latches for proper operation					
Inspect Slide outs for operation					
Inspect Slide out compressor					
Empty compressor drain and verify Y-strainer is cleaned out					
Check Fire system Last Inspection Date _____					
Inspect stair mounts					
Inspect interior flooring					
Verify bay heater operation					
Inspect cabinet latches and hinges					
Verify phone/communication lines					
Inspect landing gear					
Inspect locking pins					
Inspect air drive or air/hydraulic					
Inspect air tanks					
Verify hub fluid levels					
Inspect undercarriage/frame					
Inspect airbags/airlines/fittings					
Inspect shocks/bushings					
Inspect Tires / Rotate as needed					
Note hub meter mileage _____					

Generator	3M	6M	9M	12M	Comments
Clean fuel/water separator & replace filter					
Lamp test on control panel					
Inspect fuel lines & injectors					
Change oil/filters- 250 hrs					
Check crankcase breather					
Check hoses/belts					
Verify radiator coolant level					
Verify coolant freeze point & pH					

Generator Continued	3M	6M	9M	12M	Comments
Verify block heater operation					
Inspect housing mounting bolts					
Inspect muffler/brackets					
Verify battery charging voltage					
Load test battery/clean terminals					
Verify voltage & hertz output					
Record hours run since last P.M. (_____) Recorded Generator Hours					

Electrical	3M	6M	9M	12M	Comments
Inspect breakers and panels					
Inspect lighting and bulbs					
Inspect power cord and plug					
Inspect 110volt outlets					

Humidifier	3M	6M	9M	12M	Comments
Inspect/replace steam tank					
Verify humid control set point					
Inspect/fill water reservoir					
Clean fill and drain valves					
Verify 12 volt pump					

Misc.	3M	6M	9M	12M	Comments
Attach and/or fill out Quarterly Service Record for all major components					

Section 15: Specific Maintenance

WARNING Use and follow the appropriate Lockout/Tagout procedures as required by OSHA Standard 1910.147 when performing maintenance or servicing any electrical, hydraulic or pneumatic systems. See Appendix E for Lockout/Tagout procedures.

WARNING Make sure that all electrical parts are serviced only by a certified electrician or qualified personnel. Dangerous voltages are present which could result in injury or death.

WARNING Always make sure that eyes are protected while servicing the unit. Wear safety goggles when prying, drilling, grinding, or working with batteries. Wear safety goggles over regular prescription glasses unless the lenses are made of hardened glass and can serve as safety goggles.

WARNING Be certain to disconnect the power before working on any of the electrical systems.

CAUTION The HVAC system is critical to the operation and life of the equipment. The medical equipment operates within strict limits regarding temperature and humidity. All aspects of the HVAC system such as baffling, venting, component set points, and sensor placement are adjusted for optimum operation. Under no circumstances should any aspect of the HVAC system be altered from factory specifications.

CAUTION During seasons of low humidity, the humidifier will need to be filled more often.

CAUTION Image quality can be impaired with improper door closer adjustment.

CAUTION A power washer should never be used to clean the A/C units. Serious damage to the A/C coils may occur.

IMPORTANT When servicing the unit be certain that a first aid kit and fire extinguisher are within reach at all times.

IMPORTANT **Failure to comply with OSV procedures, regulations, and system maintenance requirements may result in invalidating the Siemens Magnet Technology warranty.**

15.1 Door Closer Adjustments

The door closer must be adjusted so that the door does not slam shut. Refer to the door closer component sheet in the component literature manual for proper adjustment. Adjust door closer as required to insure proper non-slamming door action.

15.2 Electrical System

1. Inspect the power cables for any damage.
2. Check the cable tie downs.
3. Check for cut, damaged, or loose wire connections.
4. Check and verify that all connector bolts are tight and secure.

15.3 Cryogen Compressor

The cryogen compressor is supplied by Siemens. For information regarding the cryogen compressor, please refer to the manuals supplied by Siemens.

15.4 Humidity System

CAUTION During seasons of low humidity, the humidifier will need to be filled more often.

The fresh water tank supplies the humidifier and sink (if applicable) with water. The water levels must be maintained at all times. Follow the steps outlined below and please refer to **Figure 42: Humidifier Tank**, if necessary.

1. Check the water tank to determine the water level.
2. Open the overflow valve.
3. Attach one end of a hose to the exterior water tank fill valve and the other end to the shore supply.
4. Turn on the water source to begin filling the tank.
5. After the water tank is full, turn off the water source.
6. Detach the hose at both ends and place in the underbody storage compartments.
7. Turn off the overflow control valve.

15.5 HVAC System

CAUTION The HVAC system is critical to the operation and life of the equipment. The medical equipment operates within strict limits regarding temperature and humidity. All aspects of the HVAC system such as baffling, venting, component set points, and sensor placement are adjusted for optimum operation. Under no circumstances should any aspect of the HVAC system be altered from factory specifications.

1. The HVAC system is designed specifically to maintain only the internal environment of the mobile unit. The HVAC system is not designed to handle areas outside of the mobile unit such as adjoining corridors or hallways.
2. It is important to be sure that the doors, partitions, and baffling are in the intended positions before running the medical system.
3. Do not attempt to store boxes, or any other items near computer system air inlets or in the aisles. Such actions will disrupt the intended airflow requirements.
4. A qualified A/C technician must check the A/C condensers every month. Refer to the Air Conditioning Owner's Manual for more information.

15.6 Platform Lift

Lubricate the Platform Lift side rails and pivot points with an ample amount of ZEP 2000 OSV Part Number 6100811.

15.7 Landing / Stabilizing Legs

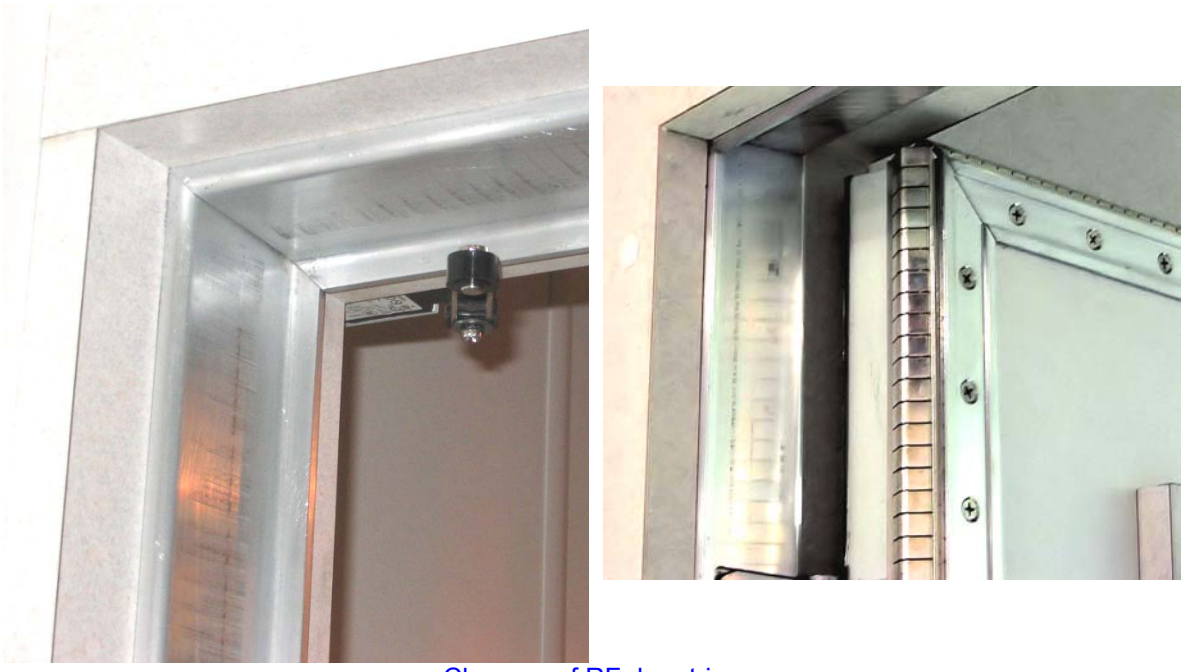
Once a year, perform the preventative maintenance on the landing legs and the landing leg controls. Refer to the accompanying manual for the landing gear system.

1. Extend the landing legs and coat lightly with clean grease.
2. Grease the alemite fittings and check the valve on each leg. Use “NGLI” lithium grease with a grade of “00” or “0”.
3. Check the fittings and the hydraulic lines for leaks or worn spots. Replace all defective fittings and lines as necessary.
4. Check for loose bolts and nuts. Tighten as necessary.

15.8 RF Shielding

When the mobile unit leaves the factory, the RF room is certified at 90 db or better. Weekly checks are required to verify the integrity of the RF room.

1. Clean RF door trim with denatured alcohol and wipe with a clean cloth.
2. Check the door hinges, stops, and latches for proper operation.
3. Ensure that the door opens and closes without binding.



Close up of RF door trim

Figure 61: RF Shielding

OSHKOSH SPECIALTY VEHICLES

Appendix A: Mobile Unit Checklist

WARNING It is the operator's responsibility to verify that the shore power receptacle is of the same type and voltage as the connection that is supplied by Oshkosh Specialty Vehicles. Failure to do this can result in injury or death to the operator of the mobile unit as well as irreparable damage to the mobile unit.

WARNING Before connecting or disconnecting from shore power, it is imperative that the shore power connections be moved to the "OFF" position. Failure to do this can result in injury or death to the operator of the mobile unit.

WARNING Make sure that all electrical parts are serviced only by a certified electrician or qualified personnel. Dangerous voltages are present which could result in injury or death.

WARNING Always make sure that eyes are protected while servicing the unit. Wear safety goggles when prying, drilling, grinding, or working with batteries. Wear safety goggles over regular prescription glasses unless the lenses are made of hardened glass and can serve as safety goggles.

WARNING Be certain to disconnect the power before working on any of the electrical systems.

CAUTION The Siemens medical system requires the HVAC system to be supplied power at all times. During transit of the mobile unit via the generator and when the unit is in the parked position via shore power.

CAUTION Always inspect the power cable, connectors, and fasteners prior to usage. If during inspection, it is suspected that either internal or external damage has occurred, have a certified electrician inspect and repair the damage before using.

CAUTION When switching from generator power to shore power the yellow "480V AC Warning Light" may illuminate and flicker. If the yellow "480V AC Warning Light" stays illuminated, reconnect to generator power and call a certified electrician before attempting to reconnect to shore power.

CAUTION The landing / stabilizing legs and rear suspension are not to be used to raise the mobile unit off the ground. The legs are meant only to level the unit and place it in a parked position. If the legs are used in an attempt to raise the mobile unit from the ground, serious damage may occur to the mobile unit.

CAUTION Failure to completely exhaust the suspension before uncoupling the airlines may result in damage to the suspension of the mobile unit.

CAUTION The rear stabilizing stands must be removed prior to the connecting the tractor to the mobile unit. Failure to do this can result in equipment damage

CAUTION The air ride control valve must be in the normal ride position before the mobile unit can be transported. If the air ride control valves are not in the normal ride position, irreparable damage may occur to the mobile unit.

CAUTION Before transporting the mobile unit, check to verify all warning lights as well as all exterior marker lights are working correctly.

IMPORTANT When servicing the unit be certain that a first aid kit and fire extinguisher are within reach at all times.

IMPORTANT **The trailer suspension system must be strictly maintained in accordance with the Siemens Magnet Technology Specification MS001. Failure to do so could result in invalidating the Siemens Magnet Technology warranty.**

IMPORTANT Due care must be exercised to avoid severe operating environments that endanger the system equipment. Failure to do so could result in invalidating the Siemens Magnet Technology warranty.

IMPORTANT Failure to comply with OSV procedures, regulations, and system maintenance requirements may result in invalidating the Siemens Magnet Technology warranty.

IMPORTANT Disobeying posted speed limits, driving dangerously, driving while under the influence of alcohol or drugs, driving without a valid operators license, or insurance or driving without due care or any illegal action by the driver may result in invalidating the Siemens Magnet Technology warranty.

IMPORTANT Due care must be exercised to use the lowest speeds possible when docking and undocking the trailer. Failure to do so could result in invalidating the Siemens Magnet Technology warranty.

IMPORTANT The owner/operator must notify Siemens Magnet Technology within one (1) day of any instance that causes the shock logger alarm to sound. Failure to do so could result in invalidating the Siemens Magnet Technology warranty. Contact the local Siemens Medical Systems Representative.

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Mobile Unit Setup Checklist

1. Park the mobile unit on the pad per the site-planning guide.
2. **DO NOT** set the trailer brakes.
3. Lower the front landing / stabilizing legs. Set the trailer parking brake.
4. Disconnect the tractor while leaving the air and electrical lines engaged.
5. Release the trailer parking brake. Raise the rear of the mobile unit and install the rear stabilizing stands. Exhaust the rear suspension.
6. Re-level the mobile unit as needed. Use the front landing / stabilizing legs as well as the rear suspension as necessary. Set the trailer parking brake.
7. Disconnect the tractor air and electrical lines.
8. Lower the auxiliary support legs and insert the pins.
9. Install the stair assembly.
10. Remove the Lift Transport Restraining Cable and Transport Pins.
11. Deploy the Platform Lift.
12. Verify that the shore power disconnect is in the “OFF” position and connect to the power cable to the shore power receptacle. Place the shore power disconnect in the “ON” position.
13. Move the power selector switch to the “Line” position and verify that the incoming power supply is good.
14. Move the Generator Stop / Start selector switch to the “Stop” position.
15. Connect the phone and data lines.
16. Connect the water supply and the waster water connections.
17. Remove all restraining hardware.
18. Prepare the medical system per OEM instructions.
19. Check for any warning lights.
20. Deploy the Roll Door Canopy, if equipped.

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Mobile Unit Transport Checklist

1. Retract the Canopy, if equipped.
2. Return the Platform Lift to the transport position.
3. Insert the Transport Pins and connect the Lift Transport Restraining Cable securely in place.
4. Secure all medical equipment per OEM requirements.
5. Secure all equipment; this includes all moveable objects such as chairs, monitors, doors, cabinets, cameras, and printers. Close and lock the Scan Room door.
6. Move the Generator Stop / Start selector switch to the “Start” position. Allow the generator to run for approximately five (5) minutes.
7. Move the power selector switch to the “Generator” position.
8. Lock the Staff Entry door and remove and store the stair assembly.
9. Move the shore power disconnect to the “OFF” position and disconnect the power cable.
10. Disconnect the water supply and the wastewater connections.
11. Disconnect phone and data lines.
12. Raise the auxiliary support legs.
13. Connect the tractor air and electrical lines.
14. Raise the rear of the unit and remove the rear stabilizing stands and store them in the underbody compartment. **Return the air ride control switch and valve to the normal ride positions.**
15. Lower the landing / stabilizing legs enough to couple the tractor to the unit.
16. Connect the tractor to the mobile unit.
17. Raise the landing / stabilizing legs.
18. Verify that the mobile unit is ready for transport.
    a. Are all exterior doors closed and locked?
    b. Is the Platform Lift in the transport position, fully seated in its retaining cradle?
    c. Is the transport lift restraining cable securely in place?
    d. Are all running & marker lights working correctly?
    e. Are any warning lights flashing?
    f. Is the fuel tank full?
    g. Is the optional fire suppression system unarmed?
    h. Verify that the air suspension system is fully inflated and at the proper ride height. The lowest point of the trailer sidewall should be approximately 15” above ground level.

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Appendix B: Troubleshooting

If any of the following troubleshooting guides do not correct the problem, or if the problem worsens, please refer to the Oshkosh Specialty Vehicles VOL II Vendor Information binder for the product manual, the Oshkosh Specialty Vehicles VOL I Service/Operation Manual binder for a list of local service representatives, or call Oshkosh Specialty Vehicles for further assistance.

Hydraulic Platform Lift is inoperable….

Please refer to the Oshkosh Specialty Vehicles VOL II Vendor Information binder for the product manual, the Oshkosh Specialty Vehicles VOL I Service/Operation Manual binder for a list of local service representatives, or contact Oshkosh Specialty Vehicles for service.

AC Power Indicator Light is off

If the AC Power Indicator Light is “OFF” then the mobile unit is not receiving AC power. The mobile unit must have power at all times. If the mobile unit is on site, shore power must be connected.

If the mobile unit is being transported, then the vehicle must be stopped and the following items checked. Please refer to the product manual located in Volume II of the literature provided by Oshkosh Specialty Vehicles. Also located in the volume is a list of local service representatives. For any additional information, please contact Oshkosh Specialty Vehicles.

Generator power is connected when the A/C power Off light is out:	
1.	Verify that the fuel tank has fuel.

Transport Warning Light is on…

WARNING If the Transport Warning Light is on, the mobile unit must not be moved. If the mobile unit is moved while this light is on, irreparable damage to the mobile unit, serious injury or death can occur.

If the Transport Warning Light is illuminated, some part of the mobile unit is not ready for transport. Before the mobile unit can be transported, this light must be off. Please refer to the following table:

Problem:		**Solution:**
The hydraulic platform lift is not in the proper transport position.	1.	Make sure that the hydraulic platform lift is seated in the cradles.
	2.	Make certain that the transport pins have been inserted.
	3.	**If Emergency Air from the tractor is connected to the trailer, the Transport Warning Strobe light will also be activated. Ensure that #s 1 & 2 above have been accomplished.**
Generator Vibration Isolation Mounts are not latched	1.	Make sure that the Generator Vibration Isolation Mounts are latched.

Suspension Transport Indicator Light is illuminated…

CAUTION If the Suspension Transport Indicator Light is on, the mobile unit must not be moved. If the mobile unit is moved without the rear air suspension functioning properly, irreparable damage can occur to the mobile unit.

If the Suspension Transport Indicator Light is on, the rear air bags / suspension of the mobile unit are not ready for transport. This light must be off to move the mobile unit. Check the rear air bag suspension control switch. The switch must be in the “OFF” / normal ride position. This is the normal ride position. If the switch is in this position the unit will automatically adjust the rear suspension to the transport position.

If the switch is in the correct position and the light still appears a problem exists within the rear suspension. Please refer to the product manual located in Volume II of the literature provided by Oshkosh Specialty Vehicles. Also located in the volume is a list of local service representatives. For any additional information, please contact Oshkosh Specialty Vehicles.

Humidity is out of specifications…

The humidity setting for the mobile unit is 50% RH (relative humidity). If the mobile unit is experiencing humidity levels outside of this range, either too low or too high, please refer to the following table.

Problem		Check for:	Solution:
The humidity inside of the mobile unit is too high.	1.	Check for exterior doors that have been left open during humid conditions.	The HVAC system can only support the environment of the mobile unit. Unless opened for use, all exterior doors should remain closed all of the time.
	2.	Check for blocked or dirty air vents and/or air conditioner filters.	Clean the air vents and/or change the air conditioner filters. After this has been done, check for any changes to the humidity levels.
	3.	Check to see if the humidifier is constantly running.	Verify that the humidifier is set at 50% RH (relative humidity). If the humidifier is still running constantly, contact Oshkosh Specialty Vehicles for service.
	4.	Check to see if the “ALARM” LED is illuminated.	If further information is needed, please refer to the Oshkosh Specialty Vehicles VOL II Vendor Information binder for the product manual, the Oshkosh Specialty Vehicles VOL I Service/Operation Manual binder for a list of local service representatives, or contact Oshkosh Specialty Vehicles for service.

Problem		Check for:	Solution:
The humidity inside of the mobile unit is too low.	1.	Check for open exterior doors left open during arid weather conditions.	The HVAC system can only support the environment of the mobile unit. Unless opened for use, all exterior doors should remain closed all of the time.
	2.	Check for blocked or dirty air vents and/or air conditioner filters.	Clean the air vents and/or change the air conditioner filters. After this has been done, check for any changes to the humidity levels.
	3.	Check to see if the A/C disconnect is in the “OFF” position.	Turn the A/C disconnect to the “ON” position.
	4.	Check the water levels of the water tank.	Fill the water tank to the specified limit.
	5.	Check to see if the humidifier disconnect is in the “ON” position.	Move the humidity disconnect to the “ON” position and verify that the humidifier is set at 50% RH (relative humidity). If the humidifier is running and the humidity level does not change, a problem exists within the humidity system. Please refer to the Oshkosh Specialty Vehicles VOL II Vendor Information binder for the product manual, the Oshkosh Specialty Vehicles VOL I Service/Operation Manual binder for a list of local service representatives, or contact Oshkosh Specialty Vehicles for service.

Temperature is out of specifications…

The desired room temperature is 72ºF. If the temperature is out of specifications, either too high or too low, refer to the following table.

Problem:		Check for:	Solution:
The temperature inside of the mobile unit is too warm.	1.	Check for exterior doors left open during warm weather conditions.	The HVAC system can only support the environment of the mobile unit. Unless opened for use, all exterior doors should remain closed all of the time.
	2.	Check for blocked or dirty air vents and/or air conditioner filters.	Clean the air vents and/or change the air conditioner filters. After this has been done, verify that cold air is blowing.
	3.	Check to see if the A/C disconnect is in the “OFF” position.	Turn the A/C disconnect to the “ON” position.
	4.	The Temperature Control settings are correct.	Verify that the Temperature Control for the Scan Room is set at 67 F and the Control Room is set at 68 F. Please contact Oshkosh Specialty Vehicles for further assistance.
Problem:		**Check for:**	**Solution:**
The temperature inside of the mobile unit is too cold.	1.	Check for open exterior doors left open during cold weather conditions.	The HVAC system can only support the environment of the mobile unit. Unless opened for use, all exterior doors should remain closed all of the time.
	2.	Check for blocked or dirty air vents and/or air conditioner filters.	Clean the air vents and/or change the air conditioner filters. After this has been done, verify that warm air is blowing.
	3.	Check to see if the A/C disconnect is in the “OFF” position.	Turn the A/C disconnect to the “ON” position.
	4.	The Temperature Control settings are correct.	Verify that the Temperature Control for the Scan Room is set at 67 F and the Control Room is set at 68 F. Please contact Oshkosh Specialty Vehicles for further assistance.

Appendix C: HVAC Set Points

CAUTION The HVAC system is critical to the operation and life of the equipment. The medical equipment operates within strict limits regarding temperature and humidity. All aspects of the HVAC system such as baffling, venting, component set points, and sensor placement are adjusted for optimum operation. Under no circumstances should any aspect of the HVAC system be altered from factory specifications.

CAUTION Be certain that the HVAC system is operational at all times.

There are two set points for the HVAC system. These points are set at the factory and should not be changed under any circumstances. Altering these points can result in damage to the medical equipment.

The Temperature Control for the Scan Room is set at 67°F in order to provide the desired temperature of ≈72°F.

The Temperature Control for the Control Room is set at 68°F in order to provide the desired temperature of ≈72°F.

The humidity control set point is 50% relative humidity.

The factory settings provide the proper environment for the MR system, and should not be adjusted.

Please refer to the Oshkosh Specialty Vehicles VOL II Vendor Information binder for the product manual, the Oshkosh Specialty Vehicles VOL I Service/Operation Manual binder for a list of local service representatives, or contact Oshkosh Specialty Vehicles for service.

Appendix D: A-1 Circuit Malfunction Checklist

Category 1

Visual Checks – Check for the most common occurrences.

1. Has the Start button been depressed?
2. Is the mobile unit on shore power?
3. Is the CB5 circuit breaker, in the 480V AC electrical panel, in the “ON” position?

Category 2

Component Checks (some tools are required).

1. Check the emergency off button in Control Room. N.O.?
2. Check the emergency off button in Scan Room. N.O.?
3. Check the functionality of each emergency off button. Are they working correctly?

For further troubleshooting, please contact Oshkosh Specialty Vehicles for assistance.

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Appendix E: Lockout/Tagout Procedures

Specific Energy Control Procedures

Machine or Equipment for this Procedure:

Specialty Vehicle Trailer: ***Siemens Espree MRI System***

Control of Hazardous Energy:

Type of Hazardous Energy		When is it Necessary to Lock Out
Electrical	480V AC	When servicing main electrical power line
Electrical	120V AC room circuits	When servicing or performing installation inside specific sections of the trailer
Electrical	12V DC	When servicing the following: Platform Lift, Landing Leg circuit, Transport Warning lights, underbody compartment lights
Electrical	12V DC From Battery	When servicing the following: Platform Lift, Landing Leg circuit, Transport Warning lights, underbody compartment lights

Affected Personnel to notify when the Specialty Vehicles Trailer is to be Locked Out:

Name/Department:	Location:
Production employees	In the vicinity of the trailer

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Shut down specifications for the Specialty Vehicle Trailers:

Energy Type and Rating:	Type of Energy Isolating Device:	Location of Energy Isolating Device:	Lockout Device Used:
Main power feed Electrical 480V AC	Circuit Breaker or Plug	Normally located above the Facility Power Shore	Lock and tag with or without lockout hasp
Light or outlet circuits Electrical 120V AC	Wall switch or circuit breaker	Distribution panel for circuit breaker, wall switch for room circuits	Lock and tag with a Universal Wall Switch Lockout, Universal Circuit Breaker Lockout
Roll Door Electrical 120V AC	Circuit Breaker, Service Switch	CB in 208 V AC Panel, Switch in overhead panel above door	Lock and tag with a Universal Switch Lockout, Universal Circuit Breaker Lockout
Power to lift panels Electrical 12V DC	Remove Battery Cables	Left side underbody compartment, On battery.	Lock and tag with a Circuit Breaker Lockout attachment device
Electrical 12V DC From Battery	Remove Battery Cables	Left side underbody compartment, On battery	Lock and tag with a Plug Lockout attachment device
Medical System Siemens Espree MRI	Circuit Breaker	A-1 Panel in equipment area	Lock and tag with or without lockout hasp
Air Conditioning System 480V AC	40A Circuit Breaker	CB in 480V AC Distribution Panel and Chiller are a single unit.	Lock and tag with or without lockout hasp

Methods to dissipate energy:

N/A

Method of Verifying the Isolation of the Machine or Equipment:

Voltmeter

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Appendix F: Portable Oxygen Monitor

General Service Information

The Teledyne Model MX300-I Portable Oxygen Monitor is designed to be robust yet compact in size. In order to achieve maximum reliability in a microprocessor-based instrument, a single PC board is used which relies exclusively on surface mount technology. Without access to specialized probes and test equipment, troubleshooting and repair of circuit board components are not feasible. A factory replacement of the entire PC board is more cost effective than a field repair of an individual component.

With the exception of replacing the sensor or batteries there are no user-serviceable components inside the unit. There are no potentiometers or other adjustments to be made within this instrument. If a problem arises with either of these models that cannot be corrected by recalibration ,changing the batteries or replacing the sensor as described in the users manuals, the unit must be sent back to the factory for repair or replacement. See Return Authorization for Service for instructions on obtaining a Return Merchandise Authorization (RMA) number before sending a unit back to Teledyne for repair.

Overall Maintenance

The MX300-I requires very little maintenance, other than calibration, checking and changing the batteries and sensor, and cleaning the plastic housing. Occasional cleaning of the plastic surface can be done with isopropyl alcohol. Should any part of the instrument malfunction or fail to perform, the unit should be removed from service. There are no user-serviceable components within the instrument.

Battery Maintenance

DO: Test batteries regularly. (Replace immediately when all 5 bars are missing).

DO: Always use alkaline batteries.

DO: Recalibrate after replacing batteries.

The MX300-I instrument incorporates a battery test feature that provides the approximate amount of useful life remaining on the set of batteries. Excessive alarm activation will wear down the battery faster than usual.

The minimum detectable change in battery voltage corresponds to an increment of about 50 hours, meaning that the battery voltage reading may not change for several hours at a time.

If the monitor is not used for a period of 30 days or more, the batteries should be removed prior to storage.

Sensor Maintenance

DO: Check the sensor for damage or leaks before use. DO: recalibrate after replacing the sensor.

DON'T: Immerse the RI7MED sensor in liquid.

DON'T: Autoclave the RI7MED sensor.

DON'T: Open or try to repair the sensor.

Before every use, the sensor, cable and connections should be checked. Check the sensor for leaks and condensation. Check the cable for splitting or cracked insulation. Make sure the connections are tight and dry.

In the event that the sensor has been damaged, consult the Material Safety Data Sheet in the Appendix for handling guidelines.

Calibration

Incorrect readings can often be traced to improper calibration. The MX300-I should be calibrated before each use and every 8 hours to maintain accuracy. It must be calibrated whenever new batteries are installed. Calibration using methods other than described below can lead to improper operation and are discouraged.

Whenever new batteries are installed or removed for any reason, the oxygen monitor defaults to the calibration mode with the LCD display flashing 00.0. Only the CAL and ON/OFF (I/O) keys are functional at this point. After calibration is completed, the alarm set points will need to be reset.

To calibrate the instrument refer to the procedures below:

The MX300-I should be calibrated before each use and every 8 hours to maintain accuracy.

Whenever new batteries are installed or removed for any reason, the oxygen monitor defaults to the calibration mode with the LCD display flashing 00.0. Only the CAL and ON/OFF (I/O) keys are functional at this point. On the MX300-I monitor, the alarm set points will also need to be reset after calibration is completed.

Note: For first time and for routine maintenance calibrations, make sure the sensor and sensor cable are installed correctly before attempting to calibrate the instrument

1. Turn the unit on by pressing the ON/OFF (I/O) key.
2. Check the batteries by pressing the BAT key.
3. If the LCD is not flashing, press the LOCKIUNLOCK key to unlock the keys. LCD will flash indicating changes can be made to the settings. If the batteries have just been installed the LCD will flash 00.0
4. As with most oxygen analyzer(s) the highest level of accuracy is achieved when calibration is conducted using 100% oxygen. After installing the flow diverter, insert the sensor into the plastic tee and connect to a supply of pure dry oxygen flowing at 1-2 liters per minute.

   Note: An accessory calibration assembly (PIN C53790) is available from Teledyne for use with the R17MED sensor
5. Wait about 20 seconds to insure the sample line is completely purged with the calibration gas. Press the CAL key. The LCD will count down from 9 to 0. During this time the microprocessor is measuring the sensor output to determine the gas concentration and selects the calibration range i.e.100% or 20.9%. When the calibration is complete the LCD will display the gas value. Press the LOCK/UNLOCK key to save the calibration data.

Note: The MX300-I can only be calibrated using 100% oxygen or room air 20.9%. Improper calibration or use of other gas concentrations will activate the -√ SENSOR indicator. To repeat the calibration press the LOCK/UNLOCK key and press the CAL key.

6. Remove the sensor from the oxygen supply and confirm the LCD reads less than 22% in room air. It is not necessary for it to read exactly 20.9%.
7. It is important to perform the calibration carefully and thoroughly, using calibration gases that are free from contaminates. Wait for a stable reading before locking in calibration point. The accuracy of the instrument is only as good as the procedure used to calibrate it.

   Note: A single point air calibration is not recommended unless the sensor can be exposed to a known source of fresh outdoor air. Hospital room air is often enriched with excess oxygen, which will introduce errors into the calibration. Air calibration should only be used for monitoring oxygen levels between 21% and 40% and should never be used where a high degree of accuracy is needed.

   Note: Never calibrate the unit in humidified gas, as water vapor makes the oxygen concentration appear lower than it really is.

   ⚠CAUTION Do not adjust the calibration settings in air after the 100% calibration, as this will cancel the more accurate 100% calibration. The 100% calibration may be repeated as many times as desired.

8. Adjust alarm set points to desired level according to the procedures below.
9. Press the LOCKIUNLOCK key to hold settings. The unit is now ready for use.

Alarms

To set the alarms on the MX300-I monitor, refer to the procedure below.

Note: Before attempting to change the alarms it is necessary to unlock the control keys by pressing the LOCK/UNLOCK key. When pressed, the display will start flashing.

To set the alarms on the MX300-I monitor:

1. To set the HI alarm: Press the HI ALARM SET key once. Press the UP and DOWN arrow key until the desired value is displayed in the lower right comer of the display.

   Note: The HI and LO alarms may be defeated by setting the HI alarm limit one step above 100%. The display will blink ALARM OFF continually in this mode.

2. To set the LO alarm, press the LO ALARM SET key once. Press the UP and DOWN arrow key to select a value. A built-in safety feature will not allow you to select a LO alarm value less than 18%.

   Note: The MX300-I Portable Oxygen Monitor is designed to prevent crossing of HI/LO alarm settings. If you attempt to set the La alarm higher than the HI alarm, it will push the HI alarm setting up as you continue to raise the LO alarm set point. This also applies when attempting to set the HI alarm lower than the LO alarm.

3. To test the alarms, unlock the controls by pressing the LOCK/UNLOCK key and then press ALARM TEST key. The Lo alarm followed by the HI alarm will blink and the audible visual alarm will are activated for about 1 second.
4. To silence the alarm buzzer for 115 seconds press the alarm silence key (u) (flashing red indicator light).
5. To disable the alarms set the high alarm set point above 100%.

   Note: When the alarm is in the OFF condition (set point above 100%) the ALARM OFF status message blinks slowly on the LCD below the oxygen readout.

Gas Sampling

Humidity

Humidity does not directly affect the accuracy of the sensor's measurement. However, when a nebulizer or other device is used to increase moisture levels in gas mixtures, the moisture actually dilutes the mixture. This dilution effect decreases the oxygen concentration.

For example, if an 80% oxygen gas mixture is humidified to saturation at room temperature, the resulting gas mixture will contain only 77.5% oxygen. Your portable oxygen monitor accurately measures decreases in the oxygen concentration due to the dilution effects of moisture added to gas mixtures.

As with all oxygen sensors, excessive condensation on the sensing surface of the RI7MED will block the diffusion of oxygen to the sensor, rendering it inoperative. We recommend installing the sensor on the dry side of the breathing circuit at all times.

Temperature

The RI7MED oxygen sensor adjusts for ambient temperature changes in the range of 0-40°C (32-106°F). Since the thermistor that compensates for these changes is located in the rear of the sensor assembly, it is important that gas mixtures, flowing over the front of the sensor, be at room temperature. Reading errors may occur if hot gases from a heated humidifier are directed past a sensor teed into a breathing circuit.

A small thermal tracking error may be encountered in application areas where the entire sensor assembly is placed in the gas mixture to be analyzed (e.g., incubators). Holding the sensor in your hand for more than a few minutes can also affect the temperature tracking which appears as a slow drift on the LCD. No adjustments should be made during this period since this error will be eliminated when both the thermistor and sensing electrode have had sufficient time to come to thermal equilibrium. This can take up to 2 hours.

Pressure

Virtually all gas sensors and monitors measure the partial pressure, not the percentage, of the gas that they sense. The only time that these instruments can accurately read percentages is when the total pressure does not vary over time between calibrations and use. For this reason it is important to calibrate the MX300-I oxygen sensor at regular intervals. It is recommended that the unit be calibrated prior to each use or every 8 hours.

When the sensor is connected to a ventilator circuit, the alternating "breathing" pressure cycles generated by the ventilator will be sensed as an increase in the oxygen percentage (especially if the sensor is fast enough to sense the changes, as is the RI7MED). In reality, the percentage of oxygen is not changing; it is the total pressure that is increasing producing a corresponding increase in the partial pressure of oxygen. A hundred centimeter of water pressure pulse will produce a 0.11 atmosphere, or an 11 % increase in the total and therefore partial pressure of oxygen. Assuming that the sensor is fast enough to track this pressure pulse, an un-pressurized reading of 50% oxygen will increase to 55.3% if the sensor is subjected to a pressure cycle of 100cm H20. The reading will rise proportionally less for smaller pressures.

Discrepancy in Readings

The MX300-I instrument should be used to measure the oxygen concentration exiting another oxygen mixing device or life support system (i.e., a blender, incubator or anesthesia machine). The information obtained from the MX300-I should never be used to adjust a life-support system, but should only be used as an indication that the life support system or device may require service and/or calibration.

When a discrepancy in oxygen readings is detected, the oxygen analyzers readings should be verified by checking the MX300-I battery condition and calibration using 100% Oxygen. If the monitor can be calibrated, the unit can be assumed to be in good working order and capable of providing readings to specification. If, after reinstalling the unit, the discrepancy in oxygen readings persists, the problem is most likely elsewhere (i.e., flow blockage, primary device error, etc.). Further investigation should be made until the discrepancy in readings is resolved. The troubleshooting section of this manual may provide additional assistance in locating the problem.

Note: The MSDS on this material is located in the Appendix. It is also available upon request through the Teledyne Environmental, Health and Safety Coordinator. Contact at (626) 934-1592

Troubleshooting

The MX300-I oxygen monitor provides a variety of built-in safety features that prevents its use when a fault is detected. When a unit displays the message -√ SENSOR and sounds the audible and visual alarm continuously, it is an indication of a faulty connection between the sensor and the unit or an expired or faulty sensor. To determine where the difficulty lies, refer to the following guidelines in Table 1.

Table 1 Troubleshooting

Symptom	Why	What To Do
New sensor responds slow or drifts.	If the sensor is new and was just removed from its sealed bag it may need to run for several hours.	A) Wait 1-2 hours and recalibrate.
Sensor will not read below 22 % after calibration in 100% 02.	Calibration in 100% was invalid or the room air is contaminated with excess oxygen.	A) Recalibrate using dry gas making sure the reading stabilizes before making any adjustments. B) Make sure that at least 6" (30 cm.) of tubing is attached to the exhaust side of the tee adapter to prevent back filling. 02 flow rate should not exceed 5 l/min. C) Oxygen concentration at the sensor is significantly higher than 21%. Take the instrument to a well-ventilated area and check the reading again. D) Try calibrating with a known good sensor; if this fails, see symptom "Reading drifts over 2-3%..."

Symptom	Why	What To Do
The sensor does not react to changes in oxygen concentration, or the readings are unstable and drifting.	Water is condensing on the sensing surface. Electrical interference is disrupting the electronics	A) Remove the sensor from tee adapter and unscrew the plastic flow diverter. Using absorbent tissue or cotton swab, gently wipe off sensing surface inside threaded portion of sensor assembly. B) Relocate unit away from sources of electrical noise such as cauterizing equipment and two-way radios.
The display is flashing √ SENSOR	The unit has detected a fault in the signal from the sensor. Sensor has expired. The sensor has been exposed to a gas containing little or no oxygen.	A) Check sensor cable connections and make sure they are completely inserted into the mating connector and the capture nut is firmly in place. B) Expose the sensor in 100% 02 and check calibration. C) The sensor output has fallen to a level where it is no longer usable. Replace sensor.
The oxygen reading fluctuates or appears to be incorrect.	Like all 02 sensors, the R17MED detects the changes in the partial pressure of 02.	A) During calibration, make sure there are no restrictions on exhaust side of sensor. If the reading changes with flow, the sensor is pressurized or there may be a leak in the system. B) If a high degree of accuracy is desired, or the concentration of 02 is in excess of 40%, calibration with 100% is recommended. C) If humidified gas is used to ventilate the patient, water vapor actually dilutes the gas.

Symptom	Why	What To Do
The oxygen reading fluctuates or appears to be incorrect. Continued:	Like all 02 sensors, the R17MED detects the changes in the partial pressure of 02. continued:	D) If a blender is used, check its calibration.
The unit has stopped working and the LCD is displaying alphanumeric figures.	The MX300-I instruments are equipped with an electronic "watch dog," which monitors the circuitry within the unit for potential faults and renders the unit inoperable until the condition is corrected. (See Watch dog section below) Several conditions can activate the "watch dog." Dropping the unit, poor battery connections, and radio frequency interference are the most common causes. See the watch dog section for additional information	A) Disconnect the batteries and inspect the contacts for corrosion. Reconnect the batteries. If the unit functions properly, calibrate the unit and reset the alarm values. B) Try a new set of batteries. C) Increase the distance between the unit and any source of radio frequency interference. The sensor cable is a prime source of pickup as it can act like an antenna. Relocate the sensor cable and if possible change its coiled length to "de-tune" its antenna effect. Placing the cable in a different position may also help.
Alarm sounds/flashes continuously.	A) Readings are outside alarm limits.	A) Adjust high and low alarm setting to be above and below the 02 value being displayed.
No display.	A) Batteries expired. B) Bad battery connection.	A) Check/replace batteries. B) Check battery connections. C) Calibrate.
Keys inoperable/cannot turn unit off	The LOCK/UNLOCK key is activated which is preventing key operation	A) Press LOCK/UNLOCK key once. LCD will flash indicating keys are active.
Cannot adjust calibration or alarm settings	Critical settings require two keys be pressed in a specific order. LOCK/UNLOCK key is active	A) If display is not flashing press lock key once to activate keys. Press desired function followed by the Up and Down key.

Note: In the event that none of these procedures produce desired results, remove the batteries and return the unit to Teledyne for repair.

Watchdog

The MX300-I is equipped with a watchdog circuit that continuously monitors the electronics for proper operation. If the watchdog detects a failure, one of the following codes will appear on the LCD.

The error codes can appear on the LCD when batteries are first installed, during normal operation or if the unit is subjected to extreme shock. In some cases an additional digit is used in the error code to supply additional information. For example, the error code 6 and 7 are followed by another digit listed as (N) in Table 2. The error code 65 would indicate that a key is stuck and this key is the Silence key.

In addition to supplying visual error codes, the audio device will beep a number of times to indicate the general error in case the display is not functional.

NOTE: To reset the watchdog error code. Remove one battery for 5 seconds and replace. If the error persists contact your local representative or Teledyne for assistance.

Table 2 Error Codes

Error Code	Audio Beeps	Error
Indeterminate	2	The watchdog timer has timed out indicating a serious software error
30	3	Analog output is different from the expected value. May indicate a shorted or over-loaded analog output or a failure of the analog to digital converter or digital to analog converter circuit.
50	5	The ADC circuit failed during POST.
6 (5)	6 (There is no indication of which key is stuck)	A stuck key has been detected. The second digit example (5) on the display shows which key is stuck: 0 - Low Alarm 1 - Batt 2 - Cal 3 - Up 4 - Down 5 - Silence 6 - High Alarm 7 - Alarm Test 8 - Key Lock

Error Code	Audio Beeps	Error
7(2)	7 (There is no indication of the type of DAC failure)	A failure has occurred during the automatic calibration of the digital to analog converter (DAC) circuit. The second digit example (2) shows the type of digital to analog failure. 0 - Measurement 1 - High Test 2 - Low Test 3 - Offset Cal 4 - Gain Cal

Other Problems with the Instrument

Most other problems arise from either mechanical damage from the instrument falling from a bench or table, or electronic component failure. In these units, repair or troubleshooting the PCB or individual component on the board is not feasible. It requires specialized test equipment and probes not generally available to the public. Under most circumstances a replacement of the entire PC Board is recommended. The instrument must be returned to the factory for PCB installation.

Occasionally, depending on the environment of use, keys can become stuck or function erratically due to contamination. Use a mild non-abrasive cleaner solution to periodically clean the keypad and screen. An aerosol jet spray of the type commonly used to clean computer keyboards can be used to dislodge dirt and accumulations from the keypad.

The Error Code Table (Table 2) includes a description of certain fault codes which are diagnostic of some common (usually electronic) problem with the instrument. Some of these codes refer to specific components on the PCB that are problematic or have failed. These codes are useful in reporting a problem with your instrument to Teledyne Customer Service. If an error code is indicated on your monitor record the number and report it to the Customer Service Department at the address below.

Return Authorization for Service

For any service beyond sensor and battery replacement, the instrument must be returned to the factory. A return merchandise authorization (RMA) number must be obtained from Teledyne Analytical Instruments prior to returning an instrument for service. You can request a RMA number via email by contacting us at:

tetci_ customerservice@teledyne.com

You can also contact us at the address below.

Customer Service Department

TELEDYNE Analytical Instruments

16830 Chestnut Street

City of Industry, CA 91749-1580 USA

Phone (626) 934-1500, Fax (626) 961-2538

Or via the web at: www.teledyne-ai.com

Appendix G: Quarterly Maintenance Checklist

PREVENTIVE MAINTENANCE CHECKLIST

Company Performing Preventive Maintenance:

Service Technician:

Trailer ID # :	Date	Date	Date	Date	
HVAC	**3M**	**6M**	**9M**	**12M**	**Comments**
Inspect/change filters					
Inspect Thermostats					
Verify heat strip operation					
Inspect/clean evaporator coil					
Clean/inspect condenser coils					
Inspect electrical contactors					
Verify refrigerant pressures					
Inspect refrigeration piping abrasion					
Lubricate fan motors if applicable					
Inspect covers/fasteners					
Verify compressor amp draw					
Verify condensate pans/drains					
Verify Condenser motor operation					

Chiller	**3M**	**6M**	**9M**	**12M**	**Comments**
Inspect electrical contactors					
Verify refrigerant pressures					
Inspect refrigeration piping abrasion					
Inspect pump seal					
Lubricate motors					
Clean/replace aluminum filters					
Inspect covers/fasteners					
Verify operating/alarm controls					
Verify CW supply temp 45-75 F					
Inspect/replace glycol filter					
Clean/ inspect condensing coils					
Verify/adjust glycol level					
Verify Condenser motor operation					

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Trailer	3M	6M	9M	12M	Comments
Test/inspect lift gate					
Inspect rails/ pins					
Inspect lift fittings/pivot points					
Clean / lubricate slide rails					
Verify lift switches and remote					
Load test van battery (lift)					
Verify hydraulic fluid level					
Verify van battery charger					
Verify roll door controls					
Inspect roll door mounting bolts					
Inspect roll door clutch/hardware					
Inspect roll door side track rails					
Inspect roll door key way					
Inspect awning					
Inspect bay door shocks/hardware					
Verify bay light operation					
Inspect clean and RF door gasket. Verify RF door operation					
Verify RF door lock and the handle operate correctly					
Check RF door for binding and loose hardware.					
Check door hinges/stops/latches for proper operation					
Inspect Slide outs for operation					
Inspect Slide out compressor					
Empty compressor drain and verify Y-strainer is cleaned out					
Check Fire system Last Inspection Date _____					
Inspect stair mounts					
Inspect interior flooring					
Verify bay heater operation					
Inspect cabinet latches and hinges					
Verify phone/communication lines					
Inspect landing gear					
Inspect locking pins					
Inspect air drive or air/hydraulic					
Inspect air tanks					
Verify hub fluid levels					
Inspect undercarriage/frame					
Inspect airbags/airlines/fittings					
Inspect shocks/bushings					
Inspect Tires / Rotate as needed					
Note hub meter mileage _____					

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Generator	3M	6M	9M	12M	Comments
Clean fuel/water separator & replace filter					
Lamp test on control panel					
Inspect fuel lines & injectors					
Change oil/filters- 250 hrs					
Check crankcase breather					
Check hoses/belts					
Verify radiator coolant level					
Verify coolant freeze point & pH					
Verify block heater operation					
Inspect housing mounting bolts					
Inspect muffler/brackets					
Verify battery charging voltage					
Load test battery/clean terminals					
Verify voltage & hertz output					
Record hours run since last P.M. (_____) Recorded Generator Hours					

Electrical	3M	6M	9M	12M	Comments
Inspect breakers and panels					
Inspect lighting and bulbs					
Inspect power cord and plug					
Inspect 110volt outlets					

Humidifier	3M	6M	9M	12M	Comments
Inspect/replace steam tank					
Verify humid control set point					
Inspect/fill water reservoir					
Clean fill and drain valves					
Verify 12 volt pump					

Misc.	3M	6M	9M	12M	Comments
Attach and/or fill out Quarterly Service Record for all major components					

Comment :

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Signature of Technician: _____ Date: _____