

SERVICE MANUAL

CarePorter™ Cart From Hill-Rom



Product No. P3000

For Parts Or Technical Assistance
USA (800) 445-3720 Canada (800) 267-2337
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CarePorter™ Cart Service Manual

Revisions

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Revisions

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Chapter 1

Introduction

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Purpose

This manual provides requirements for the CarePorter™ Cart normal operation and maintenance. It also includes parts lists (in chapter 5) for ordering replacement components.

Audience

This manual is intended for use by only facility-authorized maintenance personnel. Failure to observe this restriction can result in severe injury to people and serious damage to equipment.

Organization

This manual contains seven chapters.

Chapter 1: Introduction

In addition to a brief description of this service manual, chapter 1 also provides a product overview.

Chapter 2: Troubleshooting Procedures

Repair analysis procedures are contained in this chapter. These procedures are used to gather information, identify the maintenance need, and verify the effectiveness of the repair.

Chapter 3: Theory of Operation

This chapter describes the application of the mechanical, electrical, and hydraulic systems employed in this product.

Chapter 4: Removal, Replacement, and Adjustment Procedures

Chapter 4 contains the detailed maintenance procedures determined necessary in chapter 2.

Chapter 5: Parts List

This chapter contains the warranty, part-ordering procedure, and illustrated parts lists.

Chapter 6: General Procedures

Cleaning, preventive maintenance, and other general procedures are described in this chapter.

Chapter 7: Accessories

A list of additional products, that can be used in conjunction with the CarePorter™ Cart, is available in chapter 7. Installation procedures for these accessories are also included.

Typographical Conventions

This manual contains different typefaces and icons designed to improve readability and increase understanding of its content. Note the following examples:

- Standard text—used for regular information.
- **Boldface text**—emphasizes a word or phrase.
- **NOTE:**—sets apart special information or important instruction clarification.
- The symbol below highlights a WARNING or CAUTION:

Figure 1-1. Warning and Caution



- A WARNING identifies situations or actions that may affect patient or user safety. Disregarding a warning could result in patient or user injury.
- A CAUTION points out special procedures or precautions that personnel must follow to avoid equipment damage.
- The symbol below highlights a CAUGHT HAZARD WARNING:

Figure 1-2. Caught Hazard Warning



- The symbol below highlights a CHEMICAL HAZARD WARNING:

Figure 1-3. Chemical Hazard Warning



- The symbol below highlights an ELECTRICAL SHOCK HAZARD WARNING:

Figure 1-4. Electrical Shock Hazard Warning



Introduction

Overview

The CarePorter™ Cart is a freestanding mobile device that couples to a patient bed or stretcher to assist with transport of patients on round-trip or one-way trips within the facility environment. The CarePorter™ Cart can be equipped with oxygen and/or air cylinders, ventilators, infusion pumps, and various other devices. During transport, devices necessary to move a patient that is too ill to otherwise be transported safely are powered from the CarePorter™ Cart's Transport Power Module's (TPM) battery. When the CarePorter™ Cart is stationary at the transport destination, it should be connected to wall source electrical receptacles and medical gas outlets.

The CarePorter™ Cart also assists the caregiver in managing, organizing, and providing mobility to bedside equipment.

Operating Precautions

Before operating the CarePorter™ Cart, ensure you have read and understand in detail the contents of the *CarePorter™ Cart User Manual* (usr010) and this manual. It is important that you read and strictly adhere to the safety information contained in these manuals.

This product should be checked periodically for proper operation. Preventive maintenance (PM) should be performed as outlined in chapter 6 (see "Preventive Maintenance" on page 6-6). An inoperative product should be removed from service. Missing, broken, worn, distorted, or contaminated parts should be replaced immediately.

Specifications

Physical Description

See table 1-1 on page 1-7 for CarePorter™ Cart specifications.

Table 1-1. CarePorter™ Cart Specifications

Feature	Dimension
Length	31.25" (79.37 cm)
Width	39.75" (1096 cm)
Height (floor to top of unit)	44.5" (113.0 cm)
Weight	250 lb (113 kg) (excluding accessories)
Transport Power Module (TPM)	40 lb (18 kg)
Battery pack	25 lb (11 kg)
Casters	5" (13 cm) dia.
Power equipment shelf	
Width	21" (53 cm)
Depth	11" (28 cm)
Load capacity	60 lb (27 kg)
IV poles	
IV poles	2 ea.
Load capacity	55 lb (25 kg)
Travel range	240° arc

See table 1-2 on page 1-7 for CarePorter™ Cart Transport Power Module (TPM) specifications.

Table 1-2. TPM Specifications

Feature	Specification
Output voltage	120V, 60 Hz
Operating output current load (continuous)	0.84 A
Maximum current load	3 A
Discharge time	30 min @ 0.84 A
Recharge time	18 h maximum

Feature	Specification
Standard power duplex electrical outlets	6 each
Battery type	Sealed lead acid
TPM power simplex electrical outlets	2 each

Transport Power Module (TPM)

The TPM supplies temporary power to the TPM receptacles on the CarePorter™ Cart during transport. When the CarePorter™ Cart is connected to the wall power source, the TPM receptacles receive power from the wall power source. The battery pack in the TPM recharges when the CarePorter™ Cart is connected to a wall power source.

The TPM is located in the lower portion of the CarePorter™ Cart. When placed in the Standby position, the On/Standby switch disables TPM functions, including power, to TPM receptacles when the unit is plugged into the wall power. The TPM includes an audible alarm to indicate a specified system condition.

Medical Gas Manifold Module

The CarePorter™ Cart provides one air manifold and one oxygen manifold to manage the medical gases. Each manifold supplies oxygen or medical air to secondary equipment on the CarePorter™ Cart by directing the flow of medical gas from either the on-board cylinder(s) or the wall source. The manifolds provide automatic switching between on-board cylinder(s) and wall source gases. The manifolds include pressure regulators that automatically regulate the on-board cylinder gas pressures to low pressure 82-40 psi (565-276 kPa).

Air Manifold

The air manifold supplies medical air to secondary equipment on the CarePorter™ Cart by directing the flow of medical gas from either the on-board cylinder(s) or the wall source. The air manifold can manage two E-sized air cylinders and includes two capacity gauges. A 120" (304 cm) hose connects the air manifold to the wall air supply outlet.

Oxygen Manifold

The oxygen manifold supplies oxygen to secondary equipment on the CarePorter™ Cart by directing the flow of oxygen from either the on-board

cylinder(s) or the wall source. The oxygen manifold can manage two E-sized oxygen cylinders and includes two capacity gauges. A 120" (304 cm) hose connects the oxygen manifold to the wall oxygen supply outlet.

Push Handle

The CarePorter™ Cart is equipped with a push handle to facilitate pushing and maneuvering the cart. The push handle employs a folding design to allow the CarePorter™ Cart with bed or stretcher to fit into a hospital elevator.

Power Equipment Shelf

The power equipment shelf can accommodate a ventilator or other equipment with a total weight not exceeding 55 lb (25 kg). The power equipment shelf is motor driven and controlled by the caregiver via one of two switches located on either side of the cart. The shelf has a vertical range of 27" (69 cm) and can be rotated 360°.

Latching Mechanism

The CarePorter™ Cart couples to Hill-Rom® beds and stretchers via a pair of latches and pins. The latches are located on the cart, and the pins on the bed or stretcher. When the latches and pins are properly aligned and pushed together, coupling occurs automatically. To uncouple the CarePorter™ Cart from a bed or stretcher, the caregiver operates a lever on each latch.

IV Poles

The base configuration CarePorter™ Cart is equipped with two IV poles, one on each side. When operating the CarePorter™ Cart in the patient's room, the caregiver should ensure that there is sufficient clearance for the IV poles to avoid damage or loss of stabilization of the CarePorter™ Cart.

Casters

The CarePorter™ Cart is equipped with four 5" (13 cm) diameter swivel casters. The left and right rear casters (marked orange) are equipped with a brake.

Electrical Description

See table 1-3 on page 1-10 for CarePorter™ Cart electrical specifications.

Table 1-3. Electrical Specifications

Description	Specification
Voltage	109 - 125V AC, 60 Hz
Power cord	120" ± 3" (305 cm ± 78 cm), 16 AWG
Line voltage fuse	5 A, slo-blo

See table 1-4 on page 1-10 for CarePorter™ Cart receptacle specifications.

Table 1-4. Receptacle Specifications

Description	Specification
Hospital grade receptacle	NEMA 5-15R (Hospital-grade is indicated by a green dot on the face of the receptacle.)
Single phase	2 wires plus ground
Voltage	125V AC
Amperage	15

Regulations, Standards, and Codes

The CarePorter™ Cart is certified to the applicable requirements of UL 544 *Medical and Dental Equipment*.

The CarePorter™ Cart is UL certified to the applicable requirements of CSA C22.2, *No. 125-M1984 Electromedical Equipment*.

Model Identification

See table 1-5 on page 1-11 for CarePorter™ Cart model identification.

Table 1-5. Model Identification

Model Number	Description
P3000	CarePorter™ Cart

Safety Tips

Operating Precautions

General Operation



WARNING:

Do not raise and lower the bed or stretcher when the CarePorter™ Cart is attached. Possible personal injury or equipment damage could occur.



WARNING:

The weight of the bed or stretcher with a patient and the CarePorter™ Cart attached could exceed 1200 lb (544 kg). Ensure that you maintain control during transport of the CarePorter™ Cart. Failure to do so could result in personal injury or equipment damage.



WARNING:

When the CarePorter™ Cart is stationary, ensure the brakes are set. Failure to do so could result in personal injury or equipment damage.



WARNING:

Do not raise or lower the power equipment shelf when the CarePorter™ Cart is attached to the bed. Doing so could result in personal injury or equipment damage.



WARNING:

Ensure the bracket weldment is fully seated into the ISS socket before using the monitor/equipment shelf. Failure to do so could result in personal injury or equipment damage.



CAUTION:

Ensure the bracket weldment is fully seated into the ISS socket before using the ventilator display mount. Failure to do so could result in personal injury or equipment damage.



CAUTION:

Do not put the bed or stretcher into the Trendelenburg position when the CarePorter™ Cart is attached. Possible equipment damage could occur.



WARNING:

Follow the product manufacturer's instructions. Failure to do so could result in personal injury or equipment damage.



WARNING:

Keep all extremities clear of the area between the CarePorter™ Cart and the service head while nesting the cart and head together. Failure to do so could result in personal injury.

IV Poles



WARNING:

During transport, ensure the IV poles are turned toward the rear. Failure to do so could result in personal injury or equipment damage.

When the cart is attached to the bed do not position the IV poles forward towards the bed. The IV poles may interfere with the bed operation, especially the siderails, when the head section is raised or lowered.



WARNING:

Ensure the IV pole does not slip downward during the removal procedure. Failure to do so could result in personal injury or equipment damage.



CAUTION:

Ensure that there is proper clearance for the IV poles when operating the CarePorter™ Cart in a patient's room. Failure to do so could result in equipment damage.

Power Equipment Shelf



WARNING:

Ensure the power equipment shelf is rotated 90° before docking the cart to the bed/stretcher. Failure to do so could result in personal injury or equipment damage.

Rotate the power equipment shelf 90° before docking the cart to the bed/stretcher.



WARNING:

Ensure that all hoses, power cords, and connections are oriented correctly and properly connected. Failure to position the ventilator correctly may result in crimping or kinking of the hoses. Possible personal injury or equipment damage could occur.

Before transporting the patient, inspect all hoses and connections. The ventilator hoses may become crimped if the ventilator is not positioned properly under the bed.

**WARNING:**

Keep all extremities clear of the area between the power equipment shelf and bed or stretcher while raising/lowering the shelf or bed/stretcher. Failure to do so could result in personal injury.

**WARNING:**

Use the wood support block to support the power equipment shelf during the removal procedure. The power equipment shelf will fall if it is not supported. Failure to support the shelf could result in personal injury or equipment damage.

Monitor Shelf**WARNING:**

Ensure that the monitor is properly attached to the monitor shelf. Failure to do so could result in personal injury or equipment damage.

Secure the monitor to the monitor shelf before transport.

**WARNING:**

Ensure the monitor shelf is not positioned above the patient. If the head section is raised, the monitor shelf may interfere with the bed or patient. Possible personal injury or equipment damage could occur.

Never position the monitor shelf above the patient.

Ventilator Display**WARNING:**

Ensure the ventilator display is not positioned above the sleep surface. If the head section is raised, the ventilator display may interfere with the bed or patient. Possible personal injury or equipment damage could occur.

Do not position the ventilator display above the sleep surface.

Ambu-bag Basket



WARNING:

Ensure that the Ambu-bag basket is present, and positioned rearward. Failure to do so could result in interference with the bed being raised or lowered. Possible personal injury or equipment damage could occur.

Do not position the Ambu-bag basket over the sleep surface.

Portable Suction Pump Holder



WARNING:

Ensure that the portable suction pump is not positioned over the sleep surface. Failure to do so could result in interference with the bed when the head section is raised or lowered. Possible personal injury or equipment damage could occur.

Do not position the portable suction pump over the sleep surface.

Device Attachments to the IV Poles



WARNING:

Ensure that all devices are positioned properly. Failure to do so could result in interference when the bed is raised or lowered. Possible personal injury or equipment damage could occur.

When the cart is attached to the bed, do not position devices such as infusion pumps over the sleep surface.

Latch Mechanism

Coupling the CarePorter™ Cart to a Bed or Stretcher



WARNING:

Ensure that all equipment and attachment devices are oriented properly and secure before docking the CarePorter™ Cart to the bed/stretcher. Failure to do so could result in personal injury or equipment damage.

Adjust the power equipment shelf to the designated height for the type of bed or stretcher to be coupled to, as indicated by the label on the front panel of the CarePorter™ Cart.

Adjust the bed or stretcher to the proper height for coupling to the CarePorter™ Cart.

Push the CarePorter™ Cart and bed or stretcher together until the latch and pin mechanisms engage and automatically couple.

Separating the CarePorter™ Cart from a Bed or Stretcher



WARNING:

Ensure that all equipment and attachment devices are oriented properly and secure before separating the CarePorter™ Cart from the bed/stretcher. Failure to do so could result in personal injury or equipment damage.

Pull each latch handle.

Separate the CarePorter™ Cart from the bed or stretcher.

Battery Pack



WARNING:

Replace the battery pack **only** with the manufacturer's equipment supplied by Hill-Rom. Failure to do so could result in personal injury or equipment damage.



WARNING:

Do not discard the battery pack into a fire. The battery pack may explode, and possible personal injury or equipment damage could occur.

Do not discard a battery pack into a fire. Follow the manufacturer's recommendations for disposing of the battery pack.



WARNING:

Do not mutilate or attempt to disassemble the battery pack. Personal injury or equipment damage could occur.



SHOCK HAZARD:

Ensure that proper methods are used when handling the battery pack. A battery pack can present a risk of electric shock. Personal injury could occur.

Follow the manufacturer's recommendations for handling the battery pack.



CAUTION:

Before removing the TPM battery pack, unplug the TPM battery pack cable. Failure to do so could result in equipment damage.



CAUTION:

Ensure that the TPM battery pack connector is properly connected to the TPM battery pack. Failure to do so could result in equipment damage.



CAUTION:

Do not allow the TPM battery pack to freeze. Store the TPM battery pack at 32°F to 104°F (0°C to 40°C). Failure to do so could result in equipment damage.



CAUTION:

The TPM battery pack should be fully charged every 30 days. Failure to do so could result in equipment damage or loss of extended battery life.



WARNING:

Before attempting to transport a patient, verify the battery pack has a full charge. Failure to do so could result in a loss of power and patient injury.



CAUTION:

Always keep the cart plugged into an appropriate power source when not in transport mode. Failure to do so could result in a battery pack that

is discharged or not fully charged.

General Maintenance



WARNING:

Only facility-authorized maintenance personnel should perform preventive maintenance on the CarePorter™ Cart. Preventive maintenance performed by unauthorized personnel could result in personal injury or equipment damage.



WARNING:

A fire and explosion hazard exists when performing cleaning and/or maintenance procedures in an oxygen enriched environment. Turn off the oxygen supply, and disconnect the equipment from the oxygen supply when performing cleaning and maintenance procedures. Failure to disconnect the oxygen supply could result in personal injury or equipment damage.



WARNING:

Only facility-authorized maintenance personnel should troubleshoot the CarePorter™ Cart. Troubleshooting by unauthorized personnel could result in personal injury or equipment damage.



WARNING:

Adhere to the “Infection Control Policies and Procedures” outlined in the *Safety Coordinator Reference Guide*. Failure to do so could result in the spread of infection.



CAUTION:

Place the removed P.C. boards in antistatic protective bags for shipping and storage. Equipment damage can occur. See “P.C. Boards” on page 6-4 for additional information.



CAUTION:

Do not use harsh cleaners, solvents, or detergents. Equipment damage could occur.



CAUTION:

Do not use silicone-based lubricants. Equipment damage could occur.



WARNING:

Ensure that the gasket seals are properly installed in the effective areas. Failure to do so could result in personal injury or equipment damage.



WARNING:

Ensure the CarePorter™ Cart is not attached to a bed or stretcher during maintenance procedures. Possible personal injury or equipment damage could occur.



WARNING:

Before working under the raised section of the bed, set the brakes, and install the hilow cylinder safety block. Failure to do so could result in personal injury or equipment damage.



WARNING:

Use proper lifting methods when lifting more than 50 lb (23 kg). Failure to do so could result in personal injury or equipment damage.

Medical Gases



WARNING:

Keep oil, grease, and greasy substances away from the oxygen manifold, cylinder valves, tubing, and connections, and all other oxygen equipment. A spontaneous and violent ignition can occur if oil, grease, or greasy substances come in contact with oxygen under pressure.



WARNING:

Open medical gas cylinder valves slowly. Rapidly expanding gas in the presence of contaminants could result in a fire at the manifold.



WARNING:

Properly secure the medical gas cylinders to the CarePorter™ Cart. Adequately tighten the lockdown screw to prevent cylinders from

detaching from the manifold. Failure to do so could result in a discharge of medical gases into the room and/or patient injury.

**WARNING:**

Ensure the on-board oxygen cylinder(s) are shut off when not in use. Failure to do so could result in personal injury or equipment damage.

**CAUTION:**

Ensure the CarePorter™ Cart power cord, medical gas hoses, and all pole-mounted equipment is unplugged from the wall prior to transport. Failure to do so could result in equipment damage.

**CAUTION:**

Prior to transport, wrap the power cord and medical gas hoses around the cord wraps. Ensure ends of stored hoses hang down to prevent internal hose contamination. Failure to do so could result in equipment damage.

**WARNING:**

When smoking or near an open flame when administering oxidizing gases. Doing so could result in personal injury or equipment damage.

**WARNING:**

In the presence of oxygen, oil and/or grease become highly combustible. Oxygen must never be allowed to contact oil, grease or other petroleum-based substances. Do not use grease or oil on or near the on-board oxygen cylinder(s) or oxygen manifold. Personal injury or equipment damage could occur.

**WARNING:**

Ensure the on-board oxygen cylinder valve is opened slowly. Do not allow compressed medical gases to enter the oxygen manifold suddenly. Personal injury or equipment damage could occur.

**WARNING:**

When a ventilator is attached and in use, ensure the on-board oxygen cylinder valve is fully opened. Failure to do so could result in personal

injury or equipment damage.



WARNING:

Ensure the on-board oxygen cylinder valve is fully closed before removing it from the oxygen manifold. Failure to do so could result in personal injury or equipment damage.



WARNING:

When the CarePorter™ Cart is attached to a bed, ensure that both E-sized air cylinders are completely full before transporting a patient. Failure to do so could result in personal injury.

Electrical System



WARNING:

Do not plug hospital beds, laser printers, motorized devices, or large inductive devices into the TPM receptacles on the CarePorter™ Cart. Possible personal injury or equipment damage could occur.



WARNING:

Mark and note the position and proper connection of all wiring before disconnecting. Failure to do so could result in personal injury or equipment damage.



SHOCK HAZARD:

To minimize the risk of electrical shock or damage to equipment, disconnect all electrical power to the CarePorter™ Cart before working on it. Failure to do so could result in personal injury or equipment damage.



SHOCK HAZARD:

Unplug the unit from its power source when performing maintenance or cleaning procedures. Failure to do so could result in personal injury or equipment damage.



SHOCK HAZARD:

Use care when checking live voltages. Do not touch live terminals,

wires, and ground. Failure to use caution will cause serious electrical shock injury.



SHOCK HAZARD:

Do not expose the unit to excessive moisture. Personal injury or equipment damage could occur.



CAUTION:

Adhere to all electrical safety precautions when servicing the unit's electrical system. Failure to do so could result in equipment damage.



CAUTION:

Ensure that your hands are clean, and **only** handle the P.C. boards by their edges to prevent component damage.



CAUTION:

Wear an antistatic strap when handling electronic components. Failure to do so could result in component damage.



CAUTION:

Ensure that all color-coded wires are marked to ensure proper connection during the installation procedure. Failure to do so could result in equipment damage.



CAUTION:

Ensure that the color-coded wires are connected properly as marked. Failure to do so could result in equipment damage.

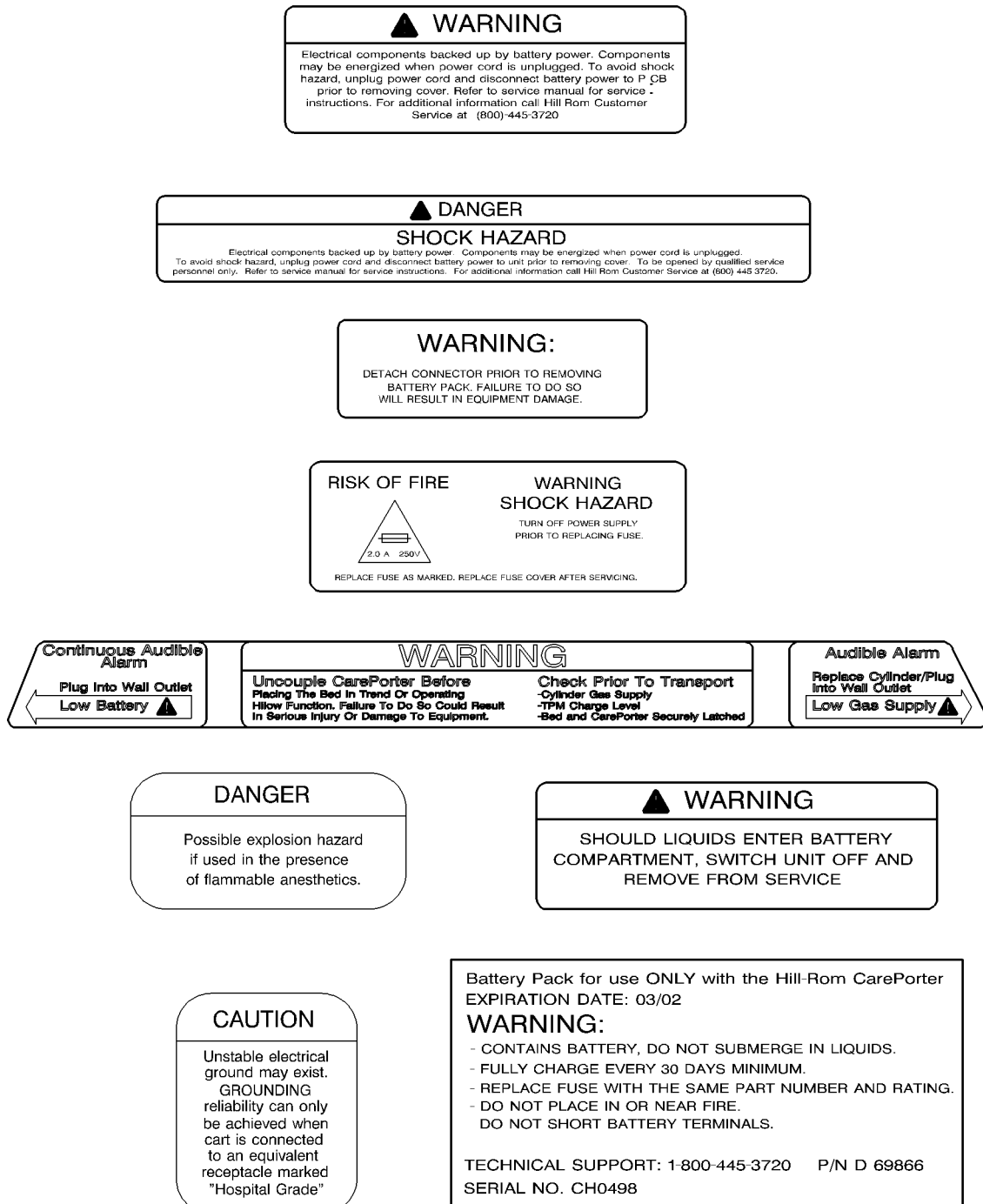


CAUTION:

Do not pinch the cables when removing the TPM. Possible equipment damage could occur.

Warning and Caution Labels

Figure 1-5. Warning and Caution Labels



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Chapter 2

Troubleshooting Procedures

2

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NOTES:

Getting Started



WARNING:

Only facility-authorized maintenance personnel should troubleshoot the CarePorter™ Cart. Troubleshooting by unauthorized personnel could result in personal injury or equipment damage.

Begin each procedure in this chapter with step 1. Follow the sequence outlined (each step assumes the previous step has been completed). In each step, the normal operation of the product can be confirmed by answering **Yes** or **No** to the statement. Your response will lead to another step in the procedure, a repair analysis procedure (RAP), or a component replacement. If more than one component is listed, replace them in the given order.

Start with **Initial Actions** to begin gathering information about the problem.

Perform the **Function Checks** to isolate or identify a problem and to verify the repair after completing each corrective action (replacing or adjusting a part, seating a connector, etc.).

Perform the **Final Actions** after the Function Checks to verify the repair.

If troubleshooting procedures do not isolate the problem, call Hill-Rom Technical Support at (800) 445-3720 for assistance.

2

Initial Actions

Use Initial Actions to gather information from operators concerning problems with the CarePorter™ Cart. Note symptoms or other information concerning the problem that the operator describes. This information helps identify the probable cause.

1. Someone who can explain the problem is available.

Yes No



→ Go to “Function Checks” on page 2-4.

2. Ask that person to demonstrate or explain the problem. The problem can be duplicated.

Yes No



→ Go to “Function Checks” on page 2-4.

3. The problem is a result of improper operator action.

Yes No



→ Go to “Function Checks” on page 2-4.

4. Go to “Final Actions” on page 2-5.

Function Checks

1. Initial Actions have been performed.

Yes No



→ Go to “Initial Actions” on page 2-3.

2. Inspect the CarePorter™ Cart for signs of obvious damage. The CarePorter™ Cart appears to be all right.

Yes No



→ Repair the damage, and proceed to step 3.

3. The powered equipment shelf is operational.

Yes No



→ Go to RAP 2.2.

4. Put the CarePorter™ Cart into the brake position. The brake pedal seats in position, and both total lock/steer casters do not roll or rotate.

Yes No



→ Go to RAP 2.1.

5. Connect the CarePorter™ Cart to the bed or stretcher by following these steps:

- a. Adjust the power equipment shelf to the designated height for the type of bed or stretcher to be coupled to, as indicated by the label on the front panel of the CarePorter™ Cart.
- b. Adjust the bed or stretcher to the proper height for coupling to the CarePorter™ Cart.
- c. Push the CarePorter™ Cart and bed or stretcher together. The latches and pins engage and automatically couple.

Yes No



→ Go to RAP 2.3.

6. Pull each latch release handle. The CarePorter™ Cart separates from the bed or stretcher.

Yes **No**
↓ → Go to RAP 2.4.

7. Press the rear leg release and move the CarePorter™ Cart forward. The gas spring pushes the rear legs back into the locked position.

Yes **No**
↓ → Go to RAP 2.5.

8. The duplex or simplex electrical receptacle(s) work(s).

Yes **No**
↓ → Go to RAP 2.6.

9. Place the IV pole/arm into the proper position for transport. The IV pole/arm retains its horizontal position during transport.

Yes **No**
↓ → Go to RAP 2.7.

10. Rotate the IV pole/arm forward or backward. The IV pole/arm rotates with little resistance.

Yes **No**
↓ → Go to RAP 2.8.

11. Raise the IV pole. The IV pole retains its vertical position and releases when the IV pole release is pulled downward.

Yes **No**
↓ → Go to RAP 2.9.

12. Go to “Final Actions” on page 2-5.

Final Actions

1. Complete the required preventive maintenance procedures. See “Preventive Maintenance Checklist” on page 6-9.
2. Complete all required administration tasks.

Alarm Summary

See table 2-1 on page 2-6 and table 2-2 on page 2-6 to identify the cause and the appropriate corrective action for alarm conditions on the CarePorter™ Cart.

Gas Manifold Alarms

Table 2-1. Gas Manifold Alarm

Indications	Causes	Actions
The air cylinder LED begins flashing, and an audible alarm sounds.	This occurs when pressure in the air cylinder drops to 600 psi (4137 kPa) and below.	Check the patient. Replace the air cylinder with a full one. The alarm will de-activate when the air cylinder pressure exceeds 600 psi (4137 kPa).
The oxygen cylinder LED begins flashing, and an audible alarm sounds.	This occurs when pressure in the oxygen cylinder drops to 600 psi (4137 kPa) and below.	Check the patient. Replace the oxygen cylinder with a full one. The alarm will de-activate when the oxygen cylinder pressure exceeds 600 psi (4137 kPa).

Transport Power Module (TPM) Alarms

Table 2-2. Transport Power Module (TPM) Alarms

Indications	Causes	Actions
The “Battery On” LED illuminates.	This occurs when the CarePorter™ Cart is on TPM battery power.	None
The “No Ground Present” LED illuminates.	This occurs when no earth ground is present (e.g. when the unit is unplugged during transport and on TPM power).	Remove the CarePorter™ Cart from service, and check the ground connections (only when plugged into a wall outlet).

Indications	Causes	Actions
The “Overload” LED illuminates, the battery charge level indicators blink, and the audible alarm sounds continuously.	This occurs when the electrical load exceeds 110% of the maximum rated capacity.	Reduce the electrical load to ≤ 3 A. Check the current electrical requirements for the equipment plugged into the TPM.
The “No Output Power” LED illuminates, and the audible alarm sounds continuously for a minimum of 3 minutes.	This occurs when no output power is being supplied to the TPM receptacles.	Plug the CarePorter™ Cart into an appropriate power source.
The “Battery Pack Protection Mode”	This occurs when the TPM goes into a low battery pack shut down, and no wall power is present. The TPM will give low battery alarm conditions prior to shut down. Five minutes after the shut down, the TPM will go into the “Battery Pack Protection Mode”.	Remove the CarePorter™ Cart from service. Reset the CarePorter™ Cart by performing the following: <ul style="list-style-type: none"> • Plug the cart into an appropriate power source. • Turn the TPM On/Standby switch to the Standby position.
The “Service Required” LED illuminates, the battery charge level indicators blink, and the audible alarm sounds continuously.	This occurs when a system failure has occurred.	<ul style="list-style-type: none"> • Wait 30 seconds. • Turn the TPM On/Standby switch to the On position.
The “Battery Check/Replace” LED illuminates, and the audible alarm sounds.	This occurs when a battery pack is not connected, and the TPM is connected to wall power, or the battery pack has reached the end of its life.	Check for proper connection, or replace the battery pack.

2.1 Reduced Braking Ability

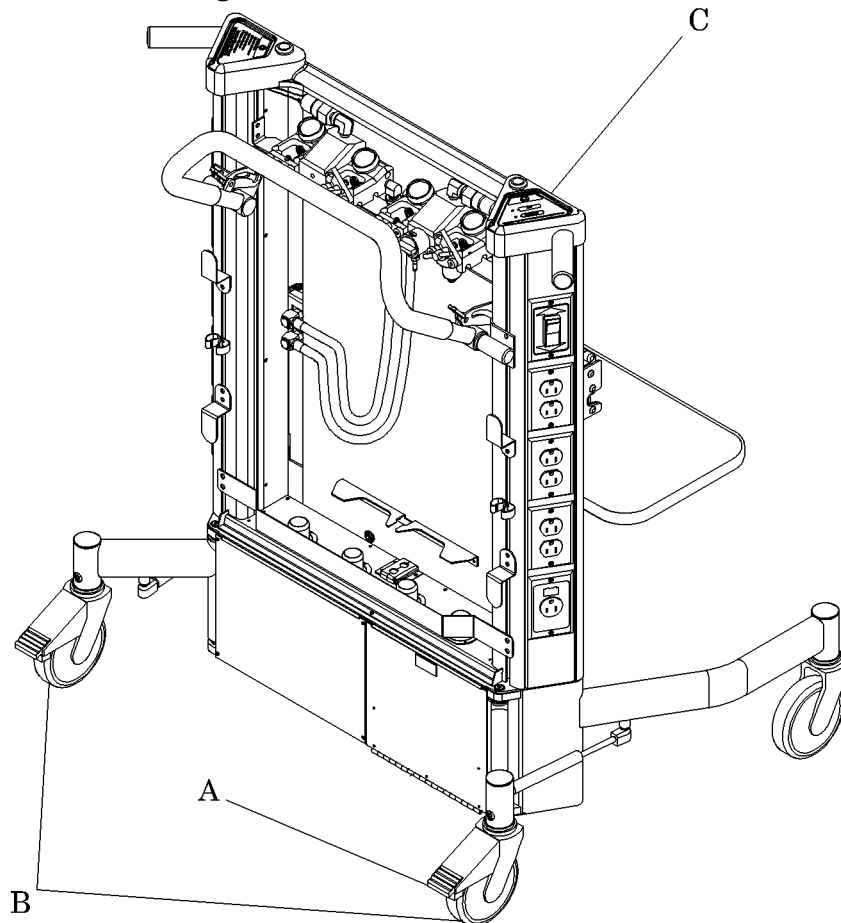
1. The brake caster pedal (A) locks in the brake position when you push on it with your foot (see figure 2-1 on page 2-8).

Yes No



→ Inspect the two rear casters for excessive wear. If necessary, replace the damaged rear brake caster (refer to procedure 4.13). If this solves the problem, go to “Final Actions” on page 2-5. Otherwise, go to step 2.

Figure 2-1. Brake Caster Location



m239_081

2. The two rear casters (B) lock in the brake position and do not roll or rotate when you push in the brake pedal.

Yes No



→ Replace the damaged rear brake caster (refer to procedure 4.13). If this solves the problem, go to “Final Actions” on page 2-5. Otherwise, go to step 3.

3. Another part of the CarePorter™ Cart interferes with the brake mechanism.

Yes No



→ Go to “Final Actions” on page 2-5.

4. Take appropriate actions to eliminate the interference.

This solves the problem.

Yes No



→ Call Hill-Rom Technical Support at (800) 445-3720.

5. Go to “Final Actions” on page 2-5.

2.2 Powered Equipment Shelf

1. Ensure the CarePorter™ Cart is plugged into an appropriate power source.



WARNING:

Ensure the CarePorter™ Cart is not attached to a bed or stretcher during this procedure. Possible personal injury or equipment damage could occur.

2. Disengage the CarePorter™ Cart from the bed or stretcher.
3. Another part of the CarePorter™ Cart interferes with the powered equipment shelf.

Yes **No**
↓ → Go to step 6.

4. Take appropriate actions to eliminate the interference.

This solves the problem.

Yes **No**
↓ → Go to step 6.

5. Go to “Final Actions” on page 2-5.
6. Check the P.C. board to see if voltage is present. Voltage is present on the P.C. board.
Yes **No**
↓ → Check for power in the wall outlet, and from the TPM. If necessary, find a wall outlet with the appropriate power source. If this solves the problem, go to “Final Actions” on page 2-5. Otherwise, go to step 7.

7. Check for continuity of the up/down shelf cable. If necessary, replace the up/down shelf cable.

This solves the problem.

Yes **No**
↓ → Go to step 9.

8. Go to “Final Actions” on page 2-5.
9. Momentarily activate powered equipment shelf rocker switch. The motor runs.

Yes	No
↓	→ Replace the damaged motor assembly (refer to procedure 4.19). If this solves the problem, go to “Final Actions” on page 2-5. Otherwise, go to step 10.

10. Call Hill-Rom Technical Support at (800) 445-3720.

2.3 Latch Engage Malfunction

1. Before coupling the CarePorter™ Cart to the bed or stretcher, make the following adjustments:
 - a. Adjust the power equipment shelf to the designated height for the type of bed or stretcher to be coupled to, as indicated by the label on the front panel of the CarePorter™ Cart.
 - b. Adjust the bed or stretcher to the proper height for coupling to the CarePorter™ Cart.
2. Push the CarePorter™ Cart and bed or stretcher together. The latches and pins engage and automatically couple.
Yes **No**
↓ → Go to step 4.
3. Go to “Final Actions” on page 2-5.
4. The latch assembly requires excessive force to engage the pin mechanism on the bed attachment brackets.
Yes **No**
↓ → Go to step 8.
5. Inspect the latch mechanism assembly for damage. It is damaged.
Yes **No**
↓ → Go to step 8.
6. Replace the damaged latch assembly (refer to procedure 4.15). This solves the problem.
Yes **No**
↓ → Go to step 8.
7. Go to “Final Actions” on page 2-5.
8. Another part of the bed interferes with the latch assembly.
Yes **No**
↓ → Call Hill-Rom Technical Support at (800) 445-3720.
9. Take appropriate actions to eliminate the interference. This solves the problem.
Yes **No**
↓ → Call Hill-Rom Technical Support at (800) 445-3720.
10. Go to “Final Actions” on page 2-5.

2.4 Latch Disengage Malfunction

2

1. If the CarePorter™ Cart is not yet coupled to the bed or stretcher, take these steps:
 - a. Adjust the power equipment shelf to the designated height for the type of bed or stretcher to be coupled to, as indicated by the label on the front panel of the CarePorter™ Cart.
 - b. Adjust the bed or stretcher to the proper height for coupling to the CarePorter™ Cart.
 - c. Push the CarePorter™ Cart and bed or stretcher together.
 - d. Ensure the latches and pins engage and automatically couple.
2. Simultaneously, pull each latch release handle. The CarePorter™ Cart latch releases from the bed attachment pin.
Yes No
↓ → Go to step 4.
3. Go to “Final Actions” on page 2-5.
4. The latch assembly requires excessive force to disengage from the pin on the bed attachment brackets.
Yes No
↓ → Go to step 8.
5. Inspect the latch mechanism assembly for damage. It is damaged.
Yes No
↓ → Go to step 8.
6. Replace the damaged latch assembly (refer to procedure 4.15). This solves the problem.
Yes No
↓ → Go to step 8.
7. Go to “Final Actions” on page 2-5.
8. Another part of the bed interferes with the latch assembly.
Yes No
↓ → Call Hill-Rom Technical Support at (800) 445-3720.
9. Take appropriate actions to eliminate the interference. This solves the problem.

Yes **No**



→ Call Hill-Rom Technical Support at (800) 445-3720.

10. Go to “Final Actions” on page 2-5.

2.5 Gas Spring Malfunction

2

1. Press the rear leg release, and move the CarePorter™ Cart forward. The gas spring pushes the rear legs back into the locked position.

Yes No

↓

→ Go to step 3.

2. Go to “Final Actions” on page 2-5.

3. Inspect the gas spring for proper operation. The gas spring is functioning properly.

Yes No

↓

→ Ensure the gas spring is fully extended. Check the gas spring rod for scratches, nicks, or dents. If necessary, replace the damaged gas spring (refer to procedure 4.12). If this solves the problem, go to “Final Actions” on page 2-5. Otherwise, go to step 4.

4. Another part of the CarePorter™ Cart interferes with the gas spring assembly.

Yes No

↓

→ Call Hill-Rom Technical Support at (800) 445-3720.

5. Take appropriate actions to eliminate the interference.

This solves the problem.

Yes No

↓

→ Call Hill-Rom Technical Support at (800) 445-3720.

6. Go to “Final Actions” on page 2-5.

2.6 Duplex or Simplex Electrical Receptacle—Standard Is Inoperative



SHOCK HAZARD:

Use care when checking live voltages. Do not touch live terminals, wires, and ground. Failure to use caution will cause serious electrical shock injury.

1. Before checking the receptacle, check the following:
 - a. The CarePorter™ Cart has been connected to an external power supply.
 - b. The power cord is not damaged.
 - c. The correlating circuit breaker is in the ON position.
2. A voltage reading of 109 to 125V AC is available between the terminal of the breaker.

Yes	No
↓	→ Replace the damaged circuit breaker (refer to procedure 4.8). If this solves the problem, go to “Final Actions” on page 2-5. Otherwise, go to step 3.
3. A voltage reading of 109 to 125V AC is available at the wire terminals on the receptacle.

Yes	No
↓	→ Repair or replace the wiring between the circuit breaker and the receptacle. If this solves the problem, go to “Final Actions” on page 2-5. Otherwise, go to step 4.
4. The voltage reads from 109 to 125V AC between the receptacle’s short slot and the long slot.

Yes	No
↓	→ Go to step 6.
5. Go to “Final Actions” on page 2-5.
6. Replace the defective receptacle(s) (refer to procedure 4.6) or (refer to procedure 4.9). This solves the problem.

Yes	No
↓	→ Call Hill-Rom Technical Support at (800) 445-3720.
7. Go to “Final Actions” on page 2-5.

2.7 IV Pole/Arm Rotates Freely

1. The IV pole/arm swings freely and does not retain its position during transport.

Yes	No
↓	→ Inspect the adjustment of the IV pole/arm assembly (refer to procedure 4.16).
2. Inspect the friction washers on the upper IV arm hinge. The washers are in good working condition.

Yes	No
↓	→ Replace the damaged friction washer. If this solves the problem, go to “Final Actions” on page 2-5. Otherwise, go to step 3.
3. Adjust the IV pole/arm clutch assemblies. This solves the problem.

Yes	No
↓	→ Call Hill-Rom Technical Support at (800) 445-3720.
4. Go to “Final Actions” on page 2-5.

2.8 IV Pole/Arm Does Not Rotate

1. The IV pole/arm rotates without excessive force.

Yes No

↓

→ Go to step 3.

2. Go to “Final Actions” on page 2-5.

3. Another part of the CarePorter™ Cart interferes with the IV pole/arm assembly.

Yes No

↓

→ Inspect the adjustment of the IV pole/arm assembly (refer to procedure 4.16). If this solves the problem, go to “Final Actions” on page 2-5. Otherwise, go to step 5.

4. Take appropriate actions to eliminate the interference. This solves the problem

Yes No

↓

→ Call Hill-Rom Technical Support at (800) 445-3720.

5. Adjust the IV pole/arm clutch assemblies (refer to procedure 4.16). This solves the problem.

Yes No

↓

→ Call Hill-Rom Technical Support at (800) 445-3720.

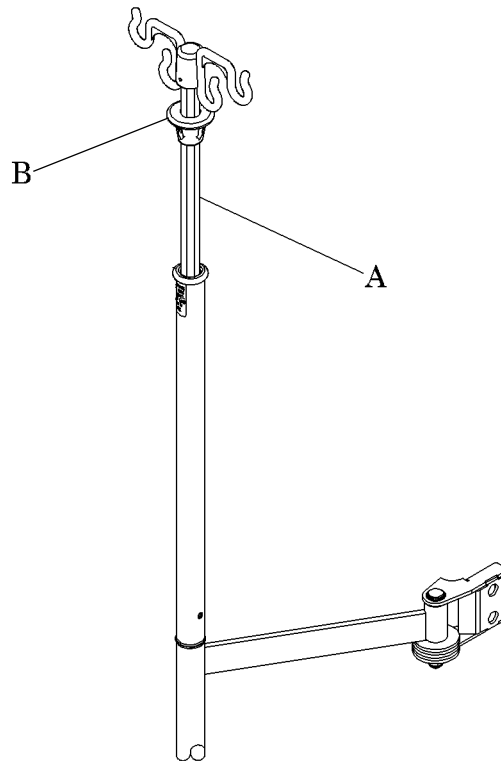
6. Go to “Final Actions” on page 2-5.

2.9 IV Pole Malfunction

1. Raise the IV pole. The IV pole (A) retains its higher position and releases when the IV pole release (B) is pulled downward (see figure 2-2 on page 2-19).

Yes **No**
 ↓ → Go to step 3.

Figure 2-2. IV Pole



m239_082

2. Go to “Final Actions” on page 2-5.
3. Another part of the CarePorter™ Cart or an accessory interferes with the vertical function of the IV pole.
Yes **No**
 ↓ → Inspect the IV pole release for damage. If necessary, replace the defective IV pole/arm assembly (refer to procedure 4.16). If this solves the problem, go to “Final Actions” on page 2-5. Otherwise, call Hill-Rom Technical Support at (800) 445-3720.
4. Take appropriate actions to eliminate the interference. This solves the problem

Yes **No**

↓

→ Call Hill-Rom Technical Support at (800) 445-3720.

5. Go to “Final Actions” on page 2-5.

Chapter 3

Theory of Operation

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Electrical System

Figure 3-1. Column Wiring Diagram

Refer to fold-out FO 3-1 at the rear of this manual.

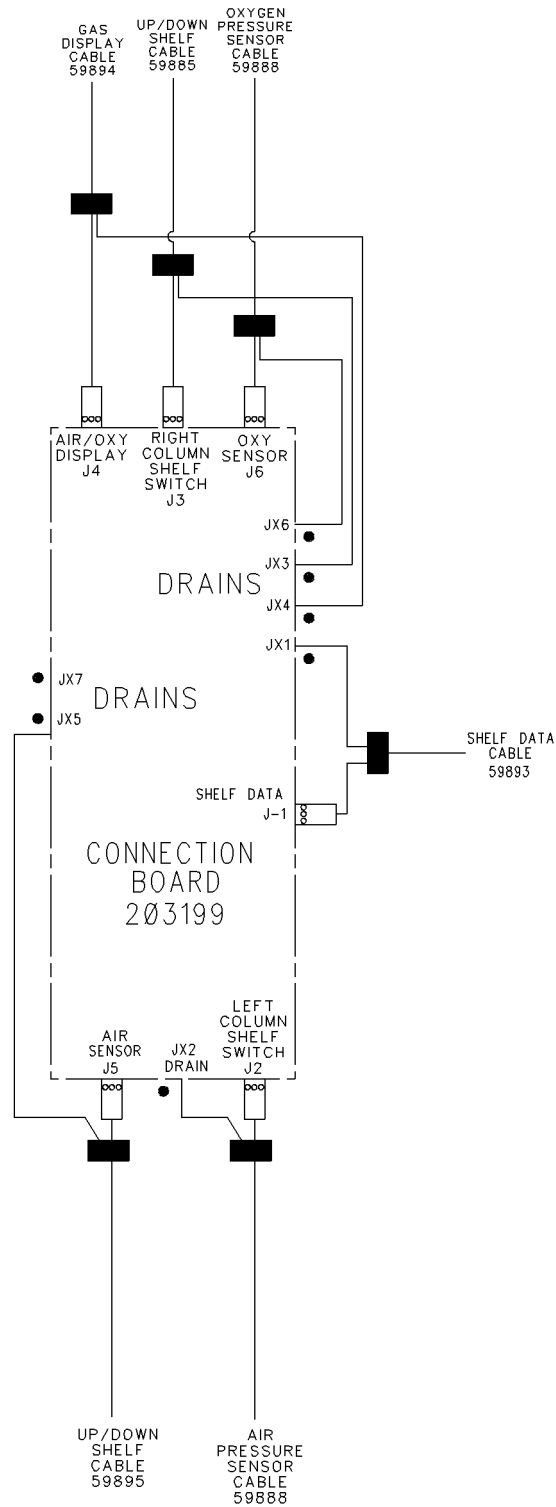
Figure 3-2. Base Wiring Diagram

Refer to fold-out FO 3-2 at the rear of this manual.

Figure 3-3. Ventilator Shelf Wiring Diagram

Refer to fold-out FO 3-3 at the rear of this manual.

Figure 3-4. Connection Board Wiring Diagram



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Theory of Operation

A theory of operation is not available for the CarePorter™ Cart.

NOTES:

Chapter 4

Removal, Replacement, and Adjustment Procedures

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NOTES:

4.1 Transport Power Module (TPM) Battery Pack

Tools required: None



WARNING:

Replace the battery pack **only** with the manufacturer's equipment supplied by Hill-Rom. Failure to do so could result in personal injury or equipment damage.



WARNING:

Do not discard the battery pack into a fire. The battery pack may explode, and possible personal injury or equipment damage could occur.



WARNING:

Do not mutilate or attempt to disassemble the battery pack. Personal injury or equipment damage could occur.



SHOCK HAZARD:

Ensure that proper methods are used when handling the battery pack. A battery pack can present a risk of electric shock. Personal injury could occur.

Removal

1. Place the On/Standby switch to the Standby position.

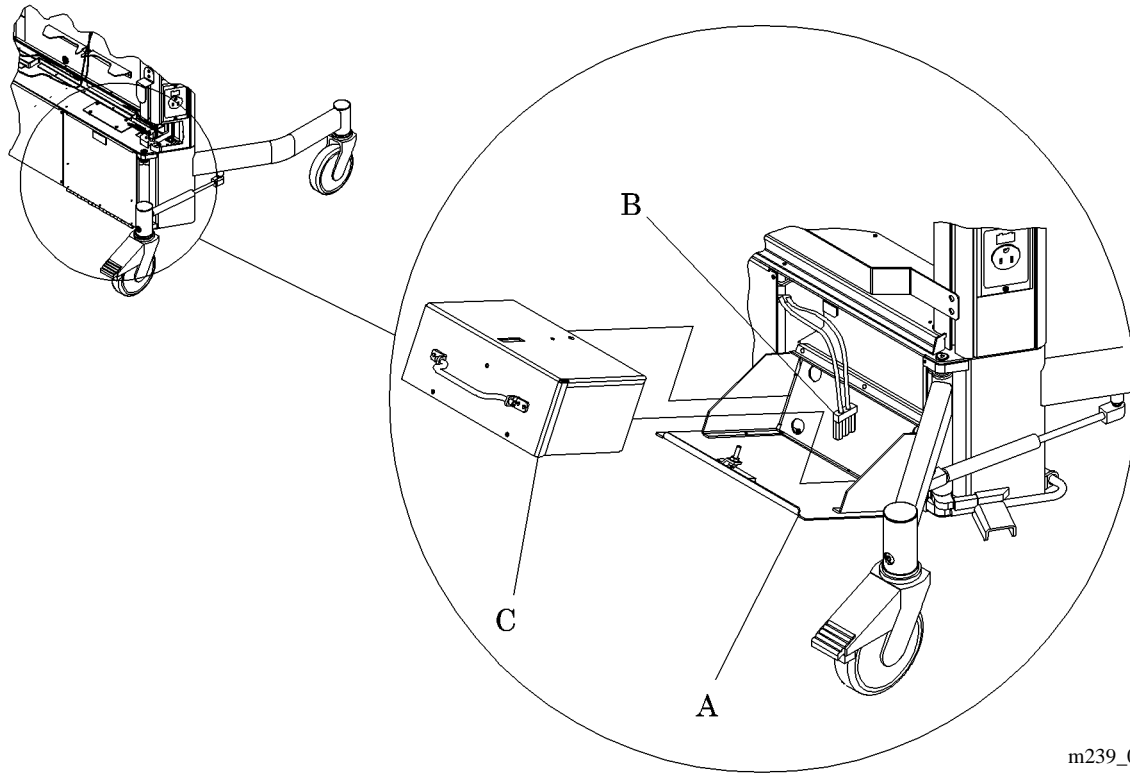


SHOCK HAZARD:

To minimize the risk of electrical shock or damage to equipment, disconnect all electrical power to the CarePorter™ Cart before working on it. Failure to do so could result in personal injury or equipment damage.

2. Unplug the unit from its power source.
3. Set the brake casters to the brake position.
4. Open the TPM battery pack compartment (A) (see figure 4-1 on page 4-6).

Figure 4-1. Transport Power Module (TPM) Battery Pack Location



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CAUTION:

Before removing the TPM battery pack, unplug the TPM battery pack cable. Failure to do so could result in equipment damage.

5. Before removing the TPM battery pack (C), unplug the TPM battery pack cable (B).
6. Remove the TPM battery pack (C) from the unit.

Replacement

1. To install the replacement TPM battery pack (C), reverse the removal procedure.



CAUTION:

Ensure that the TPM battery pack connector is properly connected to the TPM battery pack. Failure to do so could result in equipment damage.

2. Before operating the CarePorter™ Cart, ensure that all connections are properly connected.

Adjustment

No adjustment is required for the TPM battery pack (C).

4.2 Printed Circuit Board Assembly (Motorized Shelf)

Tools required: Phillips head screwdriver Needle nose pliers
Antistatic (electrostatic discharge) strap



CAUTION:

Adhere to all electrical safety precautions when servicing the unit's electrical system. Failure to do so could result in equipment damage.



CAUTION:

Ensure that your hands are clean, and **only** handle the P.C. boards by their edges to prevent component damage.



CAUTION:

Wear an antistatic strap when handling electronic components. Failure to do so could result in component damage.



CAUTION:

Place the removed P.C. boards in antistatic protective bags for shipping and storage. Equipment damage can occur. See "P.C. Boards" on page 6-4 for additional information.

Removal

1. Place the On/Standby switch to the Standby position.

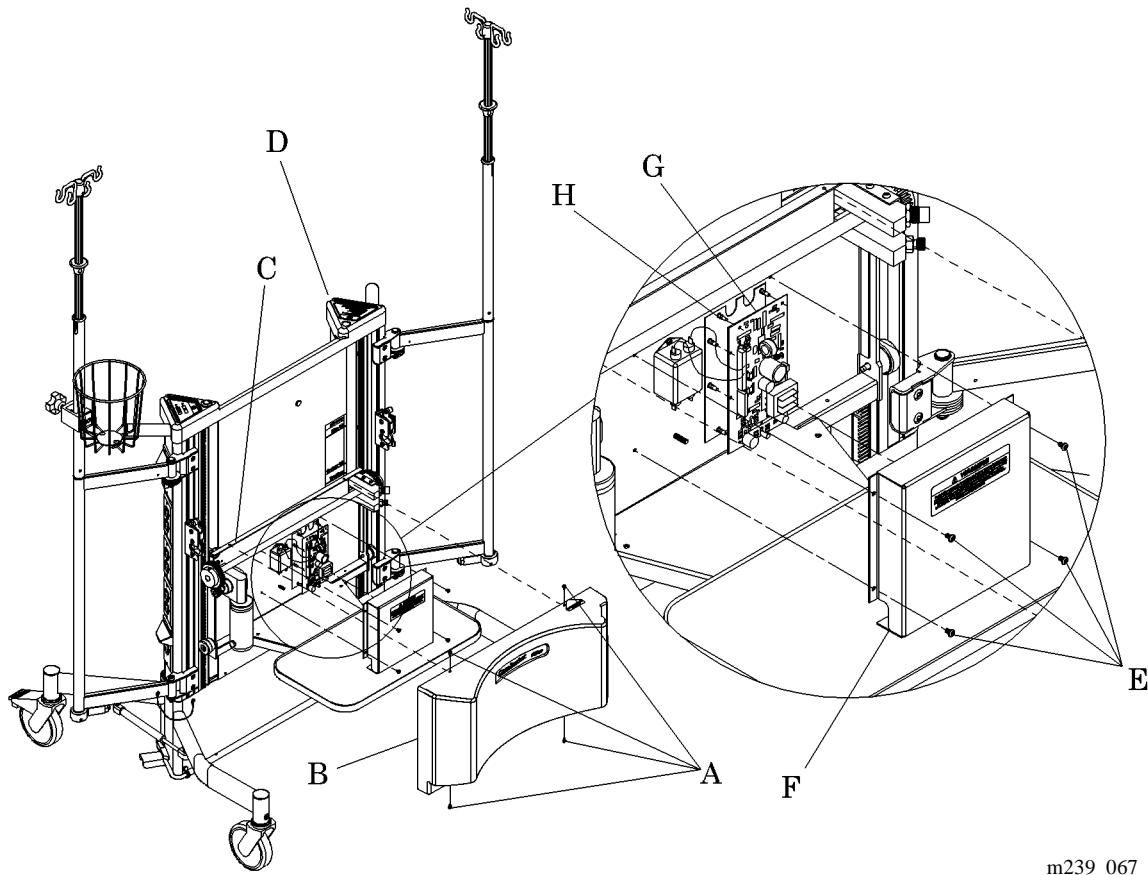


SHOCK HAZARD:

To minimize the risk of electrical shock or damage to equipment, disconnect all electrical power to the CarePorter™ Cart before working on it. Failure to do so could result in personal injury or equipment damage.

2. Unplug the unit from its power source.
3. Disconnect the battery pack (refer to procedure 4.1).
4. Set the brake casters to the brake position.
5. Using the phillips head screwdriver, remove the four screws (A) that secure the shelf cover (B) to the shelf carriage weldment (C) (see figure 4-2 on page 4-9).

Figure 4-2. Printed Circuit Board Assembly (Motorized Shelf)



m239_067

6. Remove the shelf cover (B) from the CarePorter™ Cart (D).
7. Using the phillips head screwdriver, remove the four screws (E) that secure the printed circuit board cover (F) to the shelf carriage weldment (C).
8. Remove the printed circuit board cover (F) from the CarePorter™ Cart (D).



CAUTION:

Ensure that all color-coded wires are marked to ensure proper connection during the installation procedure. Failure to do so could result in equipment damage.

9. Identify and disconnect the wiring connectors from the printed circuit board (G).
10. Using the needle nose pliers, compress the standoffs (H), and remove the printed circuit board (G).

Installation



CAUTION:

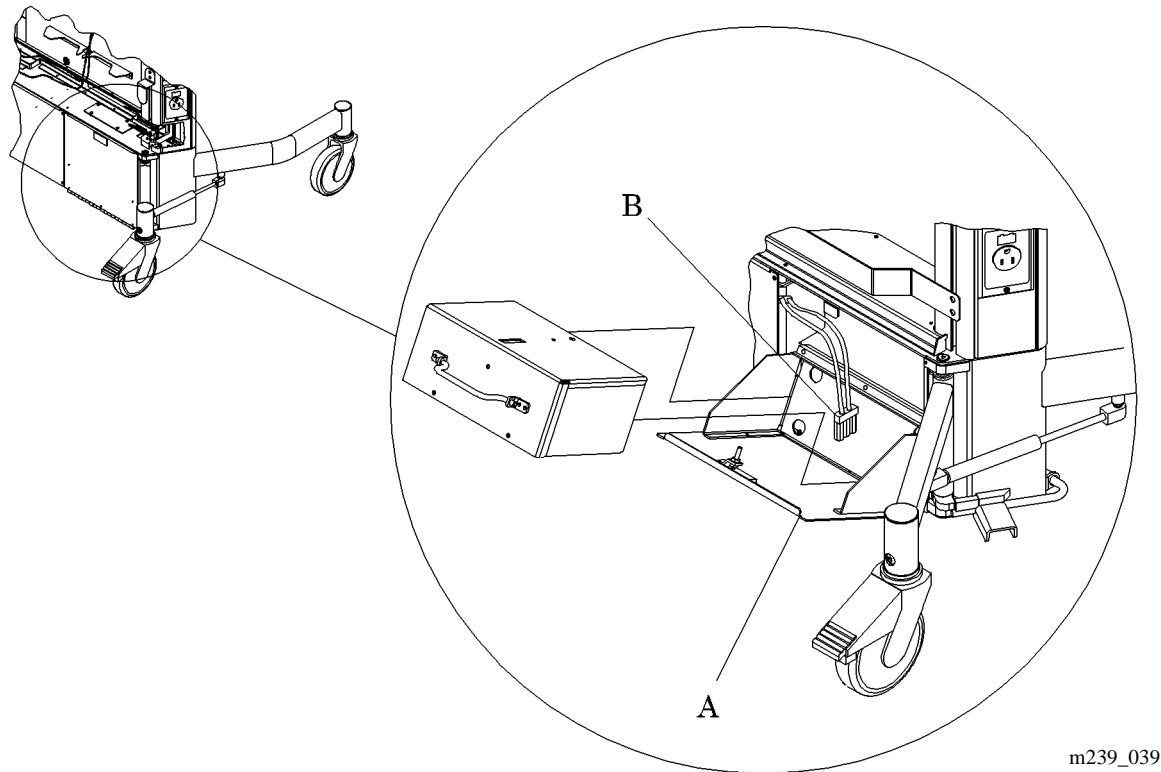
Ensure that the color-coded wires are connected properly as marked. Failure to do so could result in equipment damage.

To install the replacement printed circuit board (G), reverse the removal procedure.

Adjustment

No adjustment is required for the printed circuit board (G).

Figure 4-3. Transport Power Module (TPM) Battery Pack Location



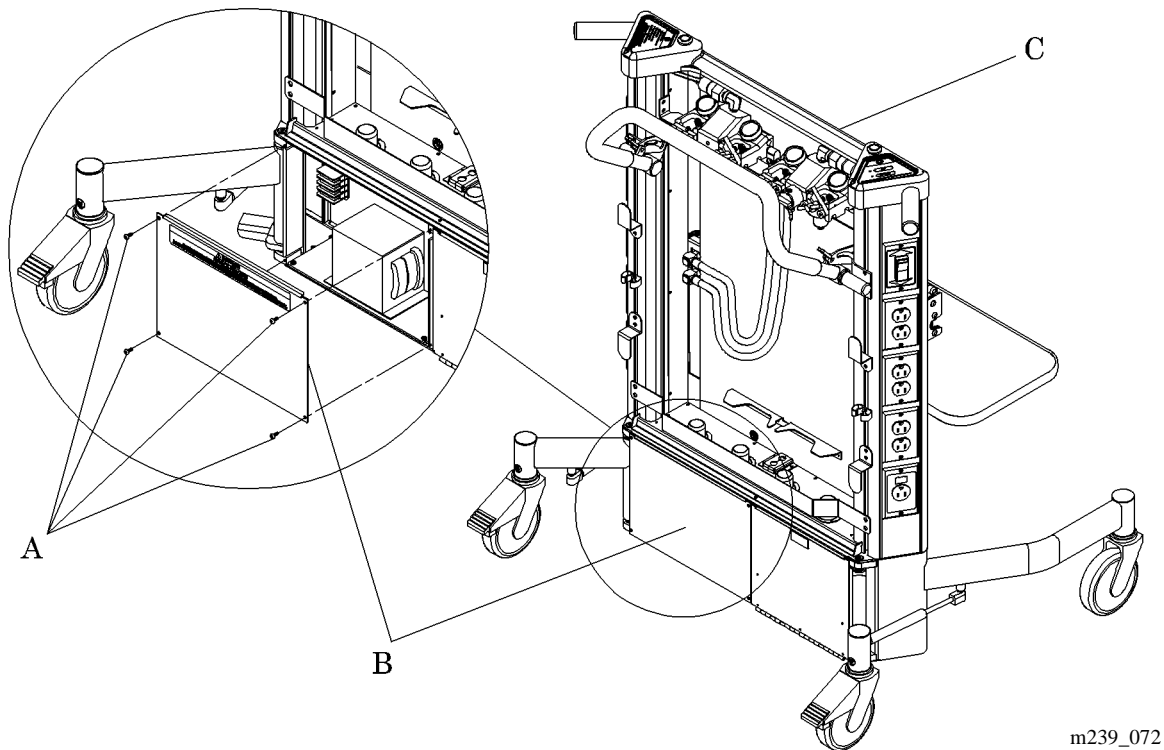
m239_039



CAUTION:

Before removing the TPM battery pack, unplug the TPM battery pack cable. Failure to do so could result in equipment damage.

6. Before removing the TPM battery pack, unplug the TPM battery pack cable (B).
7. Remove the raceway cover.
8. Using the phillips head screwdriver, remove the four screws (A) from the TPM cover plate (B) (see figure 4-4 on page 4-13).

Figure 4-4. TPM Cover Plate Removal

9. Remove the TPM cover plate (B) from the CarePorter™ Cart (C).

**WARNING:**

Mark and note the position and proper connection of all wiring before disconnecting. Failure to do so could result in personal injury or equipment damage.

10. Disconnect the wires from the terminal block.
11. Disconnect the lower (orange) plug from the TPM circuit board.
12. Remove the ground wires, and ground stud.
13. Disconnect the wires to the On/Standby switch.
14. Remove the battery pack cable cover plate between the battery pack compartment, and the TPM compartment.
15. Using the phillips head screwdriver, remove the two screws that secure the Transport Power Module (TPM) to the base weldment.

16. Mark and note the orientation and proper connection of all wiring to ensure proper installation during the replacement procedure.
17. Carefully disconnect the receptacle output connectors from the TPM.
18. Carefully disconnect the receptacle input connectors from the TPM.
19. Carefully disconnect the LVC cables from the TPM P.C. board, and the connector board.
20. Carefully disconnect the spade connectors from the TPM P.C. board.
21. Remove the HV cover.
22. Pull the HV cable up and out to remove it from the TPM.
23. Pull the LVC cable to the connector board downward, and out.
24. Carefully tuck the remaining cables into the side cavity of the CarePorter™ Cart base weldment to gain side clearance for the TPM removal.
25. Using the ratchet and 11/32" socket, remove the nut that secures the ground wires to the ground post.

**CAUTION:**

Do not pinch the cables when removing the TPM. Possible equipment damage could occur.

26. Carefully remove the TPM from the CarePorter™ Cart base weldment without pinching the wires.

Replacement

1. To install the replacement TPM, reverse the removal procedure.

**WARNING:**

Ensure that the gasket seals are properly installed in the effective areas. Failure to do so could result in personal injury or equipment damage.

2. Ensure that the gasket seals are properly installed in the effective areas.

Adjustment

No adjustment is required for the TPM.

4.4 Line Voltage Fuse

Tools required: Screwdriver

Antistatic strap



CAUTION:

Adhere to all electrical safety precautions when servicing the unit's electrical system. Failure to do so could result in equipment damage.



CAUTION:

Ensure that your hands are clean, and **only** handle the P.C. boards by their edges to prevent component damage.



CAUTION:

Wear an antistatic strap when handling electronic components. Failure to do so could result in component damage.



CAUTION:

Place the removed P.C. boards in antistatic protective bags for shipping and storage. Equipment damage can occur. See "P.C. Boards" on page 6-4 for additional information.

Removal

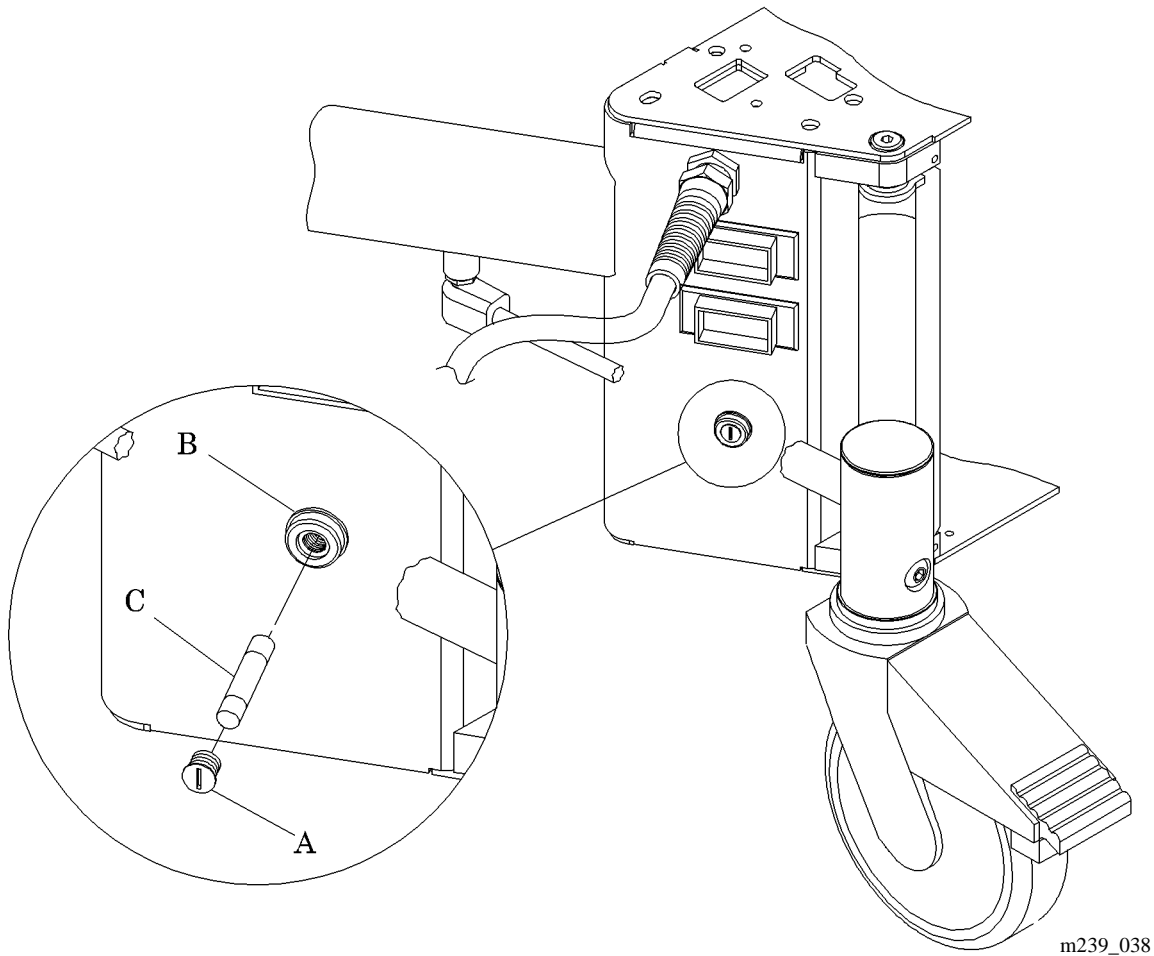
1. Place the On/Standby switch to the Standby position.



SHOCK HAZARD:

To minimize the risk of electrical shock or damage to equipment, disconnect all electrical power to the CarePorter™ Cart before working on it. Failure to do so could result in personal injury or equipment damage.

2. Unplug the unit from its power source.
3. Disconnect the battery pack (refer to procedure 4.1).
4. Set the brake casters to the brake position.
5. Using the screwdriver, push in and turn the fuse cap (A) counterclockwise (see figure 4-5 on page 4-17). Remove the fuse cap (A) from the fuse housing (B).

Figure 4-5. Line Voltage Fuse Location

6. Remove the line voltage fuse (C) from the fuse housing (B).

Replacement

1. Install a 5 A, slo-blo fuse (C) into the fuse housing (B).
2. Install the fuse cap.
3. Using the screwdriver, push inward, and turn clockwise to secure.

Adjustment

No adjustment is required for the line voltage fuse.

4.5 Printed Circuit Board Fuse

Tools required: Phillips head screwdriver Needle nose pliers
 Antistatic strap



CAUTION:

Adhere to all electrical safety precautions when servicing the unit's electrical system. Failure to do so could result in equipment damage.



CAUTION:

Ensure that your hands are clean, and **only** handle the P.C. boards by their edges to prevent component damage.



CAUTION:

Wear an antistatic strap when handling electronic components. Failure to do so could result in component damage.



CAUTION:

Place the removed P.C. boards in antistatic protective bags for shipping and storage. Equipment damage can occur. See "P.C. Boards" on page 6-4 for additional information.

Removal

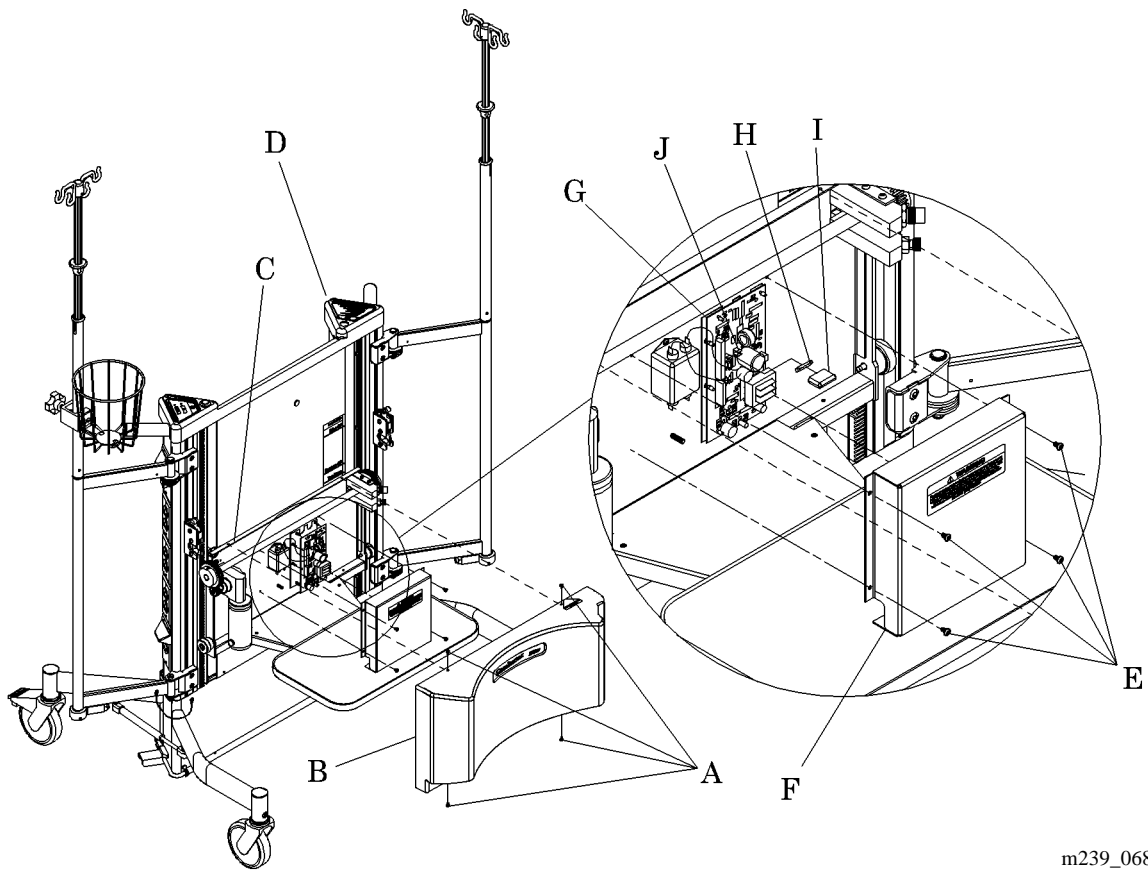
1. Place the On/Standby switch to the Standby position.



SHOCK HAZARD:

To minimize the risk of electrical shock or damage to equipment, disconnect all electrical power to the CarePorter™ Cart before working on it. Failure to do so could result in personal injury or equipment damage.

2. Unplug the unit from its power source.
3. Disconnect the battery pack (refer to procedure 4.1).
4. Set the brake casters to the brake position.
5. Using the phillips head screwdriver, remove the four screws (A) that secure the shelf cover (B) to the shelf carriage weldment (C) (see figure 4-6 on page 4-19).

Figure 4-6. Printed Circuit Board Fuse Location

m239_068

6. Remove the shelf cover (B) from the CarePorter™ Cart (D).
7. Using the phillips head screwdriver, remove the four screws (E) that secure the printed circuit board cover (F) to the shelf carriage weldment (C).
8. Remove the printed circuit board cover (F) from the CarePorter™ Cart (D).
9. Locate the high voltage fuse (H) on the printed circuit board (G)
10. Carefully remove the fuse cover (I).
11. Carefully remove the high voltage fuse (H) from the fuse bracket (J).

Replacement

To install the replacement high voltage fuse (H), reverse the removal procedure.

NOTE:

The replacement fuse must be the correct fuse that is specified.

Adjustment

No adjustment is required for the high voltage fuse (H).

4.6 Duplex Receptacle

Tools required: Screwdriver
Phillips head screwdriver

Removal

**CAUTION:**

Adhere to all electrical safety precautions when servicing the unit's electrical system. Failure to do so could result in equipment damage.

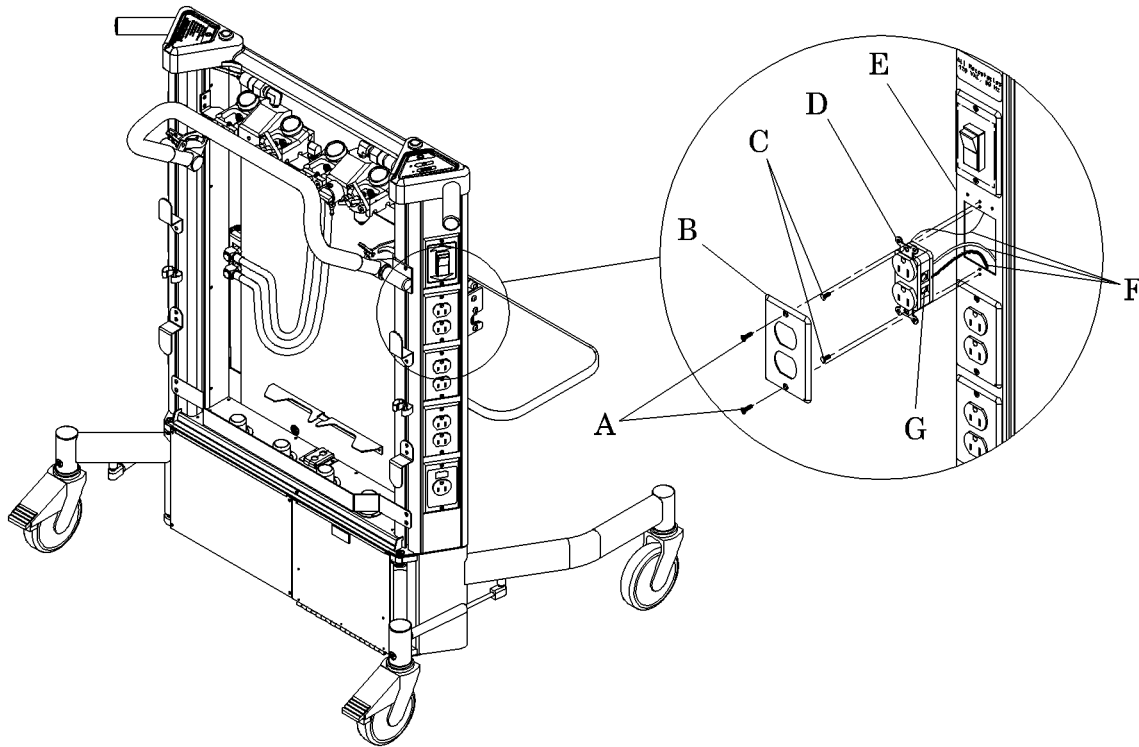
1. Place the On/Standby switch to the Standby position.

**SHOCK HAZARD:**

To minimize the risk of electrical shock or damage to equipment, disconnect all electrical power to the CarePorter™ Cart before working on it. Failure to do so could result in personal injury or equipment damage.

2. Unplug the unit from its power source.
3. Disconnect the battery pack (refer to procedure 4.1).
4. Set the brake casters to the brake position.
5. Using the phillips head screwdriver, remove the two screws (A) from the duplex receptacle faceplate (B) (see figure 4-7 on page 4-22).

Figure 4-7. Duplex Receptacle Removal



m239_046

6. Remove the duplex receptacle faceplate (B).
7. Using the phillips head screwdriver, remove the two screws (C) that secure the duplex receptacle (D) to the device mount weldment (E).
8. Pull the duplex receptacle (D) out of the opening in the device mount weldment (E).
9. Using the screwdriver, loosen the terminal screws (G) holding the color-coded wires (F).
10. Note the color, orientation, and location of the color-coded wires (F).
11. Pull the wires out of the connection hole, and remove the color-coded wires (F) from the terminals.

Replacement

1. Connect the color-coded wires (F) to their original terminals.

2. Using the screwdriver, tighten the terminal screws (G).
3. Push the duplex receptacle (D) into the opening in the device mount weldment (E).
4. Using the phillips head screwdriver, install the two screws (C) that secure the duplex receptacle (D) to the device mount weldment (E).
5. Cover the duplex receptacle faceplate (B).
6. Using the phillips head screwdriver, install the two screws (A) that secure the duplex receptacle faceplate (B).
7. Test the duplex receptacle (D) for availability of power, and proper grounding (refer to procedure 2.6).

Adjustment

No adjustment is required for the duplex receptacle (D).

4.7 Powered Equipment Shelf Rocker Switch

Tools required: Screwdriver
 Phillips head screwdriver

Removal



CAUTION:

Adhere to all electrical safety precautions when servicing the unit's electrical system. Failure to do so could result in equipment damage.

1. Place the On/Standby switch to the Standby position.

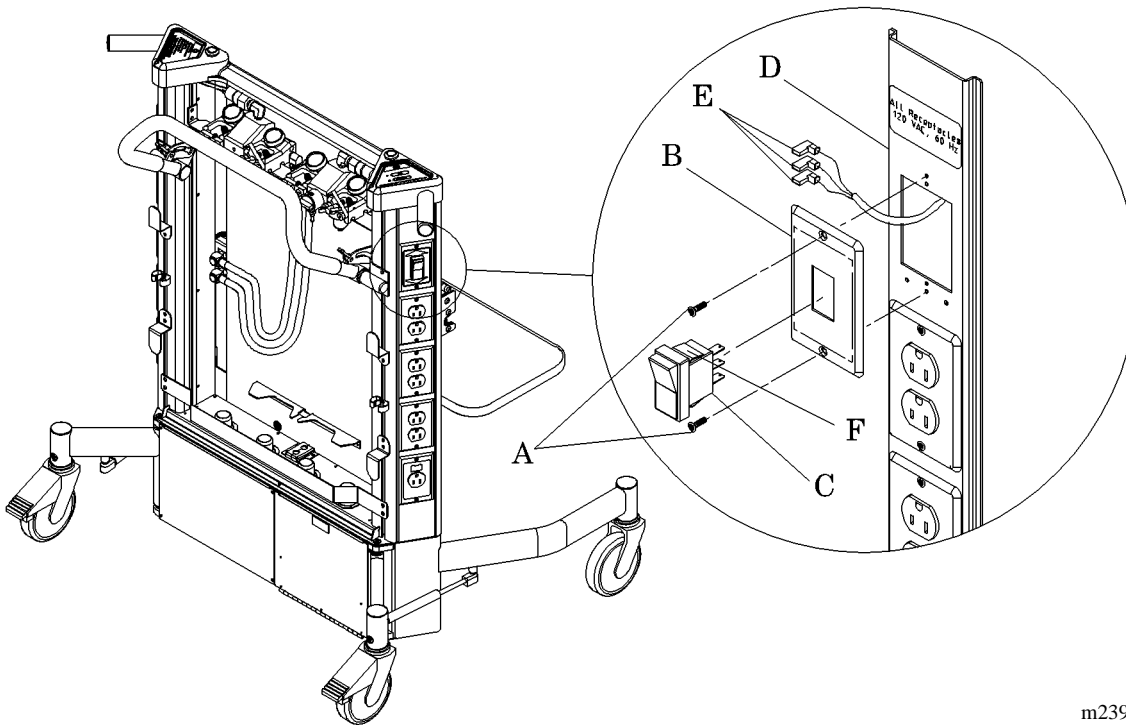


SHOCK HAZARD:

To minimize the risk of electrical shock or damage to equipment, disconnect all electrical power to the CarePorter™ Cart before working on it. Failure to do so could result in personal injury or equipment damage.

2. Unplug the unit from its power source.
3. Disconnect the battery pack (refer to procedure 4.1).
4. Set the brake casters to the brake position.
5. Using the phillips head screwdriver, remove the two screws (A) from the rocker switch faceplate (B) (see figure 4-8 on page 4-25).

Figure 4-8. Rocker Switch Removal



m239_048

6. Pull the rocker switch faceplate (B) and rocker switch (C) out of the opening in the device mount weldment (D).
7. Disconnect the three color-coded wires (E) from the rocker switch (C).
8. Note the color, orientation, and location of the color-coded wires (E).
9. Depress the lock tabs (F) on the top and bottom of the rocker switch (C).
10. Remove the rocker switch (C) from the rocker switch faceplate (B).

Replacement

to install the replacement rocker switch (C), reverse the removal procedure.

Adjustment

No adjustment is required for the rocker switch (C).

4.8 Breaker Switches

Tools required: Phillips head screwdriver Needle nose pliers

Removal



CAUTION:

Adhere to all electrical safety precautions when servicing the unit's electrical system. Failure to do so could result in equipment damage.

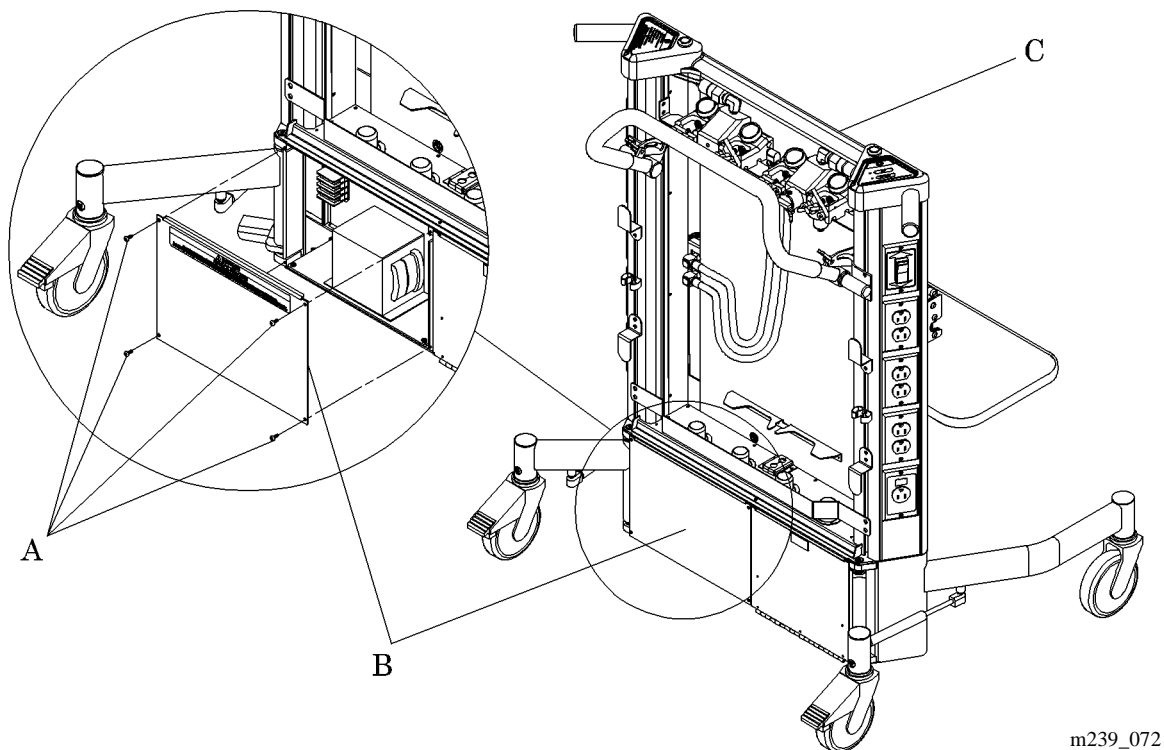
1. Place the On/Standby switch to the Standby position.



SHOCK HAZARD:

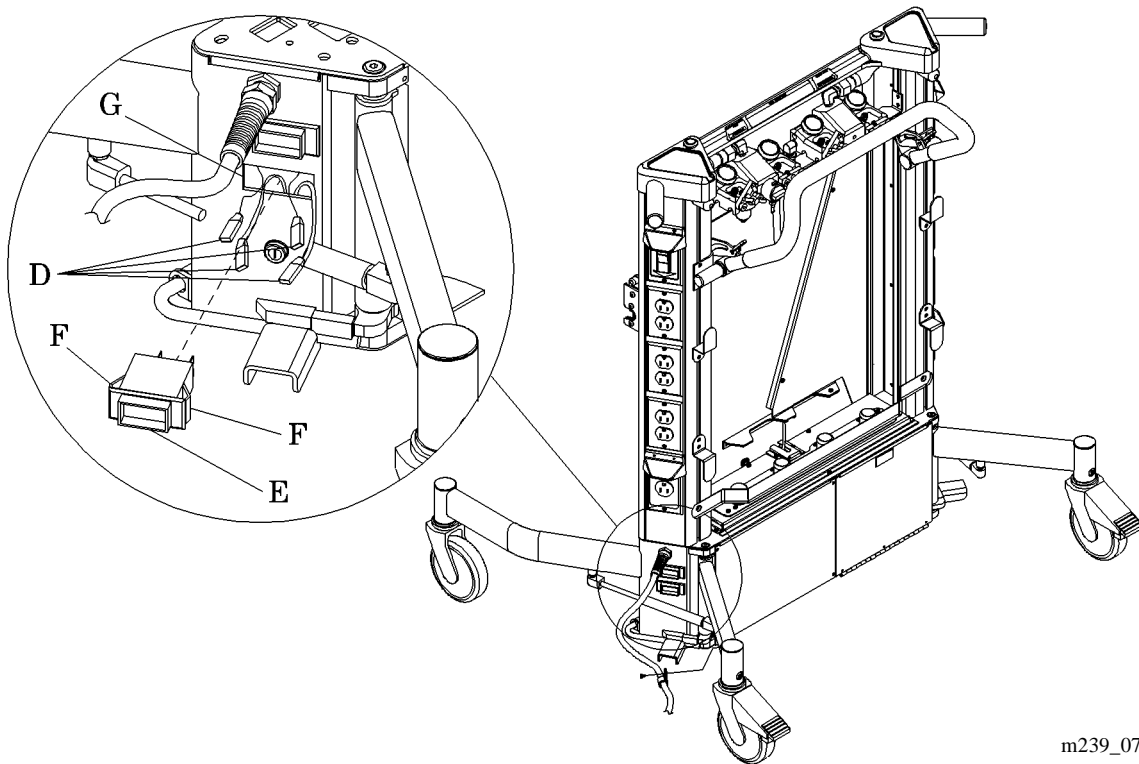
To minimize the risk of electrical shock or damage to equipment, disconnect all electrical power to the CarePorter™ Cart before working on it. Failure to do so could result in personal injury or equipment damage.

2. Unplug the unit from its power source.
3. Disconnect the battery pack (refer to procedure 4.1).
4. Set the brake casters to the brake position.
5. Using the phillips head screwdriver, remove the four screws (A) from the TPM cover plate (B) (see figure 4-9 on page 4-27).

Figure 4-9. TPM Cover Plate Removal

6. Remove the TPM cover plate (B) from the CarePorter™ Cart (C).
7. Disconnect the wires (D) from the damaged breaker switch (E) (see figure 4-10 on page 4-28).

Figure 4-10. Breaker Switch Removal



m239_073

8. Note the color, orientation, and location of the wires (D).

NOTE:

Note the orientation of the breakers to ensure proper positioning during the replacement procedure.

9. Depress and squeeze the lock tabs (F) on both sides of the breaker switch (E).
10. Push out and remove the breaker switch (E) from the base weldment (G).

Replacement

To install the replacement breaker switch (E), reverse the removal procedure.

Adjustment

No adjustment is required for the breaker switch (E).

4.9 Simplex Receptacle

Tools required: Screwdriver
Phillips head screwdriver

Removal

**CAUTION:**

Adhere to all electrical safety precautions when servicing the unit's electrical system. Failure to do so could result in equipment damage.

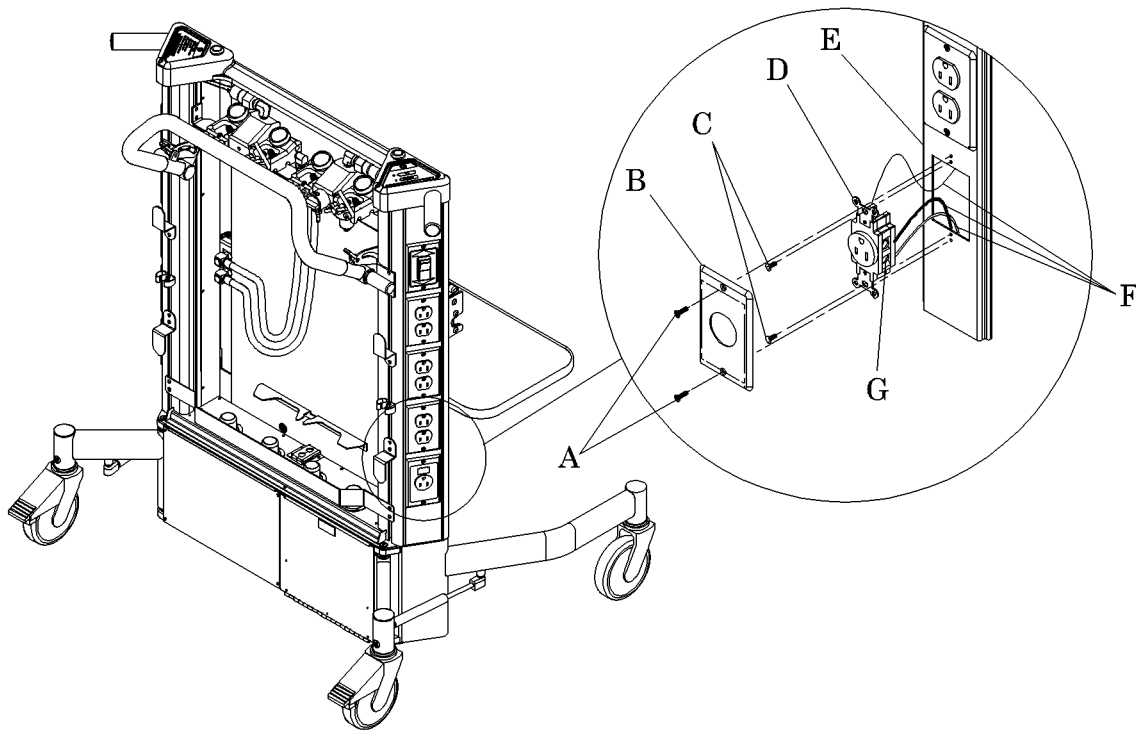
1. Place the On/Standby switch to the Standby position.

**SHOCK HAZARD:**

To minimize the risk of electrical shock or damage to equipment, disconnect all electrical power to the CarePorter™ Cart before working on it. Failure to do so could result in personal injury or equipment damage.

2. Unplug the unit from its power source.
3. Disconnect the battery pack (refer to procedure 4.1).
4. Set the brake casters to the brake position.
5. Using the phillips head screwdriver, remove the two screws (A) from the simplex receptacle faceplate (B) (see figure 4-11 on page 4-30).

Figure 4-11. Simplex Receptacle Removal



m239_047

6. Remove the simplex receptacle faceplate (B).
7. Using the phillips head screwdriver, remove the two screws (C) that secure the simplex receptacle (D) to the device mount weldment (E).
8. Pull the simplex receptacle (D) out of the opening in the device mount weldment (E).
9. Using the screwdriver, loosen the terminal screws (G) holding the color-coded wires (F).
10. Note the color, orientation, and location of the color-coded wires (F).
11. Pull the wires out of the connection hole, and remove the color-coded wires (F) from the terminals.

Replacement

1. Connect the color-coded wires (F) to their terminals on the new receptacle.

2. Using the screwdriver, tighten the terminal screws (G).
3. Push the new simplex receptacle (D) into the opening in the device mount weldment (E).
4. Using the phillips head screwdriver, install the two screws (C) that secure the simplex receptacle (D) to the device mount weldment (E).
5. Position the simplex receptacle faceplate (B) over the simplex receptacle.
6. Using the phillips head screwdriver, install the two screws (A) that secure the simplex receptacle faceplate (B).
7. Test the simplex receptacle (D) for availability of power, and proper grounding (refer to procedure 2.6).

Adjustment

No adjustment is required for the simplex receptacle (D).

4.10 TPM Display Board

Tools required: Phillips head screwdriver Screwdriver
 Antistatic (electrostatic discharge) strap

Parts required: (1) 59864 TPM display board

Removal



CAUTION:

Adhere to all electrical safety precautions when servicing the unit's electrical system. Failure to do so could result in equipment damage.



CAUTION:

Ensure that your hands are clean, and **only** handle the P.C. boards by their edges to prevent component damage.



CAUTION:

Wear an antistatic strap when handling electronic components. Failure to do so could result in component damage.



CAUTION:

Place the removed P.C. boards in antistatic protective bags for shipping and storage. Equipment damage can occur. See "P.C. Boards" on page 6-4 for additional information.

1. Place the On/Standby switch to the Standby position.



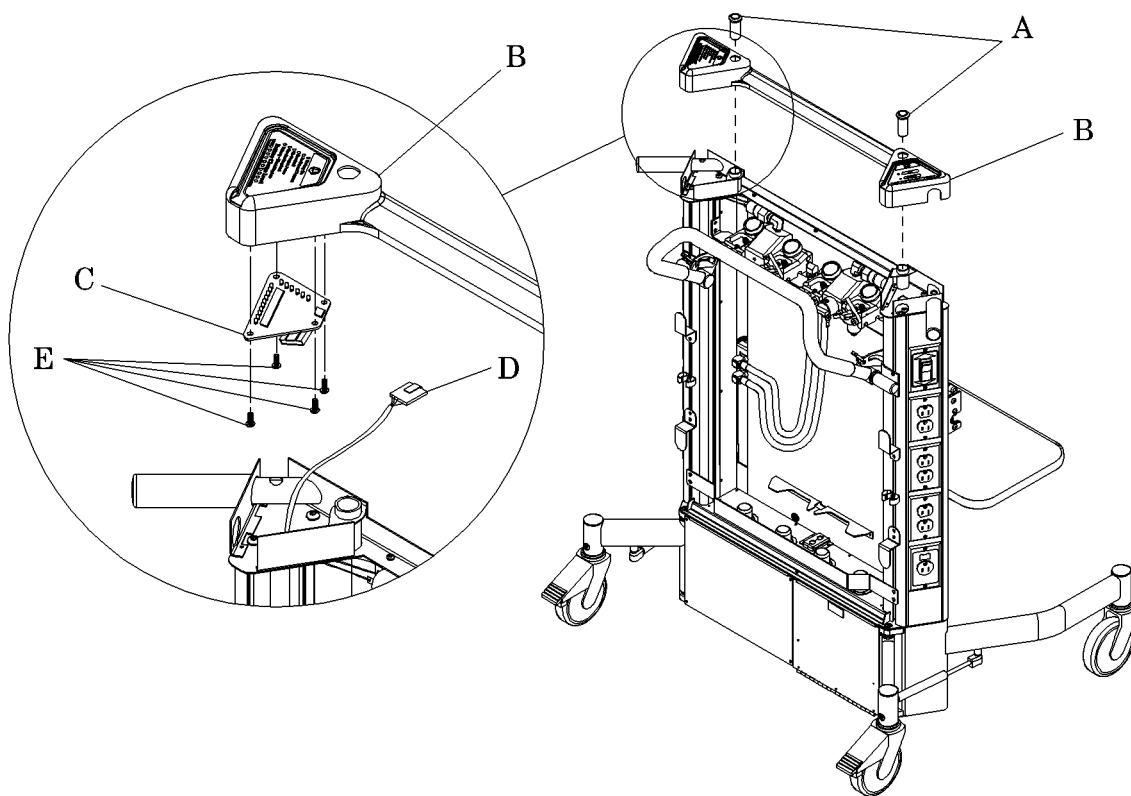
SHOCK HAZARD:

To minimize the risk of electrical shock or damage to equipment, disconnect all electrical power to the CarePorter™ Cart before working on it. Failure to do so could result in personal injury or equipment damage.

2. Unplug the unit from its power source.
3. Disconnect the battery pack (refer to procedure 4.1).
4. Set the brake casters to the brake position.

5. Remove the two ISS socket adapters (A) from the top cover assembly (B) (see figure 4-12 on page 4-33).

Figure 4-12. TPM Display Board Removal



m239_049

6. Carefully lift up the top cover assembly (B) to expose the TPM display board (C).
7. Carefully disconnect the TPM display cable (D) from the TPM display board (C).
8. Using the phillips head screwdriver, remove the four screws (E) that secure the TPM display board (C) to the top cover assembly (B).

Replacement

To install the replacement TPM display board (C), reverse the removal procedure.

Adjustment

No adjustment is required for the TPM display board (C).

4.11 Gas Display Board

Tools required: Phillips head screwdriver Screwdriver
Antistatic (electrostatic discharge) strap

Removal

**CAUTION:**

Adhere to all electrical safety precautions when servicing the unit's electrical system. Failure to do so could result in equipment damage.

**CAUTION:**

Ensure that your hands are clean, and **only** handle the P.C. boards by their edges to prevent component damage.

**CAUTION:**

Wear an antistatic strap when handling electronic components. Failure to do so could result in component damage.

**CAUTION:**

Place the removed P.C. boards in antistatic protective bags for shipping and storage. Equipment damage can occur. See "P.C. Boards" on page 6-4 for additional information.

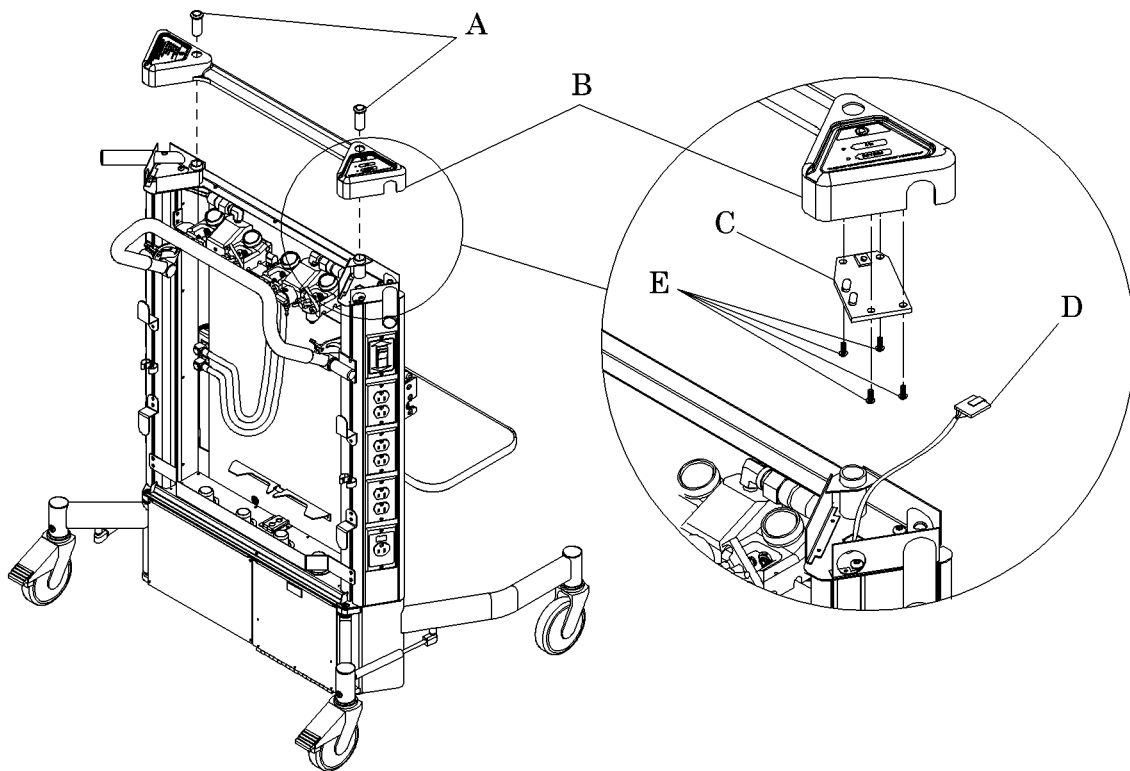
1. Place the On/Standby switch to the Standby position.

**SHOCK HAZARD:**

To minimize the risk of electrical shock or damage to equipment, disconnect all electrical power to the CarePorter™ Cart before working on it. Failure to do so could result in personal injury or equipment damage.

2. Unplug the unit from its power source.
3. Disconnect the battery pack (refer to procedure 4.1).
4. Set the brake casters to the brake position.
5. Remove the two ISS socket adapters (A) from the top cover assembly (B) (see figure 4-12 on page 4-33).

Figure 4-13. Gas Display Board Removal



m239_050

6. Carefully lift up the top cover assembly (B) to expose the gas display board (C).
7. Carefully disconnect the gas display cable (D) from the gas display board (C).
8. Using the phillips head screwdriver, remove the four screws (E) that secure the gas display board (C) to the top cover assembly (B).

Replacement

To install the replacement gas display board (C), reverse the removal procedure.

Adjustment

No adjustment is required for the gas display board (C).

4.12 Gas Spring

Tools required: Small screwdriver

Removal

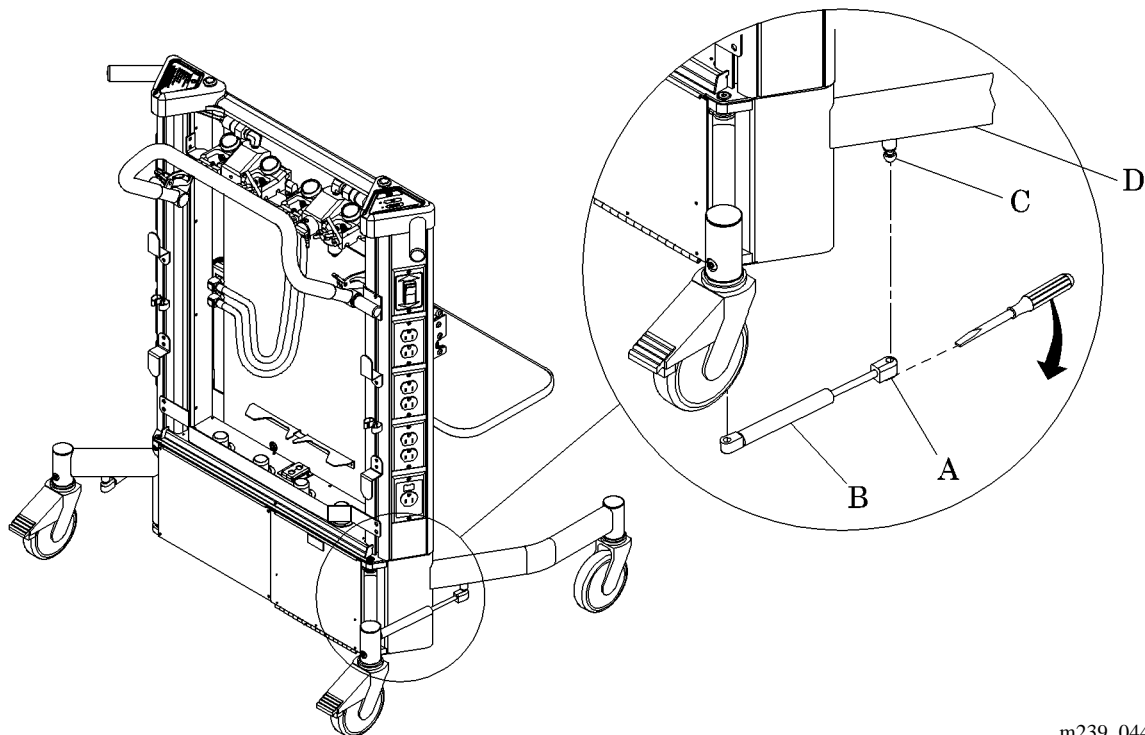
1. Place the On/Standby switch to the Standby position.



SHOCK HAZARD:

To minimize the risk of electrical shock or damage to equipment, disconnect all electrical power to the CarePorter™ Cart before working on it. Failure to do so could result in personal injury or equipment damage.

2. Unplug the unit from its power source.
3. Disconnect the battery pack (refer to procedure 4.1).
4. Set the brake casters to the brake position
5. Using the small screwdriver, insert the flat section of the blade underneath the clip (A) on each end of the gas spring assembly (B), and pry downward to release the gas spring assembly (B) from the ball stud (C) (see figure 4-14 on page 4-38).

Figure 4-14. Gas Spring Assembly

m239_044

6. Remove the gas spring assembly (B) from the base weldment (D).

Replacement

1. Insert the ball stud (C) into one end of the new gas spring assembly (B), and apply pressure to the gas spring assembly (B) until the ball stud (C) snaps into the clip (A).
2. Repeat step 1 to install the other end of the gas spring assembly (B) onto the ball stud (C) located on the base weldment.
3. Ensure both ends of the gas spring assembly (B) are attached properly to the ball studs (C).
4. Test the gas spring assembly for proper operation.

Adjustment

No adjustment is required for the gas spring assembly (B).

4.13 Caster

Tools required: 5 mm allen wrench 6" (15 cm) block

Removal

**SHOCK HAZARD:**

To minimize the risk of electrical shock or damage to equipment, disconnect all electrical power to the CarePorter™ Cart before working on it. Failure to do so could result in personal injury or equipment damage.

1. Place the On/Standby switch to the Standby position.

**WARNING:**

Use proper lifting methods. Failure to do so could result in personal injury or equipment damage.

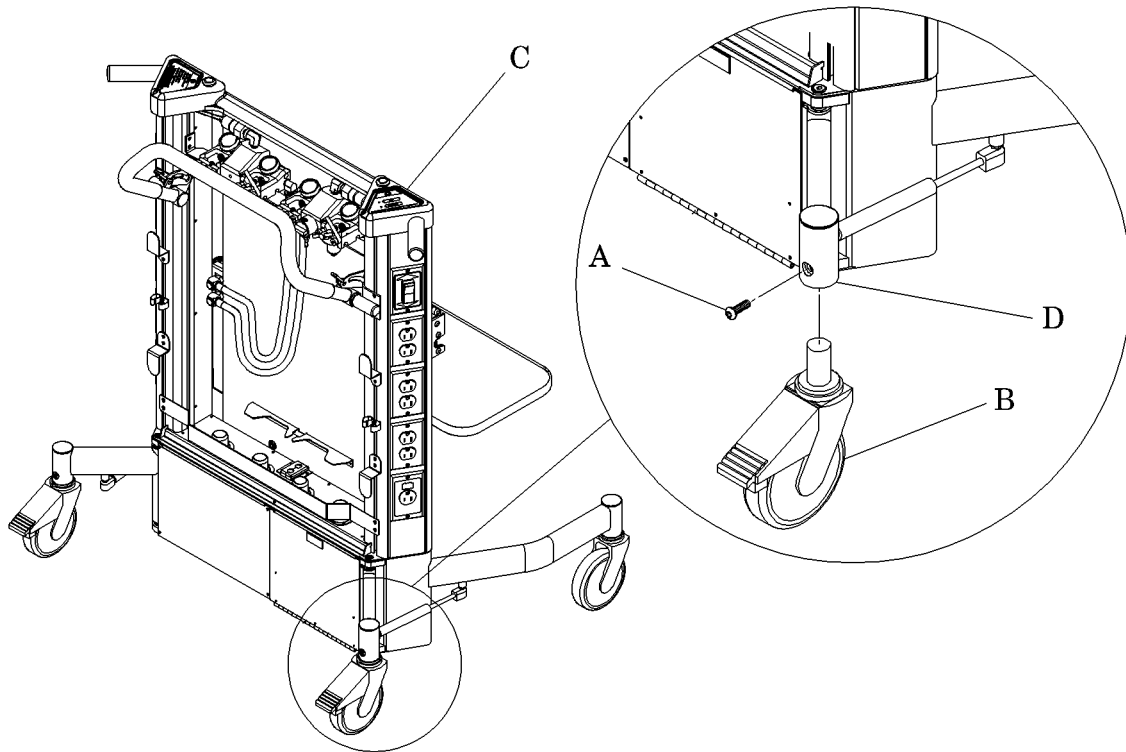
2. Unplug the unit from its power source.
3. Disconnect the battery pack (refer to procedure 4.1).
4. Set the CarePorter™ Cart on a 6" (15 cm) block (approximate).

**WARNING:**

Ensure that the CarePorter™ Cart is stable before removing the caster. Failure to do so could result in personal injury or equipment damage.

5. Using the 5 mm allen wrench, remove the screw (A) that secures the caster (B) to the base weldment (D) (see figure 4-15 on page 4-40).

Figure 4-15. Caster Location



m239_045

6. Remove the caster (B) from the base weldment (D).

Replacement

To install the replacement caster (B), reverse the removal procedure.

Adjustment

No adjustment is required for the caster assembly.

4.14 Power Cord/Plug Assembly

Tools required: Phillips head screwdriver Adjustable wrench

Removal

1. Place the On/Standby switch to the Standby position.



SHOCK HAZARD:

To minimize the risk of electrical shock or damage to equipment, disconnect all electrical power to the CarePorter™ Cart before working on it. Failure to do so could result in personal injury or equipment damage.

2. Unplug the unit from its power source.
3. Disconnect the battery pack (refer to procedure 4.1).
4. Set the brake casters to the brake position
5. Using the phillips head screwdriver, remove the four screws that secure the TPM cover.
6. Set the four screws and TPM cover aside.
7. Using the adjustable wrench, loosen the pigtail assembly from the base weldment.
8. Disconnect the power cord wires from the 12 amp breaker (refer to FO 3-2 at the end of the manual).
9. Disconnect the ground wire (green) from the primary ground stud.
10. Remove the pigtail assembly nut from the pigtail assembly.
11. Gently pull the power cord assembly through the hole in the base weldment, and remove it.

4

Replacement

1. To install the replacement power cord assembly, reverse the removal procedure.
2. Test the power cord for proper operation. Ensure that effective ground integrity has been established.

Adjustment

No adjustment is required for the power cord assembly.

4.15 Latch Assembly

Tools required: #2 phillips head screwdriver T30 Torx® head bit
Ratchet Screwdriver
5/32" hex key allen wrench
Anti-static (electrostatic discharge) strap

**CAUTION:**

Adhere to all electrical safety precautions when servicing the unit's electrical system. Failure to do so could result in equipment damage.

Tools required:

**CAUTION:**

Ensure that your hands are clean, and **only** handle the P.C. boards by their edges to prevent component damage.

**CAUTION:**

Wear an antistatic strap when handling electronic components. Failure to do so could result in component damage.

**CAUTION:**

Place the removed P.C. boards in antistatic protective bags for shipping and storage. Equipment damage can occur. See "P.C. Boards" on page 6-4 for additional information.

4

Removal

1. Place the On/Standby switch to the Standby position.

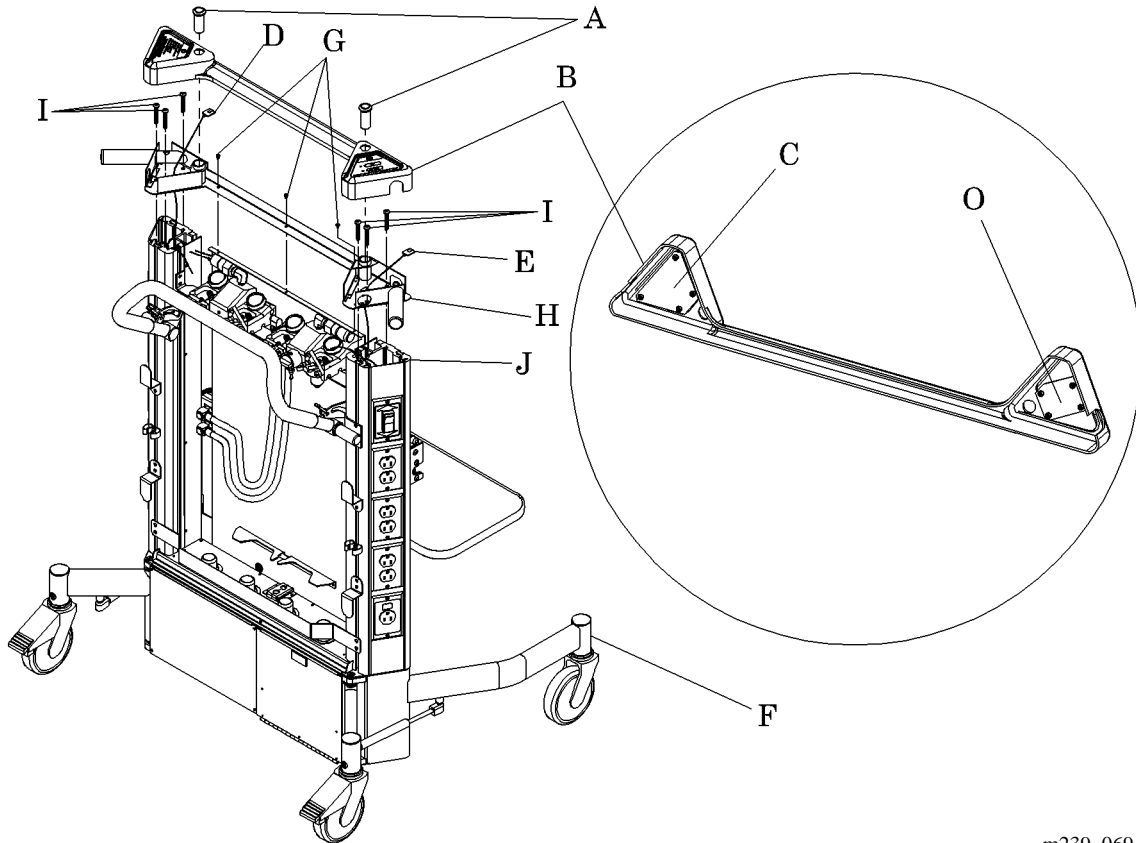
**SHOCK HAZARD:**

To minimize the risk of electrical shock or damage to equipment, disconnect all electrical power to the CarePorter™ Cart before working on it. Failure to do so could result in personal injury or equipment damage.

2. Unplug the unit from its power source.
3. Disconnect the battery pack (refer to procedure 4.1).
4. Set the brake casters to the brake position.

5. Remove the two ISS socket adapters (A) from the top cover assembly (B) (see figure 4-16 on page 4-44).

Figure 4-16. Top Cover Assembly

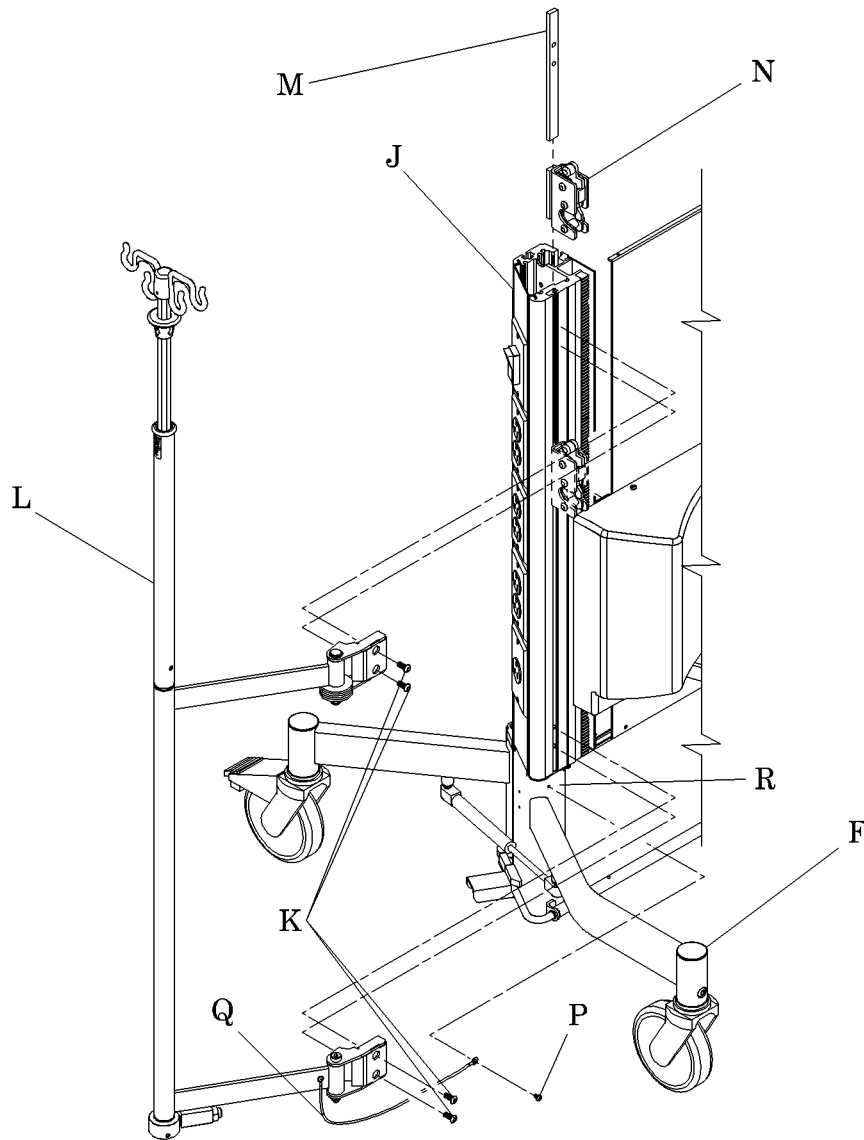


m239_069

6. Carefully lift up the top cover assembly (B) to expose the TPM display board (C) and gas display board (O).
7. Disconnect the TPM display cable (D) from the TPM display board (C).
8. Disconnect the gas display cable (E) from the gas display board (O).
9. Remove the top cover assembly (B) from the CarePorter™ Cart (F).
10. Using the phillips head screwdriver, remove the three screws (G) from the bulkhead/stabilizer weldment (H).
11. Using the ratchet and T30 Torx® head bit, remove the six screws (I) that secure the bulkhead/stabilizer weldment (H) to the left and right vertical columns (J).

12. Remove the bulkhead/stabilizer weldment (H) from the CarePorter™ Cart (F).
13. Using the #2 phillips head screwdriver, remove the self-tapping screw (P), that secures the green ground wire (Q) to the hole located on the front of the base assembly (R) (see figure 4-17 on page 4-45).

Figure 4-17. Latch Assembly Removal



m239_070



WARNING:

Ensure the IV pole does not slip downward during the removal procedure. Failure to do so could result in personal injury or equipment damage.

14. Using the 5/32" hex key allen wrench, remove the four screws (K) that secure the IV pole (L) to the correlating vertical column (J).
15. Remove the IV pole (L) from the CarePorter™ Cart (F).
16. Using the screwdriver, remove the upper front mounting track (M) from the vertical column (J).
17. Remove the latch assembly (N) from the vertical column (J).

Replacement

To install the replacement latch assembly (N), reverse the removal procedure.

Adjustment

No adjustment is required for the latch assembly (N).

4.16 IV Pole/Arm Assembly

Tools required: #2 phillips head screwdriver 5/32" hex key allen wrench
Screwdriver Torque wrench
5/32" hex key allen bit Ratchet
9/16" socket Adjustable wrench
6 mm allen wrench

**WARNING:**

Use proper lifting methods. Failure to do so could result in personal injury or equipment damage.

**WARNING:**

Two people are recommended for this procedure. The length of the IV pole/arm assembly may cause handling problems. Personal injury or equipment damage could occur.

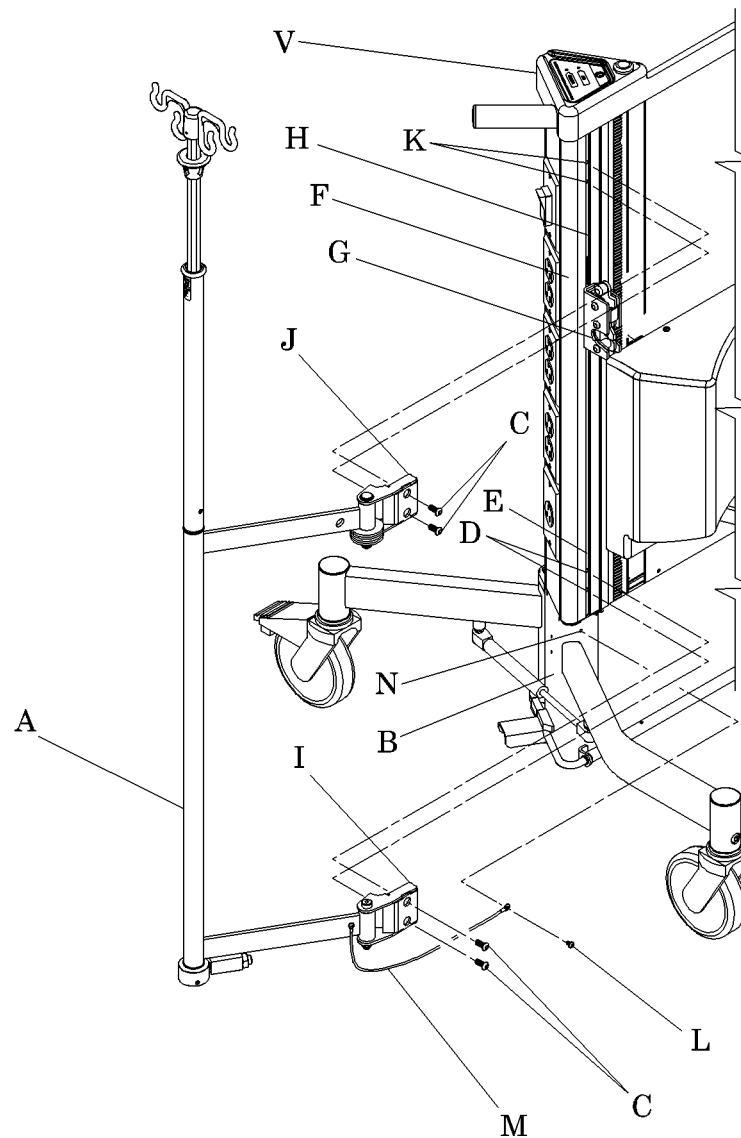
Removal

1. Place the On/Standby switch to the Standby position.

**SHOCK HAZARD:**

To minimize the risk of electrical shock or damage to equipment, disconnect all electrical power to the CarePorter™ Cart before working on it. Failure to do so could result in personal injury or equipment damage.

2. Unplug the unit from its power source.
3. Disconnect the battery pack (refer to procedure 4.1).
4. Set the brake casters to the brake position.
5. Using the #2 phillips head screwdriver, remove the self-tapping screw (L) that secures the green ground wire (M) to the hole (N) located on the front of the base assembly (B) (see figure 4-18 on page 4-48).

Figure 4-18. IV Arm and Pole Assembly

m239_060

6. Using the 5/32" hex key allen wrench, remove the two button socket head cap screws (C) from the threaded holes (K) that secure the **upper** hinge (J) of the IV arm/pole assembly (A) to the **upper** mounting track (H).
7. Using the 5/32" hex key allen wrench, remove the two button socket head cap screws (C) from the threaded holes (D) that secure the **lower** hinge (I) of the IV arm/pole assembly (A) to the **lower** mounting track (E).
8. Carefully remove the IV pole/arm assembly from the CarePorter™ Cart (V).

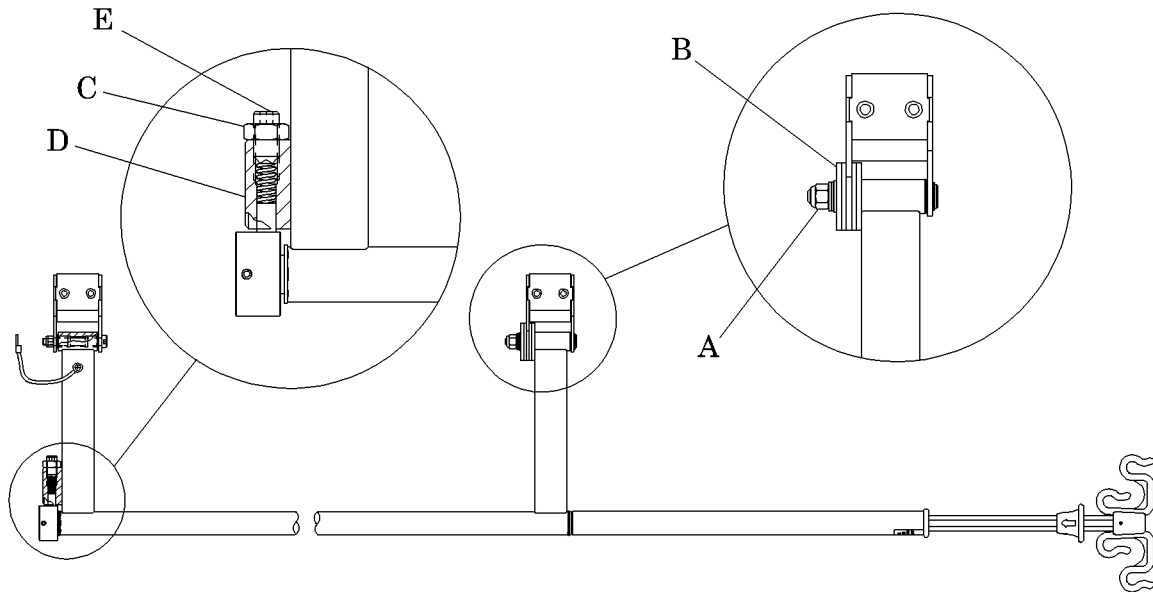
Replacement

1. Using the 5/32" hex key allen wrench, install, without tightening, the two button-socket head cap screws (C) into the threaded holes (D), and install the lower hinge (I) of the IV arm/pole assembly (A) to the lower mounting track (E) located on the vertical column (F).
2. Do not tighten the two button socket head cap screws (C) at this time.
3. Insert the blade of the screwdriver into the slot in front of the vertical column (F) just above the bed latch (G), and raise the upper mounting track (H) until the threaded holes (K) line up with the hole pattern in the upper hinge (J) of the IV arm/pole assembly (A).
4. Using the 5/32" hex key allen wrench, install the two button socket head cap screws (C) into the threaded holes (K) to secure the upper hinge (J) of the IV arm/pole assembly (A) to the upper mounting track (H) located on the vertical column (F).
5. Using the torque wrench, tighten the four button socket head cap screws (C) to 65-80 in-lb (7.3-9.0 N·m).
6. Using the #2 phillips head screwdriver, install the self-tapping screw (L), and secure the green ground wire (M) to the hole (N) located on the front of the base assembly (B).

Adjustment

IV Arm Clutch Assembly

1. Using the ratchet and 9/16" socket, loosen the self locking nut (A) on the IV arm clutch assembly (B) (see figure 4-19 on page 4-50).

Figure 4-19. IV Pole/Arm Adjustment

m239_078

2. Using the torque wrench and 9/16" socket, tighten the self locking nut (A) until the force to move the IV arm is 7-17 lb (0.80-1.92 N•m).

IV Pole Clutch Assembly

1. Using the adjustable wrench, loosen the jam nut (C) on the IV pole clutch assembly (D).
2. Using the ratchet and 6 mm allen wrench bit, loosen the socket set screw (E) on the IV pole clutch assembly (D).
3. Using the torque wrench and 6 mm allen wrench bit, tighten the socket set screw (E) until the force to move the IV pole is 15-35 lb (1.7-3.95 N•m).

Using the adjustable wrench, tighten the jam nut (C) to lock the socket set screw (E) in place.

4.17 Oxygen Manifold Assembly

Tools required: 5/32" hex key allen wrench Adjustable wrench

Removal

1. Place the On/Standby switch to the Standby position.



SHOCK HAZARD:

To minimize the risk of electrical shock or damage to equipment, disconnect all electrical power to the CarePorter™ Cart before working on it. Failure to do so could result in personal injury or equipment damage.

2. Unplug the unit from its power source.
3. Disconnect the battery pack (refer to procedure 4.1).
4. Set the brake casters to the brake position.



WARNING:

Turn off and disconnect the oxygen supply. A fire and explosion hazard exists when performing cleaning and/or maintenance procedures in an oxygen enriched environment. Failure to disconnect the oxygen supply could result in personal injury or equipment damage.

5. Before performing cleaning and maintenance procedures, turn off and disconnect the oxygen supply.
6. Remove the oxygen tanks from the CarePorter™ Cart.
7. Disconnect the oxygen cable sensor from the oxygen manifold assembly.
8. Disconnect the ventilator shelf hoses from the oxygen manifold assembly.
9. Disconnect the wall air hose assembly from the DISS adapter on the oxygen manifold assembly.
10. Using the 5/32" hex key allen wrench, remove the two screws that secure the oxygen manifold assembly to the manifold mount weldment on the CarePorter™ Cart.
11. Remove the oxygen manifold assembly from the CarePorter™ Cart.

Replacement

To install the replacement oxygen manifold assembly, reverse the removal procedure.

Adjustment

No adjustment is required for the oxygen manifold assembly.

4.18 Air Manifold Assembly

Tools required: 5/32" hex key allen wrench

Removal

1. Place the On/Standby switch to the Standby position.



SHOCK HAZARD:

To minimize the risk of electrical shock or damage to equipment, disconnect all electrical power to the CarePorter™ Cart before working on it. Failure to do so could result in personal injury or equipment damage.

2. Unplug the unit from its power source.
3. Disconnect the battery pack (refer to procedure 4.1).
4. Set the brake casters to the brake position.



WARNING:

Turn off and disconnect the medical air supply. A fire and explosion hazard exists when performing cleaning and maintenance procedures in an oxygen enriched environment. Failure to disconnect the medical air supply could result in personal injury or equipment damage.

5. Turn off and disconnect the medical air supply when performing cleaning and maintenance procedures.
6. Remove the medical air tanks from the CarePorter™ Cart.
7. Disconnect the air cable sensor from the air manifold assembly.
8. Disconnect the ventilator shelf hoses from the air manifold assembly.
9. Disconnect the wall air hose assembly from the DISS adapter on the air manifold assembly.
10. Using the 5/32" hex key allen wrench, remove the two screws that secure the air manifold assembly to the manifold mount weldment.
11. Remove the air manifold assembly from the CarePorter™ Cart.

Replacement

To install the replacement air manifold assembly (B), reverse the removal procedure.

Adjustment

No adjustment is required for the air manifold assembly (B).

4.19 Motor Assembly

Tools required:	Screwdriver	#2 phillips head screwdriver
	Ratchet	T25 Torx® head bit
	T30 Torx® head bit	Wood support block
	5/32" hex bit	Gear alignment tool

Removal

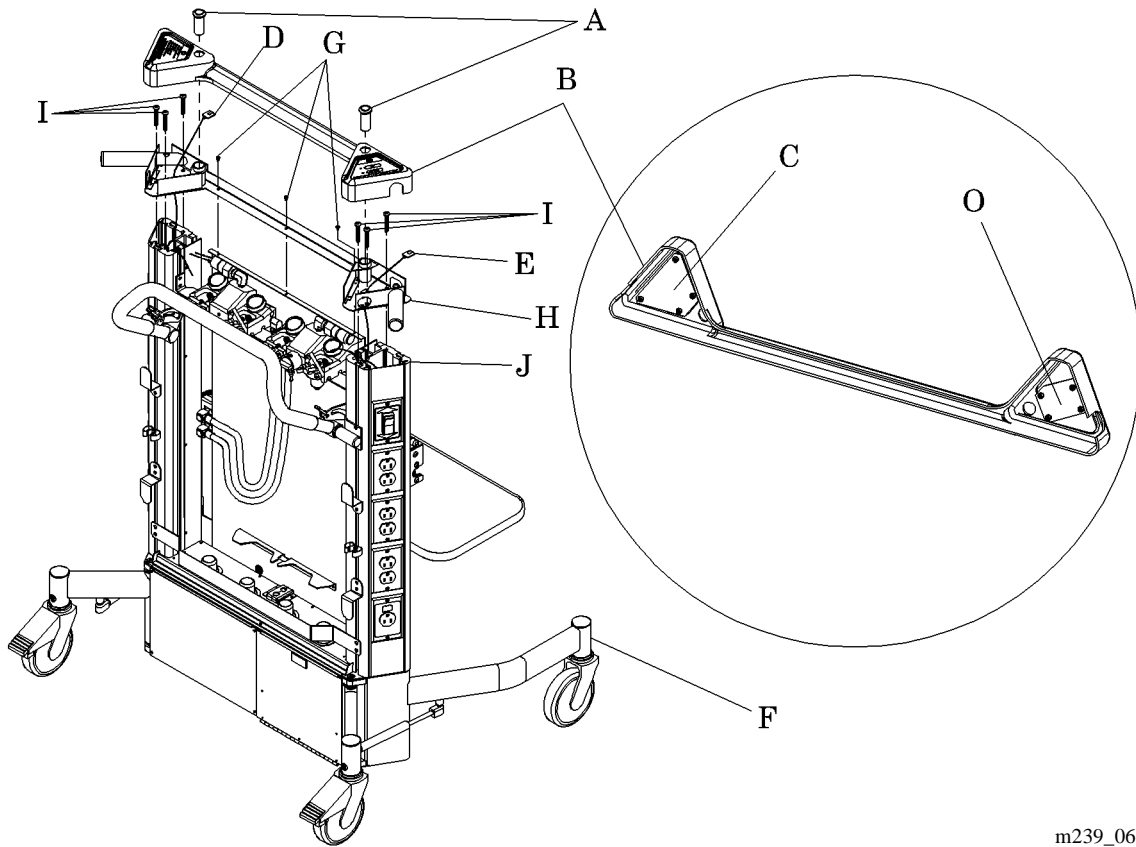
1. Place the On/Standby switch to the Standby position.



SHOCK HAZARD:

To minimize the risk of electrical shock or damage to equipment, disconnect all electrical power to the CarePorter™ Cart before working on it. Failure to do so could result in personal injury or equipment damage.

2. Unplug the unit from its power source.
3. Disconnect the battery pack (refer to procedure 4.1).
4. Set the brake casters to the brake position.
5. Remove the two ISS socket adapters (A) from the top cover assembly (B) (see figure 4-20 on page 4-56).

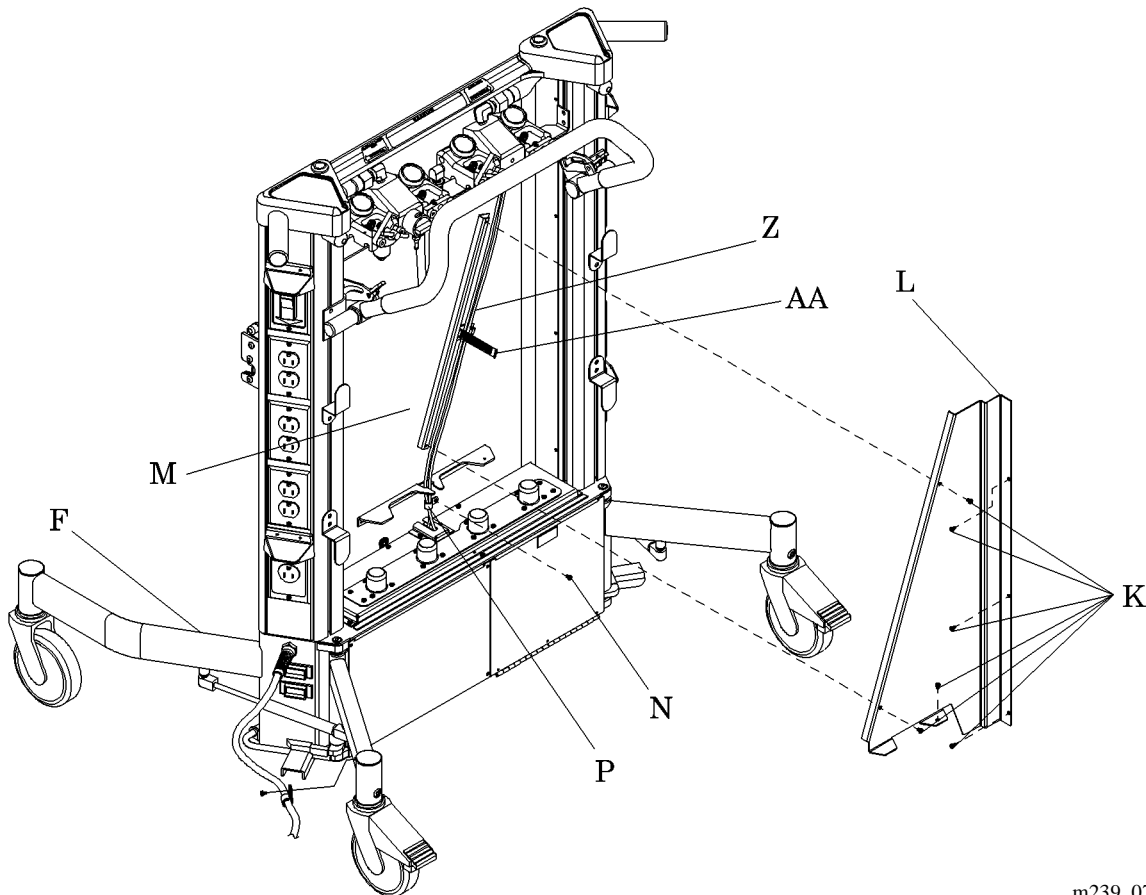
Figure 4-20. Top Cover Assembly Removal

m239_069

6. Carefully lift up the top cover assembly (B) to expose the TPM display board (C) and gas display board (O).
7. Disconnect the TPM display cable (D) from the TPM display board (C).
8. Disconnect the gas display cable (E) from the gas display board (O).
9. Remove the top cover assembly (B) from the CarePorter™ Cart (F).
10. Using the phillips head screwdriver, remove the three screws (G) from the bulkhead/stabilizer weldment (H).
11. Using the ratchet and T30 Torx® head bit, remove the six screws (I) that secures the bulkhead/stabilizer weldment (H) to the left and right vertical columns (J).
12. Remove the bulkhead/stabilizer weldment (H) from the CarePorter™ Cart (F).

13. Using the phillips head screwdriver, remove the six screws (K) that secure the front panel wire cover (L) to the front panel weldment (M) (see figure 4-21 on page 4-57).

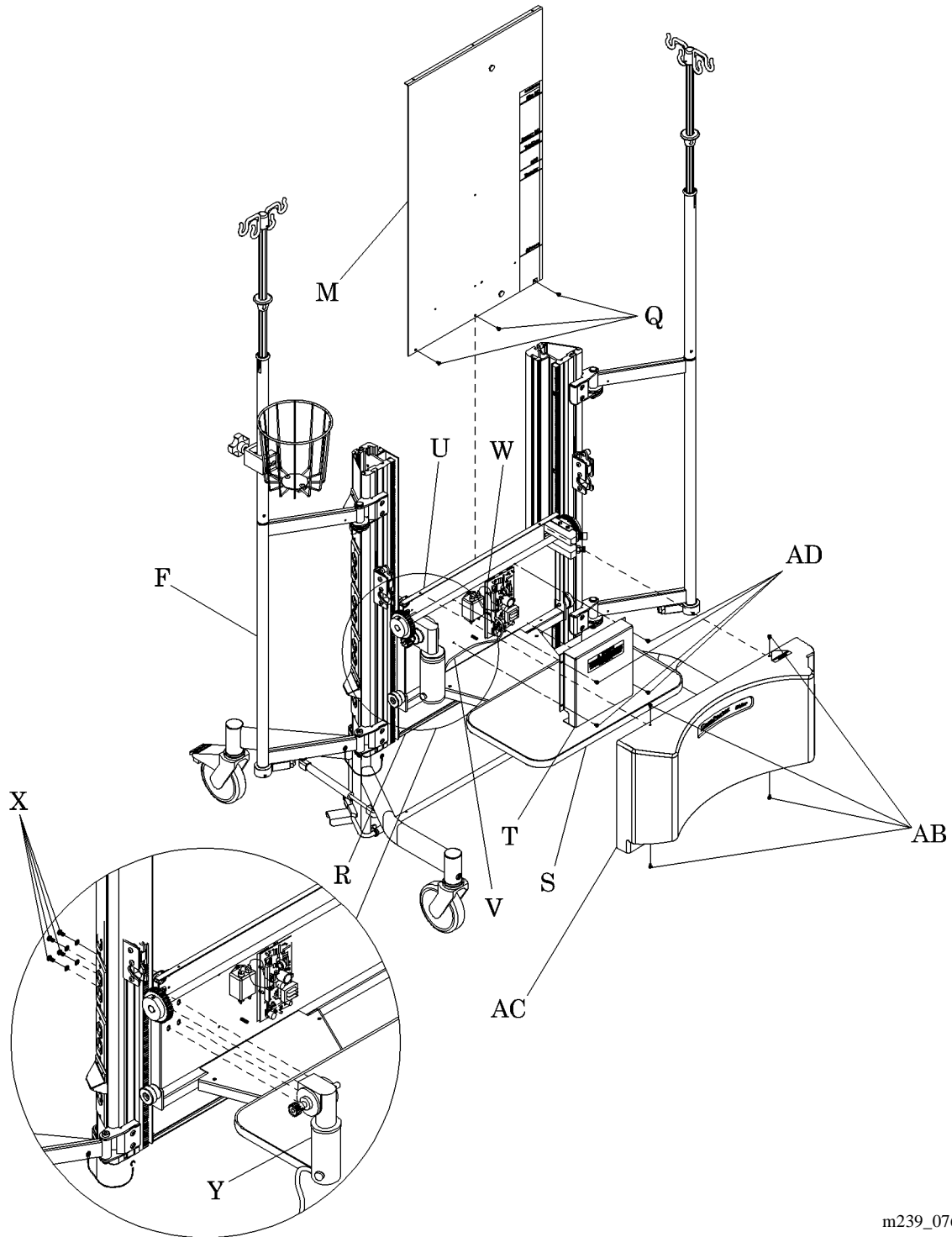
Figure 4-21. Panel Removal



m239_075

14. Remove the front panel wire cover (L) from the CarePorter™ Cart (F).
15. Using the phillips head screwdriver, remove the screw (N) that secures the wire clamp (P) to the front panel weldment (M).
16. Carefully disconnect the wiring (Z) from the heyclip omni clamp (AA).
17. Using the phillips head screwdriver, remove the three screws (Q) that secure the bottom of the front panel weldment (M) to the base weldment (R) (see figure 4-22 on page 4-58).

Figure 4-22. Motor Assembly Removal



m239_076

18. Carefully remove the front panel weldment (M) from the CarePorter™ Cart (F).

NOTE:

Be careful not to scratch the front panel weldment (M) when removing it from the CarePorter™ Cart (F).

**WARNING:**

Use the wood support block to support the ventilator shelf. The ventilator shelf will fall during this procedure if not supported. Failure to support the shelf could result in personal injury or equipment damage.

19. Position the wood support block underneath the ventilator shelf assembly (S).
20. Using the phillips head screwdriver, remove the four screws (AB) that secure the shelf cover (AC) to the shelf carriage weldment (U).
21. Using the phillips head screwdriver, remove the four screws (AD) that secure the PC board cover (T) to the shelf carriage weldment (U).
22. Remove the PC board cover (T) from the CarePorter™ Cart (F).
23. Locate and disconnect the motor assembly power cable (V) from the PC board (W).

**WARNING:**

Do not let the motor assembly drop during this procedure. Doing so could result in personal injury or equipment damage.

24. Using the ratchet and 5/32" hex bit, remove the four screws (X) that secure the motor assembly (Y) to the shelf carriage weldment (U).
25. Remove the motor assembly (Y) from the CarePorter™ Cart (F).

Replacement

1. Install the new spur gear, set screw, and woodruff key onto the new motor assembly.



WARNING:

Ensure that the gears are aligned, and parallel to mesh properly. Failure to do so could result in personal injury or equipment damage.

2. Use the gear alignment tool to align the gears during installation. Ensure that the gears are parallel to mesh properly.



WARNING:

Ensure that there is sufficient backlash in the gears after installation. Failure to do so could result in personal injury or equipment damage.

3. To install the replacement motor assembly (Y), reverse the removal procedure.

Adjustment

No adjustment is required for the motor assembly (Y).

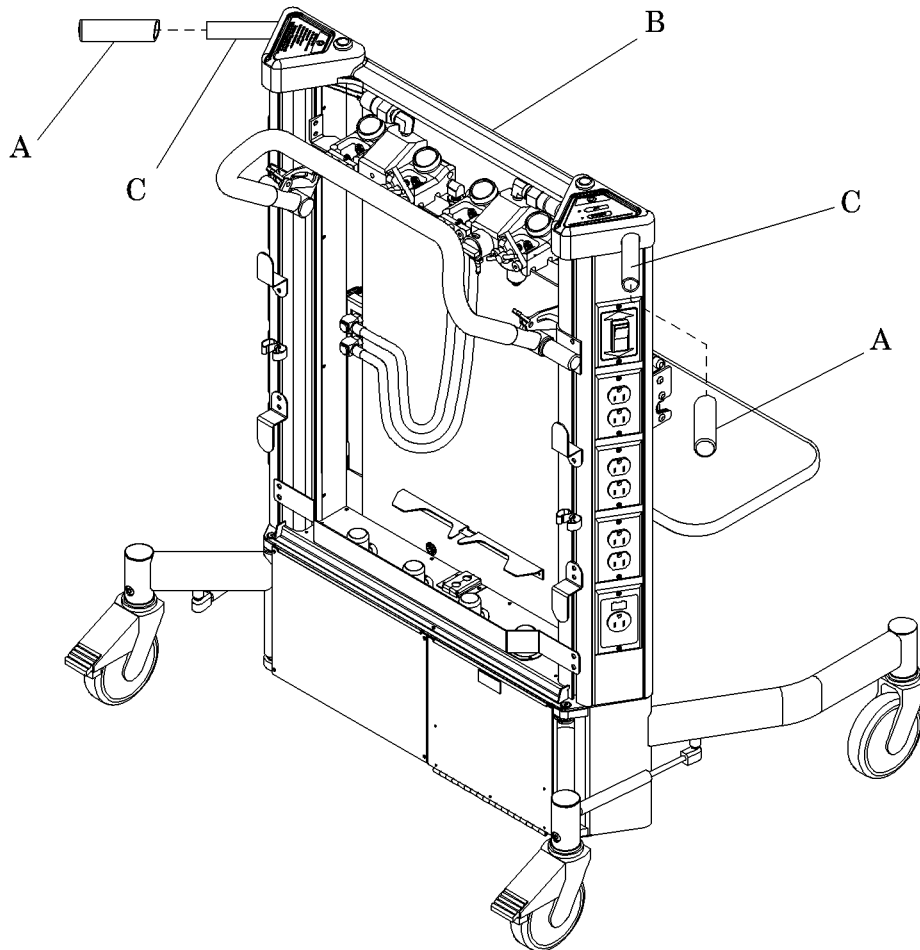
4.20 Push Handle Cover (Side)

Tools required: Box knife

Removal

1. Set the brake casters to the brake position.
2. Using the box knife, make a relief cut on the side push handle cover.
3. Grasp and pull the side push handle cover (A) outward and away from the CarePorter™ Cart (B) (see figure 4-23 on page 4-61).

Figure 4-23. Side Handle Cover Removal



m239_071

NOTE:

It may be easier to remove the side push handle cover (A) if you twist and rotate it as you pull outward.

4. Remove the side push handle cover (A) from the bulkhead/stabilizer weldment (C).

Replacement

To install the replacement side push handle cover (A), reverse the removal procedure.

Adjustment

No adjustment is required for the side push handle cover (A).

Chapter 5

Parts List

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Warranty

HILL-ROM, INC. LIMITED WARRANTY

Hill-Rom, Inc. (Hill-Rom) has a long tradition of providing superior products and service to our customer. Our goal is "Total Customer Satisfaction". In that spirit, Hill-Rom is proud to offer the following warranty.

GENERAL WARRANTY (APPLICABLE UNLESS A SPECIFIC WARRANTY IS LISTED)

Hill-Rom warrants to the original purchaser that its products and replacement parts shall be free from defects in material and workmanship for a period of one (1) year from date of delivery. Hill-Rom's obligation under this warranty is expressly limited to supplying replacement parts and/or service for, or replacing, at its option, any product which is, in the sole discretion of Hill-Rom, found to be defective. In addition to the foregoing one year warranty, Hill-Rom warrants to the original purchaser that the frame and welds on its products will be free from structural defects for the life of the product. Any product upgrade or modification initiated by Hill-Rom does not affect the original product warranty.

SPECIFIC WARRANTIES

MATTRESS WARRANTIES

Hill-Rom warrants to the original purchaser that its mattress product shall be free from defects in material and workmanship for a period of two (2) years from date of delivery. However, electro mechanical mattress components (compressors, valves, printed circuit boards, hoses, and couplers) are covered by the general one (1) year warranty.

EXPENDABLES WARRANTIES

A sixty (60) day limited warranty from date of delivery applies to expendable parts such as cushions, coverlets, software diskettes, locator badge batteries, dome light incandescent bulbs, overhead fluorescent tubes, heating elements, temperature probes, filter sheets, and microspheres. This warranty is limited to replacement of the parts covered.

TO OBTAIN PARTS AND SERVICE

In the United States, call Hill-Rom Technical Support Department at (800) 445-3720, Monday through Friday. In Canada, call Hill-Rom Technical Support Department at (800) 267-2337, Monday through Friday. Outside the United States and Canada, call your authorized Hill-Rom Distributor. In order to expedite service, we request you furnish the following information: customer identification number, product model number, serial number, and description of problem. A qualified specialist will provide, via telephone (United States and Canada), or FAX (Outside the United States and Canada), troubleshooting assistance for facility personnel and provide necessary parts to make repairs. If troubleshooting determines the need for on-site technical service, a qualified service representative will be dispatched. Replacement of non-technical items will be the responsibility of the customer. If requested by Hill-Rom, products or parts for which a warranty claim is made shall be returned prepaid to Hill-Rom's factory.

OUT OF WARRANTY EXCHANGE POLICY

After the expiration of the original warranty, upon request, Hill-Rom will ship as a replacement, components such as selected: motors and printed circuit boards, for like units returned to Hill-Rom by the original purchaser at a substantial savings. Please call Hill-Rom Technical Support Department for current pricing.

PARTS AVAILABILITY POLICY

Hill-Rom will offer parts for new and remanufactured products for ten (10) years from date of sale; for communications products for five (5) years from date of sale.

Note: Some original component parts and assemblies may not be available; functional equivalents may be substituted.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS WARRANTIES AND IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS OF PURPOSE. HILL-ROM'S OBLIGATION UNDER THESE WARRANTIES SHALL NOT INCLUDE ANY LIABILITY FOR LOSS OF PROFITS, DIRECT, INDIRECT OR CONSEQUENTIAL DAMAGES OR DELAYS.

Some states, provinces, or countries do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitation may not apply. Any improper or negligent use, any alterations or repairs not in accordance with Hill-Rom's manuals or performed by others in such manner as in Hill-Rom's sole judgment affects the product materially and adversely, shall void these warranties. These warranties do not cover failures due to misuse, abuse, neglect, or lack of routine maintenance. No employee or representative of Hill-Rom is authorized to change these warranties in any way or grant any other warranty unless in writing and signed by a Hill-Rom officer. These warranties provide specific legal rights; but, there may be other available rights, which vary from state to state, province to province, or country to country.

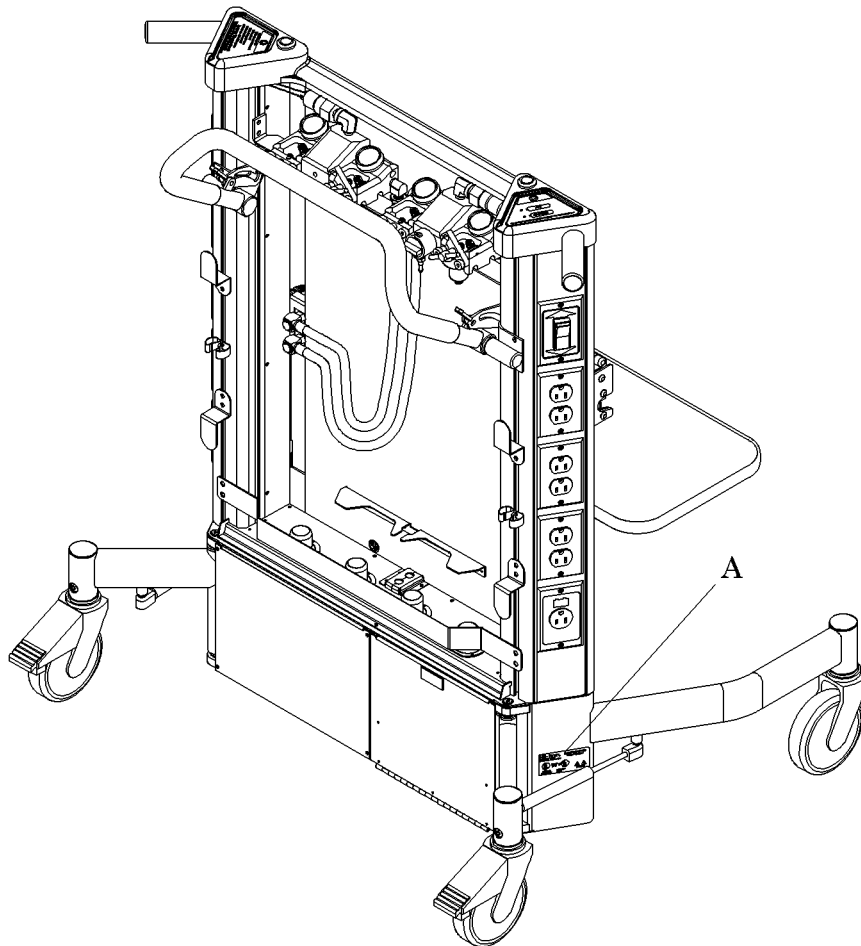
Revised October 20, 1998

NOTES:

Service Parts Ordering

Using the parts lists in this manual, identify the part number(s) you require. Find the product number and serial number on the product identification label (A) (see figure 5-1 on page 5-5).

Figure 5-1. Product Identification Label Location



m239_066

5

Call Hill-Rom Technical Support at (800) 445-3720 with the following information:

- Six-digit customer account number
- Purchase order number
- Product number
- Serial number
- Part number(s)

Hill-Rom also provides a fax number to promptly order parts, request part prices and availability, or follow up on a service order. The fax number is (812) 934-8472.

To order parts, a \$40.00 minimum will prevent a charge for processing your order.

Terms:

- Net 30 days
- F.O.B. Batesville, IN
- Prepaid shipping charges added to invoice
- All orders shipped UPS ground unless specified

Address all inquiries to:

ATTN TECHNICAL SUPPORT—PARTS
HILL-ROM, INC.
1069 STATE ROUTE 46 E
BATESVILLE IN 47006-9167

Address all return goods to:

ATTN SERVICE STORES
DISTRIBUTION CENTER DOOR D23
HILL-ROM, INC.
COUNTY ROAD 300E
BATESVILLE IN 47006-9167

NOTE:

To eliminate possible delays or incorrect billings, **do not** return any items without a Return Material Authorization (RMA) number. When a return is requested, an RMA packet is included with each order. This packet includes an RMA number, instructions, and a shipping label. If an RMA number is not available, obtain one by phoning Hill-Rom Technical Support at (800) 445-3720.

Exchange Policy

The following are policies for in-warranty and out-of-warranty exchanges from Hill-Rom.

In-Warranty Exchanges

In some cases, Hill-Rom will request that parts/products be returned for inspection. When this occurs, you are expected to return parts/products within 30 days of receipt of the exchange part. If you fail to return the inoperative parts/products within the 30 day period, Hill-Rom will invoice your facility for the full selling price of the parts/products.

NOTE:

The preceding billing procedure pertains **only** to parts/products that Hill-Rom requests to be returned.

In some cases, the invoice accompanying the parts will show the full selling price (only for internal use at Hill-Rom). Do not confuse this price with your price.

Do not return any parts without an RMA number. When parts/products have been requested to be returned, Hill-Rom will include an RMA packet with the parts/products shipment. If an RMA number is not available, obtain one by phoning Hill-Rom Technical Support at (800) 445-3720.

Out-of-Warranty Exchanges

You are expected to return the inoperative parts/products within 30 days of receipt of the exchange part. Hill-Rom will include an RMA packet with the parts/products shipment. If an RMA number is not available, obtain one by phoning Hill-Rom Technical Support at (800) 445-3720. If you fail to return the inoperative parts/products within 30 days, Hill-Rom will invoice your facility for the full selling price of the parts/products. Upon return of the inoperative parts/products, Hill-Rom will issue a credit for the discounted price.

Recommended Spare Parts

For a recommended spare parts list to service five units or more, see table 5-1 on page 5-8.

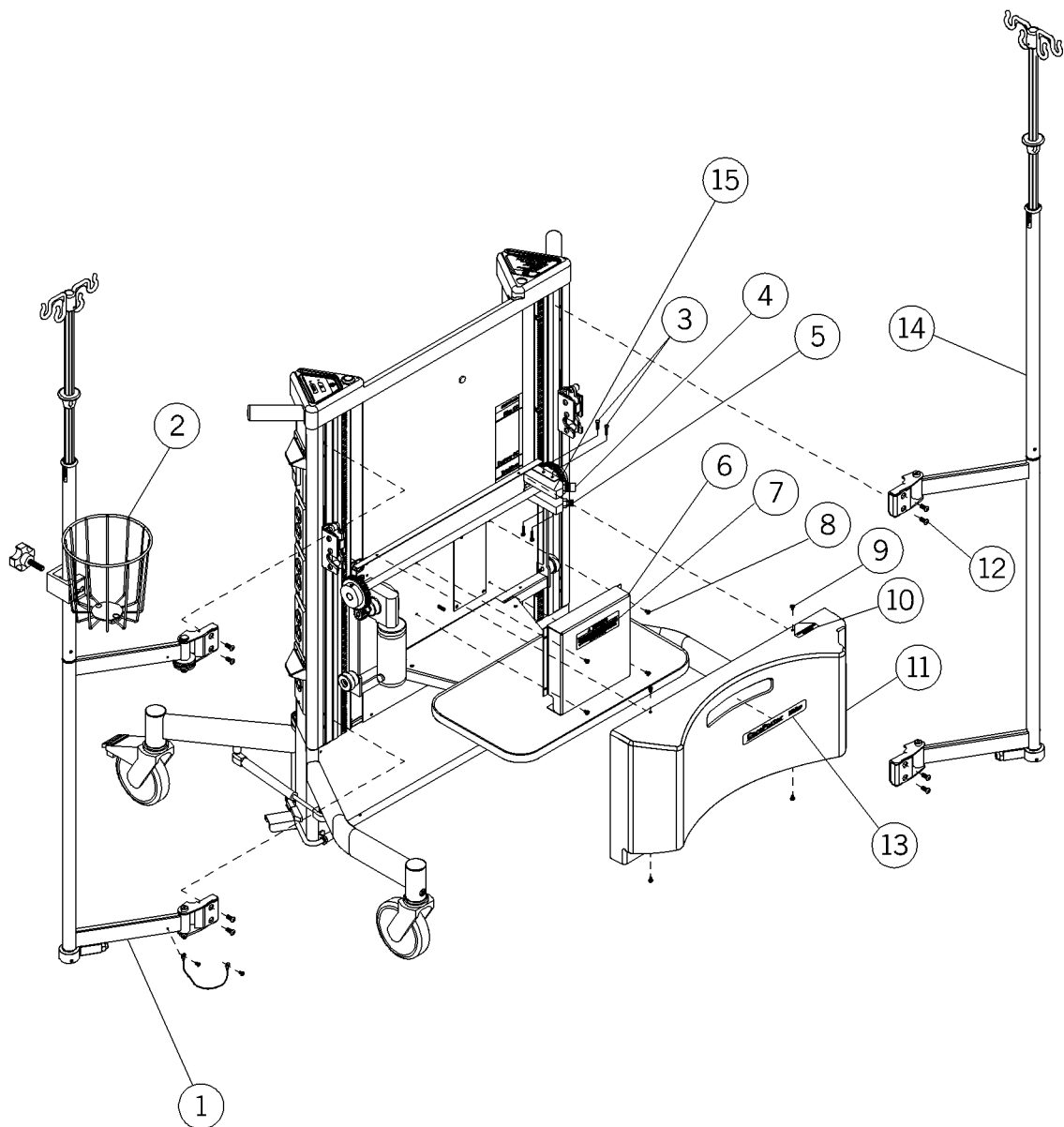
Table 5-1. Recommended Spare Parts

Part Number	Quantity	Description
5948903 (3000)	2	Caster, total lock
5948901 (3000)	2	Caster, swivel
203120 (3000)	5	Fuse, 5A
59794 (3000)	1	Assembly, CarePorter™ control board
59857 (3000)	2	Grip side handle
203270 (3000)	1	Motor assembly, motorized shelf
20311902 (3000)	1	Circuit breaker, 12 amp
20311901 (3000)	1	Circuit breaker, 3.5 amp
203111 (3000)	2	Switch, rocker
59866 (3000)	1	Assembly, battery pack
38827 (3000)	1	Touch-up paint (aerosol can), light neutral

NOTES:

CarePorter™ Cart Assembly (Sheet 1 of 4)

Figure 5-2. CarePorter™ Cart Assembly (Sheet 1 of 4)



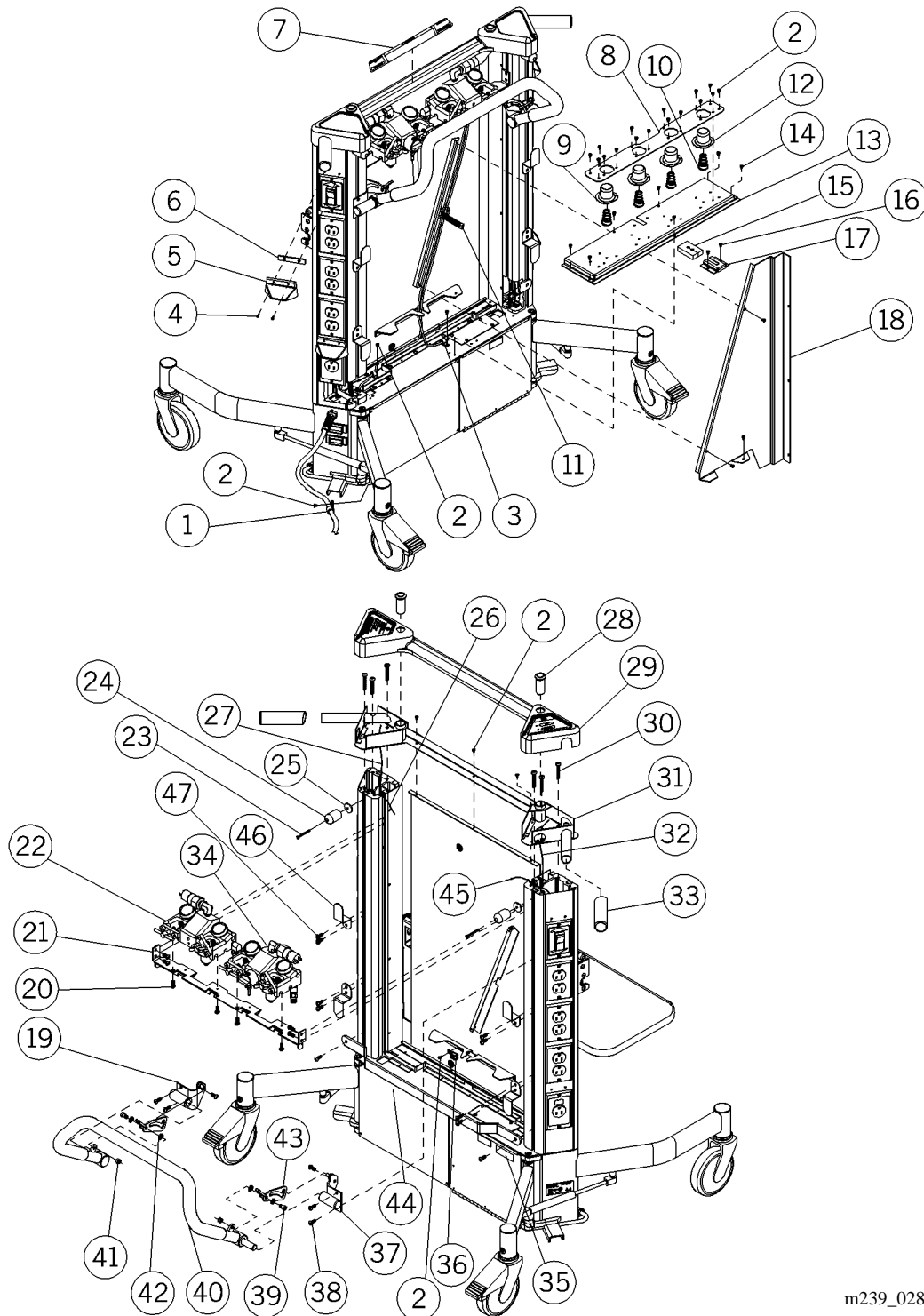
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Table 5-2. CarePorter™ Cart Assembly (Sheet 1 of 4)

Item Number	Part Number	Quantity	Description
1	20314602 (3000)	1	IV pole assembly—rh
2	203233 (3000)	1	Ambu-bag carrier assembly
3	57018-04 (3000)	8	Screw
4	20339101 (3000)	1	Air fitting assembly, US
5	20339201 (3000)	1	Oxygen fitting assembly, US
6	59979 (3000)	1	PCB cover
7	203375 (3000)	1	Warning label, PCB cover
8	393 (3000)	37	Screw
9	20307301 (3000)	4	Screw, #8 x 0.500 truss head
10	203377 (3000)	1	Shelf height label, shelf cover
11	59977 (3000)	1	Cover, motorized shelf
12	5966002 (3000)	26	Socket button head cap screw 1/4-20 x 0.625 UNRC-3A
13	203374 (3000)	1	CarePorter™ label cover
14	20314601 (3000)	1	IV pole assembly—lh
15	204112 (3000)	1	Relief valve

CarePorter™ Cart Assembly (Sheet 2 of 4)

Figure 5-3. CarePorter™ Cart Assembly (Sheet 2 of 4)



m239_028

Table 5-3. CarePorter™ Cart Assembly (Sheet 2 of 4)

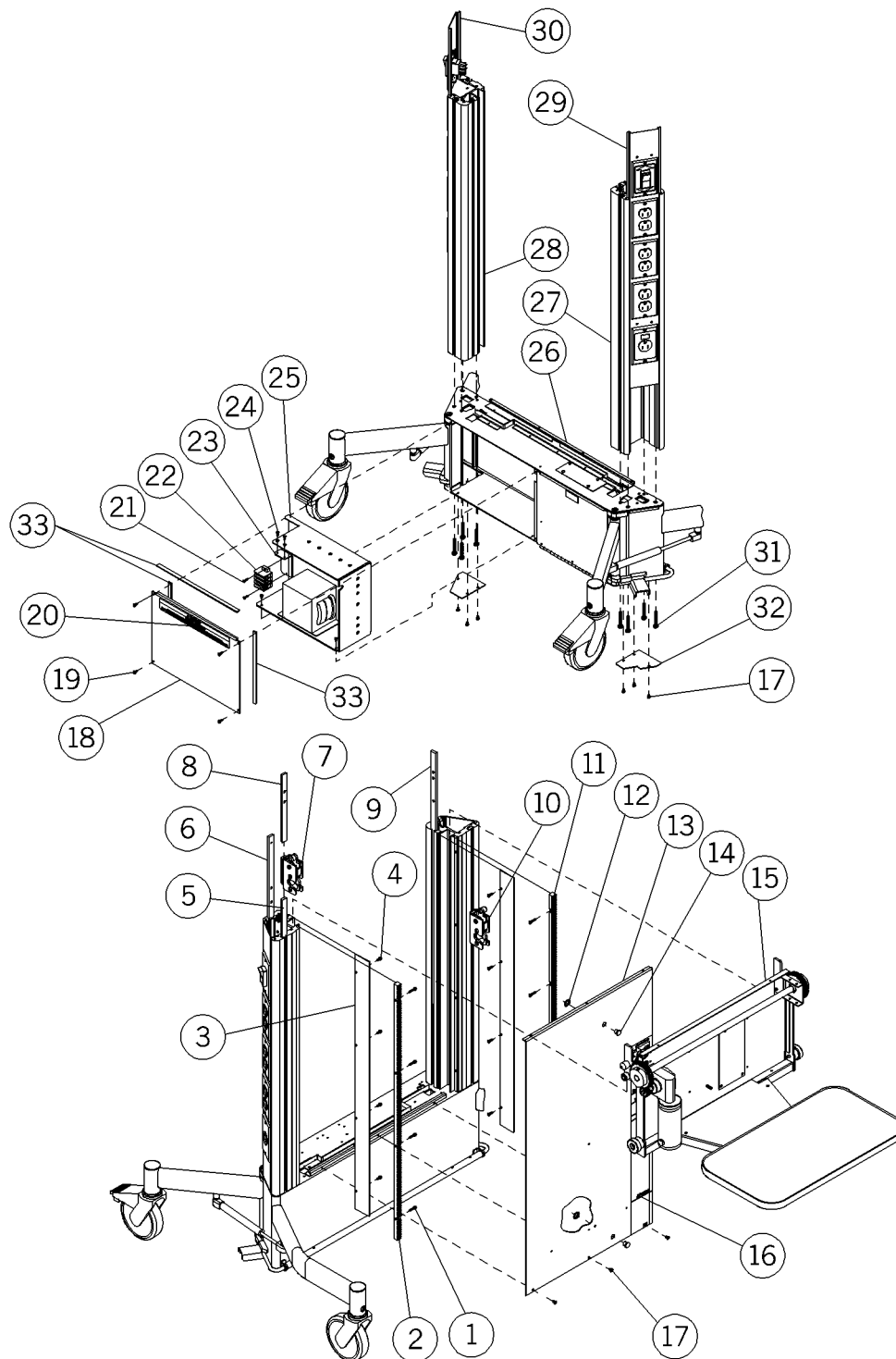
Item Number	Part Number	Quantity	Description
1	203659 (3000)	1	Cable clamp
2	393 (3000)	37	Screw
3	203712 (3000)	2	Cable clamp, 5/16
4	52945-02 (3000)	10	Screw, #6 x 3/8 truss head
5	203901 (3000)	4	Side cover
6	203833 (3000)	4	Seal side cover
7	203788 (3000)	1	Label, warning, top cover
8	203654 (3000)	1	Retaining plate-bottle support
9	20365301 (3000)	2	Bottle support cover (yellow)
10	203687 (3000)	4	Spring, conical 0.990 x 0.650
11	203776 (3000)	1	Wire clamp
12	20365302 (3000)	2	Bottle support cover (green)
13	59969 (3000)	1	Raceway, low voltage
14	52555-03 (3000)	1	Screw
15	203789 (3000)	1	Seal, wire cover
16	52555-03 (3000)	1	Screw
17	203051 (3000)	1	Cable feedthru
18	203774 (3000)	1	Wire cover
19	5965501 (3000)	1	Mounting bracket assembly handle—lh
20	5966001 (3000)	4	SBHCS, 1/4-20 x 0.500 UNRC-3A
21	203213 (3000)	1	Manifold mount weldment
22	59663 (3000)	1	Oxygen manifold assembly
23	5224301 (3000)	2	Screw
24	203836 (3000)	2	Bumper, 1.0 diameter x 1-1/2" long
25	203847 (3000)	2	Washer, 0.190 ID x 1.000 OD
26	59888 (3000)	1	Cable, air sensor
27	59867 (3000)	1	Cable, TPM display
28	59850 (3000)	2	ISS pole socket
29	203214 (3000)	1	Top cover assembly
30	50929 (3000)	14	Torx screw
31	203047 (3000)	1	Column bulkhead weldment
32	59894 (3000)	1	Cable, gas display

Item Number	Part Number	Quantity	Description
33	59857 (3000)	2	Grip, side handle
34	59662 (3000)	1	Air manifold assembly
35	203180 (3000)	1	Label, battery door
36	203334 (3000)	2	Cable clamp
37	5965502 (3000)	1	Mounting bracket assembly handle—rh
38	5966002 (3000)	12	SBHCS, 1/4 - 20 x 0.625 UNRC-3A
39	59958 (3000)	2	SHSS, 0.312 x 0.250
40	203003 (3000)	1	Push handle, dipped
41	55792 (3000)	2	Locknut
42	59650 (3000)	4	Spacer, push handle latch
43	59658 (3000)	2	Latch assembly, push handle
44	59906 (3000)	1	Bottle strap
45	59889 (3000)	1	Cable, oxygen sensor
46	59871 (3000)	4	Cord/hose hook
47	5966002 (3000)	26	SBHCS, 1/4 - 20 x 0.625 UNRC-3A

NOTES:

CarePorter™ Cart Assembly (Sheet 3 of 4)

Figure 5-4. CarePorter™ Cart Assembly (Sheet 3 of 4)



m239_029

Table 5-4. CarePorter™ Cart Assembly (Sheet 3 of 4)

Item Number	Part Number	Quantity	Description
1	5701808 (3000)	8	Screw #8 —32 x 0.750 tri-lobe ph
2	5993302 (3000)	1	Gear rack, motorized shelf, lh
3	203072 (3000)	2	Cover, roller
4	52555-03 (3000)	1	Screw
5	203102 (3000)	2	Mounting track, front, lower
6	59872 (3000)	2	Mounting track, rear
7	20308902 (3000)	1	Assembly latch, rh
8	203101 (3000)	2	Mounting track, front upper
9	203104 (3000)	2	Mounting track, interior
10	20308901 (3000)	1	Assembly latch, lh
11	5993301 (3000)	1	Gear rack, motorized shelf, rh
12	203333 (3000)	2	Internal tooth retainer, 0.437
13	203145 (3000)	1	Weldment, front panel
14	203143 (3000)	2	Assembly, limit switch magnet
15	59980 (3000)	1	Motorized shelf assembly
16	203376 (3000)	1	Shelf height label, front panel
17	393 (3000)	37	Screw
18	59924 (3000)	1	Cover, TPM
19	57018-04 (3000)	4	Screw
20	203471 (3000)	1	Label, TPM cover
21	50590 (3000)	2	Screw
22	5988704 (3000)	1	Connector assembly, 4 con
23	203207 (3000)	1	Bracket, terminal block
24	16115 (3000)	2	Screw
25	59865 (3000)	1	TPM controller module
26	59951 (3000)	1	Base assembly
27	5949202 (3000)	1	Extrusion, right
28	5949201 (3000)	1	Extrusion, left
29	20317802 (3000)	1	Assembly, device mount, rh
30	20317801 (3000)	1	Assembly, device mount, lh
31	50929 (3000)	14	Torx screw

Item Number	Part Number	Quantity	Description
32	5992302 (3000)	2	Cover, extrusion access, rh
33	203834 (3000)	4	Seal

NOTES:

CarePorter™ Cart Assembly (Sheet 4 of 4)

Figure 5-5. CarePorter™ Cart Assembly (Sheet 4 of 4)

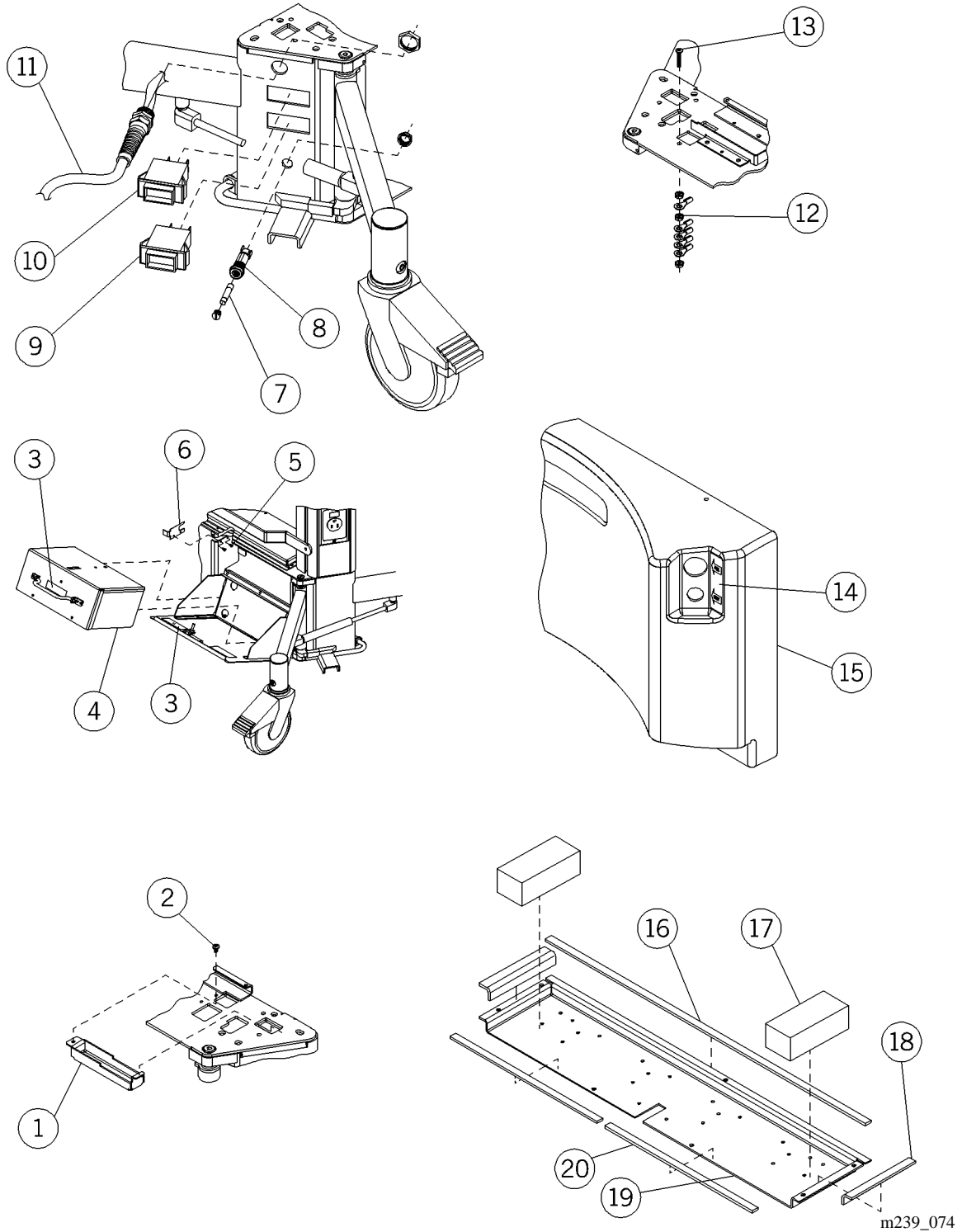
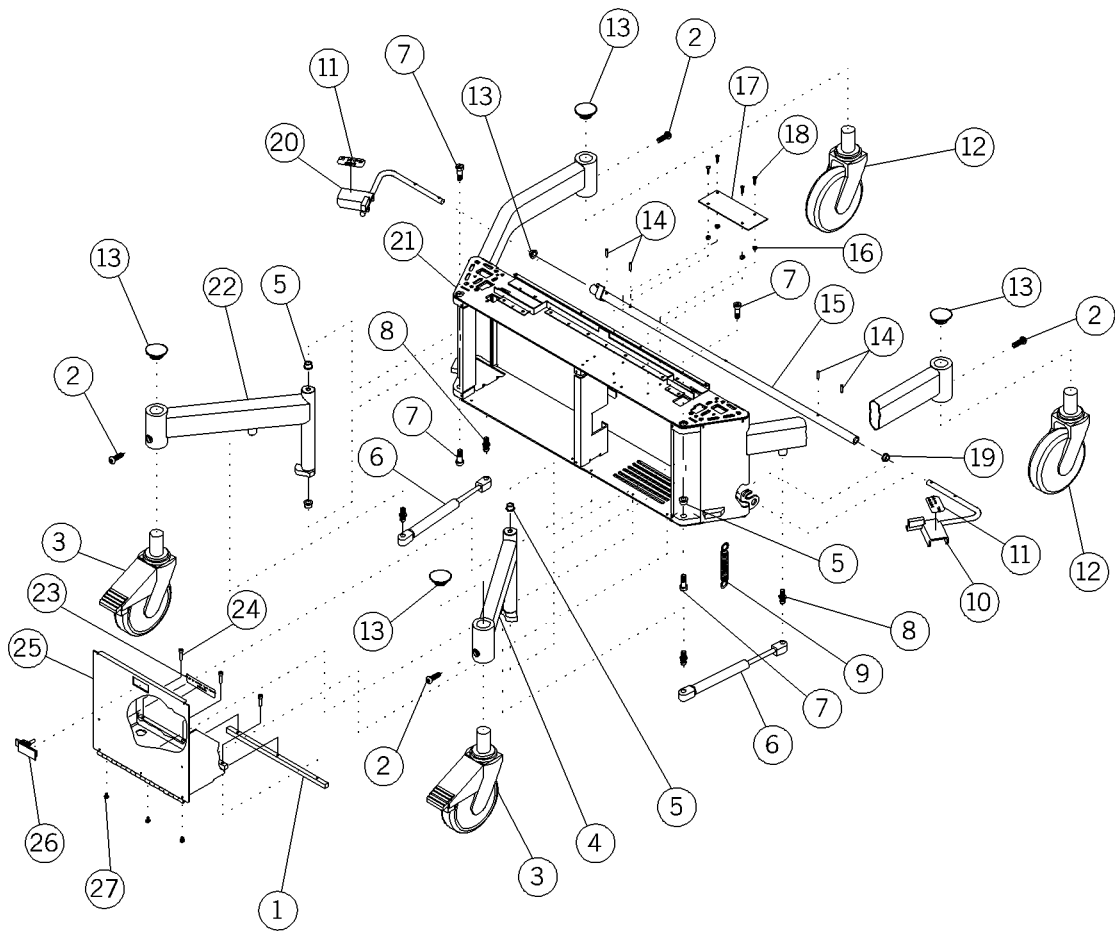


Table 5-5. CarePorter™ Cart Assembly (Sheet 4 of 4)

Item Number	Part Number	Quantity	Description
1	203039 (3000)	1	Wire cover, high voltage
2	393 (3000)	37	Screw
3	203912 (3000)	2	Label, liquid in battery
4	59866 (3000)	1	Assembly, battery pack
5	52945-02 (3000)	10	Screw, #6 x 3/8 truss head B
6	203759 (3000)	1	Cover, cable access
7	203120 (3000)	1	Fuse, 5A
8	5949401 (3000)	1	Fuse holder, high current
9	20311902 (3000)	1	Circuit breaker, 12 amp
10	20311901 (3000)	1	Circuit breaker, 3.5 amp
11	203680 (3000)	1	Power cord assembly
12	15250 (3000)	3	Locknut washer base
13	5224311 (3000)	3	Screw, #8-32 x 1.34 pan head
14	203379 (3000)	1	Air/oxygen outlet label, shelf
15	59977 (3000)	1	Cover, motorized shelf
16	203834 (3000)	4	Seal, 1/8" thick x 3/8" wide
17	203835 (3000)	2	Seal, 1" foam
18	203790 (3000)	2	Seal, low voltage cover
19	59969 (3000)	1	Raceway, low voltage
20	203834 (3000)	4	Seal, 1/8" thick x 3/8" wide

Base Assembly

Figure 5-6. Base Assembly



m239_030

Table 5-6. Base Assembly

Item Number	Part Number	Quantity	Description
1	203638 (3000)	1	Stop, battery door
2	59881 (3000)	4	Socket button head cap screw, M8 x 25
3	5948903 (3000)	2	Caster, total lock
4	5948502 (3000)	1	Weldment, rear leg, RH
5	58319 (3000)	4	Bearing, flanged, 0.375 x 0.500 x 0.375
6	59490 (3000)	2	Gas Spring
7	59493 (3000)	4	Socket head shoulder screw, 0.375 x 0.500
8	203443 (3000)	4	Ball stud, gas spring
9	203614 (3000)	1	Extension spring
10	20361102 (3000)	1	Pedal assembly, RH
11	203636 (3000)	2	Label, rear leg release
12	59489-01 (3000)	2	Caster, swivel
13	59488 (3000)	4	Cap, light neutral
14	203616 (3000)	4	Pin, spring, 0.156 dia x 0.625 lg.
15	203229 (3000)	1	Connecting tube
16	59950 (3000)	4	Spacer, nylon
17	203200 (3000)	1	Connector board assembly
18	50891-06 (3000)	4	Screw
19	203758 (3000)	2	Bearing, flanged, 0.375 x 0.50
20	20361101 (3000)	1	Pedal assembly, LH
21	59479 (3000)	1	Weldment, base
22	5948501 (3000)	1	Weldment, rear leg, LH
23	59966 (3000)	1	Label, battery pack removal
24	5918905 (3000)	3	Socket head cap screw, #10-32 x 0.75
25	59922 (3000)	1	Weldment, battery door
26	59918 (3000)	1	Latch, lift and turn, compression
27	393 (3000)	3	Screw

Motorized Shelf Assembly

Figure 5-7. Motorized Shelf Assembly

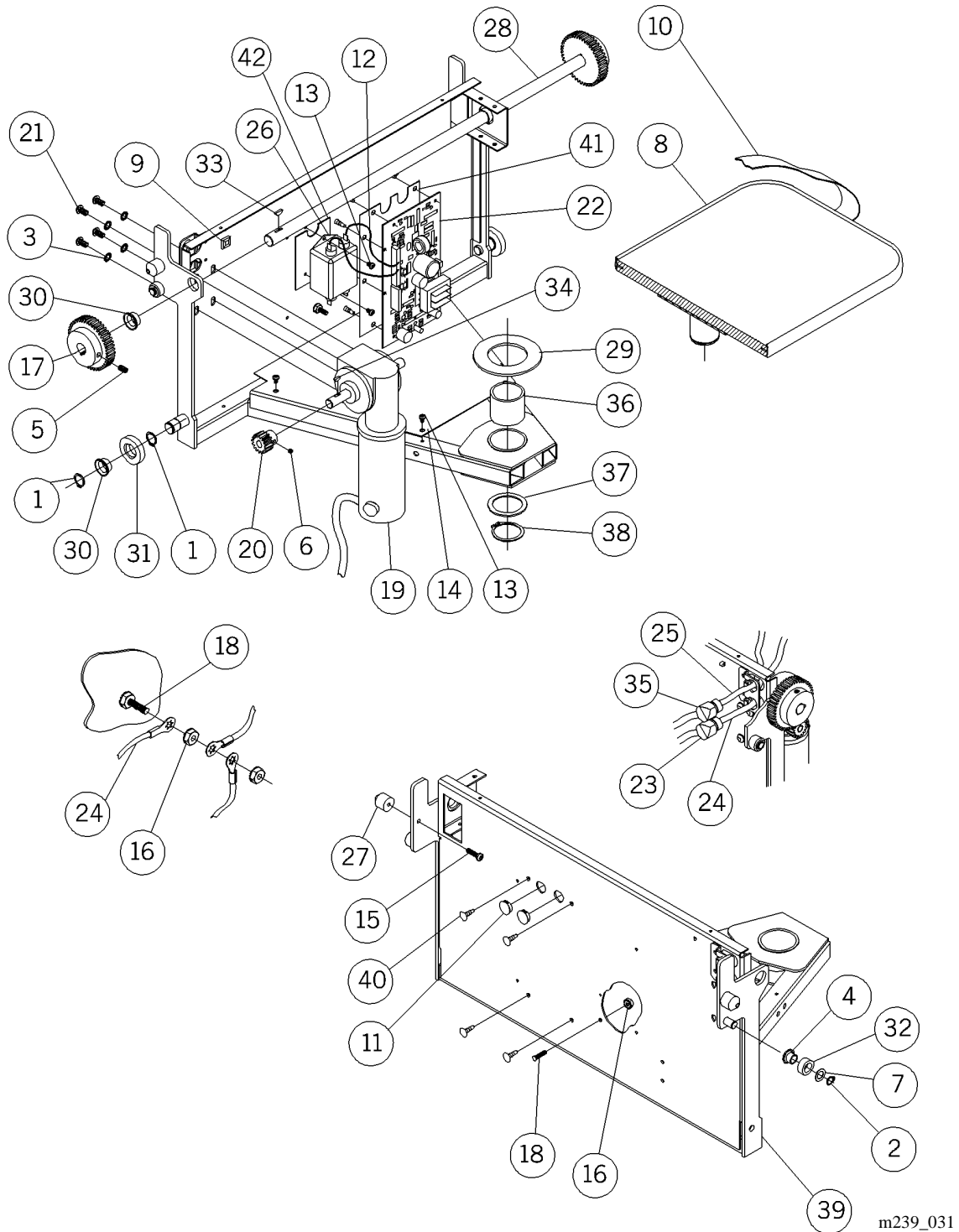


Table 5-7. Motorized Shelf Assembly

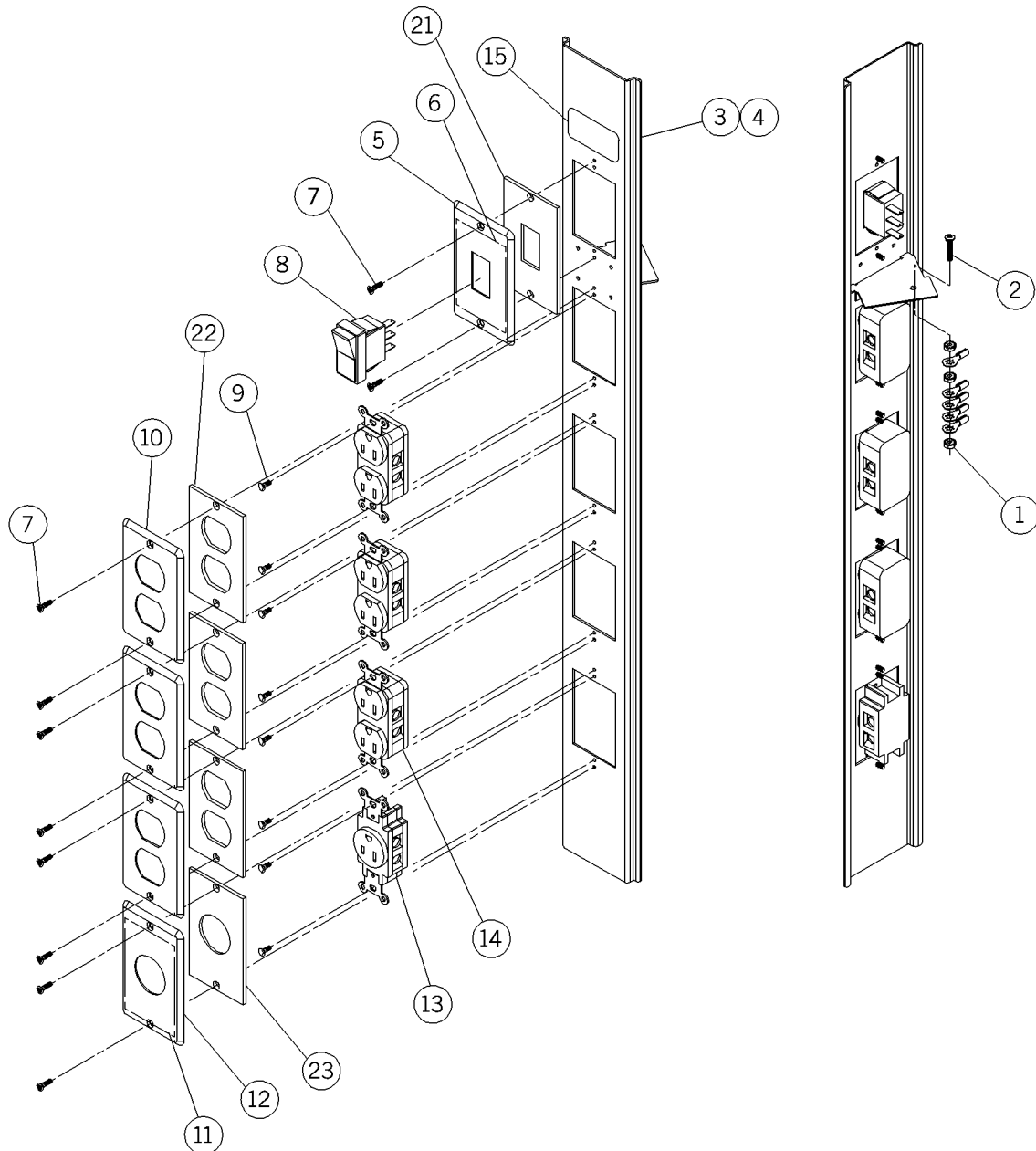
Item Number	Part Number	Quantity	Description
1	203421(3000)	4	Snap ring, 5/8
2	201469 (3000)	2	Snap ring, 3/8
3	203065 (3000)	4	Internal tooth lockwasher, 1/4
4	203647 (3000)	2	Du flange bearing, 3/8 x 3/8
5	203067 (3000)	2	Set screw, 1/4-28 x 0.500
6	203068 (3000)	1	Set screw, 10-32 x 3/16
7	203707 (3000)	2	Washer, top roller, shelf
8	203100 (3000)	1	Shelf assembly, motorized shelf
9	50128 (3000)	2	Wire tie mount
10	20315801 (3000)	1	Equipment strap
11	203194 (3000)	2	Shorty plug, 5/8
12	203829(3000)	1	Wire assembly
13	393 (3000)	6	Screw
14	59978 (3000)	2	Cover, shelf mount
15	55556 (3000)	2	Screw, #10-16, pan head
16	57033 (3000)	3	Keps nut
17	59495 (3000)	2	Spur gear, 16DP, 4OT, 1/2" face
18	5950602 (3000)	1	Stud, #10-32 x 0.750
19	203270 (3000)	1	Motor assembly, motorized shelf
20	59580 (3000)	1	Spur gear, 16DP, 16T, 1/2" face
21	59660-01 (3000)	4	Socket button head cap screw, 1/4-20 x 0.500 UNRC-3A
22	59794 (3000)	1	Assembly, CarePorter™ control
23	203684 (3000)	1	Strain, relief, angle
24	203677 (3000)	1	Cable assembly, shelf power cord
25	59893 (3000)	1	Shelf data sensor cable
26	203826 (3000)	1	Noise filter, 250V 15A
27	59899 (3000)	2	Glide, shelf carriage
28	59900 (3000)	1	Gear shaft, shelf carriage
29	59931 (3000)	1	Friction surface
30	203648 (3000)	2	Du flanged bearing, 5/8 x 3/8
31	59936 (3000)	2	Bottom roller, shelf carriage

Item Number	Part Number	Quantity	Description
32	59937 (3000)	2	Top roller, shelf carriage
33	59938 (3000)	2	Woodruff key, #404
34	59939 (3000)	1	Woodruff key, #303
35	59942 (3000)	1	Strain relief, angle
36	59943 (3000)	1	Bushing, sleeve, 1.5 x 1.75 x 1.5
37	59944 (3000)	1	Washer, 2.0 OD x 1.5 ID
38	59945 (3000)	1	Snap ring, 1.50"
39	59973 (3000)	1	Shelf carriage weldment
40	59974 (3000)	4	Standoff, power control board, snap, 1/4
41	59976 (3000)	1	Insulator, fiber fish paper
42	203953 (3000)	1	Noise filter spacer

NOTES:

Device Mount Assemblies

Figure 5-8. Device Mount Assembly (Left-Hand Shown)



m239_032

Table 5-8. Device Mount Assemblies

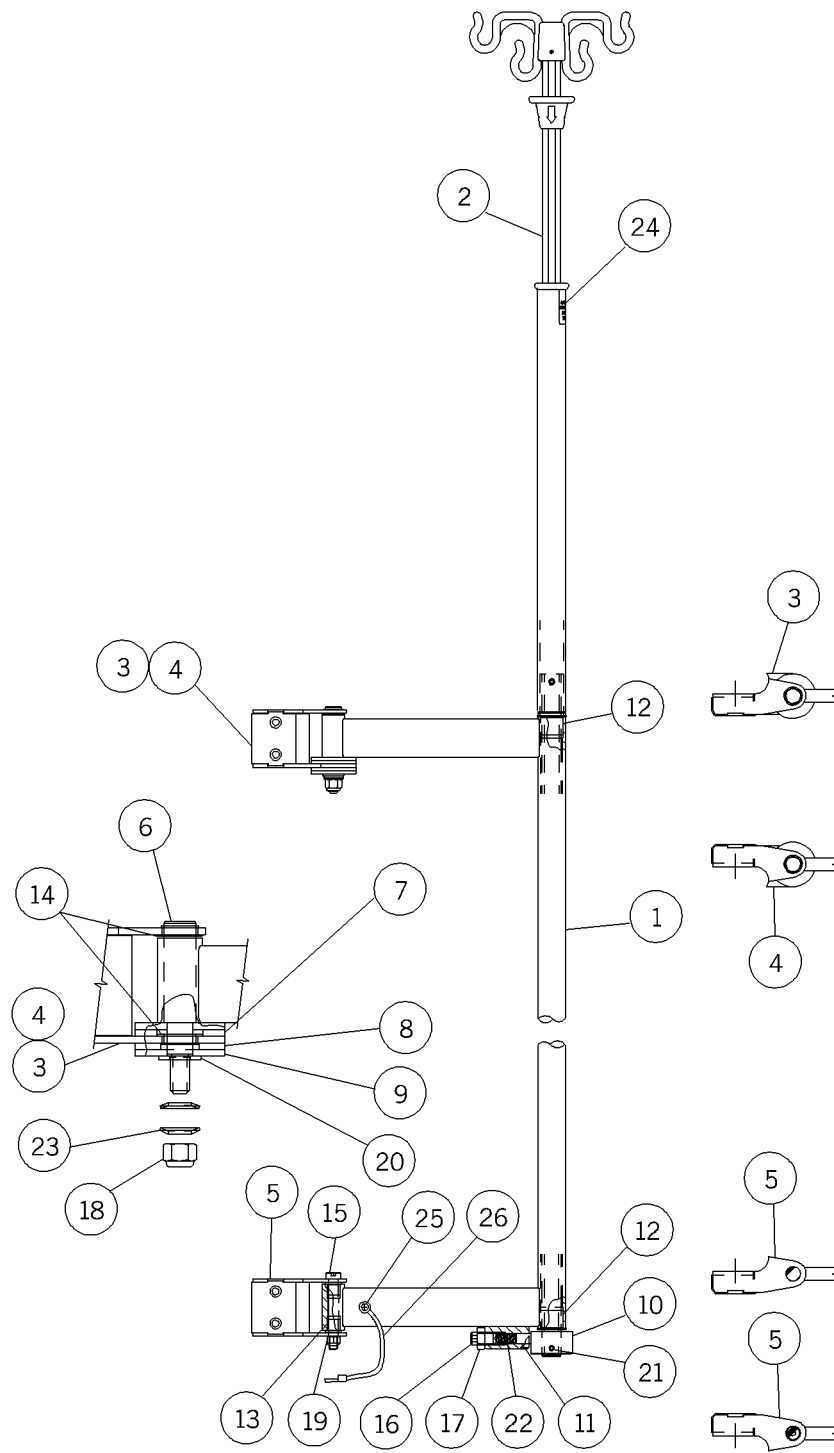
Item Number	Part Number	Quantity	Description
1	15250 (3000)	6	Locknut washer base
2	52243-07 (3000)	2	Screw
3	5999901 (3000)	1	Weldment, device mount, left
4	5999902 (3000)	1	Weldment, device mount, right
5	203179 (3000)	2	Faceplate up/down switch
6	203218 (3000)	2	Label, shelf switch
7	50590 (3000)	20	Screw
8	203111 (3000)	2	Switch, rocker
9	16115 (3000)	16	Screw
10	203406 (3000)	6	Faceplate, duplex—CarePorter™
11	203181 (3000)	2	Label, battery power
12	201871 (3000)	2	Faceplate, simplex, 1 gang
13	18061 (3000)	2	Outlet, single, 15A, ivory
14	51129 (3000)	6	Outlet, duplex, 15A, ivory
15	203709 (3000)	1	Label, receptacle rating
16	203112 (3000)♦	1	Wire harness, base to left column
17	203113 (3000)♦	1	Wire harness, base to right column
18	59895 (3000)♦	2	Cable, shelf switch
19	203203 (3000)♦	4	Wire harness, receptacle to receptacle
20	203263 (3000)♦	2	Wire harness, ground wires to right column

NOTE:

♦ Items 16 through 20 are not shown in figure 5-7 on page 5-24.

IV Arm/Pole Assemblies

Figure 5-9. IV Arm/Pole Assembly (Left-Hand Shown)

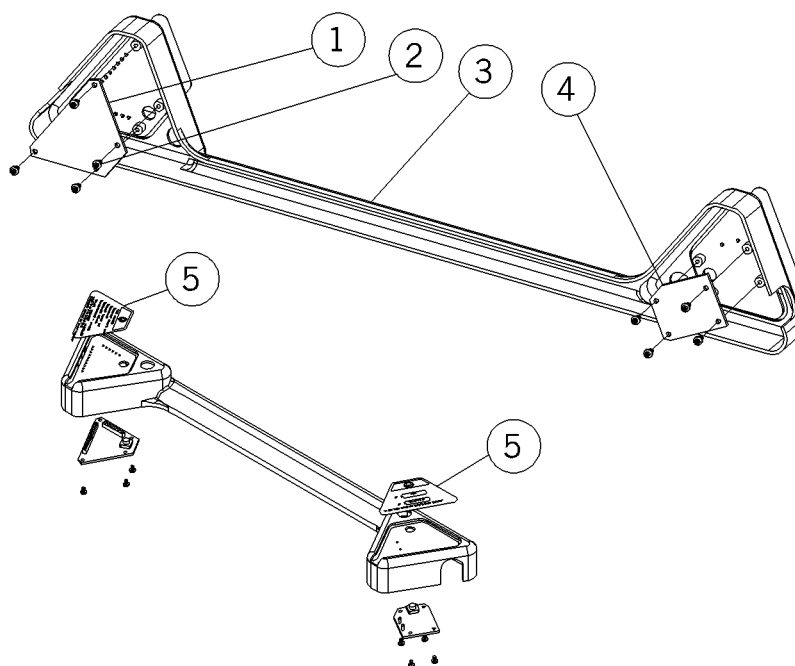


m239_033

Table 5-9. IV Arm/Pole Assemblies

Item Number	Part Number	Quantity	Description
1	59527 (3000)	2	IV arm assembly
2	59554 (3000)	2	IV pole assembly
3	5987801 (3000)	1	Upper hinge assembly, IV arm, LH
4	5987802 (3000)	1	Upper hinge assembly, IV arm, RH
5	59879 (3000)	2	Lower hinge assembly, IV arm
6	59568 (3000)	2	Clutch hinge shaft, IV arm
7	5966401 (3000)	2	Friction washer, IV arm 0.891 ID
8	5966402 (3000)	2	Friction washer, IV arm 0.750 OD
9	5952502 (3000)	2	Clutch washer, IV arm, plated
10	59530 (3000)	2	Friction disc, IV pole
11	59528 (3000)	2	Friction plunger, IV pole
12	59947 (3000)	4	Bearing, flanged, 0.75 x 0.875 x 0.75
13	59883 (3000)	4	Bearing, flanged, 0.375 x 0.500 x 0.5
14	59884 (3000)	4	Bearing, flanged, 0.625 ID
15	203149 (3000)	2	Socket head shoulder screw, 0.375 x 2.250
16	203148 (3000)	2	Socket head set screw, 1/2-13 UNC-3A x 1.0
17	203147 (3000)	2	Nut, hex jam, 1/2-13
18	203150 (3000)	2	Nut, self-locking, 3/8-24
19	59989 (3000)	2	Nut, self-locking, 5/16-18
20	53065-05 (3000)	2	Washer—flat
21	59877 (3000)	2	Spring pin, 0.188 dia x 1.500 lg.
22	59529 (3000)	2	Friction plunger spring, IV pole
23	203167 (3000)	4	Belleville spring washer, 0.380
24	59949 (3000)	2	Label, IV pole load
25	57018-04 (3000)	1	Screw
26	5231101 (3000)	1	Wire lead-green

Top Cover Assembly

Figure 5-10. Top Cover Assembly

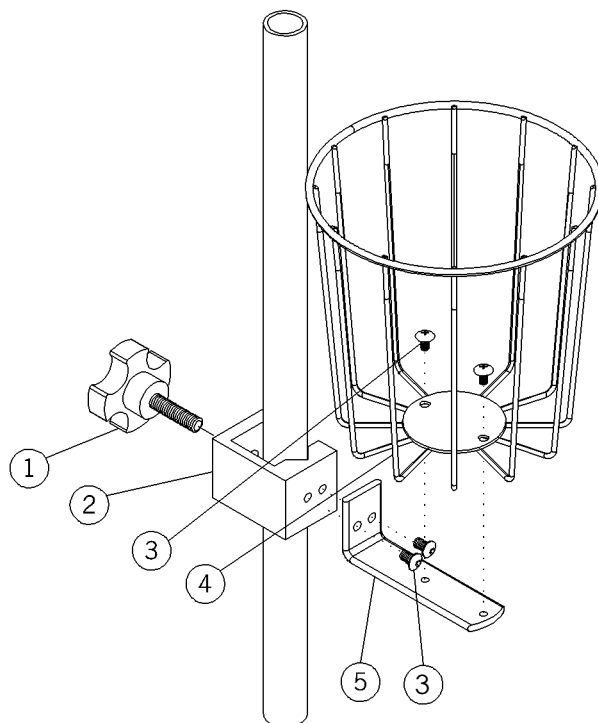
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Table 5-10. Top Cover Assembly

Item Number	Part Number	Quantity	Description
1	59864 (3000)	1	TPM display
2	393 (3000)	8	Screw
3	59849 (3000)	1	Column cover
4	203190 (3000)	1	Top assembly, gas alarm
5	59863 (3000)	1	Label, TPM

Ambu-Bag Mount

Figure 5-11. Ambu-Bag Mount



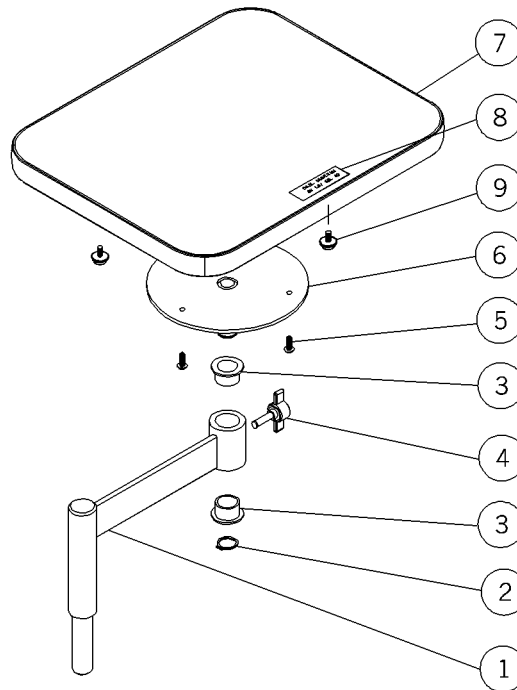
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Table 5-11. Ambu-Bag Mount

Item Number	Part Number	Quantity	Description
1	203231 (3000)	1	Knob, 4 prong, 3/8-16
2	203230 (3000)	1	Universal pole holder
3	5966001 (3000)	4	Socket button head screw, 1/4-20 x - 0.500 UNRC-3A
4	203228 (3000)	1	Basket, Ambu-bag
5	203232 (3000)	1	Basket mount bracket

Monitor/Equipment Shelf—P300101

Figure 5-12. Monitor/Equipment Shelf—P300101



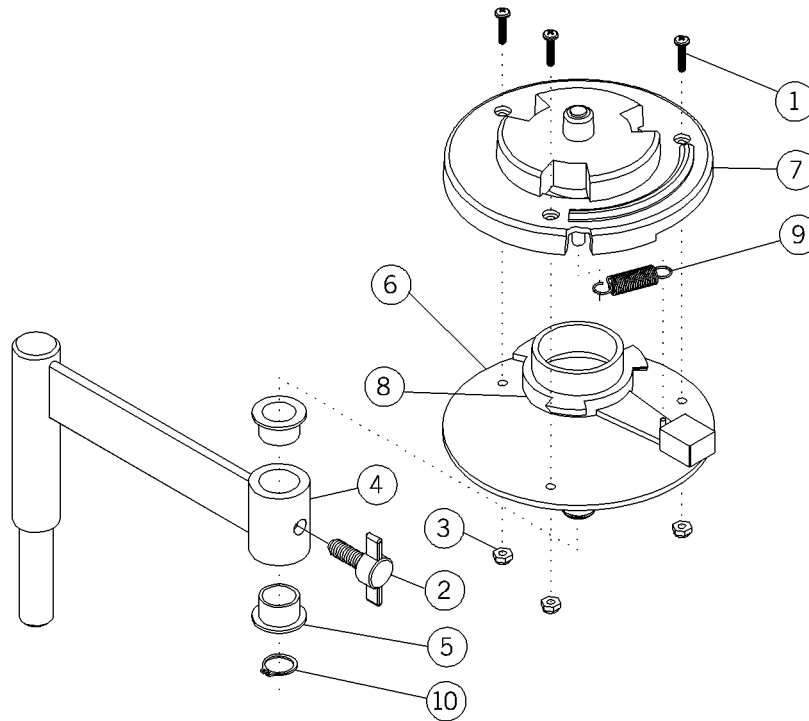
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Table 5-12. Monitor/Equipment Shelf—P300101

Item Number	Part Number	Quantity	Description
1	203319 (3000)	1	Bracket weldment, vent display
2	203421 (3000)	1	Snap ring, 5/8
3	203320 (3000)	2	Bushing, flange, 0.625 x 0.75 x 0.5 L
4	53913 (3000)	1	Knob assembly
5	10595 (3000)	4	Screw
6	203325 (3000)	1	Vent mount weldment
7	59915 (3000)	1	Shelf top, part monitor shelf
8	59398 (3000)	1	Load label, 20 lb
9	203075 (3000)	4	Snap, male

Vent Display Mount, Puritan-Bennett®—P300301

Figure 5-13. Vent Display Mount, Puritan-Bennett®—P300301



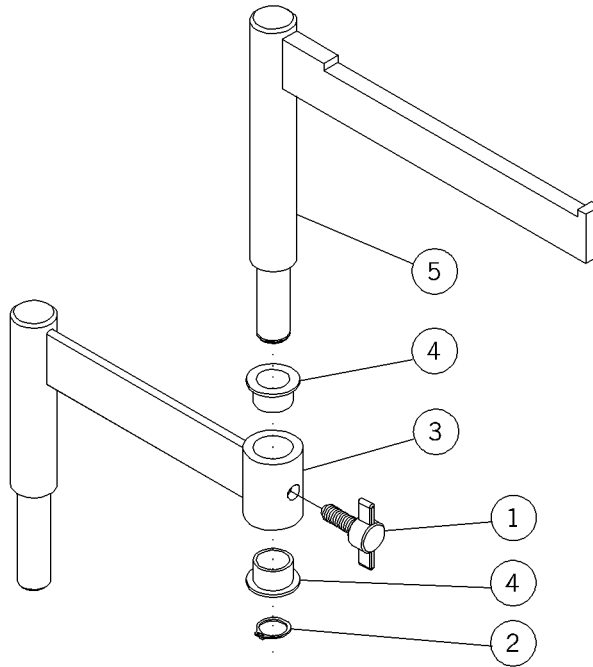
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Table 5-13. Vent Display Mount, Puritan-Bennett®—P300301

Item Number	Part Number	Quantity	Description
1	25820 (3000)	3	Screw
2	53913 (3000)	1	Knob assembly
3	57706 (3000)	3	Nut, #6-32, nylock
4	203319 (3000)	1	Bracket weldment, vent display
5	203320 (3000)	2	Bushing, flange, 0.625 x 0.75 x 0.5 L
6	203325 (3000)	1	Vent mount weldment
7	203417 (3000)	1	Vent base, Puritan-Bennett® model 840
8	203418 (3000)	1	Vent latch, Puritan Bennett® model 840
9	203419 (3000)	1	Spring, vent mount
10	203421 (3000)	1	Snap ring, 5/8

Vent Display Mount, Siemens™—P300302

Figure 5-14. Vent Display Mount, Siemens™—P300302



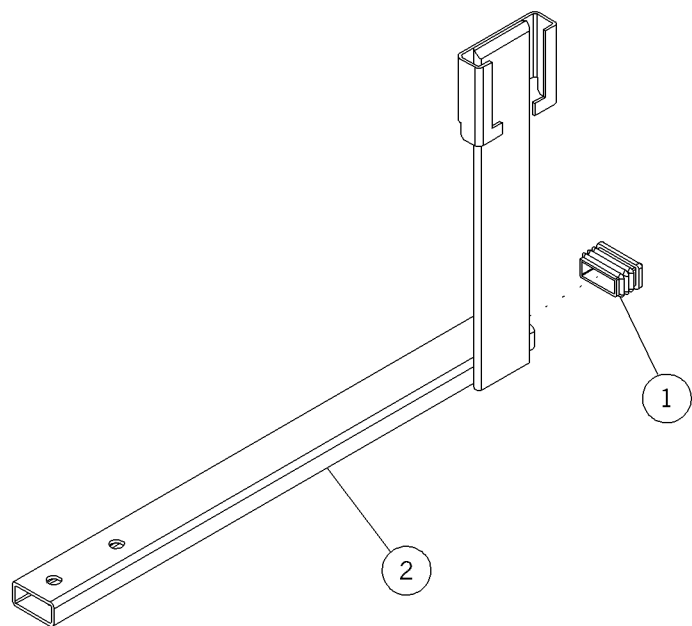
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Table 5-14. Vent Display Mount, Siemens™—P300302

Item Number	Part Number	Quantity	Description
1	53913 (3000)	1	Knob assembly
2	203421 (3000)	1	Snap ring, 5/8
3	203319 (3000)	1	Bracket weldment, vent display
4	203320 (3000)	2	Bushing, flange, 0.625 x 0.75 x 0.5 L
5	203366 (3000)	1	Flat vent mount weldment

Blender Bracket—P300401

Figure 5-15. Blender Bracket—P300401



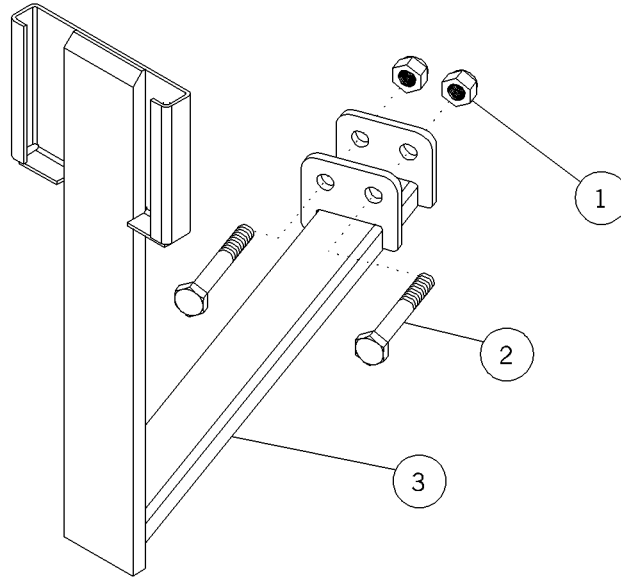
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Table 5-15. Blender Bracket—P300401

Item Number	Part Number	Quantity	Description
1	203197 (3000)	1	Finish plug, 0.50 x 1.00
2	203285 (3000)	1	Blender bracket weldment

Humidifier Bracket, Concha® 3—P300501

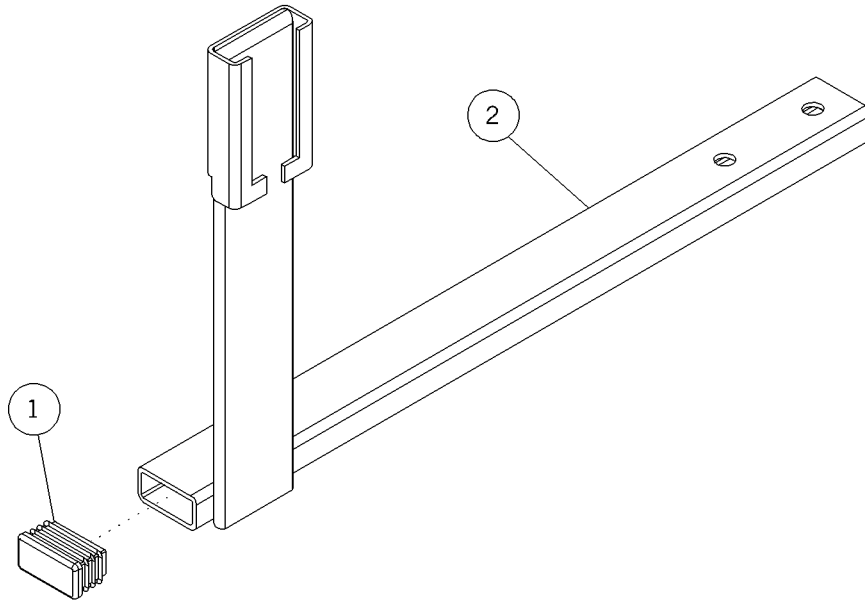
Figure 5-16. Humidifier Bracket, Concha® 3—P300501



m239_005

Table 5-16. Humidifier Bracket, Concha® 3—P300501

Item Number	Part Number	Quantity	Description
1	55792 (3000)	2	Locknut
2	5998703 (3000)	2	Hex head cap screw, 1/4-20 x 1.750
3	203223 (3000)	1	Heater bracket weldment

Humidifier Bracket, Fisher & Paykel®—P300502**Figure 5-17. Humidifier Bracket, Fisher & Paykel®—P300502**

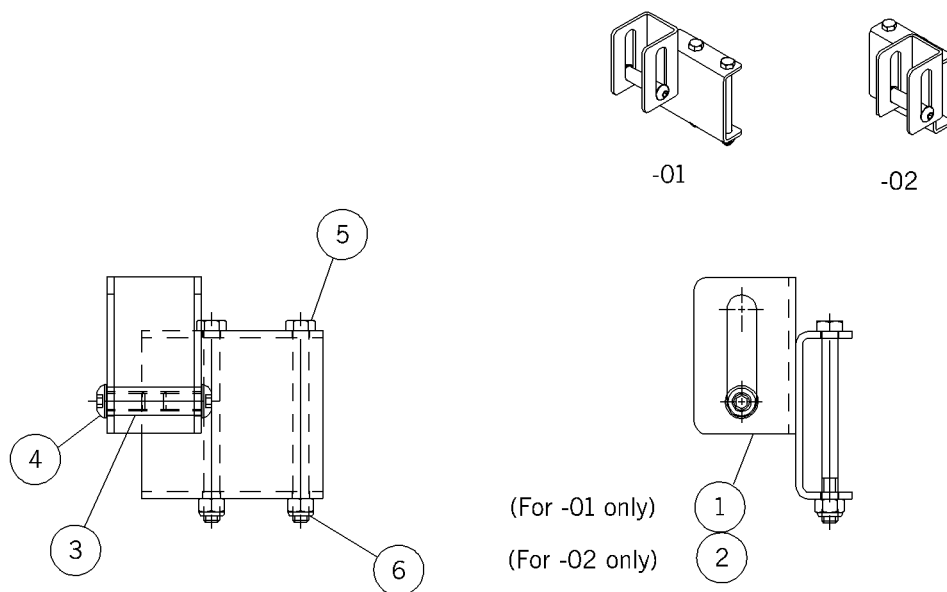
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Table 5-17. Humidifier Bracket, Fisher & Paykel®—P300502

Item Number	Part Number	Quantity	Description
1	203197 (3000)	1	Finish plug, 0.50 x 1.00
2	203286 (3000)	1	Humidifier bracket weldment

Bed Attachment Kit for Advance® Series Bed—P300701

Figure 5-18. Bed Attachment Kit for Advance® Series Bed—P300701



m239_012

Table 5-18. Bed Attachment Kit for Advance® Series Bed—P300701

Item Number	Part Number	Quantity	Description
1	20300801 (3000)	1	Mounting plate assembly, left side
2	20300802 (3000)	1	Mounting plate assembly, right side
3	59984 (3000)	2	Strike pin, bed latch
4	59985 (3000)	4	Socket button head cap screw, 3/8-16 x 0.750
5	5998803 (3000)	4	Hex head cap screw, 5/16-18 x 3.75
6	59989 (3000)	4	Nut, self locking, 5/16 -18

Bed Attachment Kit for Century CC®/EFICA CC® Dynamic Air Therapy® Unit—P301001

Figure 5-19. Bed Attachment Kit for Century CC®/EFICA CC® Dynamic Air Therapy® Unit—P301001

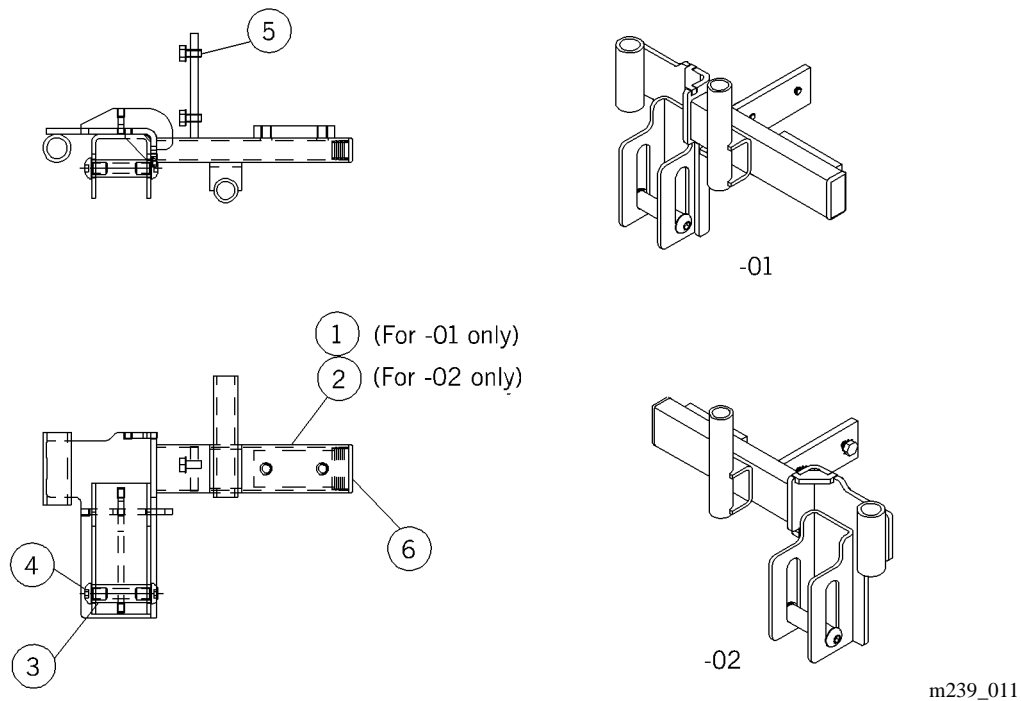
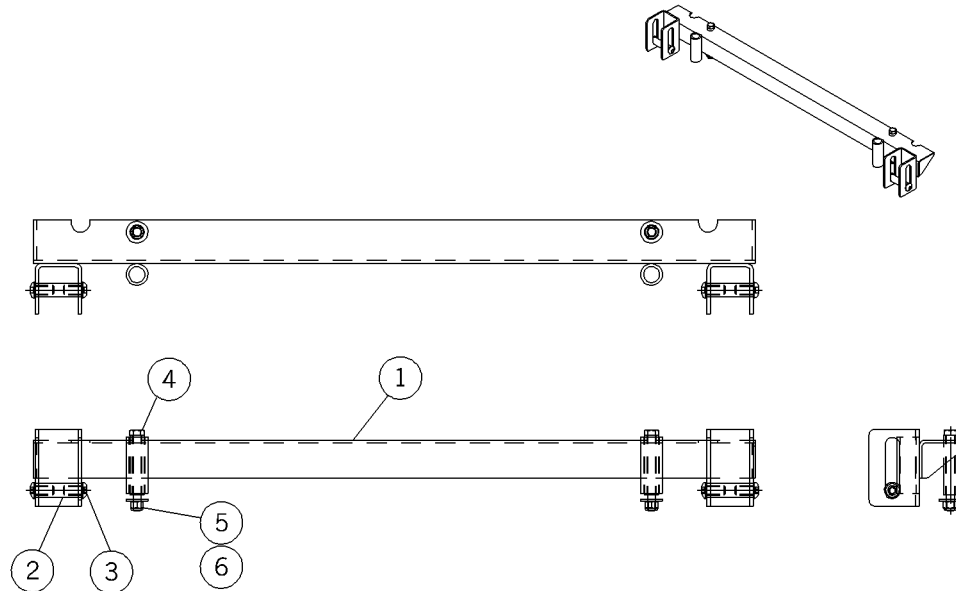


Table 5-19. Bed Attachment Kit for Century CC®/EFICA CC® Dynamic Air Therapy® Unit—P301001

Item Number	Part Number	Quantity	Description
1	20302601 (3000)	1	Mounting bracket assembly, left side
2	20302602 (3000)	1	Mounting bracket assembly, right side
3	59984 (3000)	2	Strike pin, bed latch
4	59985 (3000)	4	Socket button head cap screw, 3/8-16 x 0.750
5	5324303 (3000)	4	Screw, hex head
6	203009 (3000)	2	Finish plug, 0.75 x 1.50

Bed Attachment Kit for GPS® Procedural Stretcher—P301101

Figure 5-20. Bed Attachment Kit for GPS® Procedural Stretcher—P301101



m239_010

Table 5-20. Bed Attachment Kit for GPS® Procedural Stretcher—P301101

Item Number	Part Number	Quantity	Description
1	203030 (3000)	1	Mounting bracket assembly
2	59984 (3000)	2	Strike pin, bed latch
3	59985 (3000)	4	Socket button head cap screw, 3/8-16 x 0.750
4	5998802 (3000)	2	Hex head cap screw, 5/16-18 x 3.00
5	59989 (3000)	2	Nut, self locking, 5/16-18
6	203007 (3000)	2	Flat washer, 5/16 USS

Bed Attachment Kit for TotalCare® Bed System—P301201

Figure 5-21. Bed Attachment Kit for TotalCare® Bed System—P301201

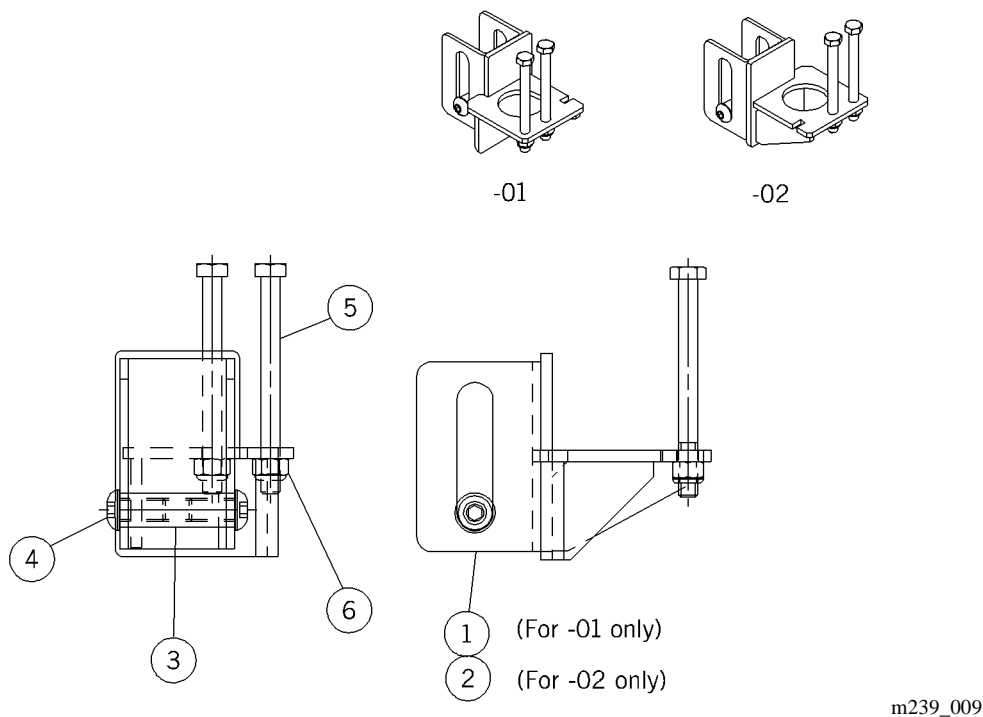
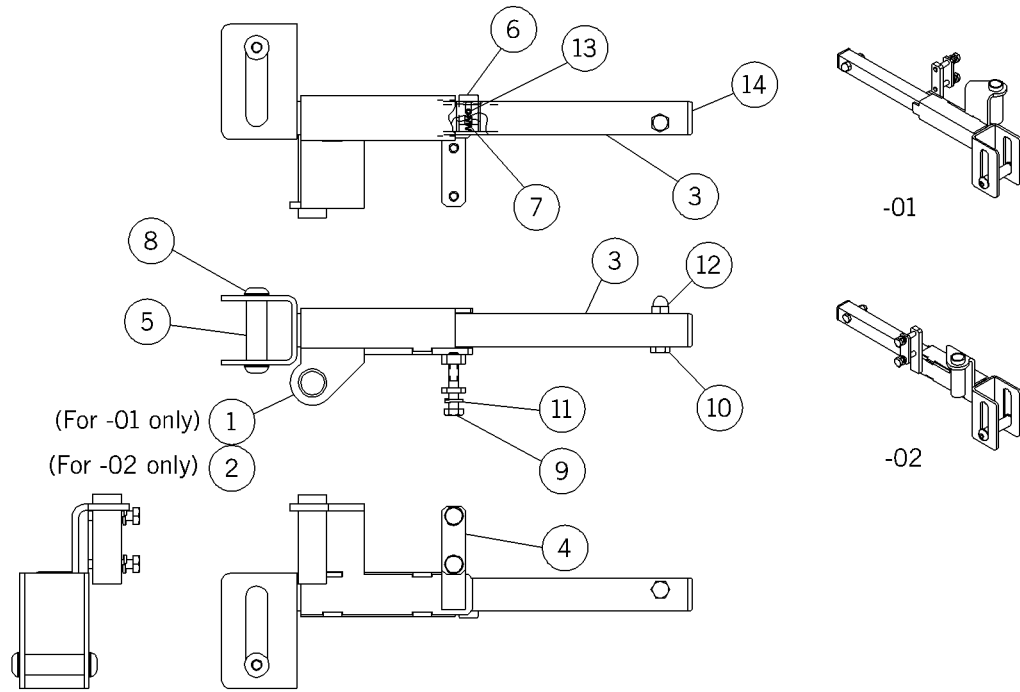


Table 5-21. Bed Attachment Kit for TotalCare® Bed System—P301201

Item Number	Part Number	Quantity	Description
1	20308001 (3000)	1	Mounting bracket assembly, left side
2	20308002 (3000)	1	Mounting bracket assembly, right side
3	59984 (3000)	2	Strike pin, bed latch
4	59985 (3000)	4	Socket button head cap screw, 3/8-16 x 0.750
5	5998805 (3000)	4	Hex head cap screw, 5/16-18 x 3.50
6	59989 (3000)	4	Nut, self locking, 5/16 -18

Bed Attachment Kit for TranStar® Series Stretcher—P301301

Figure 5-22. Bed Attachment Kit for TranStar® Series Stretcher—P301301



m239_008

**Table 5-22. Bed Attachment Kit for TranStar® Series Stretcher—
P301301**

Item Number	Part Number	Quantity	Description
1	20302201 (3000)	1	Latch guide assembly, left side
2	20302202 (3000)	1	Latch guide assembly, right side
3	203023 (3000)	2	Strike slide tube assembly
4	203017 (3000)	2	Clamp, latch
5	59984 (3000)	2	Strike pin, bed latch
6	203021 (3000)	2	Stop pin, latch
7	203024 (3000)	2	Spring, compression
8	59985 (3000)	4	Socket button head cap screw, 3/8-16 x 0.750
9	5998702 (3000)	4	Hex head cap screw, 1/4-20 x 1.500
10	5998701 (3000)	2	Hex head cap screw, 1/4-20 x 1.125
11	52560 (3000)	4	Lockwasher
12	59347 (3000)	2	1/4-20 acorn nut
13	57028-PL (3000)	2	Hinge
14	203033 (3000)	2	Finish plug, 0.875 x 0.875

NOTES:

Chapter 6

General Procedures

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Cleaning and Care



WARNING:

Follow the product manufacturer's instructions. Failure to do so could result in personal injury or equipment damage.



SHOCK HAZARD:

Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.



SHOCK HAZARD:

Do not expose the unit to excessive moisture. Personal injury or equipment damage could occur.



CAUTION:

Do not use harsh cleaners, solvents, or detergents. Equipment damage could occur.

General Cleaning

Clean the unit with a lightly dampened cloth and ordinary disinfectants. Do not use excessive liquid.

Steam Cleaning

Do not use any steam cleaning device on the CarePorter™ Cart. Excessive moisture can damage mechanisms in this unit.

Hard to Clean Spots

To remove difficult spots or stains, use standard household cleaners and a soft bristle brush. To loosen heavy, dried-on soil or excreta, you may first need to saturate the spot.

Disinfection

Dilute disinfectants and germicides as specified on the manufacturer's label.

Component Handling



CAUTION:

Ensure that your hands are clean, and **only** handle the P.C. boards by their edges to prevent component damage.



CAUTION:

Wear an antistatic strap when handling electronic components. Failure to do so could result in component damage.



CAUTION:

Place the removed P.C. boards in antistatic protective bags for shipping and storage. Equipment damage can occur.

P.C. Boards

Good handling practices must be followed when servicing P.C. boards. Mishandling can cause damage to the P.C. boards, shorten their service life, and result in bed malfunctions. The following rules for handling should always be observed:

- Wear an appropriate antistatic (electrostatic discharge) strap, and ensure it is properly grounded when working with electronics.
- Ensure that hands are clean and free of moisture or oily liquids (etc.).
- Only handle the P.C. boards by their outer edges. Do not touch the components on the P.C. board. Finger contact with the board surface and/or with its components can leave a deposit which will result in board (and component) deterioration.

Place the removed P.C. boards in antistatic protective bags for shipping and storage.

Lubrication Requirements



WARNING:

Follow the product manufacturer's instructions. Failure to do so could result in personal injury or equipment damage.



CAUTION:

Do not use silicone-based lubricants. Equipment damage could occur.

Preventive Maintenance



WARNING:

Only facility-authorized maintenance personnel should perform preventive maintenance on the CarePorter™ Cart. Preventive maintenance performed by unauthorized personnel could result in personal injury or equipment damage.

The CarePorter™ Cart requires an effective maintenance program. We recommend that you perform annual preventive maintenance (PM) and testing for Joint Commission on Accreditation of Healthcare Organizations (JCAHO). PM and testing not only meet JCAHO requirements but will help ensure a long, operative life for the CarePorter™ Cart. PM will minimize downtime due to excessive wear.

The following PM schedule guides the technician through a normal PM procedure on the CarePorter™ Cart. During this PM process, check each item on the schedule, and make the necessary adjustments.

Follow the PM schedule with the corresponding PM checklist. This checklist is designed to keep a running maintenance history and subsequent repair costs for one CarePorter™ Cart. However, your facility can modify this checklist or design another to fit your needs. Keeping close records and maintaining the CarePorter™ Cart are two effective ways to reduce downtime and ensure the patient remains comfortable.

Preventive Maintenance Schedule

Table 6-1. Preventive Maintenance Schedule

Function	Procedure
Electrical compartment covers	Inspect the covers for signs of fluid leakage into the electrical compartment. Replace the seals if necessary.
Electrical receptacles	Check all electrical receptacles for proper voltage and polarity. Check all electrical receptacles for proper ground conductor extraction force. The extraction force should be 4 oz with a 0.184" diameter pin.
Electrical test	Test the CarePorter™ Cart for electrical leakage.
Electrical switches	Check for proper operation. Replace if necessary (refer to procedure 4.7).
Electrical wiring	Inspect the electrical wiring and check for wear. Replace if necessary.
IV poles/arms	Inspect the IV arm and IV pole clutch assemblies to ensure that they are adjusted properly (refer to procedure 4.16). Check the friction washers for excessive wear or damage. Replace if necessary.
Power cord and plug	Inspect the power cord and plug for cuts, nicks, excessive abrasion or breaks. Replace if necessary (refer to procedure 4.14).
Swivel casters and total lock casters	Check the tires for cuts, wear, tread life, etc. Apply the brake and check to ensure that the CarePorter™ Cart will not move (when the brake is activated). If the CarePorter™ Cart moves, inspect it for wear and replace if required (refer to procedure 4.13).
Breaker switches	Test each breaker switch separately for proper function. Inspect the contacts for cleanliness. Replace if necessary (refer to procedure 4.8).
Air system	Check the air system functions. Check the manifold assembly, hose connections, hoses, and O-rings for signs of excessive abrasions and leakage. A mandatory replacement for the hoses is required after a maximum of 7 years of service.
Gas manifold	Check the manifold gas bottle inlets for cleanliness and deterioration. Clean or replace the manifold if necessary (refer to procedure 4.17) or (refer to procedure 4.18).
DISS connections	Check the DISS connections on a monthly basis for cleanliness. Clean if necessary.

Function	Procedure
Gas spring	Ensure the gas spring pushes the rear legs into the locking position as the CarePorter™ Cart is moved forward. When the gas spring is fully extended, check the gas spring rod for scratches, nicks, or dents. Replace if necessary (refer to procedure 4.12).
Manifold alarms	Check the manifold alarms and gas display LEDs for proper function and illumination. Replace the gas display board if necessary (refer to procedure 4.11).
TPM alarms	Check the TPM alarms and TPM display LEDs for proper function and illumination. Replace the TPM display board if necessary (refer to procedure 4.10).
Battery cable	Inspect the battery cable from the TPM to the battery pack for cuts, nicks, excessive abrasion or breaks. Replace if necessary (refer to procedure 4.3).
Push bar	Make sure the push bar is securely attached.
Side push handle	Inspect the side push handle covers for cuts, nicks, excessive abrasion or breaks. Replace if necessary (refer to procedure 4.20).
Accessories	Check all accessories for proper fit and function.
Overall appearance	Touch up paint where necessary. Inspect all labels and replace if necessary. Check the general aesthetics of the CarePorter™ Cart.

Preventive Maintenance Checklist

Table 6-2. Preventive Maintenance Checklist

Date		Function	
Hill-Rom Company, Inc.	Manufacturer		Electrical compartment
			Electrical receptacles
			Electrical test
			Electrical switches
			Electrical wiring
			IV poles/arms
			Power cord and plug
			Swivel casters
			Total lock casters
			Breaker switches
	Model Number		Air system
			Gas manifold
			DISS connections
			Gas spring
			Manifold alarms
			TPM alarms
			Battery cable
			Push bar
			Side push handle
			Accessories
	Serial Number		Overall appearance
Total Cost for This Page		Labor Time:	Legend L=Lube C=Clean A=Adjust R=Repair or Replace O=Okay N=Not Applicable Remarks:
		Repair Cost:	
		Inspected By:	

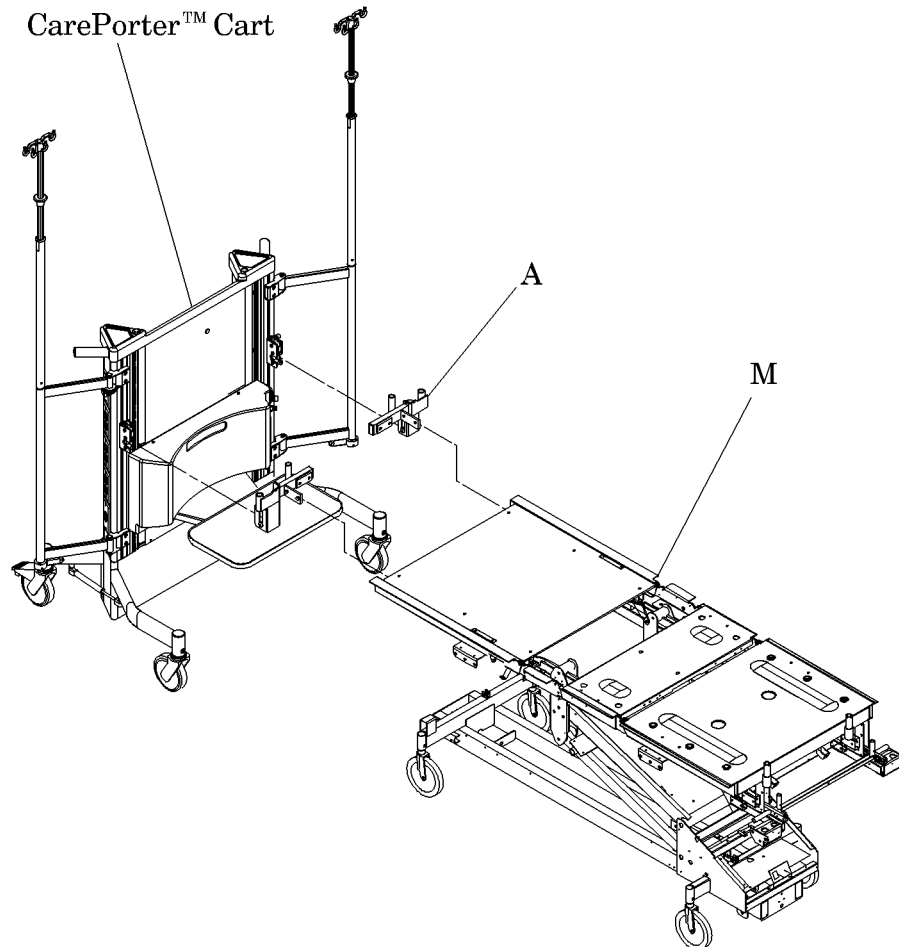
6.1 Century CC®/Efficacy CC® Dynamic Air Therapy Unit Attachment Bracket—P/N P301001

Tools required: 1/2" hex head wrench Adjustable wrench
 Ratchet 1/2" socket
 Hilow cylinder block (P/N 87V287S)

Installation

This section describes how to install the CarePorter™ Cart bed attachment kit (A) to the Century CC® Bed (M) (see figure 6-1 on page 6-10). Before you start the installation, read all of the installation instructions for the components you are installing.

Figure 6-1. CarePorter™ Cart Bed Attachment Kit



m239_052



WARNING:

Before working under the raised section of the bed, set the brakes, and install the hilow cylinder safety block. Failure to do so could result in personal injury or equipment damage.

1. Set the brake pedal to the brake position.
2. Raise the bed to the high position using the hilow function. Install the hilow cylinder safety block.
3. Raise the head section to the high position using the head function.
4. Place the On/Standby switch to the Standby position.

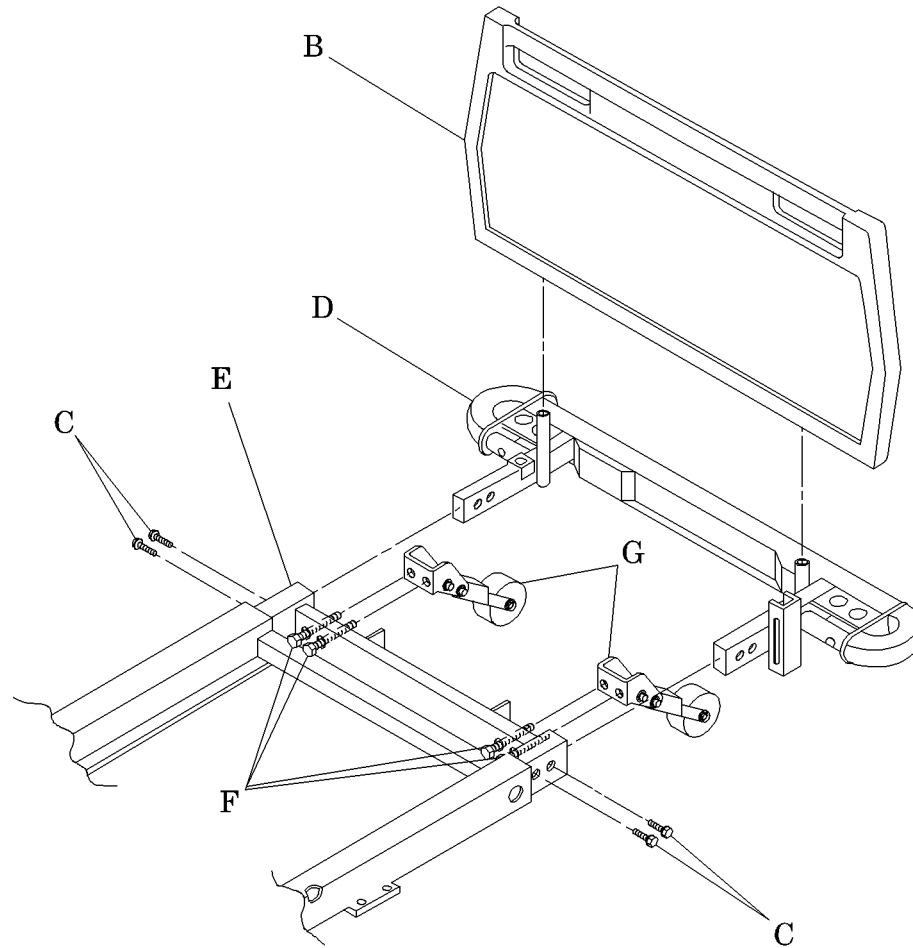


WARNING:

Unplug the bed from its power source. Failure to do so could result in personal injury or equipment damage.

5. Unplug the bed from its power source.
6. Disconnect the battery pack (refer to procedure 4.1).
7. Remove the headboard (B) (see figure 6-2 on page 6-12).

Figure 6-2. Roller Bumper Assembly Removal



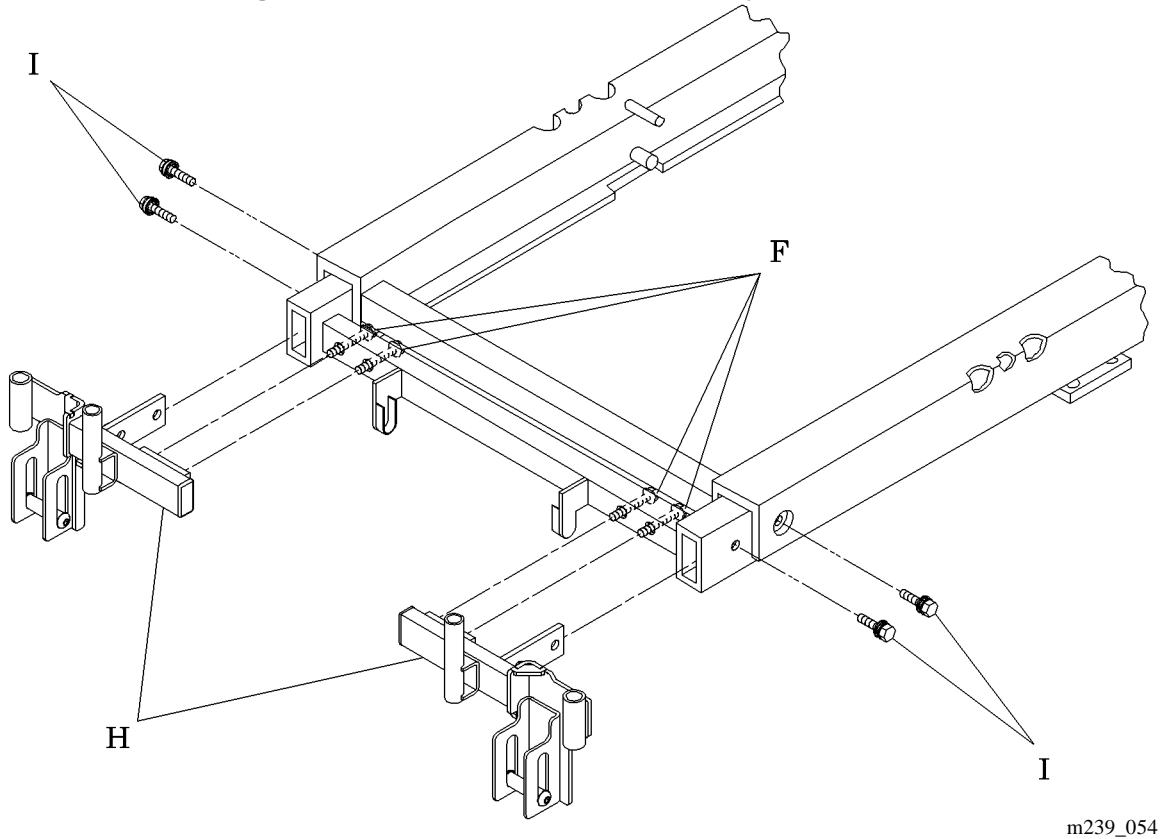
m239_053

8. Using the ratchet and 1/2" socket, remove and discard the four bolts (C) securing the bumper tube assembly (D) to the weight frame assembly (E).
9. Remove the bumper tube assembly (D).
10. Using the 1/2" hex head wrench, loosen the four bolts (F) that secure the two roller bumper assemblies (G) to the bed.

NOTE:

The four bolts (F) cannot be removed, only loosened, from the bed frame assembly.

11. Remove the roller bumper assemblies (G).
12. Using the 1/2" hex head wrench, tighten the bolts (F), and secure the bed attachment bracket (H) to the bed (see figure 6-3 on page 6-13).

Figure 6-3. Bed Attachment Assembly Installation

13. Ensure that the bed attachment bracket (H) is oriented correctly by matching the bolt patterns.
14. Using the ratchet and 1/2" socket, install the bolts (I), and secure the bed attachment bracket (H) to the bed.
15. Install the opposite bed attachment bracket (H) by performing step 12 through step 14.
16. Ensure that the bolts (F) and (I) are tight.
17. Install the headboard (B) (see figure 6-2 on page 6-12).

NOTE:

The headboard cannot be installed when the CarePorter™ Cart is attached to the bed.

Removal

To remove the bed attachment bracket (H), reverse the installation procedure.

Adjustment

No adjustment is required for the bed attachment bracket (H).

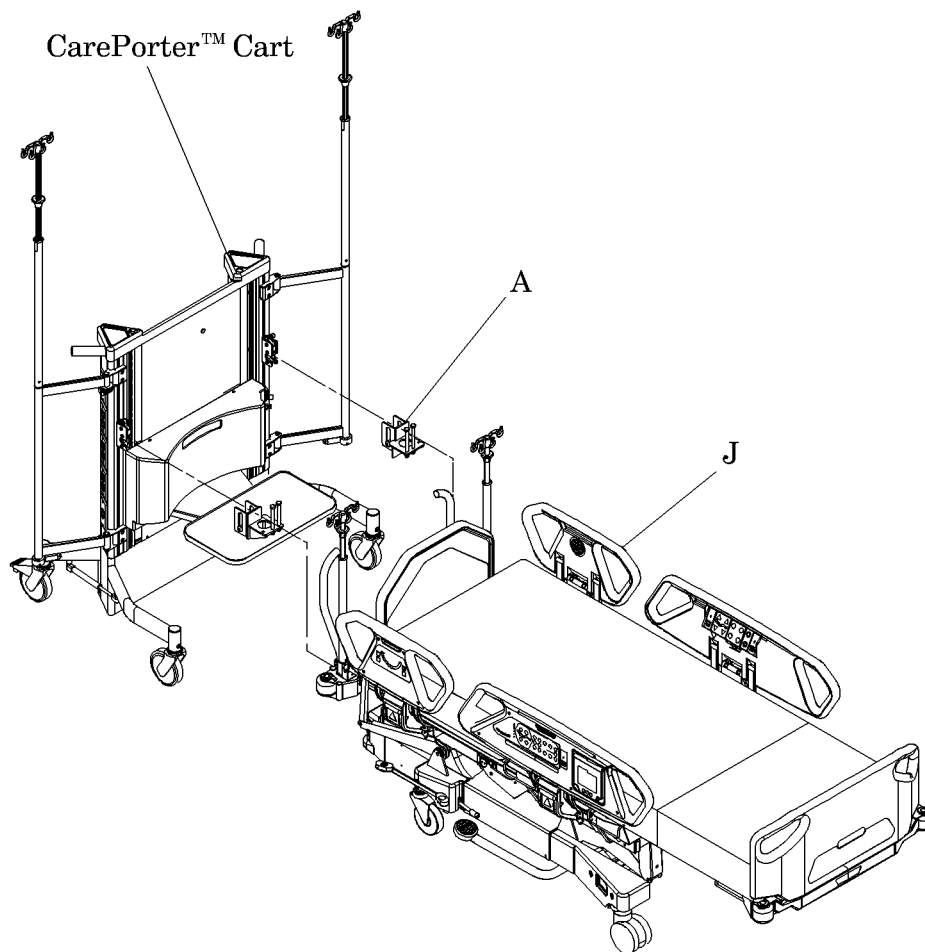
6.2 TotalCare® Bed System Attachment Bracket—P/N P301201

Tools required: 1/2" hex head wrench Adjustable wrench
Hilow cylinder block (P/N SA1658)

Installation

This section describes how to install the CarePorter™ Cart bed attachment kit (A) to the TotalCare® Bed System (J) (see figure 6-4 on page 6-15). Before you start the installation, read the installation instructions for the components you are installing.

Figure 6-4. CarePorter™ Cart Bed Attachment Kit



m239_056



WARNING:

Before working under the raised section of the bed, set the brakes, and install the hilow cylinder safety brace. Failure to do so could result in personal injury or equipment damage.

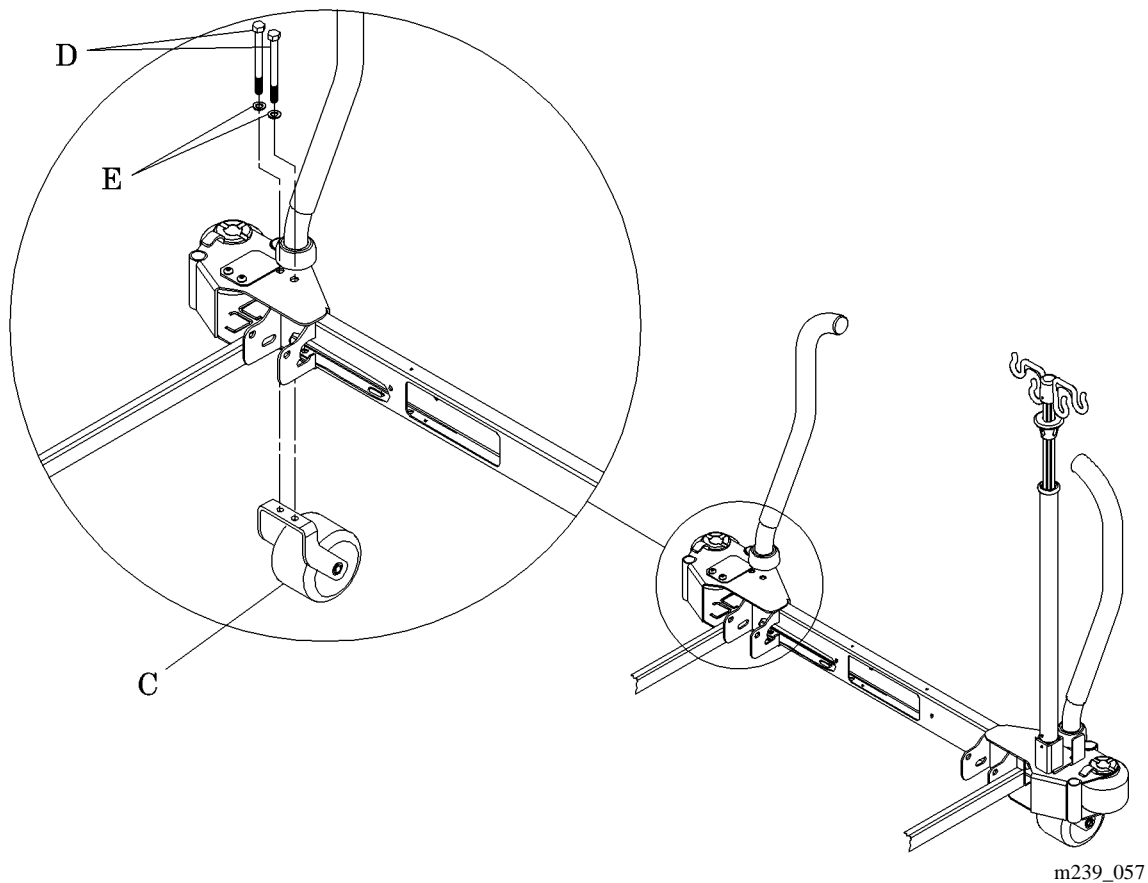
1. Set the brake pedal to the brake position.
2. Using the hilow function, raise the bed to the high position and install the hilow cylinder safety brace.
3. Place the On/Standby switch to the Standby position.



WARNING:

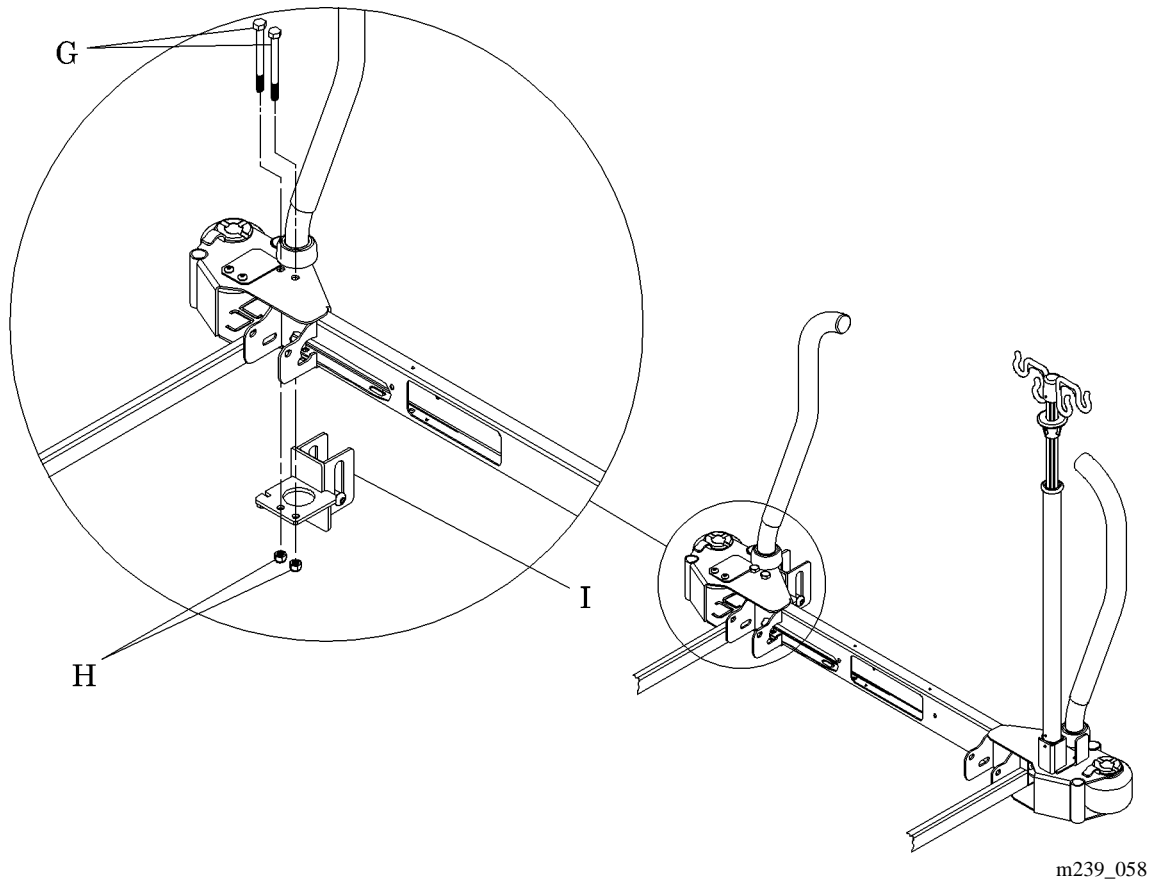
Unplug the bed from its power source. Failure to do so could result in personal injury or equipment damage.

4. Unplug the bed from its power source.
5. Disconnect the battery pack (refer to procedure 4.1).
6. Using the 1/2" hex head wrench, remove the bolts (D), and lockwashers (E) that secure the roller bumper assembly (C) to the bed (see figure 6-5 on page 6-17).

Figure 6-5. Roller Bumper Assembly Removal

7. Remove the bolts (D), lockwashers (E), and roller bumper assemblies (C) from the bed.
8. Using the 1/2" hex head wrench and the adjustable wrench, install the bolts (G) and locknuts (H) (see figure 6-6 on page 6-18).
9. Secure the bed attachment bracket (I) to the bed.

Figure 6-6. Bed Attachment Kit Installation



10. Ensure that the bed attachment bracket (I) is oriented correctly by matching the bolt pattern.
11. Install the opposite bed attachment kit (A) by performing step 6 through step 13 (see figure 6-4 on page 6-15).
12. Ensure that the bolts (G) and locknuts (H) are tight (see figure 6-6 on page 6-18).

Removal

To remove the bed attachment bracket (I), reverse the installation procedure.

Adjustment

No adjustment is required for the bed attachment bracket.

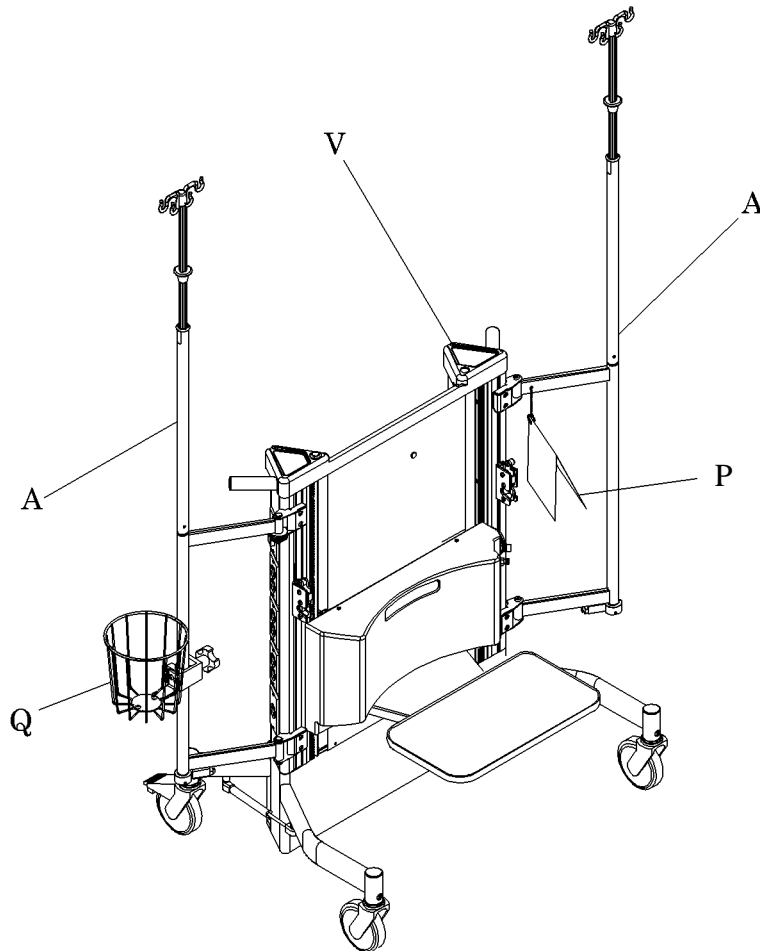
6.3 CarePorter™ Cart Assembly

Tools required: #2 phillips head screwdriver Screwdriver
5/32" hex key allen wrench

Installation

This section describes how to install the IV pole assemblies (A), onto the CarePorter™ Cart (V), install the warning placard (P), install the Ambu-bag basket (Q), and charge the Transport Power Module (TPM) battery pack (see figure 6-7 on page 6-19). Before you start the installation, read installation instructions for the components you are installing.

Figure 6-7. CarePorter™ Cart Assembly

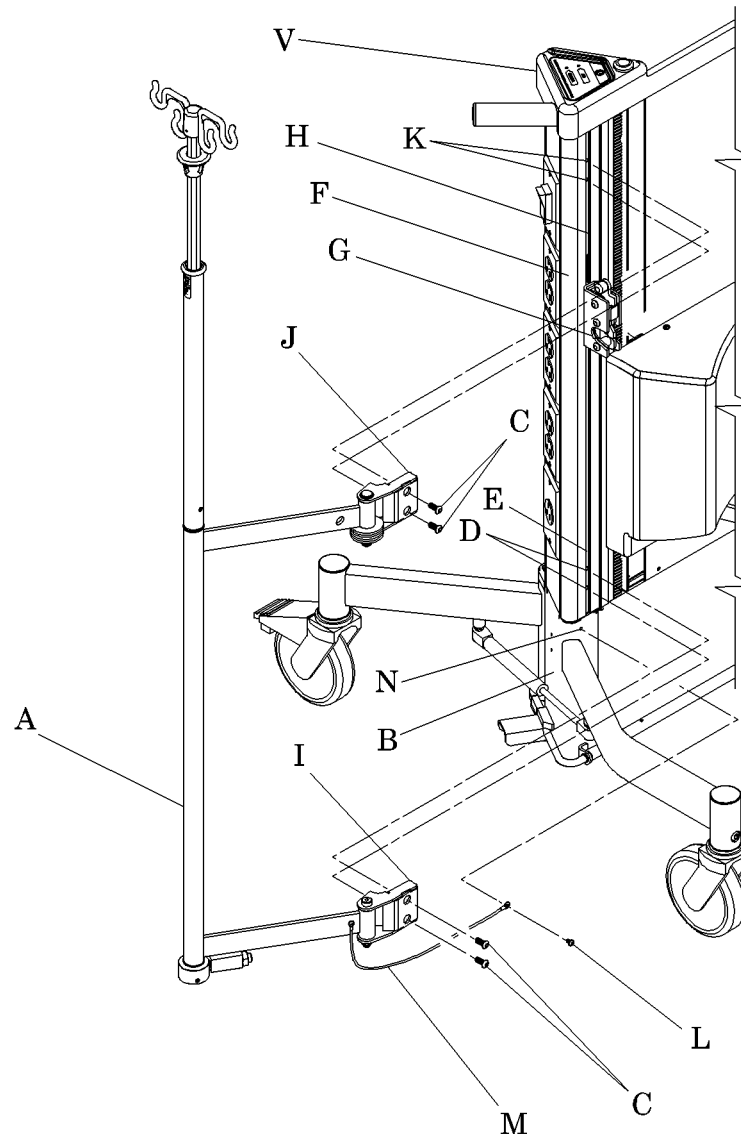


m239_059

IV Pole Assembly

1. Place the rear casters (marked orange) of the CarePorter™ Cart (V) into the brake position (see figure 6-8 on page 6-20).
2. Remove the IV arm/pole assemblies (A) from the shipping container.

Figure 6-8. IV Arm and Pole Assembly



m239_060

3. Using the 5/32" hex key allen wrench, install the two button socket head cap screws (C) into the threaded holes (D), and secure the lower hinge (I)

of the IV arm/pole assembly (A) to the lower mounting track (E) located on the vertical column (F).

4. Do not tighten the two button socket head cap screws (C) at this time.
5. Using the screwdriver, insert the blade of the screwdriver into the slot in front of the vertical column (F) just above the bed latch (G), and raise the upper mounting track (H) until the threaded holes (K) line up with the hole pattern in the upper hinge (J) of the IV arm/pole assembly (A).
6. Using the 5/32" hex key allen wrench, install the two button socket head cap screws (C) into the threaded holes (K) to secure the upper hinge (J) of the IV arm/pole assembly (A) to the upper mounting track (H) located on the vertical column (F).
7. Tighten the four button socket head cap screws (C) to 65-80 in-lb (7.3-9.0 N·m) of torque.
8. Using the #2 phillips head screwdriver, install the self-tapping screw (L), and secure the green ground wire (M) to the hole (N) located on the front of the base assembly (B).
9. Perform step 3 through step 8 to install the opposite IV arm/pole assembly (A) to the CarePorter™ Cart (V).

Transport Power Module Battery Pack



WARNING:

The TPM battery pack is for use with the CarePorter™ Cart only. Possible personal injury or equipment damage could occur if used on a non-approved product.

Use the TPM battery pack with the CarePorter™ Cart only.



CAUTION:

Do not allow the TPM battery pack to freeze. Store the TPM battery pack at 32°F to 104°F (0°C to 40°C). Failure to do so could result in equipment damage.



CAUTION:

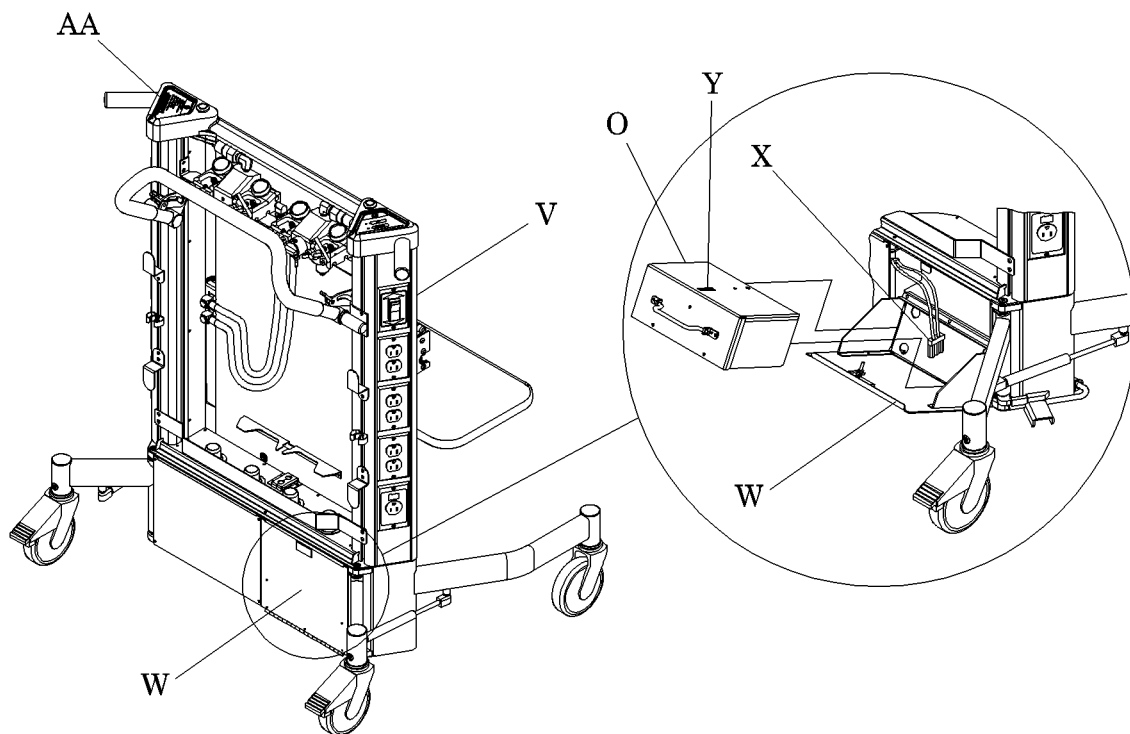
The TPM battery pack should be fully charged every 30 days. Failure to do so could result in equipment damage or loss of extended battery life.

NOTE:

The battery is shipped in a separate box attached to the packing pallet.

1. Remove the TPM battery pack (O) from the shipping container (see figure 6-9 on page 6-22).

Figure 6-9. Transport Power Module Battery Pack Location



m239_061

2. Ensure that the TPM battery pack (O) is fully charged every 30 days by, including this procedure as a part of your preventive maintenance schedule. Refer to the section titled “Preventive Maintenance” on page 6-6.

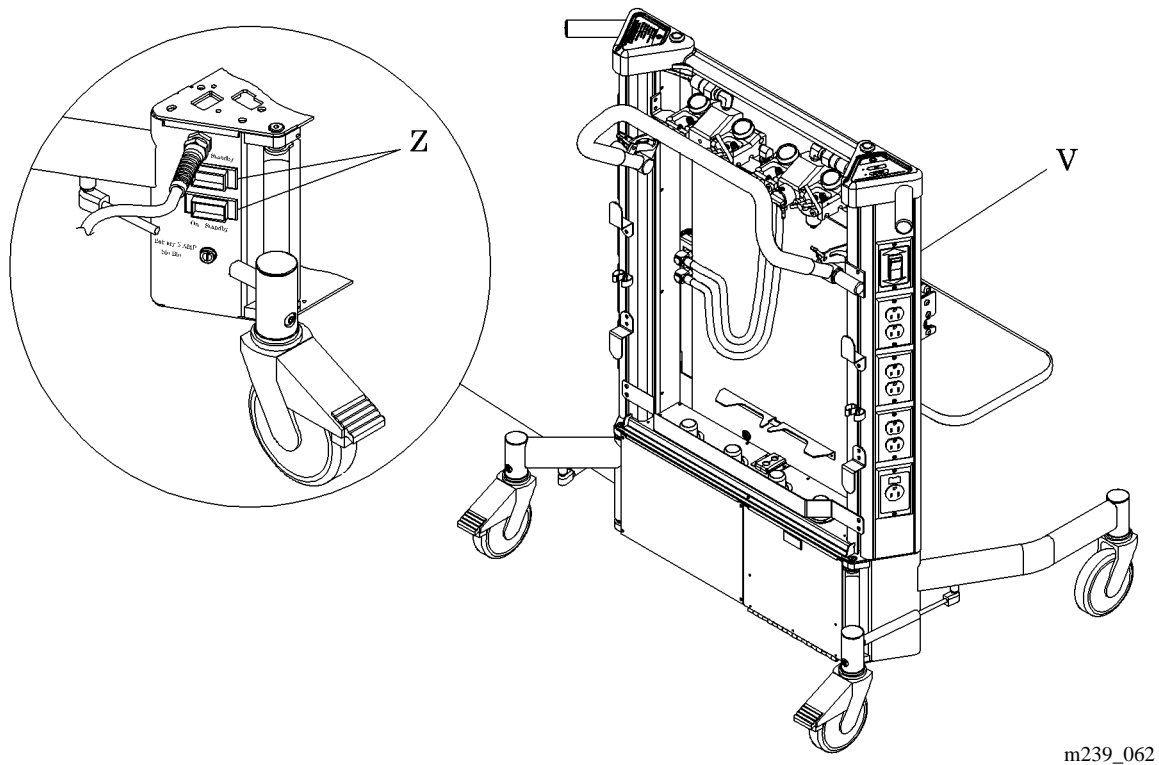
3. Charge the TPM battery pack (O) 24 hours prior to using the CarePorter™ Cart (V) by following these steps:

**SHOCK HAZARD:**

Do not expose the unit to excessive moisture. Before charging the TPM battery pack, ensure that no moisture is present. Failure to do so could result in personal injury or equipment damage.

- d. Ensure that no moisture is present before charging the TPM battery pack (O).
- e. If moisture is present, allow the unit to dry in a moisture free environment at room temperature.
- f. Place the TPM battery pack (O) into the battery compartment (W).
- g. Plug the battery cable (X) into the appropriate receptacle (Y) on the battery pack (O).
- h. Close the battery compartment (W).
- i. Plug the CarePorter™ Cart into an appropriate power source, and charge the battery for 24 hours.
- j. Set the breakers (Z) to the ON position (see figure 6-10 on page 6-24).

Figure 6-10. Breaker Location

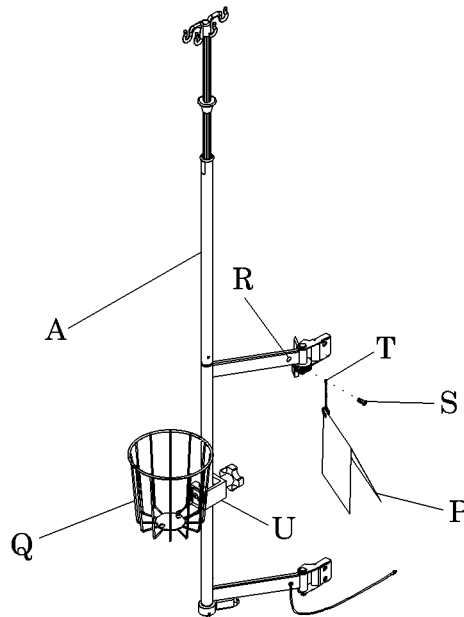


m239_062

4. Verify the TPM battery pack (O) is charging properly by visually inspecting the TPM operation display (AA). Only the battery charge level LED should be active (see figure 6-9 on page 6-22).

Warning Placard

1. Position the placard chain mount (T) over the hole (R) on either of the upper IV horizontal arms (see figure 6-11 on page 6-25).

Figure 6-11. Warning Placard and Ambu-Bag Mount Installation

m239_063

2. Using a phillips head screwdriver, secure the placard (P) to the IV arm with the screw (S).

Ambu-Bag Basket

NOTE:

In case of a loss of battery power, a resuscitator bag will be used to ventilate the patient. The ambu-bag carrier is supplied as a location to carry the resuscitator bag.

1. Remove the Ambu-bag basket (Q) from the pallet.
2. Position the pole clamp (U) on the either of the lower (non-rotating) vertical sections of the IV poles.
3. Secure the ambu-bag carrier (Q) to the IV pole by tightening the handle on the pole clamp (U).

Removal

Reverse the installation procedure to remove the IV pole assembly (A), TPM battery pack (O), warning placard (P), and ambu-bag basket (Q).

Adjustment

No adjustment is required for the IV pole assembly (A), TPM battery pack (O), warning placard (P), and ambu-bag basket (Q).

Tool and Supply Requirements

The following tools and supplies are required to service the CarePorter™ Cart:

- Drilldriver
- Long screwdriver bit
- 11/32" nut driver
- Phillips head screwdriver
- Needle nose pliers
- Antistatic (electrostatic discharge) strap
- Screwdriver
- Small screwdriver
- Allen wrench
- 6" (15 cm) block
- Adjustable wrench
- 1/2" hex head wrench
- Ratchet
- 1/2" socket
- Hilow cylinder block (P/N 87V287S)
- Hilow cylinder block (P/N SA1658)
- #2 phillips head screwdriver
- 5/32" hex key allen wrench
- T30 Torx® head bit
- T25 Torx® head bit
- Wood support block
- 11/32" socket
- Torque wrench
- 9/16" socket
- 6 mm allen wrench
- Box knife

NOTES:

Chapter 7

Accessories

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Accessories

For CarePorter Cart accessories, see table 7-1 on page 7-3.

Table 7-1. Accessories List

Product Number	Description
P300101	Monitor/equipment shelf
P300301	Vent display mount, Puritan-Bennet®
P300302	Vent display mount, Siemens™
P300401	Blender bracket
P300501	Humidifier bracket, Concha® 3
P300502	Humidifier bracket, Fisher & Paykel®
P158	Infusion Support Arm (ISS)

7.1 Monitor/Equipment Shelf—P/N P300101

Tools required: None

Installation

1. Remove the monitor/equipment shelf from the shipping container.
2. Set the brake/steer casters to the brake position.

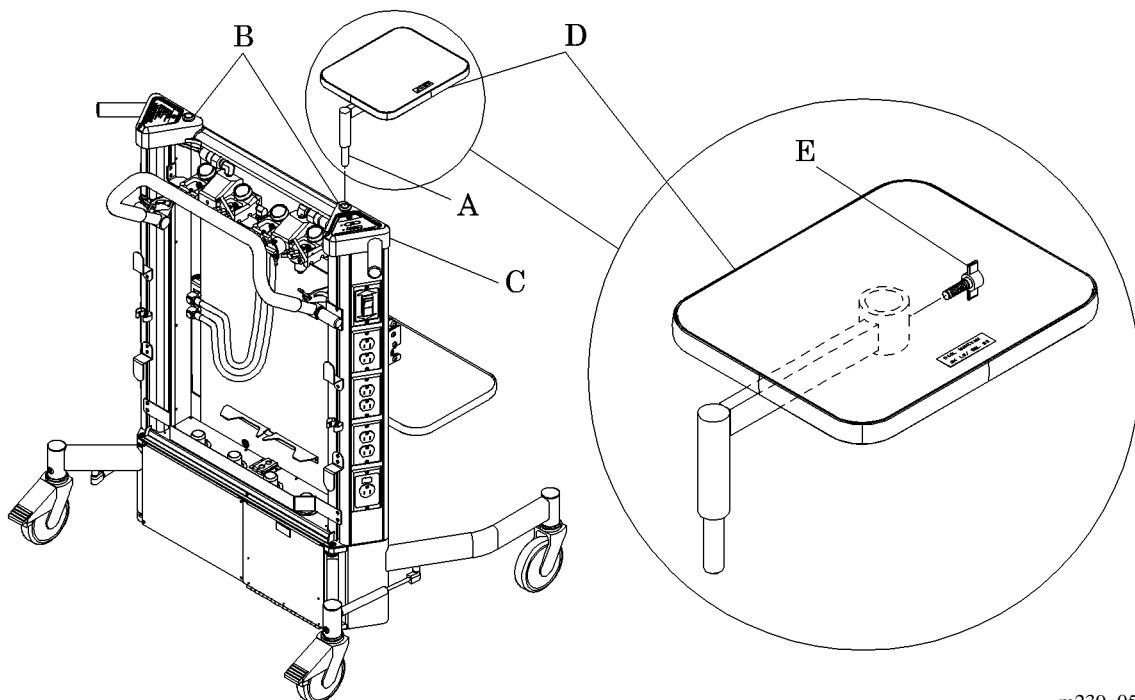


WARNING:

Ensure the bracket weldment is fully seated into the ISS socket before using the monitor/equipment shelf. Failure to do so could result in personal injury or equipment damage.

3. Insert the bracket weldment (A) into the one of the available ISS sockets (B) located on either side of the vertical columns (C) (see figure 7-1 on page 7-4).

Figure 7-1. Monitor/Equipment Shelf



m239_051

Adjustment

Orient the monitor/equipment shelf (D) to the desired position, and tighten the knob assembly (E).

Removal

To remove the monitor/equipment shelf (D) from the CarePorter™ Cart, reverse the installation procedure.

7.2 Vent Display Mount, Puritan-Bennett®—P300301

Tools required: None

Installation

1. Remove the ventilator mount from the shipping container.
2. Set the brake/steer casters to the brake position.

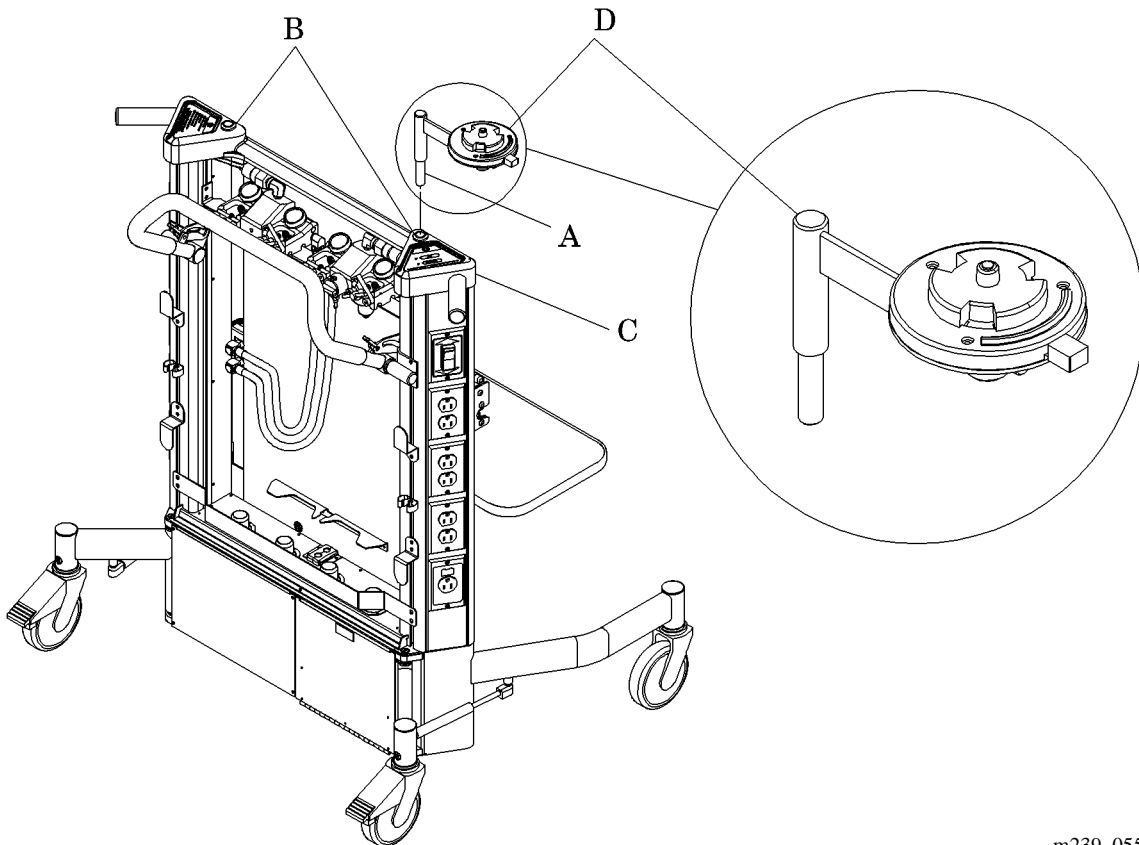


WARNING:

Ensure the bracket weldment is fully seated into the ISS socket before using the ventilator mount. Failure to do so could result in personal injury or equipment damage.

3. Insert the bracket weldment (A) into the one of the available ISS sockets (B) located on either side of the vertical columns (C) (see figure 7-2 on page 7-6).

Figure 7-2. Ventilator Display Mount Installation



m239_055

Adjustment

Turn the ventilator mount (D) to the desired position, and tighten the knob assembly.

Removal

To remove the ventilator mount (D) from the CarePorter™ Cart, reverse the installation procedure.

7.3 Vent Display Mount, Siemens™—P300302

Tools required: None

Installation

1. Remove the ventilator mount from the shipping container.
2. Set the brake/steer casters to the brake position.

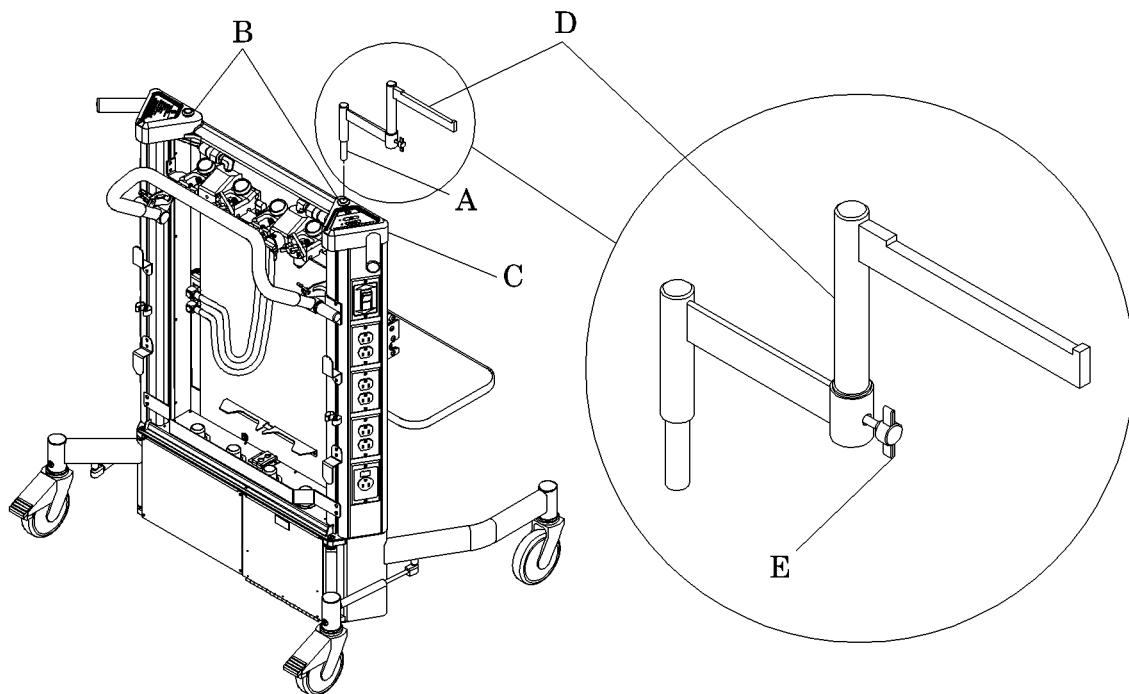


WARNING:

Ensure the bracket weldment is fully seated into the ISS socket before using the ventilator mount. Failure to do so could result in personal injury or equipment damage.

3. Insert the bracket weldment (A) into the one of the available ISS sockets (B) located on either side of the vertical columns (C) (see figure 7-3 on page 7-8).

Figure 7-3. Ventilator Display Mount Installation



m239_064

Adjustment

Orient the ventilator mount (D) to the desired position, and tighten the knob assembly (E).

Removal

Reverse the installation procedure to remove the ventilator mount (D) from the CarePorter™ Cart.

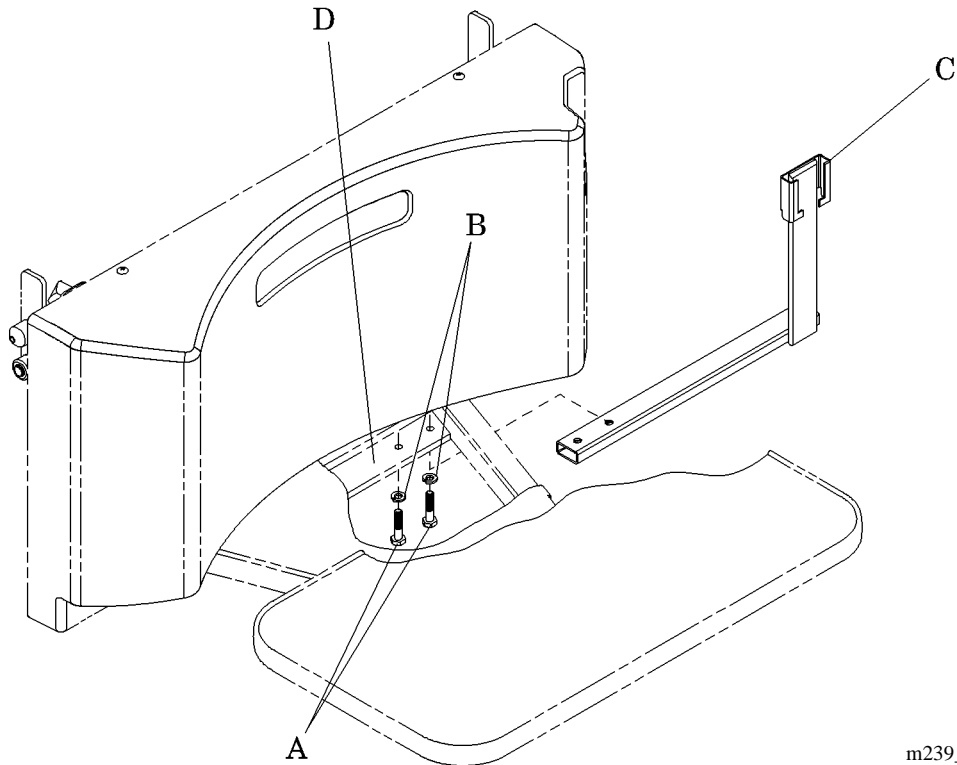
7.4 Blender Bracket—P300401

Tools required: Ratchet 7/16" socket
Torque wrench

Installation

1. Remove the blender bracket from the shipping container.
2. Set the brake/steer casters to the brake position.
3. Using the ratchet and 7/16" socket, install the two screws (A), two lockwashers (B), and secure the blender bracket (C) to the shelf mount weldment (D) (see figure 7-4 on page 7-10).

Figure 7-4. Blender Bracket



m239_079

4. Using the torque wrench and 7/16" socket, tighten the two screws (A) to 5-7 ft-lb (6.8-9.5 N•m).

Adjustment

No adjustment is required for the blender bracket (C).

Removal

To remove the blender bracket (C) from the CarePorter™ Cart, reverse the installation procedure.

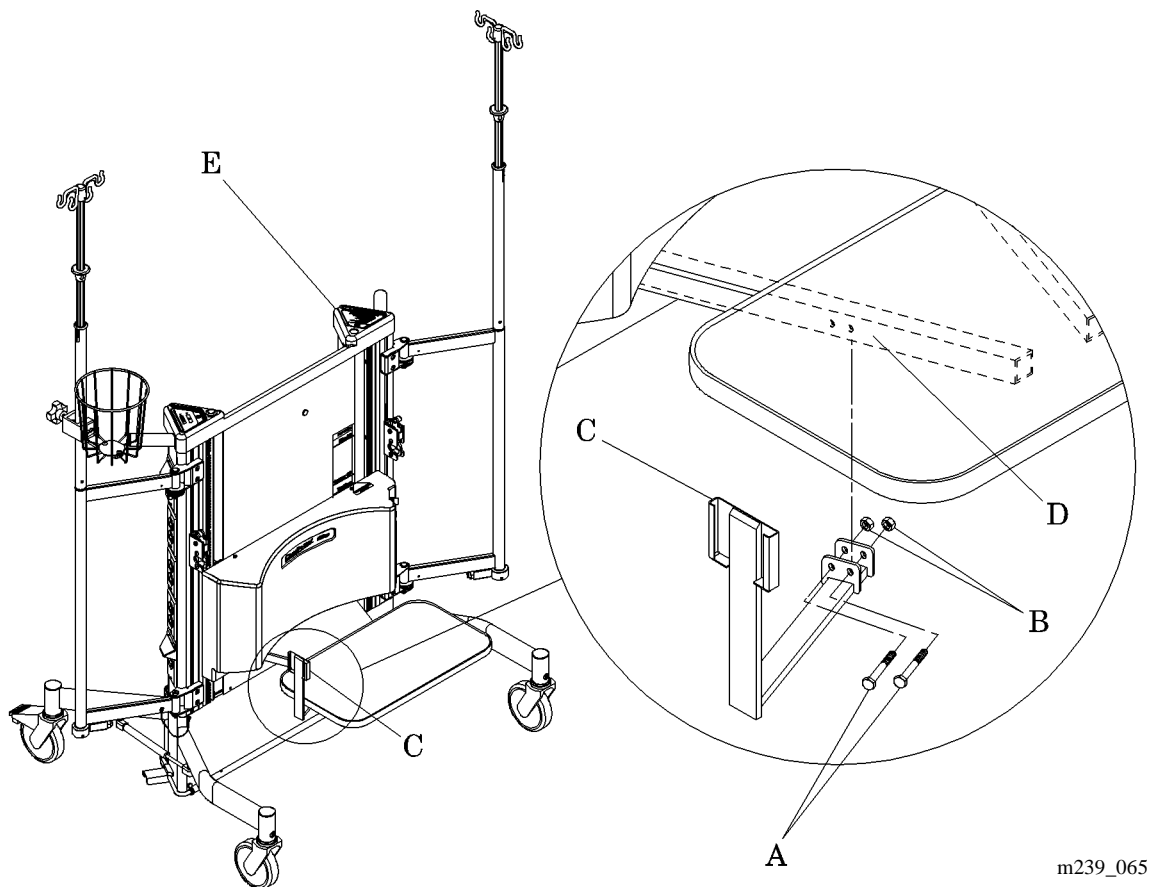
7.5 Humidifier Bracket, Concha® 3—P300501

Tools required: Adjustable wrench 7/16" wrench

Installation

1. Remove the humidifier bracket from the shipping container.
2. Set the brake/steer casters to the brake position.
3. Using the adjustable wrench and 7/16" wrench, install the two hex head screws (A), two nylock hex nuts (B), and secure the humidifier bracket (C) to the ventilator shelf support weldment (D) (see figure 7-5 on page 7-12).

Figure 7-5. Humidifier Bracket, Concha® 3



m239_065

4. Using the torque wrench and 7/16" wrench, tighten the two screws to 5-7 ft-lb (6.8-9.5 N·m).

Adjustment

No adjustment is required for the humidifier bracket (C).

Removal

To remove the humidifier bracket (C) from the CarePorter™ Cart (E), reverse the installation procedure.

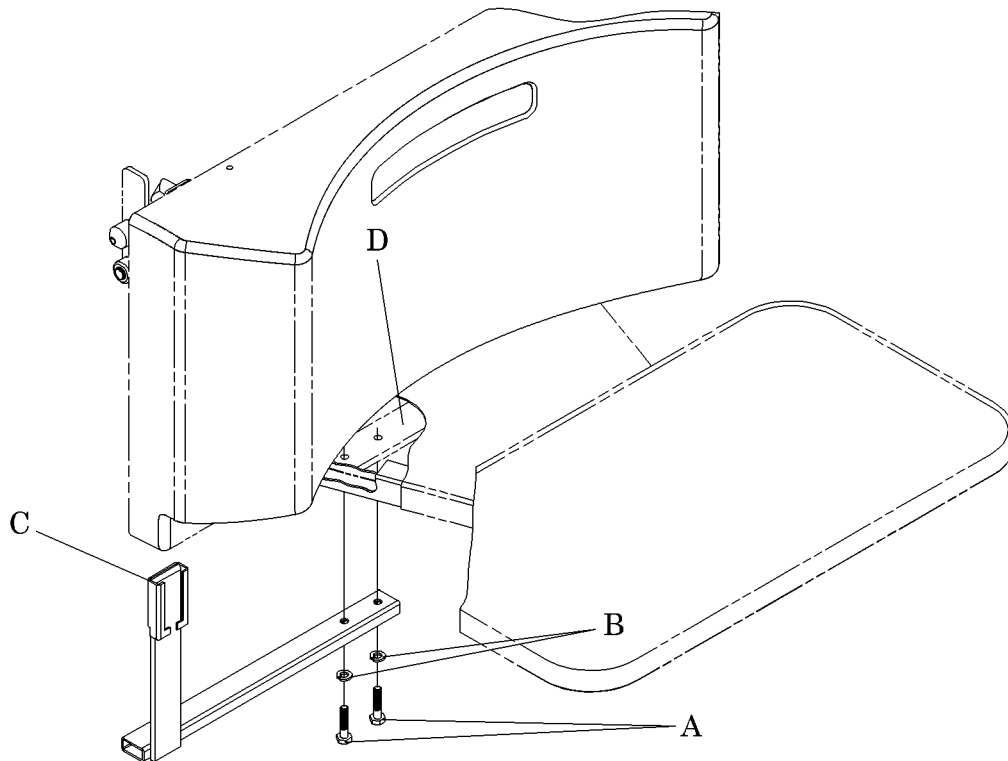
7.6 Humidifier Bracket, Fisher & Paykel®—P300502

Tools required: Ratchet 7/16" socket
Torque wrench

Installation

1. Remove the humidifier bracket from the shipping container.
2. Set the brake/steer casters to the brake position.
3. Using the ratchet and 7/16" socket, install the two screws (A), two lockwashers (B) and secure the humidifier bracket (C) to the shelf mount weldment (D) (see figure 7-6 on page 7-14).

Figure 7-6. Humidifier Bracket, Fisher & Paykel®



m239_080

4. Using the torque wrench and 7/16" socket, tighten the two screws (A) to 5-7 ft-lb (7-9 N•m).

Adjustment

No adjustment is required for the humidifier bracket (C).

Removal

To remove the humidifier bracket (C) from the CarePorter™ Cart, reverse the installation procedure.

7.7 Infusion Support System (ISS) Transfer Pole—P158

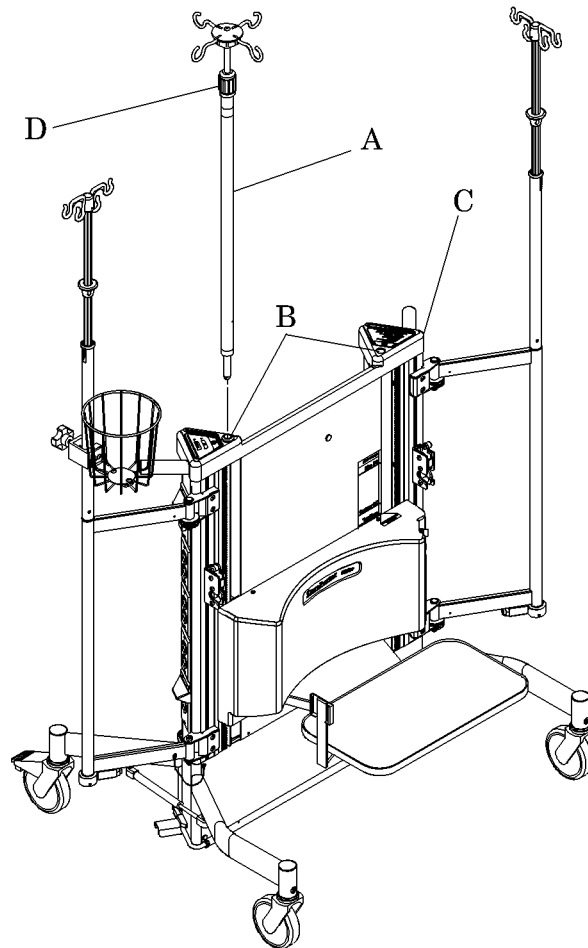
Tools required: None

The ISS transfer pole mounts in any of the two ISS sockets located at the top each column on the CarePorter™ Cart.

Installation

1. Insert the ISS transfer pole (A) into one of the two ISS sockets (B) located at the top each column on the CarePorter™ Cart (C) (see figure 7-7 on page 7-16).

Figure 7-7. ISS Transfer Pole



m239_077

Adjustment

1. To extend the upper portion of the ISS transfer pole (A), turn the black collar (D) counterclockwise, and manually raise the upper section of the pole.
2. Lock the pole in place by turning the black collar (D) clockwise until it stops.
3. To lower the ISS transfer pole (A), grasp the upper section of the pole, turn the black collar (D) counterclockwise, and manually lower the pole.

Removal

To remove the ISS transfer pole, reverse the installation procedure.

NOTES:

