



# Setup and Installation Manual

Part Number: 4116113  
Rev: R  
Date: 15 March 2003  
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## Saturn

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# 1

## Introduction

*This section introduces you to the setup procedures for installing Saturn (Saturn Information System) Clinical Workstations and 4sys Medical Grade Workstations.*

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Warnings, Cautions, and Notes .....	1-4
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## What is Saturn?

Saturn (the Saturn Information System) is a suite of applications that enables anesthesia clinicians and other hospital personnel to work with anesthesia records electronically. Saturn can be used at desktop workstations, outside the OR, and at special Saturn Clinical Workstations. See the Saturn Recorder User's Guide, the Administrator's User Guide, and the Report Manager User's Guide for more information on the Saturn suite of applications.

This manual explains how to set up Saturn Clinical Workstations.

**Warning:** The setup must be performed by or under the direct supervision of an authorized Dräger Medical, Inc. (DMI) Technical Service Representative.

### The Saturn Application Suite

Saturn comprises the Recorder, List Manager, Environment Manager, Report Manager, and Case Manager applications.

#### Recorder

Recorder is a software application for the anesthesia clinician to use in documenting the anesthesia process from preoperative assessment to discharge. The application provides easy data entry and access, as well as a means to record and store data collected automatically during surgery.

#### List Manager

Your Saturn Administrator uses List Manager to create and tailor the lists you use in Recorder, such as lists of drugs, events, procedures, and surgeons. List Manager also enables your Saturn Administrator to create sublists that group the list items into clearly-defined categories (e.g., sublists for the Drugs list could be "Narcotics," "Reversal," "Induction," and "Cardiac").

#### Environment Manager

Environment Manager is an optional SIS application that enables you to configure Recorder options and save them as an "environment" using a unique name (ex., your name). When an environment is selected for use while Recorder is running, Recorder reads and uses that environment's configuration options for that session. The configuration options consist of templates (sub-lists of drugs, events, fluids, vitals, charges, and labs), default items placed on the record, and view settings.

#### Report Manager

Your Saturn Administrator uses Report Manager to generate standard reports for time studies, drug studies, and quantitative studies. Each study generates reports for specific periods of time. The reports can be printed or saved to a report template file.

#### Case Manager

Your Saturn Administrator uses Case Manager to delete and restore patient case files that are created in the Saturn Recorder application.

## The DMI Workstation Processor Unit and the 4sys Medical Grade Workstation

The DMI Workstation Processor Unit (WPU) is the foundation for DMI monitoring, data management, and other DMI products. The WPU is a set of DMI-developed and OEM-procured components integrated together for use in DMI products. The OEM components include processors, peripherals, operating systems, displays, keyboards, etc.

**Warning:** Within the patient environment, the DMI Workstation Processor Unit must be powered from the DMI-supplied isolation transformer assembly. Powering the DMI Workstation Processor Unit from any other source, e.g., from a wall outlet, without the use of the isolation transformer assembly, will result in increased leakage current and will make the workstation unsuitable for use in the patient environment while it is connected.

The 4sys Medical Grade Workstation is an off-the-shelf personal computer that is manufactured by EG electronics. The workstation is a self-contained unit consisting of a 15" flat panel display, processor, uninterruptible power supply, and an isolation transformer. This single workstation unit has an integrated keyboard tray that comes with a standard mini-keyboard that can be easily removed. The workstation supports the VESA 75 mm mounting standard.

The workstation was chosen by DMI as it is agronomically designed to unintrusively integrate with the acute point-of-care work area. The architecture supports today's latest technology with the capability to grow and expand as technology changes or as the customers' needs change. The design supports the most recently developed IT solutions based on the 4sys platform, as well as legacy systems developed by Draeger Medical. The workstation is based on industry standards and therefore could support any vendor's Windows 2000 application.

## DMI Workstation Types

A DMI workstation is used to view, manage, and share operative data. It accepts data entered by the clinician and data that is automatically recorded by the anesthesia machine and other monitors. Because an DMI workstation is part of the hospital's computer network, the data that one workstation collects can be shared with the other DMI workstations in the network.

Three types of DMI Workstations are available. This manual describes how to install each type.

- An integrated DMI Workstation is installed on, and integrated with, one of the following DMI anesthesia machines: Fabius GS, Narkomed 6000, Julian, Narkomed GS, Narkomed 2B, Narkomed 2C, Narkomed 3, and Narkomed 4. The Saturn Clinical integrated workstation is created using parts supplied by DMI. The setup procedure for an integrated Saturn Clinical Workstation is contained in Sections 2 and 3 of this manual. The integrated 4sys Medical Grade Workstation is created by using parts supplied by DMI and EG Electronics. The setup procedure for an integrated 4sys Medical Grade Workstation is contained in Section 4 of this manual.
- A stand-alone Saturn Clinical Workstation stands alone; it is not installed on any other device. However, it can be used with third-party anesthesia

machines and monitoring devices, as well as DMI anesthesia machines and monitoring devices. The stand-alone Saturn Clinical Workstation is created using parts supplied by DMI. Section 5 of this manual explains how to set up a stand-alone Saturn Clinical Workstation.

- A customized clinical workstation is like the stand-alone Saturn Clinical Workstation in two ways. It is not installed on any other device, and it can be used with anesthesia machines and monitoring devices. However, unlike the Saturn Clinical Workstation, a customized workstation is created using the customer's personal computer system, along with some add-on components supplied by DMI. The procedure for setting up a customized clinical workstation is in Section 6 of this manual.

## Warnings, Cautions, and Notes

*Warning* statements are used in this manual with procedures that, if not performed correctly, could result in personal injury.

*Caution* statements are used in this manual to alert service personnel to the possibility of equipment damage if a procedure is not performed correctly.

*Note* statements are used in this manual to clarify information that may not be readily obvious, such as secondary cause and effect.

## Change Bars

Change bars located in the margin of the page indicate information that has changed since the last revision release of this manual.

## Error and Warning Messages

The following is a list of error and warning messages that may appear on the Saturn workstation display, as well as steps to take to resolve the issues.

- "An AC power failure has been detected."
  1. Check the AC power connections.
  2. Call your DMI-certified Service Department if you are unable to resolve the issue.
- "The battery level is low."
  1. Immediately save all data; the unit will shut down if this condition persists.
  2. Check the power connections. The unit has been running without AC power for sufficient time to discharge the battery.
  3. Call your DMI-certified Service Department if you are unable to resolve this issue.
- "The temperature has exceeded the normal operating range."

Contact your DMI-certified Service Department.

- “The power supply needs servicing.”

Call the DMI Technical Service Department at 1-800-543-5047 or 1-215-721-5402.

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# 2

## Setting Up an Integrated OR Workstation

*This section explains how to set up an integrated OR workstation.*

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## Overview

The instructions in this section explain how to install an *integrated* Draeger OR workstation on any of the following Draeger anesthesia machines:

- Narkomed 2B,
- Narkomed 2C,
- Narkomed 3,
- Narkomed 4,
- Narkomed GS,
- Narkomed 6000, or
- Julian

## Workstation Hardware

Draeger supplies all of the hardware for the integrated Draeger OR workstation. The main hardware components that you will install include the following:

- Keyboard Unit,
- Processor Unit,
- Display Unit, and
- Power Supply Assembly, or

If installing the 4sys Medical Grade Workstation, the hardware componenet that you will install is:

- 4sys Medical Grade Workstation

## Workstation Software

All workstation software is preinstalled and preconfigured at the factory. Therefore, no software setup is required.

## Network Server

The Draeger OR workstation requires the use of a network server. A preconfigured server is available from Draeger. However, any server may be used, as long as it meets the following minimum requirements:

- the server must be a Windows NT server,
- the server must have a RAID 5 Configuration,
- the server must be a Primary Domain Controller,
- Draeger must have an Administration account,
- Draeger must configure the server,
- TCP/IP must be installed, and
- the server must have 10/100MB ethernet typology.

## Setup Checklist

Use the table of contents of this chapter as a checklist for the initial hardware installation of an integrated Draeger OR workstation on an Draeger anesthesia machine. Some steps may include various mounting options, depending upon the model and configuration of the anesthesia machine.

**Warning:** This installation must be performed by or under the direct supervision of an authorized Draeger Technical Service Representative.

## Step 1. Disconnect the Anesthesia Machine

Configurations	<p>This procedure applies to the following Draeger anesthesia machines:</p> <ul style="list-style-type: none"><li>• Narkomed 2B</li><li>• Narkomed 2C</li><li>• Narkomed 3</li><li>• Narkomed 4</li><li>• Narkomed GS</li><li>• Narkomed 6000 Series</li></ul>
Procedure	<p>Follow this procedure to disconnect the anesthesia machine before you install an Draeger OR workstation.</p> <p><b>Caution:</b> To prevent possible equipment damage, you must perform these steps before installing any part of the Draeger OR workstation or connecting any cables.</p> <ol style="list-style-type: none"><li>1. Set the anesthesia machine power switch to STANDBY.</li><li>2. Unplug the system AC power cord.</li><li>3. Disable all circuit breakers by pulling out each button with a knife or sharp object.</li></ol> <p><i>You are finished with this step.</i></p> <p><i>If the machine on which you are installing Saturn has the ORDM, proceed to one of the following sections.</i></p> <ul style="list-style-type: none"><li>• <a href="#">“Step 2, Option 1. Disconnect the Outboard ORDM from the NM2B or NM3” on page 2-5</a></li><li>• <a href="#">“Step 2, Option 2. Disconnect the Inboard ORDM from the NM2C” on page 2-6</a></li><li>• <a href="#">“Step 2, Option 3. Disconnect the Inboard ORDM from the NM4 (Earlier NM4s)” on page 2-9</a></li><li>• <a href="#">“Step 2, Option 4. Disconnect the Inboard ORDM from the NM4 (Later NM4s)” on page 2-12</a></li></ul> <p><i>If the machine on which you are installing Saturn does not have the ORDM, proceed to one of the following sections.</i></p> <ul style="list-style-type: none"><li>• <a href="#">“Step 4, Option 1. Install the Keyboard Unit to Replace the Writing Tray” on page 2-22</a></li><li>• <a href="#">“Step 4, Option 2. Install the Keyboard Unit on a Short Arm Display” on page 2-32</a></li></ul>

## Step 2, Option 1. Disconnect the Outboard ORDM from the NM2B or NM3

**Configurations** This procedure applies to the following Draeger anesthesia machines:

- Narkomed 2B
- Narkomed 3

**Procedure** Follow this procedure to disconnect the ORDM, if one exists, before you install an Draeger OR workstation.

1. Disconnect all cables from the ORDM assembly.
2. Remove the screw from the back of the bottom of the ORDM box, which holds together the CPU.
3. Move to the back of the anesthesia machine and slide the CPU out of the ORDM box.
4. Remove the four screws from the inside of the ORDM box that holds the box to the anesthesia machine.

*You are finished with this step. Proceed to “[Step 3, Option 1. Remove the ORDM Keyboard from the NM 2B and the NM 3](#)” on page 2-15.*

## Step 2, Option 2. Disconnect the Inboard ORDM from the NM2C

**Configurations** This procedure applies to the Narkomed 2C anesthesia machine.

**Procedure** The O.R. DATA MANAGER (ORDM) Sub-Assembly is located behind the right front ventilator box cover. Removal of the ORDM requires removal of the front ventilator box cover. Removal of the ORDM requires removal of the ventilator box back panel and disconnecting the ORDM - processor board cable. The ORDM can then be withdrawn from the front of the ventilator box for access to the remaining cables. [Figure 2-1 on page 2-7](#) shows the ORDM mounting and cable connection arrangement.

Follow these steps to remove the inboard ORDM from the Narkomed 2C.

1. Turn the System Power switch to STANDBY and remove AC power from the machine.
2. Remove any disk from the disk drive.

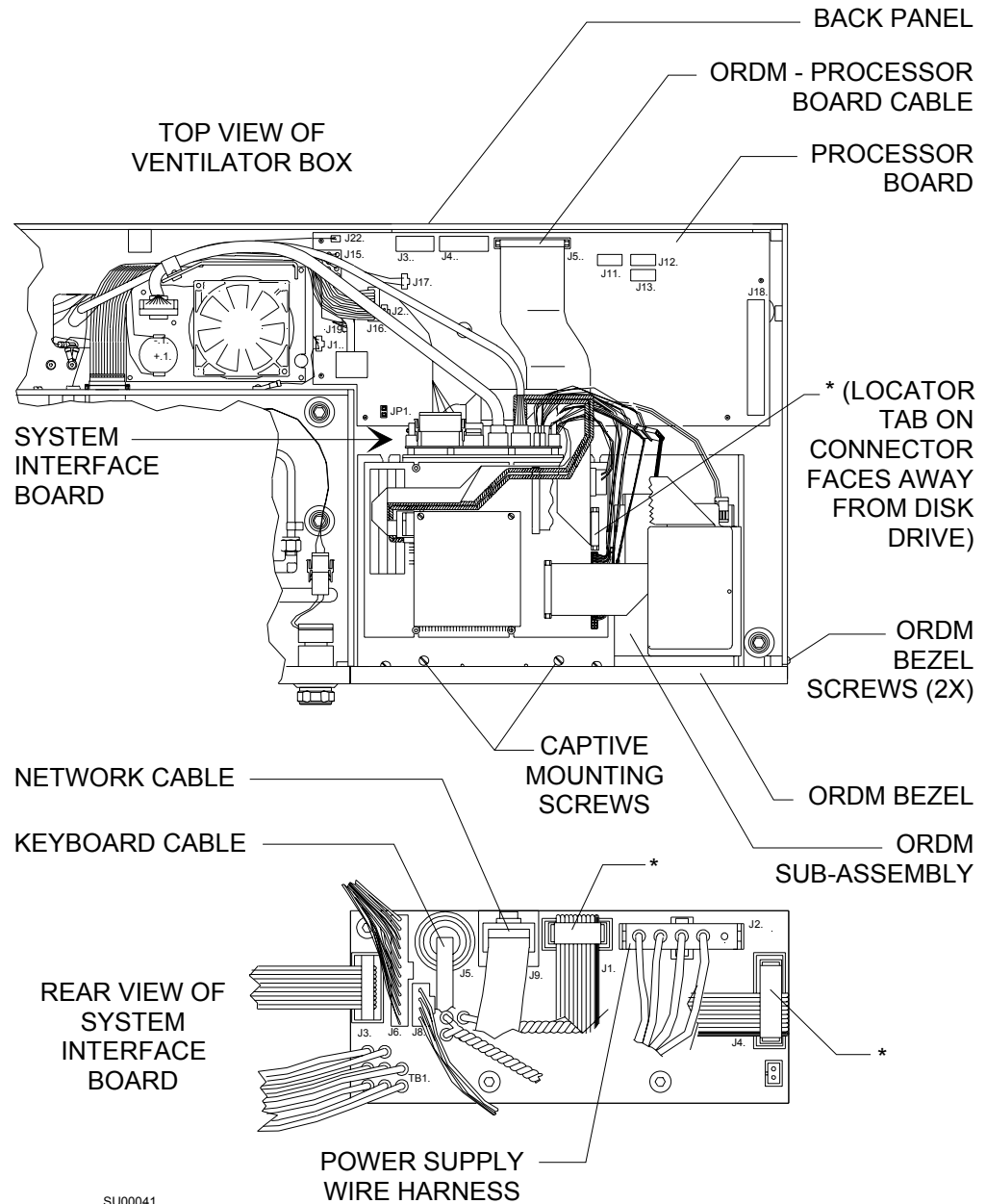
**Caution:** Use ESD protection when handling the ORDM sub-assembly.

3. Remove the back panel of the ventilator box and disconnect the ribbon cable from J5 on the processor board. Leave the other end of the cable attached to the ORDM assembly.

**Note:** If the machine is equipped with an auxiliary lamp, it must be removed before proceeding to the next step.

4. Remove the two screws securing the right end of the ORDM front bezel.
5. Pull the right side of the bezel outward, slide it to the right until the locking tab on the left side of the bezel is clear of its receptacle, and remove the bezel.
6. Loosen the two captive mounting screws securing the ORDM sub-assembly to the ventilator box, then pull the ORDM sub-assembly out far enough to gain access to the remaining connections.
7. Disconnect the following at the system interface board on the back of the ORDM sub-assembly:
  - J2: Power Supply Wire Harness
  - J9: Network Cable
  - J5: Keyboard Cable (DIN Connector)

The ORDM sub-assembly can now be removed from the ventilator box.



\* ORDM - PROCESSOR BOARD CABLE CONNECTIONS

Figure 2-1. ORDM Processor Board Cable Connections

8. Remove the cable from J1 and J4 on the system interface board (marked (\*) in the illustration).
9. Remove the ORDM - processor board cable from J2/J3 of the ORDM CPU PCB (marked (\*) in the illustration).
10. Carefully fit the locking tab on the left side of the replacement bezel into its receptacle, then slide the bezel to the left until it is properly seated.

- 11.Reinstall the two retaining screws at the right side of the bezel.
- 12.Reinstall the auxiliary lamp at this time, if applicable.
- 13.Remove the ORDМ processor board cable.
- 14.Replace the ventilator box back panel with the screws that were previously removed.

*You are finished with this step. Proceed to “[Step 3, Option 2. Remove the ORDМ Keyboard from the NM 2C](#)” on page 2-17*

## Step 2, Option 3. Disconnect the Inboard ORDM from the NM4 (Earlier NM4s)

**Configurations** This procedure applies to the Narkomed 4 anesthesia machine.

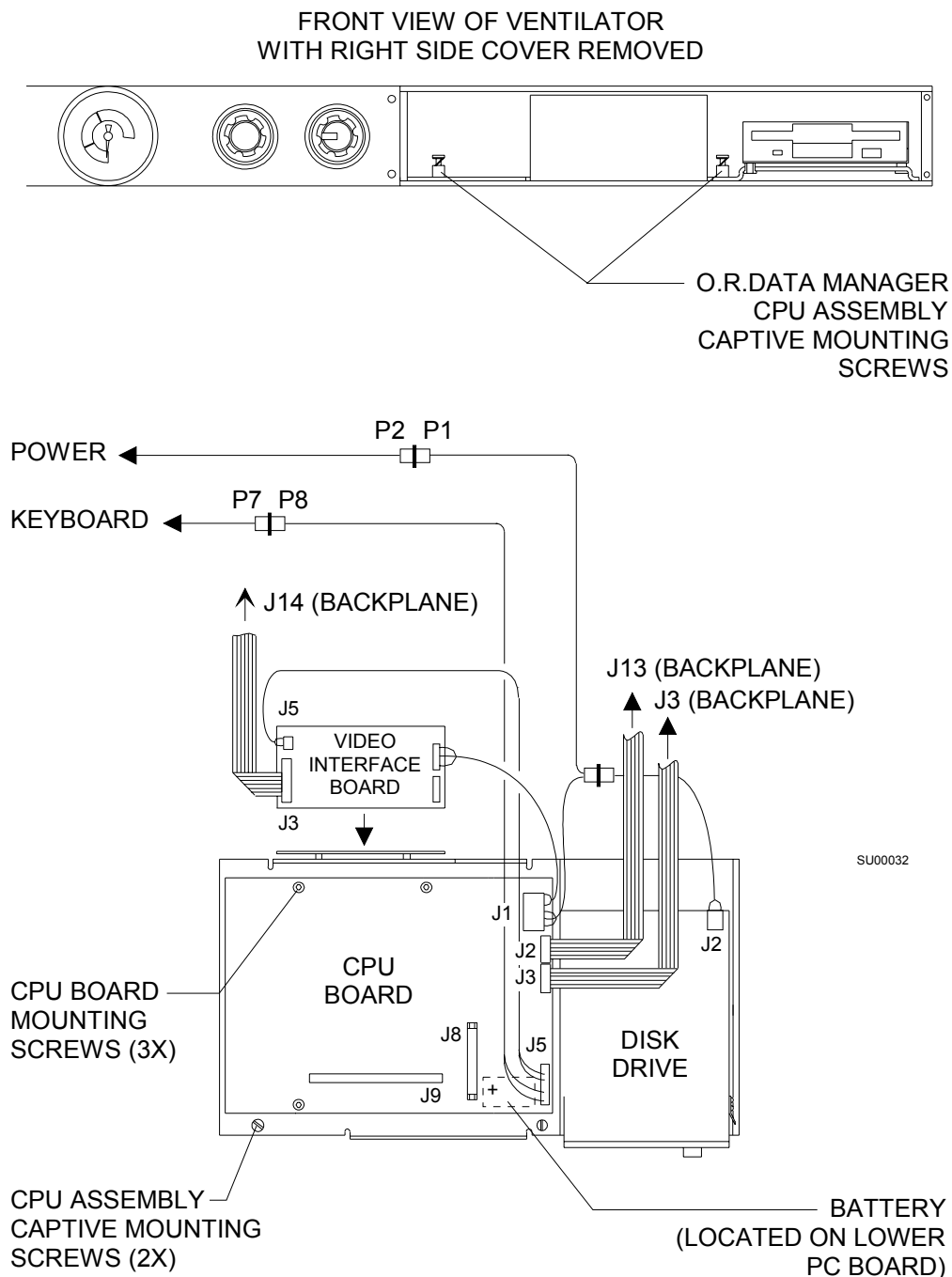
**Procedure** The O.R. DATA MANAGER (ORDM) CPU assembly is located in the right side of the ventilator box. Access to the ORDM CPU assembly requires removal of the right front panel of the ventilator box, and removal of the monitor box cover. [Figure 2-2 on page 2-10](#) shows the CPU assembly mounting and cable connection arrangement.

Following these steps to remove the inboard ORDM from the Narkomed 4 (earlier machines).

1. Set the System Power switch to STANDBY and remove AC power from the machine.
2. Remove any disk from the disk drive.
3. Remove the four screws holding the right front panel of the ventilator box, and remove the panel.

**Caution:** Use ESD protection when handling the CPU assembly.

4. Loosen the two captive mounting screws holding the ORDM CPU assembly to the floor of the ventilator box. Carefully slide the CPU assembly forward.
5. Disconnect all cables from the patient interface panel on the left side of the monitor box.
6. Remove the six screws holding the monitor box cover, and carefully lift the cover from the monitor box.
7. Disconnect the ORDM cables from backplane connectors J3, J13, and J14.
8. Disconnect the keyboard cable floating connector (P7-P8), and the power wire harness floating connector (P2-P1).
9. Carefully pull the ORDM CPU assembly from the ventilator box.



TOP VIEW OF O.R. DATA MANAGER CPU ASSEMBLY

Figure 2-2. Top View of O.R. DATA MANAGER CPU Assembly

10. Locate J19 on the backplane PCB assembly. If J19 is a six pin header, remove the two position jumper between pins 5 and 6 of J19 and proceed to step 12.

If J19 is a four pin jumper terminal, proceed to the next step.



11. Remove the Pin 3 wire from the present jumper.
12. Reinstall the monitor box cover and restore all connections to the patient interface panel.
13. Attach the ventilator box right side replacement front panel and secure it with its four mounting screws.

*You are finished with this step. Proceed to “[Step 3, Option 3. Remove the ORDM Keyboard from the NM 4](#)” on page 2-20*

## Step 2, Option 4. Disconnect the Inboard ORDM from the NM4 (Later NM4s)

**Configurations** This procedure applies to the Narkomed 4 anesthesia machine.

**Procedure** The O.R. DATA MANAGER sub-assembly is located behind the right front ventilator box cover. Replacement of the ORDM requires removal of the monitor box cover and disconnecting the ORDM cables. The ORDM can then be withdrawn from the front of the ventilator box for access to the remaining cables. [Figure 2-3 on page 2-13](#) shows the ORDM mounting and cable connection arrangement.

Follow these steps to remove the Inboard ORDM from the Narkomed 4 (later machines).

1. Turn the System Power switch to STANDBY and remove AC power from the machine.
2. Remove any disk from the disk drive.

**Caution:** Use ESD protection when handling the ORDM sub-assembly.

3. Disconnect all cables from the patient interface panel on the left side of the monitor box.
4. Remove the six screws holding the monitor box cover, and carefully lift the cover from the monitor box.
5. Disconnect the ORDM cables from the backplane connectors J3, J13, and J14.
6. Disconnect the ORDM Datagrip cable from Datagrip PCB J3 (located on the front of the backplane).
7. Disconnect the power wire harness floating connector.
8. Disconnect the keyboard cable floating connector.
9. Remove the right front ventilator box cover.

On later machines with an AV-2 ventilator, remove the two screws securing the right end of the ORDM front bezel. Pull the right side of the bezel outward, slide it to the right until the locking tab on the left side of the bezel is clear of its receptacle, and remove the bezel.

10. Loosen the two captive mounting screws securing the ORDM subassembly to the ventilator box.

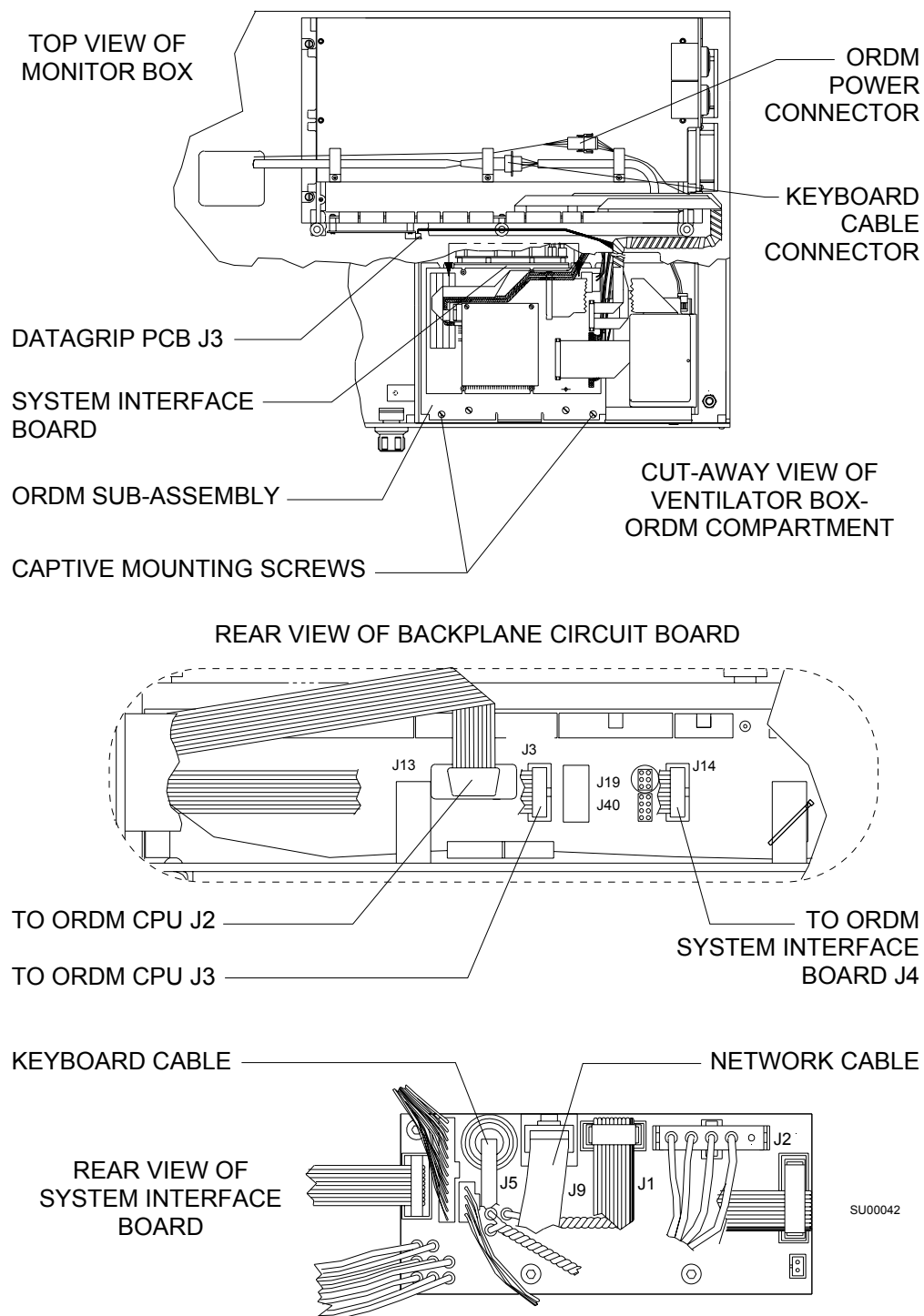


Figure 2-3. ORDM Sub-assembly Connections

11. Carefully pull the ORDM sub-assembly from the ventilator box while feeding the previously disconnected cables down from the monitor box.

As the ORDM is pulled out, disconnect the network cable from J9 on the system interface board.

12. Locate J19 on the backplane PCB assembly. If J19 is a four pin jumper terminal, proceed to the next step. If J19 is a six pin jumper, proceed to step 14.

13. Cut the Pin 3 wire off of the present jumper.

14. Remove the two position jumper between pin five and six of J19.

15. Reinstall the right front replacement ventilator box cover.

16. Reinstall the monitor box cover and restore all connections to the patient interface panel.

*You are finished with this step. Proceed to “[Step 3, Option 3. Remove the ORDM Keyboard from the NM 4](#)” on page 2-20*

## Step 3, Option 1. Remove the ORDM Keyboard from the NM 2B and the NM 3

**Configurations** This procedure applies to the following Draeger anesthesia machines:

- Narkomed 2B
- Narkomed 3

**Procedure** Follow this procedure to disconnect the ORDM keyboard, if one exists, before you install an Draeger OR workstation.

1. Remove the screws securing the table top to the machine, and remove the table top.
2. Pull the keyboard tray out to its fully extended position.
3. Remove the keyboard cable clamp from the inner cabinet rail as shown in [Figure 2-4](#).

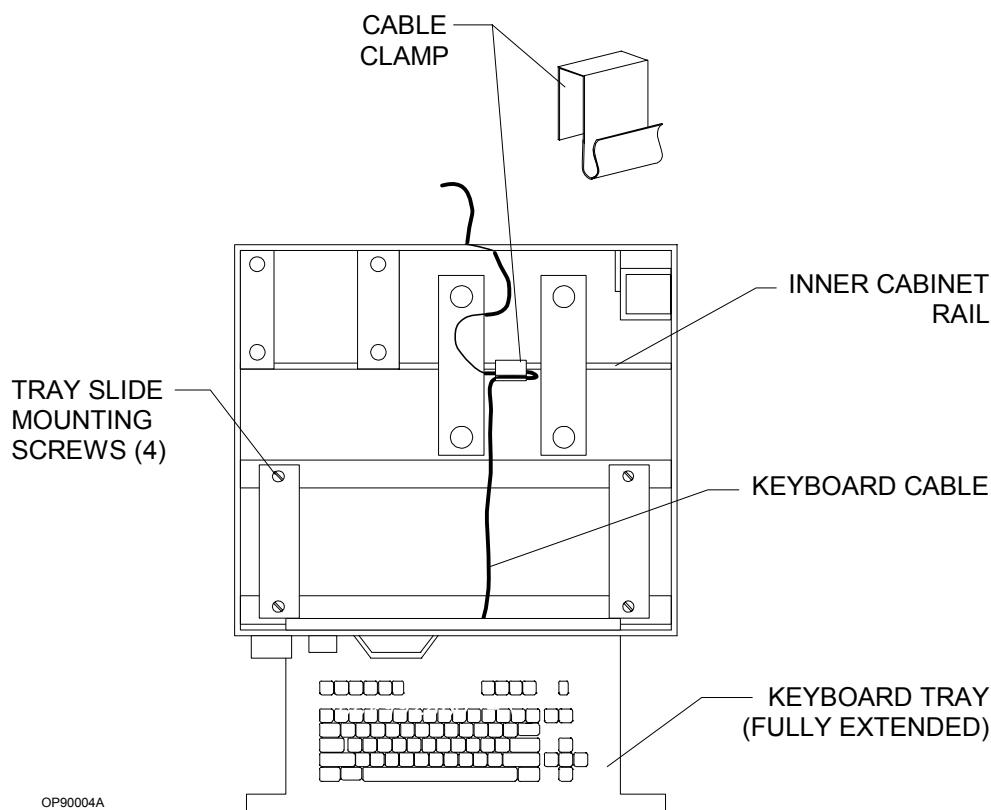


Figure 2-4. Removing the Keyboard Cable Clamp (NM 2B and NM 3)

4. Remove the keyboard cable clamps from the back of the anesthesia machine, as shown in [Figure 2-5](#).

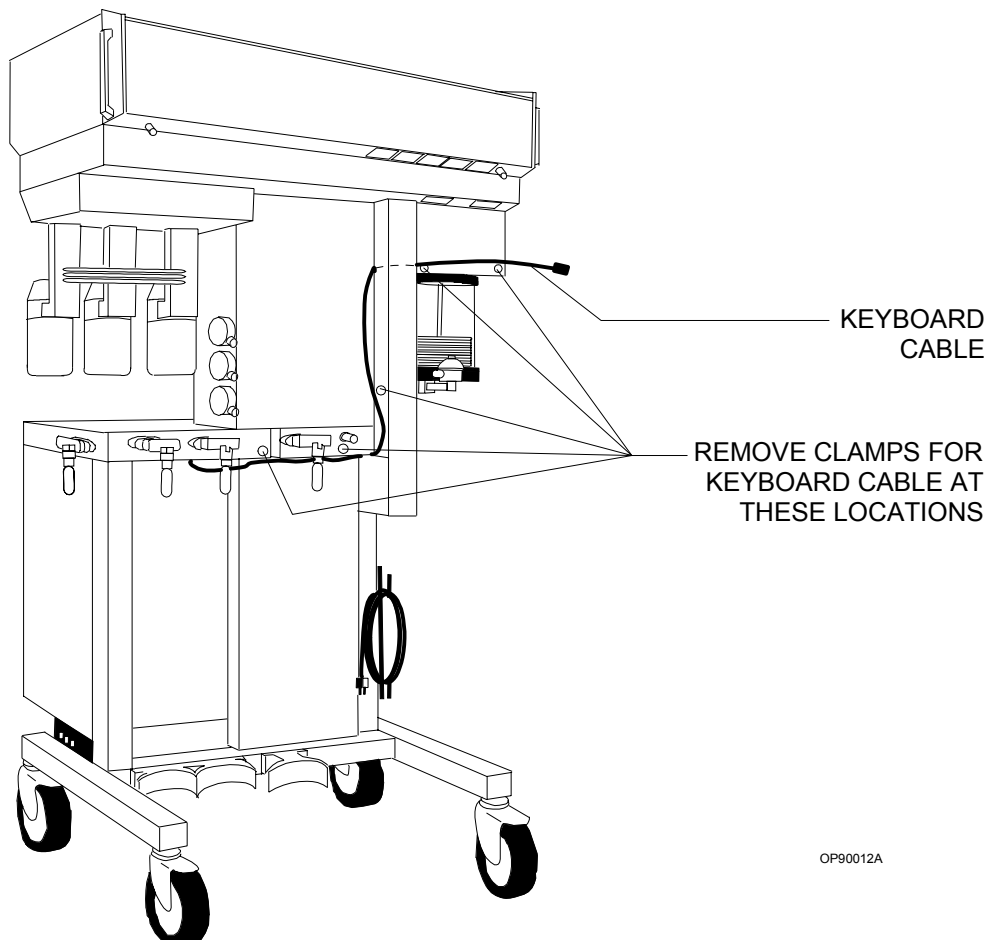


Figure 2-5. Keyboard Cable Clamps

5. Remove the four screws securing the tray slides to the cabinet, and remove the keyboard tray.

*You are finished with this step. Proceed to one of the following sections.*

- [“Step 4, Option 1. Install the Keyboard Unit to Replace the Writing Tray” on page 2-22](#) or
- [“Step 4, Option 2. Install the Keyboard Unit on a Short Arm Display” on page 2-32.](#)

## Step 3, Option 2. Remove the ORDM Keyboard from the NM 2C

**Configurations** This procedure applies to the Narkomed 2C anesthesia machine.

**Procedure** Follow this procedure to disconnect the ORDM keyboard, if one exists, before you install an Draeger OR workstation.

**Note:** Use proper ESD control during all removal and installation procedures.

1. Turn the System Power switch to STANDBY and remove AC power from the machine.  
  
Disable all circuit breakers by pulling out each button with a knife or sharp object.
2. Remove the back panel of the ventilator box.
3. Remove the screws holding the raceway cover (wiring channel) at the back of the machine. See [Figure 2-6 on page 2-18](#).
4. Remove the screws holding the table top assembly, and lift the table top from the cabinet.
5. Remove the top drawer from the cabinet.
6. Pull the keyboard tray out to its fully extended position.
7. Remove the four screws (two on each side) holding the tray slides to the cabinet, and remove the keyboard tray.
8. Remove the keyboard cable clamp.
9. Disconnect the keyboard cable from the ORDM assembly.
10. Remove the ORDM keyboard cable from the wiring channel and the ventilator box as shown in [Figure 2-6 on page 2-18](#). Remove the keyboard assembly.
11. Reinstall the raceway (wiring channel) cover and the back panel with the hardware that was previously removed.
12. Install the Saturn keyboard tray or standard writing tray.
13. Reinstall the table top.
14. Re-enable all circuit breakers.

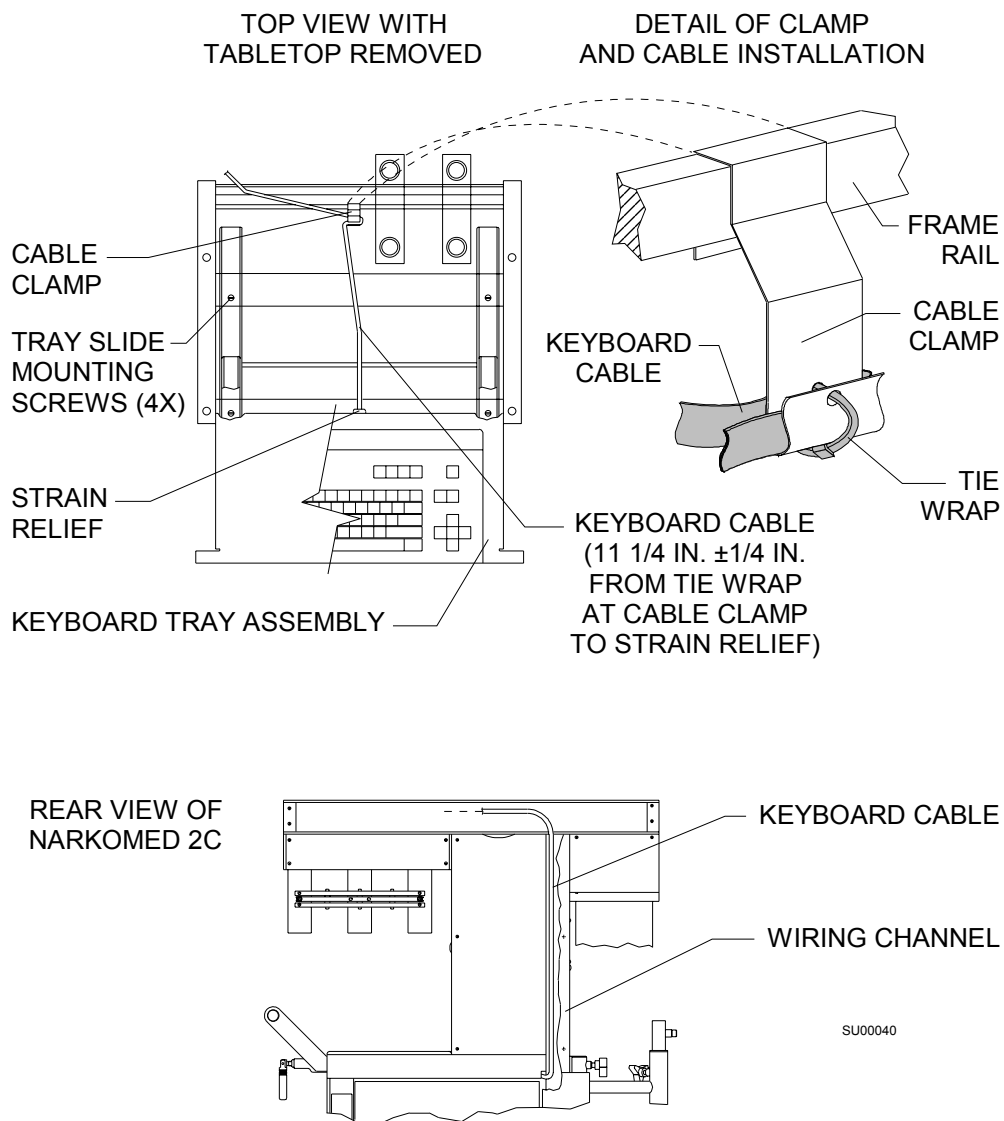
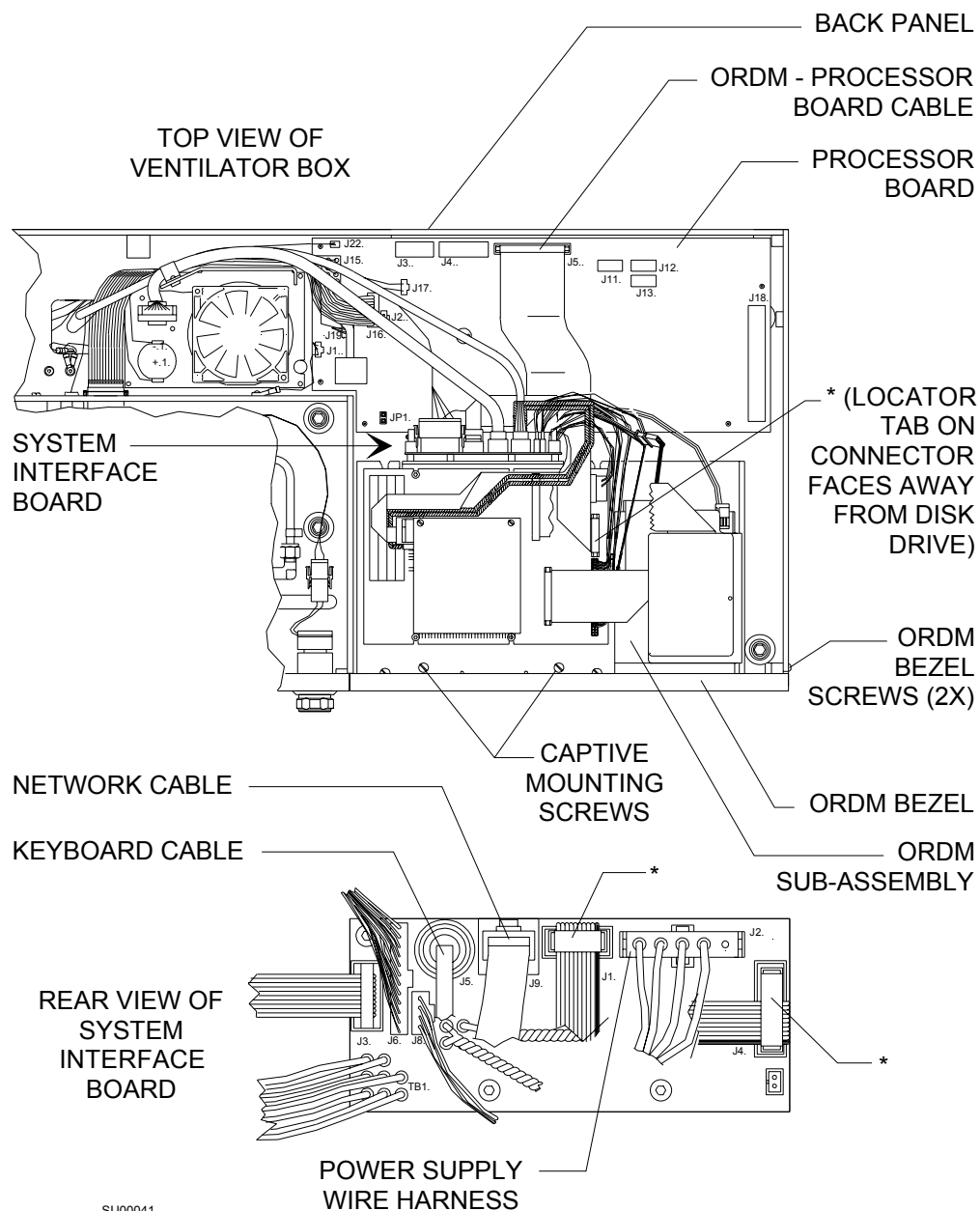


Figure 2-6. Removing the Keyboard and Cable Clamps (NM 2C)





\* ORDM - PROCESSOR BOARD CABLE CONNECTIONS

Figure 2-7. ORDM Sub-assembly (NM 2C)

*You are finished with this step. Proceed to one of the following sections.*

- “Step 4, Option 1. Install the Keyboard Unit to Replace the Writing Tray” on page 2-22 or
- “Step 4, Option 2. Install the Keyboard Unit on a Short Arm Display” on page 2-32.

## Step 3, Option 3. Remove the ORDM Keyboard from the NM 4

**Configurations** This procedure applies to the Narkomed 4 anesthesia machine.

**Procedure** Follow this procedure to disconnect the ORDM keyboard, if one exists, before you install an Draeger OR workstation.

**Note:** Use proper ESD control during all removal and installation procedures.

1. Set the system power switch on the alarm channel to the STANDBY position and remove AC power from the machine.

**Caution:** Do not plug or unplug remote display with power applied.

2. Disconnect the following items from the patient interface panel on the left side of the monitor box:
  - Data Grip Cable
  - Remote Display Cable
  - BP Cuff and BP Gauge lines
  - Pulse Oximeter Sensor Cable
3. Remove the disposable reservoir from its holder.
4. Remove the seven screws holding the monitor box cover, and carefully lift the cover from the monitor box.
5. Remove the ten screws holding the power supply cover to the rear of the cabinet assembly, and remove the power supply cover.
6. Remove the six screws holding the raceway cover (cable channel) to the raceway assembly, and remove the raceway cover.
7. Remove the five screws holding the table top assembly, and carefully remove the table top from the frame assembly.
8. Pull the keyboard tray out to its fully-extended position.
9. Remove the top drawer from the cabinet.
10. Remove the four screws holding the tray slides to the cabinet.
11. Remove the ORDM keyboard cable from the monitor box and raceway assembly.
12. Remove the keyboard cable clamp.
13. There are three screws along the inside left and right channels of the power supply box. Remove the upper and the middle screws from each side.

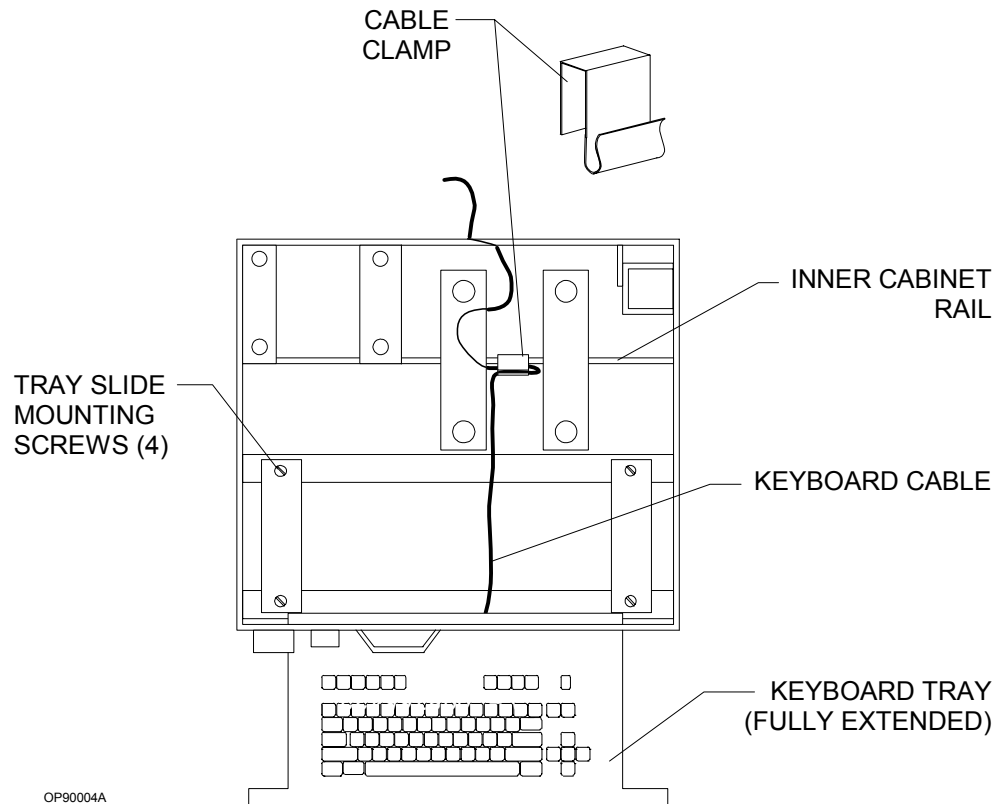


Figure 2-8. Removing the Keyboard and Cable Clamps (NM 4)

14. Loosen the two lower screws and pull the top of the power supply box outward from the Narkomed 4 drawer/frame assembly. Pull the ORDM keyboard cable through the upper right corner of the power supply box.
15. Return the power supply box to its original position. Reinstall the upper and middle screws in each side of the power supply box. Tighten the two lower screws.
16. Remove the keyboard assembly from the machine.
17. Install the Saturn keyboard tray or standard writing tray.
18. Reinstall the Narkomed 4 power supply cover, raceway cover, monitor box cover, and the table top assembly.

*You are finished with this step. Proceed to one of the following sections.*

- [“Step 4, Option 1. Install the Keyboard Unit to Replace the Writing Tray” on page 2-22](#) or
- [“Step 4, Option 2. Install the Keyboard Unit on a Short Arm Display” on page 2-32.](#)

## Step 4, Option 1. Install the Keyboard Unit to Replace the Writing Tray

The keyboard unit consists of a tray, retaining plate, keyboard, and cable assembly. The keyboard unit replaces the existing writing tray in the anesthesia machine.

**Configurations** This procedure applies to the following Draeger anesthesia machines:

- Narkomed 2B
- Narkomed 2C
- Narkomed 3
- Narkomed 4
- Narkomed GS

**Required Parts** You need the following parts to install the keyboard.

- 1 keyboard
- 1 keyboard tray
- screws and washers - see [Figure 2-10 on page 2-24](#), [Figure 2-11 on page 2-25](#), [Figure 2-13 on page 2-27](#), [Figure 2-14 on page 2-28](#), and [Figure 2-15 on page 2-29](#).
- a protective covering for the bottom of the cabinet to catch drilling debris

**Required Tools** You need the following tools to install the keyboard:

- center punch
- drill and tap set
- standard screwdrivers
- standard hex key set

**Procedure** To install the keyboard unit, follow these steps.

### A. Remove Existing Parts

1. Remove the table top from the machine.
2. Pull the writing tray out to its fully extended position.
3. Remove the four screws securing the tray slides to the cabinet and remove the writing tray.
4. Remove all of the drawers from the cabinet, and place a protective cover at the bottom of the cabinet to catch any drilling debris.

B. Install the  
New Keyboard  
Unit

1. If you have an early machine model without pre-drilled holes in the cabinet for the keyboard tray slides, create the holes, as follows. (You will use these holes in step 3.)
  - a. Measure and mark the locations of the four holes that need to be drilled for the keyboard tray slides, as shown in [Figure 2-9](#).



Figure 2-9. Hole Locations in Machine Cabinet for Keyboard Tray Slides

- b. Center-punch the four points to be drilled.

**Caution:** Do not disturb the position of any tubing in the machine.
- c. Drill a clearance hole for a #8 screw at each center-punched location and de-burr the holes. Use a #7 (.201) drill bit.

2. Install the keyboard retaining plate, as follows. (See [Figure 2-10.](#))
  - a. Standing at the back of the machine, position the tab end of the keyboard retaining plate in the channel in the top front machine rail.
  - b. While pulling the back of the retaining plate up to the machine rails, push the front of the retaining plate into the channel to obtain a tight fit.
  - c. Screw the retaining plate into the middle rail of the machine using two 8-32 x 13/16 inch cap head socket screws and two #8 internal tooth lock washers.

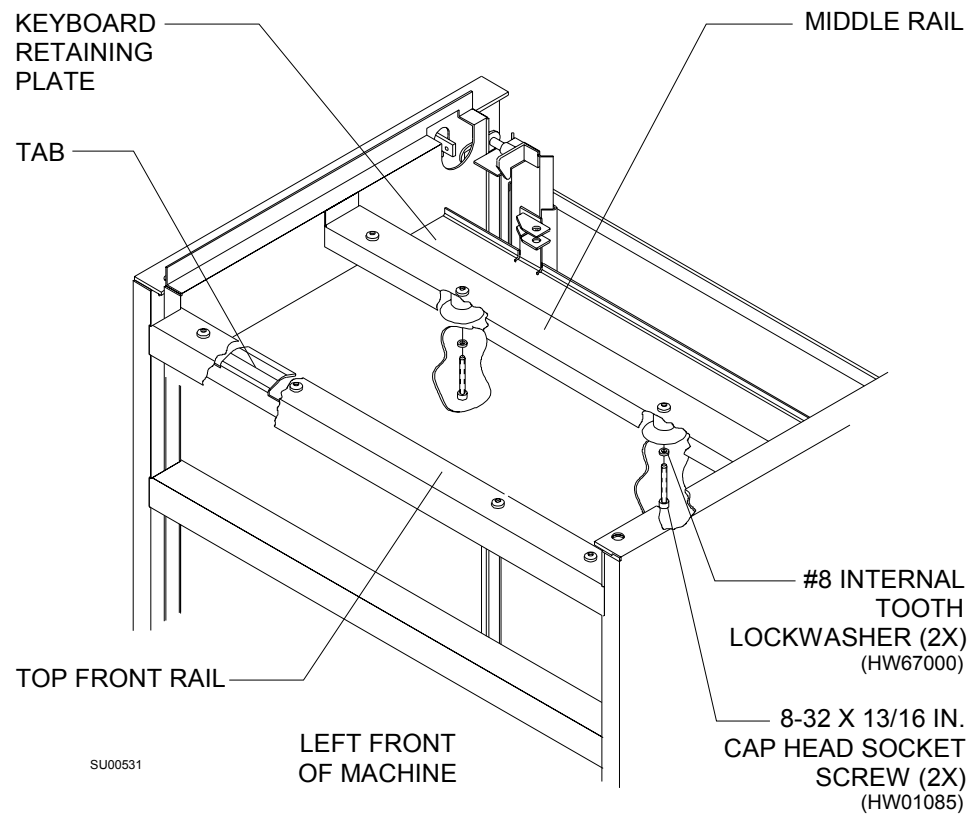


Figure 2-10. Installing the Keyboard Retaining Plate

3. Install the keyboard tray, as follows. (See [Figure 2-11.](#))
  - a. Extend the slides on the keyboard tray, and bolt the slides to the cabinet at the new hole locations using four #8 screws and lockwashers (and KEP nuts if you drilled holes in the cabinet).
  - b. Slide the keyboard tray in and out, ensuring that it moves freely and is properly centered.

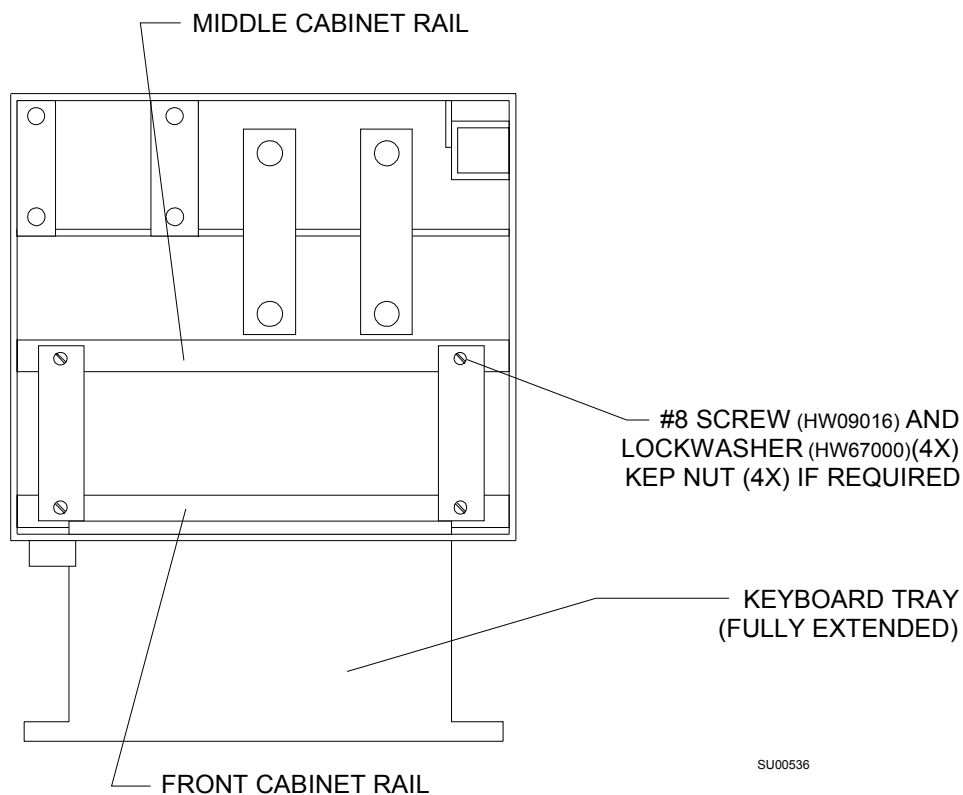
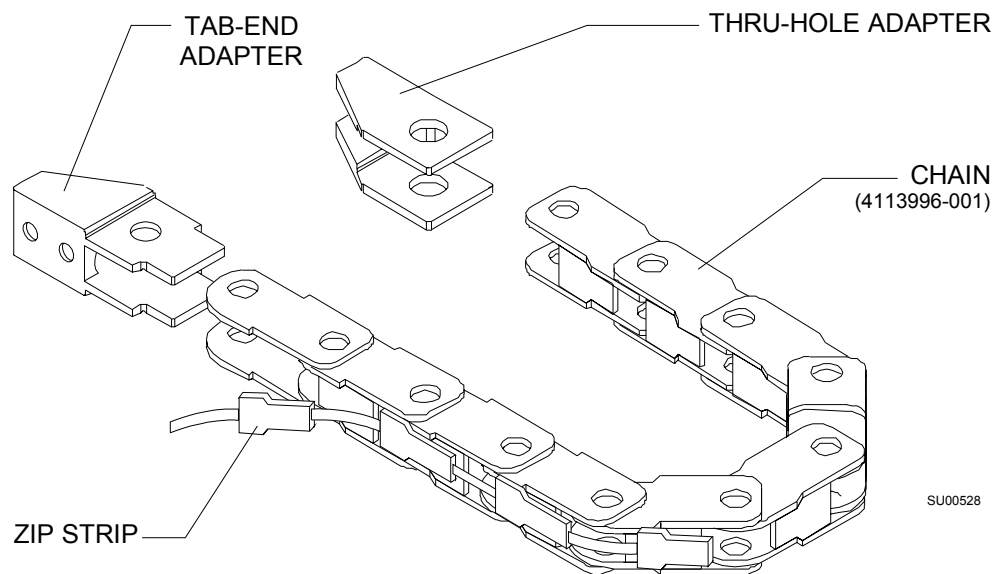


Figure 2-11. Installing the Keyboard Tray

4. Disassemble the chain assembly ([Figure 2-12](#)) into its components:

- chain,
- tab-end adapter,
- thru-hole adapter, and
- zip strip.



SU00528

Figure 2-12. Chain Assembly



5. Install the connector and the tab-end adapter onto the back of the keyboard tray, as follows: (See [Figure 2-13](#).)
  - a. Run the narrow end of the cable through the large hole in the inside back frame of the keyboard tray until the connector reaches the back of the tray.
  - b. Standing at the back of the machine, attach the right side of the connector to the inside back of the keyboard tray using one 4-40 x 3/8 inch flat head screw and one #4 KEP nut.
  - c. Position the two small holes on the tab-end adapter over the two holes on the outside back of the keyboard tray, with the tab-end of the adapter pointing to the center of the machine cabinet.
  - d. Attach the tab-end adapter to the keyboard tray using two 4-40 x 3/8 inch flat head screws and two #4 KEP nuts. (One of the screws also goes through the hole in the left side of the connector to secure it to the keyboard tray.)

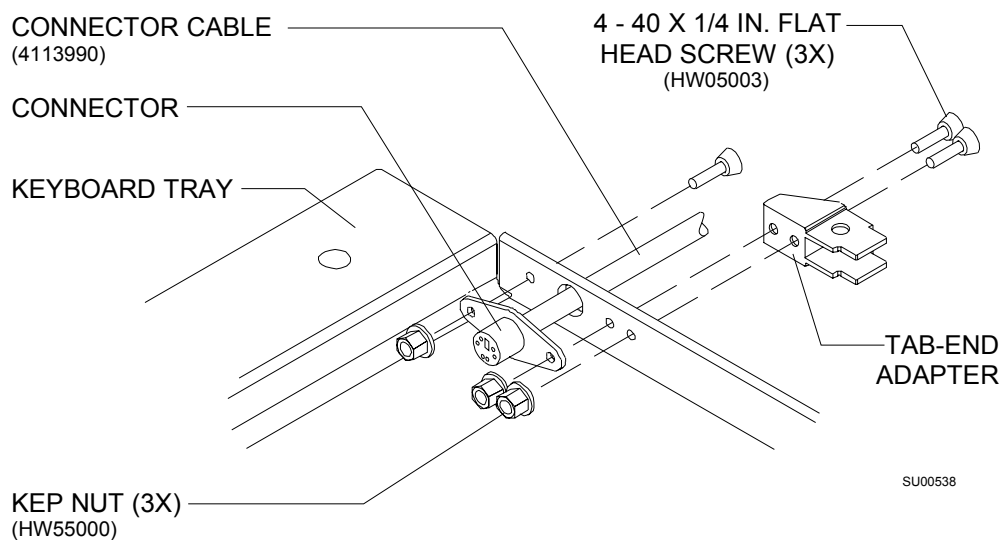


Figure 2-13. Attaching the Connector and Tab-end Adapter to the Keyboard Tray

6. Run the cable through the tab-end adapter.
7. Snap the hole-end of the chain into the tab-end adapter, then insert the cable in the chain and close the chain with the zip strip. (See [Figure 2-14.](#))

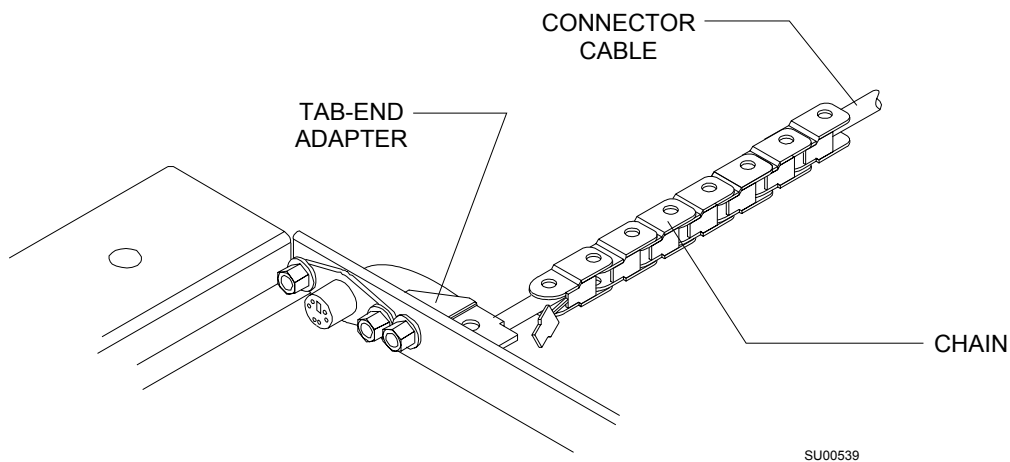


Figure 2-14. Enclosing the Cable in the Chain

8. Attach the thru-hole adapter to the inside back of the retaining plate using two 4-40 x 3/8 inch flat head screws. (See [Figure 2-15](#).)

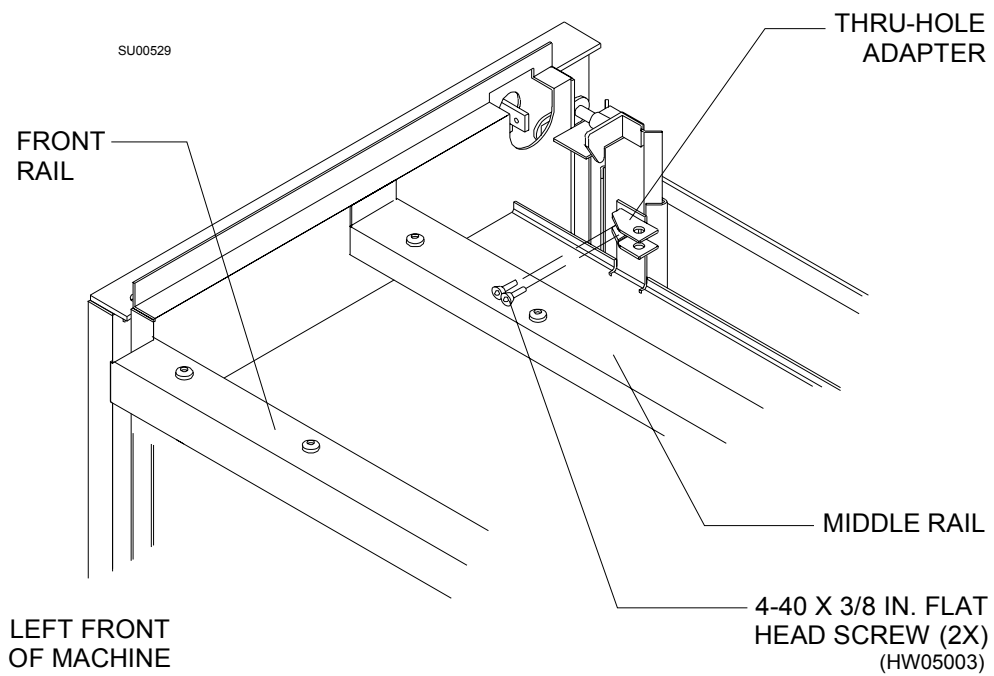


Figure 2-15. Installing the Thru-hole Adapter

9. Run the cable through the thru-hole adapter and out the back of the retaining plate, then snap the chain into the thru-hole adapter. (See [Figure 2-16.](#))

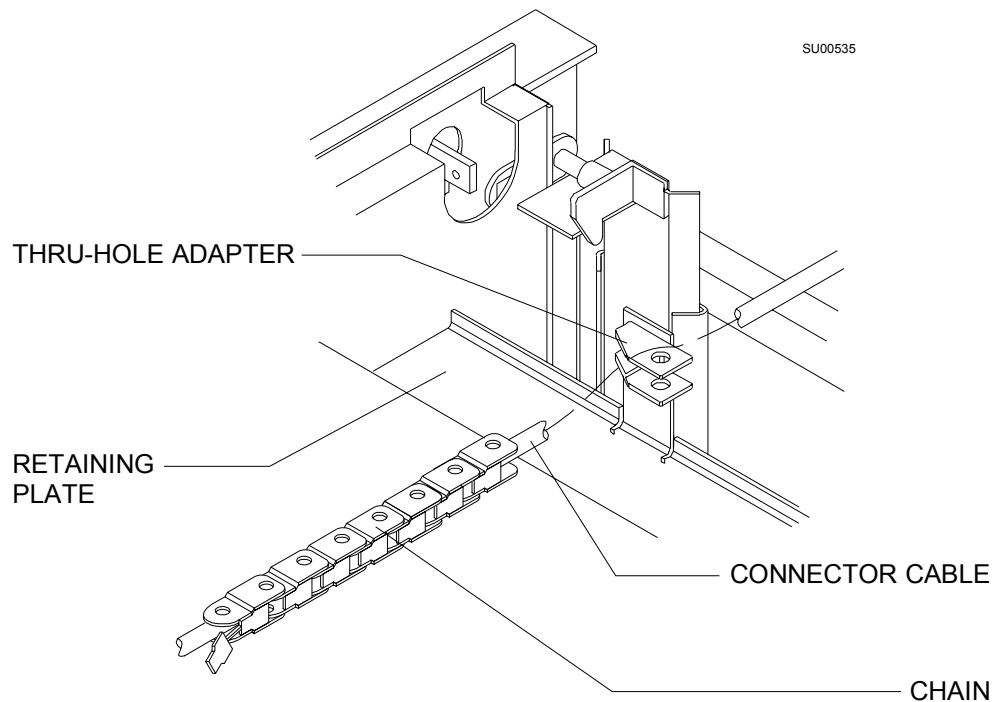


Figure 2-16. Completing the Chain Cabling

10. Remove the screw and washer located in the lower right corner of the rear of the flowmeter housing.
11. Reuse the hardware and install the cable clamp.

12. Clamp the connector cable to the back of the machine, as shown in [Figure 2-17](#).

**Caution:** Do not insert the cable into its port. You will plug in all of the cables after you install all of the hardware.

13. Set the keyboard in the keyboard tray, and plug the keyboard cable into the connector at the back of the tray.

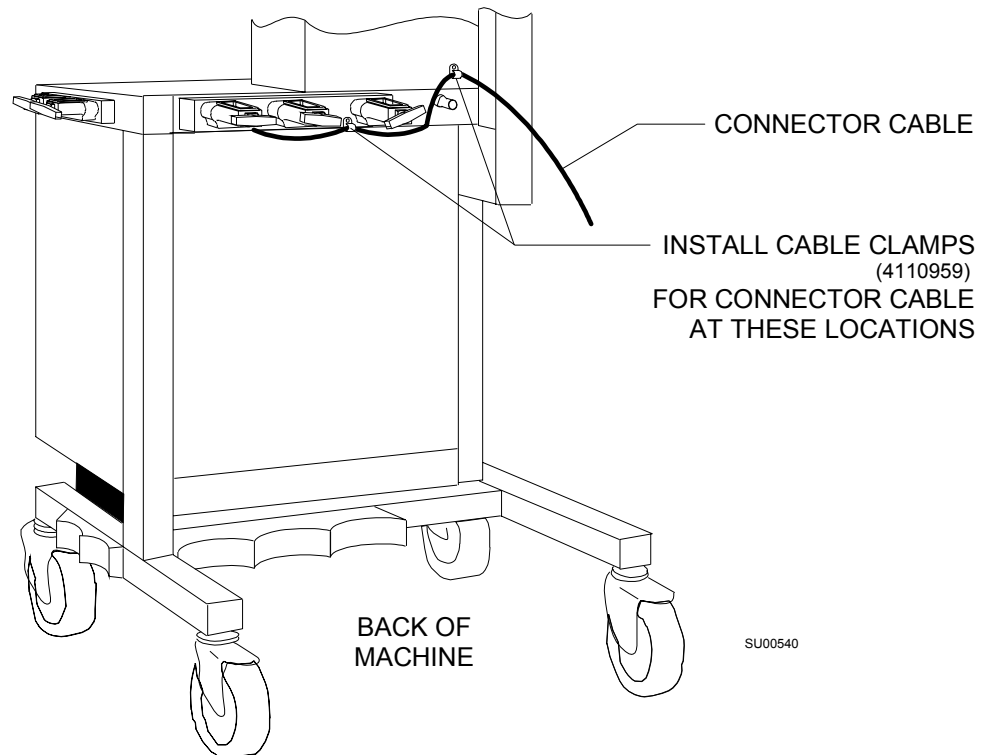


Figure 2-17. Clamping the Connector Cable to the Machine

#### C. Reassemble Separated Parts

1. Carefully remove the protective covering previously placed in the bottom of the cabinet and vacuum any drilling debris from the cabinet and surrounding area.
2. Replace the top cabinet drawer and ensure that the keyboard cable does not interfere with the operation of the top drawer.

**Note:** Leave the middle and bottom drawers out of the machine; they must be out of the cabinet for installation of the processor unit and power supply assembly.

3. Replace the table top and secure it with the screws that were previously removed.

*You are finished with this step. Proceed to [“Step 5. Move the Scavenger” on page 2-35](#).*

## **Step 4, Option 2. Install the Keyboard Unit on a Short Arm Display**

The keyboard unit consists of a retaining plate, keyboard, and cable assembly. The keyboard unit is attached to the back of the display on a short arm assembly.

**Configurations**      This procedure applies to the following Draeger anesthesia machines:

- Narkomed 2B
- Narkomed 2C
- Narkomed 3
- Narkomed 4
- Narkomed GS

**Required Parts**      You need the following parts to install the keyboard.

- 1 keyboard
- screws and washers - see
- the keyboard assembly (Part Number 4115579)

**Required Tools**      You need the following tools to install the keyboard:

- standard screwdrivers
- standard hex key set

Procedure

To install the keyboard unit, follow these steps and [Figure 2-18](#) for a 12-inch monitor or [Figure 2-19 on page 2-34](#) for a 15-inch display.

1. Support the display and remove the mounting screws from the back of the display mounting plate.
2. Place the keyboard retaining plate onto the display mounting plate back.
3. Line up the inner holes of the plates. Align the upper holes for the 15-inch display and the lower holes for the 12-inch display.
4. Insert the four outer attachment screws from the front of the display mounting plate.
5. Apply a nut to each screw and tighten the nuts.
6. Reattach the display to the display mounting plate.
7. Place the keyboard on the keyboard tray.
8. Plug the keyboard cable into the Saturn System.

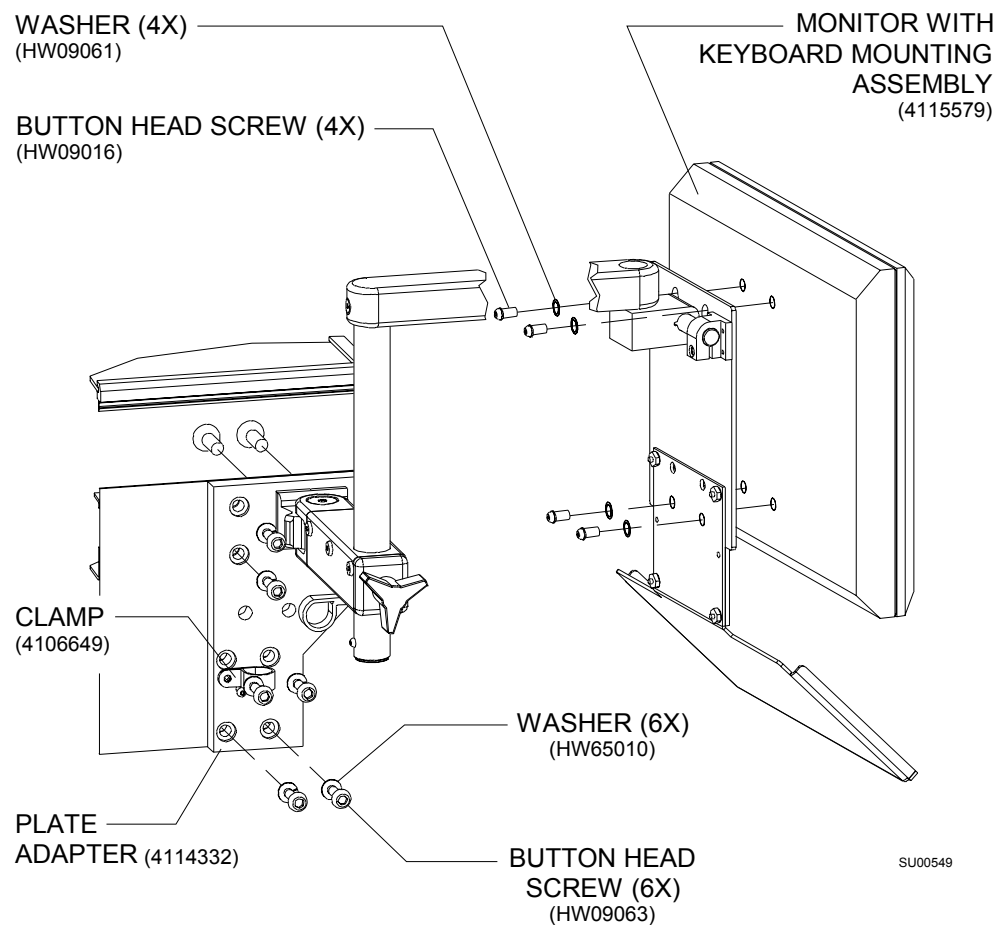


Figure 2-18. Installing the Keyboard on a 12-inch Display

## 2

### Setting Up an Integrated OR Workstation

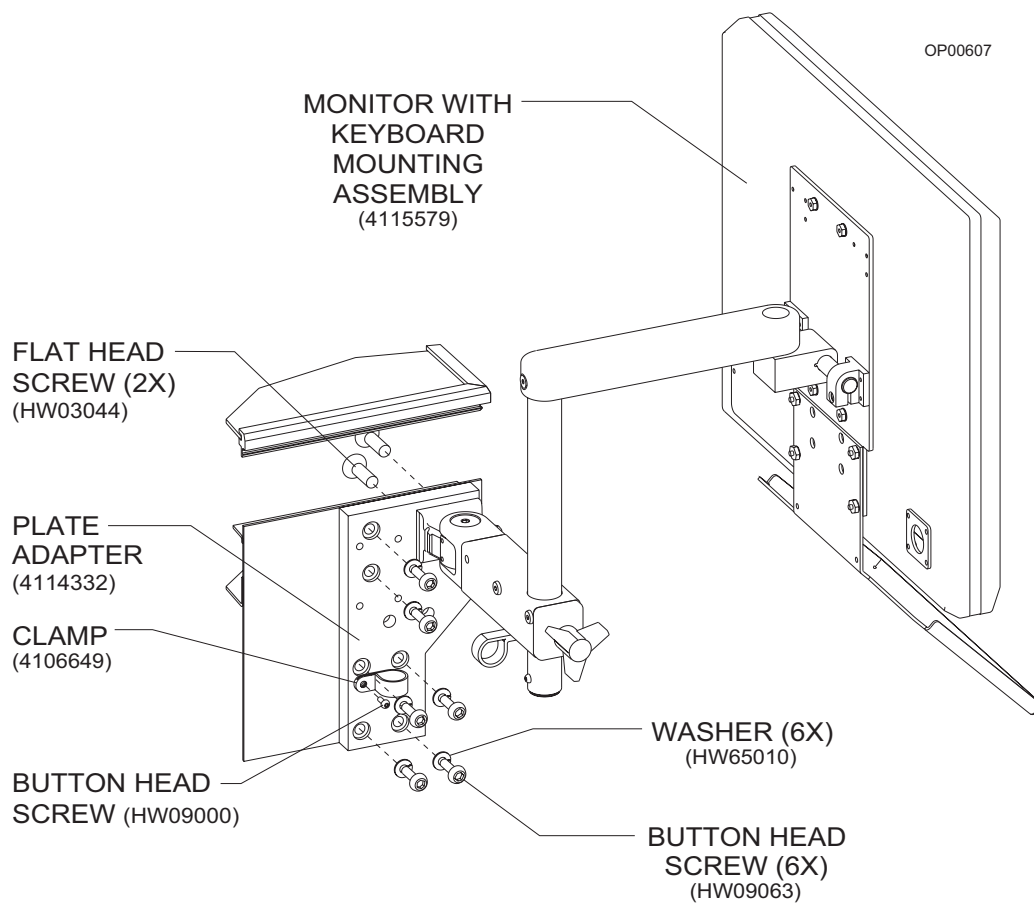


Figure 2-19. Installing the Keyboard on a 15-inch Display

*You completed this step. Proceed to [“Step 5. Move the Scavenger”](#) on page 2-35.*



## Step 5. Move the Scavenger

You must move the scavenger to make room for the processor unit on the left side of the anesthesia machine.

### A. Remove Existing Parts

1. Disconnect the two 19mm hoses from the left and right side of the scavenger. (Leave the hoses attached to the absorber.)
2. While holding the scavenger, remove the two screws, flat washers, and split lockwashers that secure the scavenger to the mounting bracket.
3. Remove the screws, lockwashers, and mounting bracket from the anesthesia machine.
4. Set aside the scavenger, screws, mounting bracket, and washers for reinstallation.
5. Remove the cap plug and set screw on the frame above the back left caster of the machine.

**Caution:** Do not attempt to move the machine after removing the cap plug and set screw.

## 2

### Setting Up an Integrated OR Workstation

#### B. Reinstall the Scavenger

1. Attach the scavenger support bracket to the frame through the hole where you removed the cap and set screw. Use one 8 x 1.25 x 40 millimeter stainless steel screw and lockwasher. (See [Figure 2-20.](#))

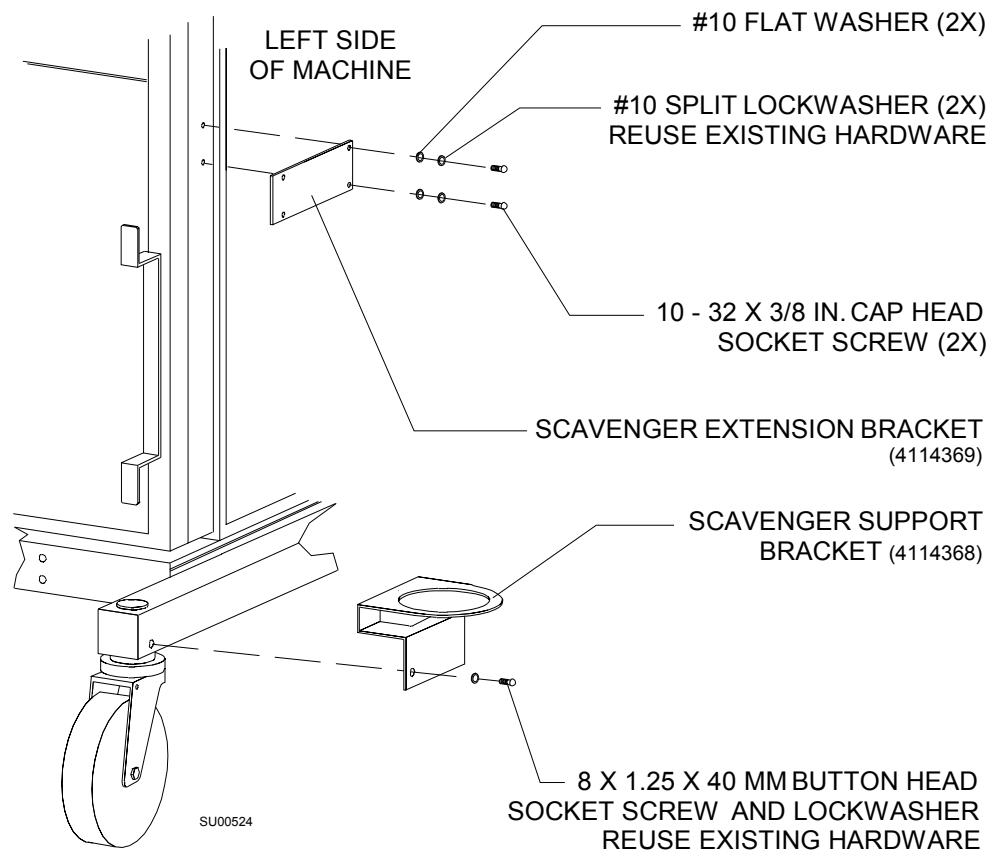


Figure 2-20. Attaching the Scavenger Brackets to the Anesthesia Machine

2. Using the two screws, flat washers, and lockwashers you removed from the scavenger mount, attach the scavenger extension bracket to the left side of the anesthesia machine in the old scavenger mount holes. (See [Figure 2-21](#).)
3. Insert the bottom of the scavenger through the opening in the scavenger support bracket and, while holding the scavenger in place, screw the scavenger mounting bracket to the scavenger extension bracket. Use two 10-32 x ½ inch button head socket screws, flat washers, and split lockwashers. (See [Figure 2-21](#).)
4. Reconnect the two 19 mm hoses to the left and right side of the scavenger. (The hoses should still be connected to the absorber at the other end.)

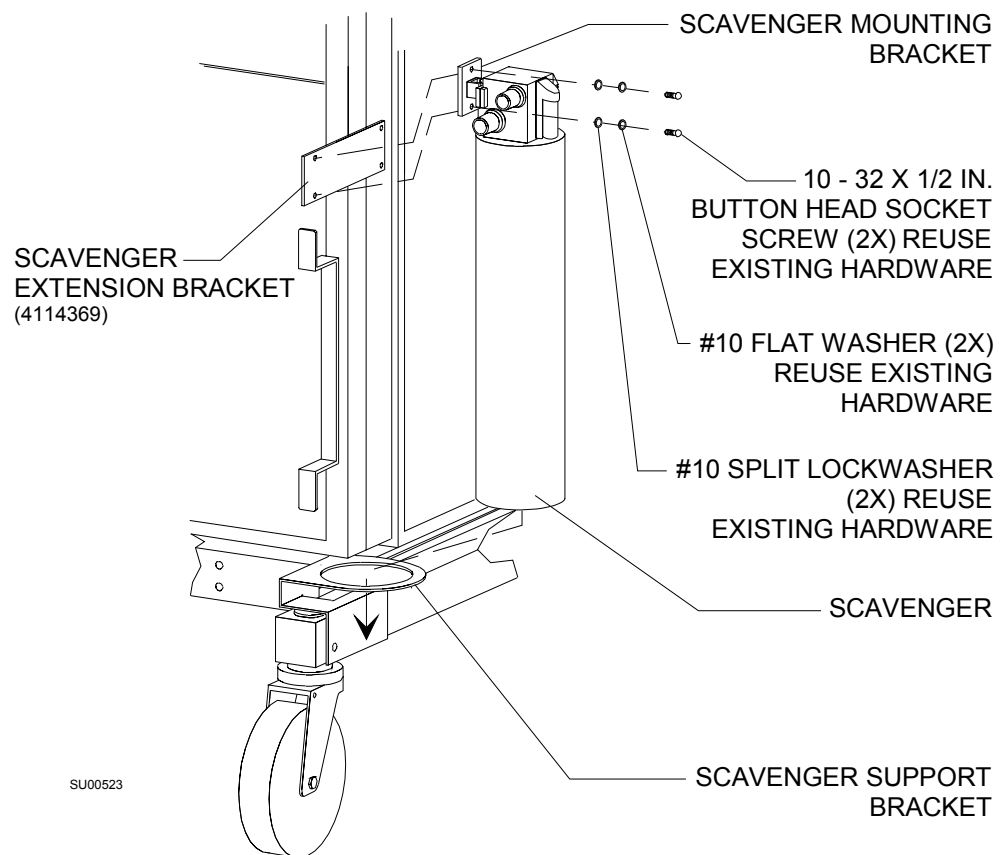


Figure 2-21. Mounting the Scavenger onto the Scavenger Brackets

*You are finished with this step. Proceed to “[Step 6. Install the Processor Unit](#)” on [page 2-38](#).*

## Step 6. Install the Processor Unit

Install the processor unit on the left side of the anesthesia machine, as described in the following steps.

### A. Remove Existing Parts

If the bottom and middle drawers are not already out of the anesthesia machine, remove them.

### B. Install the Processor Unit

Follow these steps to install the processor unit.

#### Configurations

This procedure applies to the following Draeger anesthesia machines:

- Narkomed 2B
- Narkomed 2C
- Narkomed 3
- Narkomed 4
- Narkomed GS

#### Required Parts

You need the following parts to install the processor unit:

- 1 processor unit
- 1 mounting plate (installed on processor)
- screws and washers for mounting plate (see [Figure 2-22 on page 2-39](#))
- 1 slide plate (installed on anesthesia machine)
- 2 support brackets for slide plate
- screws and washers for slide plate (see [Figure 2-26 on page 2-43](#))

#### Required Tools

You need the following tools to install the processor unit:

- drill with a 21/64 in. drill bit
- standard screwdrivers

Procedure

1. Attach the processor unit mounting plate to the processor unit with four 8-32 x 5/16 inch button head socket screws and four #8 internal tooth lock washers as shown in [Figure 2-22](#).

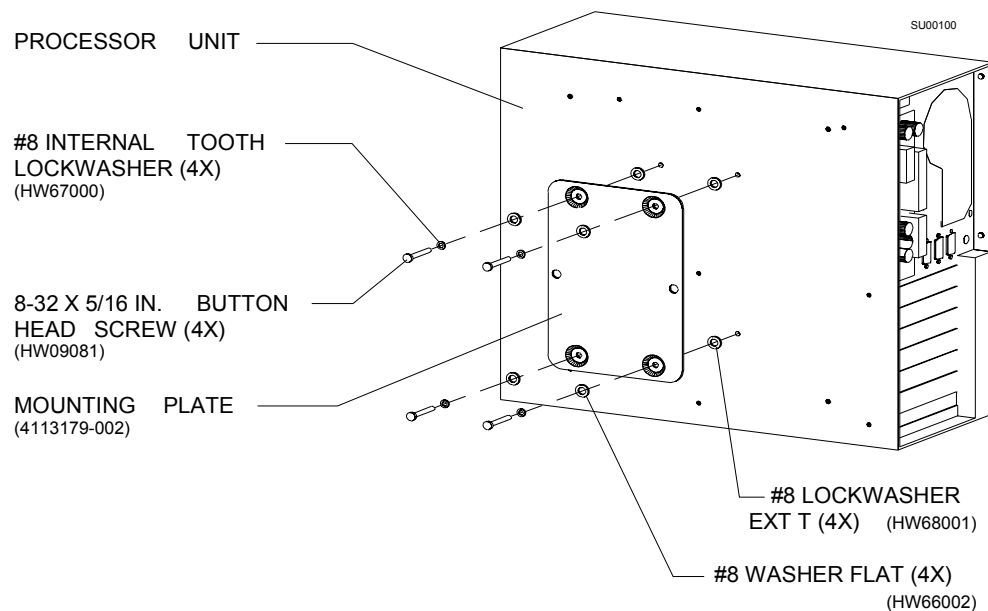


Figure 2-22. Attaching the Mounting Plate to the Processor Unit

2. Mark four hole locations on the side of the cabinet.

The hole locations depend on whether or not the anesthesia machine has a standard cabinet or a short cabinet. [Figure 2-23](#) illustrates the two cabinet types.

- The standard cabinet is used by the Narkomed 2B, 2C, 3, and 4.
- The short cabinet is used by the Narkomed GS.

SU00506

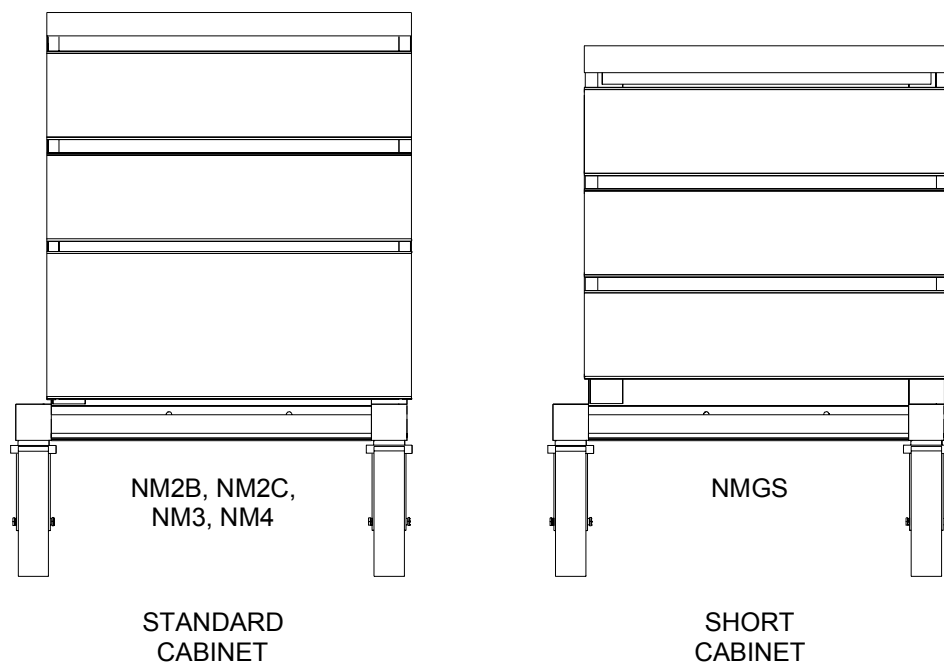


Figure 2-23. Cabinet Types

- For machines with a standard cabinet, mark the four hole locations, as shown in [Figure 2-24](#).

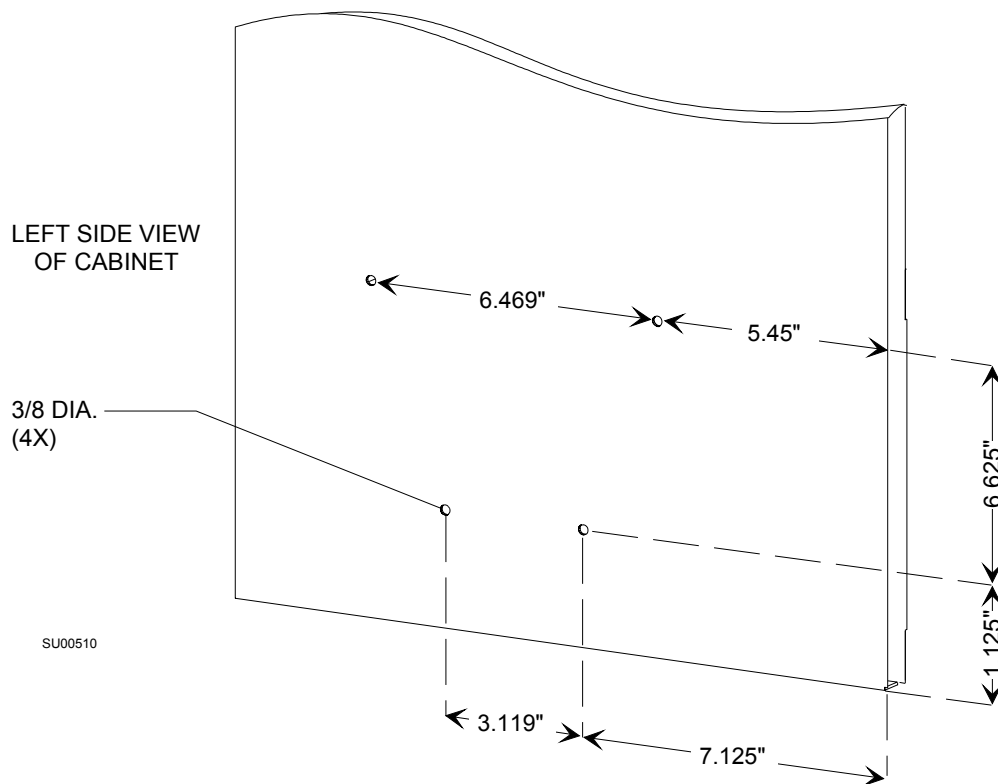


Figure 2-24. Slide Plate Holes for Standard Cabinet

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- For machines with a short cabinet, mark the four locations, as shown in [Figure 2-25](#).

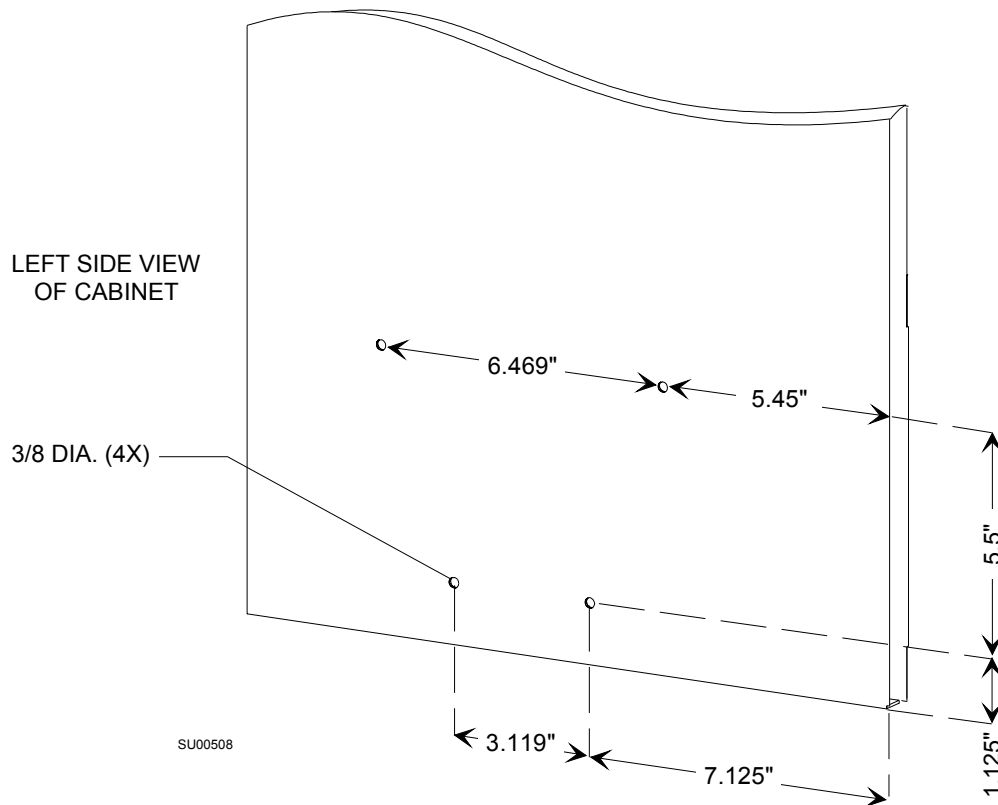


Figure 2-25. Slide Plate Holes for Short Cabinet



Make sure the marked hole locations match up with the holes in the slide plate, as shown in [Figure 2-26](#).

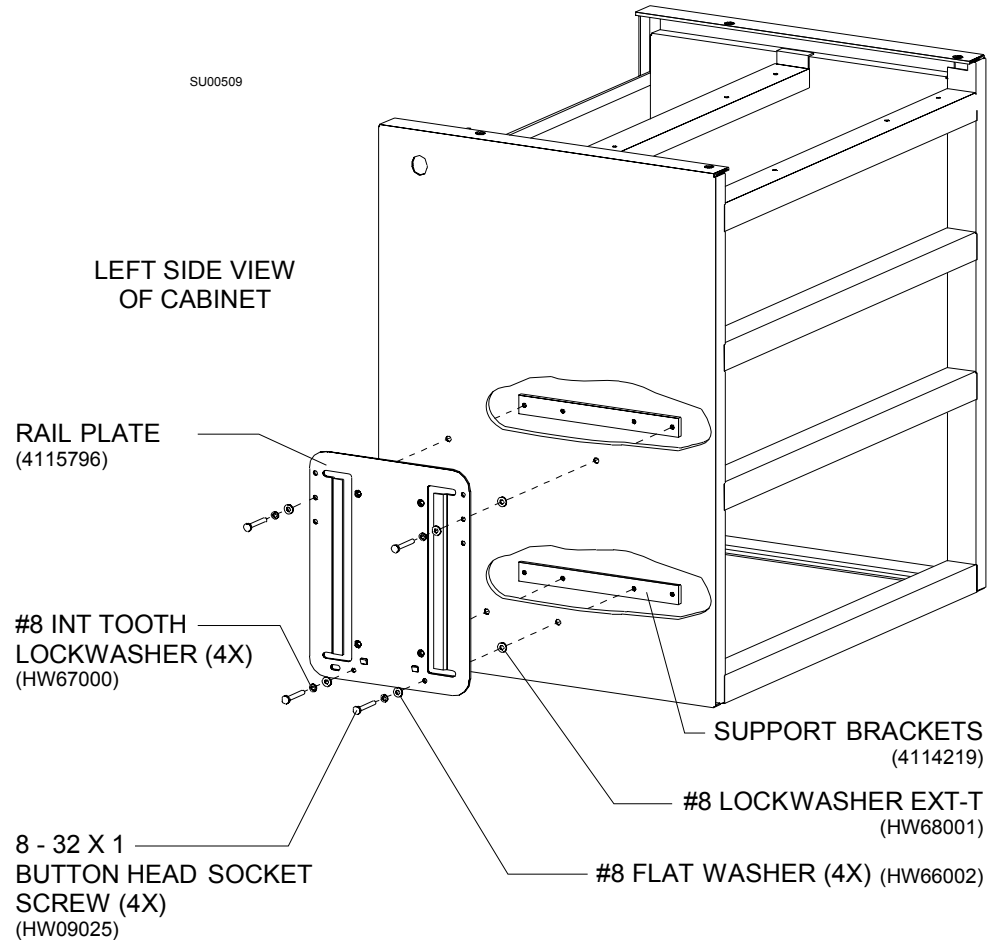


Figure 2-26. Attaching Rail Plate to the Cabinet

3. Center punch the four points to be drilled.
4. Carefully drill each hole with a 3/8 inch drill bit.
5. Carefully de-burr the holes and vacuum all drill chips from the machine and surrounding area.
6. Join the rail plate on the *outside* of the cabinet to the two support brackets on the *inside* of the cabinet using four 8-32 x 1 inch button head socket screws, four #8 flat washers, and four #8 split lock washers. (See [Figure 2-26](#).)
7. Slide the processor unit mounting plate onto the machine's rail plate until the mounting plate is firmly seated.

**C. Reassemble Separated Parts**

Replace the middle drawer in the machine. (Leave the middle and bottom drawers out if this installation is on a Narkomed 2C, 3 or 4).

*You are finished with this step. Proceed to either*

- [“Step 7, Option 1A. Install the Power Supply Assembly and Replacement Drawer” on page 2-44](#) for power supply PN 4115952-001/002, or [“Step 7, Option 1B. Install the Power Supply Assembly” on page 2-52](#) for power supply PN4116687-001/002 (Narkomed 2C, 3 or 4)
- [“Step 7, Option 2. Install the Power Supply Assembly Under the Machine” on page 2-55](#) (Narkomed 2B or GS).

**Step 7, Option 1A. Install the Power Supply Assembly and Replacement Drawer**

The following procedure outlines assembly and installation of a Saturn power supply (**4115952-001/002**), and replacement of the lower cabinet drawer with a new drawer assembly that accommodates the size and shape of the installed Saturn power supply.

**Configurations**

This procedure applies to the following Draeger anesthesia machines:

- Narkomed 2C
- Narkomed 3
- Narkomed 4

**Required Parts**

You need the following parts to install the power supply:

- Saturn power supply assembly (P/N 4115952-001/-002) comprising:
  - Housing and cover
  - UPS unit
  - Power transformer
  - Cords
  - Attaching hardware and misc. items
- Replacement drawer, slide rails and attaching hardware (P/N 4115955)

**Required Tools**

You need the following tools to install the power supply and drawer slides:

- Allen wrenches
- Standard screwdrivers

### Power Supply Assembly Procedure

Follow this procedure to assemble the power supply.

1. Install the grommet and serial number label on the power supply housing as shown in [Figure 2-27](#) (if not previously installed).
2. Install the cable tie on the housing with a 6-32 x 5/16 in btn hd skt screw and #6 int-t lock washer.
3. Install four self-adhesive foam strips on the inside of the housing at the locations shown in [Figure 2-27](#).

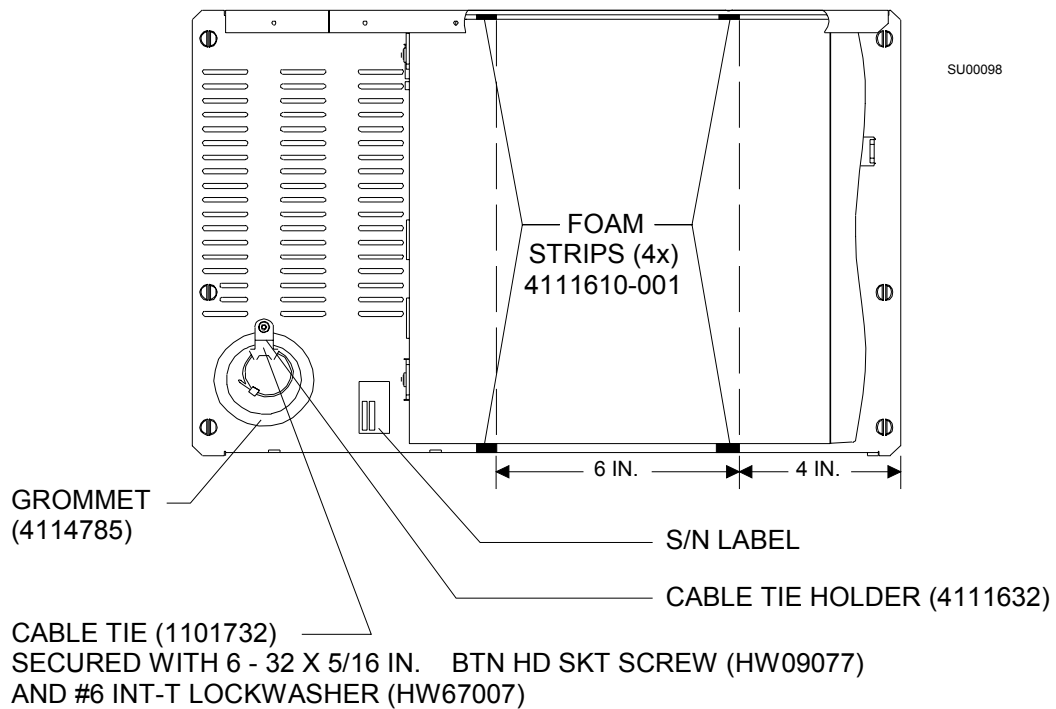


Figure 2-27. Power Supply Assembly

4. Install the UPS unit in the housing with two M3x0.5x10 mm btn hd skt screws, #4 int-t lock washers and #4 flat washers as shown in [Figure 2-29 on page 2-47](#).
5. Install the power transformer in the housing with four 10-32 x 3/8 in btn hd skt screws and #10 lock washers as shown in [Figure 2-29 on page 2-47](#).
6. Ensure that the transformer is configured for the correct mains voltage:
  - The Power Switch and fuse rating shall be as specified in [Figure 2-28](#).
  - The Voltage Selector Switch shall be set to the corresponding mains voltage.

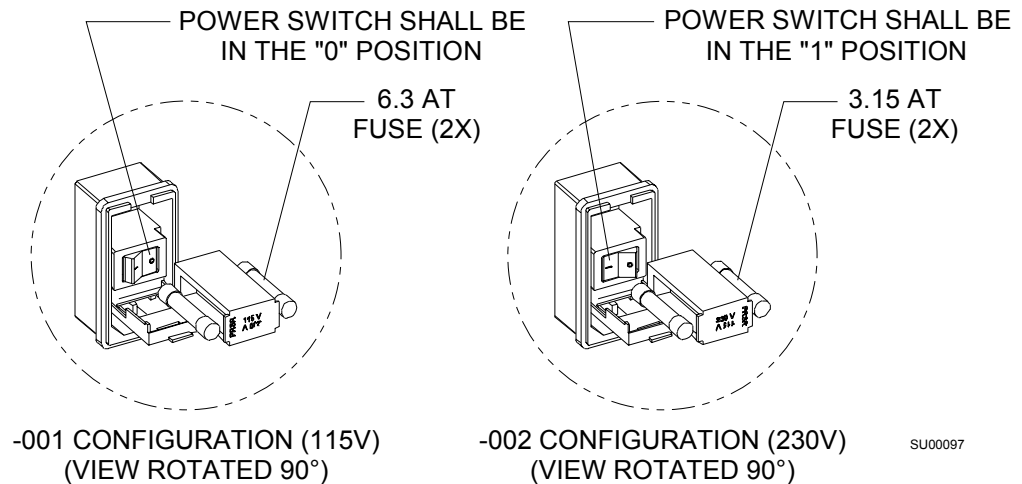


Figure 2-28. Power Switch and Fuse Arrangement

7. Install the internal transformer-to-UPS cord as shown in the illustration. Wrap any excess cable in a figure 8 and secure it with a tie strap.

**Note:** External cord installation is described in the next step. For Narkomed 2C and 4 installations, route these cords through the grommet in the housing as shown in the illustration. For Narkomed 3 installations, route these cords directly out the side of the housing and not through the grommet.

8. Connect the following cords as shown in the illustration:
  - Plug the WPU data cord into the UPS unit
  - Plug the mains cord into the power transformer at the power entry.
  - Plug the WPU power cord into the UPS unit.
9. Install tie straps where shown in the illustration.
10. Install the cover on the housing with five 6-32 x 5/16 in btn hd skt screws and #6 int-t lock washers.

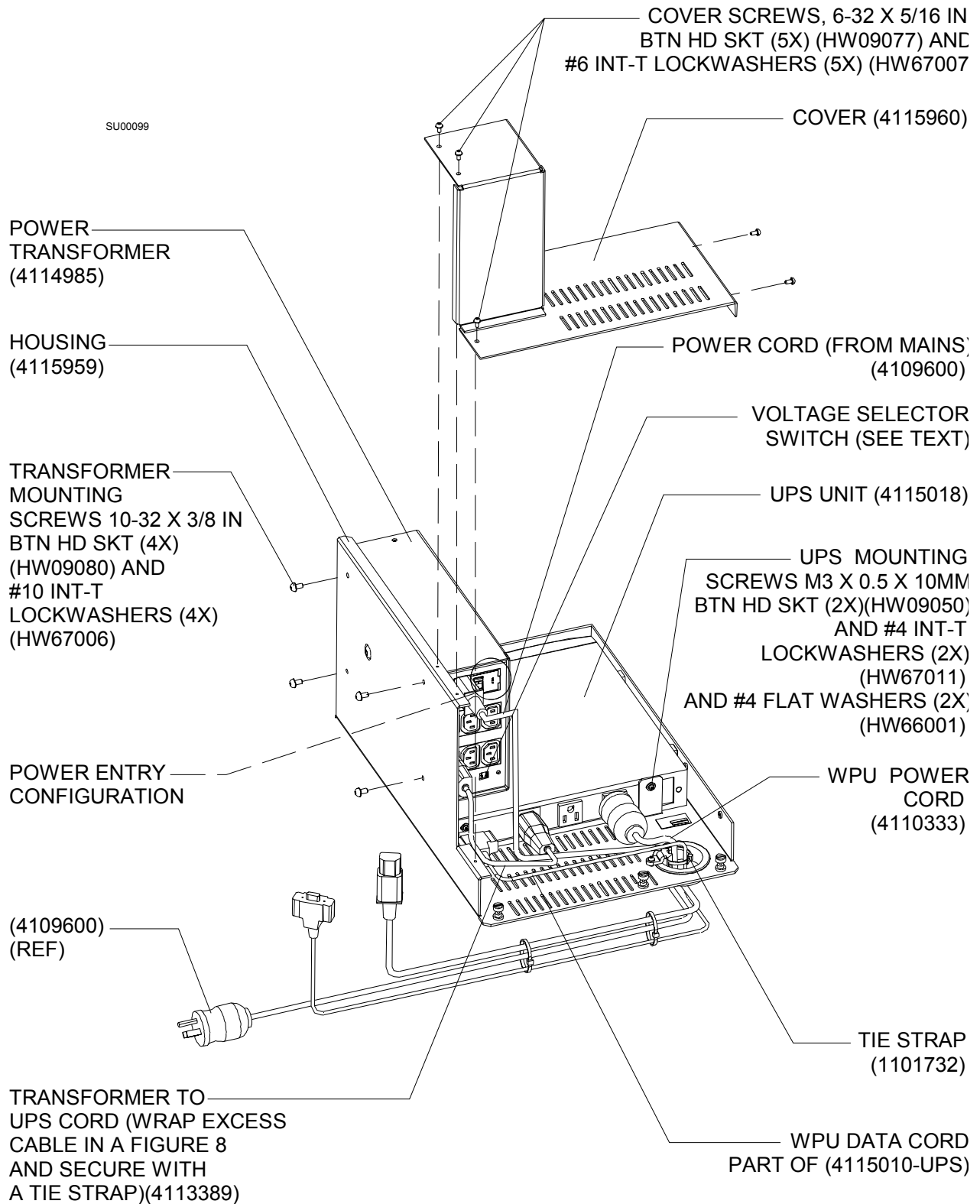


Figure 2-29. Power Supply Assembly (continued)

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#### Installing the Saturn Power Supply

1. Pull out the bottom cabinet drawer and remove it from the cabinet rails. See [Figure 2-30](#).
2. Pull out the middle cabinet drawer and remove it from the cabinet rails.
3. Remove the top cover from the power supply/battery box (located between the bottom frame rails).

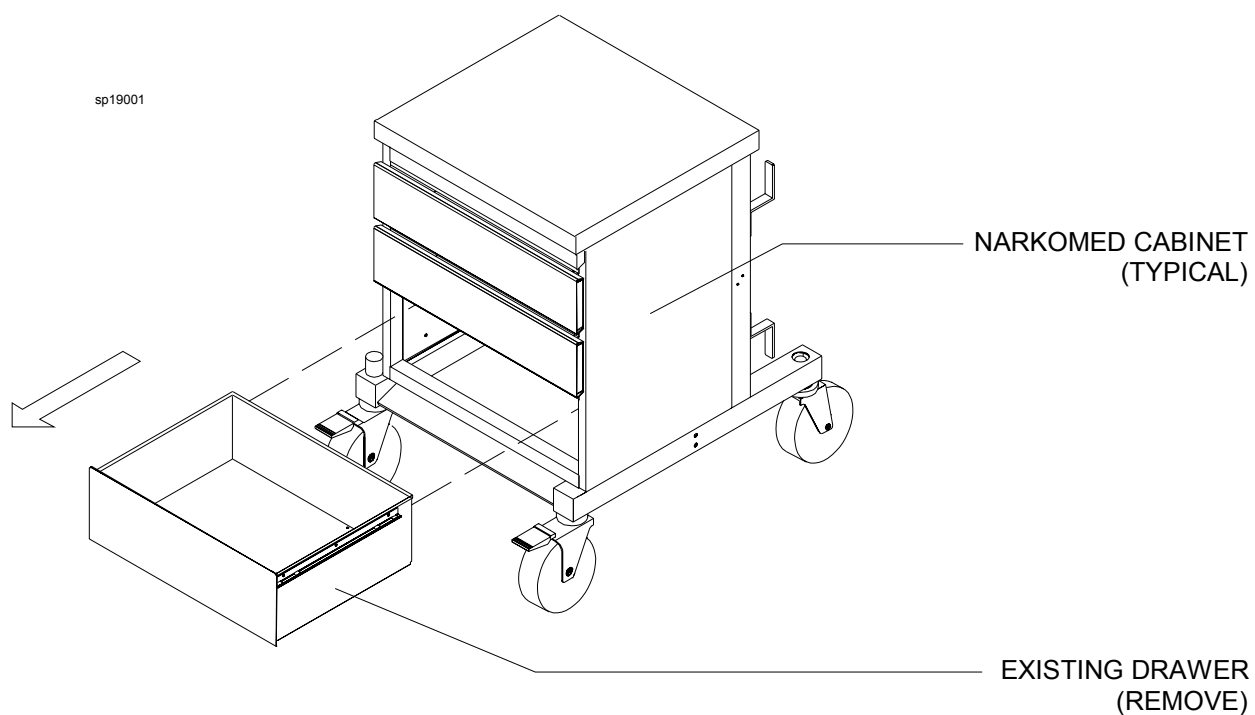


Figure 2-30. Existing Drawer Removal

4. Install the Saturn power supply atop the existing Narkomed power supply as shown in [Figure 2-31](#).

Ensure that the cords are routed correctly. For Narkomed 2C and 4 installations, route these cords through the grommet in the power supply housing. For Narkomed 3 installations, route these cords directly out the side of the housing and not through the grommet.

Position the Saturn power supply so that its captive mounting screws engage the tapped holes in the Narkomed power supply box. The location of these holes will depend upon the type of machine. The Saturn power supply is designed to accommodate all three machines.

Tighten the captive mounting screws.

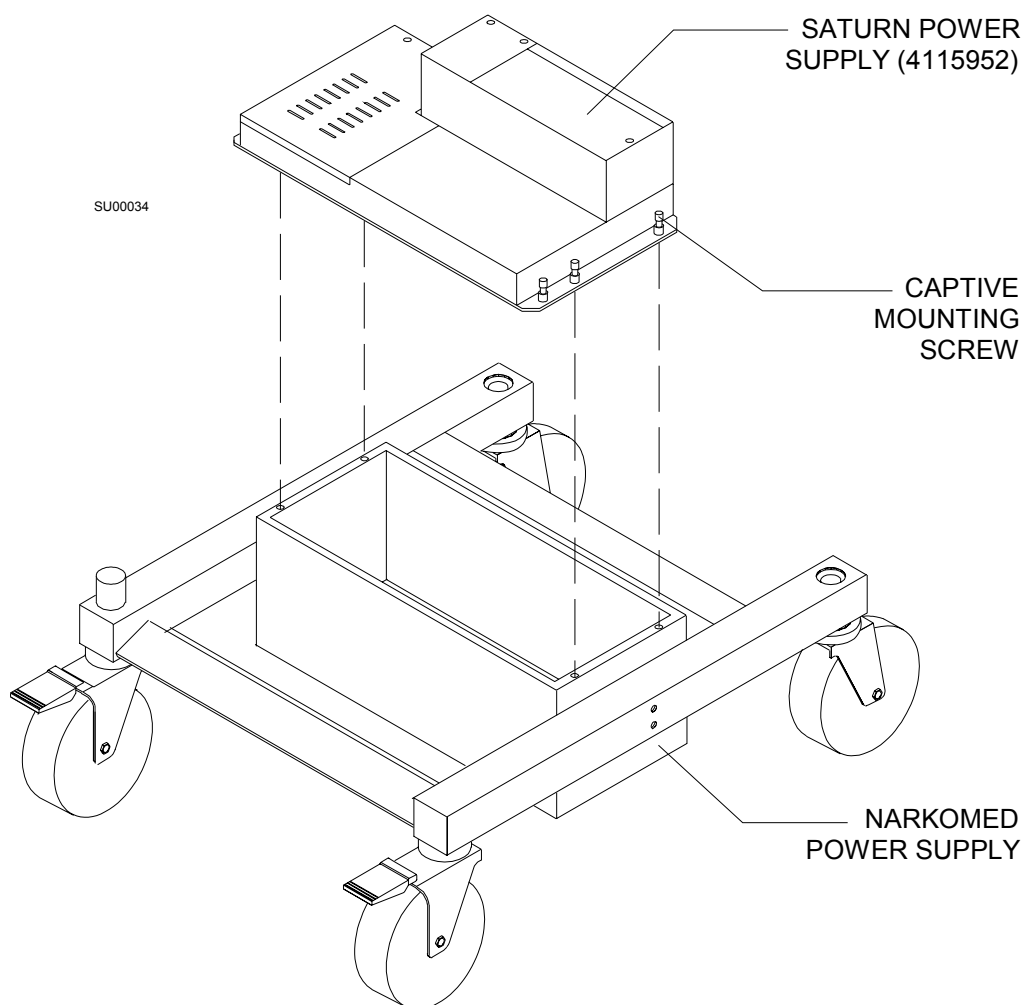


Figure 2-31. Saturn Power Supply Installation

## 2

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#### Installing the Replacement Drawer

1. Assemble the slide rails (furnished with the new drawer) to the replacement drawer. Two slide rail arrangements are shown in [Figure 2-32 on page 2-51](#):
  - If your cabinet has a double-track rail system, assemble the slide rails as shown in View **A** with three 6-32 x 5/16 in. btn hd skt screws and #6 int-t lock washers through each rail. In this assembly the left and right rails are the same.
  - If your cabinet has a single-track rail system, assemble the slide rails as shown in View **B** with two 6-32 x 5/16 in. btn hd skt screws and #6 int-t lock washers through each rail. In this assembly the left and right rails are different:

Install Accurail 7155-1214-CR on the right side of the drawer.

Install Accurail 7155-1214-LR on the left side of the drawer.
2. Install the replacement drawer in the bottom position in the cabinet and ensure that it works properly.
3. Reinstall the middle drawer in the cabinet.



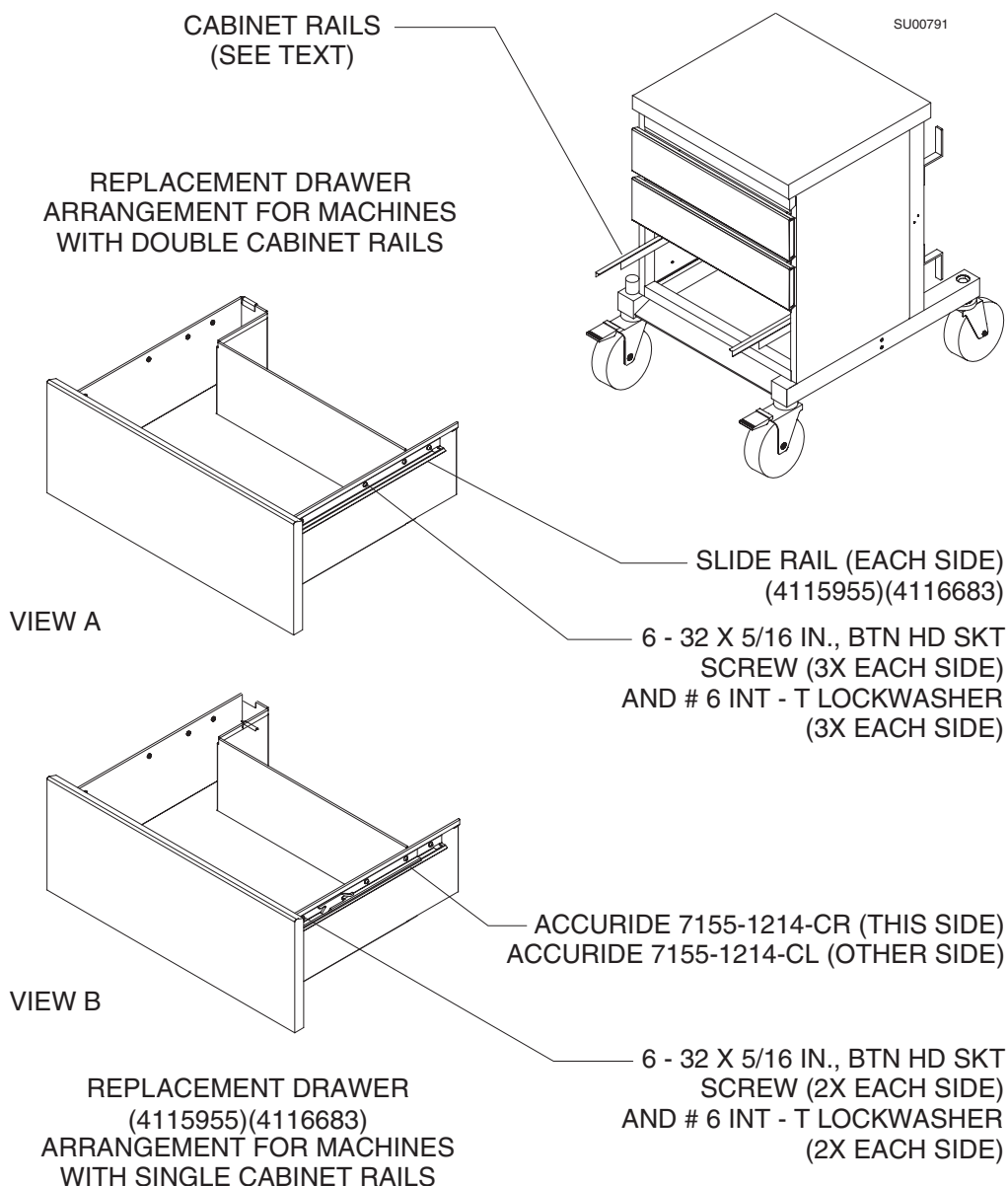


Figure 2-32. Replacement Drawer Installation

*You are finished with this step. Proceed to:*

- “Step 8, Option 2. Install the Display Unit on a Narkomed 2B, 2C, 3, and 4” on page 2-63, or
- “Step 8, Option 2. Install the Display Unit on a Narkomed 2B, 2C, 3, and 4” on page 2-63, or
- “Step 8, Option 4. Install the Display Unit on a Julian” on page 2-94.

## Step 7, Option 1B. Install the Power Supply Assembly

The following procedure outlines installation of a newer Saturn power supply (P/N 4116687-001/002). When you are done, refer to [“Installing the Replacement Drawer” on page 2-50](#) and [Figure 2-33 on page 2-53](#) to replace the lower cabinet drawer with a new drawer assembly that accommodates the size and shape of the installed Saturn power supply.

Configurations	<p>This procedure applies to the following Draeger anesthesia machines:</p> <ul style="list-style-type: none"> <li>• Narkomed 2C</li> <li>• Narkomed 3</li> <li>• Narkomed 4</li> </ul>
Required Kit	<p>You need the following parts to install the power supply:</p> <ul style="list-style-type: none"> <li>• Saturn power supply assembly (P/N 4116687-001/002)</li> <li>• Replacement drawer, slide rails and attaching hardware (P/N 4115955)</li> </ul>
Required Tools	<p>You need the following tools to install the power supply and drawer slides:</p> <ul style="list-style-type: none"> <li>• Allen wrenches</li> <li>• Standard screwdrivers</li> <li>• SAE wrenches</li> </ul>
Power Supply Assembly Procedure	<p>Follow this procedure to connect the cords and attach the power supply.</p> <p><b>Note:</b> External cord installation is described in this procedure. For Narkomed 2C and 4 installations, route these cords through the grommet in the housing. For Narkomed 3 installations, route these cords directly out the side of the housing and not through the grommet.</p> <ol style="list-style-type: none"> <li>1. Plug the cords as follows (<a href="#">Figure 2-33 on page 2-53</a> and <a href="#">Figure 2-34 on page 2-54</a>): <ul style="list-style-type: none"> <li>• Plug the WPU data cord into the UPS unit.</li> <li>• Plug the mains cord into the power transformer at the power entry.</li> <li>• Plug the WPU power cord into the UPS unit.</li> </ul> </li> <li>2. Remove the four large screws (5/16 - 18 x 2-1/2) holding the machine power supply in place.</li> <li>3. Carefully lower the machine power supply, and then remove the power supply cover and discard. Save the hardware for mounting the Saturn power supply.</li> </ol> <p><b>Note:</b> See <a href="#">Figure 2-31 on page 2-49</a> to remove second and third drawers.</p> <ol style="list-style-type: none"> <li>4. Position the Saturn power supply on top of the machine power supply so that the power cords face left. Fasten the Saturn power supply to the machine power supply using the existing hardware.</li> <li>5. Install the 3/16 spacer plate (4117719) supplied with the kit between the frame rail and the machine power supply.</li> <li>6. Reinstall the four 2-1/2 large hex hardware screws, washers and acorn nuts.</li> </ol>

**Note:** For the Narkomed 4, use 5/16-18 x 2-3/4 large hex hardware screws supplied with the kit. Use existing acorn nuts and washers.

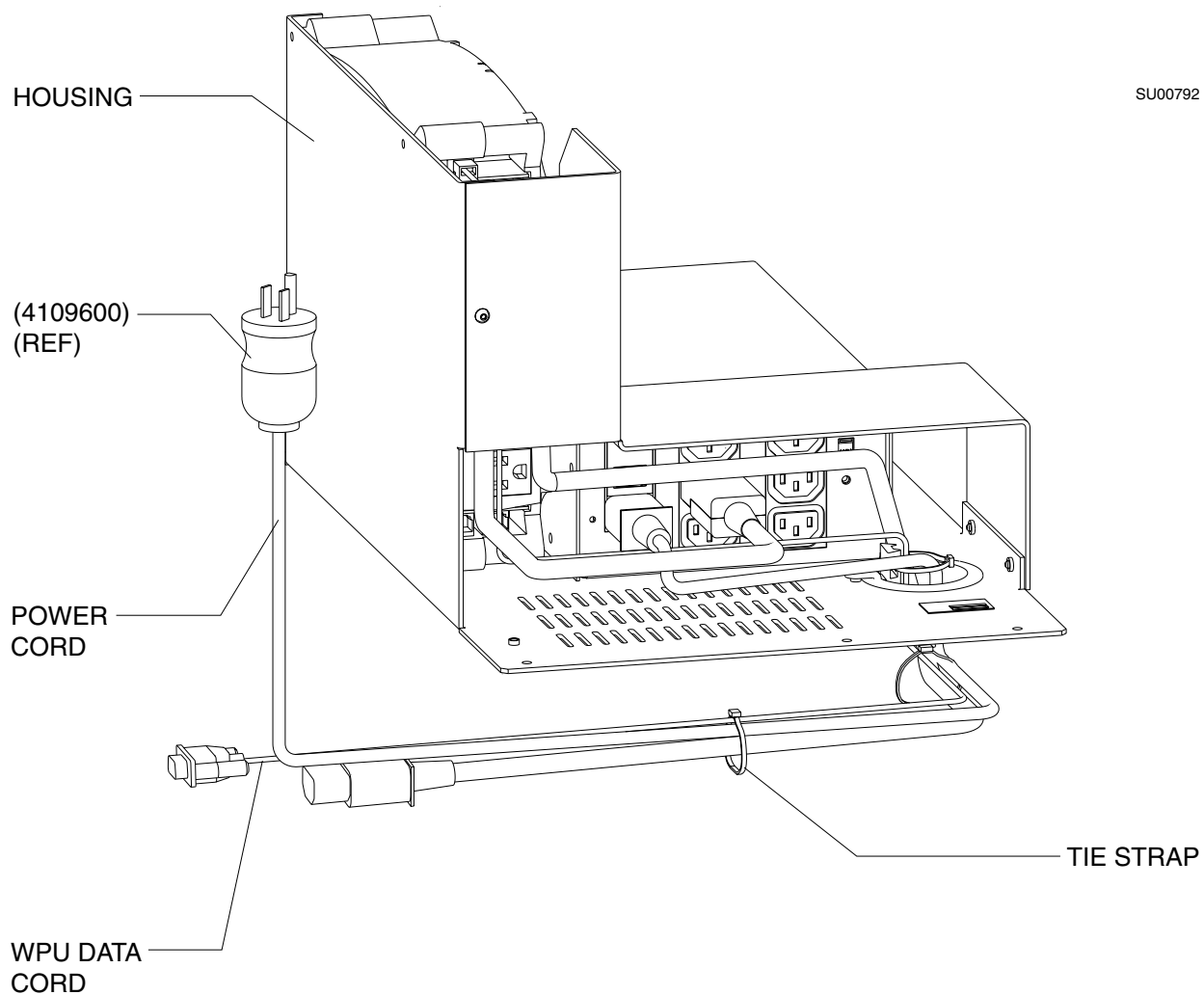


Figure 2-33. Power Supply Assembly

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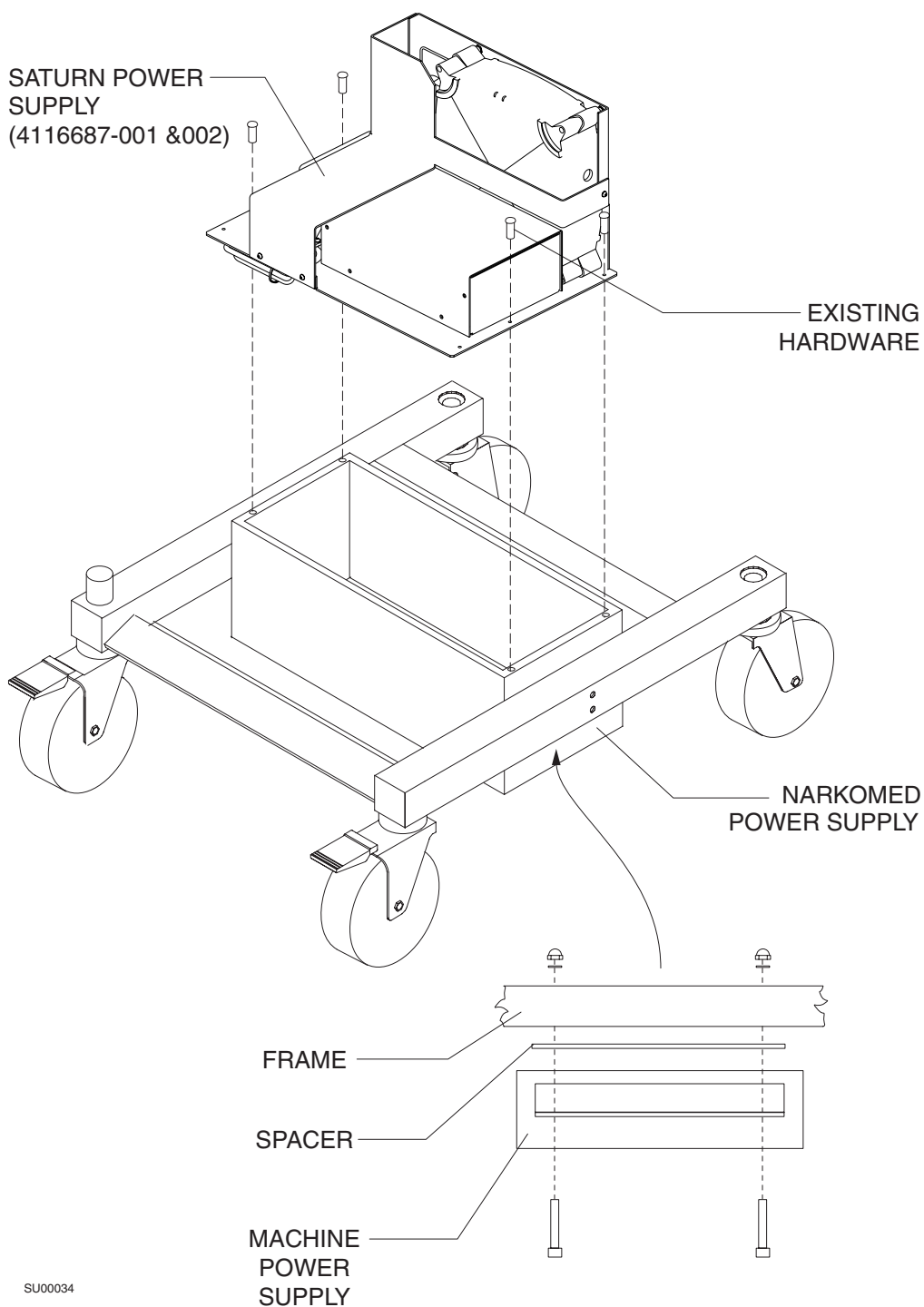


Figure 2-34. Saturn Power Supply (Already Assembled)

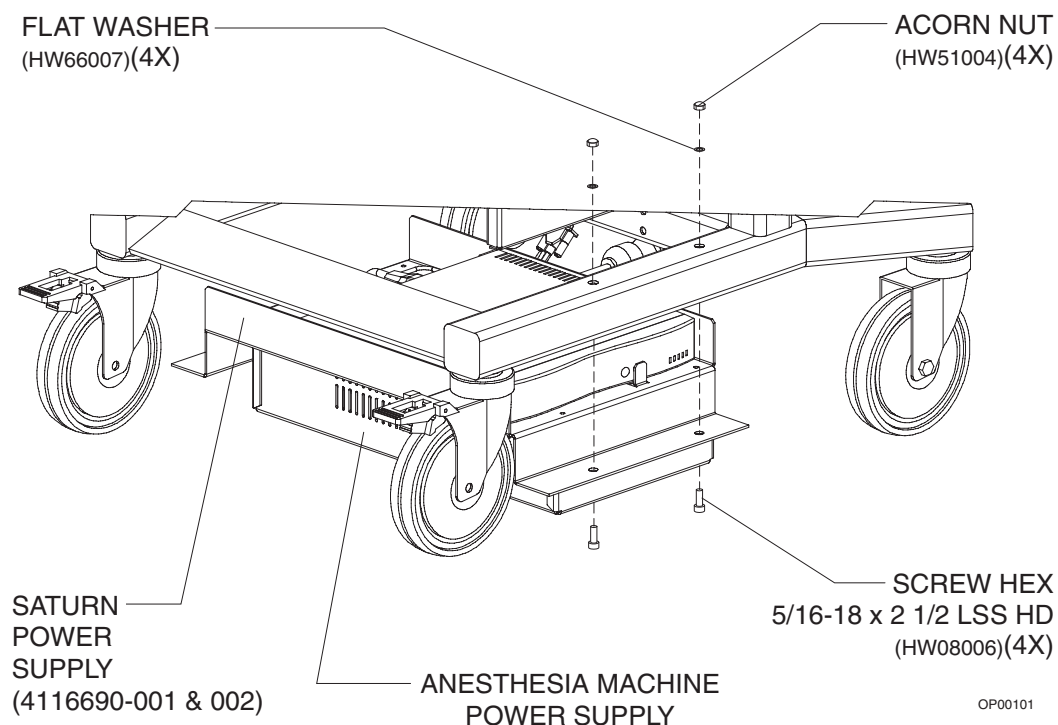
## Step 7, Option 2. Install the Power Supply Assembly Under the Machine

The power supply assembly (either **4115010-001/002** or **4116690-001/002**) is mounted under the anesthesia machine.

Configurations	<p>This procedure applies to the following Draeger anesthesia machines:</p> <ul style="list-style-type: none"><li>• Narkomed 2B</li><li>• Narkomed GS</li></ul>
Required Parts	<p>You need the following parts to install the premium power supply:</p> <ul style="list-style-type: none"><li>• standard wrenches</li><li>• a support device for lifting and holding the power supply in place while you insert and tighten the screws</li><li>• screws and washers (see <a href="#">Figure 2-35 on page 2-56</a>)</li></ul>
Required Tools	<p>You need the following tools to install the premium power supply:</p> <ul style="list-style-type: none"><li>• Allen wrenches</li><li>• standard screwdrivers</li></ul>
Procedure	<p>Follow this procedure to install the power supply assembly under the machine.</p> <ol style="list-style-type: none"><li>1. Position the power supply under the anesthesia machine with the power switch to the right side of the machine (<a href="#">Figure 2-35 on page 2-56</a>).</li><li>2. Line up the mounting holes and raise the power supply using the support device.</li><li>3. Insert the mounting screws from the bottom of the power supply.</li><li>4. Attach the acorn nuts to each screw and tighten the nuts.</li><li>5. Plug the Saturn power Cable into the power supply.</li><li>6. Connect the power supply serial cable to the UPS port on the Saturn System.</li><li>7. Connect the power supply cable to the standard over-current-protected hospital-grade wall outlet.</li><li>8. Push the ON/OFF switch of the power supply and verify that the indicator lights illuminate.</li></ol>

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**Figure 2-35. Installing the Power Supply Assembly Under the Machine**

*You are finished with this step. Proceed to one of the following steps:*

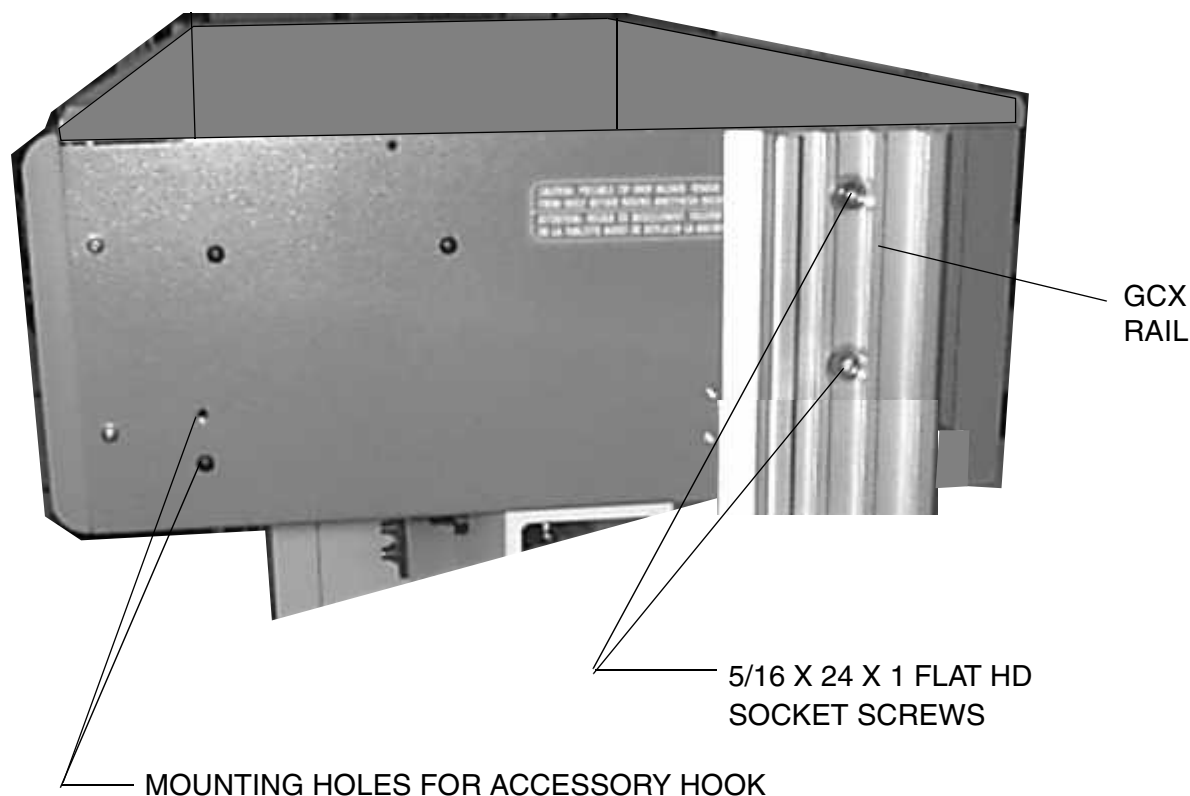
- “Step 8, Option 3. Install the Display Unit on a Narkomed 6000” on page 2-89;
- “Step 8, Option 2. Install the Display Unit on a Narkomed 2B, 2C, 3, and 4” on page 2-63; or
- “Step 8, Option 4. Install the Display Unit on a Julian” on page 2-94.

## Step 8, Option 1. Install the Display Unit on a Narkomed GS

The instructions that follow explain how to install the display unit on a Narkomed GS.

Attaching the  
GCX Rail to the  
Narkomed GS

1. Remove the top cover of the monitor box.
2. If necessary, remove the accessory hook and relocate it at the forward mounting holes on the monitor box.
3. Attach the GCX rail to the monitor box with two 5/16-24 x 1 in. flat head socket screws as shown in [Figure 2-36](#). Threaded inserts are provided in the monitor box.

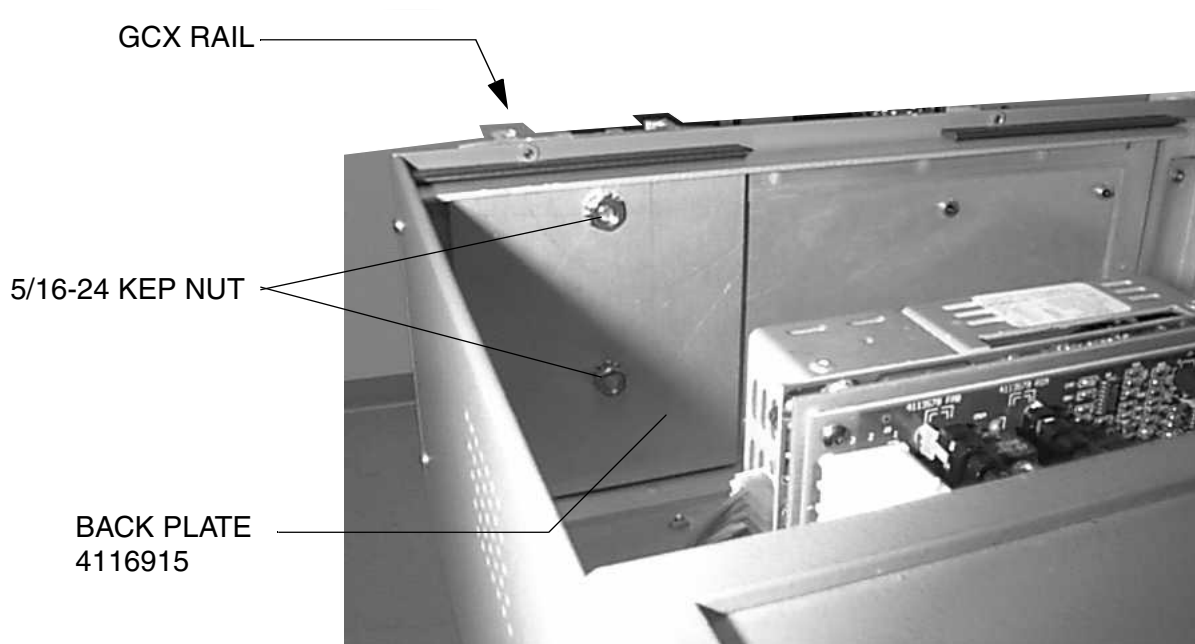


**Figure 2-36. Upper Mounting Locations for GCX Rail**

## 2

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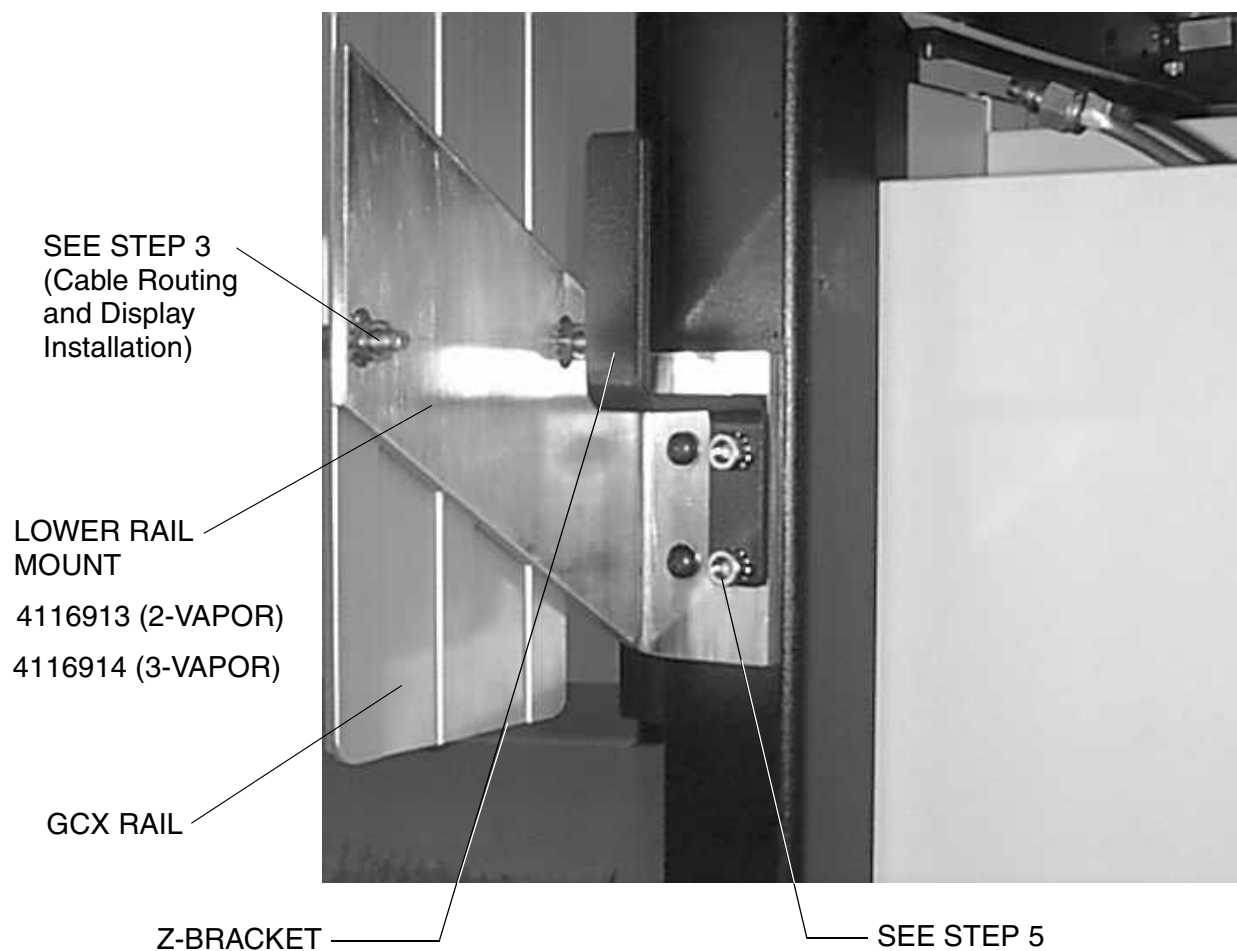
4. Install the back plate inside the monitor box as shown in [Figure 2-37](#). Secure the plate with two 5/16-24 kep nuts.



**Figure 2-37. Back Plate Installation**

5. Remove the top left Z-bracket from the machine ([Figure 2-38 on page 2-59](#)) and reinstall it along with the lower rail mounting bracket using two 1/4-28 x 7/8 in. button head socket screws and the original 1/4 in. internal tooth lock washers. Use bracket P/N 4116913 for 2-vapor machines, or bracket P/N 4116914 for 3-vapor machines.
6. Attach the GCX rail to the lower rail mount using two 1/4-20 x 3/4 in. cap socket head screws, flat washers and 1/4-20 kep nuts. Do not tighten the hardware at this time.





**Figure 2-38. GCX Rail Lower Mounting**

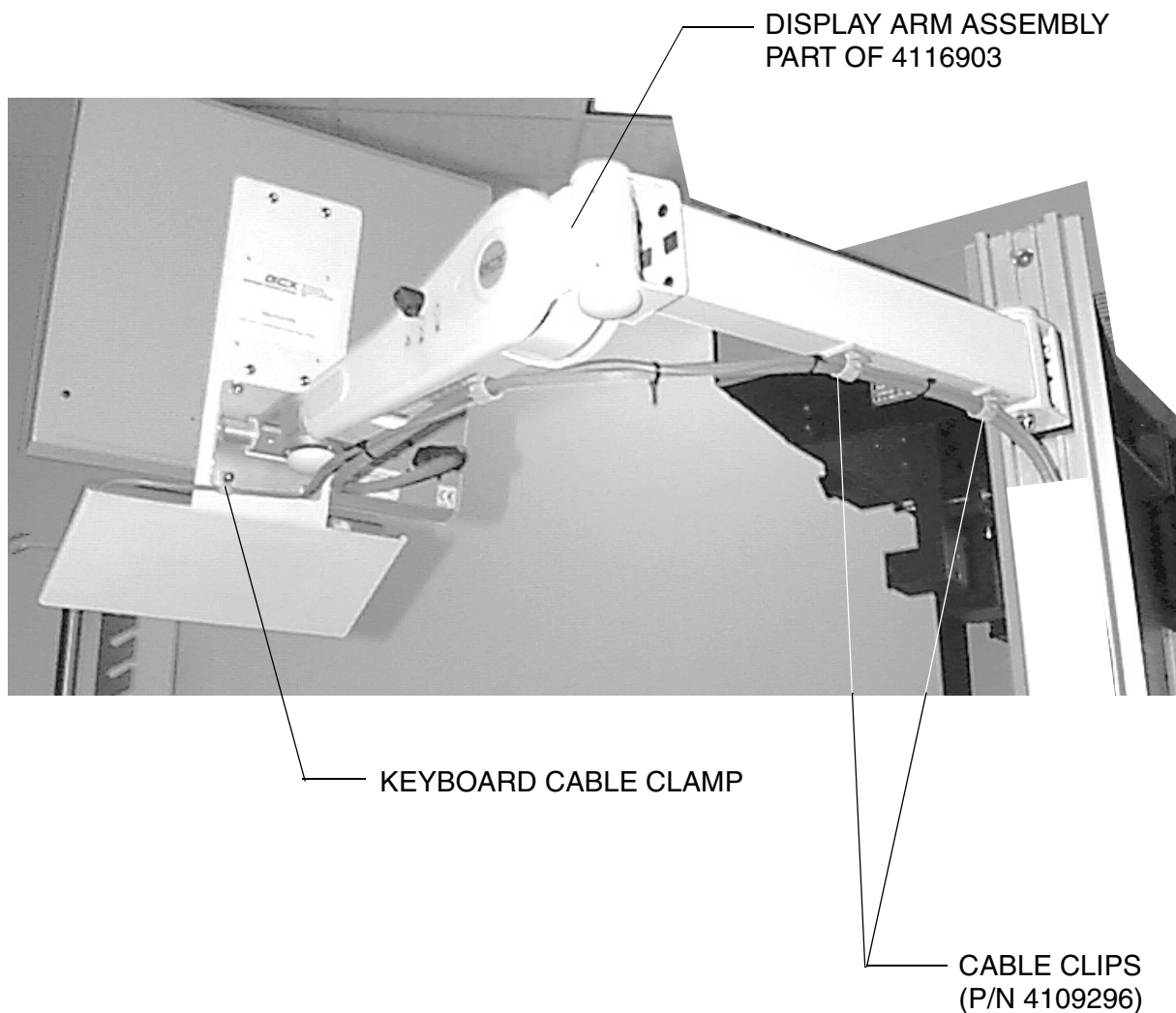
7. Align the GCX rail so it is plumb, and tighten all of its mounting hardware.

## 2

### Setting Up an Integrated OR Workstation

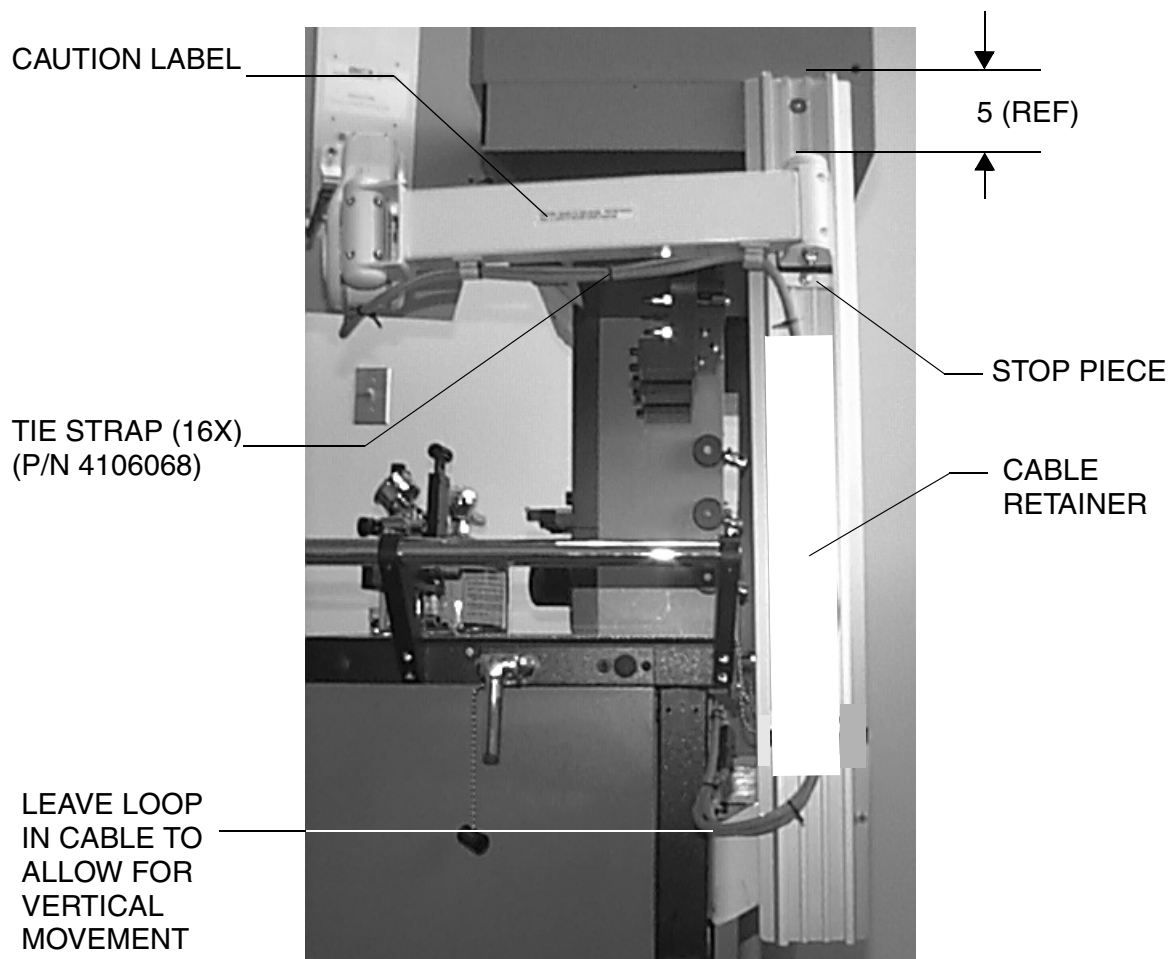
#### Cable Routing and Display Installation (Narkomed GS)

1. Slide the display arm assembly into the GCX rail as shown in [Figure 2-39](#). Ensure that the stop piece (shown in [Figure 2-40 on page 2-61](#)) is tight.
2. Install two stick-on cable clips (P/N 4109296) at the locations shown in [Figure 2-39](#).
3. Place a nylon cable clamp on the keyboard cable and install the clamp under the acorn nut on the display mount as shown in [Figure 2-39](#).



**Figure 2-39. Display Arm Installation**

4. Install tie straps where shown in [Figure 2-40](#). Install the first one 15 inches from the display, and then at 5-inch intervals along the cables.



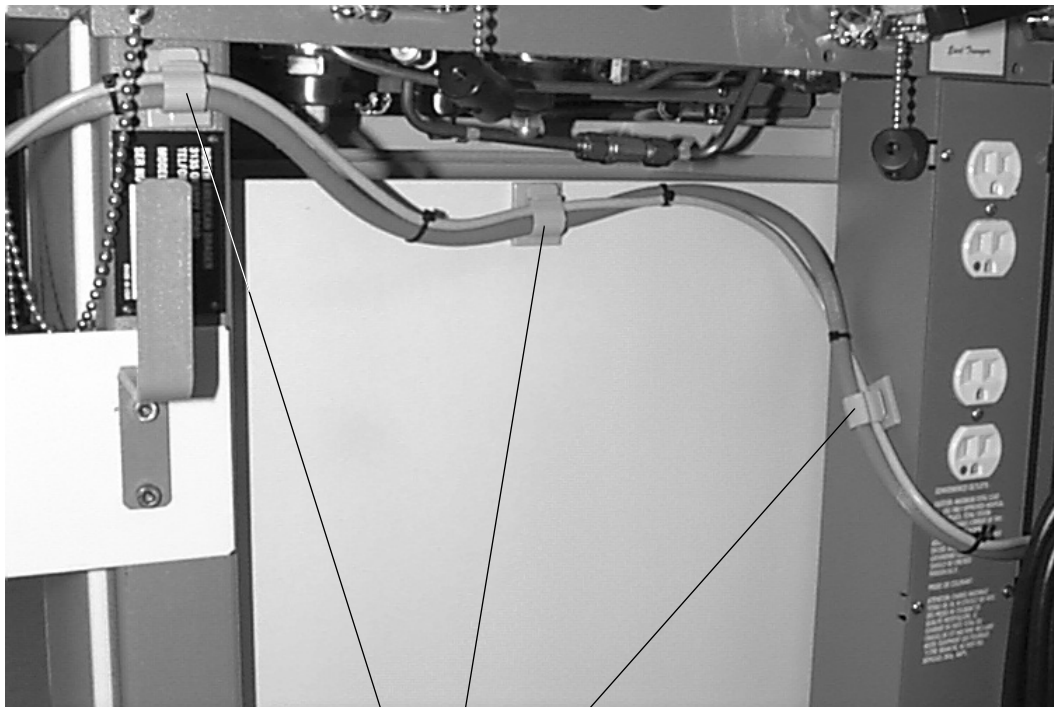
**Figure 2-40. Cable Routing**

5. Slide the GCX white plastic cable retainer onto the rail as shown.
6. Route the Saturn cables behind the retainer as shown in the illustration.

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7. Install three stick-on cable clips on the back of the machine as shown in [Figure 2-41](#). Route the Saturn display cables through these clips.



CABLE CLIP (3X)  
(P/N 4109296)

**Figure 2-41. Cable Routing Continued**

## Step 8, Option 2. Install the Display Unit on a Narkomed 2B, 2C, 3, and 4

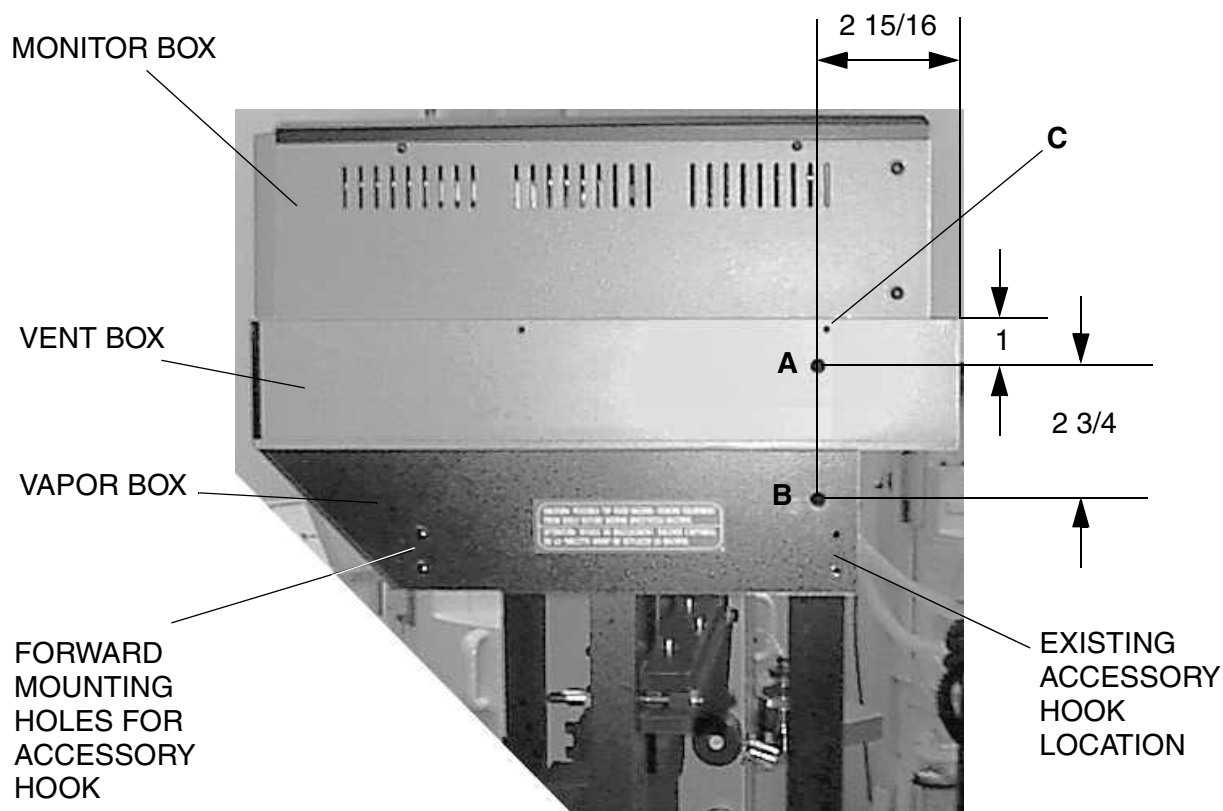
The instructions that follow explain how to install the display unit on a Narkomed 2B, 2C, 3, or 4.

**Note:** The display unit kit contains hardware for all possible configurations. Some hardware may be left over when your are finished.

Attaching the  
GCX Rail to the  
Narkomed 2B

Follow this procedure to install the Saturn display on a Narkomed 2B.

1. Proceed to Step 5 if your machine has 5/16 threaded inserts installed at locations **A** and **B** in [Figure 2-42](#).
2. Remove the rear cover of the vapor box.
3. Remove the five screws holding the monitor box to the vent box; carefully lift the monitor box and move it to the left (facing the front of the machine) to gain access to the inside wall of the vent box.
4. Drill a 0.328 in. dia. (21/64 drill) hole at locations **A** and **B** in [Figure 2-42](#). Vacuum all drill chips from the vent box and the vapor box.



**Figure 2-42. Upper Mounting Locations for GCX Rail**

5. Remove the screw at location **C**.

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6. Remove the accessory hook and relocate it at the forward mounting holes on the vapor box.
7. Attach the GCX rail to the vent box (Hole A) with a 5/16-24 x 3/4 in. flat head socket screw. Use a 5/16-24 kep nut (Figure 2-43) if your machine does not have a threaded insert. See Figure 2-44 on page 2-65. Do not tighten the hardware at this time.

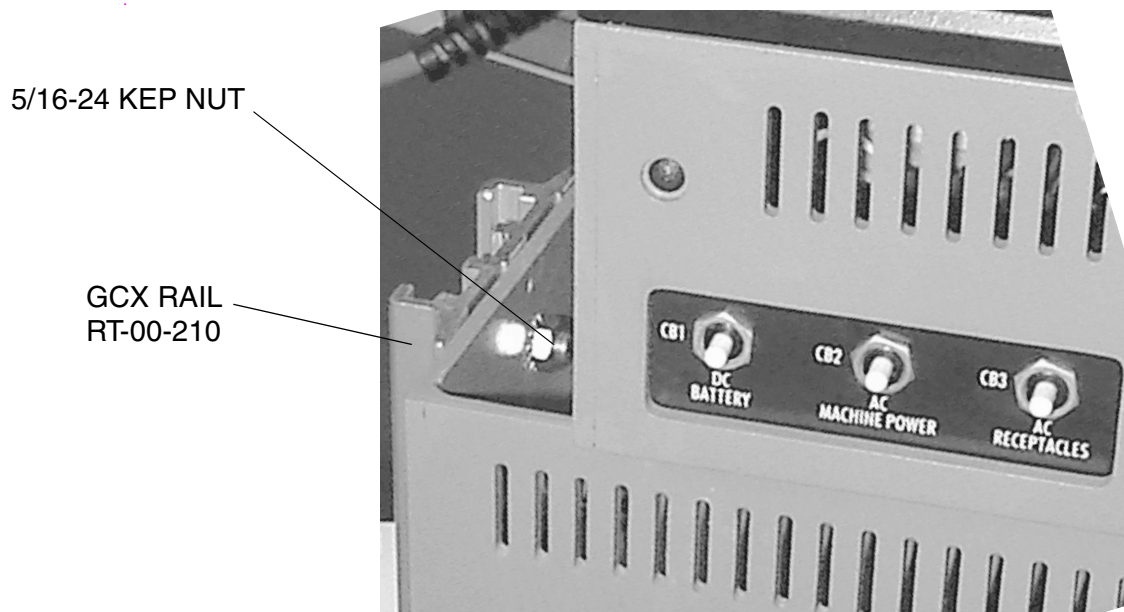
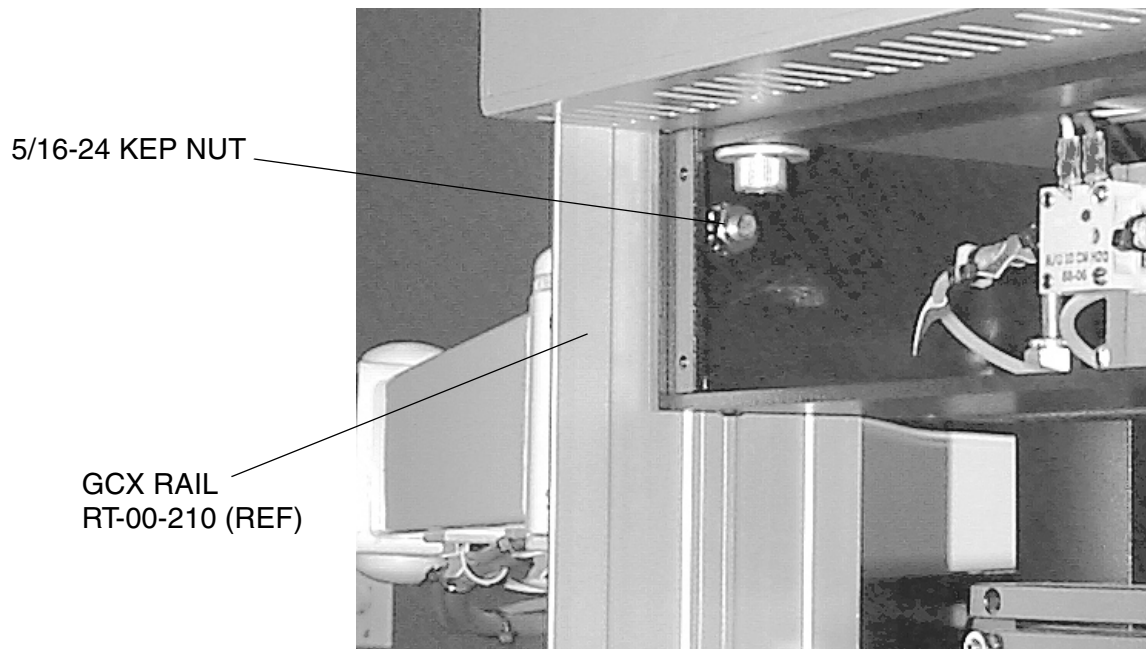


Figure 2-43. GCX Rail Attachment to Vent Box



8. Attach the GCX rail to the vapor box (Hole **B**) with another 5/16-24 x 3/4 in. flat head socket screw. Use a 5/16-24 kep nut if your machine does not have a threaded insert. See [Figure 2-44](#). Do not tighten the hardware at this time.



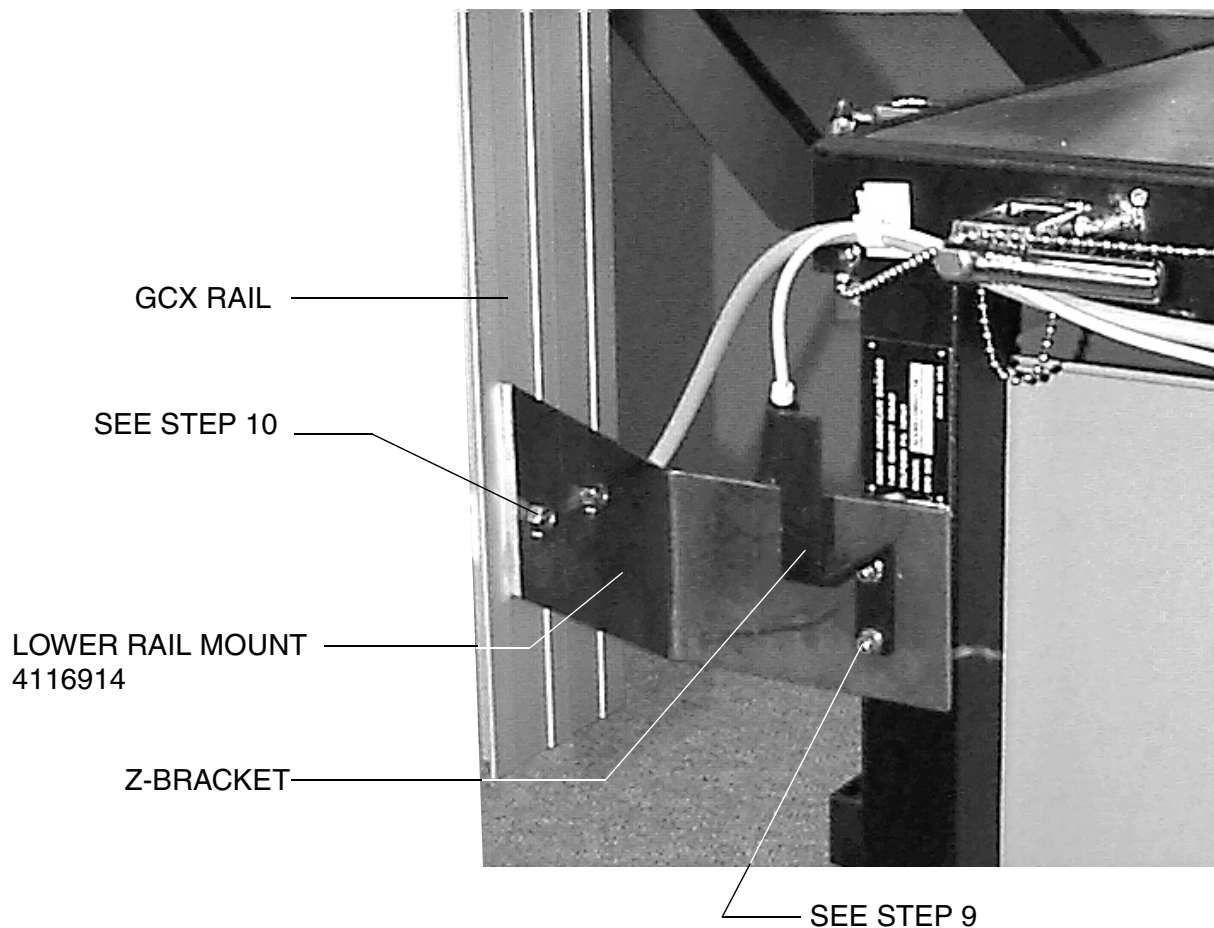
**Figure 2-44. GCX Rail Attachment to Vapor Box**

9. Remove the top left Z-bracket from the machine (see [Figure 2-45 on page 2-66](#)) and reinstall it along with the lower rail mounting bracket (P/N 4116914) using two 1/4-28 x 7/8 in. button head socket screws and the original 1/4 in. internal tooth lock washers.

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10. Attach the GCX rail to the lower rail mount using two 1/4-20 x 3/4 in. cap socket head screws, flat washers and 1/4-20 kep nuts. Do not tighten the hardware at this time.



**Figure 2-45. GCX Rail Lower Mounting**

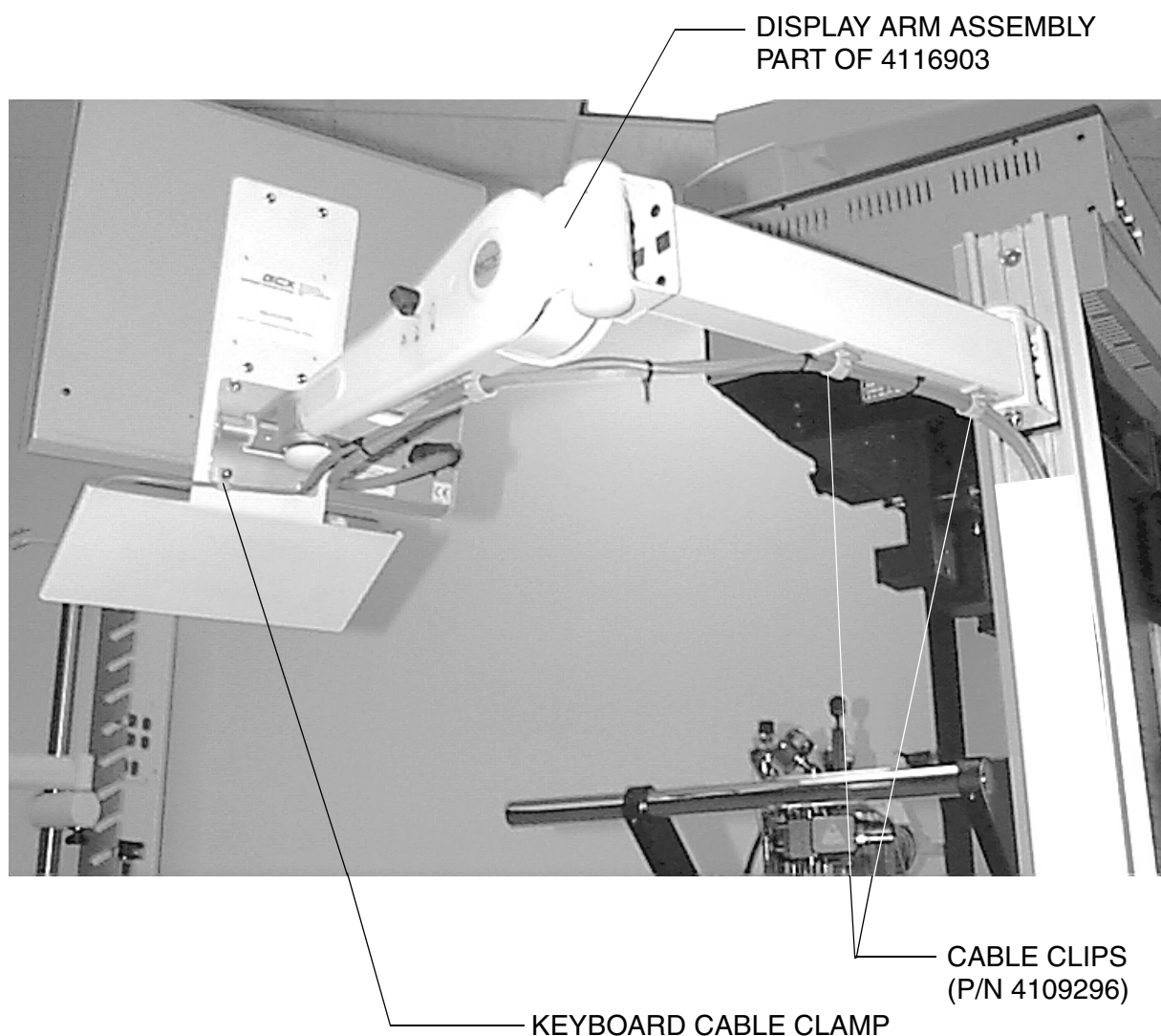
11. Align the GCX rail so it is plumb, and tighten all of its mounting hardware.
12. If the installation required drilling, reinstall the vapor box rear cover, and reinstall the monitor box on the vent box. (Do not reinstall the btn hd screw at Location C.)



Cable Routing  
and Display  
Installation  
(Narkomed 2B)

Follow this procedure to attach cables and complete display installation.

1. Slide the display arm assembly into the GCX rail as shown in [Figure 2-46](#). Ensure that the stop piece (shown in [Figure 2-47 on page 2-68](#)) is tight.
2. Install two stick-on cable clips (P/N 4109296) at the locations shown in [Figure 2-46](#).
3. Place a nylon cable clamp on the keyboard cable and install the clamp under the acorn nut on the display mount as shown in [Figure 2-46](#).

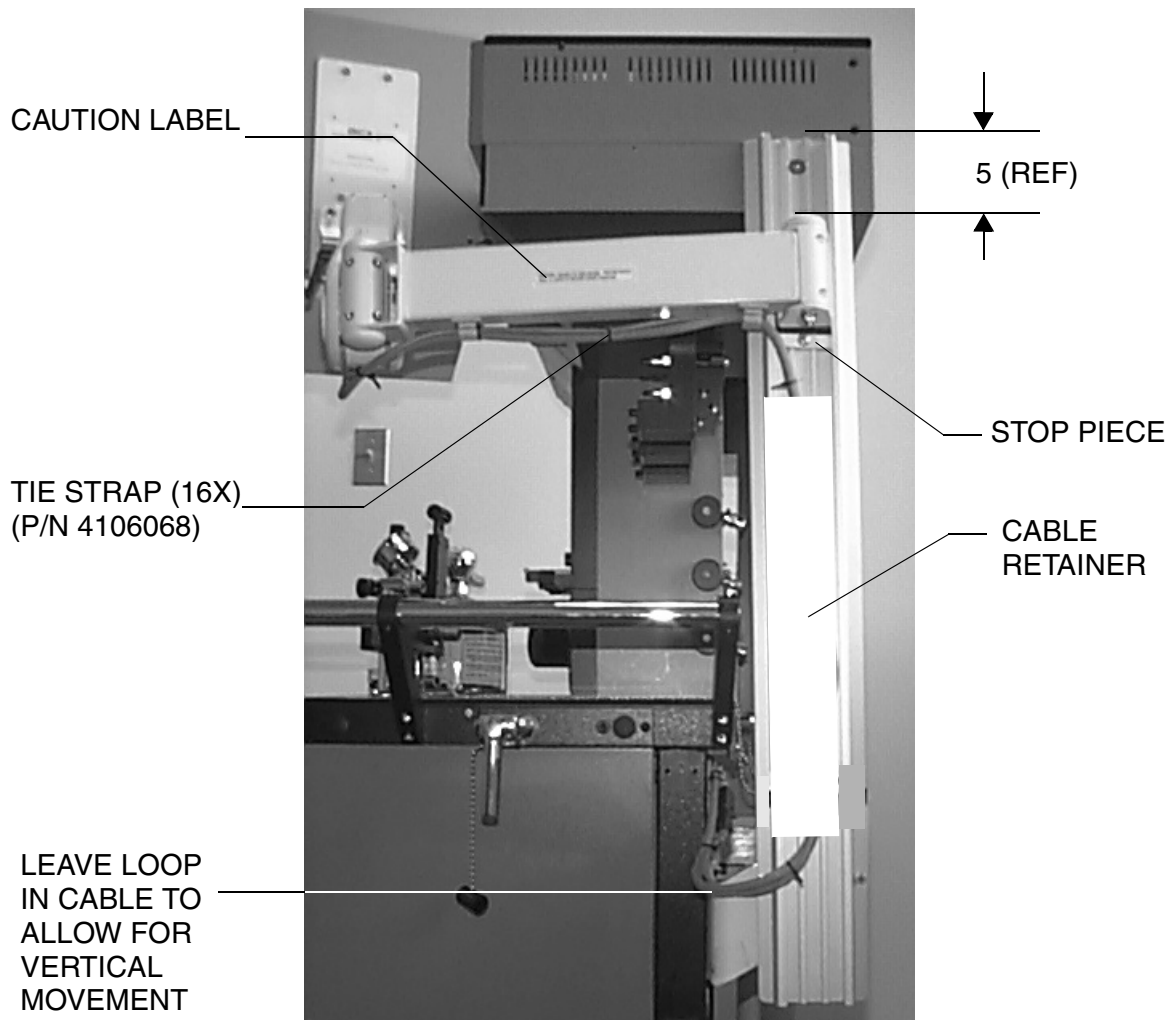


**Figure 2-46. Display Arm Installation**

## 2

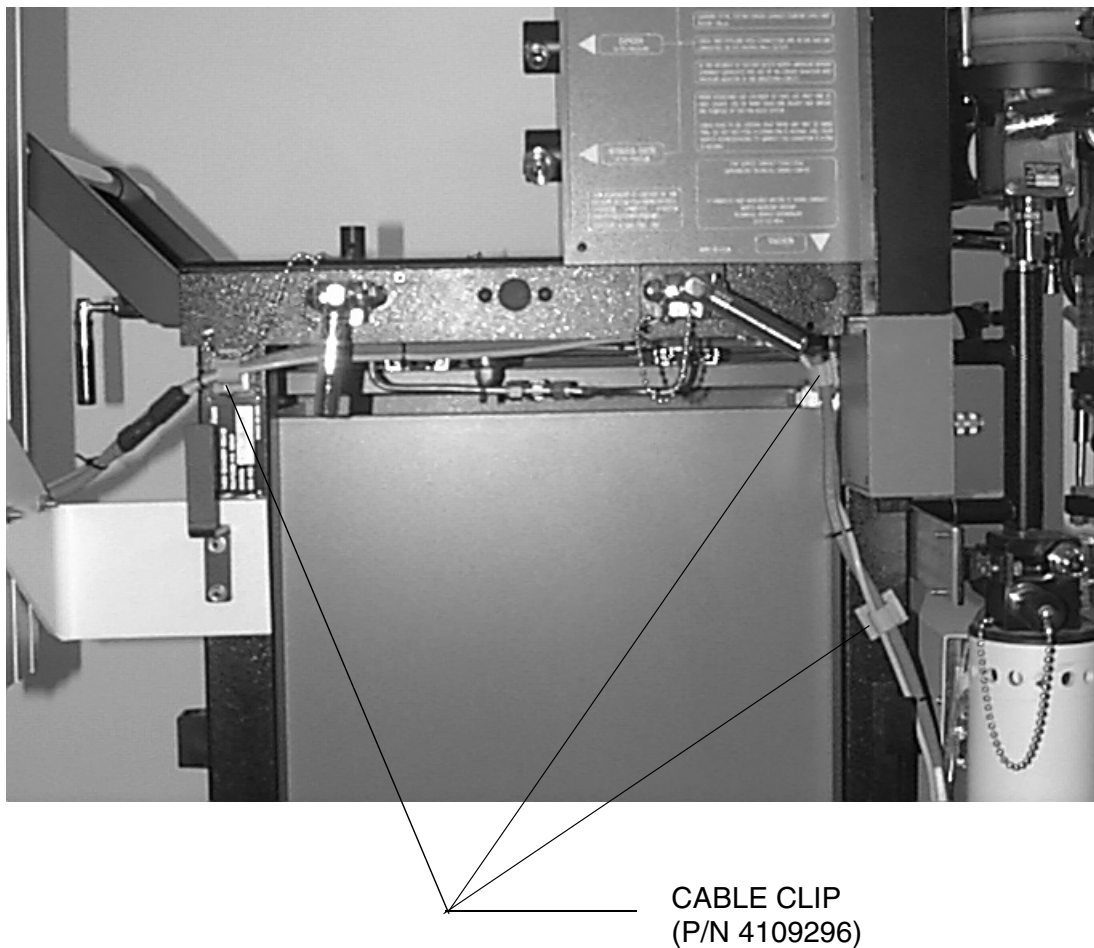
### Setting Up an Integrated OR Workstation

4. Install tie straps where shown in [Figure 2-47](#). Install the first one 15 inches from the display, and then at 5-inch intervals along the cables.



**Figure 2-47. Cable Routing**

5. Slide the GCX white plastic cable retainer onto the rail as shown.
6. Route the Saturn cables behind the retainer, as shown in the illustration



**Figure 2-48. Cable Routing Continued**

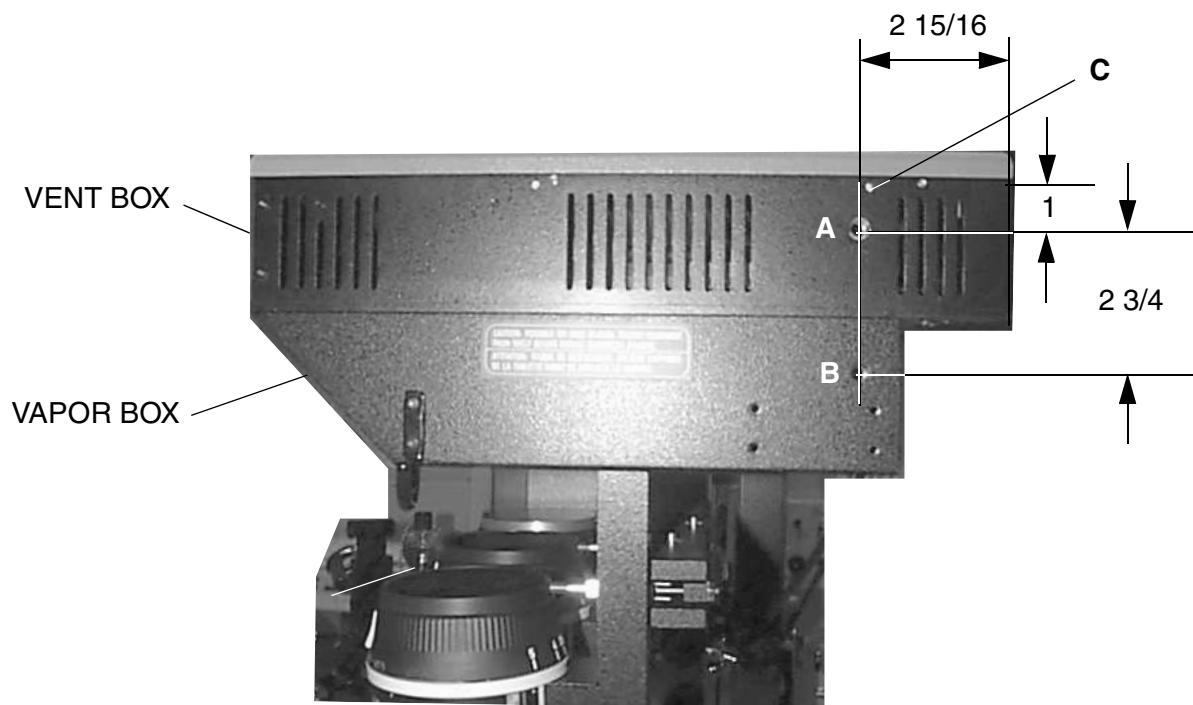
7. Install three stick-on cable clips on the back of the machine as shown in [Figure 2-48](#). Route the Saturn display cables through these clips.

## 2

### Setting Up an Integrated OR Workstation

Attaching the  
GCX Rail to the  
Narkomed 2C

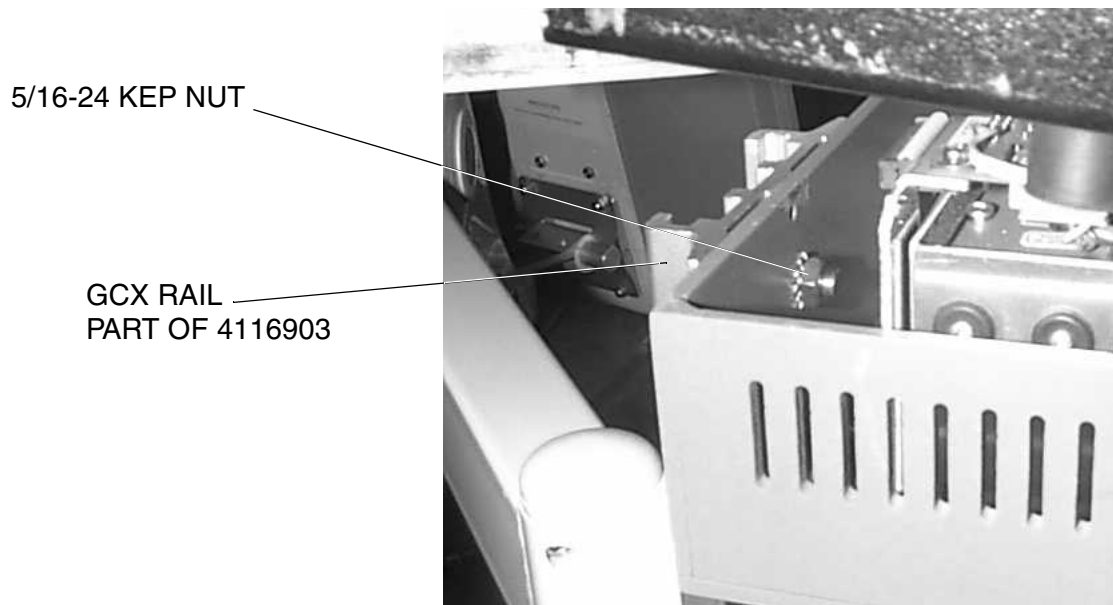
1. Proceed to Step 5 if your machine has 5/16 threaded inserts installed at locations **A** and **B** in [Figure 2-49](#).
2. Remove the rear cover of the vapor box.
3. Remove the five screws holding the monitor box to the vent box; carefully lift the monitor box and move it to the left (facing the front of the machine) to gain access to the inside wall of the vent box.
4. Drill a 0.328 in. dia. (21/64 drill) hole at locations **A** and **B** in [Figure 2-49](#). Vacuum all drill chips from the vent box and the vapor box.



**Figure 2-49. Upper Mounting Locations for the GCX Rail**

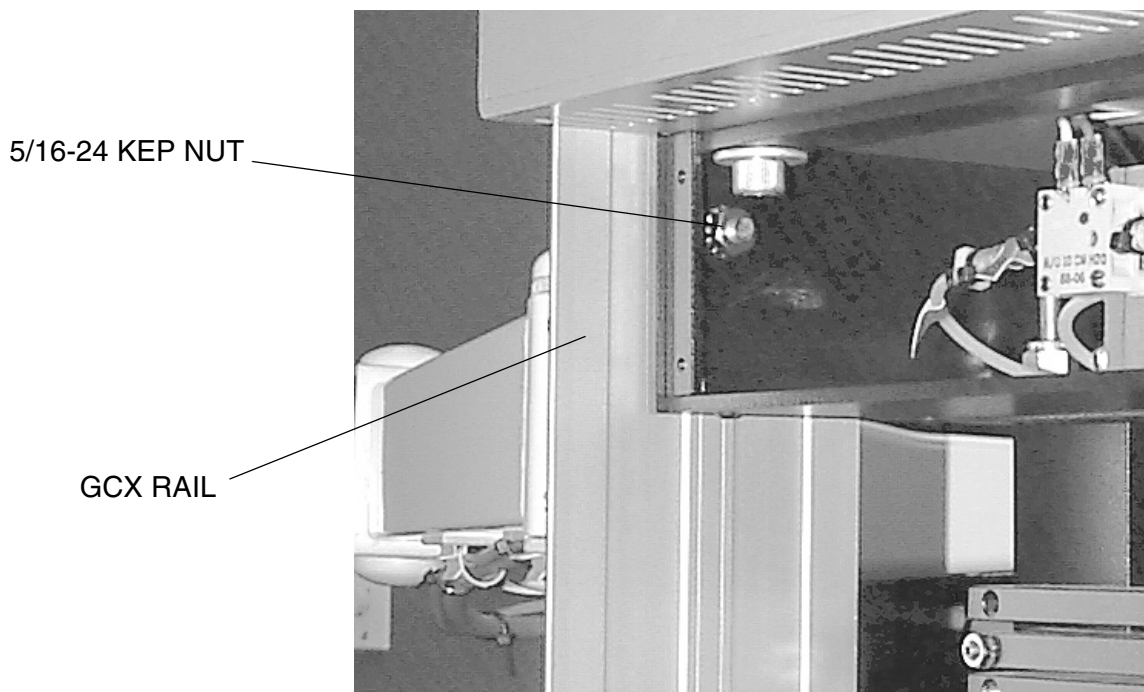
5. Remove the screw at location **C**.
6. Remove the accessory hook and relocate it at the forward mounting holes on the vapor box.

7. Attach the GCX rail to the vent box (Hole **A**) with a 5/16-24 x 3/4 in. flat head socket screw. Use a 5/16-24 kep nut if your machine does not have a threaded insert. See [Figure 2-50](#). Do not tighten the hardware at this time..



**Figure 2-50. GCX Rail Attachment to Vent Box**

8. Attach the GCX rail to the vapor box (Hole **B**) with another 5/16-24 x 3/4 in. flat head socket screw. Use a 5/16-24 kep nut if your machine does not have a threaded insert. See [Figure 2-51 on page 2-72](#). Do not tighten the hardware at this time.

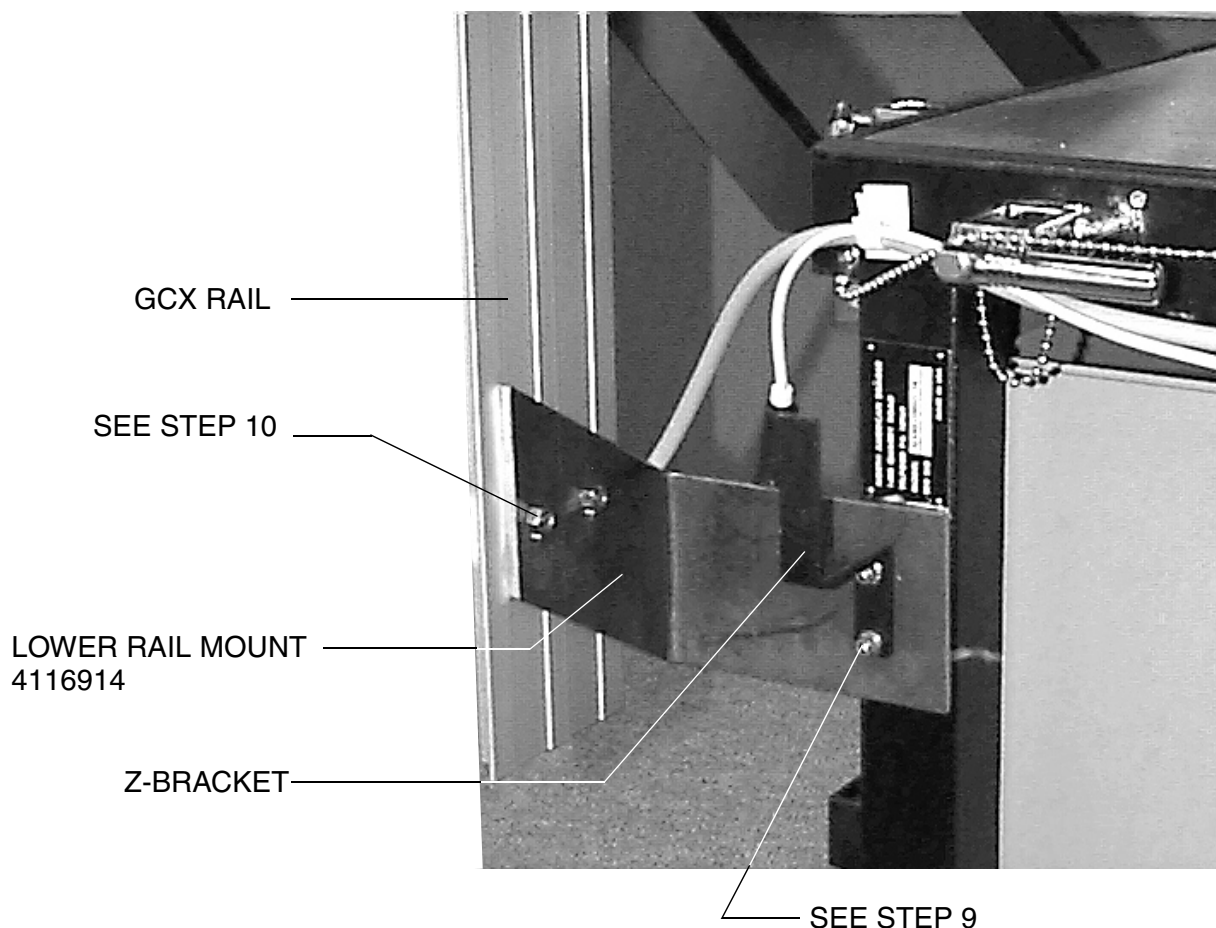


**Figure 2-51. GCX Rail Attachment to Vapor Box**

9. Remove the top left Z-bracket from the machine (see [Figure 2-52 on page 2-73](#)) and reinstall it along with the lower rail mounting bracket (P/N 4116914) using two 1/4-28 x 7/8 in. button head socket screws and the original 1/4 in. internal tooth lockwashers.



10. Attach the GCX rail to the lower rail mount using two 1/4-20 x 3/4 in. cap socket head screws, flat washers and 1/4-20 kep nuts. Do not tighten the hardware at this time.



**Figure 2-52. GCX Rail Lower Mounting**

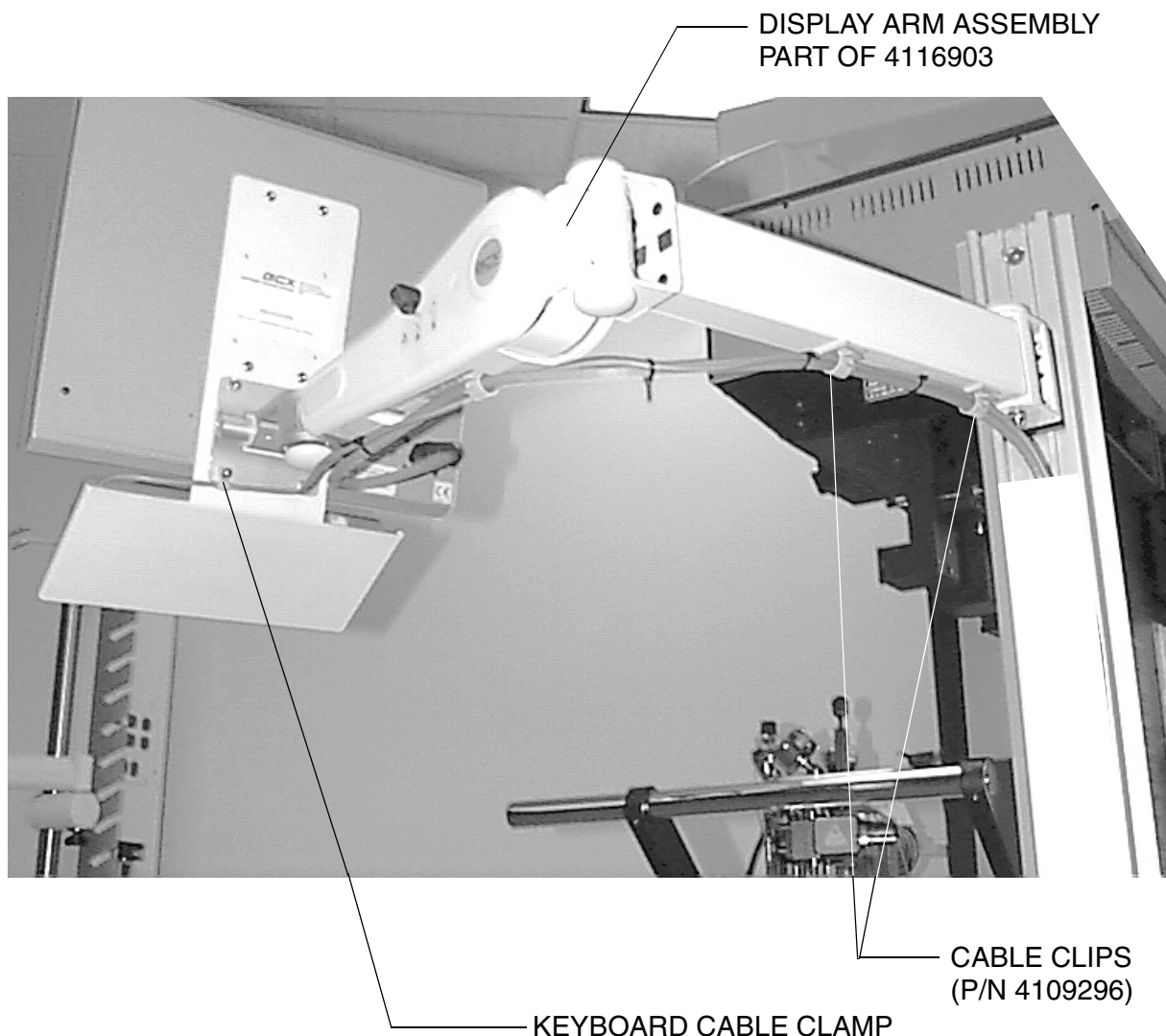
11. Align the GCX rail so it is plumb, and tighten all of its mounting hardware.
12. If the installation required drilling, reinstall the vapor box rear cover, and reinstall the monitor box on the vent box. (Do not reinstall the btn hd screw at Location C.)

## 2

### Setting Up an Integrated OR Workstation

#### Cable Routing and Display Installation (Narkomed 2C)

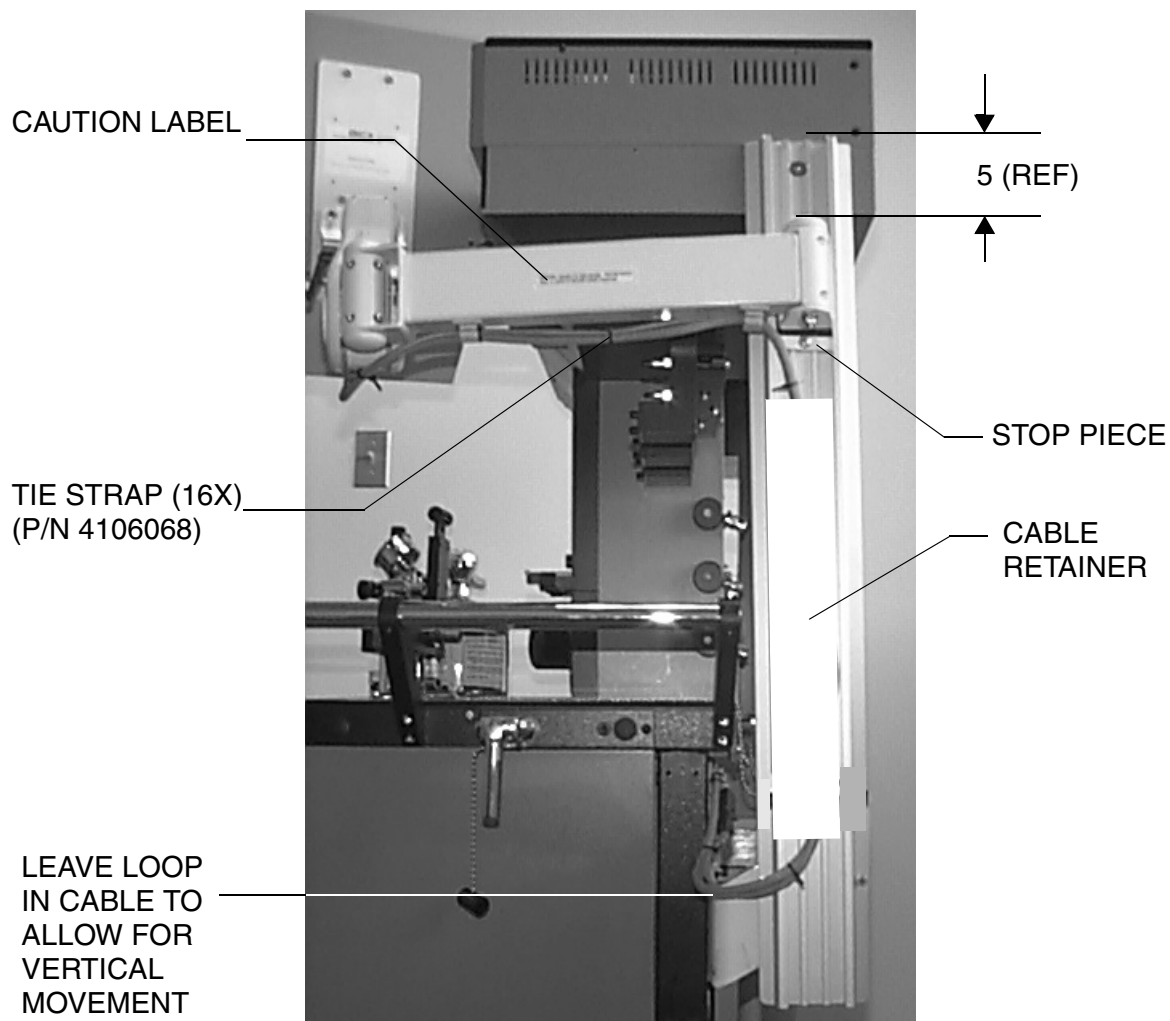
1. Slide the display arm assembly into the GCX rail as shown in [Figure 2-53](#). Ensure that the stop piece (shown in [Figure 2-54 on page 2-75](#)) is tight.
2. Install two stick-on cable clips (P/N 4109296) at the locations shown in [Figure 2-53](#).
3. Place a nylon cable clamp on the keyboard cable and install the clamp under the acorn nut on the display mount as shown in [Figure 2-53](#).



**Figure 2-53. Display Arm Installation**

4. Install tie straps where shown in [Figure 2-54 on page 2-75](#). Install the first one 15 inches from the display, and then at 5-inch intervals along the cables.





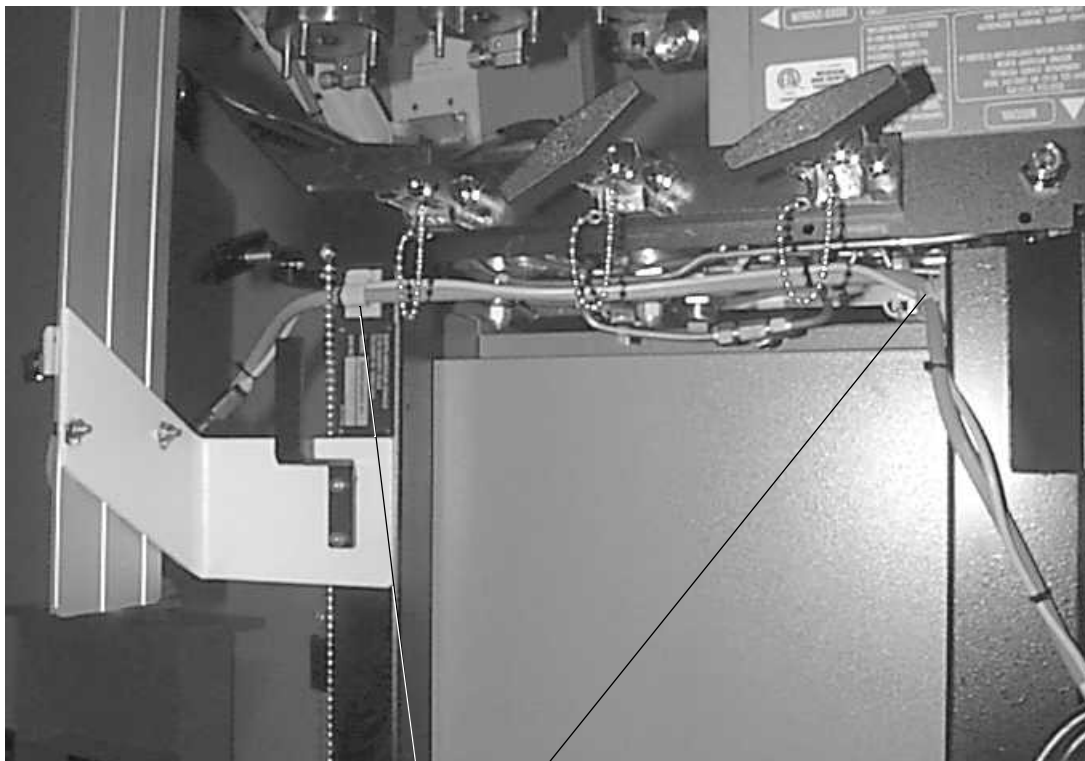
**Figure 2-54. Cable Routing**

5. Slide the GCX white plastic cable retainer onto the rail as shown.
6. Route the Saturn cables behind the retainer as shown in the illustration.

2

Setting Up an Integrated OR Workstation

7. Install two stick-on cable clips on the back of the machine as shown in [Figure 2-55](#). Route the Saturn display cables through these clips.



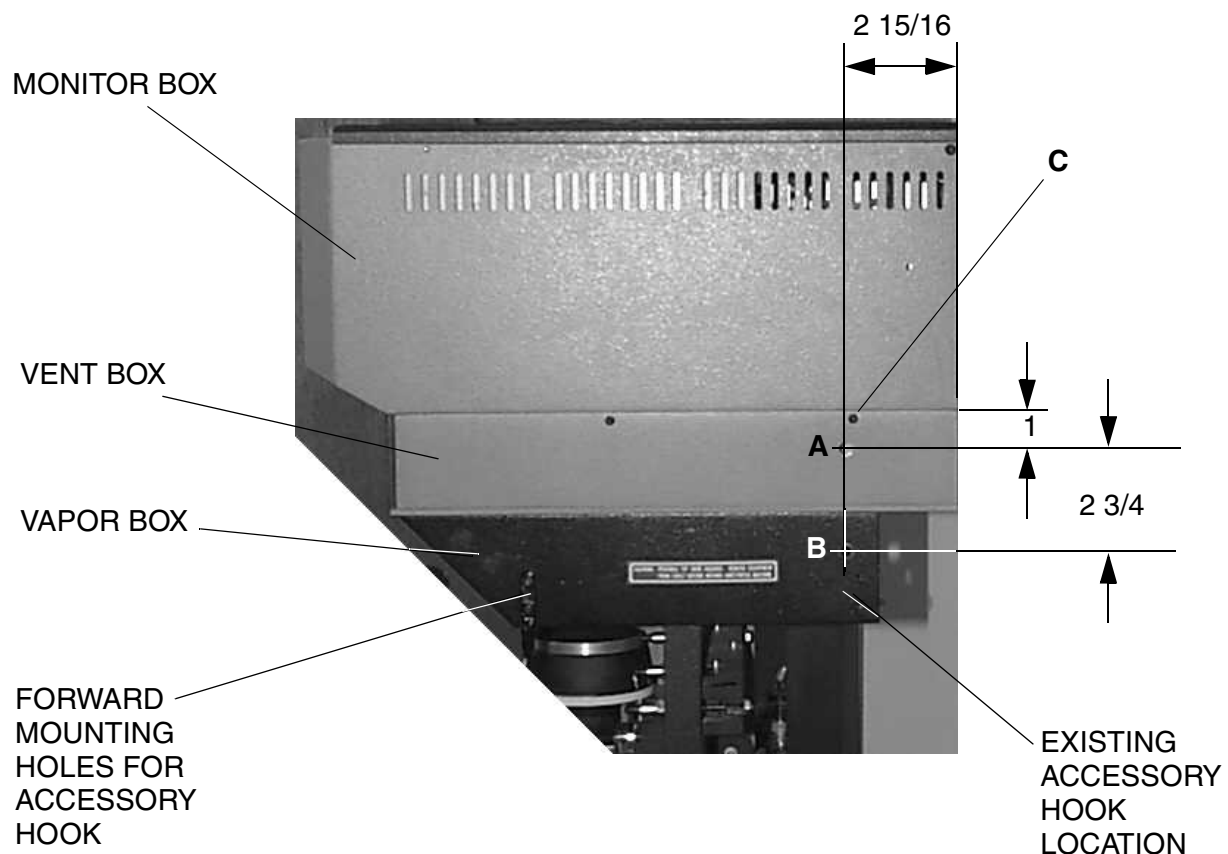
CABLE CLIP (2X)  
(P/N 4109296)

**Figure 2-55. Cable Routing Continued**

### Attaching the GCX Rail to the Narkomed 3

Follow this procedure to install the Saturn display on a Narkomed 3.

1. Proceed to Step 5 if your machine has 5/16 threaded inserts installed at locations **A** and **B** in [Figure 2-56](#).
2. Remove the rear cover of the vapor box.
3. Remove the five screws holding the monitor box to the vent box; carefully lift the monitor box and prop it up with a piece of wood to gain access to the inside wall of the vent box.
4. Drill a 0.328 in. dia. (21/64 drill) hole at locations **A** and **B** in [Figure 2-56](#). Vacuum all drill chips from the vent box and the vapor box.



**Figure 2-56. Upper Mounting Locations for GCX Rail**

5. Remove the screw at location **C**.
6. Remove the accessory hook and relocate it at the forward mounting holes on the vapor box.
7. Attach the GCX rail to the vent box (Hole **A**) with a 5/16-24 x 3/4 in. flat head socket screw (P/N HW03034). Use a 5/16-24 kep nut (P/N HW55009) if your

## 2

### Setting Up an Integrated OR Workstation

machine does not have a threaded insert. See [Figure 2-57](#). Do not tighten the hardware at this time..

5/16-24 KEP NUT

GCX RAIL  
PART OF 4116903



**Figure 2-57. GCX Rail Attachment to Vent Box**

8. Attach the GCX rail to the vapor box (Hole **B**) with another 5/16-24 x 3/4 in. flat head socket screw (P/N HW03034). Use a 5/16-24 kep nut (P/N HW55009) if your machine does not have a threaded insert. See [Figure 2-58](#). Do not tighten the hardware at this time.

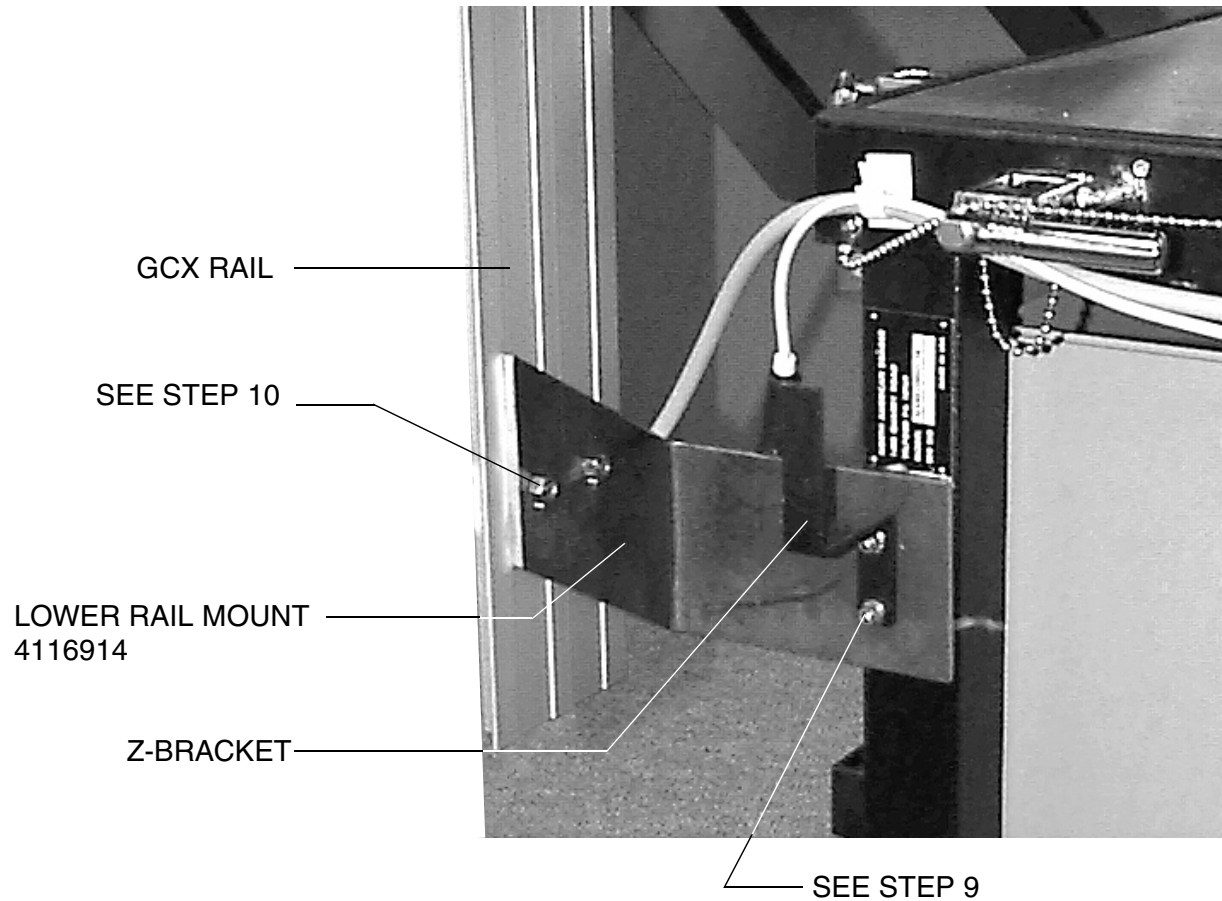
5/16-24 KEP NUT

GCX RAIL



**Figure 2-58. GCX Rail Attachment to Vapor Box**

9. Remove the top left Z-bracket from the machine (see [Figure 2-59](#)) and reinstall it along with the lower rail mounting bracket (P/N RT-00-200) using two 1/4-28 x 7/8 in. button head socket screws and the original 1/4 in. internal tooth lock washers.
10. Attach the GCX rail to the lower rail mount using two 1/4-20 x 3/4 in. cap socket head screws, flat washers, and 1/4-20 kep nuts. Do not tighten the hardware at this time.



**Figure 2-59. GCX Rail Lower Mounting**

11. Align the GCX rail so it is plumb, and tighten all of its mounting hardware.
12. If the installation required drilling, reinstall the vapor box rear cover, and reinstall the monitor box on the vent box. (Do not reinstall the btn hd screw at Location C.)

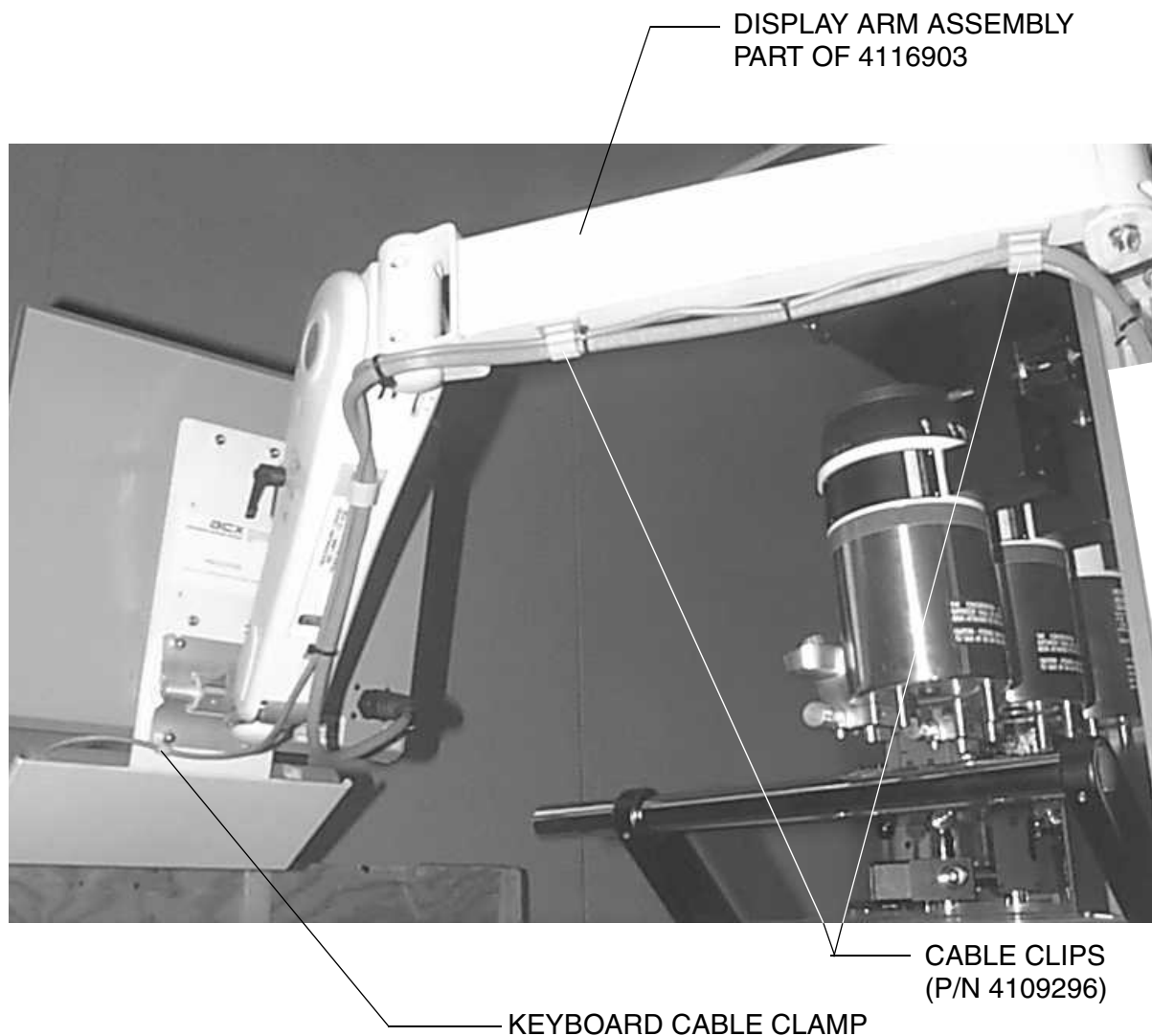
## 2

### Setting Up an Integrated OR Workstation

#### Cable Routing and Display Installation (Narkomed 3)

Follow this procedure to attach cables and complete display installation.

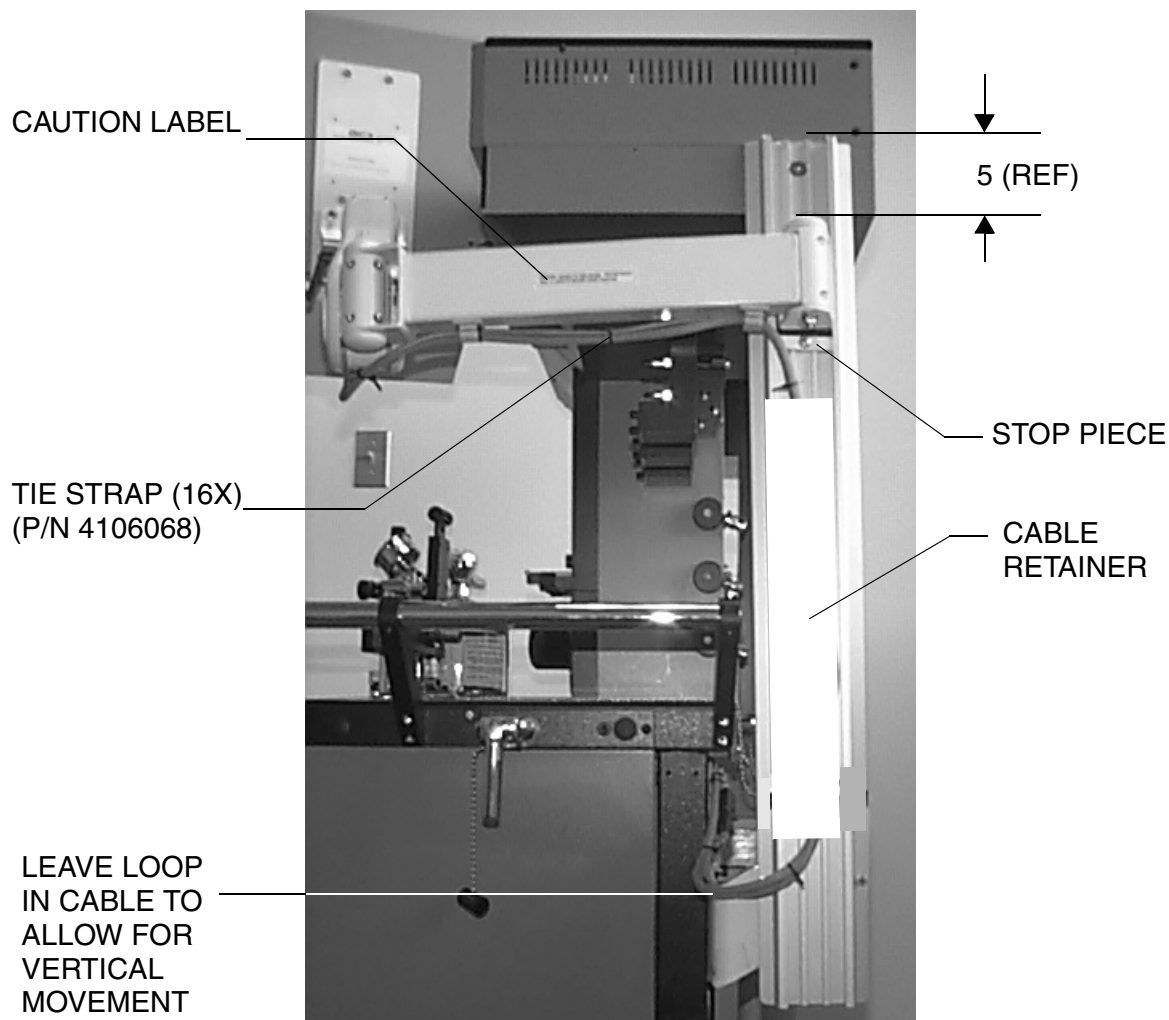
1. Slide the display arm assembly into the GCX rail as shown in [Figure 2-60](#). Ensure that the stop piece (shown in [Figure 2-61 on page 2-81](#)) is tight.
2. Install three stick-on cable clips (P/N 4109296) at the locations shown in [Figure 2-60](#).
3. Place a nylon cable clamp on the keyboard cable and install the clamp under the acorn nut on the display mount as shown in [Figure 2-60](#).



**Figure 2-60. Display Arm Installation**



4. Install tie straps where shown in [Figure 2-61](#). Install the first one 15 inches from the display, and then at 5-inch intervals along the cables.



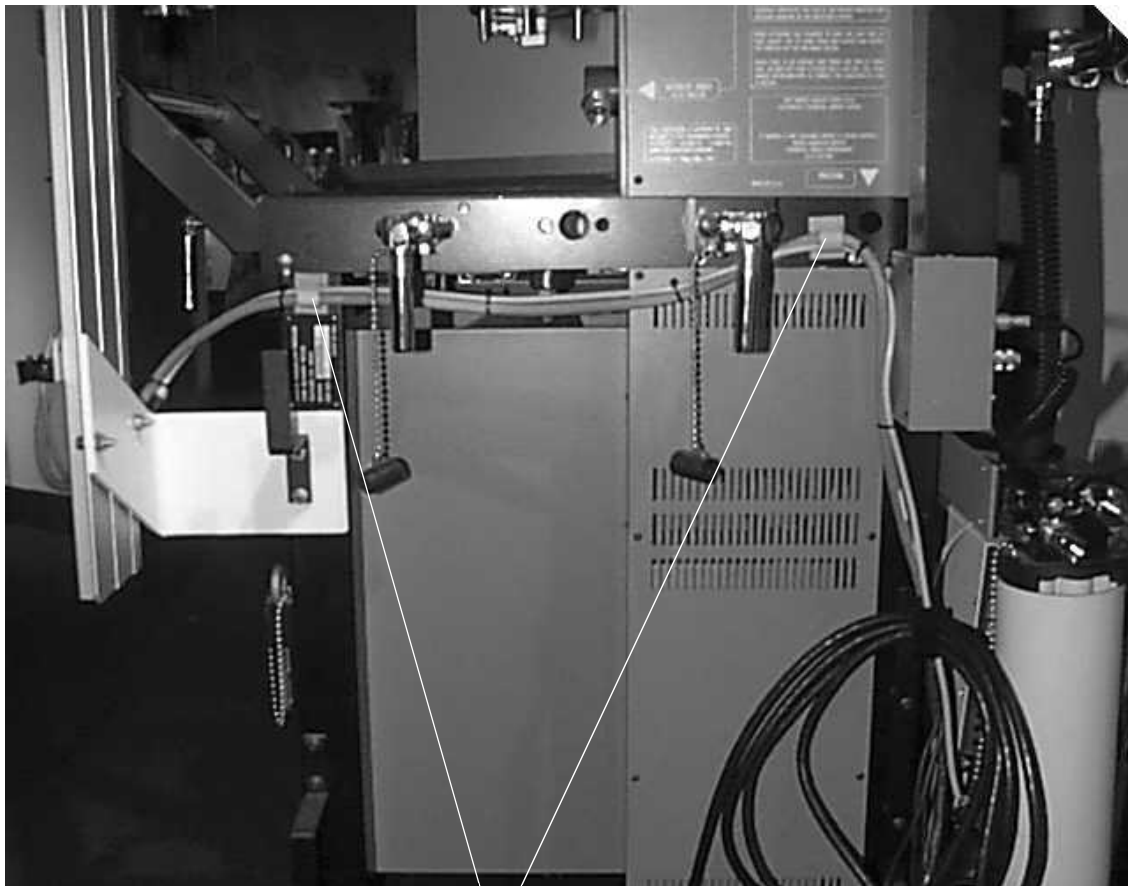
**Figure 2-61. Cable Routing**

5. Slide the GCX white plastic cable retainer onto the rail as shown.
6. Route the Saturn cables behind the retainer, as shown in the illustration.

## 2

### Setting Up an Integrated OR Workstation

7. Install two stick-on cable clips on the back of the machine as shown in [Figure 2-62](#). Route the Saturn display cables through these clips.



CABLE CLIP  
(P/N 4109296)

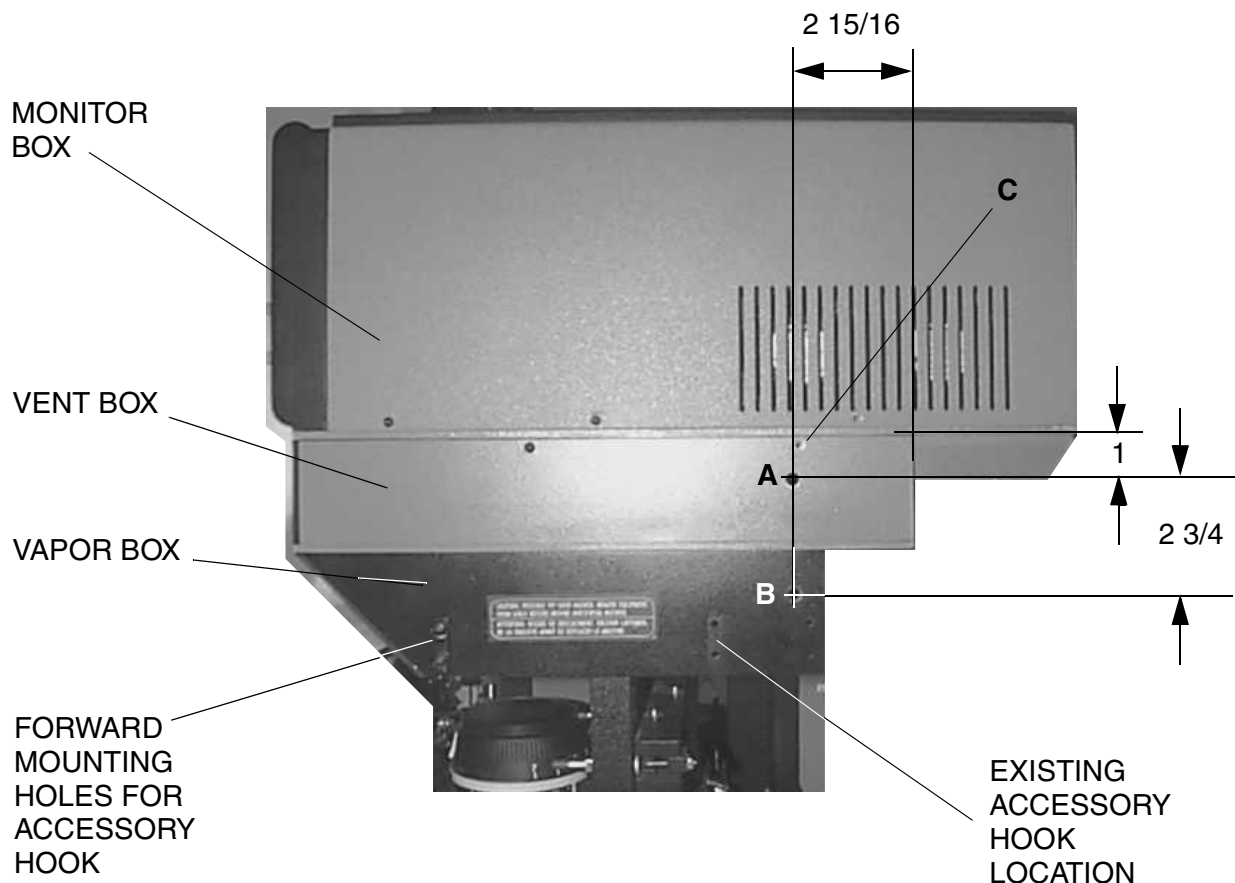
**Figure 2-62. Cable Routing Continued**



# Attaching the GCX Rail to the Narkomed 4

Follow this procedure to install the Saturn display on a Narkomed 4.

1. Proceed to Step 5 if your machine has 5/16 threaded inserts installed at locations **A** and **B** in [Figure 2-63](#).
2. Remove the rear cover of the vapor box.
3. Remove the screws holding the monitor box to the vent box; carefully lift the monitor box and prop it up with a piece of wood to gain access to the inside wall of the vent box.
4. Drill a 0.328 in. dia. (21/64 drill) hole at locations **A** and **B** in [Figure 2-63](#). Vacuum all drill chips from the vent box and the vapor box.



**Figure 2-63. Upper Mounting Locations for GCX Rail**

5. Remove the screw at location **C**.
6. Remove the accessory hook and re-locate it at the forward mounting holes on the vapor box.
7. Attach the GCX rail to the vent box (Hole **A**) with a 5/16-24 x 3/4 in. flat head socket screw. Use a 5/16-24 kep nut if your machine does not have a threaded insert. See [Figure 2-64 on page 2-84](#). Do not tighten the hardware at this time.

## 2

### Setting Up an Integrated OR Workstation

GCX RAIL  
PART OF 4116903

5/16-24 KEP NUT



**Figure 2-64. GCX Rail Attachment to Vent Box**

8. Attach the GCX rail to the vapor box (Hole **B**) with another 5/16-24 x 3/4 in. flat head socket screw. Use a 5/16-24 kee nut if your machine does not have a threaded insert. See [Figure 2-65](#). Do not tighten the hardware at this time.

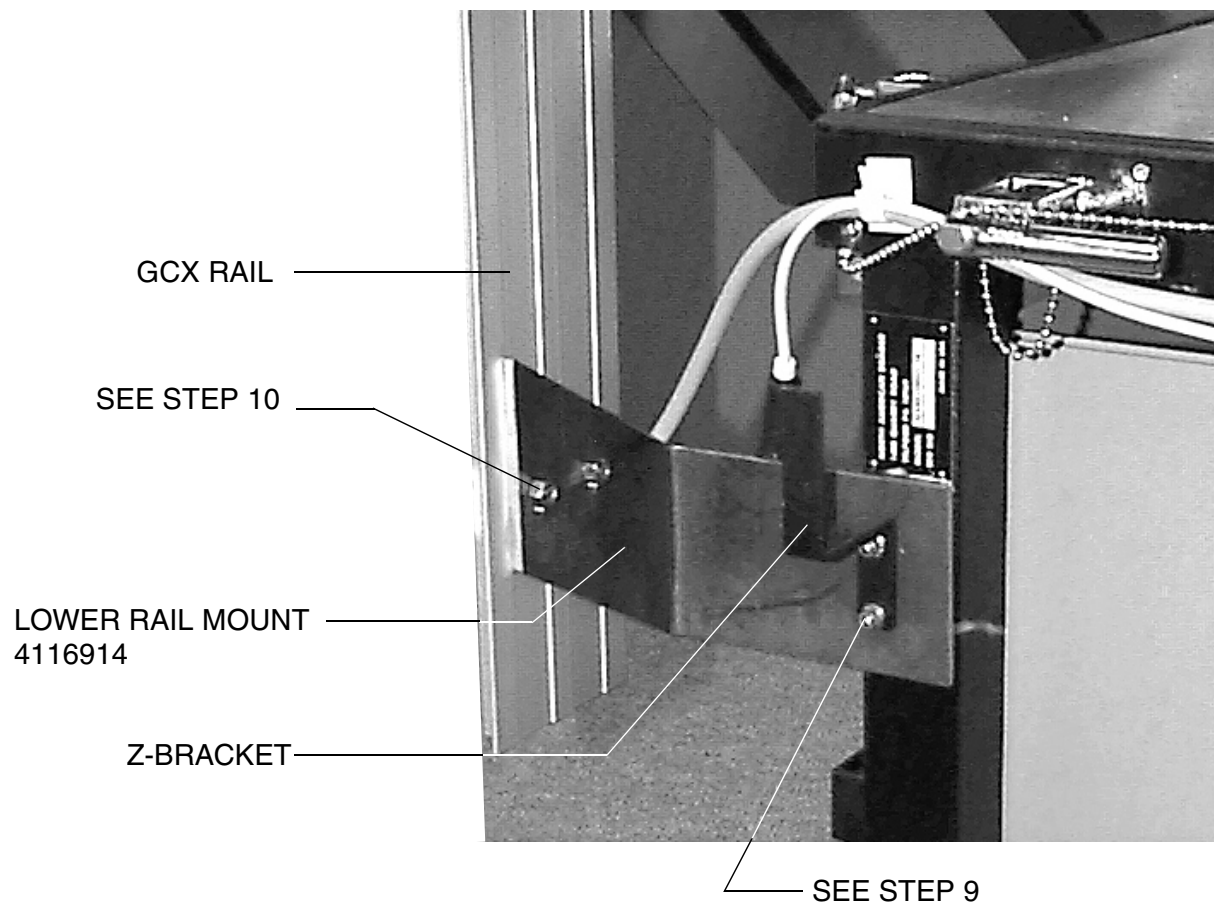
5/16-24 KEP NUT

GCX RAIL



**Figure 2-65. GCX Rail Attachment to Vapor Box**

9. Remove the top left Z-bracket from the machine (see [Figure 2-66](#)) and reinstall it along with the lower rail mounting bracket (P/N 4116914) using two 1/4-28 x 7/8 in. button head socket screws and the original 1/4 in. internal tooth lock washers.
10. Attach the GCX rail to the lower rail mount using two 1/4-20 x 3/4 in. cap socket head screws, flat washers and 1/4-20 kep nuts. Do not tighten the hardware at this time.



**Figure 2-66. GCX Rail Lower Mounting**

11. Align the GCX rail so it is plumb, and tighten all of its mounting hardware.
12. If the installation required drilling, reinstall the vapor box rear cover, and reinstall the monitor box on the vent box. (Do not reinstall the btn hd screw at Location C.)

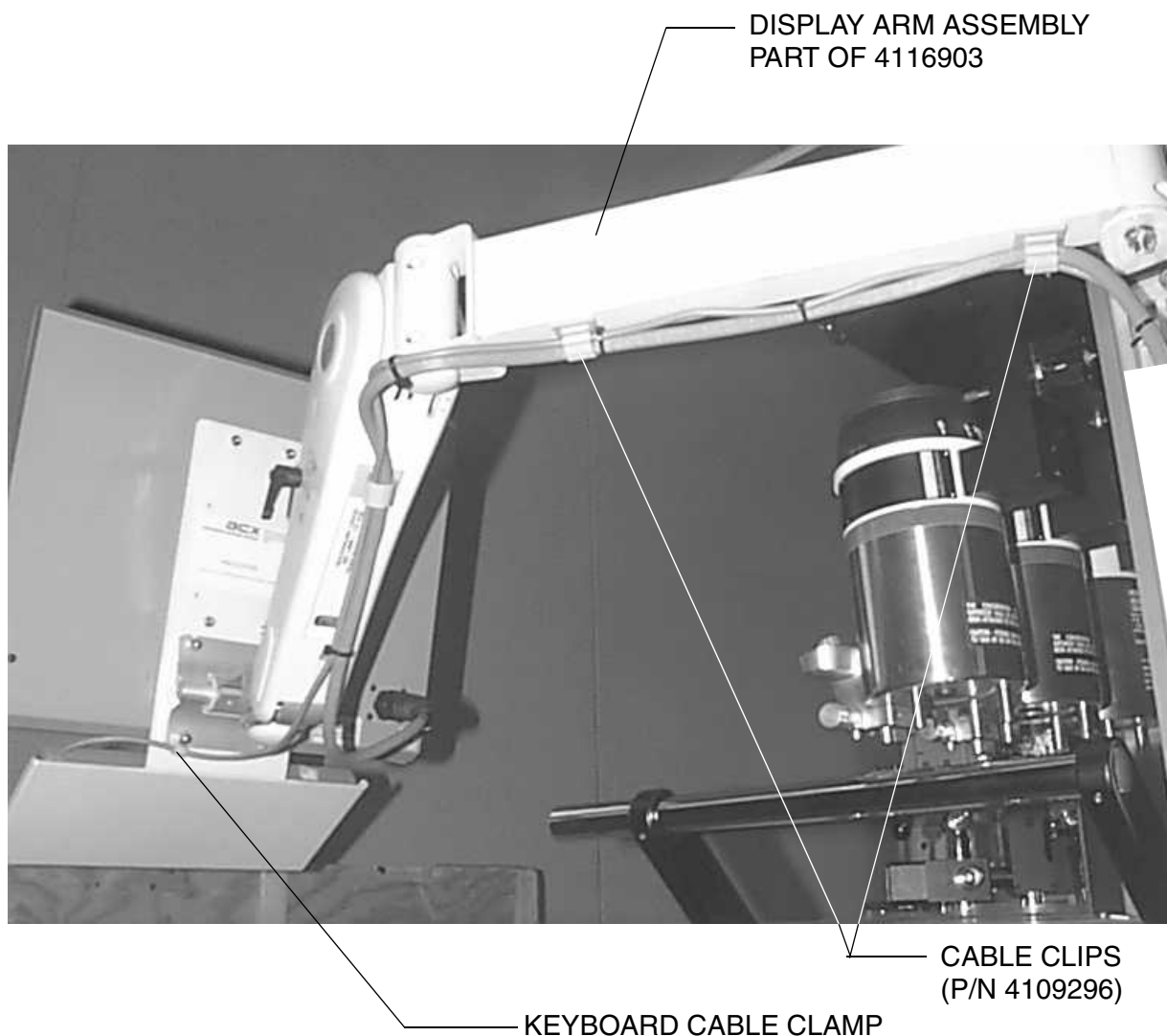
## 2

### Setting Up an Integrated OR Workstation

#### Cable Routing and Display Installation (Narkomed 4)

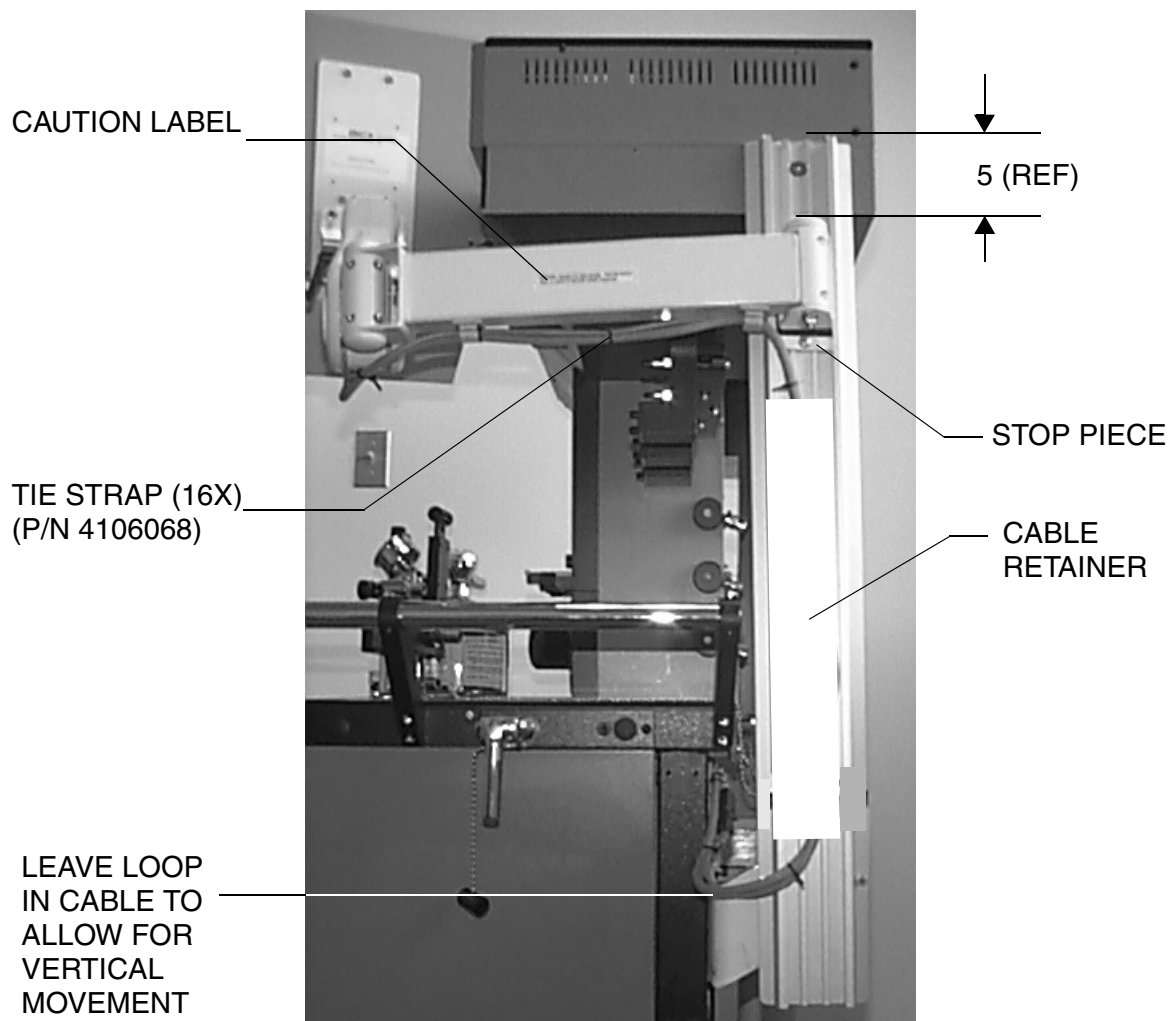
Follow this procedure to attach cables and complete display installation.

1. Slide the display arm assembly into the GCX rail, as shown in [Figure 2-67](#). Ensure that the stop piece (shown in [Figure 2-68 on page 2-87](#)) is tight.
2. Install two stick-on cable clips (P/N 4109296) at the locations shown in [Figure 2-67](#).
3. Place a nylon cable clamp on the keyboard cable and install the clamp under the acorn nut on the display mount as shown in [Figure 2-67](#).



**Figure 2-67. Display Arm Installation**

4. Install tie straps where shown in [Figure 2-68 on page 2-87](#). Install the first one 15 inches from the display, and then at 5-inch intervals along the cables.



**Figure 2-68. Cable Routing**

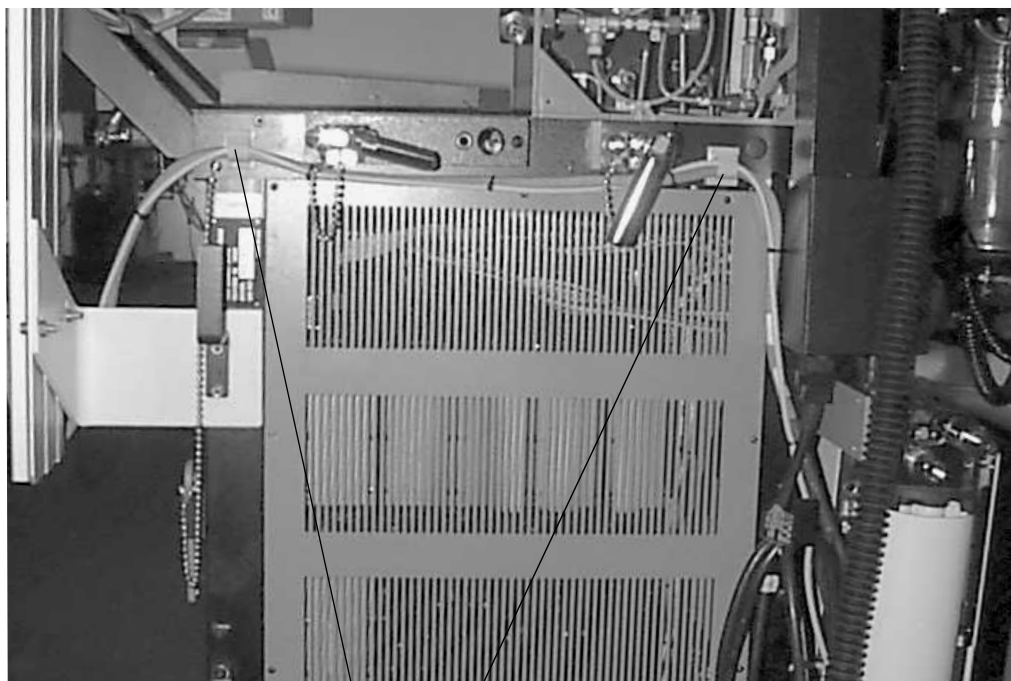
5. Slide the GCX white plastic cable retainer onto the rail as shown.
6. Route the Saturn cables behind the retainer as shown in the illustration.

## 2

### Setting Up an Integrated OR Workstation

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7. Install two stick-on cable clips on the back of the machine as shown in [Figure 2-69](#). Route the Saturn display cables through these clips.



CABLE CLIP (2X)  
(P/N 4109296)

**Figure 2-69. Cable Routing Continued**



### Step 8, Option 3. Install the Display Unit on a Narkomed 6000

The instructions that follow explain how to install the display unit on a Narkomed 6000.

Follow this procedure to install the Saturn display on a Narkomed 6000.

1. Install the ISO on its mounting bracket ([Figure 2-70](#)) and slide the assembly into the GCX rail on the side of the machine.
2. Install the CPU on its mounting bracket, and slide the assembly into the GCX rail.
3. Install the UPS mounting bracket on the CPU as shown, and then install the UPS in its mounting bracket. [Figure 2-71 on page 2-90](#) shows the completed assembly.

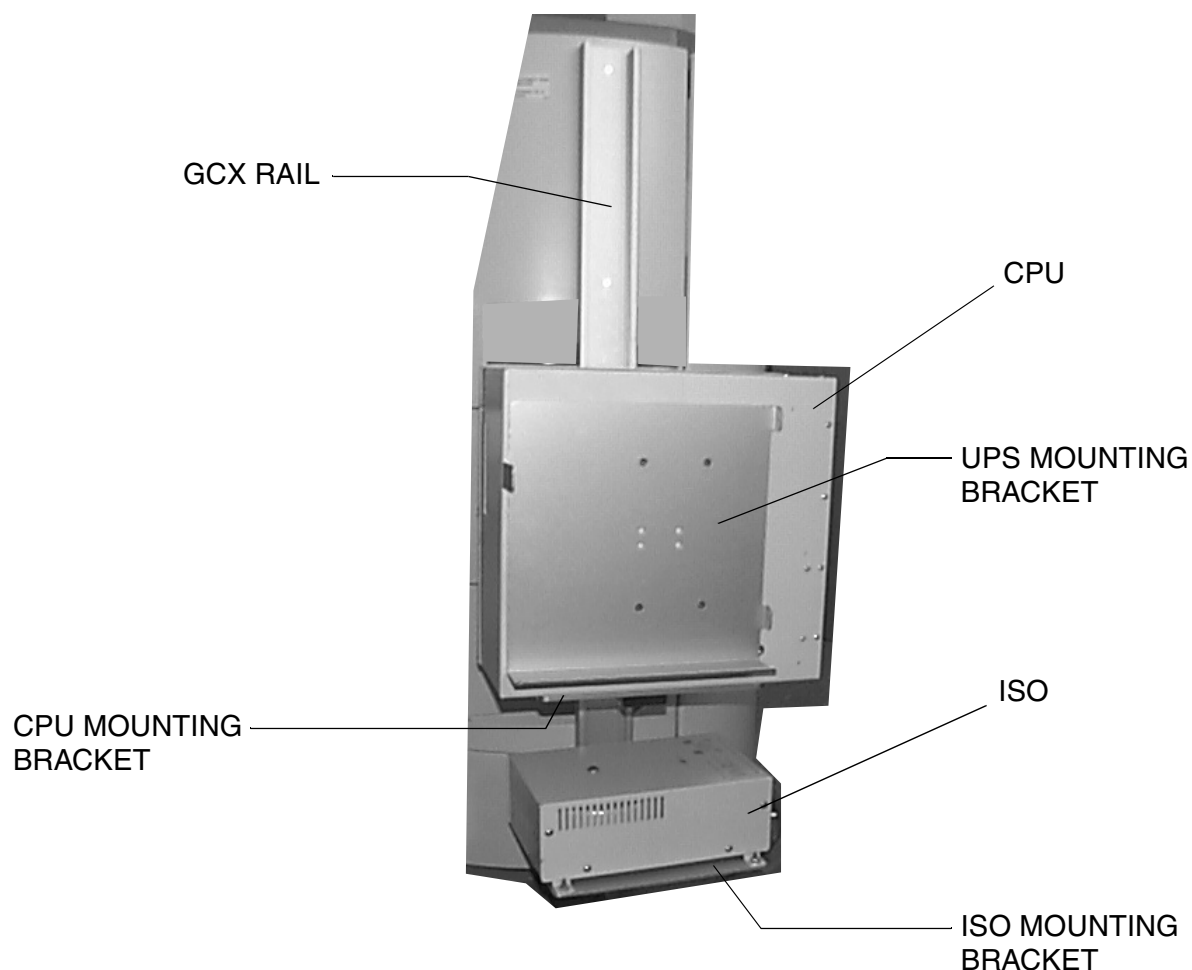
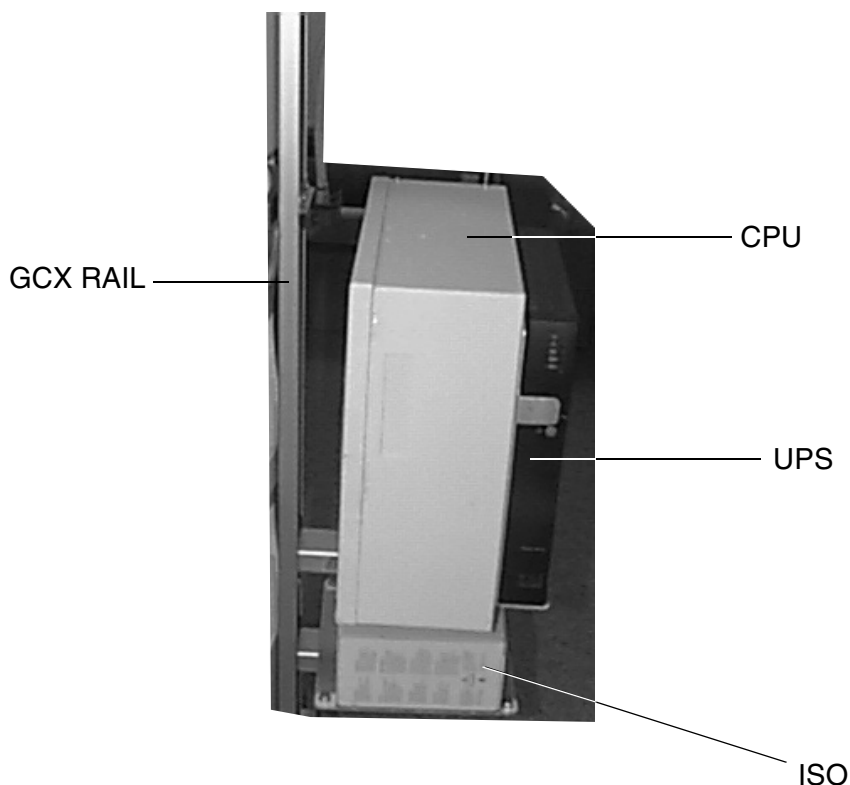


Figure 2-70. Saturn GCX Rail and Mountings



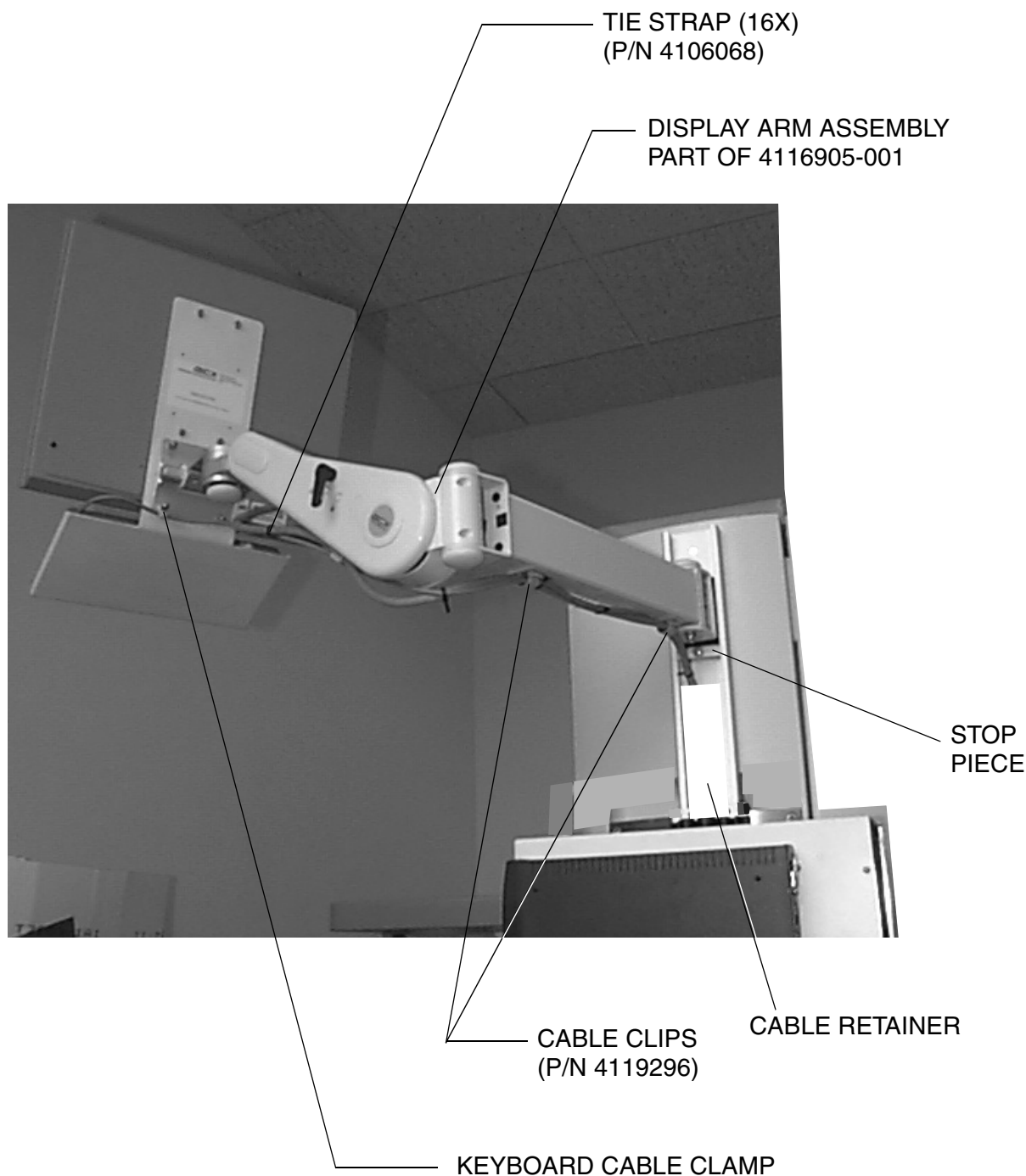
**Figure 2-71. Saturn Components on GCX Rail (Completed Assembly)**

Display Arm  
Installation and  
Cable Routing  
(Narkomed  
6000)

Follow this procedure to attach cables and complete display installation.

1. Slide the stop piece into the GCX rail, and tighten it in place where shown in [Figure 2-72 on page 2-91](#).
2. Slide the display arm assembly into the GCX rail until it rests on the stop piece.
3. Install three stick-on cable clips on the display arm at the locations shown in [Figure 2-72 on page 2-91](#).
4. Place a 1/4 ID x 3/8 nylon cable clamp on the keyboard cable and install the clamp under the acorn nut on the display mount, as shown in [Figure 2-72 on page 2-91](#).

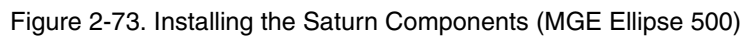




**Figure 2-72. Display Arm Installation and Cable Routing**

5. Install tie straps as shown in [Figure 2-72](#). Install the first one 15 inches from the display, and then at 5-inch intervals along the cables.
6. Route the cables behind the white plastic cable retainer as shown.

1. Install the ISO on its mounting bracket (see [Figure 2-73](#)) and slide the assembly into the GCX rail.
2. Install the CPU on its mounting bracket, and slide the assembly into the GCX rail.
3. Install the UPS mounting plate on the CPU as shown in [Figure 2-73](#), then install the UPS in its mounting bracket. [Figure 2-74 on page 2-93](#) shows the completed assembly.
4. **For Ellipse models only:** Install the top plate to the UPS mounting plate using 2 x 6-32 button head screws ([Figure 2-74 on page 2-93](#)).



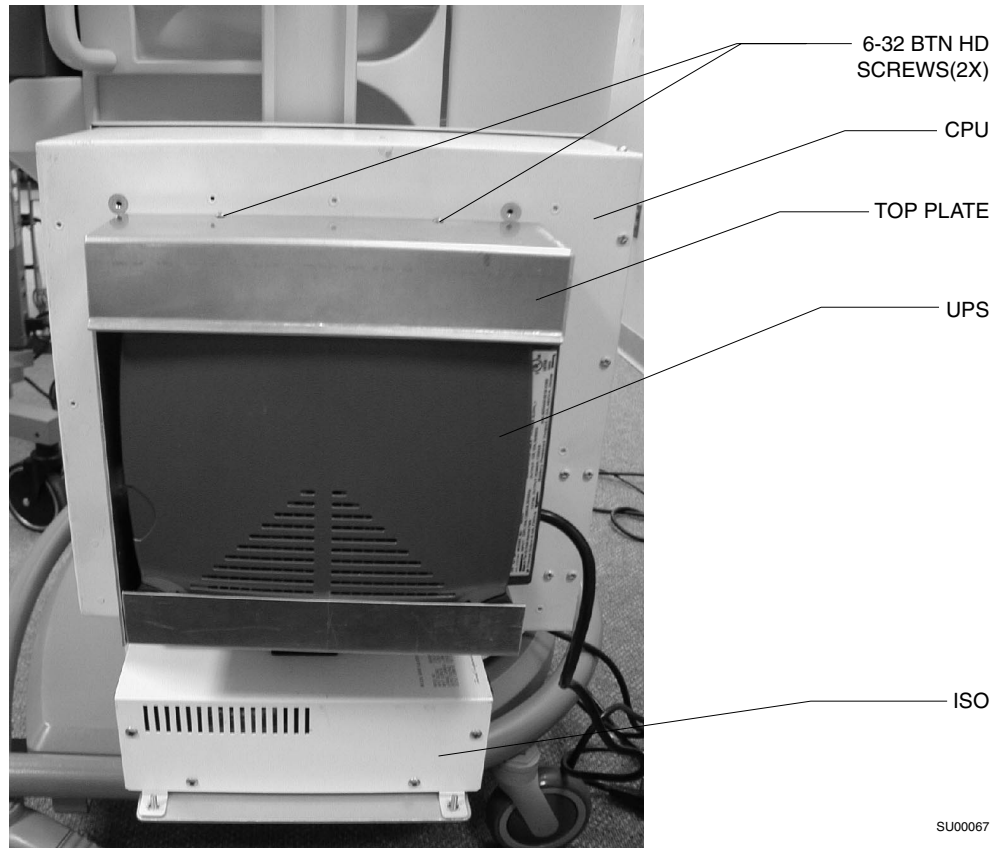


Figure 2-74. Saturn Components on GCX Rail (MGE Ellipse 500)

## Step 8, Option 4. Install the Display Unit on a Julian

The instructions that follow explain how to install the display unit on a Julian.

Attaching the  
GCX Rail to the  
Julian

Follow this procedure to install the Saturn display on a Julian.

1. Attach the GCX rail to the right side of the machine as shown in [Figure 2-75](#). Install the top mounting screws first.
2. Slide the bottom rail clamp assembly into the GCX rail, and fasten it to the frame of the machine.

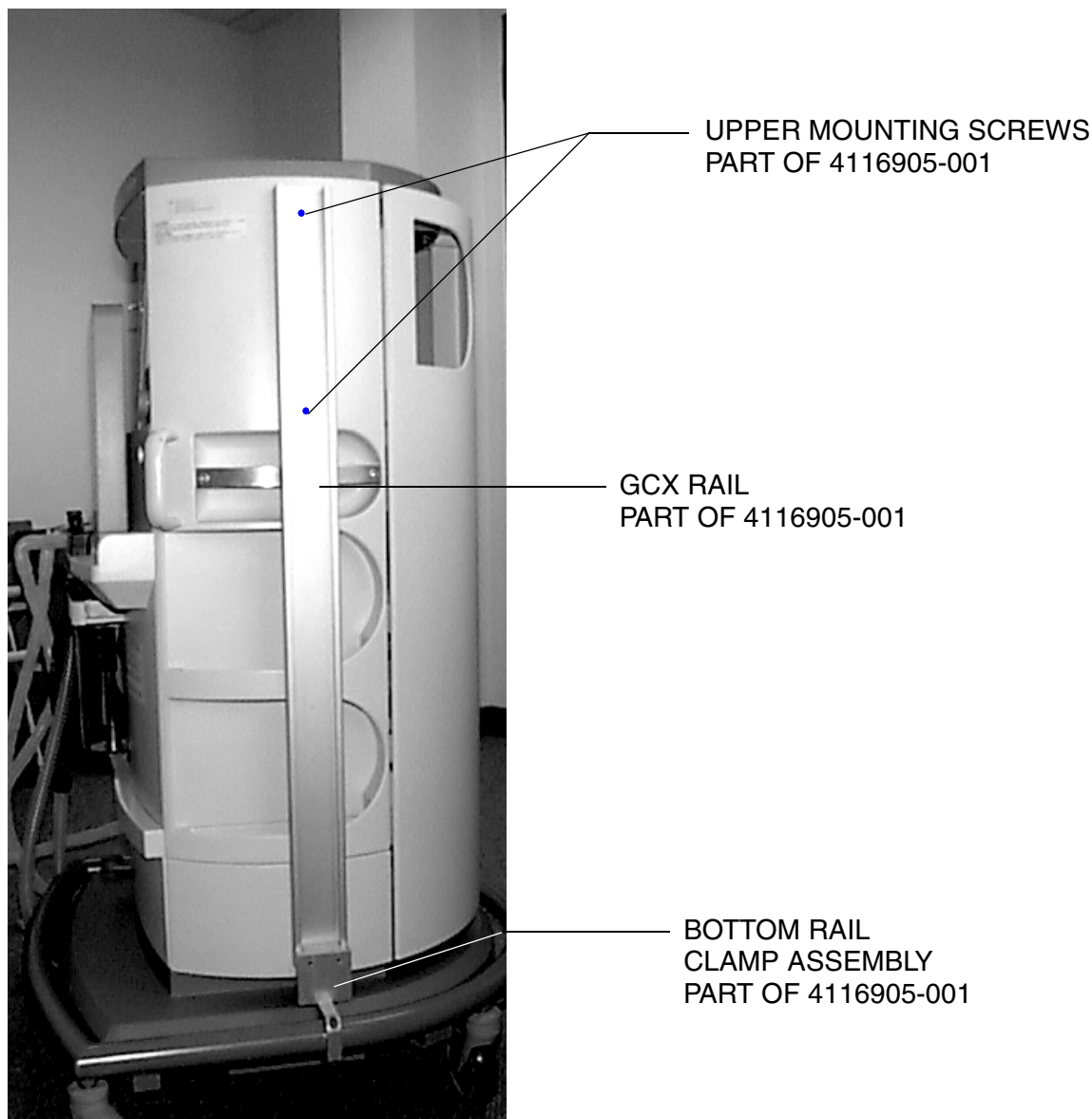


Figure 2-75. GCX Rail Mounting

### Installing the Saturn Components

Perform the following to install the Saturn components on the mounting gear of an MGE Pulsar UPS (Figure 2-76 and Figure 2-77 on page 2-96) and an MGE Ellipse UPS (Figure 2-78 on page 2-97 and Figure 2-79 on page 2-98).

1. Install the ISO on its mounting bracket (see Figure 2-76 or Figure 2-78) and slide the assembly into the GCX rail.
2. Install the CPU on its mounting bracket, and slide the assembly into the GCX rail.
3. Install the UPS mounting plate on the CPU as shown in Figure 2-76 or Figure 2-78, then install the UPS in its mounting bracket. Figure 2-77 on page 2-96 and Figure 2-79 on page 2-98 show the completed assemblies.
4. **For Ellipse models only:** Install the top plate to the UPS mounting plate using 2 x 6-32 button head screws (Figure 2-79 on page 2-98).

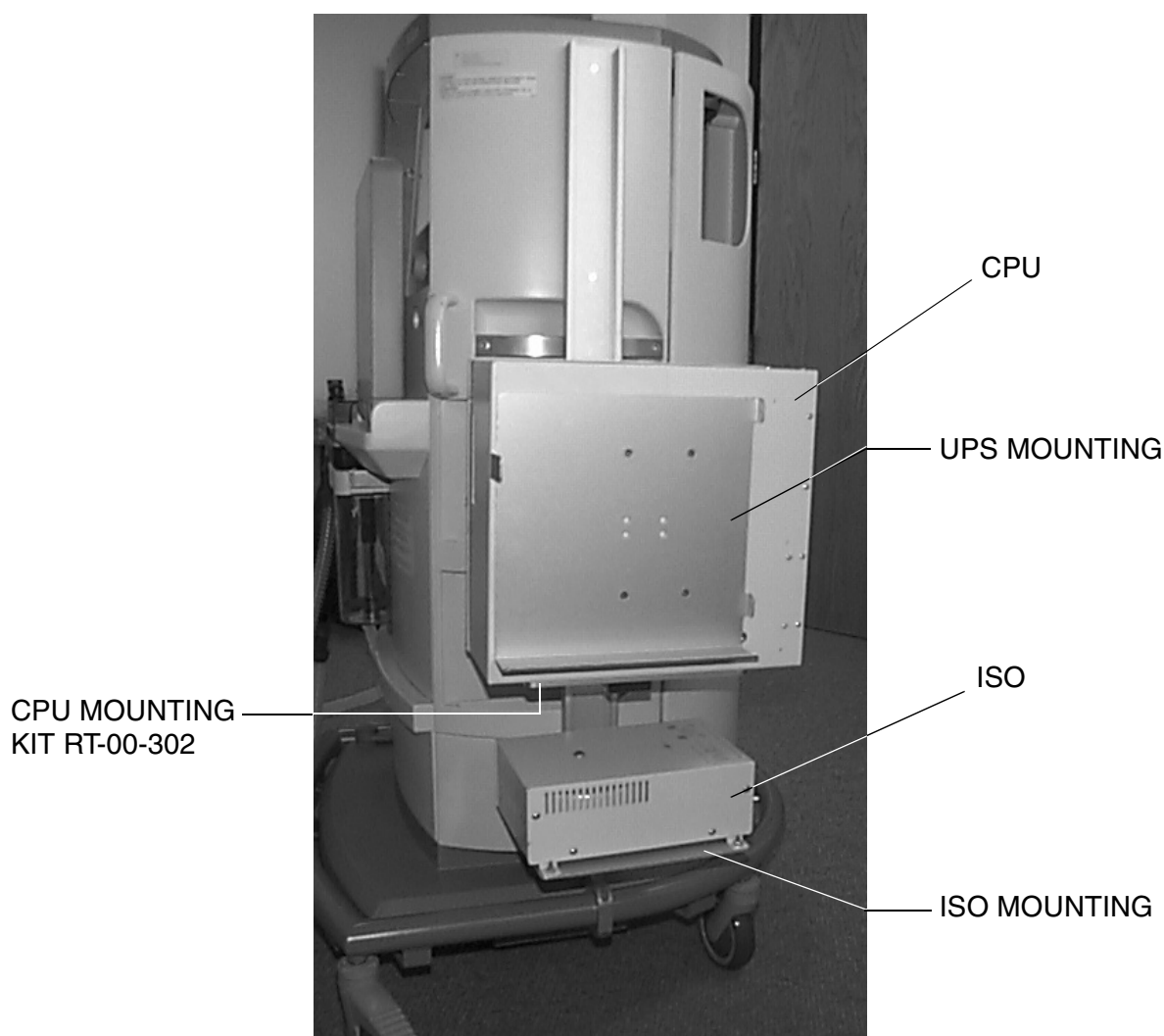
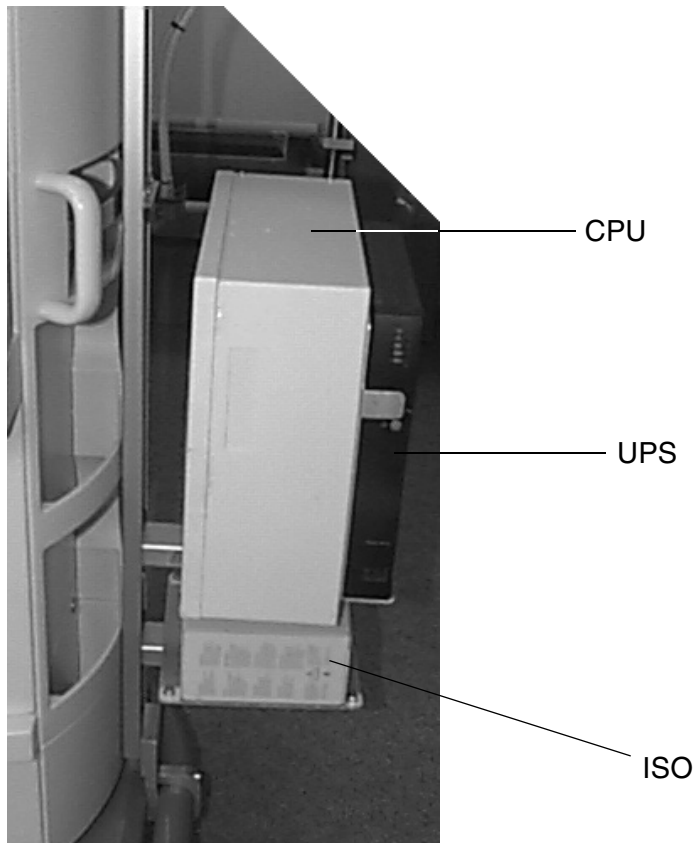


Figure 2-76. Installing the Saturn Components (MGE Pulsar)

## 2

### Setting Up an Integrated OR Workstation

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**Figure 2-77. Saturn Components on GCX Rail (MGE Pulsar)**

SU00067

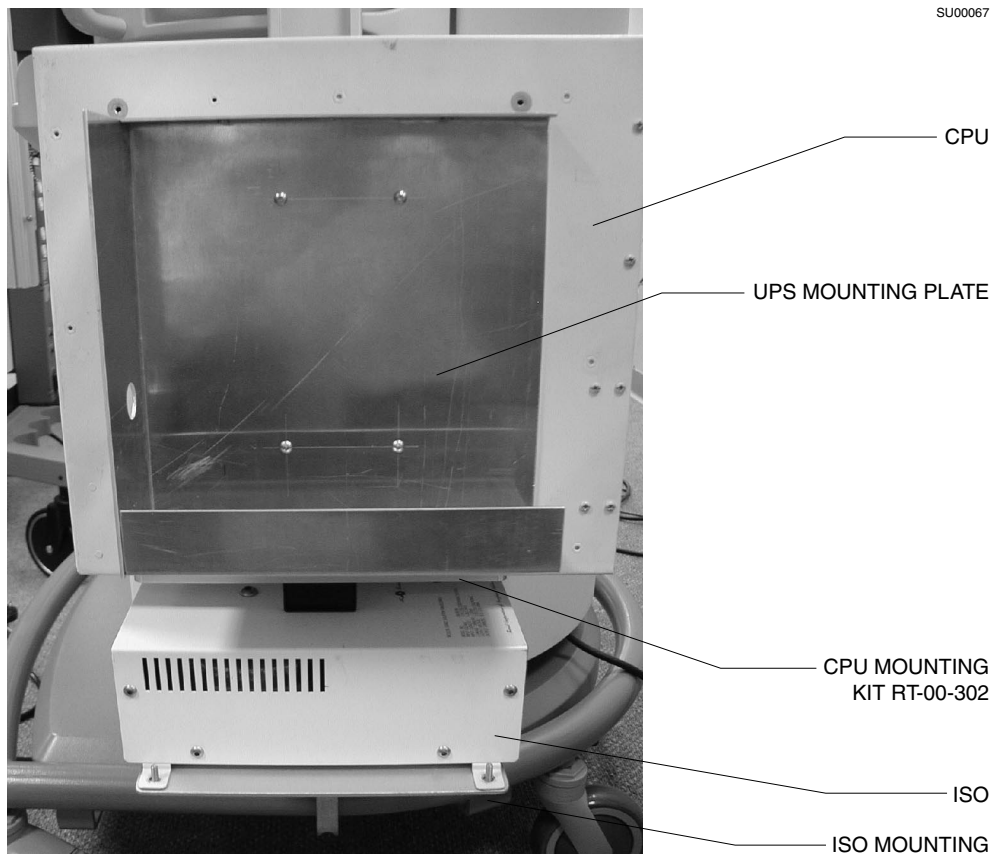


Figure 2-78. Installing the Saturn Components (MGE Ellipse 500)



## 2

### Setting Up an Integrated OR Workstation

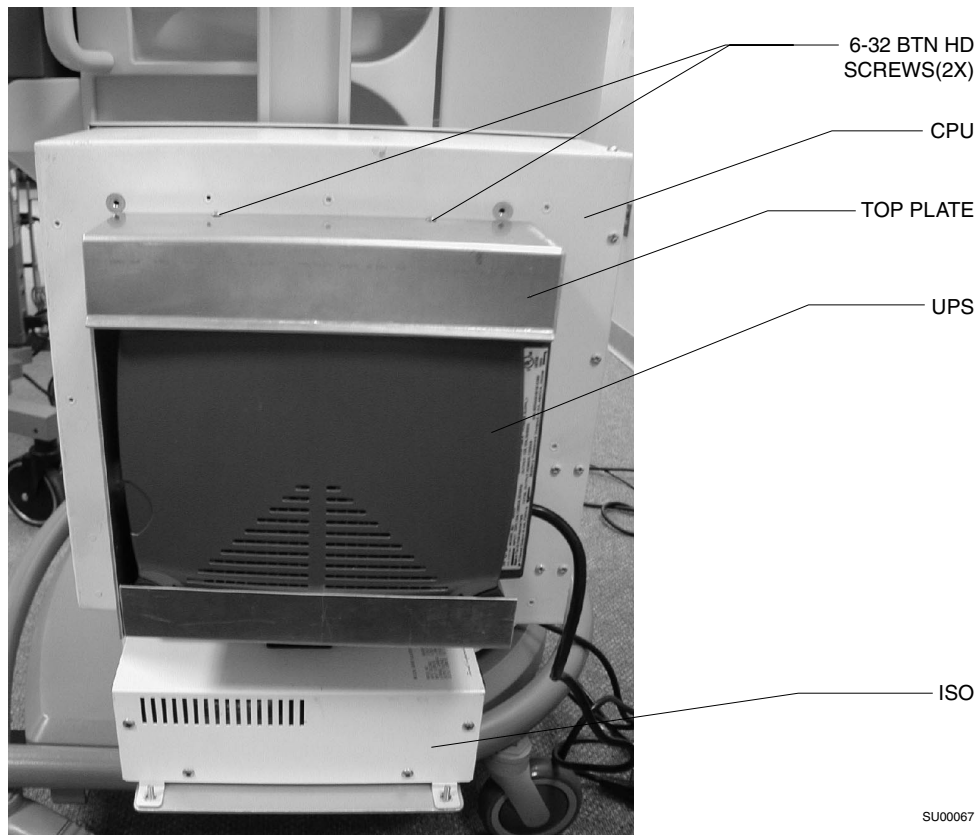


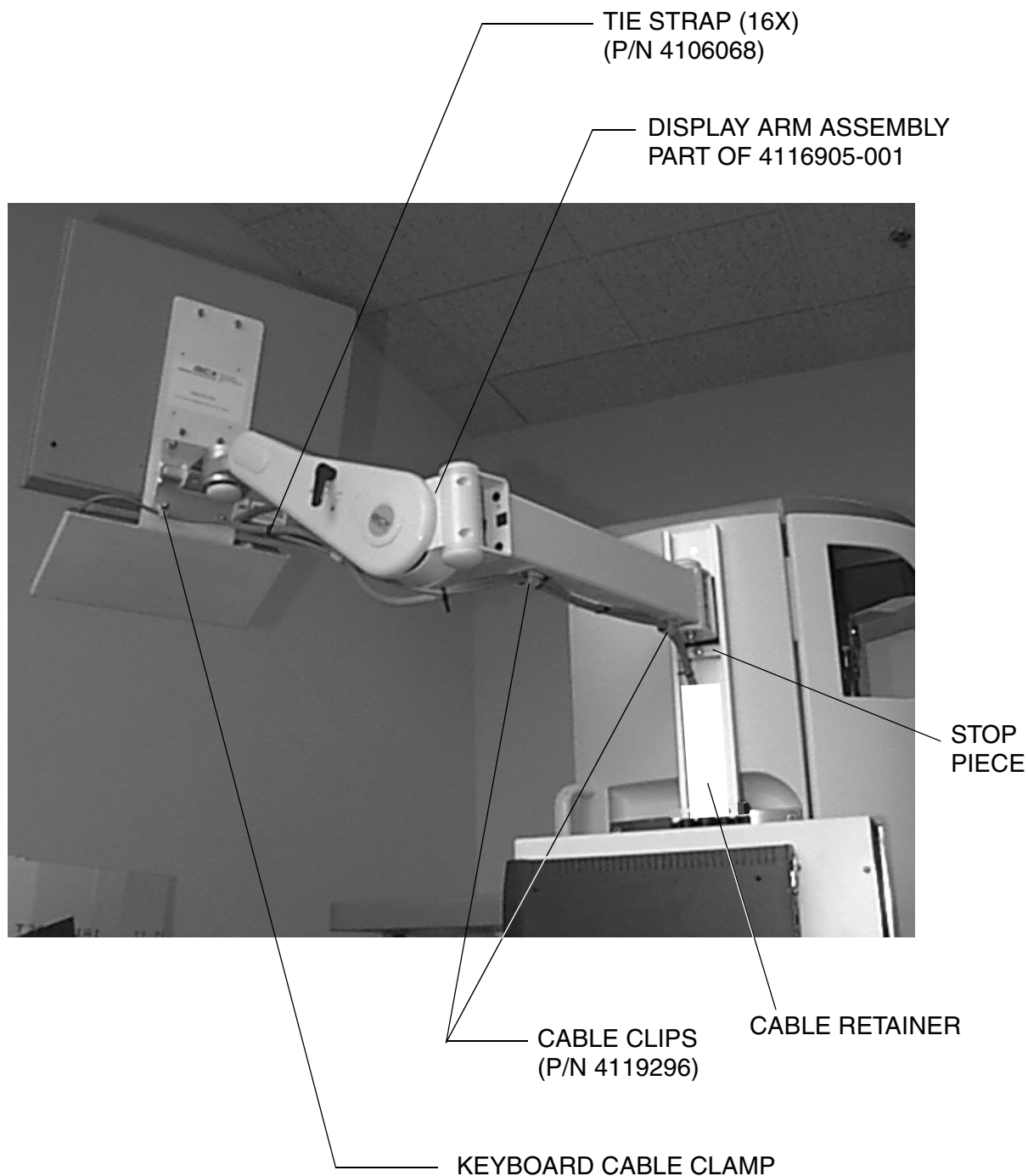
Figure 2-79. Saturn Components on GCX Rail (MGE Ellipse 500)



Display Arm  
Installation and  
Cable Routing  
(Julian)

Follow this procedure to attach cables and complete display installation.

1. Slide the stop piece into the GCX rail, and tighten it in place where shown in [Figure 2-80](#).



**Figure 2-80. Display Arm Installation and Cable Routing**

2. Slide the display arm assembly into the GCX rail until it rests on the stop piece.
3. Install three stick-on cable clips on the display arm at the locations shown in [Figure 2-80 on page 2-99](#).
4. Place a 1/4 ID x 2/8 nylon cable clamp on the keyboard cable and install the clamp under the acorn nut on the display mount as shown in [Figure 2-80 on page 2-99](#).
5. Install tie straps as shown in [Figure 2-80 on page 2-99](#). Install the first one 15 inches from the display, and then at 5-inch intervals along the cables.
6. Route the cables behind the white plastic cable retainer as shown in the illustration.

## Step 9. Connect the Cables

Configurations	<p>This procedure applies to the following Draeger anesthesia machines:</p> <ul style="list-style-type: none"> <li>• Narkomed 2B                      Narkomed GS</li> <li>• Narkomed 2C                      Narkomed 6000</li> <li>• Narkomed 3                      Julian</li> <li>• Narkomed 4</li> </ul>
Procedure	<p>Follow this procedure to install the interconnecting cables. Depending on your processor, see <a href="#">Figure 2-81 on page 2-101</a>, <a href="#">Figure 2-82 on page 2-102</a>, or <a href="#">Figure 2-83 on page 2-103</a>.</p> <ol style="list-style-type: none"> <li>1. Connect the end of the keyboard cable that comes out of the back of the anesthesia machine to the processor unit.</li> <li>2. Connect the three connectors at the end of the display cable to the following receptacles on the processor unit: <ul style="list-style-type: none"> <li>• video display</li> <li>• touch control</li> <li>• power</li> </ul> </li> <li>3. Connect the network cable to the network receptacle on the processor unit.</li> <li>4. Connect two of the three connectors at the end of the power supply assembly cable into the following receptacles in the processor unit: <ul style="list-style-type: none"> <li>• Connect the WPU data cord to the UPS port on the WPU.</li> <li>• Connect the WPU power cord to the power inlet on the Saturn WPU.</li> </ul> </li> <li>5. Connect the third connector (mains cord) at the end of the power supply cable to the standard over-current-protected hospital-grade wall outlet. DO NOT use the convenience outlet on the anesthesia machine to power the Saturn.</li> <li>6. Connect the anesthesia machine's communication port to Comm 5, 6, 7, or 8 of the Saturn system.</li> </ol>

**Note:** The Narkomed 2B, 2C, and GS require cable Part Number 4110328-004.  
The Narkomed 3 requires Part Number 4115131.  
The Narkomed 4 requires Part Number 4110328-004, and its interface cable must be connected to Port C.  
The Julian requires Part Number 4116852.

You are finished with this step. Proceed to **“Step 10. Test the Workstation Setup”** on page 2-104.

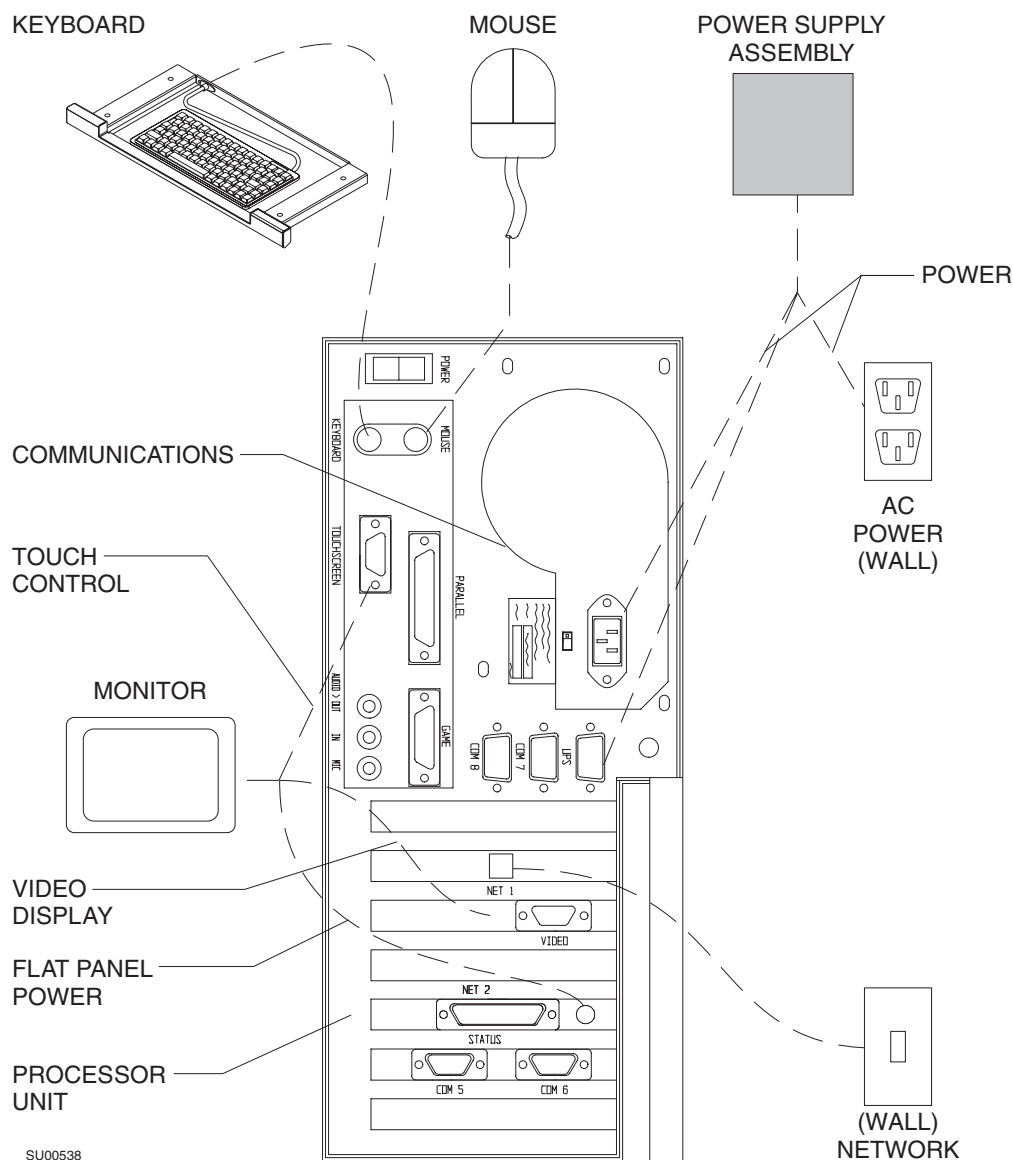


Figure 2-81. Connecting the Cables to a 233-MHz Processor

## 2

### Setting Up an Integrated OR Workstation

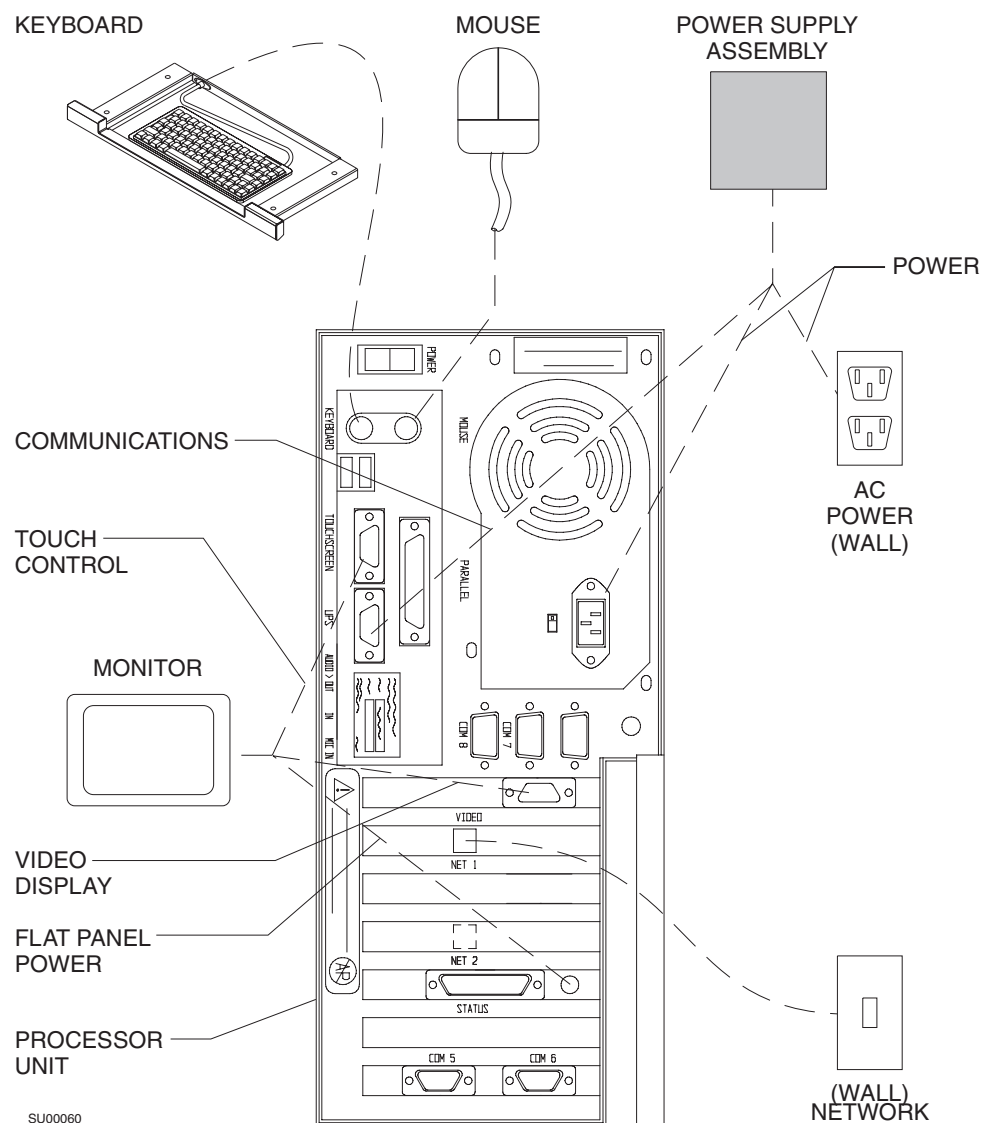


Figure 2-82. Connecting the Cables to a 400-MHz Processor

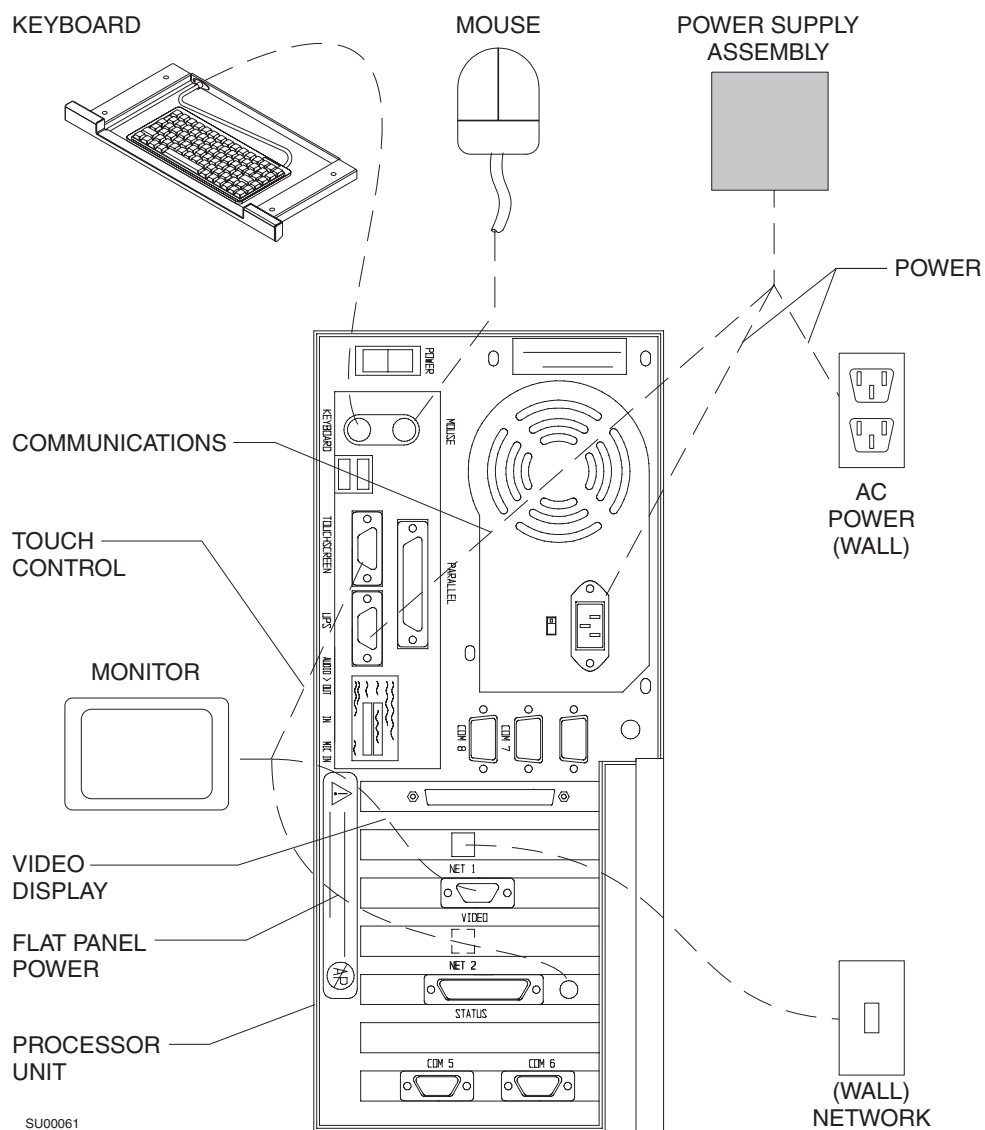


Figure 2-83. Connecting the Cables to a 700-MHz Processor

## Step 10. Test the Workstation Setup

Configurations	<p>This procedure applies to the following Draeger anesthesia machines:</p> <ul style="list-style-type: none"> <li>• Narkomed 2B</li> <li>• Narkomed 2C</li> <li>• Narkomed 3</li> <li>• Narkomed 4</li> <li>• Narkomed GS</li> <li>• Narkomed 6000</li> <li>• Julian</li> </ul>
Procedure	<p>Follow this procedure to test the workstation setup.</p> <ol style="list-style-type: none"> <li>1. Restore anesthesia machine functions, as follows: <ol style="list-style-type: none"> <li>a. Verify that the power switch is set to STANDBY.</li> <li>b. Enable all circuit breakers by pushing in each button.</li> <li>c. Plug the AC power cord into an active AC hospital grade outlet. <p><b>Caution:</b> The workstation is preset to 115 VAC at the factory. Do not move the preset voltage switch.</p> </li> <li>d. Set the anesthesia machine power switch to ON.</li> </ol> <p>The anesthesia machine powers on, displaying self-diagnostics on the monitor display screen.</p> </li> <li>2. Verify that the anesthesia machine passes all power-up tests. For details, see the setup manual for the machine you are testing.</li> <li>3. Turn on the Draeger OR workstation by pressing the momentary ON/OFF switch, located at the back of the processor unit.</li> <li>4. Verify that the workstation powers on without displaying any error messages. <p><b>Note:</b> The green indicator light, running fan, and functioning monitor are the indicators that the workstation is receiving power from the power supply. The power supply is always charging when it is receiving power from the standard over-current-protected hospital-grade wall outlet.</p> </li> <li>5. Verify that the Saturn application starts.</li> </ol> <p><i>When both the anesthesia machine and the workstation power on successfully, you are finished installing the workstation.</i></p> <p><i>If the anesthesia machine or the workstation does not function properly, contact your local Authorized Service Organization, or contact DrägerService, Draeger Medical, Inc., 3122 Commerce Drive, Telford, PA 18969, or call toll free, 24 hours a day, at 1-800-543-5047 or 1-215-721-5402.</i></p>

# 3

## Setting Up an Integrated OR Workstation on Fabius GS

*This section explains how to set up an integrated OR workstation on Fabius GS.*

Overview.....	3-2
Step 1. Disconnect the Anesthesia Machine .....	3-3
Step 2. Installing the Saturn Processor Unit.....	3-4
Step 3. Installing the Power Supply Assembly .....	3-7
Step 4. Installing the Display and Keyboard Unit.....	3-8
Step 5. Connecting the Saturn Workstation .....	3-9
Step 6 Test the Workstation.....	3-10

### 3

## Setting Up an Integrated OR Workstation on Fabius GS

---

### Overview

The instructions in this section explain how to install an *integrated* Draeger OR workstation a Fabius GS anesthesia machine:

#### Workstation Hardware

Draeger supplies all of the hardware for the integrated Draeger OR workstation. The main hardware components that you will install include the following:

- Keyboard Unit,
- Processor Unit,
- Display Unit, and
- Power Supply Assembly.

#### Workstation Software

All workstation software is preinstalled and preconfigured at the factory. Therefore, no software setup is required.

#### Network Server

The Draeger OR workstation requires the use of a network server. A preconfigured server is available from Draeger. However, any server may be used, as long as it meets the following minimum requirements:

- the server must be a Windows NT server,
- the server must have a RAID 5 Configuration,
- the server must be a Primary Domain Controller,
- Draeger must have an Administration account,
- Draeger must configure the server,
- TCP/IP must be installed, and
- the server must have 10/100MB ethernet typology.

#### Setup Checklist

Use the table of contents of this chapter as a checklist for the initial hardware installation of an integrated Draeger OR workstation on an Draeger anesthesia machine. Some steps may include various mounting options, depending upon the model and configuration of the anesthesia machine.

**Warning:** This installation must be performed by or under the direct supervision of an authorized Draeger Technical Service Representative.



## Step 1. Disconnect the Anesthesia Machine

**Configurations**      This procedure applies to the Fabius GS anesthesia machine:

**Procedure**            Follow this procedure to disconnect the anesthesia machine before you install a Draeger OR workstation.

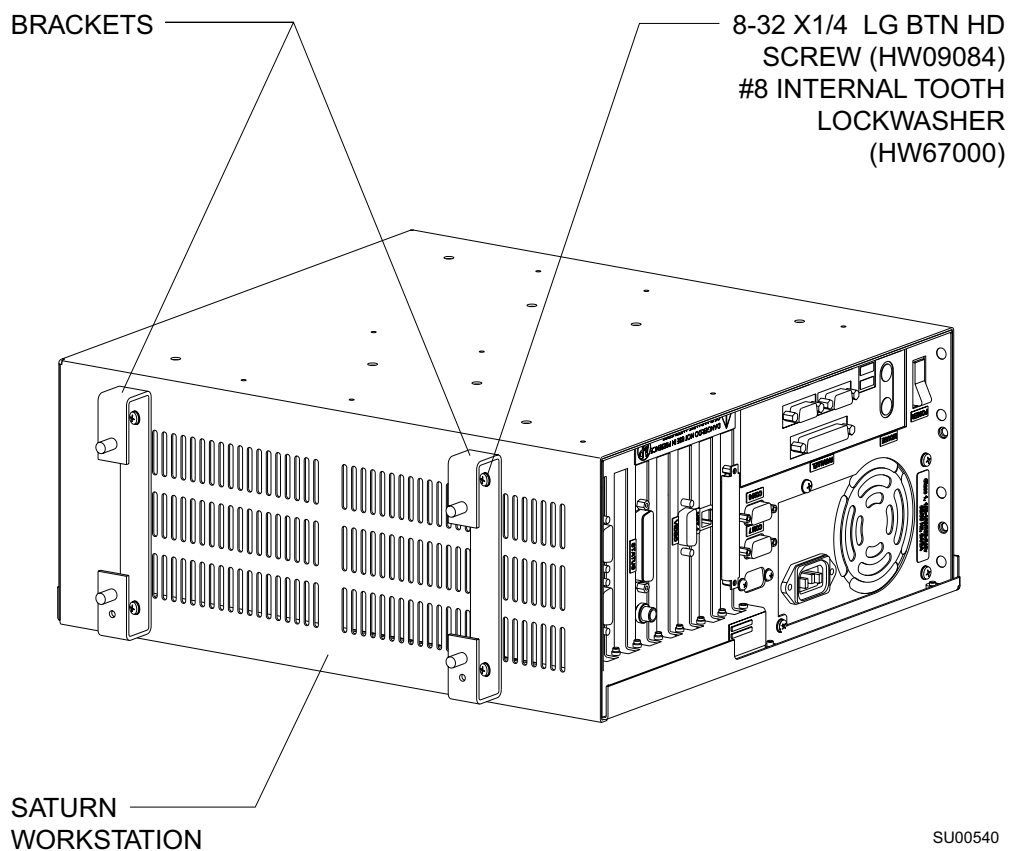
**Caution:** To prevent possible equipment damage, you must perform these steps before installing any part of the Draeger OR workstation or connecting any cables.

1. Set the anesthesia machine power switch to OFF.
2. Unplug the system AC power cord.

## Step 2. Installing the Saturn Processor Unit

### Procedure

1. Unpack all of the items from the kit.
2. Mount the two brackets to the processor using four 8-32 x 1/4 in. btn hd screws and four #8 internal tooth lock washers. See [Figure 3-1](#)



SU00540

Figure 3-1. Installing the Processor Unit Brackets

3. Check the rear floor of the Fabius GS frame for four 5/16 in. holes. Refer to [Figure 3-3](#) for the general location of these processor mounting holes.

If these holes are not present, they must be drilled at the locations shown in [Figure 3-2](#). Measure and mark the hole centers, and carefully drill the four holes using a 5/16 in. drill.

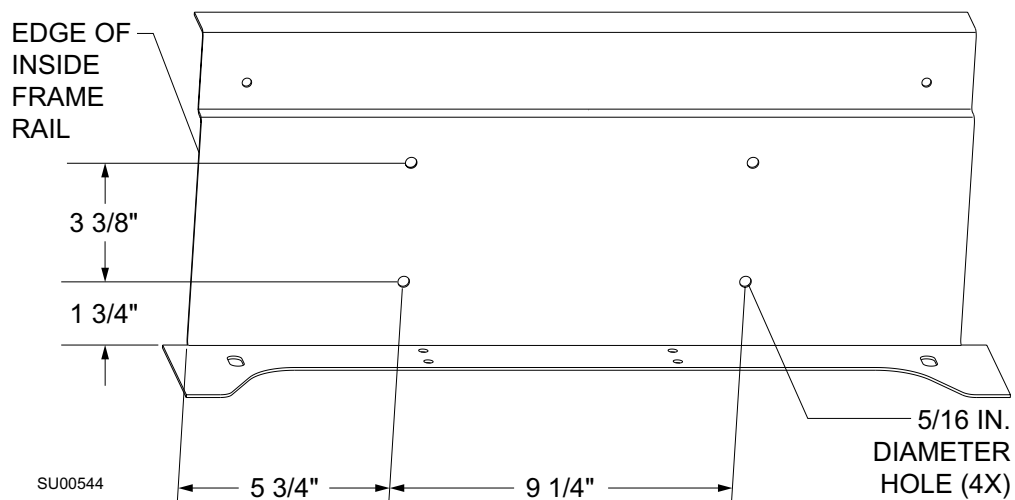


Figure 3-2. Frame Hole Locations: top view

### 3

#### Setting Up an Integrated OR Workstation on Fabius GS

4. Place the processor unit on the rear of the machine frame with the four studs on the brackets going through the holes drilled in the previous step. See [Figure 3-3](#). Secure the assembly using four M6 kep nuts (HW55014).

SU00543

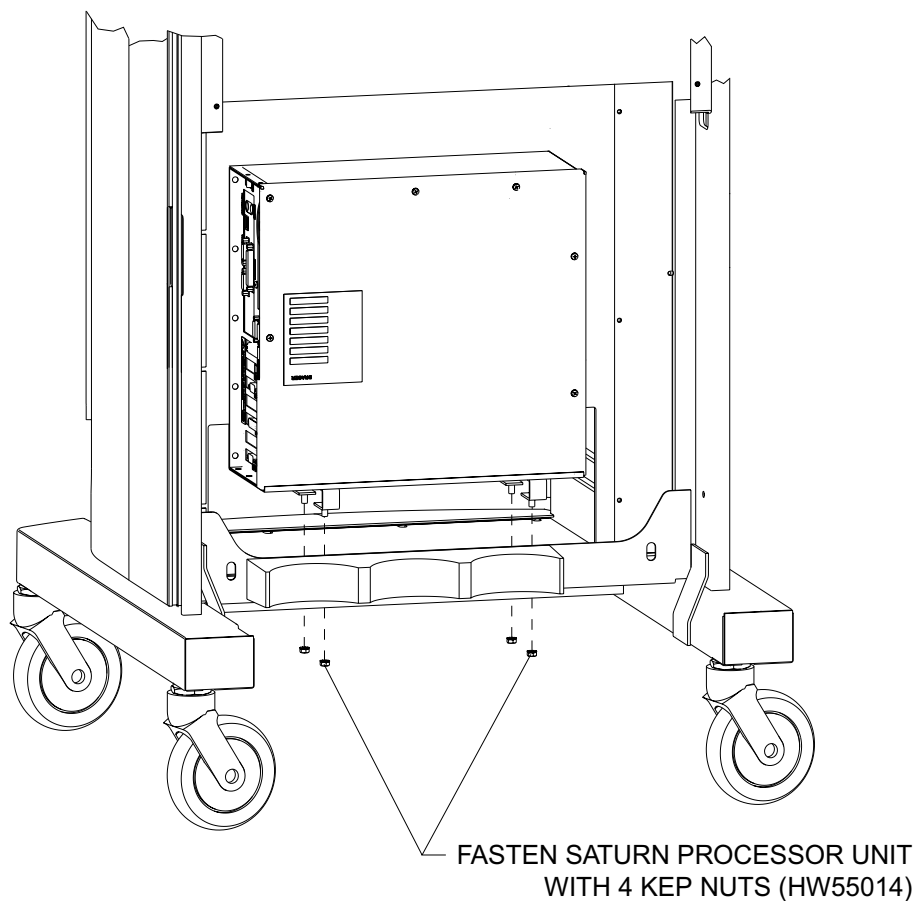
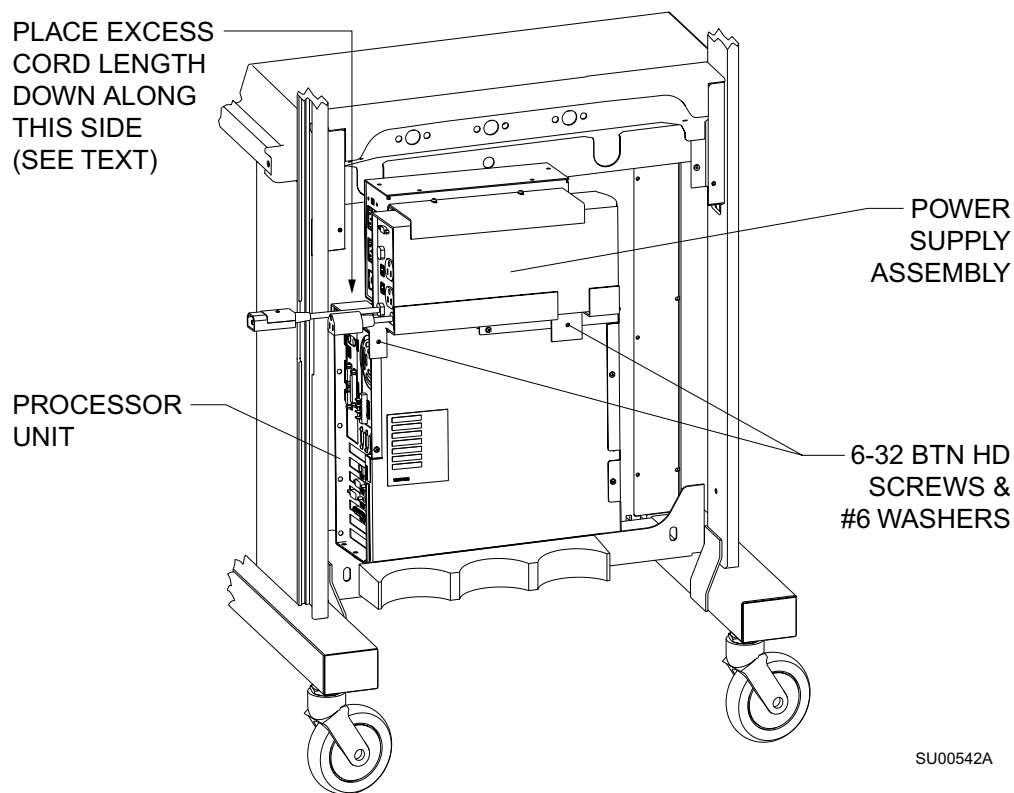


Figure 3-3. Mounting the Processor Unit on the Fabius GS

### Step 3. Installing the Power Supply Assembly

#### Procedure

1. Remove the two 6-32 screws and washers from the top right side of the processor (see [Figure 3-4](#)).
2. Place the power supply assembly on the processor with the outlets facing toward the left. Reinstall the two 6-32 screws and washers to secure the power supply assembly to the processor.



SU00542A

Figure 3-4. Installing the Power Supply Assembly

### 3

## Setting Up an Integrated OR Workstation on Fabius GS

### Step 4. Installing the Display and Keyboard Unit

#### Procedure

1. Insert the display arm into the lower end of the GCX rail on the machine and slide it up to the desired height. See [Figure 3-5](#).
2. Insert the stop block into the GCX rail; slide it up to the display arm and tighten the screw on the stop block.
3. Route the display and keyboard cables down the GCX rail and through the opening in the GCX rail as shown in the illustration.

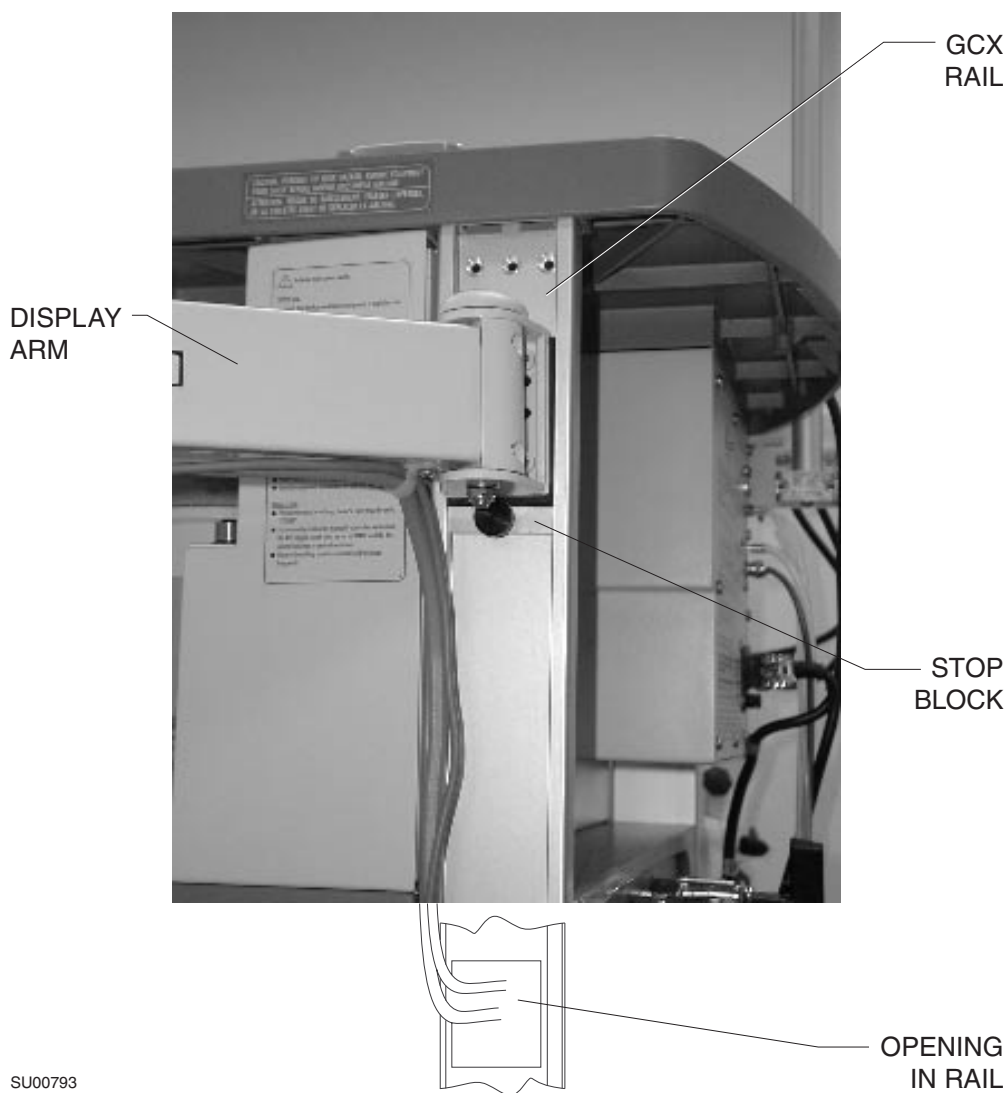


Figure 3-5. Installing the Display Arm

## Step 5. Connecting the Saturn Workstation

### Procedure

1. Unpack the power cords and serial cable supplied in the kit. Make all connections to the power supply and workstation as shown in [Figure 3-6](#).
2. Connect the video, power, touchscreen and keyboard cables as shown in the illustration. Make sure all connectors are fully seated, and that retainer screws on DB connectors are secured.

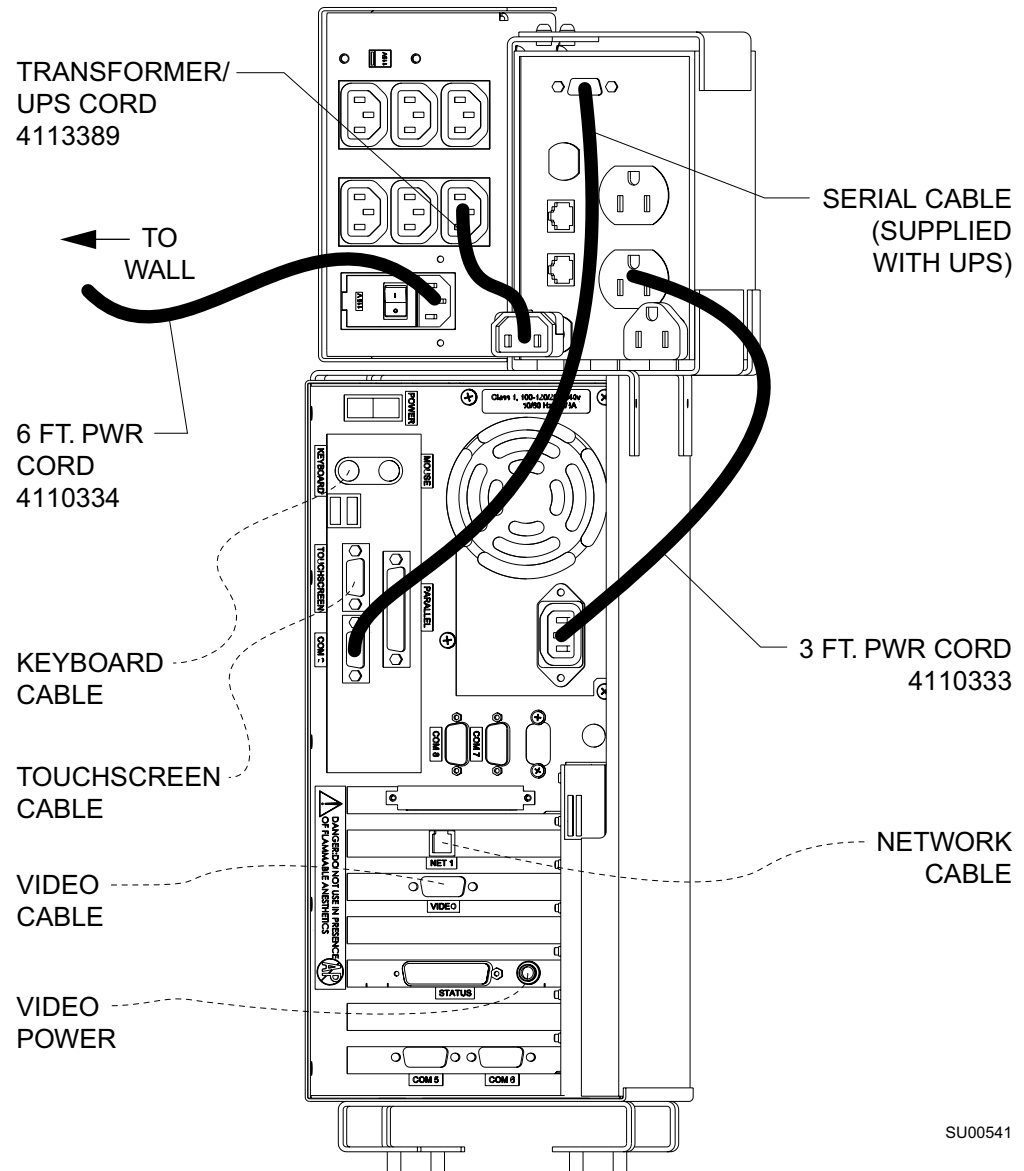


Figure 3-6. Workstation Connections

3. Coil any excess cord neatly and tie wrap where needed. Place the excess cord at the left side of the processor. Refer to [Figure 3-4](#).

## Step 6 Test the Workstation

### Procedure

Follow this procedure to test the workstation setup:

1. Restore anesthesia machine functions, as follows:

- a. Verify that the power switch is set to OFF.
- b. Plug the AC power cord into an active AC hospital grade outlet.

**Caution:** The workstation is preset to 115 VAC at the factory. Do not move the preset voltage switch.

- c. Set the anesthesia machine power switch to ON.

The anesthesia machine powers on, displaying self-diagnostics on the monitor display screen.

2. Verify that the anesthesia machine passes all power-up tests. For details, see the operator's manual for the machine you are testing.
3. Turn on the Draeger OR workstation by pressing the momentary ON/OFF switch, located at the back of the processor unit.
4. Verify that the workstation powers on without displaying any error messages.

**Note:** The green indicator light, running fan, and functioning monitor are the indicators that the workstation is receiving power from the power supply. The power supply is always charging when it is receiving power from a standard over-current-protected hospital-grade wall outlet.

5. Verify that the Saturn application starts.

*When both the anesthesia machine and the workstation power on successfully, you are finished installing the workstation.*

*If the anesthesia machine or the workstation does not function properly, contact your local Authorized Service Organization, or contact DrägerService, Draeger Medical, Inc., 3122 Commerce Drive, Telford, PA 18969, or call toll free, 24 hours a day, at 1-800-543-5047 or 1-215-721-5402.*



# 4

## Setting Up an Integrated OR Workstation with the 4sys Medical Grade Workstation

*This section explains how to set up an integrated OR workstation with the 4sys Medical Grade Workstation.*

Overview.....	4-2
Step 1. Disconnect the Anesthesia Machine .....	4-3
Step 2. Disconnect the Cables from the WPU.....	4-4
Step 3, Option 1. Removal of the Power Supply Assembly (UPS Unit) - Lower Cabinet Installation .....	4-8
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## Overview

The instructions in this section explain how to install an *integrated* Draeger OR workstation with the 4sys Medical Grade Workstation on various Draeger anesthesia machines:

### Workstation Hardware

Draeger supplies all of the hardware for the integrated Draeger OR workstation. The 4sys Medical Grade Workstation hardware component that you will install is:

- 4sys Medical Grade Workstation

### Workstation Software

All workstation software is pre-installed and preconfigured at the factory. Therefore, no software setup is required.

### Network Server

The Draeger OR workstation requires the use of a network server. A preconfigured server is available from Draeger. However, any server may be used, as long as it meets the following minimum requirements:

- the server must be a Windows NT server,
- the server must have a RAID 5 Configuration,
- the server must be a Primary Domain Controller,
- Draeger must have an Administration account,
- Draeger must configure the server,
- TCP/IP must be installed, and
- the server must have 10/100MB ethernet typology.

### Setup Checklist

Use the table of contents of this chapter as a checklist for the initial hardware installation of an integrated Draeger OR workstation on a Draeger anesthesia machine. Some steps may include various mounting options, depending upon the model and configuration of the anesthesia machine.

**Warning:** This installation must be performed by or under the direct supervision of an authorized Draeger Technical Service Representative.

## Step 1. Disconnect the Anesthesia Machine

Configurations	<p>This procedure applies to the following anesthesia machines:</p> <ul style="list-style-type: none"> <li>• Fabius GS</li> <li>• Julian</li> </ul>
Procedure	<p>Follow this procedure to disconnect the anesthesia machine before you install a Draeger OR workstation.</p> <p><b>Caution:</b> To prevent possible equipment damage, you must perform these steps before installing any part of the Draeger OR workstation or connecting any cables.</p> <ol style="list-style-type: none"> <li>1. Set the anesthesia machine power switch to OFF.</li> <li>2. Unplug the system AC power cord.</li> </ol>

Configurations	<p>This procedure applies to the following Draeger anesthesia machines:</p> <ul style="list-style-type: none"> <li>• Narkomed 2B</li> <li>• Narkomed 2C</li> <li>• Narkomed 3</li> <li>• Narkomed 4</li> <li>• Narkomed GS</li> <li>• Narkomed 6000 Series</li> </ul>
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Proceed to [“Step 1. Disconnect the Anesthesia Machine” on page 2-4.](#)

*You are finished with this step.*

*If the machine on which you are installing the 4sys Clinical Hardware does not have the Saturn WPU installed, refer to one of the following steps in Section 2 of this manual for CGX Rail System and Display Arm installation procedures:*

- [“Attaching the GCX Rail to the Narkomed GS” on page 2-57](#)
- [“Cable Routing and Display Installation \(Narkomed GS\)” on page 2-60](#)
- [“Attaching the GCX Rail to the Narkomed 2B” on page 2-63](#)
- [“Cable Routing and Display Installation \(Narkomed 2B\)” on page 2-67](#)
- [“Attaching the GCX Rail to the Narkomed 2C” on page 2-70](#)
- [“Cable Routing and Display Installation \(Narkomed 2C\)” on page 2-74](#)
- [“Attaching the GCX Rail to the Narkomed 3” on page 2-77](#)
- [“Cable Routing and Display Installation \(Narkomed 3\)” on page 2-80](#)
- [“Attaching the GCX Rail to the Narkomed 4” on page 2-83](#)
- [“Cable Routing and Display Installation \(Narkomed 4\)” on page 2-86](#)
- [“Attaching the GCX Rail to the Julian” on page 2-94](#)
- [“Display Arm Installation and Cable Routing \(Julian\)” on page 2-99](#)

- To install a GCX Rail System to the Narkomed 6000 Series machines, see the instructions supplied with the GCX rail kit.
- [“Display Arm Installation and Cable Routing \(Narkomed 6000\)” on page 2-90](#)

*You are finished with this step. Proceed to Step 7 for 4sys Medical Grade Workstation installation on page 4-20.*

*If the machine on which you are installing the 4sys Medical Grade Workstation has the Saturn Workstation Processor Unit (WPU) installed, proceed with Step 2.*

## Step 2. Disconnect the Cables from the WPU

Configurations	<p>This procedure applies to the following Draeger anesthesia machines:</p> <ul style="list-style-type: none"> <li>• Narkomed 2B                      Narkomed GS</li> <li>• Narkomed 2C                      Narkomed 6000</li> <li>• Narkomed 3                      Julian</li> <li>• Narkomed 4</li> </ul>
Procedure	<p>Follow this procedure to disconnect the interconnecting cables from the WPU components. Depending on your processor, see one of the following figures: Figure 4-1 on page 5, Figure 4-2 on page 6, or Figure 4-3 on page 7.</p> <ol style="list-style-type: none"> <li>1. Disconnect the third connector (mains cord) at the end of the power supply cable from the standard over-current-protected hospital-grade wall outlet.</li> <li>2. Disconnect the anesthesia machine's communication port from Comm 5, 6, 7, or 8 of the Saturn system.</li> <li>3. Disconnect two of the three connectors at the end of the power supply assembly cable from the following receptacles in the processor unit: <ul style="list-style-type: none"> <li>• Disconnect the WPU data cord from the UPS port on the WPU.</li> <li>• Disconnect the WPU power cord from the power inlet on the Saturn WPU.</li> </ul> </li> <li>4. Disconnect the network cable from the network receptacle on the processor unit.</li> <li>5. Disconnect the three connectors at the end of the display cable from the following receptacles on the processor unit: <ul style="list-style-type: none"> <li>• video display</li> <li>• touch control</li> <li>• power</li> </ul> </li> <li>6. Disconnect the end of the keyboard cable that comes out of the back of the anesthesia machine from the processor unit.</li> </ol>

*You are finished with this step.*

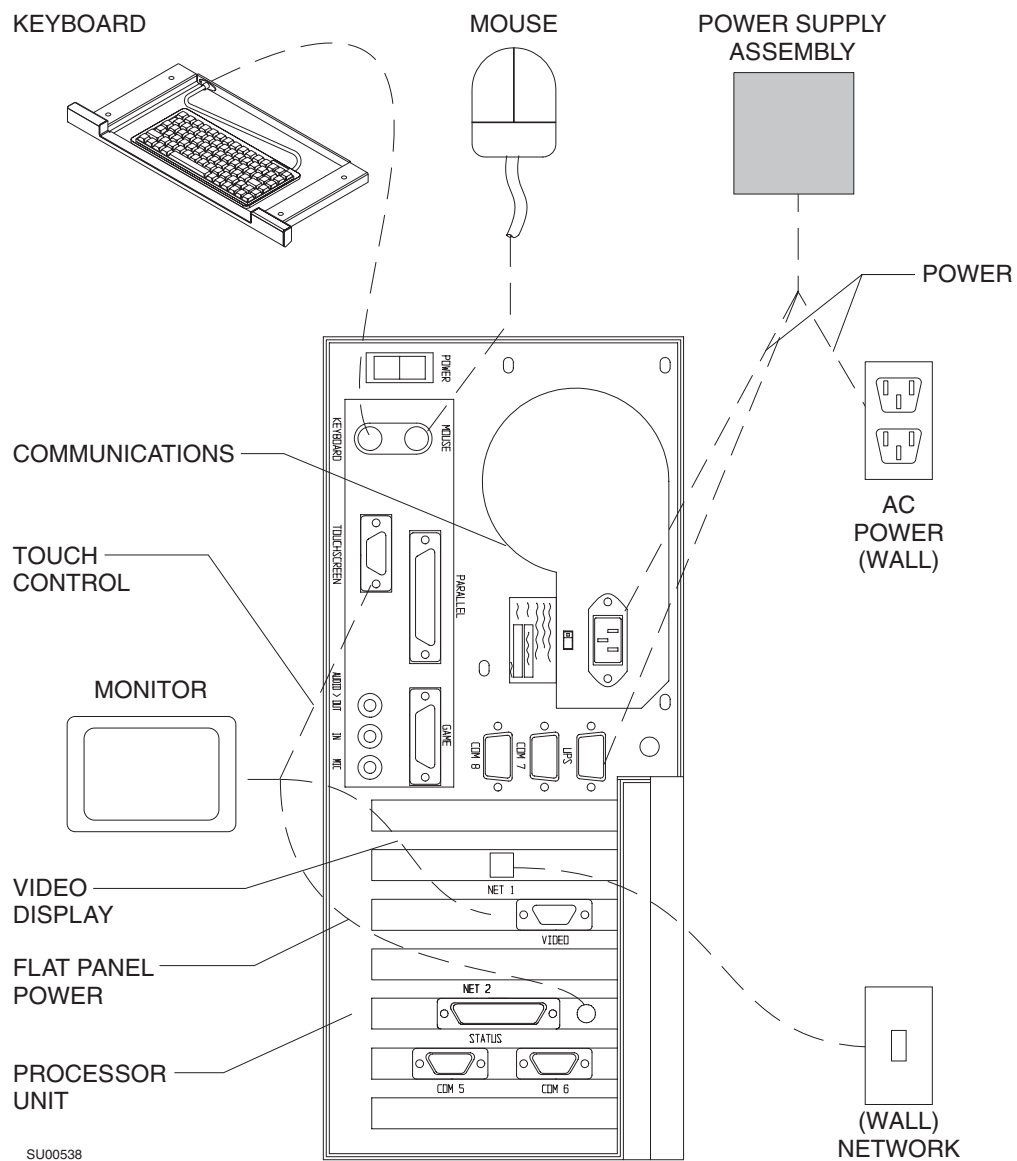


Figure 4-1. Disconnecting the Cables from a 233-MHz Processor

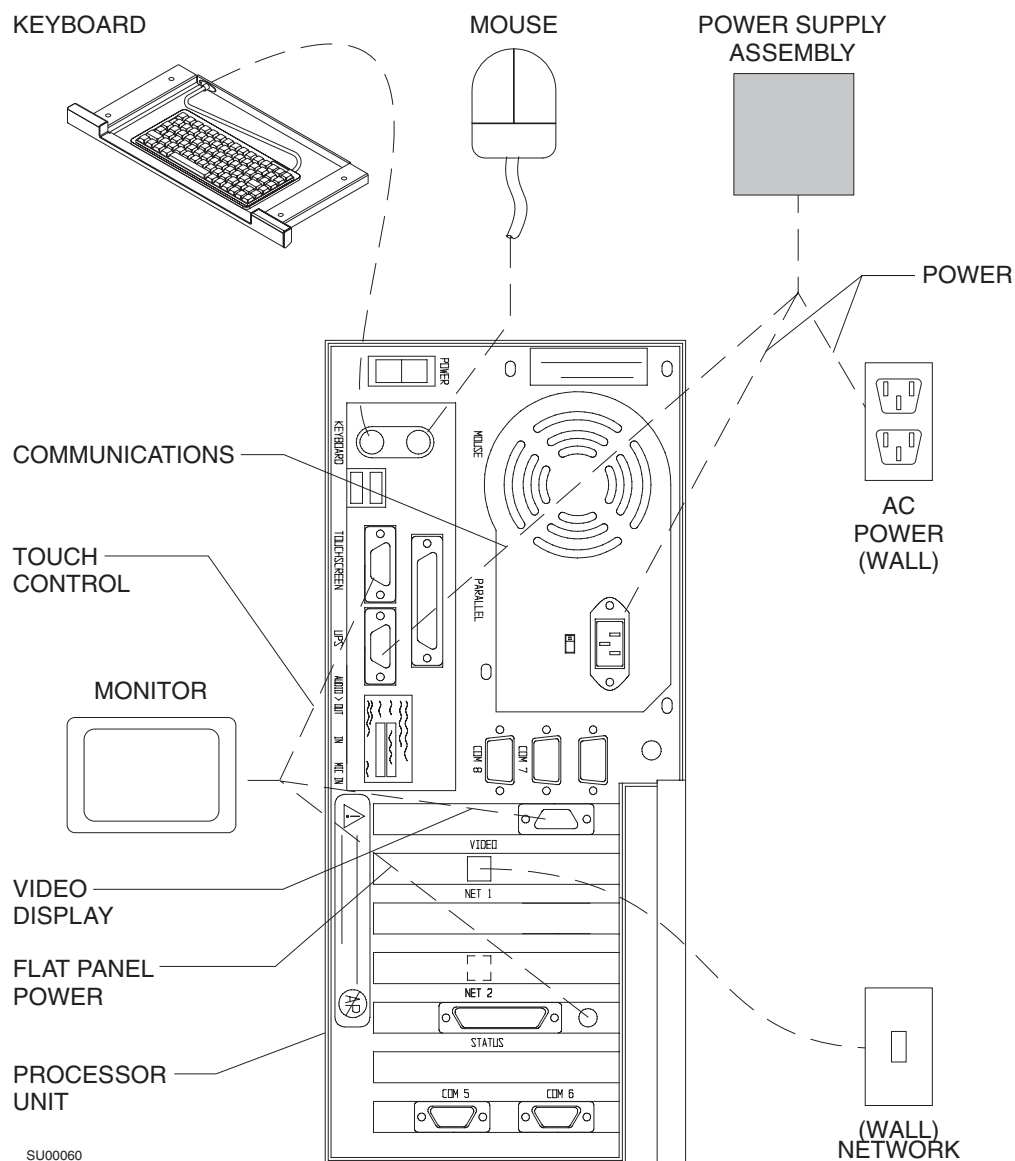


Figure 4-2. Disconnecting the Cables from a 400-MHz Processor

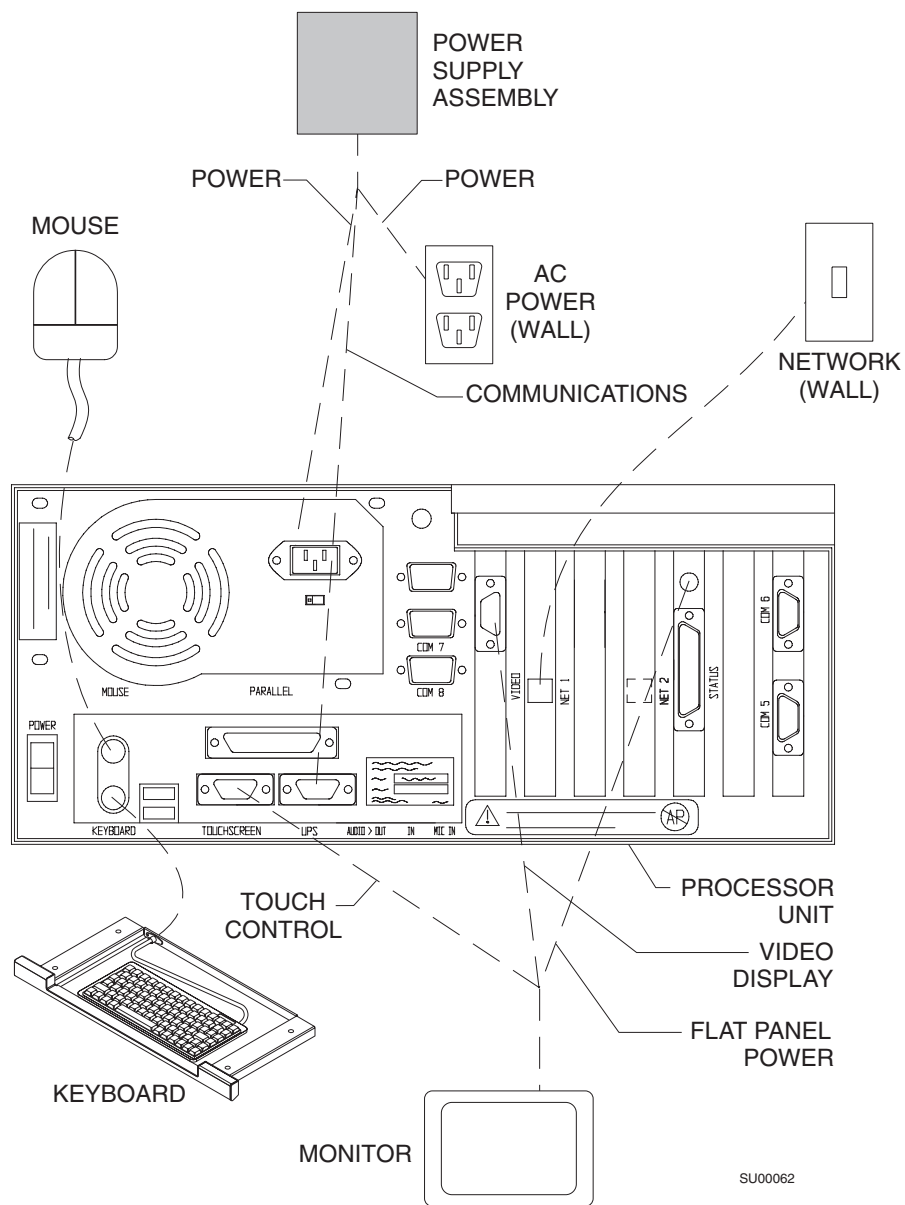


Figure 4-3. Disconnecting the Cables from a 700-MHz Processor

### Step 3, Option 1. Removal of the Power Supply Assembly (UPS Unit) - Lower Cabinet Installation

Remove the power supply assembly (UPS unit) (4115952-001/002 or 4116687-001/002) located in the lower portion of the cabinet of the anesthesia machine, as described in the following steps.

**Configurations** This procedure applies to the following Draeger anesthesia machines:

- Narkomed 2C
- Narkomed 3
- Narkomed 4

**Required Tools** You need the following tools to remove the processor unit:

- Standard Screwdrivers

**Procedure**

1. Push ON/OFF switch to ensure system is OFF.
2. Disconnect cable cords as follows (Figure 4-4 on page 9):
  - Unplug the WPU power cord from the UPS unit.
  - Unplug the mains cord from the power transformer at the power entry.
  - Unplug the WPU data cord from the UPS unit.
3. Remove the four large screws (5/16 - 18 x 2-1/2) holding the UPS unit in place (Figure 4-5 on page 10).
4. Remove the UPS unit.

**Note:** If removing the UPS unit from the Narkomed 2C, proceed with step 5.

**Note:** If removing the UPS unit from the Narkomed 4, proceed to step 6.

**Note:** If removing the UPS unit from the Narkomed 3, proceed to step 7.

5. Install Narkomed 2C Power Supply cover (P/N 4112053) on top of machine Power Supply and fasten with 4 screws (P/N HW09004).
6. Install Narkomed 4 Power supply cover (P/N 4110770) on top of machine Power Supply and fasten with 4 screws (P/N HW09004).
7. Reinstall four screws (5/16 - 18 x 2-1/2) that were removed with the UPS unit.

*You are finished with this step.*



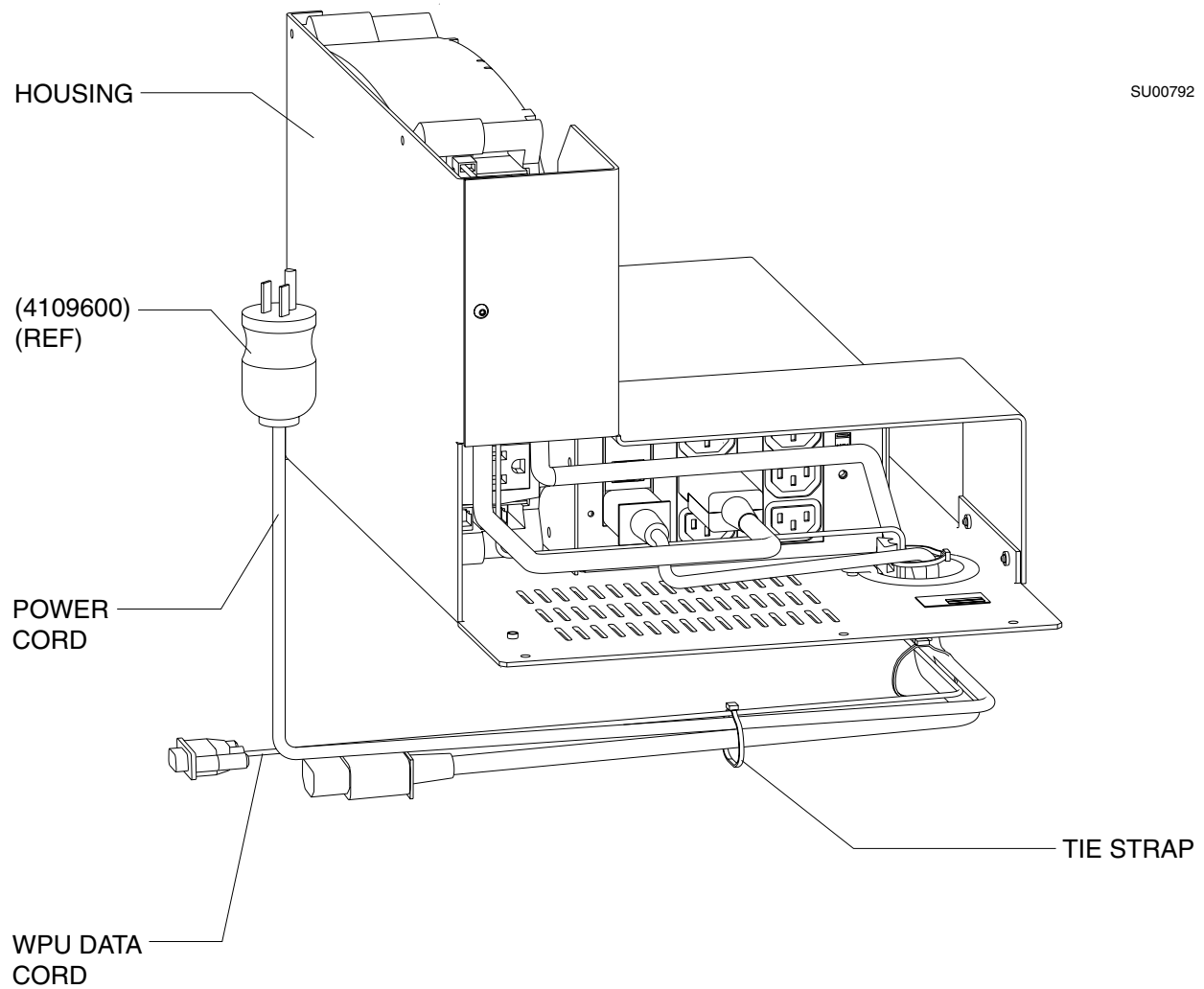


Figure 4-4. UPS Unit Cable Cords

4

Setting Up an Integrated OR Workstation with the 4sys Medical Grade Workstation

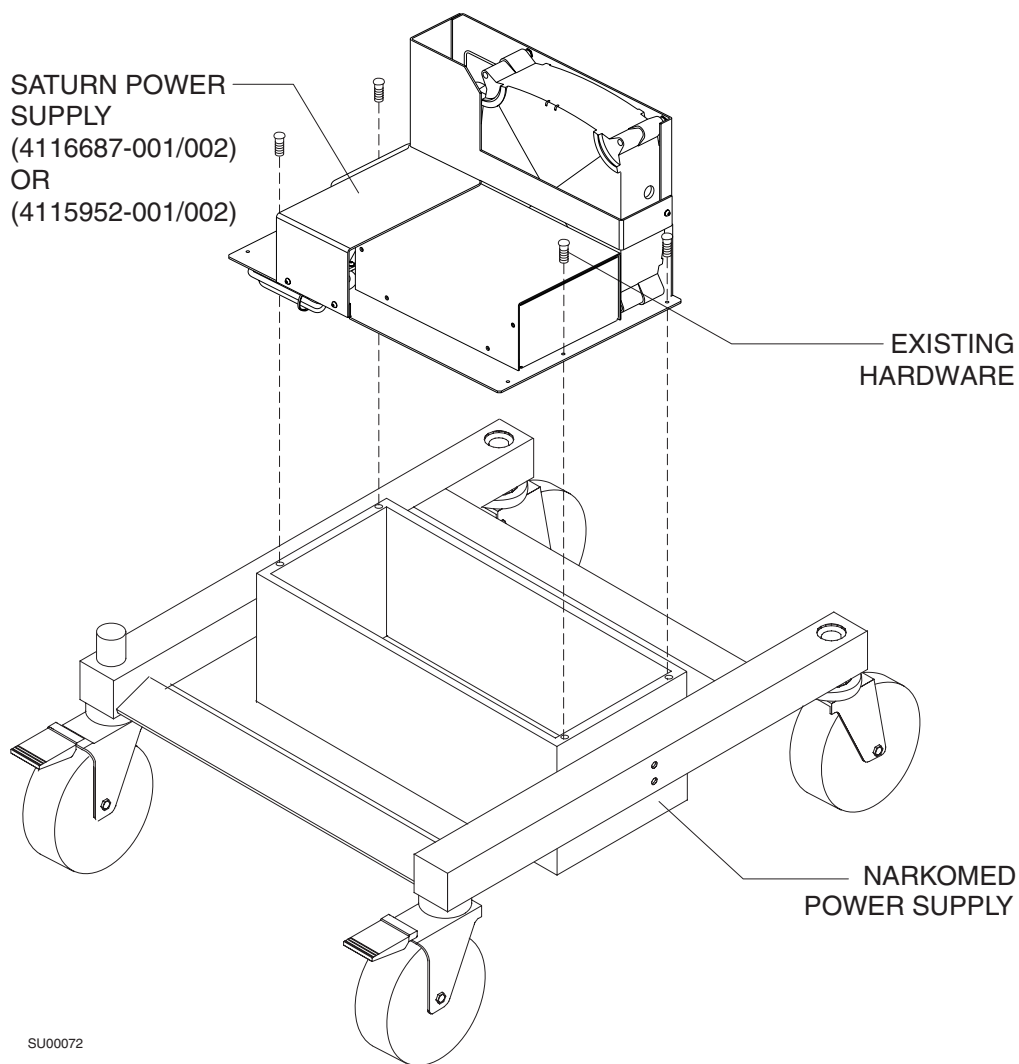


Figure 4-5. Removal of UPS Unit from Lower Cabinet

### Step 3, Option 2. Removal of the Power Supply Assembly (UPS Unit) - Under Machine Installation

The UPS Unit (either 411510-001\002 or 4116690-001\0020) is mounted under the anesthesia machine.

Configurations	<p>This procedure applies to the following Draeger anesthesia machines:</p> <ul style="list-style-type: none"><li>• Narkomed 2B</li><li>• Narkomed GS</li></ul>
Required Tools	<p>You will need the following tools and support equipment to remove the UPS unit:</p> <ul style="list-style-type: none"><li>• Standard wrench</li><li>• Standard screwdriver</li><li>• a support device for holding UPS unit in place while you remove mounting hardware</li></ul>
Procedure	<p>Follow this procedure to remove UPS unit from under the machine (Figure 4-6 on page 12).</p> <ol style="list-style-type: none"><li>1. Push the ON/OFF switch of the UPS unit to ensure system is OFF.</li><li>2. Disconnect UPS cable from hospital wall outlet.</li><li>3. Disconnect UPS unit serial cable from the UPS port on the Processor unit.</li><li>4. Unplug the Processor power cable from the UPS unit.</li><li>5. Align support device under UPS unit and raise to support weight.</li><li>6. Remove four acorn nuts, four flat washers, and four 5/16 - 18X2 1/2 LSS HD screws from the UPS unit and machine frame.</li><li>7. Remove UPS unit from machine.</li></ol> <p><i>You are finished with this step.</i></p>

## 4

### Setting Up an Integrated OR Workstation with the 4sys Medical Grade Workstation

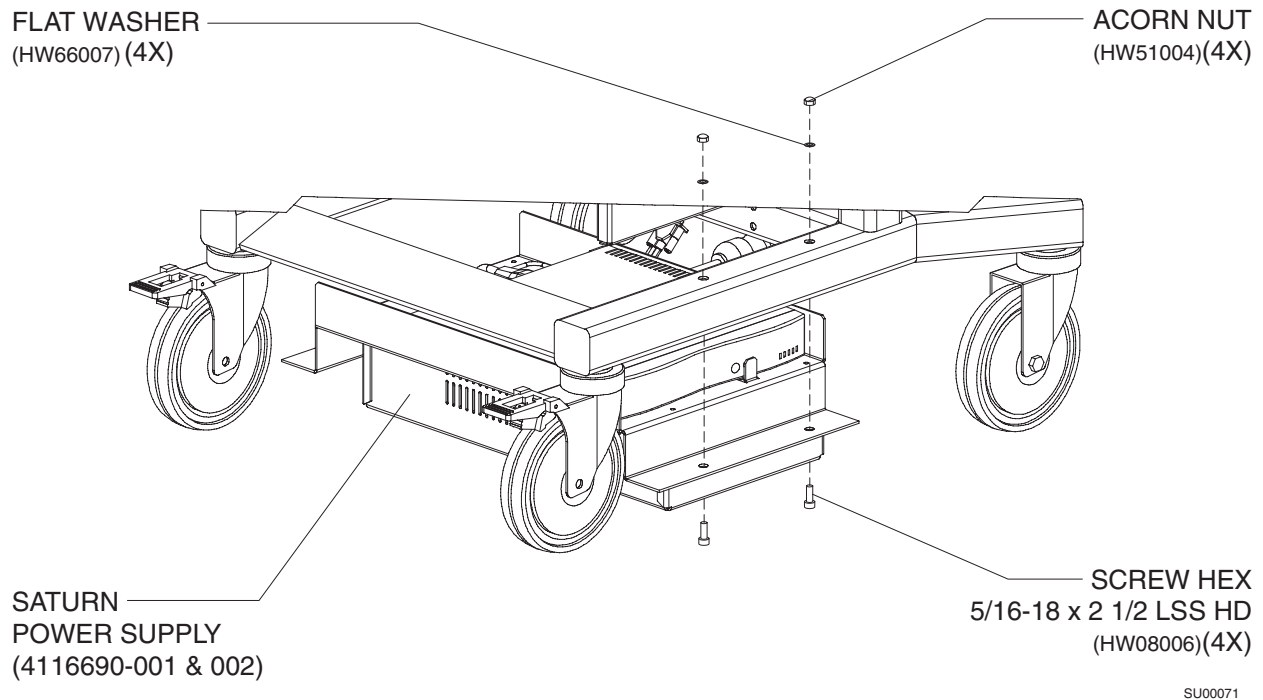


Figure 4-6. Removal of UPS Unit under Machine

### Step 3, Option 3. Removal of the Power Supply Assembly (UPS Unit) - Rear Machine Frame Installation

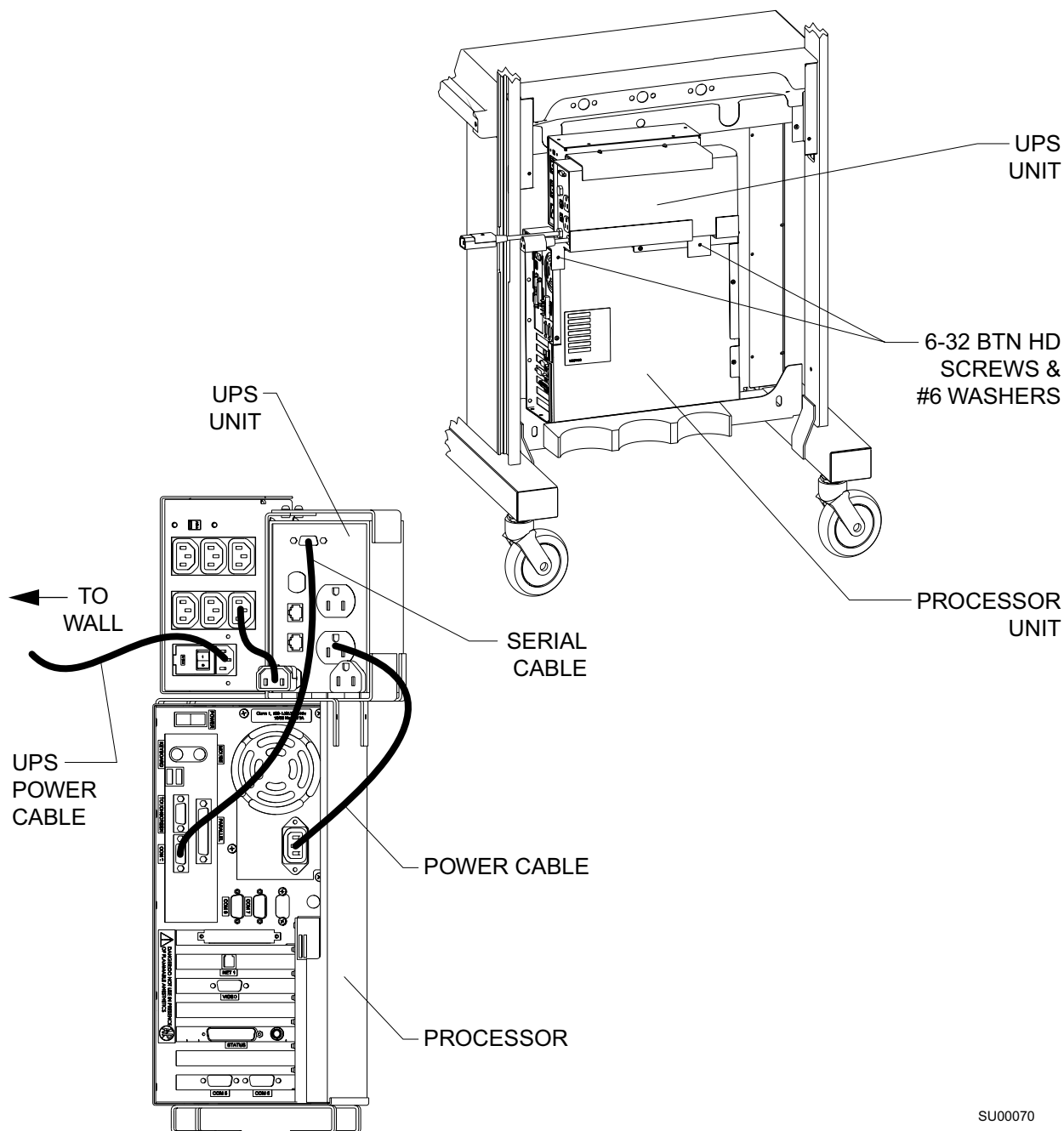
The UPS Unit is mounted to the Processor Unit at the rear of the anesthesia machine.

Configurations	This procedure applies to the Fabius GS anesthesia machine.
Required Tools	You will need the following tools and support equipment to remove the UPS unit: <ul style="list-style-type: none"> <li>• Allen wrenches</li> </ul>
Procedure	Follow this procedure to remove UPS unit from the CGX Rail (Figure 4-7 on page 13). <ol style="list-style-type: none"> <li>1. Push the ON/OFF switch of the UPS unit to ensure system is OFF.</li> <li>2. Disconnect UPS cable from hospital wall outlet.</li> <li>3. Disconnect UPS unit serial cable from the UPS port on the Processor unit.</li> <li>4. Unplug the Processor power cable from the UPS unit.</li> <li>5. Remove two 6-32 button head screws and two #6 washers from the top right side of the processor unit.</li> </ol>

6. Remove UPS unit from top of processor unit.

7. Reinstall two washers and two screws into processor unit.

*You are finished with this step.*



SU00070

Figure 4-7. Removal of the UPS Unit - Rear Machine Frame Installation

## Step 4, Option 1. Removal of the WPU Processor Unit and Rail Plate - Left Side Mount Installation

Remove the processor unit and rail plate on the left side of the anesthesia machine, as described in the following steps.

### A. Remove Existing Parts

If the bottom and middle drawers are not already out of the anesthesia machine, remove them.

### B. Remove the Processor Unit

Follow these steps to remove the processor unit.

#### Configurations

This procedure applies to the following Draeger anesthesia machines:

- Narkomed 2B
- Narkomed 2C
- Narkomed 3
- Narkomed 4
- Narkomed GS

#### Required Tools

You need the following tools to remove the processor unit:

- standard screwdrivers

#### Procedure

1. Slide the processor unit mounting plate out of the machine's rail plate by firmly lifting upward on processor unit.
2. Remove rail plate from the cabinet by removing four 8-32 x 1 inch button head socket screws, four #8 flat washers, four #8 internal tooth lock washers, and four #8 external tooth lock washers from rail plate (Figure 4-8 on page 15).

*You are finished with this step.*

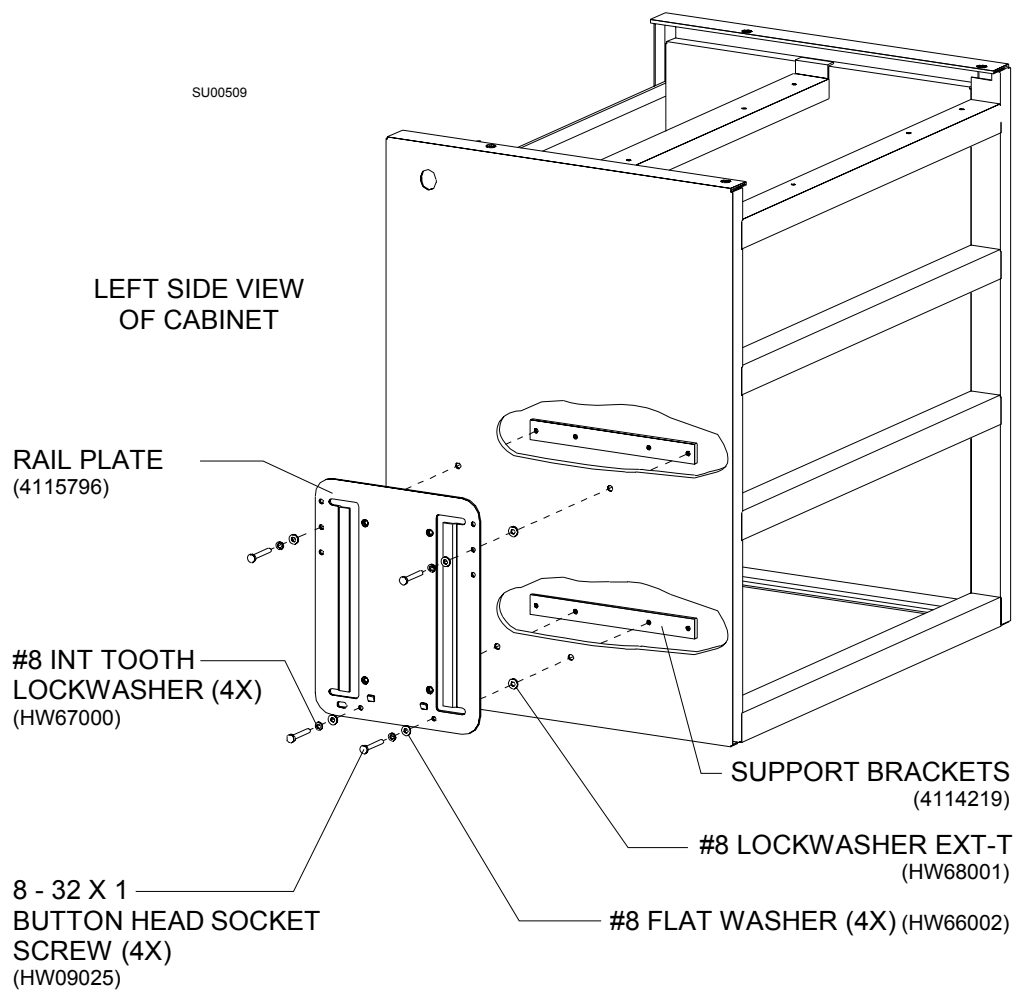


Figure 4-8. Removal of Rail Plate from Cabinet

## Step 4, Option 2. Removal of the WPU Processor Unit - Rear Machine Frame Installation

Remove the processor unit on the rear side of the anesthesia machine, as described in the following steps.

**Configurations** This procedure applies to the following Draeger anesthesia machines:

- Fabius GS

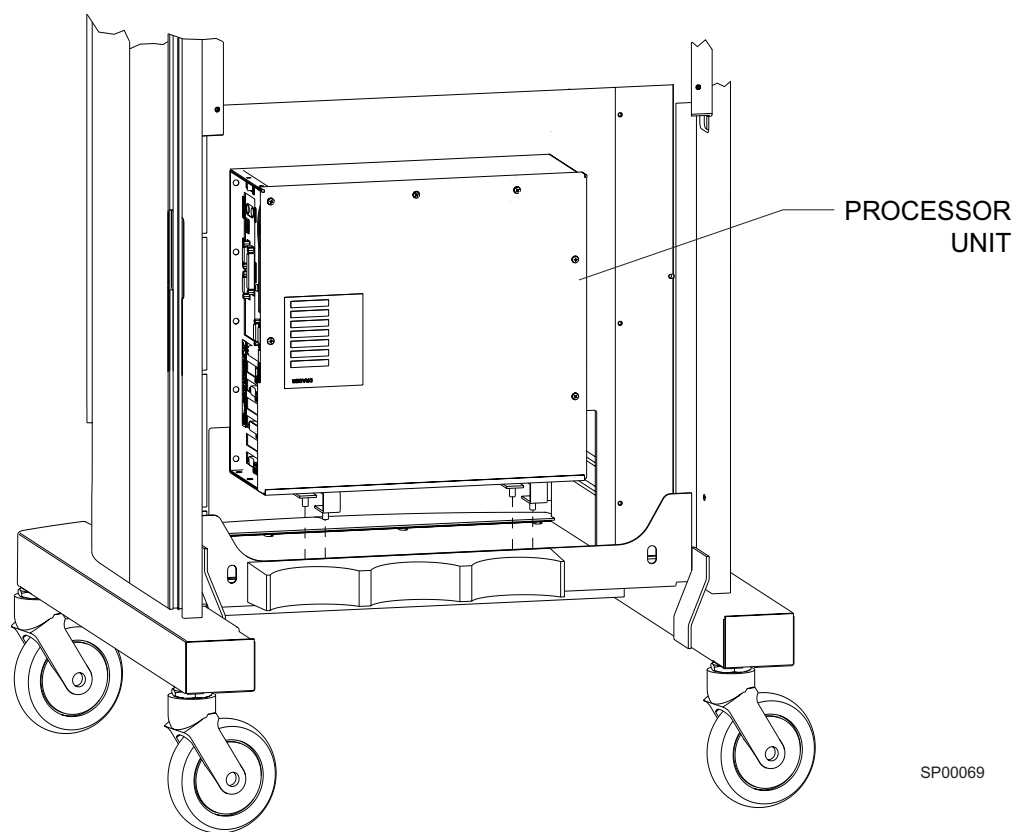
**Required Tools** You need the following tools to remove the processor unit:

- Standard wrench

**Procedure**

1. Remove 4 M6 keps nuts located on the lower rear portion of the machine frame.
2. Remove processor unit by lifting unit upward to ensure 4 studs clear holes located in the machine frame (Figure 4-9 on page 16).

*You are finished with this step.*



SP00069

Figure 4-9. Removal of Processor Unit - Rear Machine Frame Installation



## Step 5. Removal of the WPU Keyboard Unit - Keyboard Tray Installation

<b>Configuration</b>	<p>This procedure applies to the following Draeger anesthesia machines:</p> <ul style="list-style-type: none"> <li>• Narkomed 2B</li> <li>• Narkomed 2C</li> <li>• Narkomed 3</li> <li>• Narkomed 4</li> <li>• Narkomed GS</li> </ul>
<b>Required Tools</b>	<p>You will need the following tools to remove the keyboard:</p> <ul style="list-style-type: none"> <li>• Standard screwdrivers</li> <li>• Standard hex key set</li> </ul>
<b>Procedure</b>	<p>To remove the keyboard unit, follow these steps (Figure 4-10 on page 18):</p> <ol style="list-style-type: none"> <li>1. Unplug keyboard connector cable from the back of the keyboard.</li> </ol>
A. Remove the chain cabling	<ol style="list-style-type: none"> <li>2. Remove connector cable from cable clamps located at the back of the machine.</li> <li>3. Unsnap chain cabling from the thru-hole adapter located on the back of the retaining plate.</li> <li>4. Detach opposite end of chain cabling from the tab-end adapter located on the outside of the keyboard tray.</li> <li>5. Remove chain cabling from the outside of the connector cable.</li> </ol>
B. Remove connector cable clamps.	<ol style="list-style-type: none"> <li>1. Locate two connector cable clamps on the rear of the machine.</li> <li>2. Remove one screw and one washer from each of the two cable clamps.</li> </ol>
C. Remove connector cable	<p>Remove connector cable from keyboard tray by removing two kee nuts and two flat head screws from the connector located inside the keyboard tray.</p>
D. Remove the keyboard tray	<ol style="list-style-type: none"> <li>1. Remove keyboard from the keyboard tray.</li> <li>2. Slide keyboard tray out of the cabinet until the slides are fully extended.</li> <li>3. Remove four #8 screws, four lockwashers, and four kee nuts (if installed) from the keyboard tray slides and middle cabinet rails.</li> </ol>
E. Remove the keyboard retaining plate	<p>Remove two cap head socket screws and two internal tooth lock washers from the keyboard retaining plate and the middle rail.</p>

# 4

## Setting Up an Integrated OR Workstation with the 4sys Medical Grade Workstation

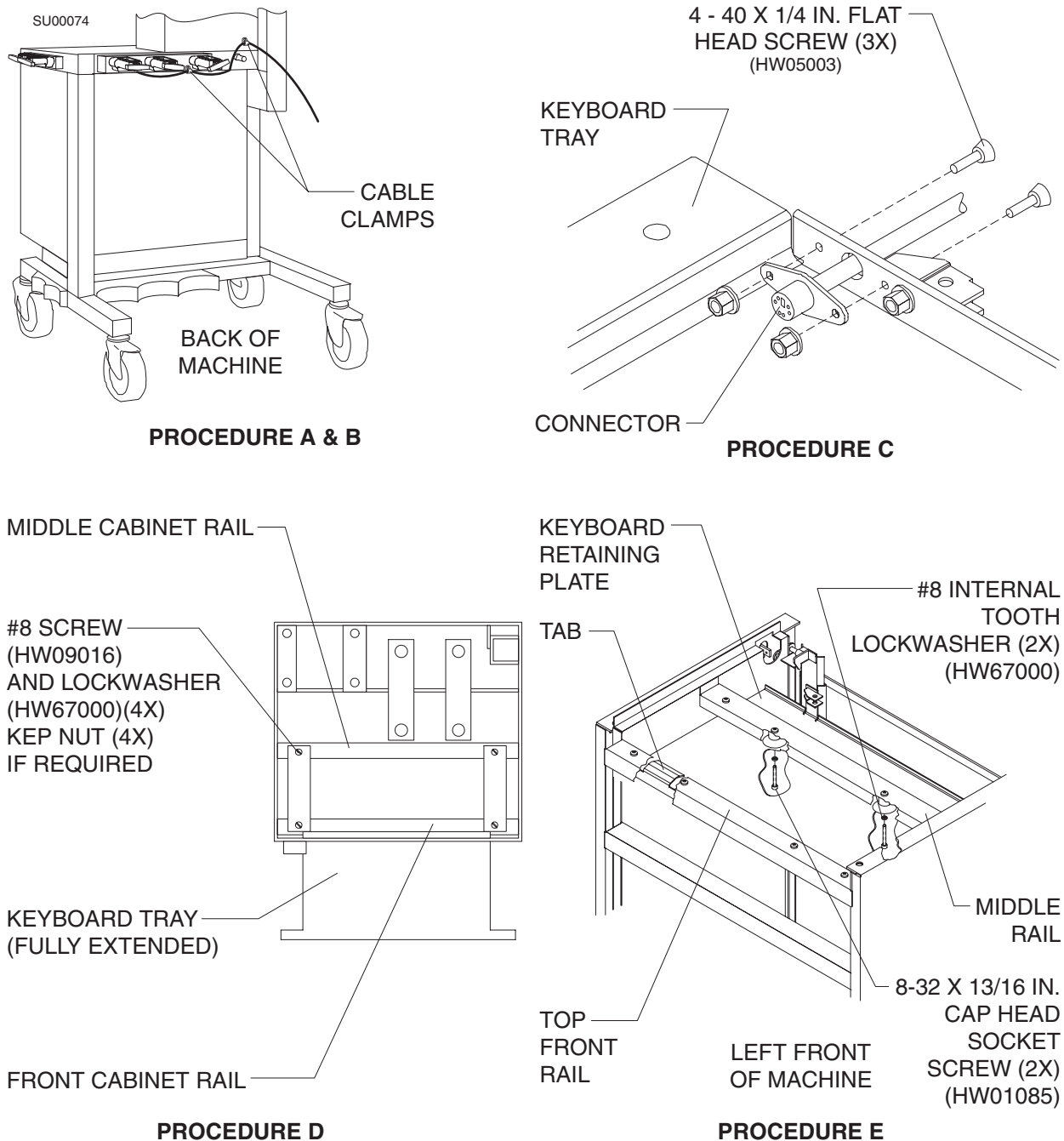


Figure 4-10. Removal of WPU Keyboard Unit - Tray Installation

## Step 6. Removal of the Display Unit

**Configurations** This procedure applies to all Draeger anesthesia machines.

**Required Tools** You need the following tools to remove the display unit from the display arm:

- Allen wrenches

**Procedure** Follow this procedure to remove existing display units from the display arm (Figure 4-11 on page 19).

1. Ensure all display unit and keyboard cabling is disconnected and freed from any clamping, harnessing, and retainers.
2. Remove keyboard and cabling from keyboard tray.
3. While supporting display unit, remove four screws from display arm adapter and remove display unit and keyboard bracket.

*You are finished with this step.*

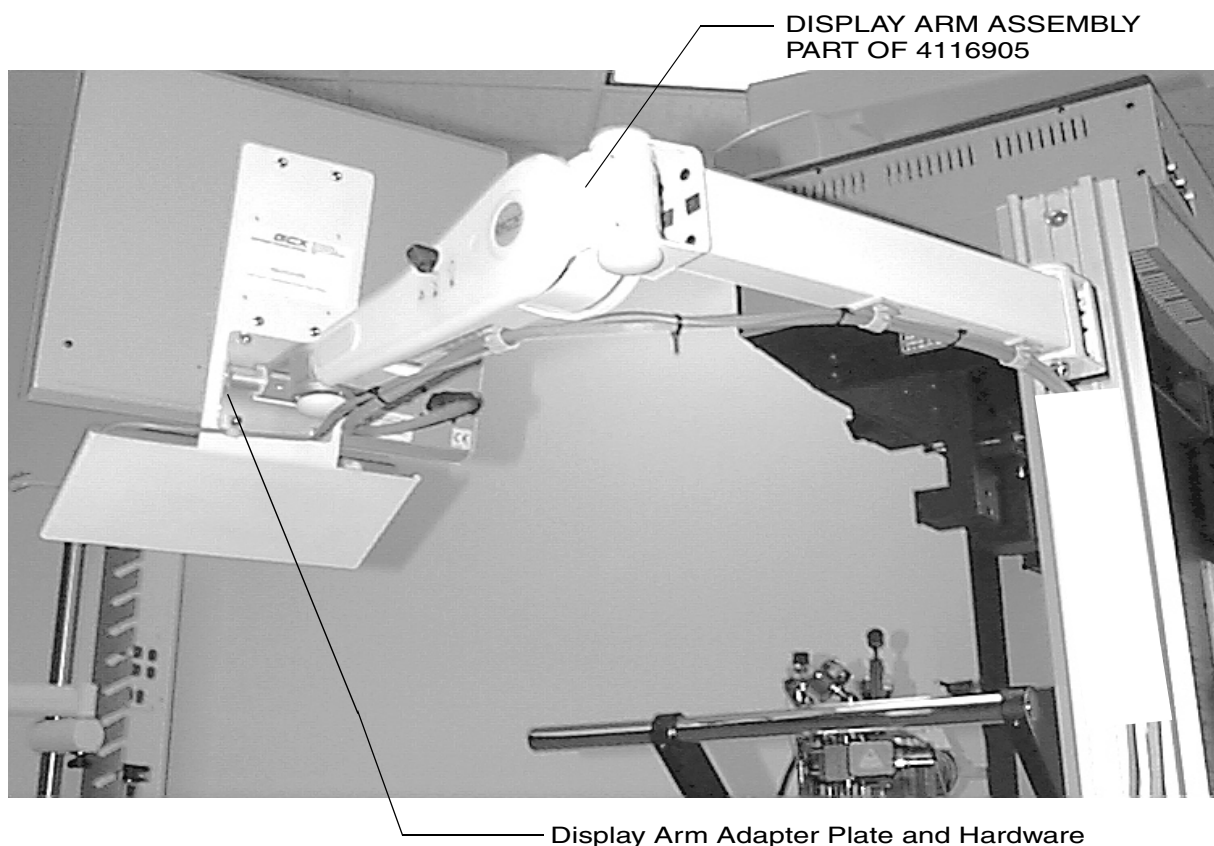


Figure 4-11. Removal of the Display Unit

## Step 7. Install the 4sys Medical Grade Workstation

**Configurations** This procedure applies to all Draeger anesthesia machines.

**Required Tools** You need the following tools to install the 4sys Medical Grade Workstation to the display arm:

- Allen Wrenches

**Procedure** Follow this procedure to install the 4sys Medical Grade Workstation to the display arm (Figure 4-12 on page 21).

**Note:** The 4sys Medical Grade Workstation is designed to be installed on the display arm that is provided with kit number 4116905-003. If the machine display arm you intend to install the 4sys Medical Grade Workstation on is not part of this kit, please refer to pages 4-3 and 4-4 of this document.

1. While supporting the 4sys Medical Grade Workstation, install four M4 screws through the display arm adapter plate into four existing holes located on the back of the 4sys Medical Grade Workstation.
2. Using existing cable clamps, route the cables through the cable clamps as shown in Figure 4-12 on page 21.
3. Connect 4sys Medical Grade Workstation cables from the Workstation unit to the appropriate machine ports, power sources, and network ports as shown in Figure 4-13 on page 22.

**Note:** The 4sys Medical Grade Workstation COM 1 through COM 4 ports will require configuration applicable to each individual user. See the 4sys Medical Grade Workstation Operators Manual for instructions to configure each port.

*You are finished with this step.*

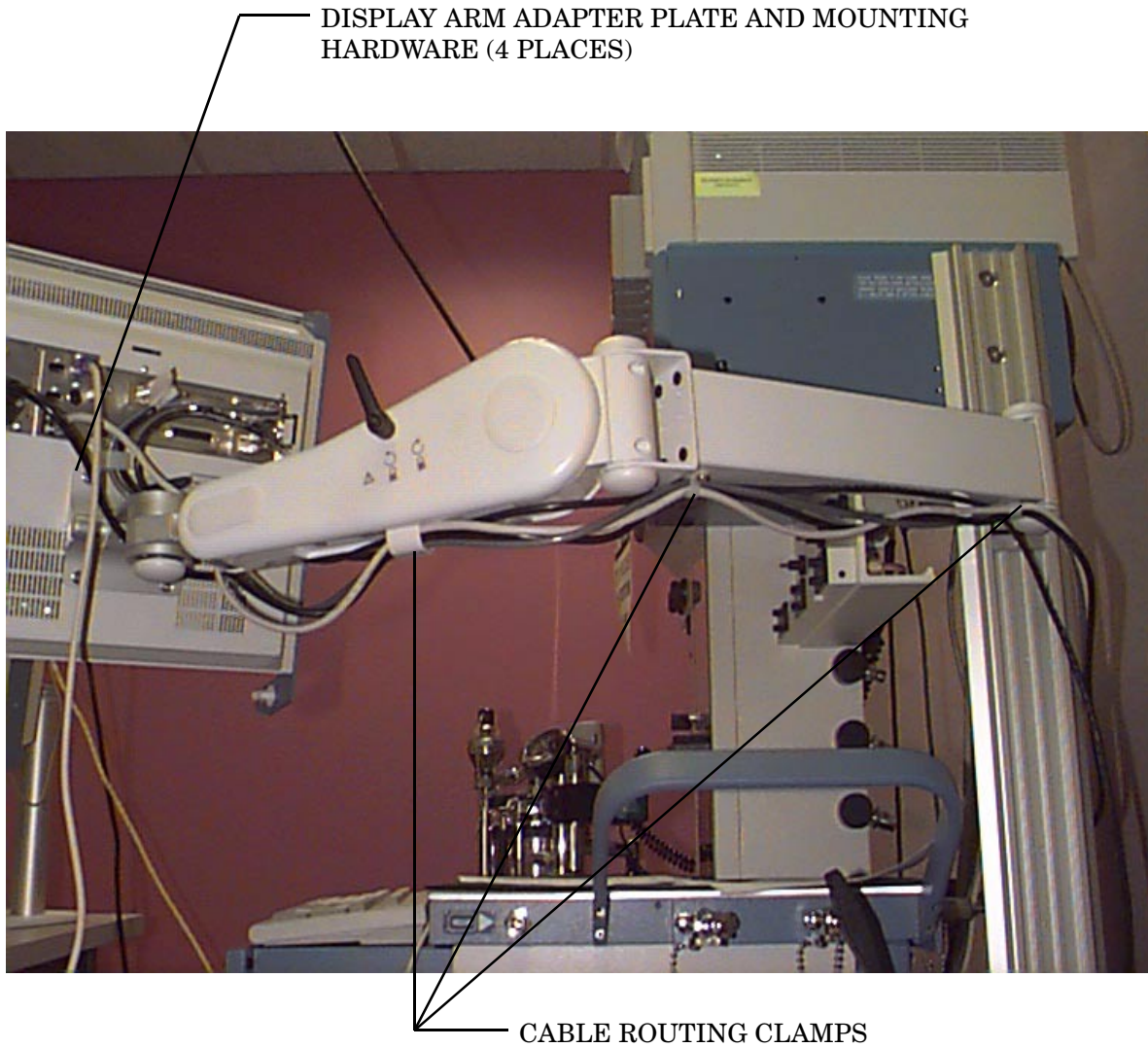


Figure 4-12. Mounting the 4sys Medical Grade Workstation and Cable Routing

4

Setting Up an Integrated OR Workstation with the 4sys Medical Grade Workstation

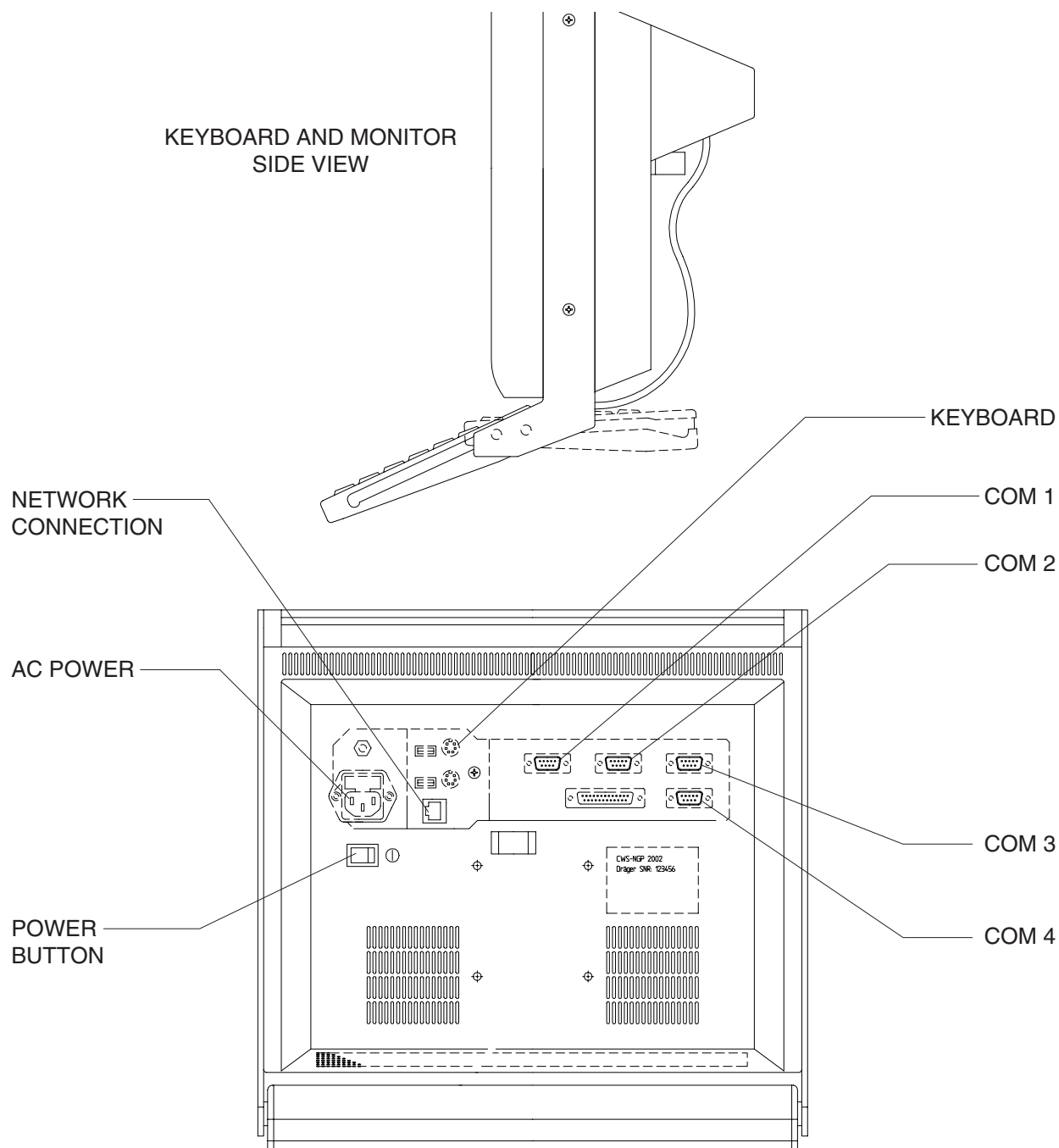


Figure 4-13. 4sys Medical Grade Workstation Cable Connections

## Step 8. Testing the 4sys Medical Grade Workstation

**Configurations** This procedure applies to the following Draeger anesthesia machines:

- Narkomed 2B
- Narkomed 2C
- Narkomed 3
- Narkomed 4
- Narkomed GS
- Narkomed 6000

**Procedures** Follow this procedure to test the 4sys Medical Grade Workstation setup:

1. Restore anesthesia machine functions, as follows:
  - a. Verify that the power switch is set to standby.
  - b. Enable all circuit breakers by pushing in each button.
  - c. Plug the AC power cord into an active AC hospital grade outlet.
  - d. Set the anesthesia power switch to ON.

The anesthesia machine powers on, displaying a self-diagnostics on the monitor display screen.

2. Verify that the anesthesia machine passes all power up tests. For details, see the setup manual for the machine you are testing.
3. Turn on the 4sys Medical Grade Workstation by pressing the power on switch located at the back of the unit.
4. Verify that the workstation powers on without displaying any error message.
5. Verify that the Saturn application starts.

*When both the anesthesia machine and the workstation power on successfully, you are finished installing the workstation.*

*If the anesthesia machine or the workstation does not function properly, contact your local Authorized Service Organization, or contact DrägerService, Draeger Medical, Inc., 3122 Commerce Drive, Telford, PA 18969, or call toll free, 24 hours a day, at 1-800-543-5047 or 1-215-721-5402.*

## Step 9. Testing the 4sys Medical Grade Workstation

**Configurations** This procedure applies to the following Draeger anesthesia machines:

- Fabius GS
- Julian

**Procedures** Follow this procedure to test the 4sys Medical Grade Workstation setup:

1. Restore anesthesia machine functions, as follows:



- a. Verify that the power switch is set to OFF.
- b. Plug the AC power cord into an active AC hospital grade outlet.
- c. Set the anesthesia power switch to ON.

The anesthesia machine powers on, displaying a self-diagnostics on the monitor display screen.

2. Verify that the anesthesia machine passes all power up tests. For details, see the setup manual for the machine you are testing.
3. Turn on the 4sys Medical Grade Workstation by pressing the power on switch located at the back of the unit.
4. Verify that the workstation powers on without displaying any error message.
5. Verify that the Saturn application starts.

*When both the anesthesia machine and the workstation power on successfully, you are finished installing the workstation.*

*If the anesthesia machine or the workstation does not function properly, contact your local Authorized Service Organization, or contact DrägerService, Draeger Medical, Inc., 3122 Commerce Drive, Telford, PA 18969, or call toll free, 24 hours a day, at 1-800-543-5047 or 1-215-721-5402.*



## Captive Keyboard Removal

The 4SYS Medical Grade Workstation is provided with a captive keyboard to prevent the keyboard from sliding off the unit. This feature can be adjusted to support the need for keyboard removal.

### Procedure

Follow this procedure to deactivate the captive keyboard feature.

1. Remove all electrical power from the 4SYS Medical Grade Workstation by disconnecting AC power from the unit.
2. Ensuring keyboard is secure, remove two M3x5 screws connecting keyboard to keyboard bracket. Refer to [Figure 4-14 on page 25](#) for proper location.



SU00075

Figure 4-14. Captive Keyboard Mounting Hardware

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[RETURN TO CD-ROM TABLE OF CONTENTS](#)

# 5

## Setting Up a Standalone OR Workstation

*This section explains how to set up a standalone OR workstation.*

Overview.....	5-2
Step 1. Arrange the Hardware.....	5-3
Step 2. Connect the Cables.....	5-3
Step 3. Test the Workstation Setup .....	5-4

## Overview

The instructions in this section explain how to install a standalone Draeger Medical, Inc. (DMI) OR workstation. The workstation *stands alone*; it is not installed on any other device. However, the workstation can be used with third-party anesthesia machines and monitoring devices, as well as DMI anesthesia machines and monitoring devices.

**Note:** Third-party medical equipment connected to DMI OR workstation ports must meet nationally-recognized testing lab safety requirements.

### Workstation Hardware

DMI supplies all of the hardware for the standalone DMI OR workstation. The main hardware components include the following:

- power supply assembly
- processor unit
- monitor
- keyboard

### Workstation Software

All workstation software is preinstalled and preconfigured at the factory. Therefore, no software setup is required.

### Setup Checklist

Following is a checklist for the initial setup of a standalone DMI OR workstation. This installation must be performed by or under the direct supervision of an authorized DMI Technical Service Representative.

You should perform the installation steps in the following order:

[“Step 1. Arrange the Hardware” on page 5-3.](#)

[“Step 2. Connect the Cables” on page 5-3.](#)

[“Step 3. Test the Workstation Setup” on page 5-4.](#)

## Step 1. Arrange the Hardware

Follow this procedure to arrange the workstation hardware.

1. Place the power supply assembly on a sturdy table.
2. Place the processor unit on top of the power supply assembly.
3. Place the monitor on top of the processor unit.
4. Place the keyboard in front of the stack.

## Step 2. Connect the Cables

Follow this procedure to install the interconnecting cables. Depending on your processor, see [Figure 5-1](#), [Figure 5-2](#), or [Figure 5-3](#).

1. Connect the keyboard cable to the processor unit.
2. Connect the three connectors at the end of the monitor cable to the following receptacles on the processor unit:
  - video display
  - touch control
  - flat panel power
3. Connect the network cable to the network receptacle on the processor unit.
4. Connect two of the three connectors at the end of the power supply assembly cable into the following receptacles in the processor unit:
  - communications
  - power
5. Connect the third connector at the end of the power supply assembly cable to the standard over-current-protected hospital-grade wall outlet.

### Step 3. Test the Workstation Setup

Follow this procedure to test the workstation setup.

1. Turn on the workstation.

**Caution:** The workstation is preset to 115 VAC at the factory. Do not move the preset voltage switch.

**Note:** The green indicator light, running fan, and functioning monitor are the indicators that the workstation is receiving power from the power supply. The power supply is always charging when it is receiving power from the standard over-current-protected hospital-grade wall outlet.

2. Verify that no error messages are displayed.
3. Verify that the Saturn application starts.

***When the workstation powers on successfully, you are finished with the installation.***

***If the workstation does not function properly, contact your authorized DMI service department, or contact the DMI Technical Service Department, toll free, 24 hours a day, at 1-800-543-5047 or 1-215-721-5402.***

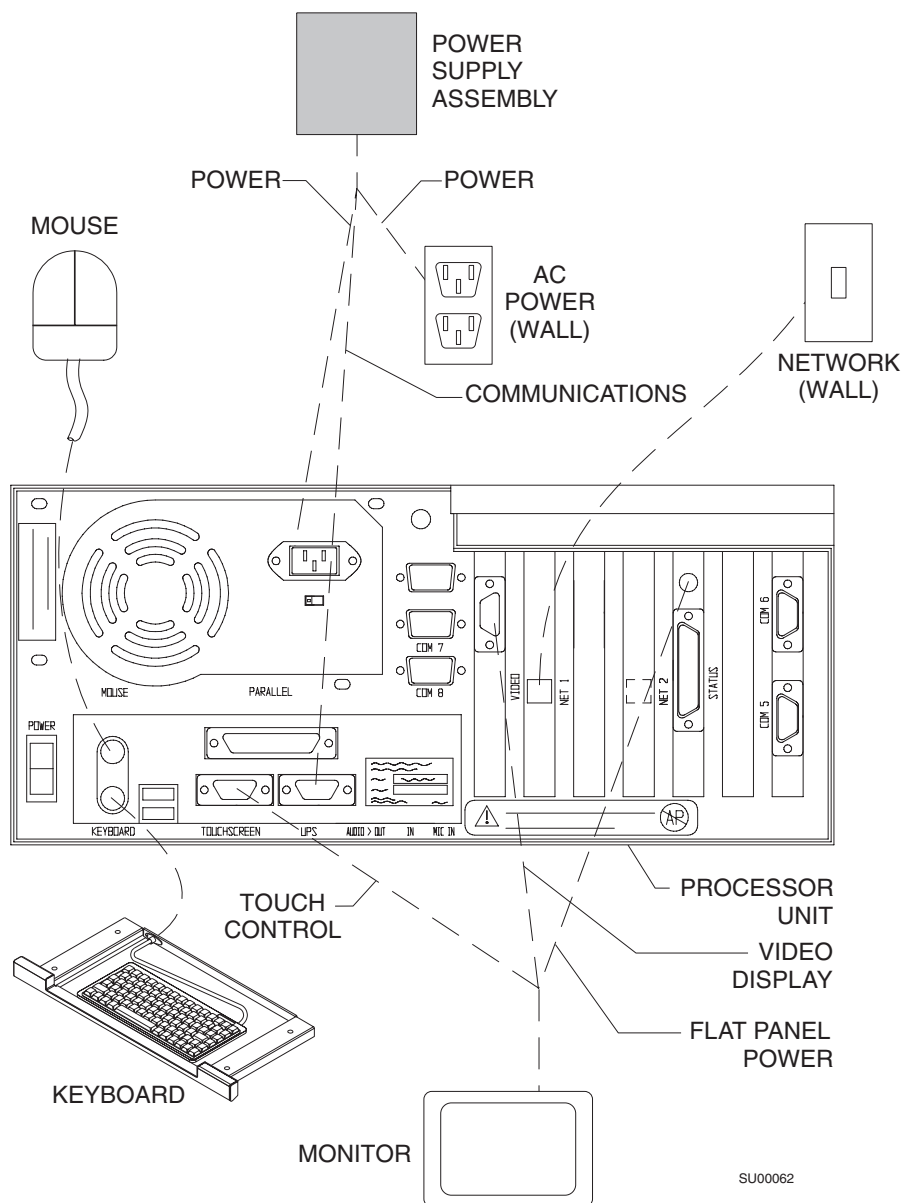


Figure 5-1. Cable Connections to a 233-MHz Processor

5

Setting Up a Standalone OR Workstation

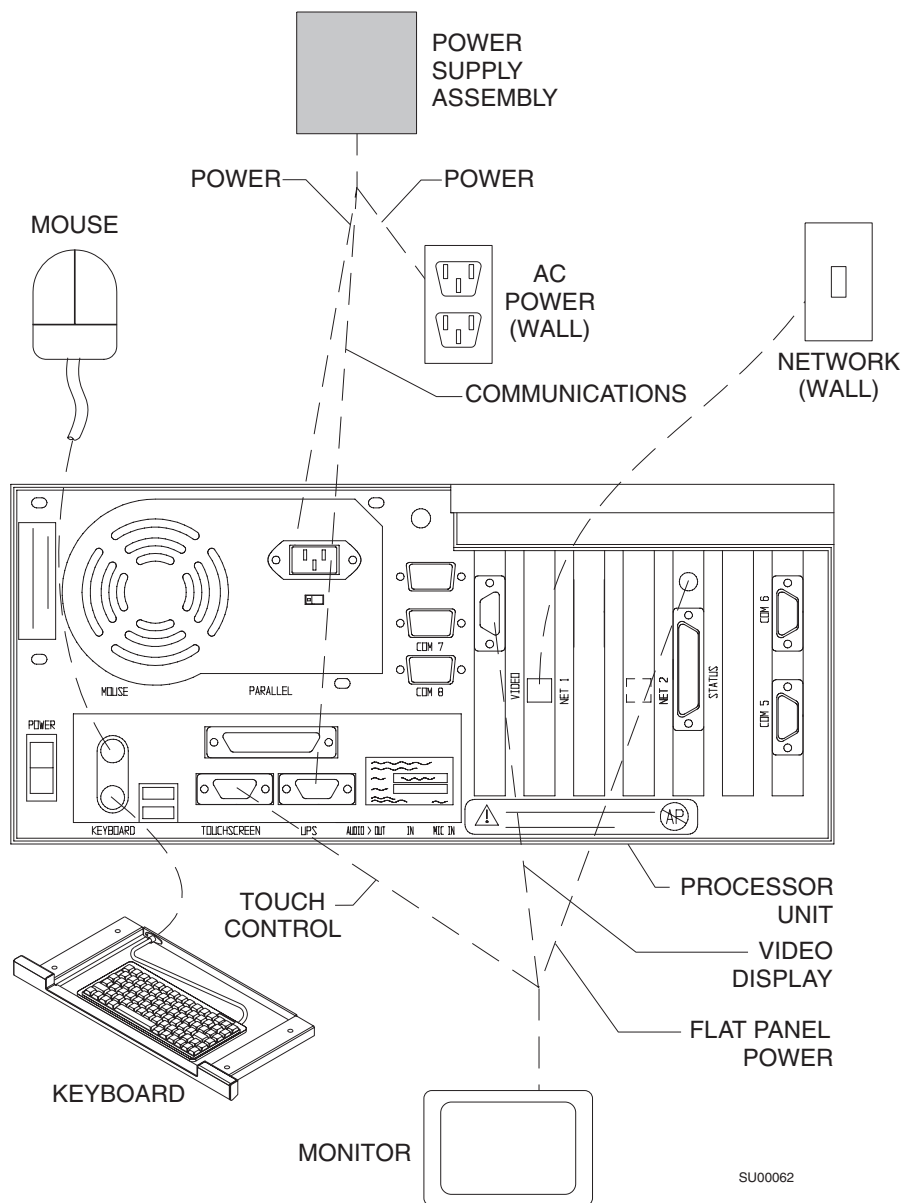


Figure 5-2. Cable Connections to a 400-MHz Processor



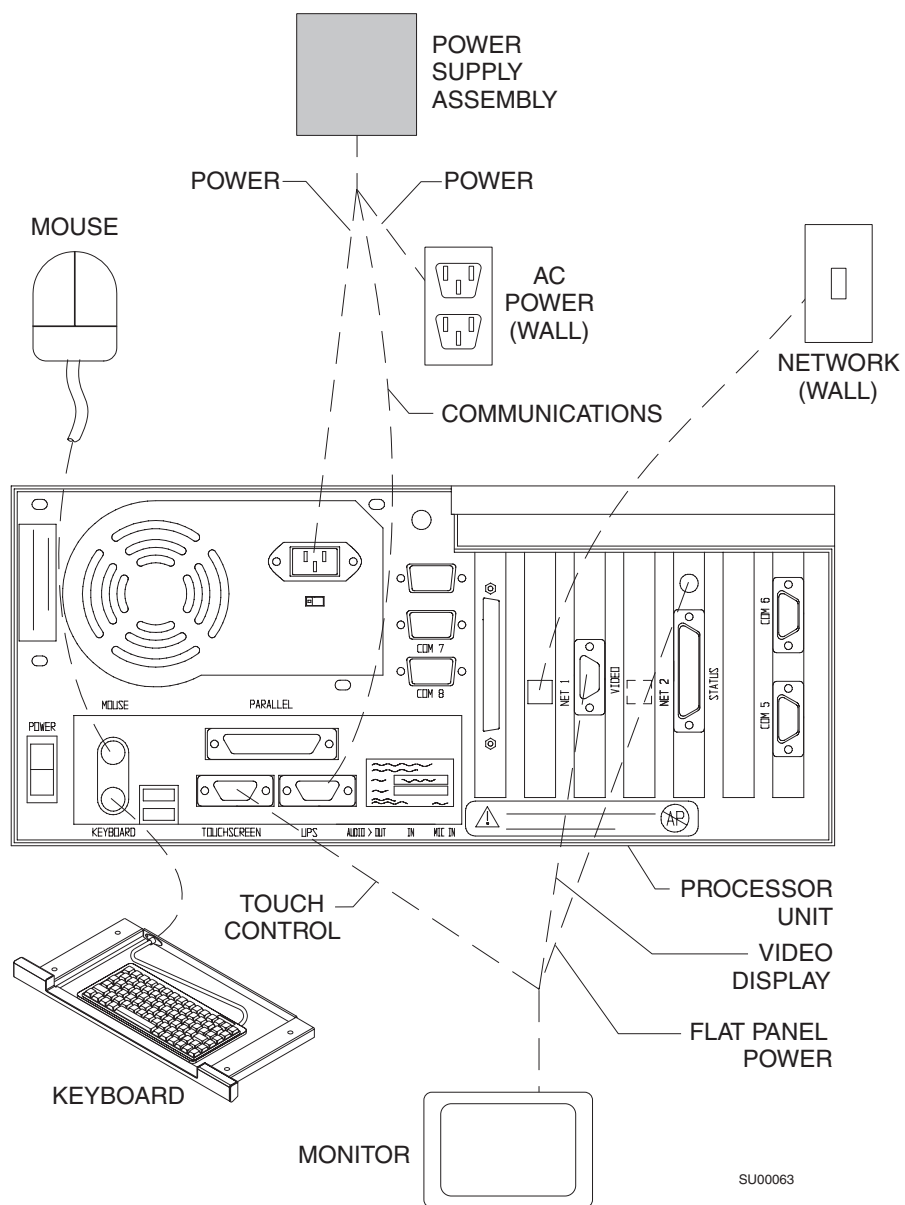


Figure 5-3. Cable Connections to a 700-MHz Processor

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[RETURN TO CD-ROM TABLE OF CONTENTS](#)

# 6

## Setting Up a Customized Clinical Workstation

*This section explains how to set up a customized clinical workstation.*

Overview.....	6-2
Workstation Specifications .....	6-2
Setup Checklist.....	6-3
Step 1. Prepare the Workstation .....	6-3
Step 2. Install the Video and Network Cards.....	6-4
Step 3. Install the Multiple Port Serial Card.....	6-4
Step 4. Install the Control Status Card .....	6-6
Step 5. Arrange the Hardware.....	6-7
Step 6. Connect the Cables.....	6-7
Step 7. Install Windows NT .....	6-7
Step 8. Install the Application Software .....	6-7
Step 9. Test the Workstation Setup .....	6-8

## Overview

A customized clinical workstation was created using the customer's personal computer system and some add-on components supplied by Draeger Medical, Inc. (DMI). Like the DMI OR workstation, the customized workstation *stands alone*; it is not installed on any other device. However, the workstation can be used with third-party anesthesia machines and monitoring devices, as well as DMI anesthesia machines and monitoring devices.

**Note:** This configuration is no longer available through DMI. This section is contained in this manual for the sole purpose of supporting existing Customized Workstation.

**Note:** Third-party medical equipment connected to DMI OR workstation ports must meet nationally-recognized testing lab safety requirements.

## Workstation Specifications

Table 6-1 describes the hardware and software components for the workstation, and indicates who is responsible for supplying each component. All components are required unless otherwise indicated.

**Table 6-1. Workstation Specifications**

Component	Supplied By
One 166 mhz Pentium processor	Customer
32 MB EDO RAM (upgradeable to 256 MB)	Customer
At least 256 K second level write-back cache	Customer
Loadable flash memory (upgradeable BIOS)	Customer
At least one 1.2 GB hard disk	Customer
At least three ISA expansion slots, one of which can accept a large (13.33 inch) card	Customer
Two RS-232 serial ports for user input	Customer
ISO COM card with four RS-232 serial ports for DMI and third-party monitors	DMI
One Intel Ether Express PRO/100base Tx Ethernet adapter	Customer
One CD ROM drive	Customer
One SVGA 1024 x 768 video card with at least 2 MB video RAM	Customer
One CRT or flat panel monitor	Customer
One standard or compact AT- or PS/2-style keyboard	Customer

**Table 6-1. Workstation Specifications**

Component	Supplied By
Either a mouse or a touch pen (or other pointing device)	Customer
One 8-pin RJ-45 network cable	Customer
A LAN that is compatible with Ethernet IEEE 802.3 (10 Base T), Novell NE1000A, TCP/IP, and Windows NT Network	Customer
Windows NT operating system	Customer
Power Supply Assembly	DMI
Control Status Card	DMI
Windows NT version 4.0 or higher	Customer
DMI application/database software	DMI

## Setup Checklist

Following is a checklist for the initial setup of the standalone Dräger Medical, Inc. (DMI) OR workstation. This installation must be performed by or under the direct supervision of an authorized DMI Technical Service Representative.

You should perform the installation steps in the following order. Each step is explained in detail in the following pages.

- “Step 1. Prepare the Workstation” on page 6-3.
- “Step 2. Install the Video and Network Cards” on page 6-4.
- “Step 3. Install the Multiple Port Serial Card” on page 6-4.
- “Step 4. Install the Control Status Card” on page 6-6.
- “Step 5. Arrange the Hardware” on page 6-7.
- “Step 6. Connect the Cables” on page 6-7.
- “Step 7. Install Windows NT” on page 6-7.
- “Step 8. Install the Application Software” on page 6-7.
- “Step 9. Test the Workstation Setup” on page 6-8.

## Step 1. Prepare the Workstation

Follow this procedure to prepare the workstation for the installation.

1. Turn the monitor's power switch to OFF and unplug the monitor's AC power cord.

2. Turn the processor unit's power switch to OFF and unplug the processor unit's AC power cord.

**Warning:** Failure to disconnect all workstation units from AC power before installing workstation components may result in electrical shock.

**Caution:** Failure to disconnect all workstation units from AC power before installing workstation components may result in equipment damage.

3. Unplug all cables from the processor unit.

**Caution:** Failure to disconnect all cabling from the processor unit before installing workstation components may result in equipment damage.

4. Remove the cover from the processor unit.

**Caution:** Use proper ESD (Electrostatic Discharge) control when the cover is off. The processor unit contains static sensitive devices.

## Step 2. Install the Video and Network Cards

Follow this procedure to install the video and network cards.

1. Install the video card according to the manufacturer's instructions.
2. Install the network card according to the manufacturer's instructions.

## Step 3. Install the Multiple Port Serial Card

The multiple port serial card provides up to four serial connections for anesthesia machines and monitoring devices. Follow this procedure to install the multiple port serial card.

1. Set the DIP switches and jumpers according to the specifications in [Table 6-2](#) and [Table 6-3 on page 6-6](#).
2. Install the multiple port serial card according to the manufacturer's instructions.

**Table 6-2. DIP Switches and Jumpers**

DIP Switch/Jumper	Label	Port #	I/O Address	IRQ	Master/Slave
DIP Switch	SW4	1	100		
DIP Switch	SW3	2	108		
DIP Switch	SW2	3	110		
DIP Switch	SW1	4	118		
Jumper	E4	1		2	
Jumper	E3	2		2	

**Table 6-2. DIP Switches and Jumpers**

DIP Switch/ Jumper	Label	Port #	I/O Address	IRQ	Master/ Slave
Jumper	E2	3		2	
Jumper	E1	4		2	
Jumper	E5	1			Slave
Jumper	E5	2			Slave
Jumper	E5	3			Master
Jumper	E5	4			Slave

**Table 6-3. DIP Switch Settings**

Label	#1	#2	#3	#4	#5	#6	#7	#8
SW1	ON	OFF	ON	ON	ON	OFF	OFF	ON
SW2	ON	OFF	ON	ON	ON	OFF	ON	ON
SW3	ON	OFF	ON	ON	ON	ON	OFF	ON
SW4	ON	OFF	ON	ON	ON	ON	ON	ON

## Step 4. Install the Control Status Card

The control status card allows the Intel Pentium® Processor to monitor and control supplemental system functions for the OR environment. These functions include:

- Measuring temperature in the processor unit and reporting a high temperature status.
- Resetting the system if the software locks up.

Follow this procedure to install the control status card.

1. Insert the control status card.
2. Insert the flying connector on the audio/reset cable to the control status card.
3. Insert the other connector on the audio/reset cable to the front panel I/O connector on the mother board. (See the manufacturer's documentation for the location of the I/O connector.)
4. Reconnect monitor and keyboard cables to the back of the processor unit.
5. Connect the monitor and processor unit to AC power.
6. Turn on the processor unit and monitor, and verify that they are functioning normally.
7. Install the GENPORT.SYS driver by installing it from the DMI CD-ROM drive.

**Note:** This driver is responsible for automatically rebooting the workstation if the application fails to respond.



## Step 5. Arrange the Hardware

Follow this procedure to arrange the workstation hardware.

1. Disconnect all cables from the processor unit and from AC power.
2. Place the cover on the processor unit.
3. Place the power supply assembly on sturdy table.
4. Place the processor unit on top of the power supply assembly.
5. Place the monitor on top of the processor unit.
6. Place the keyboard in front of the stack.

## Step 6. Connect the Cables

Follow this procedure to install the interconnecting cables.

1. Connect the keyboard cable to the processor unit.
2. Connect the three connectors at the end of the monitor cable to the following receptacles on the processor unit:
  - video display
  - touch control
  - power
3. Connect the network cable to the network receptacle on the processor unit.
4. Connect two of the three connectors at the end of the power supply assembly cable into the following receptacles in the processor unit:
  - communications
  - power
5. Connect the third connector at the end of the power supply assembly to the standard over-current-protected hospital-grade wall outlet.

## Step 7. Install Windows NT

Install Windows NT according to the manufacturer's instructions.

## Step 8. Install the Application Software

Follow this procedure to install the application software.

1. Insert the DMI CD-ROM into the CD-ROM drive.
2. Select the Start menu button, then select Run.
3. Type `D:INSTALL` and then press the ENTER key.

**Note:** If your CD-ROM drive is not drive D, substitute the appropriate letter.

4. Follow the instructions and enter information as requested.
5. When the installation is complete, reboot the workstation to invoke the software.

## Step 9. Test the Workstation Setup

Follow this procedure to test the workstation setup.

1. Turn on the workstation.
2. Verify that the workstation powers on without displaying any error messages.

**Caution:** The workstation is preset to 115 VAC at the factory. Do not move the preset voltage switch.

**Note:** The green indicator light, running fan, and functioning monitor are the indicators that the workstation is receiving power from the power supply. The power supply is always charging when it is receiving power from the standard over-current-protected hospital-grade wall outlet.

3. Verify that the Saturn application starts.

***When the workstation powers on successfully, you are finished with the installation.***

***If the workstation does not function properly, contact your authorized DMI service department, or contact the DMI Technical Service Department, toll free, 24 hours a day, at 1-800-543-5047 or 1-215-721-5402.***

# 7

## Routine Maintenance

*This section contains instructions and procedures for cleaning the workstation and replacing the battery.*

Cleaning .....	7-2
Battery Charging .....	7-2
Battery Replacement .....	7-2

**Caution:** Routine maintenance must be performed to ensure safe and effective operation. Regularly check the integrity of the cabling, power cord connections, and protective grounding.

**Warning:** Within the patient environment, the DMI Workstation Processor Unit must be powered from the DMI-supplied isolation transformer assembly. Powering the DMI Workstation Processor Unit from any other source, e.g., from a wall outlet, without the use of the isolation transformer assembly, will result in increased leakage current and will make the workstation unsuitable for use in the patient environment while it is connected.

**Note:** If the anesthesia machine or the workstation does not function properly, contact your authorized DMI service department, or contact the DMI Technical Service Department, toll free, 24 hours a day, at 1-800-543-5047 or 1-215-721-5402.

## Cleaning

Clean exposed surfaces of the Saturn Clinical Workstation or the 4sys Clinical Workstation with a mild detergent solution. Abrasive materials and solvents are not to be used. Do not allow liquids to enter the Saturn Workstation CPU or the keyboard.

## Battery Charging

The 4sys Clinical Workstation requires a battery charge time of 6 hours prior to operation.

## Battery Replacement

For Saturn battery replacement, refer to “Battery Replacement” on page 12 of the APC Back-UPS Pro® Manual, which is provided to you with your Saturn workstation.

**Note:** Dispose of batteries in accordance with your institutional policy.

For 4SYS Medical Grade Workstation battery replacement, proceed with the following steps:

1. Remove AC power from the 4SYS Medical Grade Workstation (Workstation).

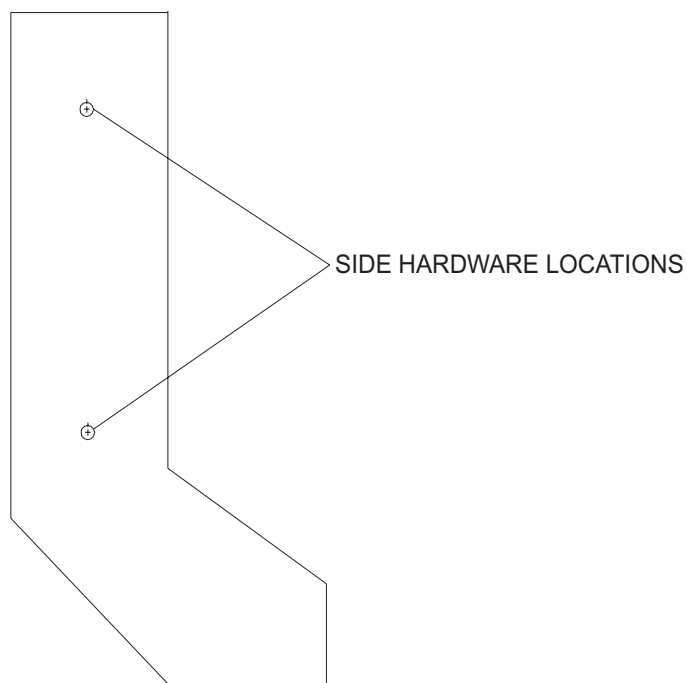
**Warning:** Before servicing, ensure that AC power is removed from the WPU. Failure to observe this precaution may cause injury by electrical shock.

**Caution:** Use ESD precautions when handling any of the electronics assemblies. These assemblies contain static sensitive components.

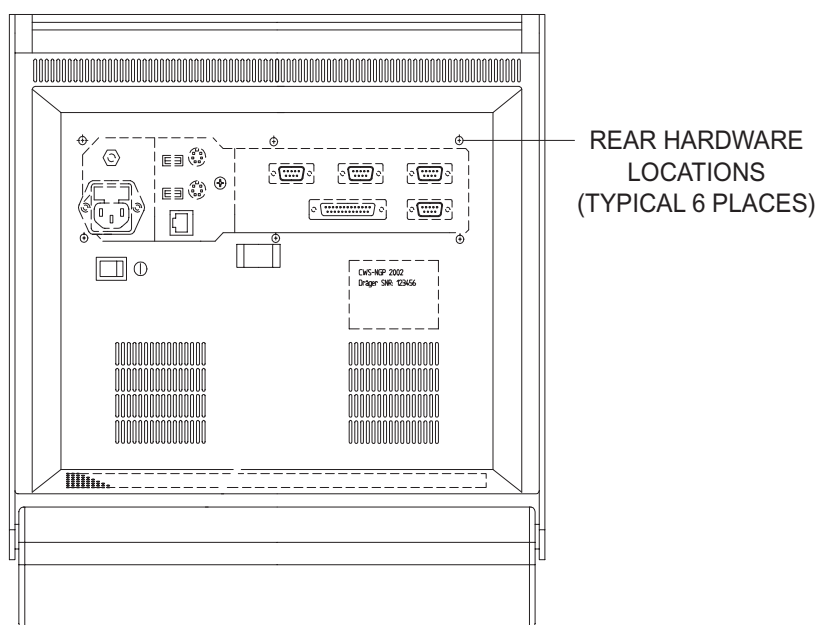
2. Unplug all cables from the rear of the 4SYS Medical Grade Workstation. Take note of removed locations for future reference.
3. Remove four screws connecting the Workstation to the patient arm. Remove the Workstation from the Anesthesia Machine.
4. Remove the keyboard from the Workstation.

**Caution:** The 4SYS Medical Grade Workstation is extremely delicate. Use extreme care when handling the Workstation. Cover work area with 1 inch thick ESD foam padded cover prior to proceeding with next step.

5. Place the Workstation face down on static mat with the keyboard mat overhanging the edge.
6. Remove and retain six screws from the back panel of the Workstation, and two screws from each side of the Workstation. Refer to [Figure 7-1](#) for hardware locations.



SIDE VIEW OF WORKSTATION



BACK OF WORKSTATION

SP26201

Figure 7-1. 4SYS Medical Grade Workstation Back Cover Hardware Locations

7. Remove back cover. Carefully unplug ground wire.
8. Remove red and blue wires from the UPS Battery.
9. Remove and retain two phillips head screws securing UPS Battery bracket.  
Remove and retain UPS Battery bracket.
10. Remove and properly discard UPS Battery.
11. Install replacement UPS Battery (P/N 4118239).
12. Reinstall UPS Battery bracket using two phillips head screws removed in step 9.
13. Reconnect red and blue wires to replacement UPS Battery.
14. Place back cover on Workstation and carefully reinstall ground wire previously removed in step 7.
15. Reinstall six cover mounting screws previously removed in step 6. See [Figure 7-1](#) for hardware locations.
16. Replace keyboard
17. Reinstall Workstation to patient arm using four screws previously removed in step 3.
18. Reconnect all cables previous removed in step 2.
19. Reapply power to the Workstation.

## TEST PROCEDURE

1. Power on the Workstation.
2. If Workstation powers up, proceed to step 3. If Workstation does not power up, ensure appropriate power is being applied to the Workstation or that all cable connections are properly connected.
3. Unplug Workstation power cord from power outlet.
4. Verify Workstation remains on. Proceed to step 6.
5. If Workstation does not remain on, revert back to step 6 and ensure the red and blue wires are correctly connected to the UPS Battery.
6. Verify pop-up screen notification is displayed.
7. Reconnect power cord to power outlet.
8. If Workstation is non-operational and all processes have been verified, please contact your DMIT Technical Service representative.

# 8

## Specifications

*This section contains equipment specifications for Saturn Clinical Workstations.*

Workstation Processor Unit .....	8-2
Isolated Power Supply .....	8-3
4sys Medical Grade Workstation .....	8-4

**Note:** The Saturn Clinical Workstation is in compliance with the standards of Safety Requirements for Medical Electrical Systems, IEC 601-1-1.

**Note:** The 4sys Medical Grade Workstation is in compliance with the standards of Safety Requirements for Medical Electrical Systems, CAN/CSA C22.2 No. 601.1 - M90, UL-2601, and IEC/EN 60601-1.

## Workstation Processor Unit

**Note:** The Saturn Workstation Processor with Monitor is certified to be in compliance with the requirements of the Standard for Information Technology Equipment, Including Electrical Business equipment, CSA C22.2 No. 950, UL-1950, and IEC 950.

<b>General</b>	<p>Dimensions (Width x Height x Depth) . . . . . 14.25 x 13.25 x 6 inches</p> <p>Weight . . . . . 19 lbs</p> <p>Standard Configuration (minimum). . . . . 1.2 gigabytes</p> <p>Processor . . . Intel Pentium 166MHz or 233MHz or AMD K6-2 400MHz<sup>1</sup></p> <p>Monitor Dimensions (Height x Length x Thickness). . . 13 x 15 x 2 inches</p> <p>Monitor Weight . . . . . 13 lbs</p>
<b>Electrical</b>	<p>Equipment Class . . . . . Class 1</p> <p>Input Voltage . . . . . 100 - 120 VAC/200 - 240 VAC, 50/60Hz</p> <p>Input Current . . . . . 5.0/3.0 amps</p> <p>Leakage Current. . . . . <math>\leq 700 \mu\text{A}</math></p> <p>Ground Impedance. . . . . <math>\leq 0.10 \text{ Ohm}</math> (60 Hz source)</p> <p><b>Note:</b> The Saturn workstation is preset to 115 volts, which is the output of the isolation transformer. This configuration does not require another voltage setting.</p>
<b>Model POC 153</b>	<p>The following specifications apply to the Advantech Model POC 153 only.</p>
<b>General</b>	<p>Dimensions (Width x Height x Depth) . . . . . 16.3 x 13.34 x 4.52 inches</p> <p>Weight . . . . . 14.4 lbs</p> <p>Standard Configuration (minimum). . . . . 20 gigabytes</p> <p>Processor . . . . . Intel Pentium III 850 MHz</p>
<b>Electrical</b>	<p>Equipment Class . . . . . Class 1</p> <p>Input Voltage . . . . . 100 - 250 VAC, 50/60Hz</p> <p>Input Current . . . . . 3.0 amps</p> <p>Leakage Current . . . . . Per UL 2601-1</p> <p>Ground Impedance . . . . . <math>\leq 0.10 \text{ Ohm}</math> (60 Hz source)</p>

---

1. Nonclinical workstations require at least a 400-MHz processor.



## Environmental

Operating	Temperature . . . . .	10 - 40° C
	Relative Humidity . . . . .	10 - 90% noncondensing
Storage	Temperature . . . . .	0 - 60° C
	Relative Humidity . . . . .	10 - 90% noncondensing

## Isolated Power Supply

**Note:** The Saturn Clinical Workstation Isolated Power Supply complies with the following Medical Electrical Equipment, Part 1: General Requirements for Safety standards: IEC 601-1, UL 2601-1, and CAN/CSA C22.2 No. 601.1-M90.

<b>General</b>	Dimensions (Height x Width x Depth) . . . . .	varies
<b>Electrical</b>	Equipment Class . . . . .	Class 1, Type B per IEC 601, continuous operation
	Ingress of Liquids. . . . .	ordinary equipment
	Input Voltage . . . . .	100/120/220/240 VAC, 50/60 Hz
	Input Power (maximum) . . . . .	800 VA
	Output Voltage . . . . .	120 VAC 50/60 Hz, 5A
	Output Power (minimum) . . . . .	480 VA/280 W
	Chassis Leakage Current . . . . .	≤ 70 microamps
	Ground Impedance. . . . .	≤ 0.10 Ohm (60 Hz source)
	Battery Backup. . . . .	≥ 3 minutes when powering a 480VA reactive load

## Environmental

Operating	Temperature . . . . .	10 - 40° C
	Relative Humidity . . . . .	15 - 70% noncondensing
Storage	Temperature . . . . .	0 - 45° C
	Relative Humidity . . . . .	10 - 90% noncondensing

## 4sys Medical Grade Workstation

**Note:** The 4sys Medical Grade Workstation is certified to be in compliance with the requirements of the Standard for Medical Electrical Equipment, CSA C22.2 No. 601.1 - M90, UL-2601-1, and IEC/EN 60601-1.

<b>General</b>	Dimensions (Width x Height x Depth) . . . . .	14.65 x 15.75 x 7 inches
	Weight . . . . .	17.5 lbs
	Standard Configuration (minimum) . . . . .	20 gigabytes
	Processor . . . . .	Intel Pentium III 733MHz <sup>1</sup>
<b>Electrical</b>	Equipment Class . . . . .	Class 1, Type B
	Input Voltage . . . . .	100-240 VAC, 50/60Hz
	Input Current . . . . .	0.76-0.33 amps
	Leakage Current . . . . .	≤ 300 uA
	Ground Impedance . . . . .	≤ 0.10 Ohm (60 Hz source)
<b>Environmental</b>		
Operating	Temperature . . . . .	0 - 40° C
	Relative Humidity . . . . .	10 - 95% noncondensing
Storage	Temperature . . . . .	-20 - 60° C
	Relative Humidity . . . . .	10 - 95% noncondensing

---

1. Nonclinical workstations require at least a 400-MHz processor.

# 9

## Server Installation and Configuration

*This section provides instructions required to install a Saturn server. It also includes server checkout procedures. (Worksheets are located at the end of this section and also in Section 11.) The operator must have a basic understanding of Windows NT and/or Windows 2000.*

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# Dräger Medical

## Server Installation and Configuration

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### 1 PURPOSE

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This set of procedures provides the instructions required to install a Saturn Server system. The operator must have a basic understanding of Windows NT.

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### 2 SOFTWARE REQUIREMENTS

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<i>PART</i>	<i>DESCRIPTION</i>
SW 4117664	Saturn Server Installation CD
SW 4116595	Saturn CPT Installation CD

---

### 3 RELATED DOCUMENTS

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<i>CHAPTER</i>	<i>DESCRIPTION</i>
Chapter 11	CPT Installation Instructions
Chapter 7	Database Administrator Responsibilities
Chapter 9	Saturn System Checkout

## Dräger Medical

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## 4 ACRONYMS

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<i>ACRONYMS</i>	<i>DESCRIPTION</i>
LAN	Local Area Network
DMI	Draeger Medical, Inc.
WPU	Workstation Processing Unit
DBMS	Database Management System
SAU	Stand-alone Unit

---

## 5 DEFINITIONS

---

<i>DEFINITION</i>	<i>DESCRIPTION</i>
Click	When using a mouse, press the left mouse button. When using a Touch Screen, touch the item on the screen. After the item is selected, press and hold the shift key, then press F10.
Right-click	When using a mouse, press the right mouse button. When using a Touch Screen, touch the item on the screen.
Double-click	When using a mouse, rapidly press the left mouse button twice. When using a Touch Screen, rapidly touch the screen twice.
Folder Tree/Directory Tree	Directory Tree – graphic representation of folders and sub-folders
File(s)	The contents of a folder
Sub-folder	A sub-level within a folder
Panel	When a screen is divided into two sections – left and right.
Z	CDROM Drive referred to as this drive letter
Server	The server is the portion of the Saturn Information System that maintains a current data set consisting of all data produced by the Information System. The server is a Database Management System that services requests from client workstations. The server is the DBMS engine running on a computer that may or may not be classified as a server.



## Dräger Medical

# Server Installation and Configuration

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## 6 PREREQUISITES

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1. The server must be loaded with Windows NT service pack 6a or later or Windows 2000 service pack 2 or later. During the installation click 'Yes' to backup the files for future uninstall.
2. Verify the monitor Display Properties are set to 1024 X 768 resolution, if possible.
3. The domain needs user accounts set up. (SATSUPPORT, SATADMIN, WPUSER – the first two are utilized by our Saturn Support Group). If the install site allows the domain user account SATADMIN to be created and added to the local administrator group on the server, then logon to the server as SATADMIN during the installation procedure. Otherwise, logon as the local administrator of the server, which the installation site personnel will provide to you, and use that user during the installation procedure.
4. The domain needs PC accounts set up.
5. Log onto the physical server as the Domain Administrator. (SATADMIN or site provided user)

### NOTE:

If the client has an SAU (Stand-alone Unit used by site to preconfigure their lists) – Copy PERIOPDM.DB and .LOG file to server as follows:

- a. Stop SAU services
- b. Copy the periopdm.db and periopdm.log files from SAU to a holding place on the server at D:\SATURN\SAU.

Then Perform a Saturn server installation, – omitting steps 7.7 (List Table Data) & 7.8 (CPT Codes).

6. Sybase Adaptive Server Anywhere version 6.x cannot be installed on the server. Any existing ASA software needs to have its services and ODBC DSN (for Windows NT) or Data Sources (ODBC) (for Windows 2000) settings deleted prior to uninstalling in order to obtain a clean uninstall. A reboot is also necessary. Verify this information prior to installing ASA 7.0.4 in the following section.
7. Verify the processor type on the server box (refer to the chart in Appendix B). If it is a Pentium IV then follow the detailed instructions in Appendix B, due to a Java bug that affects the Sybase ASA7 installation program.

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### Server Installation and Configuration

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## 7 SYSTEM SERVER CONFIGURATION PROCEDURES

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**Sybase Adaptive Server Anywhere version 6.x cannot be currently installed on the server. If ASA6 software exists, it needs to have the services (PCAPPS\_Server & PCAPPS\_Validate) and ODBC DSN (Periopdm) settings deleted prior to uninstalling in order to obtain a clean uninstall. A reboot would also be necessary. Verify this information now.**

### 7.1 Install PCAnywhere 10.5

**NOTE: DO NOT** uninstall previous versions of PCAnywhere using the ADD/REMOVE PROGRAMS function in Control Panel prior to running the PCAnywhere version 10 install.

1. Explore to installation source (typically server CD-ROM drive).
2. In Explorer, double-click on the source to see its contents in the right pane.
3. Double-click SETUP.EXE
4. Choose "Install PCAnywhere 10.5"
5. Choose the "PCAnywhere for the Individual" installation type
6. If prompted "You must restart your system for configuration changes made to.....", click NO
7. If you are presented with a "Previous Version Installed" window, click NO. If you are not presented with a "Previous Version Installed" window, proceed to step A below
8. The system will reboot
9. Following system reboot, explore to the installation source.
10. In Explorer, double-click on the source to see its contents in the right pane.
11. Double-click SETUP.EXE
12. Choose "Install PCAnywhere 10.5"
13. Choose "PCAnywhere for the Individual" installation type
14. Proceed with step A below:
  - A. At the "Welcome to Symantec pcAnywhere Setup Wizard" window, click NEXT
  - B. At the "License Agreement" window, select "I accept the terms...." and click NEXT
  - C. At the "Customer Information" window, verify the User Name and Organization (site-specific information) and click NEXT.
  - D. At the "Setup Type" window, verify that the "Typical" option is selected and click NEXT
  - E. At the "Ready to Install the Program" window, click INSTALL
  - F. Once the install completes, at the "Symantec Support Solutions" window, click NEXT.
  - G. At the "Windows Solutions window", click NEXT.
  - H. At the "How To Reach Us Online" window, click NEXT.
  - I. At the "Welcome To Live Update" window, click CANCEL
  - J. At the "Please Register Symantec PCAnywhere" window, click SKIP
  - K. When prompted "Are you sure you want to skip the registration process?", click YES
  - L. At the "Completing the Symantec PCAnywhere Setup Wizard" window, click FINISH

## Dräger Medical

### Server Installation and Configuration

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- |            |  |
|------------|--|
| <b>M.</b>  | When prompted “You must restart your system.....”, click YES and the system will reboot  |
| <b>N.</b>  | Following reboot, launch PCAnywhere by going to START->PROGRAMS->SYMANTEC PCANYWHERE   |
| <b>O.</b>  | At the “Please Register Symantec PCAnywhere” window, click SKIP  |
| <b>P.</b>  | When prompted “Are you sure you want to skip the registration process?”, click YES   |
| <b>Q.</b>  | Right-click the NETWORK host item (or highlight the NETWORK host item and choose FILE\PROPERTIES from the menu at top of screen) |
| <b>R.</b>  | Click the Connection Info. tab   |
| <b>S.</b>  | Verify TCP/IP checkbox is checked  |
| <b>T.</b>  | Click the Callers tab  |
| <b>U.</b>  | Authentication type could vary site to site. It will typically be NT. Set the Authentication Type field to NT.                   |
| <b>V.</b>  | Immediately under “Caller List”, click the icon for “New Item”   |
| <b>W.</b>  | Choose either user or group (site-specific information)  |
| <b>X.</b>  | In the Domain field, select the domain that the user or group from the previous step belongs to (site-specific information).     |
| <b>Y.</b>  | In the Account field, choose either the appropriate user or group (site-specific information) belongs to.                        |
| <b>Z.</b>  | Click OK   |
| <b>AA.</b> | Click the Security Options tab   |
| <b>BB.</b> | In the Encryption section, in the Level field, select PCAnywhere   |
| <b>CC.</b> | Check “Deny lower encryption level”  |
| <b>DD.</b> | Click OK   |
| <b>EE.</b> | Rename the Host Item. Name the host item after the name of the computer (site specific information).                             |
| <b>FF.</b> | Once the host item is named, double-click the host item to launch it   |
| <b>GG.</b> | When prompted “The PCAnywhere host is now waiting for connections”, click OK   |
| <b>HH.</b> | Choose START->SETTINGS->CONTROL PANEL  |
- 

#### **Configure Services for Windows NT**

1. Double-click SERVICES
2. Find the PCAnywhere Host Service
3. Click Startup
4. Choose Automatic, click OK
5. At the Services window, click close
6. Close the Control Panel

#### **Configure Services for Windows 2000**

1. Double-click Administrative Tools
2. Double-click Services
3. Double-click PCAnywhere Host
4. Set Startup Type to Automatic
5. Click OK
6. Close Administrative Tools
7. Close Control Panel

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#### **PCAnywhere 10.51 Update and DLL Replacement**

1. Explore to C:\utils\PCAnywhere, double-click 1051up.exe
2. Click Next at the welcome screen.
3. Click OK
4. Click Start->Shutdown from the task bar, choose Restart
5. After the reboot explore to C:\Program Files\Symantec\PCAnywhere
6. Locate AWSES32.dll and rename it to AWSES32.old
7. Explore to C:\utils\PCAnywhere and copy AWSES32.dll into the C:\Program Files\Symantec\PCAnywhere folder.

**Note:** This procedure assumes that the software and database will be installed on the “D:” drive. If it is not, then replace all occurrences of “D:” with the appropriate drive letter. The database conversion files to check and change are DBInstall.bat, DBMods.sql, DBAlter.sql, DBLoad.sql, and asa6to7rebuild.bat. Verify that you are logged onto the physical server as the Domain Administrator. (SATADMIN or site provided user)

#### **7.2 Select the Source CDROM**

1. Place the Saturn Installation CD into the CD ROM Drive (Z) on the server machine that is being configured.
2. On the Desktop, double click on the "My Computer" icon.
3. Double Click the **CD ROM Drive**.

#### **7.3 Install Sybase 7.0.4.2788**

1. Select “**Start->Run**” from the task bar then type “**explorer**” into the Open field and click OK.
2. In the Windows Explorer, select the “**Z:\sybase\**” directory and double-click “**setup.exe**”. The Sybase installation application will begin. Select the English language and click OK.



Figure 1 Setup Language Selection

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### Server Installation and Configuration

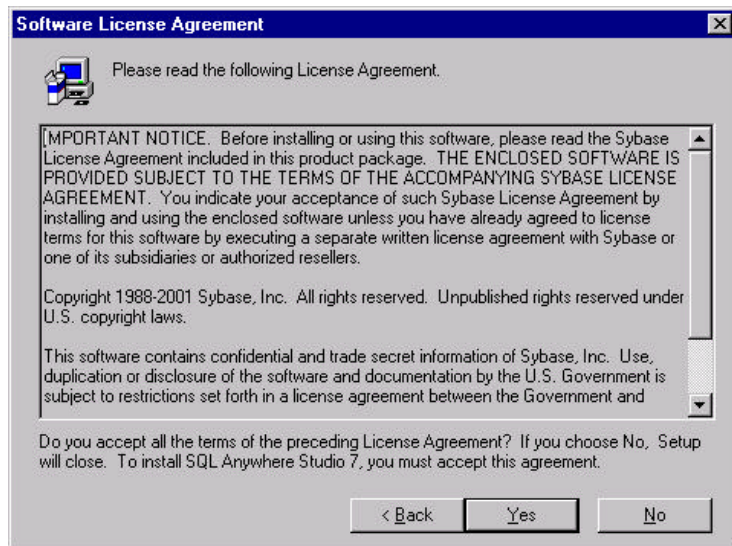
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3. After starting setup.exe, the installation wizard begins, the Sybase banner appears, and you are presented with a welcome screen. Click the **Next** button.



*Figure 2 Sybase Installation "Welcome" Dialog*

4. The following License Agreement screen will appear. Click the **Yes** button.



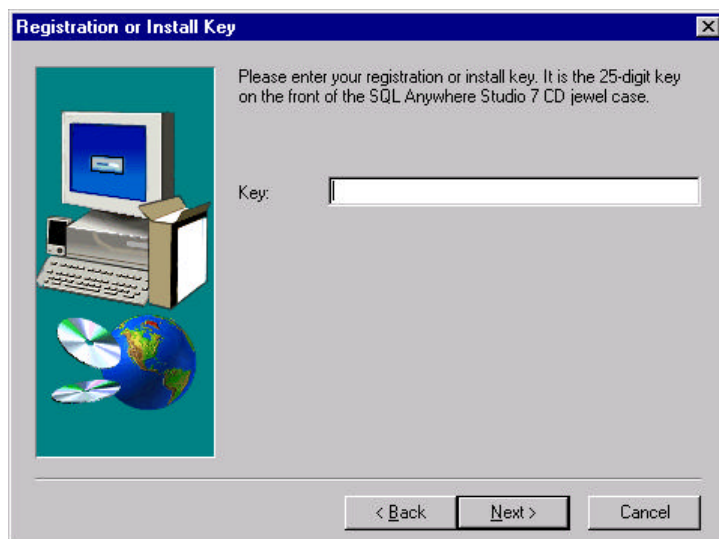
*Figure 3 Sybase Installation "Software License Agreement" Dialog*

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### Server Installation and Configuration

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5. The Registration licenses are maintained through a quarterly report to Sybase. Leave the Key text box blank and then click the **Next** button.



*Figure 4 Sybase Installation “Registration or Install Key” Dialog*

6. The same screen will reappear indicating an invalid key was entered. Leave the Key text box blank and then click the **Next** button.



*Figure 5 Sybase Installation “Registration or Install Key” Dialog*

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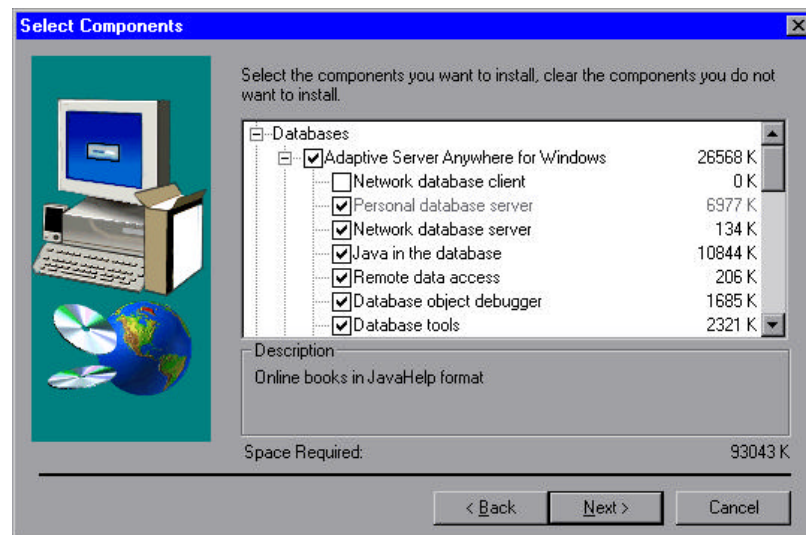
---

7. You will receive an error message. Click **OK** and it will permit you to continue on with the installation.



*Figure 6 Sybase Installation Error Message Dialog*

8. You will be presented with a screen of components to install. Select the Adaptive Server Anywhere for Windows checkbox and expand the + icon, and verify all items underneath are checked. **Verify** the following items are checked in the list and **scroll down**.



*Figure 7 Sybase Installation "Select Components" Dialog*



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9. Expand the + icon and **verify** the following items are checked in the list and **scroll down**.

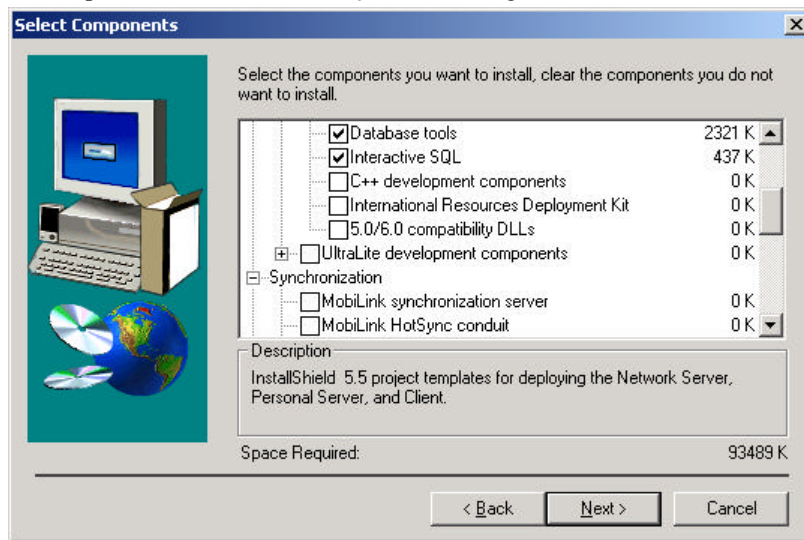


Figure 8 Sybase Installation "Select Components" Dialog

10. Expand the + icon and **verify** the following items are checked in the list and **scroll down**.

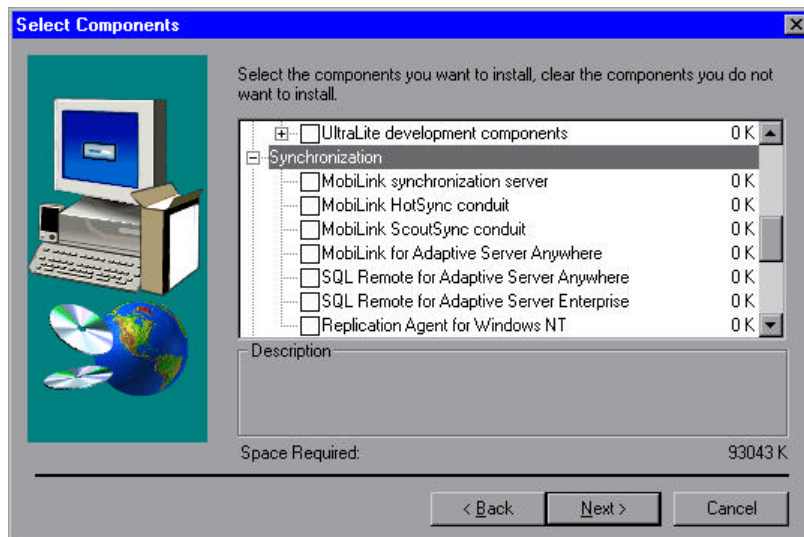


Figure 9 Sybase Installation "Select Components" Dialog



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11. Expand the + icon and **verify** the following items are checked in the list and click **Next**.

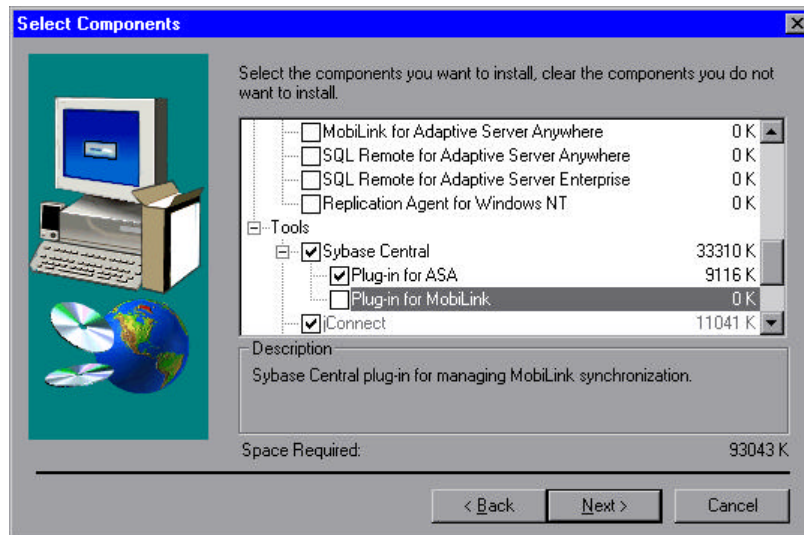


Figure 10 Sybase Installation "Select Components" Dialog

12. Expand the + icon and **verify** the following items are checked in the list and click **Next**.

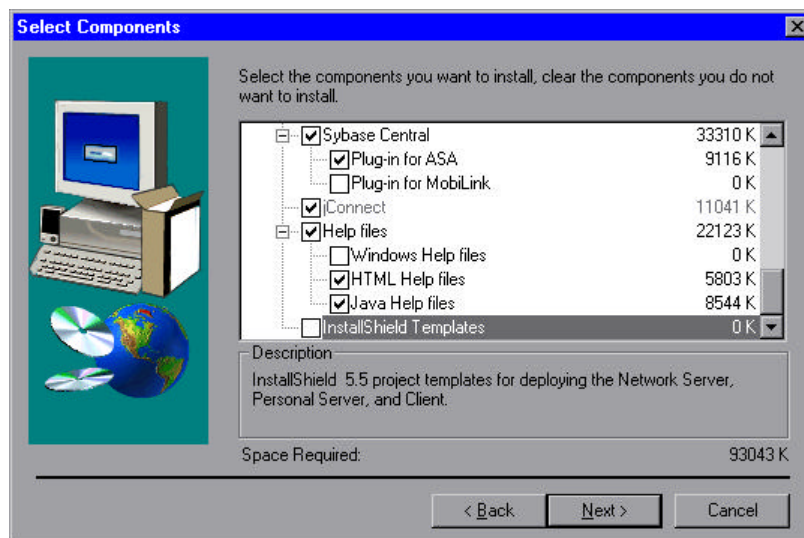


Figure 11 Sybase Installation "Select Components" Dialog

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13. Select the **Browse** button to change the default installation directory.

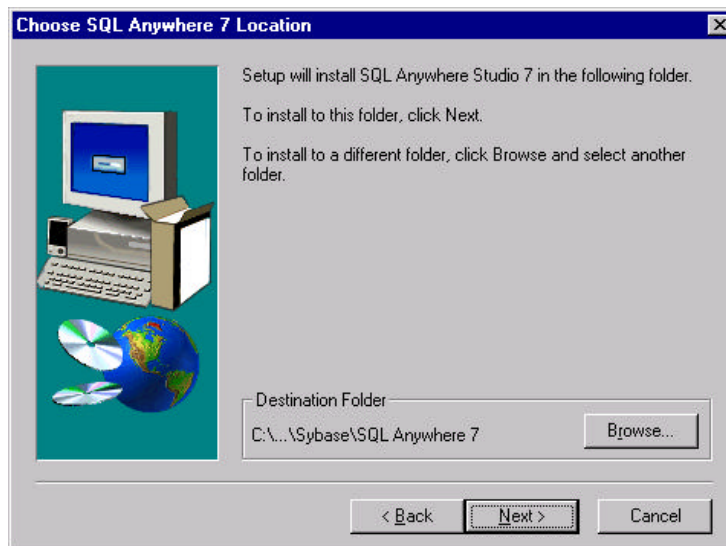


Figure 12 Sybase Installation “Choose SQL Anywhere 7 Location” Dialog

14. Change the path to be D:\Sybase\ASA70 and Click **OK**. Click **Yes** to create the folder.

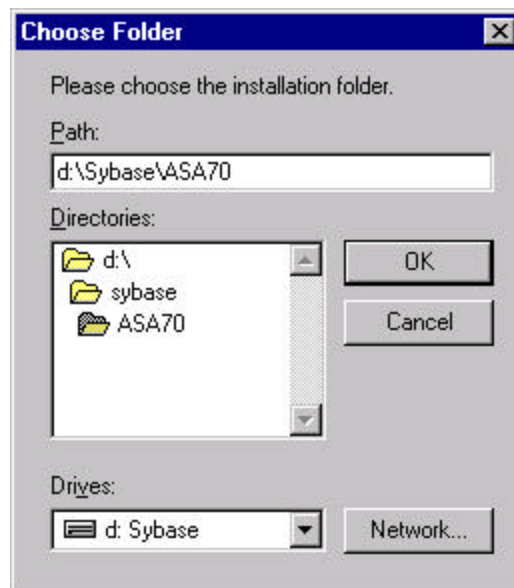


Figure 13 Sybase Installation “Choose Folder” Dialog

## Dräger Medical Server Installation and Configuration

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15. Verify the Destination folder is now D:\Sybase\ASA70 and click **Next**.

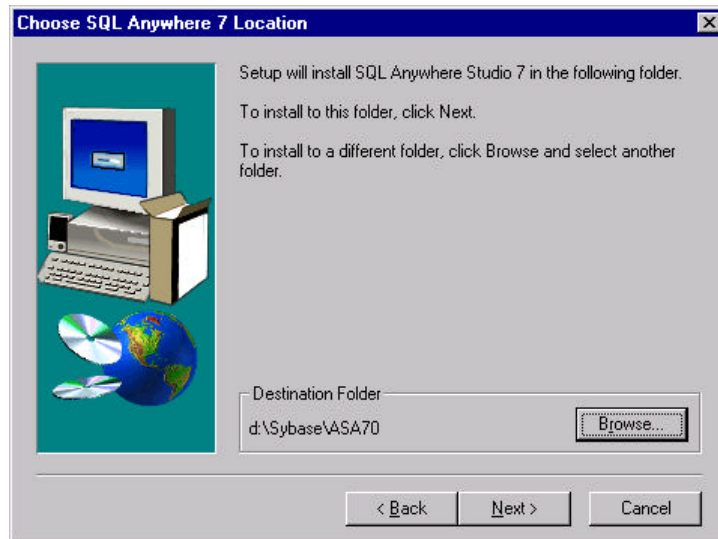


Figure 14 Sybase Installation “Choose SQL Anywhere 7 Location” Dialog

16. Verify the Destination folder for the Shared components is D:\Sybase\Shared and click **Next**.

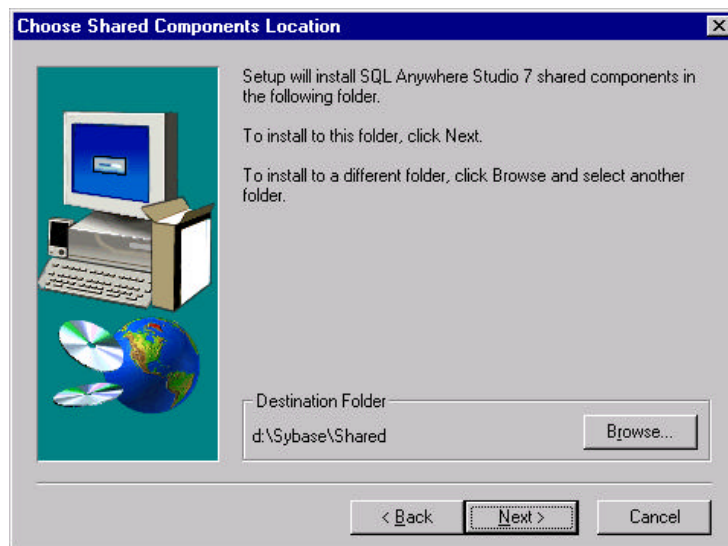


Figure 15 Sybase Installation “Choose Shared Components Location” Dialog

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17. Accept the default for the Program Folder of Sybase SQL Anywhere 7 and click **Next**.

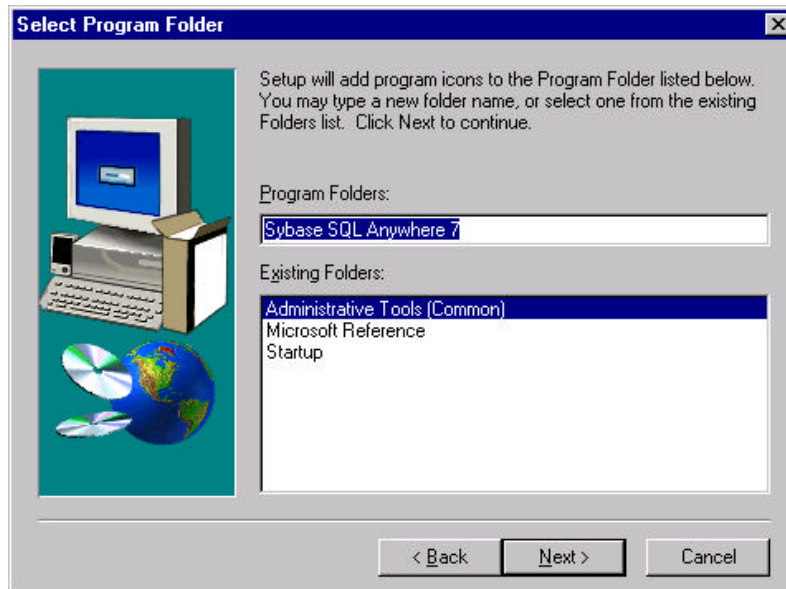


Figure 16 Sybase “Select Program Folder” Dialog

18. The next screen provides you with a display of the selected components and the directories where Sybase will be installed. **Scroll down**.

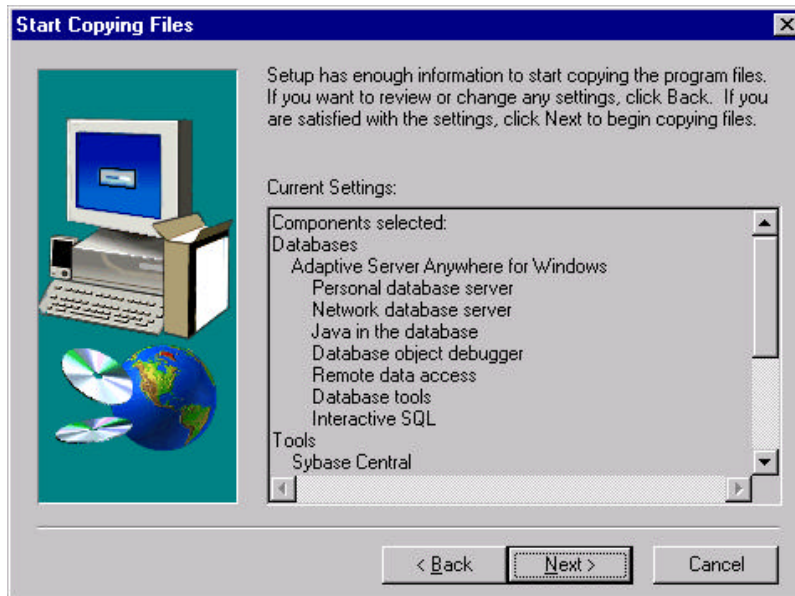


Figure 17 Sybase Installation “Start Copying Files” Dialog

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# Server Installation and Configuration

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19. Verify that the target directories are correct and click **Next**.

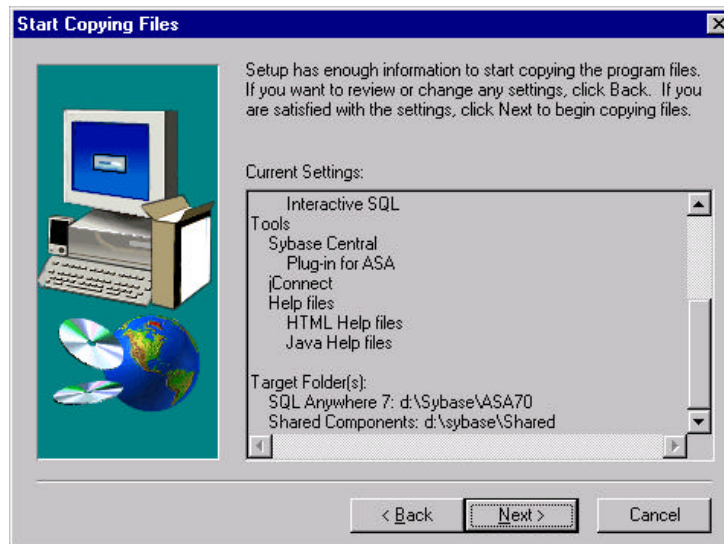


Figure 18 Sybase Installation "Start Copying Files" Dialog

20. This will begin the copy process and you will be provided with a status indicator.

Note: If a 'Read Only File Detected' message is displayed, write down the filename(s) and select 'Yes' to replace the file. Report the filenames to Saturn Support.

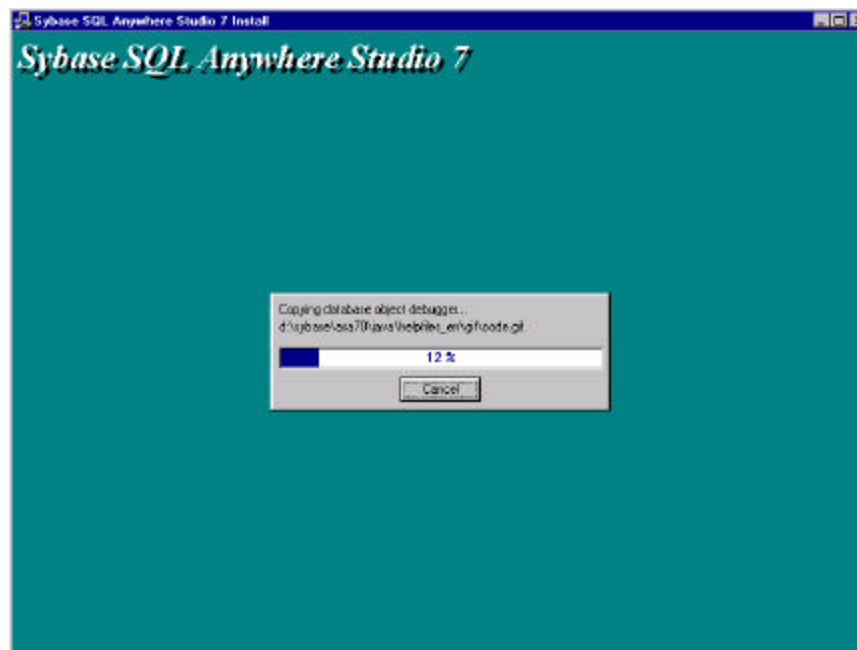


Figure 19 Sybase Installation "Progress" Dialog

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21. After the copy is completed, the following screen prompts for licensing information. Enter the **customer name** and **company** and select the **Network Seat Model**, and the number of **Licensed Seats** (This number must be the maximum number of seats this server will service according to how many licenses the site has purchased.)

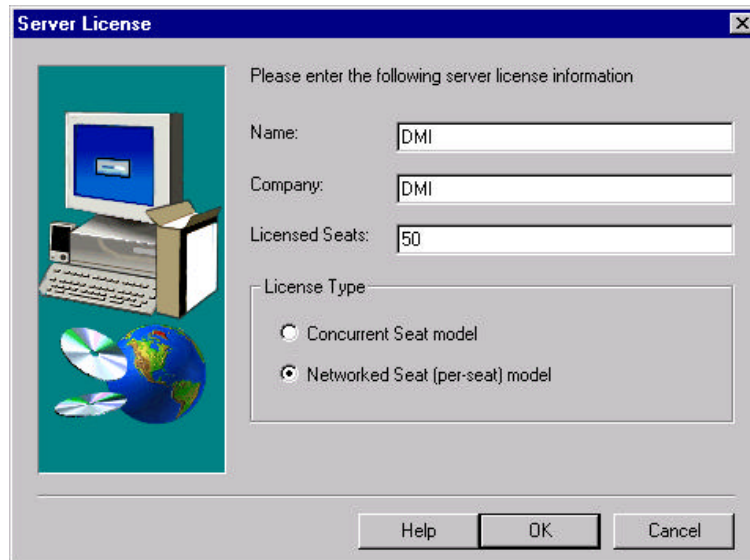


Figure 20 Example Sybase Installation "Server License" Dialog

22. Click the **OK** button and the files will load.

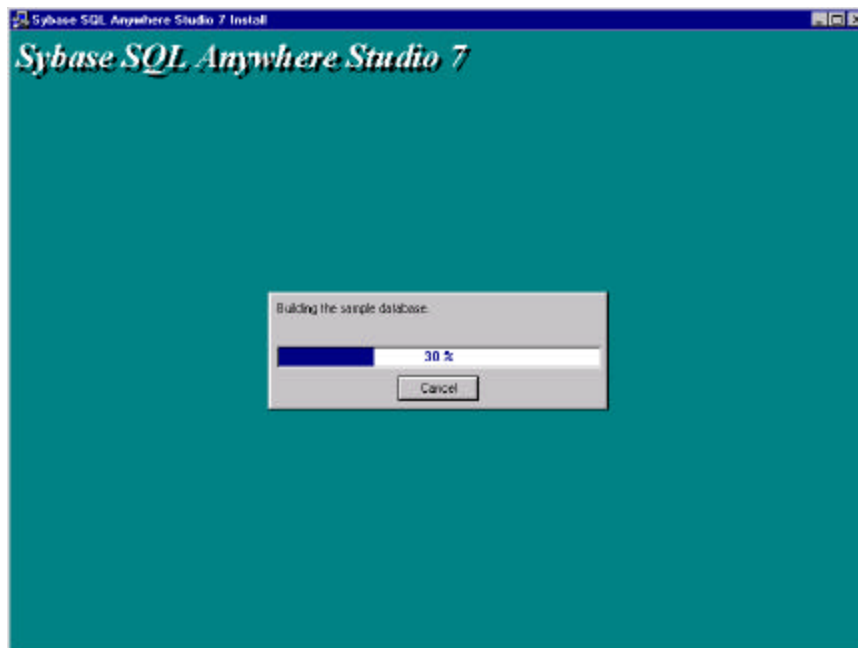


Figure 21 Sybase Installation "Progress" Dialog

## Dräger Medical Server Installation and Configuration

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23. De-select the two “Yes” checkboxes and click **Finish**. The installation program will terminate.



Figure 22 Sybase Installation “Setup Complete” Dialog

24. Click **Yes** to reboot.

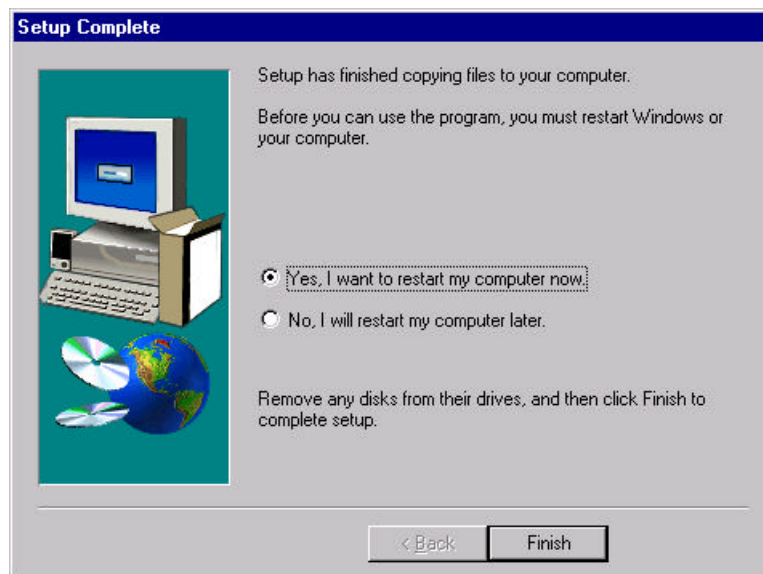


Figure 23 Sybase Installation “Setup Complete” Dialog

**THE SERVER WILL TAKE SEVERAL MOMENTS TO REBOOT**

25. After the system reboots, logon as administrator. (SATADMIN or site provided user)

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### Server Installation and Configuration

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#### **7.4 Copy the NAD Directory to the D Drive**

Note: The directory structure that is needed for the installation is already setup on the Server Installation CD. You will just need to copy it over.

\* If the client has a SAU, you will need to also perform steps 5-8, listed below.

1. In the left pane of the Explorer, click on the "D:" drive.
2. Click on the CDRom Drive
3. Single right-click the **NAD** folder in the right hand pane and select **Copy**.
4. Single right-click the D drive in the left hand pane and select **Paste**.

The tree structure you will see is:

- "<DD>\Nad"
- "<DD>\Nad\db"
- "<DD>\Nad\db\bu"
- "<DD>\Nad\db\bu\Sunday"
- "<DD>\Nad\db\bu\Sunday\Logs"
- "<DD>\Nad\db\bu\Monday"
- "<DD>\Nad\db\bu\Monday\Logs"
- "<DD>\Nad\db\bu\Tuesday"
- "<DD>\Nad\db\bu\Tuesday\Logs"
- "<DD>\Nad\db\bu\Wednesday"
- "<DD>\Nad\db\bu\Wednesday\Logs"
- "<DD>\Nad\db\bu\Thursday"
- "<DD>\Nad\db\bu\Thursday\Logs"
- "<DD>\Nad\db\bu\Friday"
- "<DD>\Nad\db\bu\Friday\Logs"
- "<DD>\Nad\db\bu\Saturday"
- "<DD>\Nad\db\bu\Saturday\Logs"
- "<DD>\Nad\db\bu\Validate"
- "<DD>\Nad\Setup"

**NOTE:** Skip to Section 7.5 (steps 5 – 8 below refer to a SAU)

5. Verify the files were copied from the SAU to the server per procedures listed in the Prerequisites section above.
6. Verify that the D:\NAD\DB directory is free of any \*.db file and \*.log files.
7. Copy the periopdm.db and periopdm.log from the D:\SATURN\SAU to the D:\NAD\DB directory.
8. Continue with the install, but omit steps 7.7 and 7.8.

#### **7.5 Install the Sybase Service & ODBC**

1. In the left pane of the Explorer, double-click on the D drive.
2. Double-click on the **NAD**, and then the **SETUP** folder
3. Right click on **saturnserverservices7.inf**.

**NOTE:** The services will be setup pointing to the D drive for the Sybase install and the database location. If this is not true then you will need to change both services in Sybase Central to reflect where to start the Sybase dbsrv7.exe and where to find the database file.

4. Click on **Install**.
5. Right click on **saturnserverodbc7.inf**.



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### Server Installation and Configuration

**NOTE:** If Sybase is not installed on the D drive then you will need to modify and save this inf file. If so, then change the path for the dbodbc7.dll to the correct drive letter where Sybase is installed.

6. Click on **Install**.

#### **7.6 Reboot the Machine.**

1. Remove the CD from the server's CD-ROM drive.
2. Close all open windows.
3. Select "**Start->Shut Down**" on the taskbar.
4. Select on the Restart option.
5. Click on the **OK** button.

***THE SERVER WILL TAKE SEVERAL MOMENTS TO REBOOT***

6. After the system reboots, logon as administrator. (SATADMIN or site provided user)

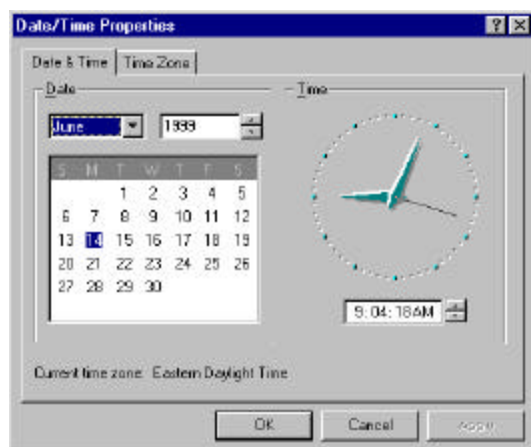
#### **7.7 Install the list table data into the database.**

**NOTE:** If the client has a SAU skip to section 7.9.

1. In the left pane of the Windows Explorer, select the **D:\NAD\SETUP** directory.
2. The default drive letter within the installLists.bat is D. If Sybase is not installed on D or if the database is not installed on the D drive, then modify the bat file to reflect the proper drive letters.
3. Double click "**installLists.bat**".
4. When the batch file is completed, **select** all **\*.dat** files in the INSTALL directory. (Hold down the Ctrl key as you click each \*.dat file.)
5. Select **File** and select **Delete** from the menu bar.
6. Click **Yes**, then **Yes to All**.

#### **7.8 Set Time and Time Zone**

1. Click on the "Start->Settings->Control Panel".
2. Double click on the **Date/Time** icon.



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### Server Installation and Configuration

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Figure 27 System Time

3. Click the **Time Zone** tab.

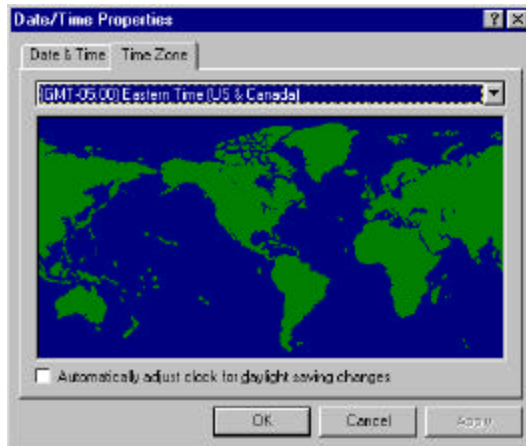


Figure 28 System Time

4. **Uncheck** 'Automatically adjust clock for daylight saving changes.'
5. Click **OK**.
6. Double-click Regional Settings (for Windows NT) or Regional Options (for Windows 2000).
7. Go to the Time tab
8. Change the Time Format/Style to HH:mm:ss
9. Go to the Date tab
10. Change the Short Date Format/Style to MM/dd/yyyy

### **7.9 Change the Sybase Central & ISQL Shortcuts Under Start - Programs**

1. Open Windows Explorer
2. Find the file D:\Sybase\ Shared\Sybase Central 3.2\win32\scview.exe
3. Create a shortcut and rename it to 'Sybase Central'.
4. Move the shortcut to the C:\WINNT\Profiles\All Users\Start Menu\Programs\Sybase SQL Anywhere 7 folder in Windows NT. Move the shortcut to C:\Documents and Settings\All Users\Start Menu\Programs\SQL Anywhere 7 folder.
5. Delete the 'Sybase Central 4.0' shortcut in the same folder.
6. Go to the 'Adaptive Server Anywhere 7' subfolder and delete the 'Manage Adaptive Server Anywhere' and 'Interactive SQL' shortcuts.
7. Find the file D:\Sybase\ ASA70\win32\dbisqlc.exe
8. Create a shortcut and rename it to 'Interactive SQL'.
9. Move the shortcut to the C:\WINNT\Profiles\All Users\Start Menu\Programs\Sybase SQL Anywhere 7\Adaptive Server Anywhere 7 folder in Windows NT. Move the shortcut to C:\Documents and Settings\All Users\Start Menu\Programs\SQL Anywhere 7\Adaptive Server Anywhere 7 folder.
10. Verify that the Sybase Central shortcut is displayed through the Start – Programs - Sybase SQL Anywhere 7 button, and the Java version Sybase Central 4.0 shortcut is no longer displayed.

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11. Verify that the Interactive ISQL shortcut is displayed through the Start – Programs - Sybase SQL Anywhere 7 - Adaptive Server Anywhere 7 button.

#### **7.10 Reset the Server Service.**

1. Open Sybase Central
2. Click on **Services**
3. Right click on **PCAPPS\_Server** and select **Properties**
4. Change the Startup section to **Automatic**
5. Click **Apply – OK**
6. Right click on **PCAPPS\_Server** and choose **Start**

#### **7.11 Add the Users to the Database.**

**NOTE:** This may or may not have already been done if utilizing a SAU.

1. Open Sybase Central and Start the database, if it is not already running
2. In Sybase Central, Connect to the database using the NAD account
3. **View Data** from any table (right click on a table name and select View Data)
4. **Replace** the SQL statement shown in the ISQL Command window with the following:  
**CreateUser username, user#, installed applications #, installed recorder modules #**  
Where: username is the UNC of the workstation  
user# is a unique 3 digit wpu identifier.  
Installed applications # is a one or two digit bitmap number (see chart below)  
Installed recorder modules # is a one or two digit bitmap number (see chart below)
5. Click **Execute**
6. Modify and execute the statement for each user that you need to add to the database
7. When done adding users, clear the SQL statement and type '**commit**' (without the single quotes) and **execute** the command
8. Close ISQL and verify that the users show up in the Users & Groups folder. You'll need to refresh the view.
9. Close Sybase Central

#### **Installed Applications and Modules Chart:**

For each parameter to pass into the stored procedure, add the associated values together that the customer had ordered for that particular workstation.

##### **INSTALLED APPLICATIONS:**

Recorder	1
List Management	2
Environment Manager	4
Case Manager	8
Report Manager	16
All Applications	31

##### **INSTALLED RECORDER MODULES:**

Pre-Op	1
Intra-Op	2
Post-Op	4
Browse	8
All Modules	15

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**Note:** If a mistake is made while adding a user, you can reset their installed applications and modules by utilizing the following 'ModifyUser' stored procedure in ISQL.

**ModifyUser username, installed applications #, installed recorder modules #**

Where: username is the UNC of the workstation

Installed applications # is a one or two digit bitmap number (see chart below)

Installed recorder modules # is a one or two digit bitmap number (see chart below)

#### **7.12 Install CPT Codes (if purchased).**

**NOTE:** If the client has a SAU skip to section 7.13. Please review the purchase order to see if the site has purchased the CPT codes prior to installing.

1. Insert the CPT Installation CD into the CDROM drive of the server.
2. Create a subfolder called CPT under D:\nad
3. Copy the CD files to **D:\nad\CPT**
4. Open Control Panel – Services, and Start the server service PCAPPS\_Server.
5. Run the file CPTInstall.exe (refer to the CPT Codes Installation Procedure)
6. When the CPT Codes Installation window appears click the '**Start**' button.
7. A progress bar will be displayed with a message indicating what is being installed.
8. When the installation is complete, an 'Installation Complete' message will be displayed under the progress bar and the application will beep. (Installation at a new site will take approximately one minute.)
9. Select the '**Exit**' button
10. Once the install is finished, click on the **X** in the upper right-hand corner of the window.

#### **7.13 Place a Sybase Help Shortcut on the Server Desktop.**

1. Open Windows Explorer
2. Find the file D:\Sybase\ASA70\win32\dbmaen7.chm
3. Right click on it and select **create** shortcut
4. Drag and drop the shortcut to the desktop
5. **Rename** the shortcut Sybase Help
6. Close Windows Explorer

#### **7.14 Create a System Environment for Sybase.**

1. Right click on My Computer and Select Properties
2. In Windows NT Select the Environments tab. In Windows 2000 Select the Advanced tab and Click the Environment Variables button.
3. Add the System Environment variable ASTMP=D:\NAD\ASTMP
4. Create an ASTMP subdirectory under the D:\NAD directory
5. Create a batch file (ASTMPDEL.bat) in the D:\NAD\DB directory that contains the single line.  
Del /F /Q D:\NAD\ASTMP\\*.\*
6. Add the file ASTMPDEL.bat to the STARTUP folder. Find the STARTUP folder by right clicking on the 'Start' button and select 'Explore All Users.' This will open Windows Explorer at the 'All Users' – 'Start Menu' folder. In the left pane expand the 'Programs' + sign, and click on the 'Startup' folder. Place a copy of the batch file here.

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#### **7.15 Reboot the machine.**

1. Click on the “Start ->Shut Down“ on the taskbar.
2. Select the Restart option.
3. Click the **OK** button.
4. If you receive the following message click Yes.



*Figure 28 Sybase Server Service “Warning” Dialog*

***THE SERVER WILL TAKE SEVERAL MOMENTS TO REBOOT***

5. After the system reboots, logon as administrator. (SATADMIN or site provided user)

#### **7.16 Run a DBVALID**

1. Open a DOS window
2. Type dbvalid -c “uid=NAD;pwd=NADADMIN;eng=Saturn;dbn=periopdm”
3. Press Enter
4. Verify the result is a “No Errors Reported” message
5. Close the DOS window

#### **7.17 Copy Appropriate Files to the Server**

1. Create and share the following tree under D:\NAD, or the drive where the database is installed upon, and copy the necessary files over from the source CD’s into each respective folder.

--- D:\NAD\

--- NADUTILS

--- Disk1

--- Images

--- Ghost

--- PCAnywhere and Fixes

--- SP (Windows NT Service Pack 6a or Windows 2000 Service Pack 2)

--- WINAT (get WINTAT.exe from the NT Resource Kit CD)

--- Internet Explorer 5.5 Service Pack 2

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#### **7.18 Cleanup the Server Files**

1. Open Windows Explorer
2. Delete the following two subdirectories  
    D:\NAD\CPT  
    D:\NAD\Setup

#### **7.19 Setup the Database Backup Schedule**

**NOTE:** The new scheduler upgrade requires the '.EXE' extension to be present in the executable code line. The new database utility files take this into consideration.

Discuss the database backup strategy with the site's Database Administrator. Setup the database backup schedule per the instructions in Appendix A, or have the site administrator setup their own backup strategy by utilizing DMI's utilities or Sybase's utilities directly. Provide backup/restore procedures to MIS. A database backup and validation process must be setup.

#### **7.20 Final Server Setup**

1. Setup Saturn server as WINS server (if larger than 10 nodes) unless client already has a WINS server.
2. Verify PCAnywhere functionality – test with an Saturn Support person
3. Run DBVALID (Run after server install and also prior to leaving facility)
4. Make an ERD – RDISK /S in Windows NT. In Windows 2000 Select Start – Programs – Accessories – System Tools – Backup. Click the Emergency Repair Disk Button. Check the Backup the Registry option. Click OK.
5. Run the Server section of the Saturn System Checkout Procedure.

**\*\*\* INSTALLATION COMPLETED \*\*\***

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### 8 SERVER TEST PROCEDURE

---

#### 8.1 Document General Information

1. Record **Hospital Name**, **Address**, **Install Date** and **Server Location** on the Results form.
2. Record the **Serial Number** and **NAD Asset Tag Number** on the Results form.
3. Record **Domain Username** and **Password** on the Results form.
4. Record **Local Administrator Username** and **Password** on the Results form.

#### 8.2 Network Information

1. Click **Start -> Run**.
2. Type **cmd** in the edit box and press the **Enter** key. The Command window will appear.
3. At the Command prompt, type **cd \** and press the **Enter** key.
4. At the Command prompt type **ipconfig /all** and press the **Enter** key. The IpConfig window will appear.

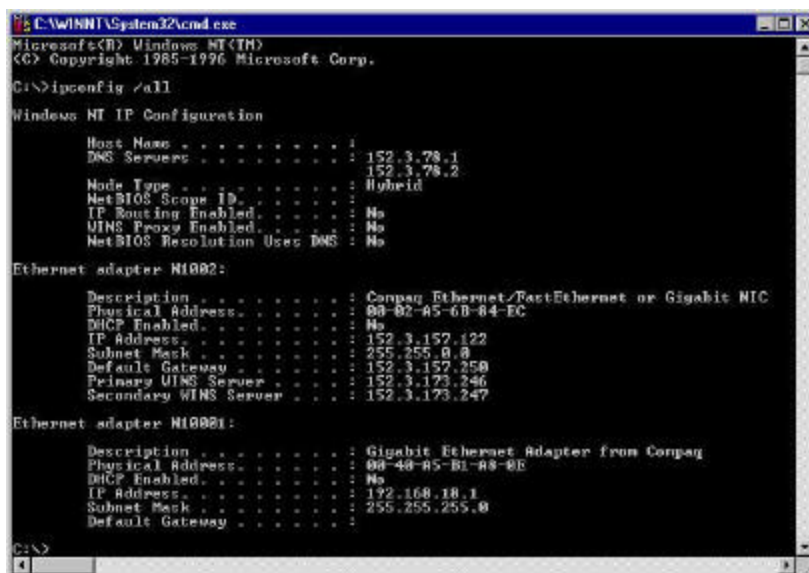


Figure 29 Server Command Window

5. Record the following information on the Results form:
  - *Host Name as Computer Name*
  - *Physical Address as NIC Address*
  - *IP Address*
  - *Subnet Mask*
  - *Default Gateway*
  - *First DNS Server as DNS1*
  - *Second DNS Server as DNS2*
  - *Primary WINS Server as WINS1*
  - *Secondary WINS Server as WINS2*
6. At the Command prompt, type **explorer** and press the **Enter** key. The windows explorer window will appear.
7. Right click **Network Neighborhood** and choose **Properties** to open the Network properties dialog
8. Record the **Domain** on the Results form.

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9. Click **Cancel** on the Network Properties dialog.
10. Click **Start, Programs, Administrative Tools**, then select **Windows NT Diagnostics**.
11. Record the **Windows NT Version**, from the **Version** tab, on the Results form.
12. Close the **Windows NT Diagnostics** dialog by clicking **OK**.
13. Close Windows Explorer and the Command window.

#### 8.3 Database Information

1. Click **Start -> Programs -> Sybase -> Sybase Central**. The Sybase Central dialog will appear.
2. Click the **Help** file menu and then choose **About**. The About Sybase Central dialog will appear.
3. Record the Adaptive Server Anywhere version as **Sybase Version** on the Results form.
4. Click the **OK** button of the About Sybase Central dialog.
5. Click the **Tools** file menu and select **Connect**. The Connect to Adaptive Server Anywhere dialog will appear.
6. Enter the appropriate User ID and Password.
7. Click **OK**. The Connect to Adaptive Server Anywhere dialog will close and the Sybase Central window will appear.
8. Record the name displayed under *Utilities* as the **Server Database Name** on the Results form.
9. The **Database Connection was successful**, record the results on the Result form.
10. Close the Sybase Central window.

#### 8.4 Services Information

1. Click **Start -> Settings -> Control Panel**. The Control Panel window will appear.
2. Double Click on **Services** in the Control Panel. The Services dialog will appear.
3. Scroll through the Services dialog and verify the following settings
  - *Adaptive Server Anywhere - PCAPPS Server* is set to **Automatic** Startup and Status equals **Started**.
  - *Task Scheduler* is set to **Automatic** Startup and Status equals **Started**
4. If the Services above are true, the **Services are functional**, record the results on the Results form.
5. Click the **Close** button
6. Close the Control Panel window.



- *PCAnywhere Host Service* is set to **Automatic** Startup and Status equals **Started**.
4. If the Services above are true, the **Services are functional**, record the results on the Results form.
  5. Click the **Close** button
  6. Close the Control Panel window.

#### 8.5 PCAnywhere Verification

*Note:* The **Results Sheet** is located at the end of this section, as well as in Section 10.

1. Click **Start, Programs, PCAnywhere** to open PCAnywhere.
2. Click the **Hosts** button to view all host items.
3. Double-click the host icon with the server name to start the PCAnywhere Host service.
4. Contact Saturn Support at (800) 523-6817 ext. 2362 to test the host connection.
5. If the **PCAnywhere connection is functional**, record the results on the Results Sheet.
6. Record **PCAnywhere Username** and **Password** on the Results Sheet.
7. Record the version of PCAnywhere installed and type of installation as **H** for Host Only or **HR** for Host and Remote on the Results Sheet.

\*\*\* **END OF THE SATURN SERVER TEST INSTRUCTIONS** \*\*\*



## Dräger Medical

### Server Installation and Configuration

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## Appendix A - Database Utilities Provided by DMI

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The site administrator has the option to either use DMI's backup and validation utilities, which provide administrative username and password security, or use Sybase's backup and validation utilities directly.

If they wish to use DMI's provided utilities then proceed with the information below, otherwise it is up to the site administrator to setup the site's backup and validation processes by utilizing Sybase's utilities directly.

### Database Utilities Provided by DMI

DMI provides five database utility files used to automate some maintenance routines and to help secure the database by concealing the administrator username and password within the executable files. All five files are copied to the D:\nad\db\bu subdirectory during Saturn installation or upgrade. The NadBackupDb is also copied to the D:\nad\db directory. The utility files and their use follows:

1. NadDbBatch.exe

Creates a batch file (SrvrBackup.bat) to schedule jobs for a full backup of the database and an incremental backup of the transaction log using the Windows Task Scheduler service. There is a default 'SrvrBackup.bat' file installed in the 'bu' directory which will perform a full backup every midnight and an incremental log backup every hour starting at 2AM. If those times are not sufficient, then the naddbbatch executable file can be used to create a custom SrvrBackup.bat file for the site.

The syntax for the command is as follows:

Naddbbatch.exe %TD% Time Interval

where:

%TD% – target drive letter where the database is located (e.g. D)

Time Interval – time interval, in hours, between incremental backup of the transaction log for each day of the week (e.g. 2).

For example, to create a SrvrBackup.bat file that contains the necessary entries to schedule a full database backup every night and incremental (i.e. transaction log file) backups every 5 hours, execute the following command from a DOS command window while in the \nad\db\bu directory:

Naddbbatch.exe D 5

This command will result in the creation of a SrvrBackup.bat file that, once executed, will register events with the scheduler to perform a full database backup nightly at 12am and incremental backups every five hours beginning at 2am (NOTE: incremental times begin from 2AM and repeat at the scheduled interval; thus jobs will be scheduled 2AM, 7AM, 12PM, etc. for the given example).

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You can modify the SrvrBackup.bat file to meet your facilities needs, for example, having one backup directory instead of one for each day of the week. Keep in mind that doing so would require diligence in nightly copies to tape because the files will be overwritten each day during the scheduled intervals for backups.

### 2. SrvrBackup.bat

The SrvrBackup.bat file, when executed, will create the scheduler jobs that will perform the backups, both full and incremental. To work properly, the nadbackupdb.exe file must be in the D:\nad\db production database directory and the NT scheduler service must be started. The scheduled AT job will call the DMI utility 'nadbackupdb'. The DMI utility calls Sybase's utility and passes in all of the parameters required to perform a backup.

### 3. NadBackupDb.exe

The new executable (nadbackupdb) is provided to simplify Sybase's DBBackup command by making use of Sybase's Database Tool Interface. Either a full database and log file backup can be performed or an incremental log file backup can be performed. The scheduler jobs that are created by the SrvrBackup.bat file will call the executable file NadBackupDB with the correct parameters for either a full or an incremental backup.

*Note:* The DMI database backup utility will only work with the database server named 'Saturn', as determined by the server service PCAPPS\_Server -n parameter, and the database name is Periopdm.

For example, to create a full database backup (the database file and transaction log), the following syntax should be used:

```
Nadbackupdb.exe %TD% subdirectory Full backup flag
```

where:

%TD% -- target drive letter (e.g. D)

subdirectory -- name of target subdirectory (assumes that the subdirectory is located under %TD% : \nad\db\bu)

Full backup flag -- flag to indicate if a full backup (TRUE) or incremental backup (FALSE) is to be performed

NadBackupDb.exe calls Sybase's database backup utility with the following parameters and switches:

-x -- Delete and restart a new transaction log

-q -- Quiet mode -- do not print messages

-y -- Replace files without confirmation

-c -- "uid=...;eng=Saturn;dbn=periopdm

Therefore, the result of executing the following command:

```
Nadbackupdb.exe D Saturday TRUE
```

would be creation of a backup copy of the database (D:\nad\db\periopdm.db) and the transaction log file (D:\nad\db\periopdm.log) in the Saturday subdirectory (D:\nad\db\bu\Saturday).

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To create an incremental backup of the transaction log only, the following command could be used:

```
Nadbackupdb.exe D Saturday FALSE 2
```

where:

D           – target drive letter  
Saturday   -- name of target subdirectory (assumes that the subdirectory is located under  
            D:\nad\db\bu)  
FALSE      – create a backup of the transaction log only  
2           – time, in military hours, of the incremental backup

The result of executing the above command would be creation of a backup copy of the transaction log file in the Saturday subdirectory (%TD%:\nad\db\bu\Saturday\logs). The current transaction log located in the production directory is deleted and a new transaction log is started.

#### 4. NadValidateDb.exe

The database file validation utility is called nadvalidatedb.exe. This executable can be utilized to verify the current production database, or a backed up copy of the database in the 'validate' directory that was previously archived to tape. The database file name must be Periopdm.

For example, to validate the backup database file, start the Validate service and issue the following command:

```
Nadvalidatedb.exe %TD% VALIDATE
```

where:

%TD%   – target drive letter (e.g. D)  
VALIDATE -- name of target subdirectory (assumes that the subdirectory is  
          located under %TD% : \nad\db\bu)

The result of executing the following command would be validation of a backup copy of the database(periopdm.db) in directory D:\nad\db\bu\validate:

```
nadvalidatedb.exe D VALIDATE
```

Also, passing an additional parameter called FULL, as indicated below can perform a full database validation:

Warning: This option may significantly extend the time required to validate the database.

```
Nadvalidatedb.exe %TD% VALIDATE FULL
```

where:

%TD%   – target drive letter (e.g. D)  
VALIDATE -- name of target subdirectory (assumes that the subdirectory is  
          located under %TD% : \nad\db\bu)  
FULL   – Utilizes the Sybase dbvalid -f switch which, in addition to the default table  
          validation, also verifies the Long Binary, Long Varchar, and Text data type  
          columns, as well as each index on every table.

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To validate the current database file, the following command could be utilized

```
Nadvalidatedb.exe %TD% NULL
```

where:

%TD% – target drive letter (e.g. D)

NULL - validate database (periopdm.db) in directory '\nad\db\'  
under %TD%

The result of executing the above command would be validation of the database (periopdm.db) in directory %TD%:\nad\db

Also, passing an additional parameter called FULL, as indicated below can perform a full database validation:

Warning: This option may significantly extend the time required to validate the database.

```
Nadvalidatedb.exe %TD% NULL FULL
```

where:

%TD% – target drive letter (e.g. D)

NULL - validate database (periopdm.db) in directory '\nad\db\'  
under %TD%

FULL – Utilizes the Sybase dbvalid -f switch which, in addition to the default table validation, also verifies the Long Binary, Long Varchar, and Text data type columns, as well as each index on every table.

#### 5. TapeBuValid.bat

A new Sybase database service called Validate, that is setup during installation, can also be used to validate a database restored from tape. It is incorporated into the TapeBUvalid.bat file. The Validate service assumes that the restored database is located in the D:\nad\db\bu\validate directory. Perform the following steps to utilize the TapeBUValid.bat utility:

- a. Verify the files TapeBUvalid.bat and nadvalidatedb.exe are located in the D:\nad\db\bu directory.
- b. Verify the database and log file, periopdm.db and periopdm.log respectively, have been restored from tape into the D:\nad\db\bu\validate directory.
- c. Open a DOS window and switch to the D:\nad\db\bu directory.
- d. At the command prompt enter the following:

```
TapeBUvalid.bat D validate
```

where:

'D' is the target drive letter

'validate' is the name of the target subdirectory, under %TD%:\nad\db\bu.

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### **Server Installation and Configuration**

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Press Enter and the TapeBUvalid.bat will perform the following:

1. Start the Validate service
2. Execute a validation of the restored database in the validate subdirectory
3. Stop the Validate service

## Dräger Medical

### Server Installation and Configuration

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## Appendix B - Pentium IV Processor Considerations

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### Known Software Issue:

CPUID detection for Intel® Pentium® 4 processor system:

Intel has identified that applications which use the Symantec Just in Time Compiler library file ("symcjit.dll" for Microsoft Windows\* operating system) may not run properly on Pentium® 4 processor systems because the library does not properly identify the processor. The failure typically is that the affected application simply terminates. Under Microsoft Windows\*, the properties of the DLL are: "Symantec Java! JustInTime Compiler Version 3.10.107 for JDK 1.2 Copyright (C) 1996-99 Symantec Corporation Dynamic Link Library file". DLLs older than this will also not work.

\*Refer to the chart on the next page to determine if your server has a Intel® Pentium® 4 processor installed.

The Sybase ASA7 Install program may fail when it tries to launch the Java version of ISQL in order to load the sample database, ASADemo.db, or it may install correctly and fail when attempting to load the Java version of Sybase Central.

Sun has released an executable file to run to update the dll version. Follow the directions listed below.

1. Try to install Sybase ASA7 per the install directions. If it passes, then follow the directions below. If it fails, run the executable per the directions below, then reinstall ASA7.
2. Apply the SUN Systems recommended release JDSE v 1.2.2\_008 for Windows which is located in the D:\Nad\Setup directory. The filename is 'jre-1\_2\_2\_008-win.exe'.
3. When prompted, install the patch into the directory: D:\Sybase\Shared\Sun\jdk122\jre rather than the default location in the installation for JDSE.
4. Verify the files are dated 3/26/2001 in particular, the Symantec Just in Time Compiler (JIT) library file symcjit.dll.
5. Run the previous action that was failing.
6. Verify it runs without an error.

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### Server Installation and Configuration

Processor Type	Family	Model	Stepping	Speed
Celeron	6	5	0	266, 300
Celeron	6	5	1	266, 300
Celeron	6	6	0	300A, 333, 366, 400
Celeron	6	6	5	300A, 333, 366, 400, 433, 466, 500, 533
Celeron	6	8	A	733, 766, 800, 850, 900, 950
Celeron	6	8	3	533A, 566, 600, 633, 667, 700
Celeron	6	8	6	566, 600, 633, 667, 700, 733, 766, 800, 850
Pentium	5	4		
Pentium Pro	6	1		
Pentium II	6	3	3	233, 266, 300,
Pentium II	6	3	4	233, 266, 300
Pentium II	6	5	0	333
Pentium II	6	5	1	300, 333, 350, 400,
Pentium II	6	5	2	266, 300, 333, 350, 400, 450,
Pentium II	6	5	3	350, 400
Pentium III	6	B	1	1.133, 1.20, 1.26,
Pentium III	6	7	2	450, 500
Pentium III	6	7	3	450, 500, 533B, 550, 600, 600B
Pentium III	6	8	A	866, 933, 1.0, 1.1
Pentium III	6	8	1	500E, 533EB, 550E, 600E, 600EB, 650, 667, 700, 733, 750, 800EB
Pentium III	6	8	3	500E, 533EB, 550E, 600E, 600EB, 650, 667, 700, 733, 750, 800, 800EB, 850, 866, 933, 1.0
Pentium III	6	8	6	600E, 600EB, 650, 667, 700, 733, 750, 800, 800EB, 667, 700, 733, 750, 800, 800EB, 850, 866, 900, 933, 1.0
Pentium IV	15	0	7	1.3, 1.4, 1.5,
Pentium IV	15	0	10	1.3, 1.4, 1.5, 1.6, 1.7, 1.8,
Pentium IV	15	1	2	1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 2.0

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### SERVER RESULTS SHEET

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Sales Order Number: \_\_\_\_\_

Hospital Name: \_\_\_\_\_ Install Date: \_\_\_\_\_

Street Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Serial Number: _____	Part Number: _____
NIC Address: _____	IP Address: _____
Computer Name: _____	Subnet Mask: _____
Domain: _____	Gateway: _____
Domain Username: _____	DNS1: _____
Domain Password: _____	DNS2: _____
Local Admin Username: _____	WINS1: _____
Local Admin Password: _____	WINS2: _____
PCAnywhere Username: _____	Server Database Name: _____
PCAnywhere Password: _____	Server Location: _____

#### VERSION INFORMATION:

Windows: \_\_\_\_\_ Sybase: \_\_\_\_\_ PCAnywhere: \_\_\_\_\_ PCA Type: \_\_\_\_\_

#### VERIFICATIONS:

Services are functional

Database connection is functional

PCAnyWhere connection is functional

All Verifications Passed Successfully Initials \_\_\_\_\_

#### NOTES:

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Signature: \_\_\_\_\_ Date: \_\_\_\_\_



# 10

## Workstation Installation and Configuration

*This section provides the instructions required to install and configure a Saturn workstation. It also includes workstation checkout procedures. (Worksheets are located at the end of this section and also in Section 11.) The operator must have a basic understanding of Windows NT and/or Windows 2000.*

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## Workstation Installation and Configuration

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### 1 PURPOSE

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This procedure provides instructions to install a Saturn Workstation system. The operator must have a basic understanding of Windows NT/2000.

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### 2 SOFTWARE REQUIREMENTS

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<i>PART</i>	<i>DESCRIPTION</i>
4118144	CD-Windows 2k Base Files
4117665	CD – Install Workstation - Saturn 4.10

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### 3 RELATED DOCUMENTS

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<i>Chapter</i>	<i>DESCRIPTION</i>
7	Server Installation Procedure

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### 4 ACRONYMS

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<i>ACRONYMS</i>	<i>DESCRIPTION</i>
DD	Destination (Designated) Drive
ISU	Installation and Setup Utility Script
LAN	Local Area Network
NAD	North American Dräger
TD	Target Directory Location
WD	Working Directory
WPU	Workstation Processing Unit
NCPU	Non-clinical Processing Unit
AOPU	All-in-one Processing Unit

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## 5 DEFINITIONS

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<i>DEFINITION</i>	<i>DESCRIPTION</i>
Click	When using a mouse, press the left mouse button. When using a Touch Screen, touch the item on the screen. After the item is selected, press and hold the shift key, then press F10.
Designated Drive (DD)	Drive to which the install is being done. Will be the C: drive in most cases – unless otherwise designated.
Double-click	When using a mouse, rapidly press the left mouse button twice. When using a Touch Screen, rapidly touch the screen twice.
File	The contents of a folder
Folder Tree/Directory Tree	Directory Tree – graphic representation of folders and sub-folders
Panel	When a screen is divided into two sections – left and right.
Right-click	When using a mouse, press the right mouse button. When using a Touch Screen, touch the item on the screen.
Sub-folder	A sub-level within a folder
Workstation Processing Unit	Dräger-supplied PC used in clinical OR environments
3 <sup>rd</sup> Party Clinical	3 <sup>rd</sup> party PC (Dell, Compaq, etc...) used as a WPU
Non-clinical Processing Unit	3 <sup>rd</sup> party PC (Dell, Compaq, etc...) used in non-OR environments
All-in-one Processing Unit	Advantech POC 153 brand unit with processor and monitor in one housing unit

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## 6 PREREQUISITES

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Before the workstation installation procedure is performed, the Saturn Server Installation Instructions must have been completed and the following **site-specific information** must be obtained:

- IP addresses (including WINS, DNS information)
- Server UNC name
- Sybase Server Name
- Sybase DB Name
- Workstation computer names
- Saturn domain user name(s) and password(s)
- Domain name
- Local administrator names and passwords
- Domain administrator (or other account) names and passwords – used to add workstations to domain
- A source for installing software – either a CDROM that is shared or a network share
- Printers/print drivers
- CCOW Information:
  1. The site's Context Manager will require the application name and application pass code for Saturn prior to configuring the system
  2. The location of the Desktop Components Install CD on the client's network
  3. The site specific CCOW Application Key Name
  4. The Virtual IP\Network Name of Sentillion's Network Appliance used during desktop components install

The above is **site-specific information** and should be available from Dräger Service prior to new installations and upgrades.

Make certain that the source locations for all software installations is available. The following installation CD's need to be either in a CD-ROM drive on-site with the drive shared and accessible or the files have been copied to a share on a computer (typically the Saturn server) on-site:

- Saturn Workstation Installation CD
- NT SP6a 128-bit (for Windows NT only)
- PCAnywhere CDs versions 10.0 and 10.5
- Internet Explorer CD version 5.5
- CCOW Component Installation CD
- Win2k Basefiles CD

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## 7 INSTALL NEW VERSIONS ON WINDOWS NT

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### 7.1 Configure Network Properties

1. Select **Enter** to close the “At least one service or driver failed during system startup...” message.
  2. Select **Start->Settings->Control Panel** from the task bar. Select **Network**.
  3. Select the **Change** button.
  4. Change the “**Computer Name:**” field to desired name (site-specific information).
  5. Record this value.
  6. Select the **OK** button.
  7. Verify that the Computer Name is correct.
  8. Select the “**Protocols**” tab.
  9. Select “**Netbeui**” and **REMOVE**
  10. Select “**TCP/IP Protocol**”
  11. Select the “**Properties...**” button.
  12. If using static IP addressing, execute the following steps:
    - Ensure that the “**Specify an IP address**” radio button is selected.
    - Enter the desired “IP Address”, Subnet Mask”, and optional “Default Gateway” data (site specific information). Record these values.
- EXAMPLE DATA:**  
IP Address: 10.0.0.100  
Subnet Mask: 255.0.0.0  
Gateway: 10.0.0.1
- Enter any WINS or DNS information in the appropriate tabs.
  13. If using DHCP or dynamic addressing, select the “**Obtain an IP address from a DHCP server**” radio button.
  14. Once all appropriate IP addressing information has been entered, select the **OK** button on the **TCP/IP Properties** window.
  15. Select the **Close** button to close the Network Properties window
  16. Select **Yes** to restart the computer
  17. Select **Enter** to close the “At least one service or driver failed during system startup...” message.
  18. Following system reboot, select **Start->Settings->Control Panel** from the task bar.
  19. Select **Network**.
  20. Select the “**Identification**” tab.
  21. Select the **Change** button.
  22. Select the **Domain** radio button.
  23. Enter the desired domain name (e.g. “SATMAN” – site specific information). Record this value.
  24. NOTE: Steps 24 and 25 may not be required at all sites.
  25. Select the “**Create a Computer Account in the Domain**” checkbox.

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26. Enter an administrative user name and password with rights to add machines to the domain (site specific information).
27. Ensure the “Welcome to the SATMAN (site specific) Domain” message appears and select **OK**.
28. Select the **OK** button.
29. Select the **Close** button to close the Dialog.
30. Select the **Yes** button and wait for the workstation to reboot
31. Select **Enter** to close the “At least one service or driver failed during system startup...” message

#### 7.2 Give User Local Administrator Privileges

1. Select **Start->Programs->Administrative Tools->User Manager** from the task bar.
2. Select “**Administrators**” in the lower Groups window.
3. Select the “**Add...**” button with Administrator highlighted.
4. Ensure the correct domain is selected after “List names from:”
5. Select the user (e.g. “wpuser” – site specific information) from the Names list.
6. Select the **Add** button.
7. Select any Domain Admins account created for Saturn use (e.g. “satadmin” – site specific information)
8. Select the **Add** button
9. Select the **OK** button.
10. Verify that the user appears in the Members list.
11. Select the **OK** button.
12. Close the “**User Manager**” Dialog.
13. Select **Start->Shutdown** from the task bar. Select the radio button to **Close all programs and log on as a different user**. Then select **Yes while holding down the Shift Key** during log off to disable autologon. Make sure that the shift key remains held down during the entire log off process. At the **Log On** prompt, enter the username and password (from step 5 above) and select the appropriate domain.
14. If the logon is successful, a “**Welcome to Windows NT**” window will be displayed.
15. Select the **Close** button.

#### 7.3 Set Autolog (WPU's, 3<sup>rd</sup> Party Clinicals - NCPUs only if a dedicated Saturn workstation)

1. Explore to **C:\utils\reskit**
2. Select **autolog.exe** to launch the AUTOLOG utility
3. Enter the appropriate password (site-specific information)
4. Select the **OK** button.
5. The AUTOLOG ENABLED dialog box will appear – select the **OK button**
6. Select **Start->Shutdown** from the task bar and choose **Close all programs and log on as different user** to test autolog.
7. If autolog was configured properly, the WPU will log on and you will be presented with the NT Welcome window.
8. De-select the **Show this Welcome Screen next time you start Windows NT** checkbox



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9. Select the **Close** button

#### **7.4 Set Time, Time Zone, And Styles**

**NOTE:** This step configures the Windows NT Time Zone. Both the Server and workstation should be set the same. This is required for the time synchronization to occur

1. Select **Start->Settings->Control Panel** from the task bar. Select **Date/Time**.
2. Select **Set the time as required**.
3. Select the **Time Zone** tab.
4. Set the time zone as appropriate.
5. De-select **Automatically adjust clock for daylight saving changes**, if necessary.
6. Select **OK** to close **Date/Time** dialog.
7. Select **Start->Settings->Control Panel** from the task bar. Select **Regional Settings** to set the Time and Date styles.
8. Select **Time** tab and set Time Style to **HH:mm:ss**.
9. Click on the Regional Settings Properties' **Date** tab.
10. Set Short date style to **MM/dd/yyyy**.
11. Select the **Apply** button.
12. Select **OK** to close Regional Settings Dialog.

#### **7.5 Install the Touchscreen (WPU's and 3<sup>rd</sup> Party Clinicals ONLY)**

**NOTE:** If upgrading a 3<sup>rd</sup> Party Clinical – touch screen is already installed. DO NOT run following steps.

1. Explore to C:\UTILS\ELO (if installing a 3<sup>rd</sup> party clinical, will need to copy UTILS folder from a WPU or map a network drive to a share on another computer)
2. Execute **SETUP.EXE**
3. At "Welcome" window, select **NEXT**
4. At "Software License Agreement" window, select **YES**
5. At "Choose Destination Location" window, select **BROWSE**
6. At Choose folder window, change path to **C:\utils\EloWinNT**, select **OK**
7. When prompted to create the folder, select **YES**
8. At "Choose Destination Location" window select **NEXT**
9. At "Monitor Configuration Type" window, select **NEXT**
10. At "Select COM Port" window, select **NEXT**
11. At "Setup Complete" window, select **NO** and **FINISH**
12. Select **Start->Run** from the taskbar and enter **Regedit**.
13. Navigate to **HKEY LOCAL MACHINE\SYSTEM\CurrentControlSet\Services\MonMouse\Touchscreen\Parameters**
14. Select the **HARDWAREHANDSHAKING** parameter
15. Change the value data from **1** to **0**.
16. Reboot the workstation
17. Select **Start->Settings->Control Panel** from the task bar. Select **Elo Touchscreen**.
18. Select the **Sound** tab.
19. Deselect **"Enable Click Sounds"** checkbox.
20. Select **OK**.

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#### **7.6 Install NT SP6a 128-bit (NCPUs and 3<sup>rd</sup> Party Clinicals ONLY)**

1. Map a network drive to the installation source (as noted in the Prerequisites section). Verify **Reconnect at Logon** is unchecked.
2. In Explorer, select the mapped drive to see its contents in the right pane.
3. Execute **SP6I386.EXE**
4. Check **ACCEPT LICENSE AGREEMENT**
5. Deselect **BACKUP FILES**
6. Select **INSTALL**
7. Once installation is complete, select **RESTART** to reboot the workstation

#### **7.7 Install IE 5.5 (NCPUs and 3<sup>rd</sup> Party Clinicals ONLY)**

1. Map a network drive to the installation source (as noted in the Prerequisites section). Verify Reconnect at Logon is unchecked.
2. In Explorer, select the mapped drive to see its contents in the right pane.
3. Execute **IE5SETUP.EXE**
4. Check **ACCEPT LICENSE AGREEMENT**
5. Select **NEXT**
6. Use default (typical set of components)
7. Select **NEXT**
8. Once installation is complete, select **FINISH** to reboot

#### **7.8 Install PCAnywhere 10**

##### **WPU's**

1. Explore to **C:\UTILS\PCA10**
2. Execute **HOSTLAN.EXE** to launch the install
3. Proceed with step A below:

##### **NCPUs and 3<sup>rd</sup> Party Clinicals**

**NOTE: DO NOT uninstall previous versions of PCAnywhere using the ADD\REMOVE PROGRAMS function in Control Panel prior to running the PCAnywhere version 10 install.**

1. Map a network drive to the installation source (as noted in the Prerequisites section). Verify Reconnect at Logon is unchecked.
2. In Explorer, select the mapped drive to see its contents in the right pane.
3. Execute **SETUP.EXE**
4. Choose **"Install PCAnywhere 10.0"**
5. Choose **"PCAnywhere for the Individual"** install for nonclinicals and **"LAN Host"** install for 3rd party clinicals
6. If prompted "You must restart your system for configuration changes made to.....", select **NO**
7. If you are presented with a "Previous Version Installed" window, select **NO**. If you are not presented with a "Previous Version Installed" window, proceed to step A below
8. The system will reboot
9. Following system reboot, map a network drive to the source
10. In Explorer, select the mapped drive to see its contents in the right pane.
11. Execute **SETUP.EXE**
12. Choose **"Install PCAnywhere 10.0"**

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13. Choose **“PCAnywhere for the Individual”** install for nonclinical and **“LAN Host”** install for 3rd party clinicals
14. Proceed with step A below:
  - A. At the “Welcome to Symantec pcAnywhere Setup Wizard” window, select **NEXT**
  - B. At the “License Agreement” window, select **“I accept the terms....”** and select **NEXT**
  - C. At the “Customer Information” window, enter the User Name and Organization (site-specific information) and click **NEXT**.
  - D. At the “Setup Type” window, verify that the “Typical” option is selected and select **NEXT**
  - E. At the “Ready to Install the Program” window, select **INSTALL**
  - F. Once the install completes, at the “Symantec Support Solutions” window, select **NEXT**.
  - G. At the “Windows Solutions window”, select **NEXT**.
  - H. At the “How To Reach Us Online” window, select **NEXT**.
  - I. At the “Welcome To Live Update” window, select **CANCEL**
  - J. At the “Please Register Symantec PCAnywhere” window, select **SKIP**
  - K. When prompted “Are you sure you want to skip the registration process?”, select **YES**
  - L. At the “Completing the Symantec PCAnywhere Setup Wizard” window, select **FINISH**
  - M. When prompted “You must restart your system.....”, select **YES** and the system will reboot
  - N. Following reboot, launch PCAnywhere by selecting Start->Programs->Symantec PC Anywhere from the task bar.
  - O. At the “Please Register Symantec PCAnywhere” window, select **SKIP**
  - P. When prompted “Are you sure you want to skip the registration process?”, select **YES**
  - Q. Right click on the **NETWORK** host item (or choose FILE\PROPERTIES)
  - R. Select the **Connection Info.** tab
  - S. Verify **TCP\IP** checkbox is checked
  - T. Select the **Callers** tab
  - U. Authentication type could vary site to site. It will typically be NT. Set the Authentication Type field to **NT**.
  - V. Immediately under “Caller List”, select the icon for **“New Item”**
  - W. Choose either user or group (site-specific information)
  - X. In the Domain field, select the domain that the appropriate user or group from the previous step belongs to.
  - Y. In the Account field, choose either the user or group (site specific information) that will be used to access the PCAnywhere host item.
  - Z. Select **OK**
  - AA. Select the **Security Options** tab
  - BB. In the Encryption section, in the Level field, select **PCAnywhere**
  - CC. Check **“Deny lower encryption level”**
  - DD. Select **OK**
  - EE. You will be prompted to provide a name for the new host item. Name the host item after the name of the computer (site specific information).
  - FF. Once the host item is named, double-click the host item to launch it
  - GG. When prompted “The PCAnywhere host is now waiting for connections”, select **OK**
  - HH. Stop the PCAnywhere host item by double-clicking on the computer icon in the System Tray (lower-right corner of screen) and selecting **Cancel**.

#### Recovery on PCAnywhere install fault (“bluescreen”)

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In any situation where Windows NT 4.0 blue screens after installing pcAnywhere, you should attempt to restart NT three times before attempting to start with "Last known good configuration." The three restarts should switch pcAnywhere to Fault Tolerant boot mode. This should allow you to restart NT, uninstall pcAnywhere, and resolve the video driver problem that caused the blue screen.

If you attempt to go to "Last known good configuration" prior to the three restarts, you will either end up doing a parallel install of NT or you will have to reinstall NT.

#### **7.9 Hardware Installation (3<sup>rd</sup> Party Clinicals ONLY)**

1. Install\verify ISOCOMM and WatchDog Timer cards
  - DS1 – 1,3,4,5,8 on; 2,6,7 off
  - DS2 – 1,3,4,5,7,8 on; 2,6 off
  - DS3 – 1,3,4,5,6,8 on; 2,7 off
  - DS4 – 1,3,4,5,6,7,8 on; 2 off
2. Install\verify serial card driver (SeaLevel)
3. Create\verify ports 5,6,7,8 in CONTROL PANEL\PORTS
4. Set IRQ's and memory settings in CONTROL PANEL\PORTS
  - Port 5, 100, IRQ 5
  - Port 6, 108, IRQ 5
  - Port 7, 110, IRQ 5
  - Port 8, 118, IRQ 5
5. Share IRQ 5 in SeaLevel Advanced Port utility

#### **7.10 Saturn Installation**

1. Map a network drive to the installation source (as noted in the Prerequisites section). Verify **Reconnect at Logon** is unchecked.
2. In Explorer, select the mapped drive to see its contents in the right pane.
3. In the right pane, select the folder **Disk1** to display its contents.
4. Execute **SETUP.EXE** found in the Disk1 folder, to begin the Saturn Installation Program. Once started, the Saturn Information System Installation window, will appear showing "Saturn Information System", the version of the software being installed, and the copyright information for the product.
5. At the Welcome Screen, select **Next** to continue or **Cancel** to abort the setup.
6. If you choose to select **Cancel** to exit Setup (at any time during Setup), a dialog will appear with the message "Setup is not complete. If you quit the setup program now, the components you requested to add/remove will not be installed/uninstalled. You may run the setup program at a later time to complete the operations. Are you sure you want to quit the setup?" Select **Yes** to continue, **No** to quit setup.
7. If a message is presented that describes steps that have not been completed, note which steps have not been completed, select **OK** (the installation will abort), complete the steps as per the instructions provided and rerun the Saturn Installation.
8. When the Saturn Setup Application Type window appears, highlight **Clinical or Non Clinical** to choose this workstation's installation type. Select **Next** to continue or **Cancel** to abort the setup.

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9. When the Enter Server Name Text window appears, enter the **Server Name** (site-specific information; this is the actual name of the server) and then select **Next** to continue, **Back** to return to previous page or **Cancel** to abort the setup.
10. If the Application Type selected is Clinical, the window, Saturn Setup Power Supply Selection, will appear. Select **APC, MGE or none** (site-specific information; one must be selected) as the UPS type for this Clinical Workstation. Select on **Next** to continue or **Cancel** to abort the setup.
11. During the installation a variety of DOS windows will appear. If you want to determine what process is taking place, minimize the DOS window. A status window is displayed that will define what process is taking place.
12. When the Saturn Setup Start Copying Files window appears, select **Next** to begin copying Program Files or **Cancel** to abort the setup.
13. A Setup Status Screen will appear, displaying a progress bar. This bar will indicate the progress of the copy. If Copy tries to copy a Read Only file, a message box will appear stating, "Read Only File Detected." Check the box, "Don't display this message again.", and select **Yes** to copy all read only files and to continue the copy.
14. When the ODBC Data Source Administrator window appears, perform the following steps to verify the Server's ODBC settings:
  - Select the **System DSN** tab.
  - Double-click **PERIOPDM** or select **PERIOPDM** and the **Configure...** button.
  - Select the **Login** tab
  - In the User ID field enter the computer name (site-specific information; was used in section 7.2).
  - In the Password field enter **ValleyBoys**
  - Select the **Database** tab.
  - Verify that the Server name is set to **SATURN** (site-specific; this refers to the name of the ASA Database Server. By default it is set to SATURN. Some sites have different names for their Saturn DB servers and the name will need to be changed manually. Example: DUMC's is SATURNP.).
  - Verify that the Database name is set to **PERIOPDM**
  - Select the **Network** tab
  - Check **TCP/IP**
  - In the TCP/IP field, enter **HOST="IP address of the server"** (site-specific information)
  - Select the **ODBC** tab
  - Select the **Test Connection** button
  - If the ODBC settings are incorrect, you will receive a "connection failed" or similar message. Repeat/verify beginning with the fourth bullet above.
  - If the ODBC settings are correct, you will receive a "connection successful" message. Proceed to the next step
  - Select the **Login** tab
  - Delete the information in the User ID field and Password field.
  - Select **OK**
  - Select **OK**. The "*ODBC Data Source Administrator*" window will close.
15. The Saturn Setup Complete window will appear.
16. Select **Finish** to exit the Saturn Workstation Installation program.
17. Reboot the WPU.

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18. Following reboot, Saturn should launch
19. Unlock the keyboard (**Ctrl, F9; Alt, F9**) and press **Ctrl, Alt, Del**
20. Choose **TASK MANAGER**
21. Select the **PERFORMANCE** tab
22. The CPU usage indicator should be spiking at approx. 95-100%. This indicates that “replication” is occurring. Once the CPU usage indicator drops to approx. 10-20% (after approx. 10-15 minutes) replication is complete.
23. Go to the Saturn Recorder’s Workstation Configuration Page.
24. On the **General** Tab, set the **Workstation Name** to your specific site configured location.
25. For NCPUs – deselect **Touchscreen** and verify proper video resolution (1024 X 768)

#### 7.11 Verify Communication with Patient Monitors (WPU's and 3<sup>rd</sup> Party Clinicals ONLY)

1. Launch a new case in Recorder
2. In **Workstation Configuration** set port settings as needed (site-specific information)
3. Once communication with patient monitors is verified, close the case without saving it.

#### 7.12 Setup Printers

1. Select **Start->Settings-> Printers** from the task bar.
2. Double-click **Add Printer** (site-specific information; printers could be networked printers or shared off another workstation).
3. If installing a printer from a network printer server, execute the following:
  - Select the **Network printer server**, then select **Next**.
  - Scroll down the list to find the desired printer, then double click it.
  - Select **Finish**.
4. If installing an LPR printer, execute the following:
  - Select the “**My Computer**” radio button and select **Next**.
  - Select “**Add Port**”.
  - Select “**LPR Port**” and select “**New Port**”.
  - Under “**Name or address of server providing lpd:**”, enter the IP address of the LPR printer (site specific).
  - Under “**Name of printer or print queue on that server:**”, enter the queue name (site specific, often does not matter)
  - Select **OK**.
  - Select **Close**.
  - Select **Next**.
  - Choose the appropriate manufacturer and printer (or install from a network location as appropriate).
  - Select **Next**.
  - Enter the name of the printer and choose if you want it to be the default printer.
  - Select **Next**.
  - Choose “**Shared**” or “**Not shared**” as appropriate (typically, this will be “Not shared”).
  - Select **Next**.
  - Select **Yes** to print a test page and select **Next**.

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- Select **Yes**.
  - Select **Finish**.
5. Close the Printer dialog.

### 7.13 Clearing the Event Log

1. Select “**Start->Programs->Administrative Tools->Event Viewer**” from the taskbar.
2. Select “**Log->System**” from the menu.
3. Select “**Log->Clear All Events**” from the menu.
4. Select **No** to save the event log”
5. Select **Yes** to clear the System log.
6. Select “**Log->Security**” from the menu.
7. Select “**Log->Clear All Events**” from the menu.
8. Select **No** to save the event log”
9. Select **Yes** to clear the Security log.
10. Select “**Log->Application**” from the menu.
11. Select “**Log->Clear All Events**” from the menu.
12. Select **No** to save the event log”
13. Select **Yes** to clear the Application log.
14. Close the Event Viewer window.

### 7.14 Copy Time.bat (NCPUs and 3<sup>rd</sup> Party Clinicals ONLY)

1. Copy ResKit and Time folders FROM a clinical TO root.
2. Copy time.bat to root, create shortcut and rename to “time”, copy shortcut to All Users\Startup and set to run minimized.
3. Copy sleep.exe to c:\nad\apps\pdm folder
4. Edit time.bat... after net time line add the following:  
“cd\;cd c:\nad\apps\pdm;sleep 5;caseeditor.exe;exit”

### 7.15 Verify Correct Virtual Memory Settings On Saturn Clinical Workstations

1. Select “**Start->Settings->Control Panel**” from the taskbar.
2. Select “**System**”.
3. At the System Properties window, note the amount of physical RAM in the WPU – this will be indicated toward the bottom of that window (will be approximately one of the following – 64, 128 or 256.)
4. Select the **Performance** tab.
5. Verify that the virtual Memory setting is 2 times what the amount of physical RAM was in the WPU (ex. – if physical RAM was 128, virtual memory should be 256 MB.)
6. If the virtual memory setting is correct, go to next section.
7. If the virtual memory setting is not correct, select the **Change** button – a virtual memory window will appear.
8. Under **Drive**, select the **C:** drive.
9. Under the **Paging File size For Selected Drive** section, change both the **Initial Size** field and the **Maximum Size** field values to be 2 times the amount of physical RAM in the WPU.
10. Select the **Set** button.



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11. Select **OK** to the Virtual Memory window.
12. Select **OK** at the System Properties window.
13. Proceed with the remainder of the Saturn Workstation Installation Procedures.

#### **7.16 CCOW Setup (Only if a site is to have CCOW enabled – site specific information)**

1. Clinical:
  - a. Open **Task Manager** and choose the **Applications** tab
  - b. Choose **System One** and select **End Task** - the System One and Proto applications will close.
  - c. Once the System One and Proto applications close, choose **Saturn - Recorder** and select **End Task** – when prompted to end the task select **End Task**.
  - d. Choose the **Processes** tab
  - e. Locate **NADREP~1.EXE** (replication agent) in the list and select **End Process**
  - f. A **Task Manager Warning window** will appear, select **YES**
  - g. Close Task Manager
2. Nonclinical:
  - a. Close Recorder by choosing **File\Exit** in Saturn.
  - b. Verify that **NADREP~1.EXE** is stopped
  - c. Open **Task Manager** and choose the **Processes** tab
  - d. Locate **NADREP~1.EXE** (replication agent) in the list and select **End Process**. If it is not in the list, it is not running. Skip to step f below.
  - e. A **Task Manager Warning window** will appear, select **YES**
  - f. Close Task Manager
3. Map a network drive to the installation source (as noted in the Prerequisites section). Verify Reconnect at Logon is checked
4. Execute **SETUP.EXE**
5. If you receive a prompt stating an update for JavaVM is necessary:
  - a. Select **YES**
  - b. Once the update is complete, reboot the workstation. Clinicals – keep Saturn from launching following reboot by holding down the shift key at NT startup. Will need to enter the appropriate user password (site-specific information) to logon.
  - c. The installation will automatically resume.
6. Accept all defaults to licensing and path prompts
7. When prompted for the Virtual IP or Network Name of the Sentillion Network Appliance, enter the appropriate values (site-specific information).
8. Installation will complete
9. Disconnect the mapped network drive
10. Reboot the workstation
11. Clinical - allow Saturn to launch. Nonclinical – launch Saturn
12. Update Context Rules (note: this step may not be required. Consult with Context Manager.)
  - a. Request the hospital's Context Manager to remove the Subject rules or provide a work-around to the rules for the computer name that has been upgraded. Continue after the configuration change has been completed.
    - i. Saturn supports the Patient Subject only.



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- ii. The site may apply rules to their Context Management system that requires other Subject setting prior to Patient Subject setting. These rules must be removed or the hospital must provide a work-around per workstation prior to enabling Clinical context in Saturn.
13. Execute the List Manager application, select **System Configuration** from the Utilities menu, enter the site specific **CCOW Application Key Name** and select **OK**.
14. Execute the following items for each workstation that will be running CCOW:
  - Select **Workstation Configuration** from the Utilities menu in the Recorder application
  - Check the **CCOW Enabled** checkbox
  - Check the **Join Context at Startup** checkbox
  - Reboot the workstation

\*\*\* SATURN WORKSTATION INSTALLATION COMPLETE\*\*\*

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## 8 UNINSTALL

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### 8.1 Preparation for Uninstall of Saturn

NOTE: If Saturn is being uninstalled on a clinical workstation running Windows 2000, see the Windows 2000 section on *Preparation for Uninstall of Saturn on a Clinical Workstation* and then continue with the steps outlined in this section.

The following steps must be executed in order to prepare a workstation for uninstalling Saturn:

1. Ensure that the workstation is not currently running a case.
2. For clinical workstations, record the Saturn port settings.
3. Exit Saturn on a clinical workstation as follows: Using the Task Manager application, end the applications in the following order: System 1 (wait for Proto to end before continuing), Recorder and NADRepAgent process (NADREP~1.EXE).

Or

Exit Saturn on a non-clinical workstation as follows: Close all Saturn applications and using the Task Manager application, close the System 1 application and NADRepAgent process if necessary.

### 8.2 Uninstalling Saturn

The following steps must be executed in order to uninstall Saturn on a clinical or non-clinical workstation:

1. Execute the Control Panel Add/Remove Programs, select Saturn and Add/Remove.
2. Select **Remove** in the Install Shield Wizard Welcome screen, select **Next>** then **OK**.
3. If presented with a window "Locked File Detected", select **Ignore**.
4. If presented with a window "Shared File Detected", select **No**.
5. Select **Finish** in the Install Shield Wizard Maintenance Complete screen and close the Add/Remove Programs and Control Panel windows.
6. Using Windows NT Explorer, delete the C:\NAD folder.
7. Reboot.

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8. Perform the Saturn installation per the Install New Versions section on *Saturn Installation*.

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## 9 WINDOWS NT WORKSTATION TEST PROCEDURE

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### 9.1 Document General Workstation Information

*Note:* The **Results Sheet** is located at the end of this chapter as well as in Section 10.

1. Record **Hospital Name**, **Address** and **Install Date** on the Results Sheet.
2. Record **Location** of the WPU on the Results Sheet.
3. Record the anesthesia machine to which Saturn is mounted, as **Mount** on the Results Sheet.
4. Record the type of **UPS** the WPU is connected to on the Results Sheet.
5. Record the type of workstation as **C** for clinical or **NC** for non-clinical on the Results Sheet.
6. For clinicals, record the **Type** of clinical as **WPU** for Dräger 400 MHz, **HPU** for 3<sup>rd</sup> party clinicals or **AOU** for Advantech All-in-One unit on the Results Sheet.
7. Record the WPU **Serial Number** and **Part Number** on the Results Sheet.
8. Record **Domain Username** and **Password** on the Results sheet.
9. Record **Local Administrator Username** and **Password** on the Results sheet.
10. From the Start Menu, click **Run**, type **cmd** in the edit box and press the **Enter** key.
11. At the command prompt type **cd \** and press the **Enter** key.
12. At the command prompt type **ipconfig /all** and press the **Enter** key. The IPConfig window will appear.
13. Record the following information on the Results Sheet:
  - *Host Name as Computer Name*
  - *Physical Address as NIC Address*
  - *IP Address*
  - *Subnet Mask*
  - *Default Gateway*

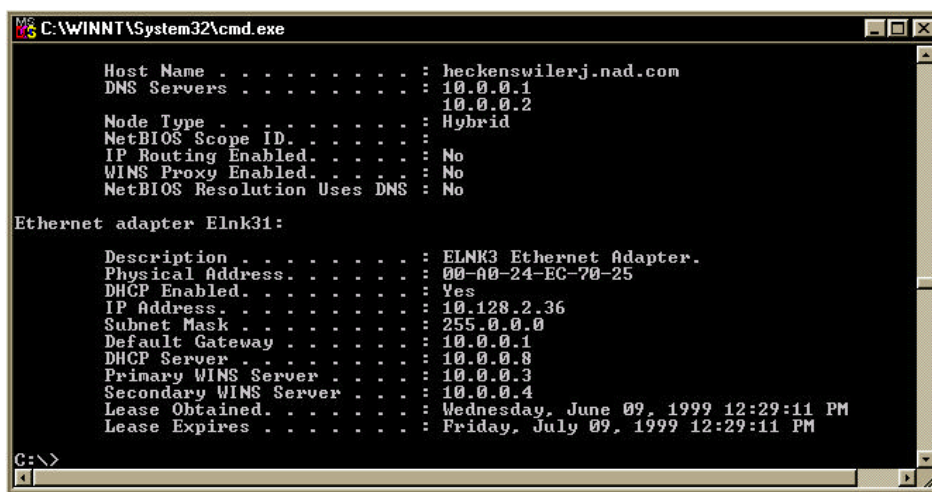


Figure 1 Workstation Command Window

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14. At the Command prompt, type **explorer** and press the **Enter** key. The windows explorer window will appear.
15. Right click on **Network Neighborhood** and choose **Properties**. The Network properties dialog will appear.
16. Record the **Domain** on the Results form.
17. Click **Cancel** on the Network Properties dialog.
18. Click **Start, Programs, Administrative Tools**, then select **Windows NT Diagnostics**.
19. Record the **Windows NT Version** from the **Version** tab on the Results sheet.
20. Close the **Windows NT Diagnostics** dialog by clicking **OK**.
21. Close Windows Explorer and the Command window.
22. From the Start Menu, click **Programs, Sybase** and then click **Sybase Central**.
23. Sybase Central will appear, select **Help** from the file menu and click **About**.
24. Record the Adaptive Server Anywhere Plug-in version as the **Sybase Version** on the Results Sheet.
25. Click the **OK** button to close the About Sybase Central dialog.
26. Click the **Tools** file menu and select **Connect**. The Connect to Adaptive Server Anywhere dialog will appear.
27. Enter the appropriate User ID and Password.
28. Click **OK**. The Connect to Adaptive Server Anywhere dialog will close and the Sybase Central window will appear.
29. Record the name displayed under *Utilities* as the **Server Database Name** on the Results Sheet.
30. Close the Sybase Central window.
31. From the Start Menu, click **Settings**, then **Printers**.
32. Record the name of each installed printer on the Results Sheet.
33. Right-click the printer icon and choose **Properties**. Record the **Driver** installed for that printer from the **General** tab.
34. Choose the **Ports** tab and record the port used. If LPR printing is utilized, record the IP address of the printer as well. (Repeat steps 27 and 28 for each installed printer)
35. Restart the computer.

#### 9.2 Testing the Saturn System

1. Does the System autolog onto Windows NT? Record the results on the Results Sheet.
2. Does the System One diagnostic screen appear?
3. Verify the **System One CRC checks** complete and record the results on the Results Sheet.
4. Are the **Version labels** displayed on the diagnostics screen correct? Record the results on the Results Sheet.
5. Record the **PDM Application** version as **Saturn Version** of the Results Sheet.
6. Does the SYSTEM FUNCTIONAL message appear on the System One diagnostic screen? Record the results on the Results Sheet.
7. The Saturn main logon screen should appear, Enter **NAD** in the username box and click **OK**.
8. Is the **Saturn logon successful**? Record the results on the Results Sheet.
9. Click on the **Logout** button in the menu at the top of the screen, the Saturn main logon screen should appear.

*(Steps 9 through 12 should be performed from one non-clinical or clinical workstation only)*

## Dräger Medical Workstation Installation and Configuration

10. At the Saturn main logon screen, enter **NAD** in the username box and click **OK**.
11. Select the **Utilities** file menu and choose **List Manager**, the List Manager window will appear.
12. Click the + next to **Drugs** and select **Induction** in the left pane.
13. De-select the check box next to the drug **thiopental** from the right pane.
14. Select **File** from the file menu and chose **Exit** to close List Manager, save your changes.
15. Click on the **Logout** button in the menu at the top of the screen, the Saturn main logon screen should appear.
16. *(Steps 16 through 24 should be performed from all WPU's and non-clinical workstations)*
17. At the Saturn main logon screen, enter **NAD** in the username box and click **OK**
18. At the main Saturn window, select **File**, then select **New Case**.
19. Click the **Add Drug** button at the top of the screen, the Add Drug dialog will appear.
20. Click the **Induction** tab of the Add Drug dialog, verify **thiopental** is not listed and click **OK**.
21. If the above is true - **List Manager is functional**, record the results on the Results Sheet.
22. Click the **Cancel** button in the Add Drug dialog box.
23. Click on the **Close Case** button in the menu at the top of the screen.
24. A dialog box will appear asking if you want to save the case - select **NO**.
25. Click on the **Logout** button in the menu at the top of the screen, the Saturn main logon screen should appear.

### 9.3 Modifying Drug Entries

*(Perform this step from one WPU or non-clinical workstation only)*

1. At the Saturn main logon screen, enter **NAD** in the username box and click **OK**
2. Select the **Utilities** file menu and choose **List Manager**, the List Manager window will appear.
3. Click the + next **Drugs** and select **Induction** in the left pane.
4. Select the check box next to the drug **thiopental** from the right pane.
5. Select **File** from the file menu and choose **Exit** to close List Manager, save your changes.

### 9.4 Replication Verification

1. Double click on the **NADRepAgent** icon in the system tray within the taskbar.

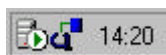


Figure 2 NADRepAgent Icon

2. Verify that the Replicator Status is Active.

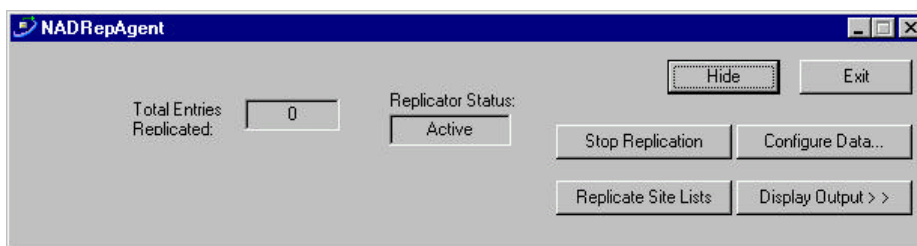


Figure 3 NADRepAgent Dialog

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### Workstation Installation and Configuration

3. Click **Hide** to close the dialog and enable the keyboard filter by pressing **F9**.
4. **NADRepAgent is functional** – Record the results on the Results sheet.

#### 9.5 Loopback Test

*NOTE: Saturn System and Proto must be closed*

1. On the back of the WPU, connect a serial cable to COM 5 and COM 6.
2. On the back of the WPU, connect a serial cable to COM 7 and COM 8.
3. From the Start Menu, click **Find** then **Files or Folders...** the Find: All Files dialog box will appear.
4. In the **Named:** field type "loop.exe." and click on the **Find Now** button.
5. In the lower part of the Find: Files dialog box, double-click on **loop.exe**.
6. A DOS window should appear containing the following text:  
**characters, rxb\_buffer=0 STRING IS SENT FROM COM 5 TO COM 6**  
**characters, rxa\_buffer=1 NOW, SENT FROM COM 5 TO COM 6**  
**characters, rxb\_buffer=0 STRING IS SENT FROM COM 7 TO COM 8**  
**characters, rxa\_buffer=1 NOW, SENT FROM COM 7 TO COM 8**  
This text will repeat itself.
7. If the above occurs, the **Loopback Test** is successful, record the results on the Results Sheet.
8. Close the DOS window by clicking on the X in the upper right hand corner of the window.
9. Close the Find Files window by clicking on the X in the upper right hand corner of the window.

#### 9.6 PCAnywhere Verification

1. Click **Start, Programs, PCAnywhere** to open PCAnywhere.
2. Click the **Hosts** button to view all host items.
3. Double-click the host icon with the workstation name to start the PCAnywhere Host service.
4. If the **Host Service is functional**, record the results on the Results Sheet.
5. Record **PCAnywhere Username** and **Password** on the Results Sheet.
6. Record the version of PCAnywhere installed and type of installation as **H** for Host Only or **HR** for Host and Remote on the Results Sheet.
7. Restart the computer.

#### 9.7 Recording Installed Modules and Applications

*NOTE: The following steps should be performed from one workstation only*

1. Click **Start -> Programs -> Sybase -> Sybase Central**. The Sybase Central window will appear.
2. Click the **Tools** file menu and select **Connect**. The Connect to Adaptive Server Anywhere dialog will appear.
3. Enter the appropriate User ID and Password.
4. Click **OK**. The Connect to Adaptive Server Anywhere dialog will close and the Sybase Central window will appear with a connection to the server database.
5. Click on the + symbol next to the server database name to expand the list.
6. Right-click on **periopdm (NAD)** and choose **Open Interactive SQL** from the context menu. An Interactive SQL window will appear.

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7. Type the following select statement in the **Command window**, which is in the bottom half of the Interactive SQL window. Highlight all text and click the **Execute** button.

**SELECT WorkstationName\_str, InstalledModules\_wrd FROM LocalConfiguration;  
OUTPUT TO c:\WkstnCf.dat FORMAT TEXT**

8. The filename and drive may be changed to accommodate the configuration of the workstation from which you are working.
9. Confirm the file was created in the directory you specified. If the file exists, close all Sybase windows.
10. Open the WkstnCf.dat file in Notepad and print the file.
11. Close and delete the file. Attached the printout to the Results Sheets.

**\*\*\* END OF THE SATURN NT WORKSTATION TEST INSTRUCTIONS \*\*\***

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### Workstation Installation and Configuration

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## 10 INSTALL NEW VERSIONS ON WINDOWS 2000

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### 10.1 Post Gold Drive Preparation for Install

1. Select **Yes** or **OK** to any prompts requesting a reboot related to new hardware detection or installation.

### 10.2 Configure WPU's (400 MHz WPU's only)

1. Select **Start->Settings->Control Panel** from the task bar. Select **Display**.
2. Select the **Settings** tab.
3. Change the **Screen Area** to 1024x768.
4. Change the **Colors** to High Color (16)bit
5. Select the **Advanced** button.
6. Select the **General** tab.
7. Select **Small Fonts**.
8. Select the **Monitor** tab.
9. Select **Refresh Frequency – 75Hz**
10. Select **OK** to close the Display Properties window.
11. Select **Start->Settings->Control Panel** from the task bar. Select **Administrative Tools**.
12. Select **Computer Management**.
13. Select the **Device Manager**.
14. Expand Ports
15. Double-click on COM port number 5.
16. Select the **Resource** tab.
17. Select “**Set configuration manually**”.
18. Set the IRQ to the appropriate value (use Gold Drive matrix to determine IRQ settings: M2R3 images (Part #4115985, Serial #10000-10086) have an IRQ of 9; all other 400 MHz images have an IRQ of 11)
19. Select the **OK** button.
20. Select the **OK** button.
21. Select **No** to the reboot question for COM 5, 6 and 7 and select **Yes** for COM 7.
22. Repeat Steps 15 through 18 for COM port numbers 6, 7 and 8
23. Execute loopback test (c:\utils\loop\_test\loop.exe).

### 10.3 Configure BIOS (AOPUs only)

1. Apply power to AOPU.
2. Verify BIOS Revision 2A69KAKJC displayed on the top of the display.
3. Select **<DEL>** during the boot process to enter the BIOS setup when presented with this option. The system BIOS entries should be made as follows:

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### **Workstation Installation and Configuration**

#### **Standard CMOS Setup (Screen)**

System Date:	<current date>
System Time:	<current time>
Primary IDE Master:	Auto
Primary IDE Slave:	None
Secondary IDE Master:	None
Secondary IDE Slave:	None
Drive A:	None
Drive B:	None
Video:	EGA/VGA
Halt On:	All, But Keyboard

#### **BIOS Features Setup (Screen)**

Virus Warning:	Disabled
CPU Internal Cache:	Enabled
External Cache:	Enabled
CPU L2 Cache ECC Checking:	Enabled
Processor Number Feature	Disabled
Quick Power on Self Test:	Disabled
Boot From LAN First	Disabled
Boot Sequence:	C only
Swap Floppy Drive:	Disabled
Boot Up Floppy Seek:	Disabled
Boot Up Num Lock Status:	Off
A20 Gate	Fast
Typematic Rate Setting:	Disabled
Typematic Rate (Char/Sec):	6
Typematic Delay (Msec):	250
Security Option:	Setup
PS/2 Mouse function Control	Enabled
PCI/VGA Palette Snoop:	Disabled



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OS Select of DRAM > 64 Mbytes:	Non-OS2
Report No FDD for Win 95	Yes
Video Bios Shadow	Disabled
C8000-CBFFF Shadow	Disabled
CC000-CFFFF Shadow	Disabled
D0000-D3FFF Shadow	Disabled
D4000-D7FFF Shadow	Disabled
D8000-DBFFF Shadow	Disabled
DC000-DFFFF Shadow	Disabled

#### Chip Set Features Setup (Screen)

Auto Configuration	Disabled
EDO CAS MA Wait State	2
EDO RAS Wait State	2
SDRAM CAS Latency:	3
SDRAM RAS to CAS Delay:	3
SDRAM RAS Pre-charge time:	3
SDRAM Pre-charge Control:	Disabled
DRAM Data Integrity Mode:	non-ECC
System BIOS Cacheable:	Enabled
Video BIOS Cacheable:	Disabled
Video RAM Cacheable:	Disabled
8 Bit I/O Recovery Time:	3
16 Bit I/O Recovery Time:	2
Memory Hole at 15M to 16M:	Disabled
Passive Release :	Enabled
Delay Transaction:	Disabled
AGP Graphics Aperture:	64 MB
Power Supply Type:	AT
Auto Detect DIMM/PCI Clock:	Enabled
Spread Spectrum:	Disabled
CPU Host Clock (CPU/PCI):	Default

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CPU Warning Temperature: Disabled

#### **Power Management Setup (Screen)**

Power Management: User Defined  
PM Controlled by APM: Yes  
Video Off Method: V/H Sync and Blank  
Video Off After: Standby  
Modem Use IRQ: NA  
Doze Mode: Disabled  
Standby Mode: Disabled  
Suspend Mode: Disabled  
HDD Power down: Disabled  
Throttle Duty Cycle 62.5%  
PCI/VGA Active Monitor: Disabled  
Soft-Off by PWR-BTTN: Instant-Off  
PWRON After PWR-Fail: Always On  
Resume on Ring: Disabled  
IRQ8 Break Suspend: Disabled

#### **PCI/Plug and Play Setup (Screen)**

PNP OS Installed: Yes  
Resources Controlled By: Manual  
Reset Configuration Data: Disabled  
IRQ-3 Assigned to: PCI/ISA PnP  
IRQ-4 Assigned to: PCI/ISA PnP  
IRQ-5 Assigned to: PCI/ISA PnP  
IRQ-7 Assigned to: PCI/ISA PnP  
IRQ-9 Assigned to: Legacy ISA  
IRQ-10 Assigned to: PCI/ISA PnP  
IRQ-11 Assigned to: Legacy ISA  
IRQ-12 Assigned to: PCI/ISA PnP  
IRQ-14 Assigned to: PCI/ISA PnP

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### **Workstation Installation and Configuration**

IRQ-15 Assigned to	PCI/ISA PnP
DMA-0 Assigned to:	PCI/ISA PnP
DMA-1 Assigned to:	PCI/ISA PnP
DMA-3 Assigned to:	PCI/ISA PnP
DMA-5 Assigned to:	PCI/ISA PnP
DMA-6 Assigned to:	PCI/ISA PnP
DMA-7 Assigned to:	PCI/ISA PnP
Used MEM Base Address:	N/A
Assign IRQ to USB:	Enabled

#### **Integrated Peripherals (Screen)**

IDE HDD Block Mode:	Enabled
On-Chip Primary PCI IDE:	Enabled
On-Chip Secondary PCI IDE:	Disabled
IDE Primary Master PIO:	Auto
IDE Primary Slave PIO:	Auto
IDE Primary Master UDMA:	Auto
IDE Primary Slave UDMA:	Auto
Onboard PCI LAN Chip:	Enabled
USB Keyboard Support:	Disabled
Init Display on First:	PCI Slot
KBC Input Clock:	8 MHz
Onboard FDC Controller:	Enabled
Onboard Serial Port1:	3F8
Onboard Serial Port2:	2F8
UART Mode:	Normal
Onboard Parallel Port:	Disabled
Onboard Serial Port1:	3E8
Onboard Serial Port2:	2E8
Serial Port 1/2/3/4 IRQ:	4/3/10/5
Vector Hi/Low Select	Low

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Vector Address Decode: 200

#### Password Setting (Screen)

Password: NAD123

4. Select <**F10**> to save and exit the system BIOS.
5. Press 'Y' and select <**Enter**> to reboot the system.

#### 10.4 Configure Network Properties

1. Select **Start->Settings->Control Panel** on the task bar. Select **System**.
2. Select the **Network Identification** tab.
3. Select the **Properties** button.
4. Change the “**Computer Name:**” field to desired name (site-specific information).
5. Record this value.
6. Select the **OK** button.
7. Select **OK** at the “You must reboot this computer...” prompt.
8. Verify that the Computer Name is correct.
9. Select **OK** on the System Properties window.
10. Select **Yes** if prompted for a reboot.
11. Select **Start->Settings->Control Panel** from the task bar. Select **Network and Dial-Up Connections**.
12. Select **Local Area Connection** and press **Alt+Enter**.
13. Select **Net buci and uninstall**. Select **No** to reboot.
14. Select **Internet Protocol (TCP/IP)** and select **Properties**.
15. If using static IP addressing, execute the following steps:
  - Ensure that the “**Use the following IP address**” radio button is selected.
  - Enter the desired “**IP Address**”, “**Subnet Mask**”, and optional “**Default Gateway**” data (site specific information). Record these values.

#### EXAMPLE DATA:

*IP Address: 10.0.0.100*

*Subnet Mask: 255.0.0.0*

*Gateway: 10.0.0.1*

- Select **Advanced...** button to access WINS and DNS settings.
  - Enter any WINS or DNS information in the appropriate tabs.
  - Select **OK** to close Advanced TCP/IP Properties window.
16. If using dynamic or DHCP addressing, select the “**Obtain an IP address automatically**” radio button.
  17. Select **OK** to close the Internet Protocol (TCP/IP) Properties window.
  18. Check the “**Show icon in taskbar when connected**” check box.
  19. Select **OK** to close Local Area Connection Properties window.
  20. If prompted for a reboot, select **Yes**.

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### Workstation Installation and Configuration

21. Select **Start->Settings->Control Panel** on the task bar. Select **System**.
22. Select the **Network Identification** tab.
23. Select the **Properties** button.
24. Press **Alt+D**, then press **Tab** to select the **Domain** radio button.
25. Enter the desired domain name (e.g. "SATMAN" – site specific information). Record this value.
26. Select the **OK** button.
27. Enter a username and password with access to add computers to the domain (site specific information).
28. Select **OK** at the "Welcome to the..." prompt.
29. Select **OK** at the "You must reboot..." prompt.
30. Select **OK** to close the System Properties window.
31. Select **Yes** to reboot.
32. To log in as local administrator, press **CTRL-ALT-DEL**, select the **Options** button, enter the local administrator password and select the local computer name from the drop-down box.

**NOTE: Perform these steps for the 4sys Clinical Workstation only:**

#### 33. Copy Files to Hard Drive

- i. Open Windows Explorer.
- ii. Copy UTILS directory from CD to the local PC c:\
- iii. In the local c:\utils directory run **ldfiles.bat**

#### 34. Password

- i. Log in as Local Administrator (no password).
- ii. Select CTRL-ALT-DEL.
- iii. Select **Change Password**.
- iv. Change password to "NAD123NAD123".
- v. Select OK.
- vi. Select OK.
- vii. Press ESC.
- viii. Open the control panel.
- ix. Select **Users and Passwords**.
- x. Delete user **CWS-W2K**. Then select YES.
- xi. Select **Advanced** tab.
- xii. Verify Required users press CTRL-ALT-DEL before logging on. is checked.
- xiii. Close Users and Passwords.
- xiv. Close Control Panel.
- xv. Browse to C:\utils\Reskit\autolog.exe
- xvi. Enable autolog.exe with password above.

#### 35. Windows Updates to Install

- i. In the local c:\utils\Win2k SP3 directory run **w2ksp3.exe**
- ii. Select **Next**.
- iii. Select **I agree**.
- iv. Select **Next**.
- v. Select **Next**.
- vi. Select **"Finish"** to reboot.
- vii. In the local c:\utils\ie55 w sp2 directory run **ie5setup.exe**
- viii. Accept agreement. Click **Next**.

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- ix. Click **Next** to begin install.
- x. Select **“Finish”** to reboot.
- xi. Close Windows Explorer.

### 36. Saturn Logo

- i. From the START MENU choose the RUN command. Type **<regedit>** in the window and press **<OK>**. This will launch the registry editor.
- ii. In the HKEY\_USERS\default\control panel\desktop key, change the parameter WALLPAPER to **Saturnlogo.BMP**.
- iii. Close the regedit window.
- iv. Open **Display Properties Window** in the control panel.
- v. Select **Background** Tab.
- vi. Choose **SATURNLOGO** in wallpaper.
- vii. Select **<Apply>**.
- viii. Select **<OK>**.
- ix. Close Display Properties Window and the Control panel.
- x. Select **WinZip** from system tray.
- xi. Select **Next**.
- xii. Select **Yes** to accept agreement.
- xiii. Select **Next**.
- xiv. Select **WinZip Classic** Select **Next**.Select **Express Setup**. Choose **Next**.
- xv. Select **Finish**.
- xvi. Select **never show tips at startup**. Select **close**.
- xvii. Select **options**.
- xviii. Select **configuration**.
- xix. Select **system** tab.
- xx. Deselect **Quick Pick, startup menu and desktop**.
- xxi. Ok. Close WinZip.

### 37. Disable Autolog.exe

- i. Browse to C:\utils\Reskit\Autolog.exe
- ii. Launch Autolog.exe
- iii. Select **Remove Autolog**.

### 38. Disable Elo Touch Programs

- i. Open control panel.
- ii. Select **Add/Remove Programs**.
- iii. Remove **Monitor mouse**.
- iv. Select **Yes** to reboot.
- v. Logon as Local Administrator.

## 10.5 Give User Local Administrator Privileges

- 1. Select **Start->Settings->Control Panel** from the task bar. Select **Users and Passwords**.
- 2. Select the **Advanced** tab.
- 3. Select the **Advanced** button.
- 4. Move to the **Groups** folder.
- 5. Highlight **Administrators**, and press **Enter**.
- 6. Select the **Add** button.
- 7. Change the “Look-in” field so that the Domain name is shown.

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8. Enter a username and password with access to obtain the user list of the domain (site specific information).
9. Select the user (e.g. “wpuser” – site specific information) from the Names list.
10. Select the **Add** button.
11. Select any Domain Admins account created for Saturn use (e.g. “satadmin” – site specific information).
12. Select the **Add** button.
13. Select the **OK** button.
14. Verify that the user appears in the Members list.
15. Select the **OK** button.
16. Close the “User Manager” Dialog.
17. Close the Local Users and Groups window.
18. Select **OK** to close the Users and Passwords window.
19. Select **Start->Shutdown** from the task bar. Select Log off administrator. Select **OK** while holding down the Shift Key during log off to disable autologon. Make sure that the shift key remains held down during the entire log off process.
20. Press **Ctrl+Alt+Delete** to open log on window.
21. Select the **Options>>** button if necessary to expand the Log on to Windows dialog.
22. Enter username, password, and select the appropriate domain from the dropdown list.
23. Select **OK** to log on.
24. Deselect the “Show this screen at startup” check box and select **Exit**.

#### **10.6 Set Autolog (All Clinicals - NCPUs only if a dedicated Saturn workstation)**

1. Open Windows Explorer.
2. Explore to C:\utils\reskit
3. Execute **autolog.exe** to launch the AUTOLOG utility
4. Enter the appropriate password (site-specific information)
5. Select **OK**
6. The AUTOLOG ENABLED dialog box will appear – select **OK**
7. Select **Start->Shutdown** from the task bar and choose Restart the system.
8. If autolog was configured properly, the WPU will log on.

#### **10.7 Set Time, Time Zone, And Styles**

**NOTE: This step configures the Windows 2000 Time Zone. Both the Server and workstation should be set the same. This is required for the time synchronization to occur**

1. Select **Start->Settings->Control Panel** from the task bar. Select **Date/Time**.
2. Set the time as required.
3. Select the **Time Zone** tab.
4. Select the appropriate time zone.
5. Deselect **Automatically adjust clock for daylight saving changes**, if necessary.
6. Select **OK** to close **Date/Time** dialog.

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7. Select **Start->Settings->Control Panel** on the task bar. Select **Regional Options** to set the Time and Date styles.
8. Select **Time** tab and set Time Style to **HH:mm:ss**, if necessary.
9. Select the **Date** tab.
10. Set Short date style to **MM/dd/yyyy**, if necessary.
11. Select **Apply**, if necessary.
12. Select **OK** to close Regional Options Dialog.

#### 10.8 Set Display Power Setting

1. Select **Start->Settings->Control Panel** from the task bar.
2. Select **Power Options**.
3. Set "Power Schemes" to **Always On**.
4. Set all drop-down boxes to **Never**.
5. Select **Advanced tab**.
6. Set "When I press the Power Button on my computer" option to **Power Off**.
7. Select the **Hibernate tab**.
8. Uncheck **Enable hibernate Support**.
9. Select **OK** to close the Power Options Properties window.

**NOTE:** 4sys hardware does not need the UPS configured (10.9 and 10.10).

#### 10.9 Set APC UPS Setting

1. Select **Start->Settings->Control Panel->Power Options** from the task bar.
2. Select the **UPS** tab.
3. Select **Select...** in the Details window.
4. Select **American Power Conversion** (for white APC UPS) from drop down and select corresponding model.
5. Select **COM2** as the port.
6. Select **Finish**.
7. Select **Apply** and wait to see if the UPS initializes communication.
  - If UPS cannot initialize communication, do the following:
    - Select **Select...**
    - Select **COM5** as the port
    - Select **Finish**
    - Select **Apply**
    - Select **Select...**
    - Select **COM2** as the port
    - Select **Finish**
    - Select **Apply**
  - Wait for UPS status information to update.
8. Select **Configure**.



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9. Change "Seconds between subsequent power failure notifications" to 300 seconds.
10. Uncheck "Finally, turn off UPS".
11. Select **OK**.
12. Close the Control Panel window.

#### 10.10 Set MGE UPS Setting

**NOTE: For an MGE UPS to work with these Windows 2000 settings, an MGE cable must be installed between the workstation and the UPS (MGE cable - Part No. 66047).**

1. Select **Start->Settings->Control Panel->Power Options** from the task bar.
2. Select the **UPS** tab.
3. Select **Select...** in the Details window.
4. Select **Generic** from drop down and select **Custom** for the model.
5. Select **COM2** as the port.
6. Select **Next>**.
7. Set the following UPS Signal Polarities:
  - Power Fail/On Battery: **Negative**
  - Low Battery: **Negative**
  - UPS Shutdown: **Negative**
8. Select **Finish**.
9. Select **OK**.
10. Select **OK** to error message.
11. Select **OK** to close Power Options window.
12. Select **Start->Run** from the task bar.
13. Enter **regedit** in the edit box and select **OK**.
14. Go to **HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\services\UPS** in the registry.
15. Change **Port** data to **COM2**.
16. Close Registry Editor window.
17. Select **Start->Settings->Control Panel->Power Options** from the task bar.
18. Select the **UPS** tab.
19. Select **Select...** in the Details window.
20. Select **Generic** from drop down and select **Custom** for the model.
21. Select **COM2** as the port.
22. Select **Next>**.
23. Set the following UPS Signal Polarities:
  - Power Fail/On Battery: **Negative**
  - Low Battery: **Negative**
  - UPS Shutdown: **Negative**
24. Select **Finish**.
25. Select **Apply** and wait to see if the UPS initializes communication.
26. Select **Configure**.
27. Change "Seconds between subsequent power failure notifications" to 300 seconds.
28. Uncheck "Finally, turn off UPS".
29. Select **OK**.
30. Select **OK**.
31. Close Control Panel window.

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#### 10.11 Install the Touchscreen ( Clinicals ONLY

**NOTES: If upgrading a 3<sup>rd</sup> party clinical – touch screen is already installed. DO NOT run the following steps.**

1. Explore to C:\UTILS\elotouch\win2k (if installing a 3<sup>rd</sup> party clinical, will need to copy UTILS folder from a WPU or map a network drive to a share on another computer)
2. Execute **SETUP.EXE**
3. At “Welcome” window, select **NEXT**
4. At “Software License Agreement” window, select **YES**
5. At “Select COM Port” window, select COM4 on Advantech systems, **COM6 for 4sys CWS**, COM1 on WPUs, and select **NEXT**.
6. Select **Yes** to Digital Signature Not Found dialog.
7. Select **FINISH**.
8. Select **Yes** at reboot prompt (for AOPUs and 4sys CWS).
9. Execute the following for WPUs ONLY:
  - Select **No** at reboot prompt.
  - Select **Start->Run** from the task bar.
  - Enter **regedit** and press the **ENTER** key.
  - Browse to the key  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\ELOTouchscreen\NTSerial0
  - Change the Hardware Handshaking value from 1 to 0.
  - Browse to the key  
HKEY\_LOCAL\_MACHINE\SYSTEM\ControlSet001\Services\ELOTouchscreen\NTSerial0
  - Change the Hardware Handshaking value from 1 to 0.
  - Restart the computer.
10. After the system has rebooted, calibrate the touch screen and select **Yes**.
11. Select **Finish**.
12. Select the sound tab and uncheck the Enable Click Sounds option.
13. Select **OK**

#### 10.12 Install PCAnywhere 10.5

##### Clinicals

1. Explore to C:\UTILS\PC Anywhere
2. Execute **HOSTLAN.EXE** to launch the install
3. Proceed with step A below:

##### NCPUs

**NOTE: DO NOT** uninstall previous versions of PCAnywhere using the **ADD\REMOVE PROGRAMS** function in Control Panel prior to running the PCAnywhere version 10.5 install.

1. Map a network drive to the installation source (as noted in the Prerequisites section). Verify Reconnect at Logon is unchecked.
2. In Explorer, select the mapped drive to see its contents in the right pane.
3. Execute **SETUP.EXE**
4. Choose **“Install PCAnywhere 10.5”**
5. Choose **“PCAnywhere for the Individual”** install for nonclinicals and **“LAN Host”** install for 3rd party clinicals

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6. If prompted “You must restart your system for configuration changes made to.....”, select **NO**
7. If you are presented with a “Previous Version Installed” window, select **NO**. If you are not presented with a “Previous Version Installed” window, proceed to step A below
8. The system will reboot
9. Following system reboot, map a network drive to the source
10. In Explorer, select the mapped drive to see its contents in the right pane.
11. Execute **SETUP.EXE**
12. Choose “**Install PCAnywhere 10.5**”
13. Choose “**PCAnywhere for the Individual**” install for nonclinicals and “**LAN Host**” install for 3rd party clinicals
14. Proceed with step A below:
  - A. At the “Welcome to Symantec pcAnywhere Setup Wizard” window, select **NEXT**
  - B. At the “License Agreement” window, select “I accept the terms....” and select **NEXT**
  - C. At the “Customer Information” window, enter the User Name and Organization (site-specific information) and click **NEXT**.
  - D. At the “Setup Type” window, verify that the “Typical” option is selected and select **NEXT**
  - E. At the “Ready to Install the Program” window, select **INSTALL**
  - F. Once the install completes, at the “Symantec Support Solutions” window, select **NEXT**.
  - G. At the “Windows Solutions window”, select **NEXT**.
  - H. At the “How To Reach Us Online” window, select **NEXT**.
  - I. At the “Welcome To Live Update” window, select **CANCEL**
  - J. At the “Please Register Symantec PCAnywhere” window, select **SKIP**
  - K. When prompted “Are you sure you want to skip the registration process?”, select **YES**
  - L. At the “Completing the Symantec PCAnywhere Setup Wizard” window, select **FINISH**
  - M. When prompted “You must restart your system.....”, select **YES** and the system will reboot
  - N. Following reboot, launch PCAnywhere by selecting Start->Programs->Symantec PC Anywhere from the task bar.
  - O. At the “Please Register Symantec PCAnywhere” window, select **SKIP**
  - P. When prompted “Are you sure you want to skip the registration process?”, select **YES**
  - Q. Right-click the **NETWORK** host item (or choose FILE\PROPERTIES)
  - R. Select the **Connection Info.** tab
  - S. Verify TCP/IP checkbox is checked
  - T. Select the **Callers** tab
  - U. Authentication type could vary site to site. It will typically be NT. Set the Authentication Type field to NT.
  - V. Immediately under “Caller List”, select the icon for “**New Item**”
  - W. Choose either user or group (site-specific information)
  - X. In the Domain field, select the domain that the user or group from the previous step belongs to.
  - Y. In the Account field, choose either the user or group (site specific information) that will be used to access the PCAnywhere host item.
  - Z. Select **OK**
  - AA. Select the **Security Options** tab
  - BB. In the Encryption section, in the Level field, select **PCAnywhere**
  - CC. Check “**Deny lower encryption level**”

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- DD.** Select **OK**
- EE.** Rename the host item after the name of the computer (site specific information).
- FF.** Once the host item is named, double-click the host item to launch it.
- GG.** Select **OK** when "The pcAnywhere host has been launched" message is displayed.
- HH.** When prompted "The PCAnywhere host is now waiting for connections", select **OK**
- II.** Stop the PCAnywhere host item by double-clicking on the computer icon in the System Tray (lower-right corner of screen) and selecting cancel.
- JJ.** Explore to C:\utils\PC Anywhere, execute **1051up.exe**
- KK.** Select **Next** at the welcome screen.
- LL.** Select **OK**
- MM.** Select **Start->Shutdown** from the task bar, choose Restart
- NN.** After the reboot explore to C:\Program Files\Symantec\PCAnywhere
- OO.** Locate AWSES32.dll and rename it to AWSES32.old
- PP.** Explore to C:\utils\PCAnywhere and copy AWSES32.dll into the C:\Program Files\Symantec\PCAnywhere folder.

#### Recovery on PCAnywhere install fault ("bluescreen")

In any situation where Windows 2000 blue screens after installing pcAnywhere, you should attempt to restart Windows three times before attempting to start with "Last known good configuration." The three restarts should switch pcAnywhere to Fault Tolerant boot mode. This should allow you to restart Windows, uninstall pcAnywhere, and resolve the video driver problem that caused the blue screen.

If you attempt to go to "Last known good configuration" prior to the three restarts, you will either end up doing a parallel install of NT, or you will have to reinstall NT.

#### 10.13 Customizing Windows Explorer Views

1. Open Windows Explorer.
2. Set view to Details.
3. From the **Tools** menu select **Folder Options**.
4. Select the **View** tab.
5. Check the **Display Compressed files and folders with alternate colors** option.
6. Check the **Display full path in address bar** option.
7. Check the **Display full path in title bar** option.
8. Check the **Show hidden files and folders** option.
9. Uncheck the **Hide extensions for known file types** option.
10. Uncheck the **Remember each folders view settings** option.
11. From the **Folder Views** select "**Like current folder**" to set all the views the same.
12. Select **Yes** in the confirmation window.
13. Select **OK** to exit the Options window.

#### 10.14 Disabling the Internet Connection Wizard

1. Double-click the **Connect to the Internet** icon on the desktop.
2. Select Local Area Network, select **Next**.
3. Select Local Area Network, select **Next**.
4. Select **Next**.

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5. Select **No** to email account, select **Next**.
6. Deselect “**Connect to the internet...**”.
7. Select **Finish**.

#### 10.15 Saturn Installation

1. Map a network drive to the installation source (as noted in the Prerequisites section). Verify Reconnect at Logon is unchecked.
2. In Explorer, select the mapped drive to see its contents in the right pane.
3. Select the folder Disk1 to display its contents.
4. Execute **SETUP.EXE**, found in the Disk1 folder, to begin the Saturn Installation Program. Once started, the Saturn Information System Installation window, will appear showing “Saturn Information System”, the version of the software being installed, and the copyright information for the product.
5. At the Welcome Screen, select **Next** to continue or **Cancel** to abort the setup.
6. If you choose to select Cancel to exit Setup (at any time during Setup), a dialog will appear with the message “Setup is not complete. If you quit the setup program now, the components you requested to add/remove will not be installed/uninstalled. You may run the setup program at a later time to complete the operations. Are you sure you want to quit the setup?” Select **Yes** to continue, **No** to quit setup.
7. If a message is presented that describes steps that have not been completed, note which steps have not been completed, select **OK** (the installation will abort), complete the steps as per the instructions provided and rerun the Saturn Installation.
8. When the Saturn Setup Application Type window appears, highlight Clinical or Non Clinical to choose this workstation’s installation type. Select **Next** to continue or **Cancel** to abort the setup.
9. When the Enter Server Name Text window appears, enter the Server Name (site-specific information; this is the actual name of the server) and then select **Next** to continue, **Back** to return to previous page or **Cancel** to abort the setup.
10. If the Application Type selected is Clinical, the window, Saturn Setup Power Supply Selection, will appear. Select APC, MGE or other (site-specific information; one must be selected) as the UPS type for this Clinical Workstation. Select **Next** to continue or **Cancel** to abort the setup.
11. Select **Next** in the Summary window.
12. During the installation a variety of DOS windows will appear. If you want to determine what process is taking place, minimize the DOS window. A status window is displayed that will define what process is taking place.
13. When the Saturn Setup Start Copying Files window appears, select **Next** to begin copying Program Files or Cancel to abort the setup.
14. A Setup Status Screen will appear, displaying a progress bar. This bar will indicate the progress of the copy.
15. If a “Locked File Detected” message is displayed, select the “**Don’t display this message again**” check box and select **Ignore**.
16. If a “Read Only File Detected” message is displayed, select the “**Don’t display this message again.**” check box and select **Yes**.
17. When the ODBC Data Source Administrator window appears, perform the following steps to verify the Server’s ODBC settings:
  - Select the **System DSN** tab.
  - Select **PERIOPDM** and select the **Configure...** button.
  - Select the **Login** tab

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- In the User ID field enter the computer name (site-specific information; was used in section 7.2).
  - In the Password field enter **ValleyBoys**
  - Select the **Database** tab.
  - Verify that the Server name is set to SATURN (site-specific; this refers to the name of the ASA Database Server. By default it is set to SATURN. Some sites have different names for their Saturn DB servers and the name will need to be changed manually. Example: DUMC's is SATURNP.).
  - Verify that the Database name is set to PERIOPDM
  - Select the **Network** tab
  - Check **TCP/IP**
  - In the TCP/IP field, enter **HOST="IP address of the server"** (site-specific information)
  - Select the **ODBC** tab
  - Select the **Test Connection** button
  - If the ODBC settings are incorrect, you will receive a "connection failed" or similar message. Repeat/verify beginning with the fourth bullet
  - If the ODBC settings are correct, you will receive a "connection successful" message. Proceed to the next step
  - Select the **Login** tab
  - Delete the information in the User ID field and Password field.
  - Select **OK**
  - Select **OK**. The "*ODBC Data Source Administrator*" window will close.
18. The Saturn Setup Complete window will appear.
19. Select **NO** for reboot, then **Finish**.
- NOTE: If installing on a 4sys CWS, then don't reboot! Follow these steps:**
- i. Select "**Start-Run**".
  - ii. Type "**Regedit**".
  - iii. Open "Hkey\_Local\_Machine\Software\Nad\Serial Ports".
  - iv. Rename "Serial Port 7" to "**Serial Port 3**".
  - v. Rename "Serial Port 8" to "**Serial Port 4**".
  - vi. Set Active ports to **1,2,3,4**.
  - vii. Set Serial Ports to **1,2,3,4**.
  - viii. Close the Registry and reboot.
20. Reboot the workstation.
21. Following reboot, Saturn should launch.
22. Log on as the "super user" in the Recorder application.
23. Select **Workstation Configuration** from the **Utilities** menu.
24. Select the **Run...** button.
25. Enter **Taskmgr** in the edit box.
26. Select **OK**.
27. Select the **PERFORMANCE** tab.

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28. The CPU usage indicator should be spiking at approx. 95-100%. This indicates that “replication” is occurring. Once the CPU usage indicator drops to approx. 10-20% (after approx. 10-15 minutes), replication is complete.
29. Go to the Saturn Recorder’s Workstation Configuration Page by selecting **Workstation Configuration** from the Utilities menu.
30. On the **General** Tab, set the **Workstation Name** to your specific site configured location.
31. For NCPUs – deselect Touchscreen and verify proper video resolution (1024 X 768)

#### 10.16 Verify Communication with Patient Monitors (Clinical Workstations)

1. Launch a new case in Recorder
2. In Workstation Configuration set port settings as needed (site-specific information)
3. Once communication with patient monitors is verified, close the case without saving it.

#### 10.17 Setup Printers

1. Log into Saturn as the “Super User”
2. Select **Utilities->Workstation Configuration**
3. Select the **Run** button
4. Type “control panel” into the run field, select **OK**
5. Double-click on **Printers**
6. Double-click **Add a printer**
7. Select **Next** at the Welcome window
8. Select **Network Printer**, select **Next**
9. Select **Next** to browse for a printer
10. Locate the desired printer in the browse list and double-click on it
11. Consult printer information spreadsheet to determine if this printer should be set as the default
12. Select **Next**
13. Select **Finish** to close the Add Printer Wizard
14. Close the Printer Dialog.

#### 10.18 Clearing the Event Log

1. Log into the Saturn Recorder application as the “Super User”.
2. Select **Utilities->Workstation Configuration**.
3. Select the **Run...** button.
4. Type “eventvwr” into the run field, select **OK**
5. Select System Log.
6. Select **Action->Clear All Events**.
7. Select **No** to save the System Log before clearing.
8. Select Application Log.
9. Select **Action->Clear All Events**.
10. Select **No** to save the Application Log before clearing.
11. Select Security Log.
12. Select **Action->Clear All Events**.
13. Select **No** to save the Security Log before clearing.
14. Close the Event Viewer window.

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15. Select **OK** to close the Workstation Configuration window.
16. Log the “Super User” out.

#### 10.19 Copy Time.bat (NCPUs and 3<sup>rd</sup> Party Clinicals ONLY)

1. Copy ResKit and Time folders FROM a clinical TO root.
2. Copy time.bat to root, create shortcut and rename to “time”, copy shortcut to All Users\Startup and set to run minimized.
3. Copy sleep.exe to c:\nad\apps\pdm folder
4. Edit time.bat... after net time line add the following:  
“cd\;cd c:\nad\apps\pdm;sleep 5;caseeditor.exe;exit”

#### 10.20 Verify Correct Virtual Memory Settings On Saturn Clinical Workstations

1. Log on to the Saturn Recorder application as the super user.
2. Select **Workstation Configuration** from the **Utilities** menu.
3. Select the **Run...** button.
4. Enter “**control panel**” in the Run edit box and select **OK**.
5. Select **System**.
6. At the System Properties window, note the amount of physical RAM in the WPU – this will be indicated toward the bottom of that window (will be approximately one of the following – 64, 128 or 256.)
7. Select the **Advanced** tab.
8. Select the **Performance options** button.
9. Verify that the virtual memory setting is 512 Mb.
10. If the virtual memory setting is correct, select **OK** in the Performance Options window, select **OK** in the System Properties window, close the Control Panel window and go to the next section.
11. If the virtual memory setting is not correct, select the **Change** button – a virtual memory window will appear.
12. Under **Drive**, select the **C:** drive.
13. Under the **Paging File size For Selected Drive** section, change the **Initial Size** field to 512 MB and the **Maximum Size** field to 768 MB.
14. Select the **Set** button.
15. Select **OK** to the Virtual Memory window.
16. Select **OK** at the System Properties window.
17. Proceed with the remainder of the Saturn Workstation Installation Procedures.

#### 10.21 CCOW Setup (Only if a site is to have CCOW enabled – site specific information)

1. A) Clinical:
  - a. Open **Task Manager** and choose the **Processes** tab
  - b. Choose **System One** and select **End Process** - the System One and Proto applications will close.
  - c. Locate **NADREP~1.EXE** (replication agent) in the list and select **End Process**
  - d. A **Task Manager Warning window** will appear, select **YES**
  - e. Choose the **Applications** tab



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- f. Choose **Saturn - Recorder** and select **End Task** – when prompted to end the task select **End Task**.
    - g. Choose **Proto** and select **End Task** – when prompted to end the task select **End Task**.
    - h. Close Task Manager
  - B) Nonclinical:
    - a. Close Recorder by choosing File\Exit in Saturn.
    - b. Verify that NADREP~1.EXE is stopped
    - c. Open **Task Manager** and choose the **Processes** tab
    - d. Locate **NADREP~1.EXE** (replication agent) in the list and select **End Process**. If it is not in the list, it is not running. Skip to step f below.
    - e. A **Task Manager Warning window** will appear, select **YES**
    - f. Close Task Manager
2. Map a network drive to the installation source (as noted in the Prerequisites section). Verify Reconnect at Logon is checked.
3. Execute **SETUP.EXE**
4. If you receive a prompt stating an update for JavaVM is necessary:
  - a. Answer **YES**
  - b. Once the update is complete, reboot the workstation. Clinicals – keep Saturn from launching following reboot by holding down the shift key at NT startup. Will need to enter the appropriate user password (site-specific information) to logon.
  - c. The installation will automatically resume.
5. Accept all defaults to licensing and path prompts
6. When prompted for the Virtual IP or Network Name of the Sentillion Network Appliance, enter the appropriate values (site-specific information).
7. Installation will complete
8. Disconnect the mapped network drive
9. Reboot the workstation
10. Clinical - allow Saturn to launch. Nonclinical – launch Saturn
11. Update Context Rules (note: this step may not be required. Consult with Context Manager.)
  - a. Request the hospital's Context Manager to remove the Subject rules or provide a work-around to the rules for the computer name that has been upgraded. Continue after the configuration change has been completed.
    - i. Saturn supports the Patient Subject only.
    - ii. The site may apply rules to their Context Management system that requires other Subject setting prior to Patient Subject setting. These rules must be removed or the hospital must provide a work-around per workstation prior to enabling Clinical context in Saturn.
12. Execute the List Manager application, select **System Configuration** from the Utilities menu, enter the site specific **CCOW Application Key Name** and select **OK**.
13. Execute the following items for each workstation that will be running CCOW:
  - Select **Workstation Configuration** from the Utilities menu in the Recorder application
  - Check the **CCOW Enabled** checkbox
  - Check the **Join Context at Startup** checkbox
  - Reboot the workstation

\*\*\* SATURN WORKSTATION INSTALLATION COMPLETE\*\*\*

## Dräger Medical

### Workstation Installation and Configuration

---

## 11 WINDOWS 2000

---

### 11.1 Executing Third Party Applications on a Clinical Workstation

Access to the desktop on a clinical workstation running Windows 2000 is limited. In order for Saturn Service personnel to execute third party applications on the workstation, a mechanism has been provided in the Recorder application as follows:

1. Log on as the “super user” in the Recorder application.
2. Select **Workstation Configuration** from the **Utilities** menu.
3. Select the **Run...** button.
4. Enter the name of a third party application to execute and select **OK**.

### 11.2 Preparation for Uninstall of Saturn on a Clinical Workstation

The following steps must be executed prior to uninstalling Saturn on a clinical workstation running Windows 2000:

1. Log on as the “super user” in the Recorder application.
2. Select **Workstation Configuration** from the **Utilities** menu.
3. Select the **Run...** button.
4. Type **poledit** in the Open text box and select **OK**.
5. Select **Open Registry** from the **File** menu in the System Policy Editor application.
6. Select the **Local User**.
7. Expand all items and uncheck all items except for the following:  
Windows NT Shell | Custom folders | Custom Programs folder,  
Windows NT Shell | Custom folders | Custom desktop icons,  
Windows NT Shell | Custom folders | Custom Startup folder,  
Windows NT Shell | Custom folders | Custom Network Neighborhood,  
Windows NT Shell | Custom folders | Custom Start menu,  
Windows NT System | Parse Autoexec.bat.
8. Select **OK** and close the window.
9. Reboot the system.

---

## 12 WINDOWS 2000 WORKSTATION TEST PROCEDURE

---

### 12.1 Document General Workstation Information

(The **Results Sheet** is located at the end of this chapter as well as in Section 10.)

**NOTE:** To execute third party applications on a clinical workstation, see the section of the same name.

1. Record **Hospital Name**, **Address** and **Install Date** on the Results Sheet.
2. Record **Location** of the WPU on the Results Sheet.
3. Record the anesthesia machine to which Saturn is mounted, as **Mount** on the Results Sheet.
4. Record the type of **UPS** the WPU is connected to on the Results Sheet.
5. Record the type of workstation as **C** for clinical or **NC** for non-clinical on the Results Sheet.

## Dräger Medical Workstation Installation and Configuration

6. For clinicals, record the **Type** of clinical as **WPU** for Dräger WPU's, **4sys CWS** for the EG unit, **HPU** for other 3<sup>rd</sup> party clinicals, or **AOU** for Advantech All-in-One unit on Results Sheet.
7. Record the **WPU Serial Number** and **Part Number** on the Results Sheet.
8. Record **Domain Username** and **Password** on the Results sheet.
9. Record **Local Administrator Username** and **Password** on the Results sheet.
10. Execute **Window Explorer**, explore to **cmd.exe** in the system directory and execute. (Enter **explorer** via the **Run...** button in Recorder on a clinical workstation.)
11. At the command prompt type **cd \** and press the **Enter** key.
12. At the command prompt type **ipconfig /all** and press the **Enter** key. The IPConfig window will appear.
13. Record the following information on the Results Sheet:
  - *Host Name as Computer Name*
  - *Physical Address as NIC Address*
  - *IP Address*
  - *Subnet Mask*
  - *Default Gateway*

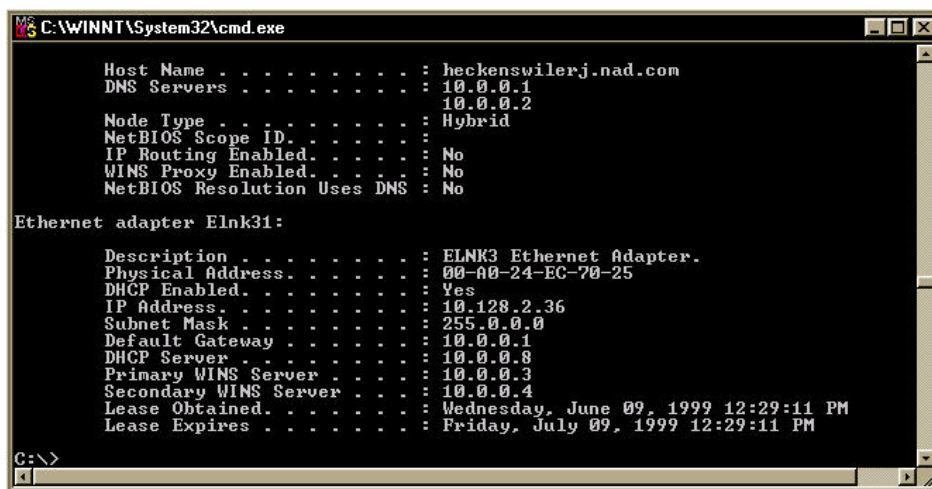


Figure 4 Workstation Command Window

14. Close the Command window.
15. Through **Explorer**, right click on **My Computer** and choose **Properties**. Choose the **Network Identification** tab.
16. Record the **Domain** on the Results form.
17. Choose the **General** tab. Record the **Microsoft Windows** Version and service pack level under **System** as **Windows Version** on the Results sheet.
18. Click **Cancel** on the System Properties dialog.
19. Close Windows Explorer.
20. Execute **Sybase Central** (enter **scview** via the **Run...** button in Recorder on a clinical workstation).
21. Select **Plug-ins...** from the **Tools** menu.
22. Select the **Change...** button and check the **Adaptive Server Anywhere** checkbox.

## Dräger Medical

### Workstation Installation and Configuration

23. Select the **OK** button.
24. Select **About Sybase Central** from the **Help** menu.
25. Record the Adaptive Server Anywhere Plug-in version as the **Sybase Version** on Res. Sheet.
26. Click the **OK** button to close the About Sybase Central dialog.
27. Click the **Tools** file menu and select **Connect**. The Connect to Adaptive Server Anywhere dialog will appear.
28. Enter the appropriate User ID and Password.
29. Click **OK**. The Connect to Adaptive Server Anywhere dialog will close and the Sybase Central window will appear.
30. Record the name displayed under *Utilities* as the **Server Database Name** on the Results Sheet.
31. Close the Sybase Central window.
32. Execute **Control Panel** (enter **Control Panel** via the **Run...** button in recorder on a clinical workstation) and select the **Printers**.
33. Record the name of each installed printer on the Results Sheet.
34. Right-click the printer icon and choose **Properties**. Record the **Driver** installed for that printer from the **Advanced** tab.
35. Choose the **Ports** tab and record the port used. If Standard TCP/IP printing is utilized, record the IP address of the printer as well. (Repeat steps 31 and 32 for each installed printer)
36. Restart the computer.

#### 12.2 Testing the Saturn System

1. Does the System autolog onto Windows 2000? Record the results on the Results Sheet.
2. Does the System One diagnostic screen appear?
3. Verify the **System One CRC checks** complete and record the results on the Results Sheet.
4. Are the **Version labels** displayed on the diagnostics screen correct? Record the results on the Results Sheet.
5. Record the **PDM Application** version as **Saturn Version** of the Results Sheet.
6. Does the SYSTEM FUNCTIONAL message appear on the System One diagnostic screen? Record the results on the Results Sheet.
7. The Saturn main logon screen should appear, Enter **NAD** in the username box and click **OK**.
8. Is the **Saturn logon successful**? Record the results on the Results Sheet.
9. Click on the **Logout** button in the menu at the top of the screen, the Saturn main logon screen should appear.

*(Steps 10 through 12 should be performed from one nonclinical or clinical workstation only)*

10. At the Saturn main logon screen, enter **NAD** in the username box and click **OK**.
11. Select the **Utilities** file menu and choose **List Manager**, the List Manager window will appear.
12. Click the + next to **Drugs** and select **Induction** in the left pane.
13. De-select the check box next to the drug **thiopental** from the right pane.
14. Select **File** from the file menu and chose **Exit** to close List Manager, save your changes.
15. Click on the **Logout** button in the menu at the top of the screen, the Saturn main logon screen should appear.

*(Steps 16 through 24 should be performed from all WPU's and nonclinical workstations)*

16. At the Saturn main logon screen, enter **NAD** in the username box and click **OK**.

## Dräger Medical

### Workstation Installation and Configuration

17. At the main Saturn window, select **File**, then select **New Case**.
18. Click the **Add Drug** button at the top of the screen, the Add Drug dialog will appear.
19. Click the **Induction** tab of the Add Drug dialog, verify **thiopental** is not listed and click **OK**.
20. If the above is true - **List Manager is functional**, record the results on the Results Sheet.
21. Click the **Cancel** button in the Add Drug dialog box.
22. Click on the **Close Case** button in the menu at the top of the screen.
23. A dialog box will appear asking if you want to save the case - select **NO**.
24. Click on the **Logout** button in the menu at the top of the screen, the Saturn main logon screen should appear.

#### 12.3 Modifying Drug Entries

*(Perform this step from one WPU or nonclinical workstation only)*

1. At the Saturn main logon screen, enter **NAD** in the username box and click **OK**.
2. Select the **Utilities** file menu and choose **List Manager**, the List Manager window will appear.
3. Click the + next **Drugs** and select **Induction** in the left pane.
4. Select the check box next to the drug **thiopental** from the right pane.
5. Select **File** from the file menu and choose **Exit** to close List Manager, save your changes.

#### 12.4 Replication Verification

1. Double-click on the **NADRepAgent** icon in the system tray within the taskbar.



Figure 5 NADRepAgent Icon

2. Verify that the Replicator Status is Active.

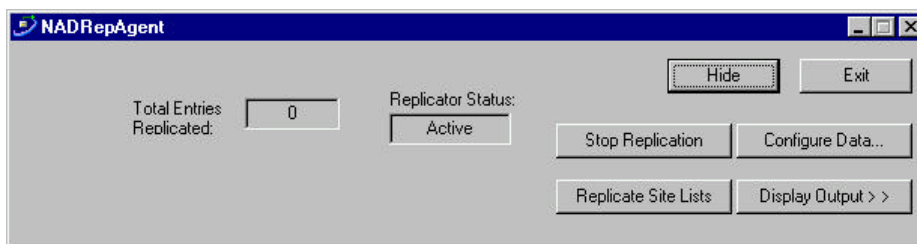


Figure 6 NADRepAgent Dialog

3. Click **Hide** to close the dialog.
4. **NADRepAgent is functional** – Record the results on the Results Sheet.

#### 12.5 PCAnywhere Verification

1. Execute **PCAnywhere** (enter **awhost32.exe** via the **Run...** button in Recorder on a clinical workstation).
2. Click the **Hosts** button to view all host items.
3. Double-click the host icon with the workstation name to start the PCAnywhere Host service.
4. If the **Host Service is functional**, record the results on the Results Sheet.
5. Record **PCAnywhere Username** and **Password** on the Results Sheet.

## Dräger Medical

### Workstation Installation and Configuration

6. Record the version of PCAnywhere installed and type of installation as **H** for Host Only or **HR** for Host and Remote on the Results Sheet.
7. Restart the computer.

#### 12.6 Recording Installed Modules and Applications

*NOTE: The following steps should be performed from one workstation only*

1. Execute **Sybase Central** (enter **scview** via the **Run...** button in Recorder on a clinical workstation).
2. Click the **Tools** file menu and select **Connect**. The Connect to Adaptive Server Anywhere dialog will appear.
3. Enter the appropriate User ID and Password.
4. Click **OK**. The Connect to Adaptive Server Anywhere dialog will close and the Sybase Central window will appear with a connection to the server database.
5. Click on the + symbol next to the server database name to expand the list.
6. Right-click on **periopdm (NAD)** and choose **Open Interactive SQL** from the context menu. An Interactive SQL window will appear.
7. Type the following select statement in the **Command window**, which is in the bottom half of the Interactive SQL window. Highlight all text and click the **Execute** button.  
**SELECT WorkstationName\_str, InstalledModules\_wrd FROM LocalConfiguration;  
OUTPUT TO c:\WkstnCf.dat FORMAT TEXT**
8. The filename and drive may be changed to accommodate the configuration of the workstation from which you are working.
9. Confirm the file was created in the directory you specified. If the file exists, close all Sybase windows.
10. Open the WkstnCf.dat file in Notepad and print the file.
11. Close and delete the file. Attach the printout to the Results Sheets.

#### 12.7 Loopback Test - AOPUs

*NOTE: Saturn System and Proto must be closed. See "Preparation for Uninstall of Saturn" section for instructions on closing the applications.*

1. Log in as local administrator on a clinical workstation.
2. On the back of the workstation, connect a serial cable to COM 5 and COM 6.
3. On the back of the workstation, connect a serial cable to COM 7 and COM 8.
4. Execute **Explorer** (enter **Explorer** via the **Run...** button in Recorder on a clinical workstation).
5. Find the **loop.exe** file and execute it.
6. A DOS window should appear containing the following text:  
**characters, rxb\_buffer=0 STRING IS SENT FROM COM 5 TO COM 6**  
**characters, rxa\_buffer=1 NOW, SENT FROM COM 5 TO COM 6**  
**characters, rxb\_buffer=0 STRING IS SENT FROM COM 7 TO COM 8**  
**characters, rxa\_buffer=1 NOW, SENT FROM COM 7 TO COM 8**  
This text will repeat itself.
7. If the above occurs, the **Loopback Test** is successful, record the results on the Results Sheet.
8. Close the DOS window by clicking on the X in the upper right hand corner of the window.
9. Log on as the local user (e.g., "wpuser" - site specific information), and restart and verify auto log on on a clinical workstation. (**End of test instructions.**)

## Dräger Medical Workstation Installation and Configuration

### **12.8 WORKSTATION RESULTS SHEET**

Sales Order Number: _____	
Hospital Name: _____	Install Date: _____
Street Address: _____	
City: _____	State: _____ Zip: _____
WPU Serial Number: _____	WPU Part Number: _____
WPU NIC Address: _____	IP Address: _____
Computer Name: _____	Subnet Mask: _____
Domain: _____	Gateway: _____
Domain Username: _____	Server Database Name: _____
Domain Password: _____	DB User ID: _____
Local Admin Username: _____	Flat Panel Serial Number: _____
Local Admin Password: _____	Location: _____ PCA Type: _____
PCAnywhere Username: _____	Mount: _____ UPS: _____
PCAnywhere Password: _____	C/NC: _____ Type: _____

#### **VERSION INFORMATION:**

Windows: \_\_\_\_\_ Sybase: \_\_\_\_\_ Saturn: \_\_\_\_\_ PCAnywhere: \_\_\_\_\_

#### **VERIFICATIONS:**

Autolog verification	Loopback Test
System One CRC checks	List Manager is functional
Version Labels are correct	NADRepAgent is functional
Saturn logon is successful	Saturn Recorder is functional
System One functional confirmation	PCAnyWhere Host Service is functional

All Verifications Passed Successfully Initials \_\_\_\_\_

#### **INSTALLED MODULES AND APPLICATIONS:**

APPLICATIONS (Recorder = 1, List Mgr = 2, Env Mgr = 4, Case Mgr = 8, Report Mgr = 16, All = 31): \_\_\_\_\_

MODULES (Pre-Op = 1, Intra-Op = 2, Post-Op = 4, Browse = 8, All = 15): \_\_\_\_\_

**PRINTERS:** (Record each installed printer's name, path, IP address and driver; Specify if LPR printing is utilized)

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#### **NOTES:**

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Signature: \_\_\_\_\_ Date: \_\_\_\_\_

# 11

## Saturn System Checkout Worksheets

*This section provides the Saturn System Checkout Worksheets. (These worksheets are also included with the system test instructions at the end of Sections 9 and 10.)*



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## Dräger Medical Server Installation and Configuration

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### SERVER RESULTS SHEET

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Sales Order Number: \_\_\_\_\_  
Hospital Name: \_\_\_\_\_ Install Date: \_\_\_\_\_  
Street Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Serial Number: _____	Part Number: _____
NIC Address: _____	IP Address: _____
Computer Name: _____	Subnet Mask: _____
Domain: _____	Gateway: _____
Domain Username: _____	DNS1: _____
Domain Password: _____	DNS2: _____
Local Admin Username: _____	WINS1: _____
Local Admin Password: _____	WINS2: _____
PCAnywhere Username: _____	Server Database Name: _____
PCAnywhere Password: _____	Server Location: _____

#### VERSION INFORMATION:

Windows: \_\_\_\_\_ Sybase: \_\_\_\_\_ PCAnywhere: \_\_\_\_\_ PCA Type: \_\_\_\_\_

#### VERIFICATIONS:

Services are functional

Database connection is functional

PCAnyWhere connection is functional

All Verifications Passed Successfully Initials \_\_\_\_\_

#### NOTES:

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Signature: \_\_\_\_\_ Date: \_\_\_\_\_

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**WORKSTATION RESULTS SHEET**

Sales Order Number: \_\_\_\_\_  
Hospital Name: \_\_\_\_\_ Install Date: \_\_\_\_\_  
Street Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

WPU Serial Number: \_\_\_\_\_ WPU Part Number: \_\_\_\_\_  
WPU NIC Address: \_\_\_\_\_ IP Address: \_\_\_\_\_  
Computer Name: \_\_\_\_\_ Subnet Mask: \_\_\_\_\_  
Domain: \_\_\_\_\_ Gateway: \_\_\_\_\_  
Domain Username: \_\_\_\_\_ Server Database Name: \_\_\_\_\_  
Domain Password: \_\_\_\_\_ DB User ID: \_\_\_\_\_  
Local Admin Username: \_\_\_\_\_ Flat Panel Serial Number: \_\_\_\_\_  
Local Admin Password: \_\_\_\_\_ Location: \_\_\_\_\_ PCA Type: \_\_\_\_\_  
PCAnywhere Username: \_\_\_\_\_ Mount: \_\_\_\_\_ UPS: \_\_\_\_\_  
PCAnywhere Password: \_\_\_\_\_ C/NC: \_\_\_\_\_ Type: \_\_\_\_\_

**VERSION INFORMATION:**

Windows: \_\_\_\_\_ Sybase: \_\_\_\_\_ Saturn: \_\_\_\_\_ PCAnywhere: \_\_\_\_\_

**VERIFICATIONS:**

Autolog verification	Loopback Test
System One CRC checks	List manager is functional
Version Labels are correct	NADRepAgent is functional
Saturn logon is successful	Saturn Recorder is functional
System One functional confirmation	PCAnyWhere Host Service is functional

All Verifications Passed Successfully Initials \_\_\_\_\_

**INSTALLED MODULES AND APPLICATIONS:**

APPLICATIONS (Recorder = 1, List Mgr = 2, Env Mgr = 4, Case Mgr = 8, Report Mgr = 16, All = 31): \_\_\_\_\_  
MODULES (Pre-Op = 1, Intra-Op = 2, Post-Op = 4, Browse = 8, All = 15): \_\_\_\_\_

**PRINTERS:** (Record each installed printer's name, path, IP address and driver; Specify if LPR printing is utilized)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**NOTES:**

\_\_\_\_\_  
\_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_

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# 12

## Software Version 4.1 Upgrade Procedure

*This section provides the procedure for upgrading a Saturn Software Version 3.03 system to a Software Version 4.1 system. The operator must have a basic understanding of Windows NT and/or Windows 2000.*

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## Software Version 4.1 Upgrade Procedure

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## Software Version 4.1 Upgrade Procedure

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### **Purpose**

This document outlines the steps necessary to perform an upgrade of an existing Saturn Information System from Version 3.03 to Version 4.1.

This procedure provides instructions to upgrade a Saturn Server system. The operator must have a basic understanding of Windows NT.

**Note:** This procedure, and all files used for the server upgrade portion of this document assume "D:" drive. If either Sybase or the Database are installed on a different drive, then modify the conversion files accordingly, as indicated within the text.

### **Requirements**

- The System Server must be at Saturn Version 3.03 software.
- The following installation disks are required for this upgrade procedure:

Version 4.1 Saturn Server Installation (PN 4117664)

Version 4.1 Saturn Workstation Installation (PN 4117665)

# Dräger Medical

## Software Version 4.1 Upgrade Procedure

---

### A) Other Server Software Upgrades

#### 1.0 Install NT SP6a

The server must be loaded with Windows NT service pack 6a or later. During the installation click 'Yes' to backup the files for future uninstall. It needs 60MB worth of space. Note: IE 4.0 or greater must be installed in order to install SP6a.

#### 2.0 Install PCAnywhere 10

Verify the monitor Display Properties are set to 1024 X 768 resolution, if possible.

**Note: *Do not* uninstall previous versions of PCAnywhere using the ADD\REMOVE PROGRAMS function in Control Panel prior to running the PCAnywhere version 10 install. If the install fails with a blue screen on reboot, then reboot three times and go to the last known good.**

1. Explore to installation source (typically server CD-ROM drive).
2. In Explorer, double-click on the source to see its contents in the right pane.
3. Double-click SETUP.EXE
4. Choose "Install PCAnywhere 10.0"
5. Choose the "PCAnywhere for the Individual" installation type
6. If prompted "You must restart your system for configuration changes made to.....", click NO
7. If you are presented with a "Previous Version Installed" window, click NO. If you are not presented with a "Previous Version Installed" window, proceed to step A below
8. The system will reboot
9. Following system reboot, explore to the installation source.
10. In Explorer, double-click on the source to see its contents in the right pane.
11. Double-click SETUP.EXE
12. Choose "Install PCAnywhere 10.0"
13. Choose "PCAnywhere for the Individual" installation type
14. Proceed with step A below:
  - A. At the "Welcome to Symantec pcAnywhere Setup Wizard" window, click NEXT
  - B. At the "License Agreement" window, select "I accept the terms...." and click NEXT
  - C. At the "Customer Information" window, enter the User Name and Organization (site-specific information) and click NEXT.
  - D. At the "Setup Type" window, verify that the "Typical" option is selected and click NEXT
  - E. At the "Ready to Install the Program" window, click INSTALL
  - F. Once the install completes, at the "Symantec Support Solutions" window, click NEXT.
  - G. At the "Windows Solutions window", click NEXT.
  - H. At the "How To Reach Us Online" window, click NEXT.
  - I. At the "Welcome To Live Update" window, click CANCEL
  - J. At the "Please Register Symantec PCAnywhere" window, click SKIP
  - K. When prompted "Are you sure you want to skip the registration process?", click YES
  - L. At the "Completing the Symantec PCAnywhere Setup Wizard" window, click FINISH
  - M. When prompted "You must restart your system.....", click YES and the system will reboot
  - N. Following reboot, launch PCAnywhere by going to START\PROGRAMS\SYMANTEC PCANYWHERE
  - O. At the "Please Register Symantec PCAnywhere" window, click SKIP
  - P. When prompted "Are you sure you want to skip the registration process?", click YES

## Dräger Medical

### Software Version 4.1 Upgrade Procedure

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- Q.** Right-click the NETWORK host item (or highlight the NETWORK host item and choose FILE\PROPERTIES from the menu at top of screen)
- R.** Click the Connection Info. tab
- S.** Verify TCP/IP checkbox is checked
- T.** Click the Callers tab
- U.** Authentication type could vary site to site. It will typically be NT. Set the Authentication Type field to NT.
- V.** Immediately under “Caller List”, click the icon for “New Item”
- W.** Choose either user or group (site-specific information)
- X.** In the Domain field, select the domain that the user or group from the previous step belongs to (site-specific information).
- Y.** In the Account field, choose either the user or group (site-specific information) that will be used to access the PCAnywhere host item.
- Z.** Click OK
- AA.** Click the Security Options tab
- BB.** In the Encryption section, in the Level field, select PCAnywhere
- CC.** Check “Deny lower encryption level”
- DD.** Click OK
- EE.** You will be prompted to provide a name for the new host item. Name the host item after the name of the computer (site specific information).
- FF.** Once the host item is named, double-click the host item to launch it
- GG.** When prompted “The PCAnywhere host is now waiting for connections”, click OK
- HH.** Choose START\SETTINGS\CONTROL PANEL
- II.** Double-click SERVICES
- JJ.** Find the PCAnywhere Host Service
- KK.** Click Startup
- LL.** Choose Automatic, click OK
- MM.** At the Services window, click close
- NN.** Close the Control Panel

# Dräger Medical

## Software Version 4.1 Upgrade Procedure

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### **B) Server Preparation**

1. Stop the Scheduler Service on the Server and change it to Manual on Startup.
2. Stop any other Sybase services that may be running, such as the Validate service.
3. Verify the last full and incremental backups were sent to tape and validated.
4. Copy the following directories and files from the Server Installation CD to the D:\NAD\UPGRADE, D:\NAD\UPGRADE\SETUP, D:\NAD\UPGRADE\QueueChk, and D:\NAD\QueueChk directories on the server:

NAD\UPGRADE

NAD\UPGRADE\SETUP

NAD\UPGRADE\QueueChk

NAD\QueueChk

5. Share both QueueChk folders

# Dräger Medical

## Software Version 4.1 Upgrade Procedure

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### C) Workstation Preparation

WPU's and 3<sup>rd</sup> Party Clinicals

- 1) Record the following:
  - a. TCP/IP settings
  - b. Computer/domain name
  - c. Printer settings
  - d. Saturn Port settings
  - e. HPU's - IRQ settings for COM ports 5,6,7,8 (ISOCOMM card) under NT ports applet in Control Panel Record IRQ settings
  - f.

#### All Workstations

- 1) Using task manager, stop System 1, Recorder and NADRepAgent.
- 2) Explore to the QueueChk share on the server
- 3) Copy the contents of the QueueChk folder to the root of C: on the workstation
- 4) Run the bat\_check\_queue.bat file to determine if the local queue has items in it
- 5) If the queue has items in it, reboot workstation and run the bat\_check\_queue.bat file again.
- 6) If the queue still has items in it, check the NT event log. If there are any errors other than a Primary Key constraint error, create a new case but don't save it.
- 7) Run the bat\_check\_queue.bat file again.
- 8) If there are Primary constraint errors or if queue still has items in it, contact Saturn Support  
Note: If a nonclinical or a 3<sup>rd</sup> party clinical then perform the following, otherwise skip to the step #12.
- 9) Run bat\_drop\_databases.bat
- 10) Check the log\_sql\_drop\_databases.txt file to verify DB's were dropped without error
- 11) Contact Saturn Support if any errors are received.
- 12) Verify System 1, Recorder and NADRepAgent are stopped.
- 13) NC & HPU's – delete the files copied in step 3 above
- 14) Disable Saturn on the workstation by performing one of the following: Clinicals – rename C:\NAD\preboot\preboot.exe ; non-clinicals – remove Saturn from the START menu.

## Dräger Medical

### Software Version 4.1 Upgrade Procedure

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#### **D) Server Upgrade to 4.0**

- 1) To verify all cases are complete, do the following on the server. Launch the Sybase Central application.
- 2) Connect to the server database.
- 3) Check if the InUse\_bol column is set to 1 in the PDMCase and Patient tables.
  - a. Execute the 'Select \* from PDMCase where InUse\_bol = 1' command from ISQL.
  - b. Execute the 'Select \* from Patient where InUse\_bol = 1' command from ISQL.
- 4) If any cases are displayed when either one of these commands is executed, do the following:
  - a. Find out which workstation has the case or patient locked by looking at the ReplicationLocation\_id column returned from the commands executed above.
  - b. Execute 'Select \* from LocalConfiguration where SerialNumber\_int = ?' where ? is the value from the ReplicationLocation\_id column and look at the WorkstationName\_str column to find the workstation.
  - c. Check that all cases on that workstation have been replicated
  - d. If there are no cases or patients on the workstation, database or queue, execute the following commands from ISQL.
    - i. Execute 'Update PDMCase set InUse\_bol=0, ReplicationLocation\_id=0 where Case\_id=?' where ? is the case ID of the case that had the InUse\_bol column set to 1.
    - ii. Execute 'Update Patient set InUse\_bol=0, ReplicationLocation\_id=0 where Patient\_id=?' where ? is the patient ID of the patient that had the InUse\_bol column set to 1.
    - iii. Execute 'Commit'.
- 5) Get the total number of rows returned from viewing the data in the CaseAutomaticData table. Write this number down for verification later in the procedure.
- 6) Stop the server service
- 7) In the server service properties tab, change the -x parameter from TCPIP to NONE
- 8) Verify the -n parameter is set to Saturn, otherwise change it and inform the DBA that the database server name was changed to Saturn. Note: Duke was set to SaturnP and needs to be changed.
- 9) Copy DB and Log files to another folder (COPY1) on the server
- 10) Start the server service.

# Dräger Medical

## Software Version 4.1 Upgrade Procedure

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### Validate Database

- 1) Go to a DOS command prompt and change to the nad\db directory on the server.
- 2) Type the following at the prompt: `dbvalid -c`  
`"uid=NAD;pwd=NADADMIN;dbf=X:\nad\db\periopdm.db" -o X:\nad\db\dbv.txt` (where "X" is the drive where the database is located)
- 3) A 'No Errors Reported' message is displayed. If an error is reported, consult your NAD Database Representative and wait for further instructions.

### Uninstall Sybase ASA Version 6.0.4.3594

- 1) Stop and restart the server service PCAPPS\_Server from within Sybase Central.
- 2) View the server console window to see how many licenses are installed on the server and write down the number for later use.
- 3) Stop the server service PCAPPS\_Server from within Sybase Central.
- 4) Review the PCAPPS\_Server service parameters against the following settings and note any differences.  
`-ti 0 -n Saturn -x TCPIP -c 100M d:\Nad\Db\periopdm.db`
- 5) Review the PCAPPS\_Validate service parameters against the following settings and note any differences.  
`-n Validate -c 100M d:\Nad\Db\bu\validate\periopdm.db`
- 6) Delete all ASA6 services showing in Sybase Central. They should only be PCAPPS\_Server & PCAPPS\_Validate.
- 7) Close Sybase Central.
- 8) Open the ODBC manager and delete the 'periopdm' ODBC DSN setting listed under the System DSN tab.
- 9) These items must be deleted prior to uninstalling ASA6 in order to obtain a clean uninstall.
- 10) Uninstall ASA6 through Control Panel.
- 11) Verify a clean uninstall (no registry entries listed in the uninstall details).  
Note: In order to correct a bad uninstall, you'll need to reinstall ASA6 software, delete the offending services or settings, and uninstall again.
- 12) Reboot the server.
- 13) Delete the D:\Sybase folder, including subfolders, if it was not thoroughly deleted by the uninstall.

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### Software Version 4.1 Upgrade Procedure

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Install Sybase ASA Version 7.0.4.2788

**Note:** This procedure assumes that the Sybase software and database will be installed on the “D:” drive. If it is not, then replace all occurrences of “D:” with the appropriate drive letter. The database conversion files to check and change are DBInstall.bat, DBMods.sql, DBAlter.sql, DBLoad.sql, and asa6to7rebuild.bat.

Verify that you are logged onto the physical server as the Domain Administrator. (SATADMIN or site provided user)

Verify the processor type on the server box (refer to the chart in Appendix B). If it is a Pentium IV then follow the detailed instructions in Appendix B, due to a Java bug that affects the Sybase ASA7 installation program.

1. Select “**Start->Programs->Windows NT Explorer**” from the task bar.
2. In the Windows NT Explorer, select the “**Z:\sybase\**” directory, where ‘Z’ is the CDROM drive letter, and double-click “**setup.exe**”. The Sybase installation application will begin. Select the English language and click OK.



*Figure 1 Setup Language Selection*

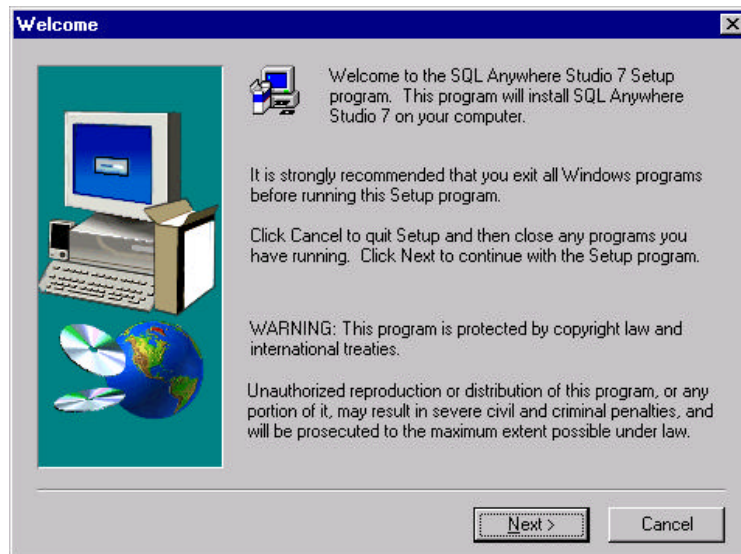


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### Software Version 4.1 Upgrade Procedure

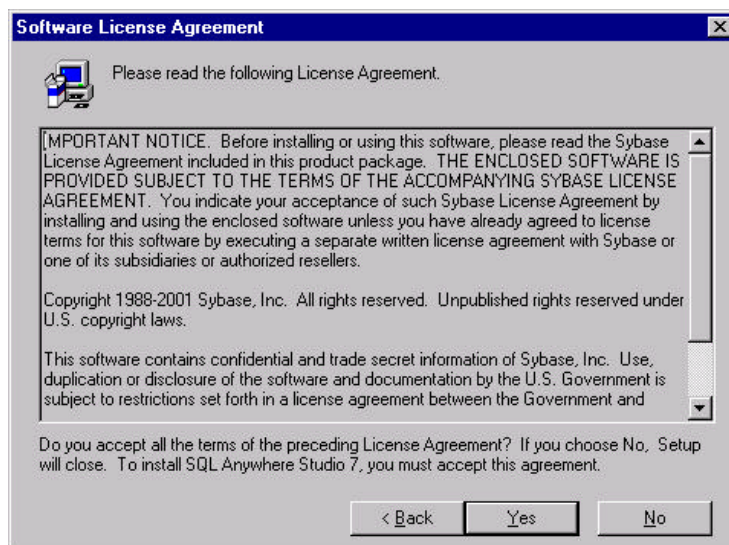
---

3. After starting setup.exe, the installation wizard begins, the Sybase banner appears, and you are presented with a welcome screen. Click the **Next** button.



*Figure 2 Sybase Installation "Welcome" Dialog*

4. The following License Agreement screen will appear. Click the **Yes** button.



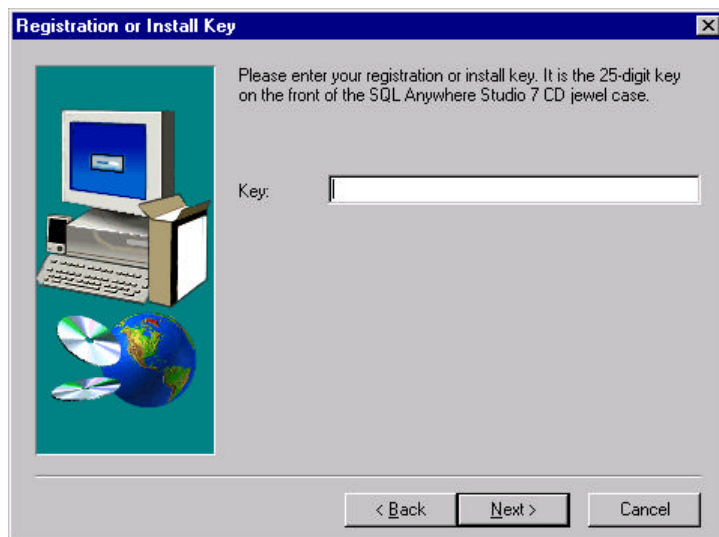
*Figure 3 Sybase Installation "Software License Agreement" Dialog*

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### Software Version 4.1 Upgrade Procedure

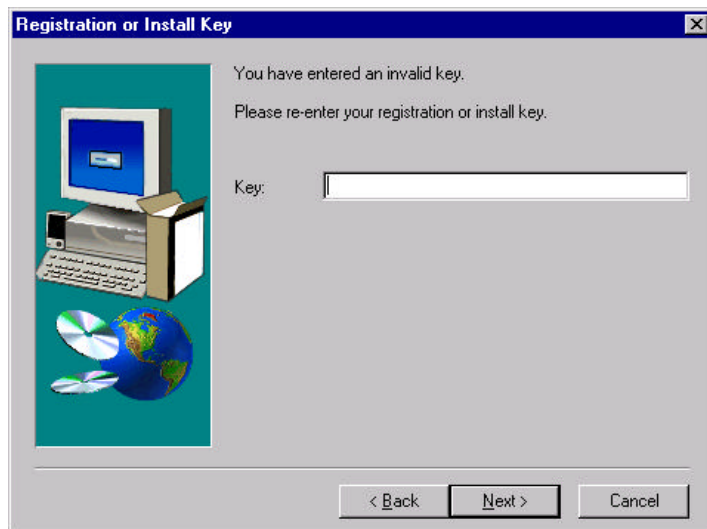
---

5. The Registration licenses are maintained through a quarterly report to Sybase. Leave the Key text box blank and then click the **Next** button.



*Figure 4 Sybase Installation “Registration or Install Key” Dialog*

6. The same screen will reappear indicating an invalid key was entered. Leave the Key text box blank and then click the **Next** button.

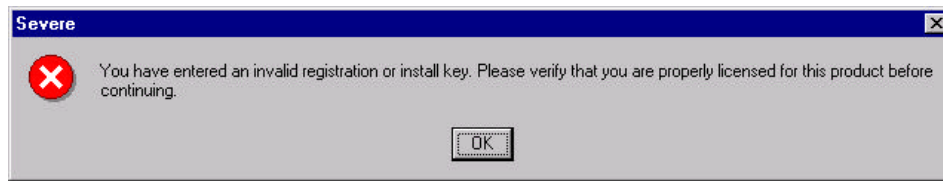


*Figure 5 Sybase Installation “Registration or Install Key” Dialog*

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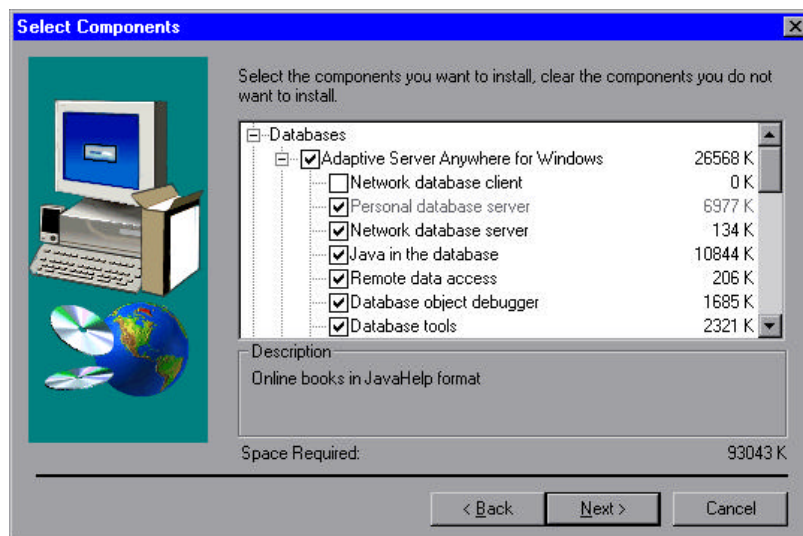
---

7. You will receive an error message. Click **OK** and it will permit you to continue on with the installation.



*Figure 6 Sybase Installation Error Message Dialog*

8. You will be presented with a screen of components to install. Select the Adaptive Server Anywhere for Windows checkbox and expand the + icon, and verify all items underneath are checked. **Verify** the following items are checked in the list and **scroll down**.



*Figure 7 Sybase Installation "Select Components" Dialog*

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9. Expand the + icon and **verify** the following items are checked in the list and **scroll down**.

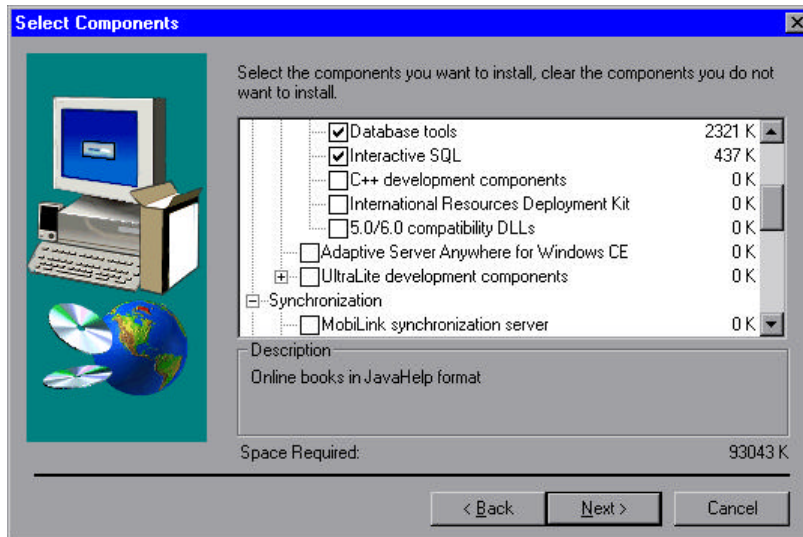


Figure 8 Sybase Installation "Select Components" Dialog

10. Expand the + icon and **verify** the following items are checked in the list and **scroll down**.

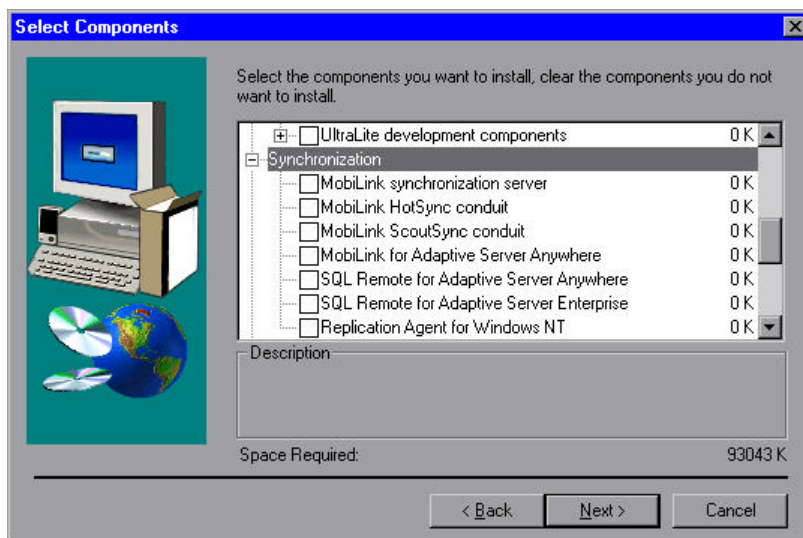


Figure 9 Sybase Installation "Select Components" Dialog

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- 11.** Expand the + icon and **verify** the following items are checked in the list and click **Next**.

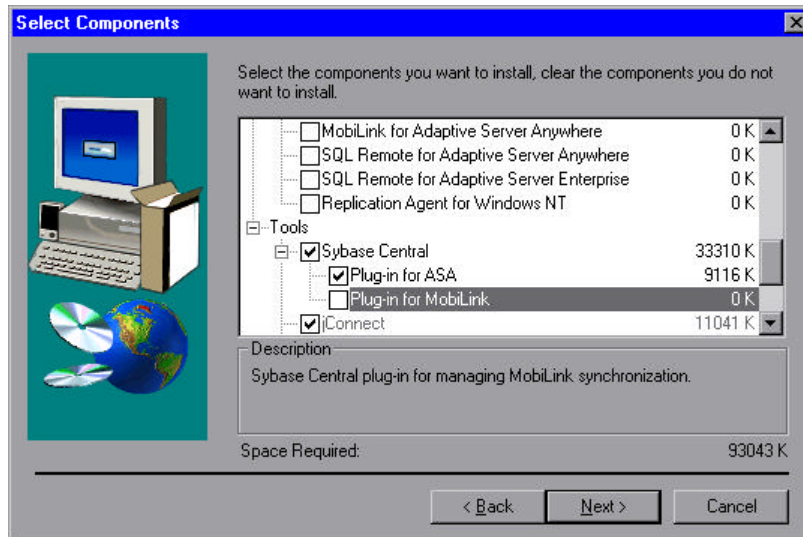


Figure 10 Sybase Installation "Select Components" Dialog

- 12.** Expand the + icon and **verify** the following items are checked in the list and click **Next**.

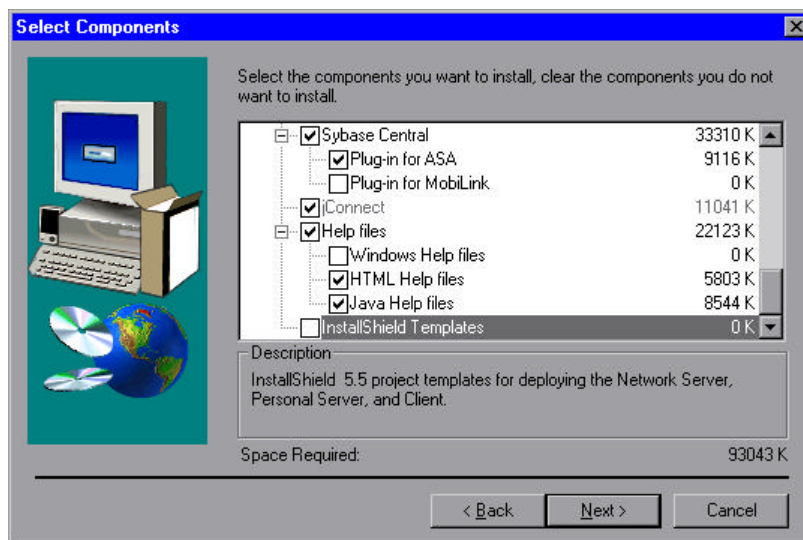


Figure 11 Sybase Installation "Select Components" Dialog

## Dräger Medical Software Version 4.1 Upgrade Procedure

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13. Select the **Browse** button to change the default installation directory.



Figure 12 Sybase Installation “Choose SQL Anywhere 7 Location” Dialog

14. **Change** the path to be D:\Sybase\ASA70 and Click **OK**. Click **Yes** to create the folder.

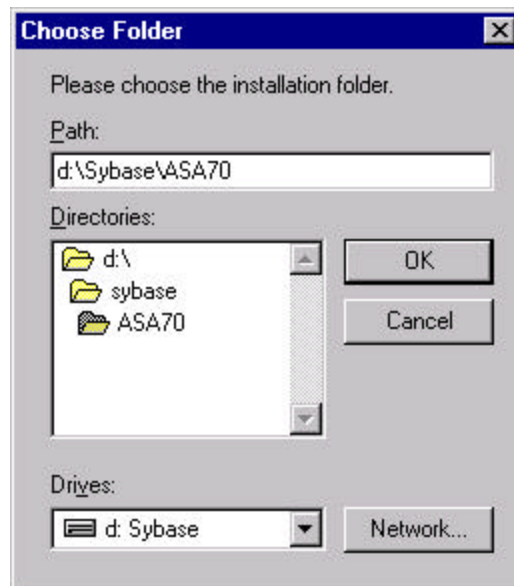


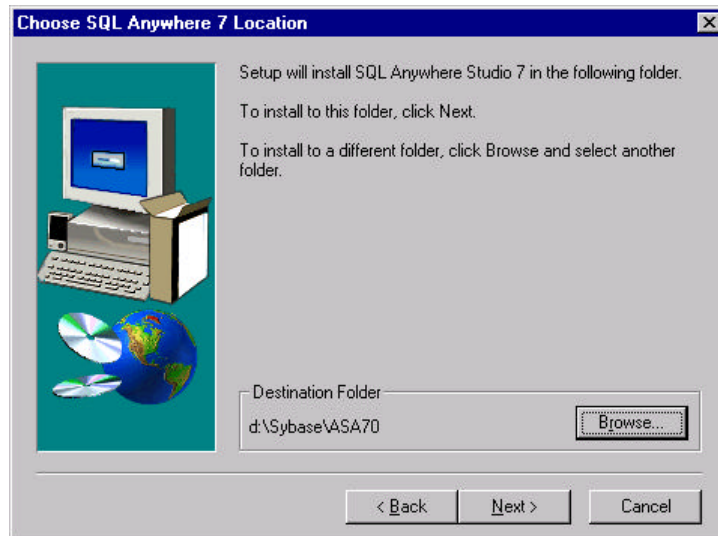
Figure 13 Sybase Installation “Choose Folder” Dialog



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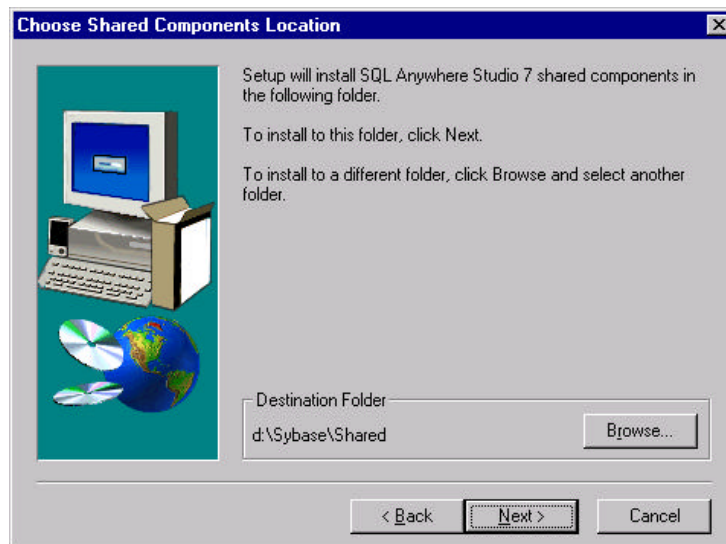
---

15. Verify the Destination folder is now D:\Sybase\ASA70 and click **Next**.



*Figure 14 Sybase Installation “Choose SQL Anywhere 7 Location” Dialog*

16. Verify the Destination folder for the Shared components is D:\Sybase\Shared and click **Next**.



*Figure 15 Sybase Installation “Choose Shared Components Location” Dialog*

## Dräger Medical Software Version 4.1 Upgrade Procedure

- 17.** Accept the default for the Program Folder of Sybase SQL Anywhere 7 and click **Next**.



Figure 16 Sybase “Select Program Folder” Dialog

- 18.** The next screen provides you with a display of the selected components and the directories where Sybase will be installed. **Scroll down**.

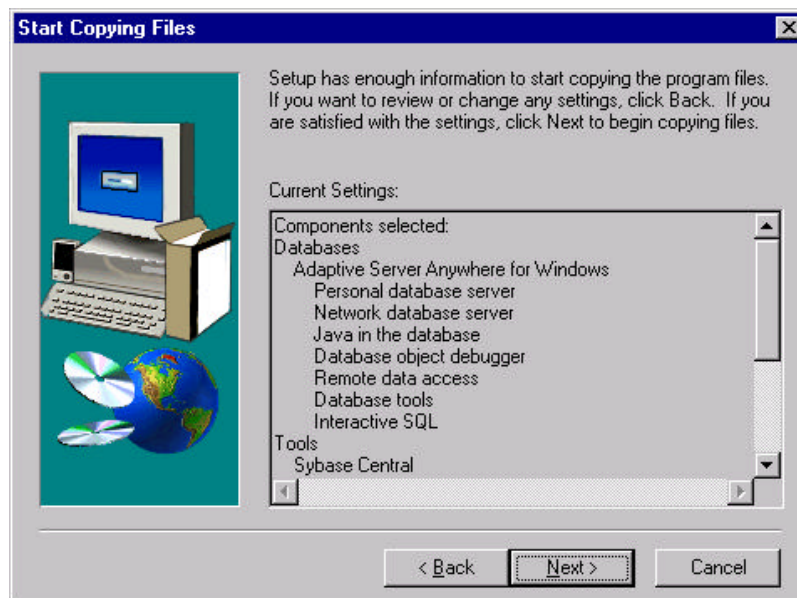


Figure 17 Sybase Installation “Start Copying Files” Dialog



## Dräger Medical Software Version 4.1 Upgrade Procedure

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19. Verify that the target directories are correct and click **Next**.

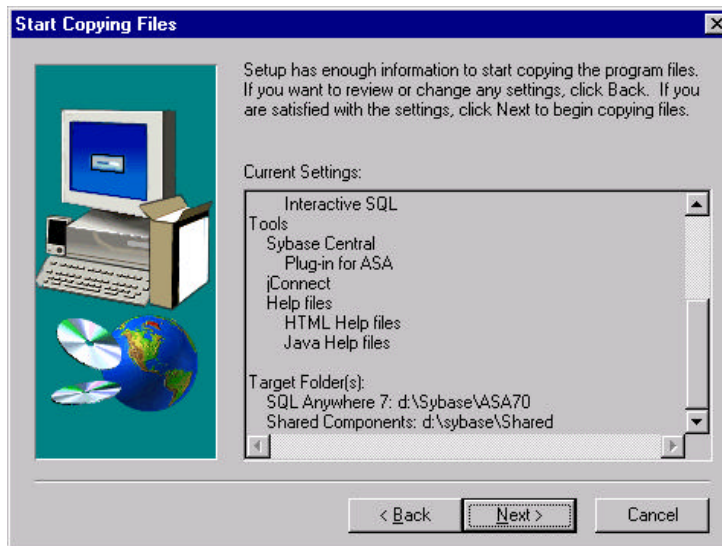


Figure 18 Sybase Installation "Start Copying Files" Dialog

20. This will begin the copy process and you will be provided with a status indicator.

Note: If a 'Read Only File Detected' message is displayed, write down the filename(s) and select '**Yes**' to replace the file. Report the filenames to Saturn Support.

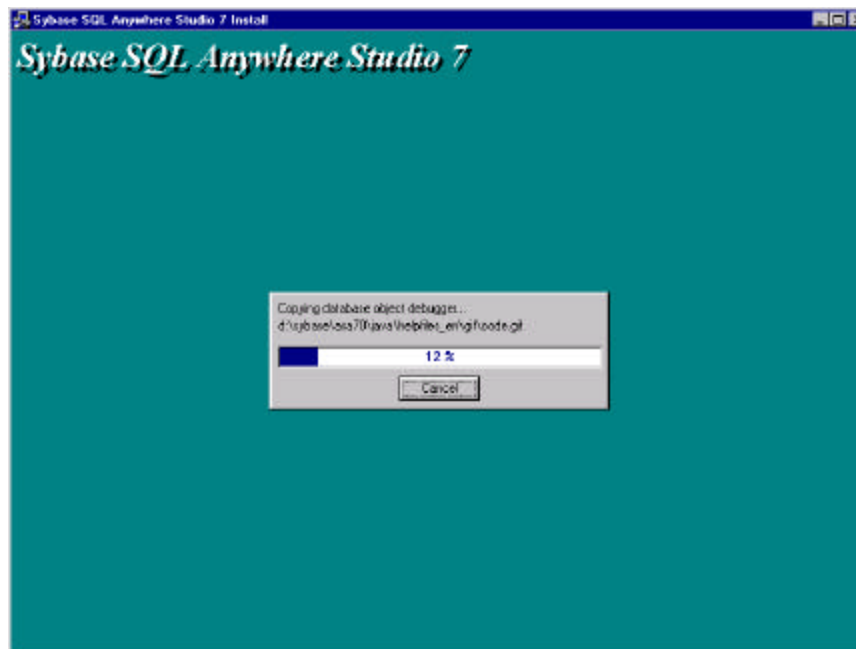


Figure 19 Sybase Installation "Progress" Dialog

## Dräger Medical Software Version 4.1 Upgrade Procedure

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21. After the copy is completed, the following screen prompts for licensing information. Enter the **customer name** and **company** and select the **Network Seat** Model, and the number of **Licensed Seats** (This number must be the maximum number of seats this server will service according to how many licenses the site has purchased.)

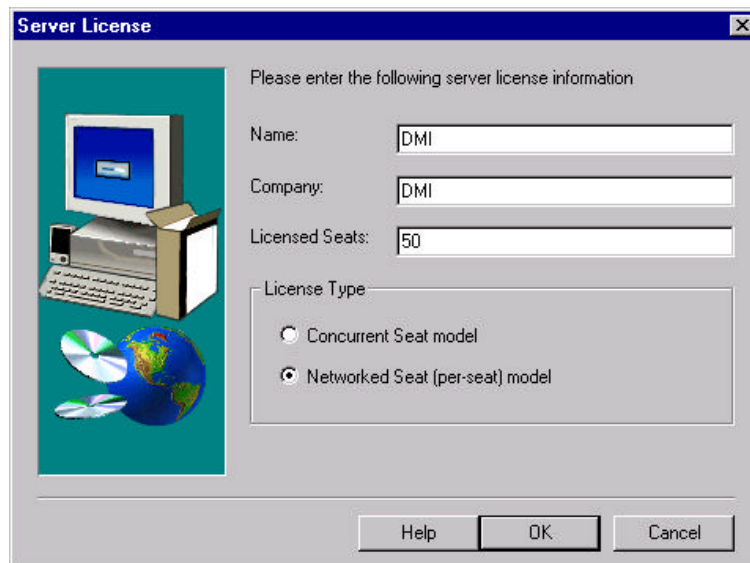


Figure 20 Example Sybase Installation “Server License” Dialog

22. Click the **OK** button and the files will load.

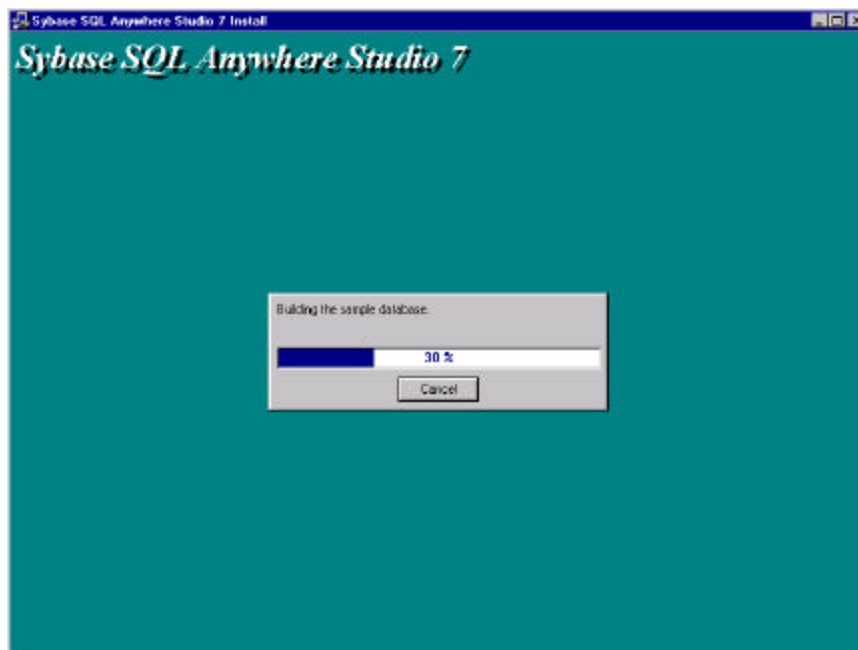


Figure 21 Sybase Installation “Progress” Dialog

## Dräger Medical Software Version 4.1 Upgrade Procedure

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- 23.** De-select the two “**Yes**” checkboxes and click **Finish**. The installation program will terminate.



*Figure 22 Sybase Installation “Setup Complete” Dialog*

- 24.** Click **Yes** to reboot.



*Figure 23 Sybase Installation “Setup Complete” Dialog*

**THE SERVER WILL TAKE SEVERAL MOMENTS TO REBOOT**

- 25.** After the system reboots, logon as administrator. (SATADMIN or site provided user)

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## Software Version 4.1 Upgrade Procedure

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### Change the Sybase Central & ISQL Shortcuts Under Start - Programs

1. Open Windows Explorer
2. Find the file D:\Sybase\ Shared\Sybase Central 3.2\win32\scview.exe
3. Create a shortcut and rename it to 'Sybase Central'.
4. Move the shortcut to the WINNT - Profiles - All Users – Start Menu – Programs – Sybase SQL Anywhere 7 folder.
5. Delete the 'Sybase Central 4.0' shortcut in the same folder.
6. Go to the 'Adaptive Server Anywhere 7' subfolder and delete the 'Manage Adaptive Server Anywhere' and 'Interactive SQL' shortcuts.
7. Find the file D:\Sybase\ ASA70\win32\dbisqlc.exe
8. Create a shortcut and rename it to 'Interactive SQL'.
9. Move the shortcut to the WINNT - Profiles - All Users – Start Menu – Programs – Sybase SQL Anywhere 7 – Adaptive Server Anywhere 7 folder.
10. Verify that the Sybase Central shortcut is displayed through the Start – Programs - Sybase SQL Anywhere 7 button, and the Java version Sybase Central 4.0 shortcut is no longer displayed.
11. Verify that the Interactive ISQL shortcut is displayed through the Start – Programs - Sybase SQL Anywhere 7 - Adaptive Server Anywhere 7 button.

### Install the Sybase Services & ODBC

- 1) Explore to Z:\NAD\SETUP, where Z is the drive letter of the CD ROM drive on the server.
- 2) Right click on saturnserverservices7.inf.
- 3) Click on Install.
- 4) NOTE: The services will be setup pointing to the D drive for the Sybase install and the database location. If this is not true then you will need to change both services in Sybase Central to reflect where to start the Sybase dbsrv7.exe and where to find the database file.
- 5) Right click on saturnserverodbc7.inf.
- 6) NOTE: If Sybase is not installed on the D drive then you will need to modify and save this inf file. If so, then change the path for the dbodbc7.dll to the correct drive letter where Sybase is installed.
- 7) Click on Install.
- 8) Reboot the server machine.
- 9) Open Sybase Central
- 10) Verify the -x parameter is set to NONE instead of TCP\IP
- 11) Verify the Server Services' parameters are set correctly for the site by comparing them to the pre-existing settings as notes in the *Uninstall Sybase ASA Version 6.0.4.3594* section. Note that the cache parameter value -ch ##P setting is new to Saturn 4.0.

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## Software Version 4.1 Upgrade Procedure

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### Verify or Create a System Environment for Sybase

- 1) Right click on My Computer and Select Properties
- 2) Select the Environments tab
- 3) Verify or Add the System Environment variable ASTMP=D:\NAD\ASTMP
- 4) Verify or Create an ASTMP subdirectory under the D:\NAD directory
- 5) Verify or Create a batch file (ASTMPDEL.bat) in the D:\NAD\DB directory that contains the single line. `Del /F /Q D:\NAD\ASTMP\*.*`
- 6) Verify or Add the file ASTMPDEL.bat to the STARTUP folder. Find the STARTUP folder by right clicking on the 'Start' button and select 'Explore All Users.' This will open Windows Explorer at the 'All Users' – 'Start Menu' folder. In the left pane expand the 'Programs' + sign, and click on the 'Startup' folder. Add the batch file there.
- 7) Review the C:\WINNT\System32 directory for any old Sybase files of asa\*.tmp or any Sybase files beginning with an underscore '\_' and delete any that are older than the current date.

### Server Conversion

**Note:** The conversion script files assume the database is installed on the D drive, if not, then the script files will need to have their drive letters changed. The database conversion files to check and change are DBInstall.bat, DBMods.sql, DBAlter.sql, DBLoad.sql, and asa6to7rebuild.bat.

- 1) Start the DB server service.
- 2) In Sybase Central, connect to the database.
- 3) Expand the database and select Users & Groups.
- 4) Make a note of the users either by writing them down or by capturing screen shots (this will be used for verification after the database is reloaded).
- 5) Open ISQL and execute the following SQL statement:  
`Select * From SysTable Order By Count Desc`
- 6) Verify that either no tables Count value exceeds 7 million rows, or if they do exceed the limit that they are one of the following tables: CaseAutomaticData, AuditCaseDrugHeader, or AuditCaseLabItemHeader. If any other tables exceed the limit, then stop here and contact the DMI DBA for script file modification.
- 7) Disconnect from the database.
- 8) Stop the Database Server service.
- 9) Verify that there are no dat files in the D:\nad folder.
- 10) Verify enough disk space (at least 1.5 times the size of the database file) is available in order to

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### Software Version 4.1 Upgrade Procedure

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convert the database and unload the CAD table, which is approximately 85% of the database file size. The dat files will reside in the D:\Nad directory. If required, change the drive letter within the dbalter.sql script file to point to a drive with sufficient space, where the 3 output statements are, and two Load Table statements are for the same table names (excluding CaseAutomaticData).

- 11) In order to maximize the conversion speed, change the server service cache setting to a multiple of 64M, but not greater than 1.5GB, which is the Sybase limit. Sybase recommends the cache size value be set to 15 – 20% of the database file size, but not more than 90% of available RAM. We set the -ch switch to 80P (80%) which limits the RAM usage of the server to 80% of the installed RAM.
- 12) Execute DBInstall.bat located in the nad\upgrade directory.  
  
Note: A 1.5GB database will take approximately 40 minutes to convert. A 12GB database will take approximately 5 hours to convert. A 30GB database will take approximately 13 hours to convert. (All test times are presented as tested at DMI running a dual processor 700MHz server with 1GB RAM)
- 13) If errors occur, consult your NAD Database Representative and wait for further instructions.
- 14) Review the two txt files PatientBirth.txt, and PDMCaseBirth.txt in the D:\nad\db directory to see if there are any entries. If so, forward the information to the site DBA for their knowledge and correction. (Any items listed in these files have been changed in the database from the invalid date to null. Inform the DBA that they must correct the birth dates in their Saturn database for those cases and patients.) Sites with HL7 have been forwarding and inserting bad SIS birth dates into the Saturn database. This is not allowed in Saturn 4.0.

#### Database Unload & Reload

Note: Here the database file will be unloaded and reloaded for performance enhancement reasons, except for CaseAutomaticData. The batch file utilizes the PCAPPS\_Server service.

- 1) Verify there is enough free hard drive space by utilizing the following formula:  
$$(\text{Database file size}) - (\text{CaseAutomaticData.dat file size}) = (\text{disk free space requirement})$$
- 2) Copy the 3 files asa6to7rebuild.bat, ReCreateUsers.sql and SPView.sql from the D:\Nad\Upgrade directory to the D:\Nad\Db directory.
- 3) Verify the D:\Nad\Unload directory does not exist. If it does, either rename it or delete it.
- 4) Verify the database server service PCAPPS\_Server is not started.
- 5) Close Sybase Central.
- 6) Open a DOS window and cd to D:\nad\db directory.
- 7) Change the window parameters to keep 500 lines in the history buffer, so you can scroll up to see what happened, if necessary.

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### Software Version 4.1 Upgrade Procedure

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- 8) Type the following command and press <enter>

Asa6to7rebuild periopdm NADADMIN

Note: This process will take approximately 4 hours to run against a 12GB database, or 7 ½ hours to run against a 30GB database. When the process completes the server service will be stopped and a message will be displayed in the command prompt window.

- 9) If errors occur, consult your NAD Database Representative and wait for further instructions.
- 10) Delete the old database file 'oldperiopdm.db' in the D:\nad\db directory in order to free up disk space for the next section. Empty the recycle bin if necessary.

#### Add Dbspace to the Database File

- 1) Open Sybase Central
- 2) Start the Server service PCAPPS\_Server
- 3) Connect to the database
- 4) Determine the amount of file space to add by utilizing the following formula:  
(CaseAutomaticData.dat file size) / 2 = (# of 2k pages to add to the database file)
- 5) Verify there is enough free disk space – the size of the original database file in the beginning of this procedure.
- 6) Expand the database folders in the left pane of Sybase Central.
- 7) Click on the DBSpaces folder.
- 8) You will see the System dbspace listed in the right hand pane.
- 9) Right click on the System dbspace and select Properties.
- 10) Click on the 'Add Pages' button.
- 11) Enter the number of pages (without commas) to add, as determined by step #4 above. Be careful not to input an incorrect high-end value, which would bloat the database file size.
- 12) Click OK and allow the process to complete.  
Note: Windows Explorer will show the new file size immediately – before the process is complete. This step takes approximately 15 minutes when adding 4,500,000 pages, or 30 minutes when adding 10,500,000 pages in order to load a 9GB or 21GB dat file, respectively.
- 13) Click OK at the System Properties window.
- 14) Disconnect from the database to release any locks, and close Sybase Central but leave the database service running.

#### Reload the Case Automatic Data

- 1) Open ISQL through the Start – Programs menu and connect to the database, using the NAD user, the 'Saturn' server service name, and 'periopdm' as the database name.

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- 2) Enter and Execute the following command: (Modify the drive letter accordingly, if the dbalter.sql file was modified in the Server Conversion section.)

```
LOAD TABLE CaseAutomaticData
FROM 'D:\NAD\CaseAutomaticData.dat'
FORMAT ASCII
```

Note: This procedure will take a considerable time to run because of the amount of data to load. *Do not* interrupt the procedure while it is running. The workstations will not be able to connect to the database at this time. The CaseAutomaticData.dat file reload will take approximately 4 ½ hours to load a 9GB dat file, or 10 hours to load a 21GB dat file.

- 3) When done, close ISQL (the Load Table statement is automatically committed)
- 4) Open Sybase Central and connect to the database.
- 5) Right click on the CaseAutomaticData table and select 'View Data'.
- 6) Verify the data exists and the correct number of rows is returned, where the row value was recorded in Section D step #5. Be careful not to use an 'estimated rows' value.
- 7) Close ISQL

### Validate Database

- 1) Right-click on the database icon in the left pane of Sybase Central and select 'validate'
- 2) Allow the validation to complete. Note: This timeframe will be the same as the first validation, prior to the database conversion.
- 3) A 'No Errors Reported' message is displayed. If an error is reported, consult your NAD Database Representative and wait for further instructions.
- 4) Disconnect from the database in Sybase Central.

### Trimming the Database Log File

- 1) Create a directory under D:\NAD\DB called 'bu2'.  
Note: if the database is located on a different drive, then modify the drive letter listed here accordingly.
- 2) At a MS-DOS prompt, enter the following:  
dbbackup -c "uid=NAD;pwd=NADADMIN;eng=Saturn;dbn=periopdm" -t -n -q -y -r  
D:\nad\db\bu2 (enter the drive letter where the bu2 folder was created) This command will trim the log file. Consult your NAD Database Representative if an error occurs and wait for further instructions.
- 3) Stop the server service.



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- 4) Move the '0#...LOG' file, where # is a digit, from the D:\NAD\DB directory to the D:\NAD directory.
- 5) Start the server service.
- 6) If you receive no errors on startup, then delete the '0#...LOG' file from the D:\NAD directory.

#### Adding or Modifying Users

Note: Pre-existing users will still exist. Only use this information if you need to add new users or to modify existing users per the Sales Order. The CreateUser stored procedure functionality has changed.

Important: When adding workstations to the Kishwaukee database they **MUST** be between the range of 800 – 999. If that range is not used then data loss and corruption will occur. This is due to their initial setup where single and double-digit values were used for workstation serial numbers during the CreateUser procedure execution.

1. Open Sybase Central and Start the database, if it is not already running
2. In Sybase Central, Connect to the database using the NAD account
3. **View Data** from any table (right click on a table name and select View Data)
4. **Replace** the SQL statement shown in the ISQL Command window with the following:  
**CreateUser username, user#, installed applications #, installed recorder modules #**  
Where:      username                      is the UNC of the workstation  
                 user#                              is a unique 3 digit wpu identifier.  
                 Installed applications #    is a one or two digit bitmap number (see chart below)  
                 Installed recorder modules #    is a one or two digit bitmap number (see chart below)
5. Click **Execute**
6. Modify and execute the statement for each user that you need to add to the database
7. When done adding users, clear the SQL statement and type '**commit**' (without the single quotes) and **execute** the command
8. Close ISQL and verify that the users show up in the Users & Groups folder. You'll need to refresh the view.
9. Close Sybase Central

#### Installed Applications and Modules Chart:

For each parameter to pass into the stored procedure, add the associated values together that the customer had ordered for that particular workstation.

##### INSTALLED APPLICATIONS:

Recorder	1
List Management	2
Environment Manager	4
Case Manager	8
Report Manager	<u>16</u>
All Applications	31

## Dräger Medical Software Version 4.1 Upgrade Procedure

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### INSTALLED RECORDER MODULES:

Pre-Op	1
Intra-Op	2
Post-Op	4
Browse	<u>8</u>
All Modules	15

Note: If a mistake is made while adding a user, you can reset their installed applications and modules by utilizing the following 'ModifyUser' stored procedure in ISQL.

#### **ModifyUser username, installed applications #, installed recorder modules #**

Where:      username                      is the UNC of the workstation  
                 Installed applications #   is a one or two digit bitmap number (see chart below)  
                 Installed recorder modules #      is a one or two digit bitmap number (see chart below)

### Update the CPT Codes

Note: Skip this section if the site does not have CPT codes loaded in their database.

- 1) Update the site's CPT codes per the CPT Installation Procedure

### Update the DMI Backup and Validation Utilities

Note: The DMI database utilities were updated and any existing files need to be replaced. Some functionality changes were made. If a site is not using our utilities then they need to update their scheduled jobs according to the DBA Responsibilities Document, Sample Database Recovery section, items #1, 3, 4, & 7. The connection string parameters were changed. See Appendix A for details on the database utility files.

- 1) Replace the DMI utility files that are located in the D:\nad\db\bu directory.  
Note: Adjust the drive letter accordingly.
- 2) Check the AT scheduler jobs, if they exist, and see if they include the ".exe" file extensions on each job. If not, then verify & write down the site's current backup schedule, delete the database backup AT jobs and recreate them per Appendix A. Utilize the new server utility files. Note: Pay close attention to the NADValidateDB.exe section for functionality changes where the scheduler now requires the ".exe" file extension on each job.
- 3) Replace the nadbackupdb.exe file located in the D:\nad\db directory by copying it from the D:\nad\db\bu directory.
- 4) If database backup jobs don't already exist then see Appendix A to setup a database backup and validation schedule at the site.
- 5) Inform the site DBA of the file and functionality changes.

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### Software Version 4.1 Upgrade Procedure

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#### Reset The Database Connectivity Switch and Cache Setting

- 1) Open Sybase Central
- 2) Right click on the PCAPPS\_Server service and select properties.
- 3) Select the Parameters tab.
- 4) Change the -x NONE setting to -x TCPIP
- 5) Change the server service cache setting to a multiple of 64M (you decide - “set this specific to the customer’s needs”), but not greater than 1.5GB, which is the Sybase limit. Sybase recommends the cache size value be set to 15 – 20% of the database file size, but not more than 90% of available RAM. We set the -ch switch to 80P (80%), which limits the RAM usage of the server to 80% of the installed RAM.
- 6) Click Apply – OK.
- 7) Stop and Restart the Server Service.
- 8) The database now allows workstations to connect.

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### Software Version 4.1 Upgrade Procedure

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#### **E) Server 4.00 to 4.1 Upgrade**

- 1) Create the following directory on the server under NAD: 4\_xUpgrade. Copy the contents of the \NAD\4\_xUpgrade directory from the server CD to the newly created 4\_xUpgrade directory on the server.
- 2) Create directory on server under NAD: QueueChk. Copy the contents of the \NAD\QueueChk directory from the server CD to the newly created QueueChk directory on the server.
- 3) Share the \NAD\QueueChk directory.
- 4) Under Services in Control Panel, Stop and Disable the NT Scheduler/Task Scheduler service.
- 5) Verify that no backups or validates are running against the production server database, or any other server services are running.
- 6) Open Sybase Central and select the Services folder.
- 7) Stop the Server Service PCAPPS\_Server in Sybase Central by right clicking on PCAPPS\_Server and selecting Stop.
- 8) Right click on PCAPPS\_Server and select Properties.
- 9) Select the Configuration tab and change the -x parameter from 'TCPIP' to 'NONE' in the Parameters for executable box.
- 10) Click Apply & OK

Note: the 4\_xUpgrade.bat file assumes that the Database and Sybase are both located on the D drive. If they are not then you will need to modify the 4\_xUpgrade.bat file. The bat file will start the database, modify it, and stop the database.
- 11) Open the Command Prompt window and change directory to D:\NAD\4\_xUpgrade.
- 12) Run the batch file 4\_xUpgrade.bat located in the D:\nad\4\_xUpgrade directory from a command prompt making sure to pass in the database NAD user password. Ex:  
4\_xUpgrade.bat dbpassword
- 13) Contact Saturn Support if any error messages are displayed.
- 14) Close Command Prompt window and return to Sybase Central.
- 15) Change the -x parameter from 'NONE' to 'TCPIP' for PCAPPS\_Server Properties (see Step 9 above).
- 16) Click Apply & OK
- 17) Start the Server Service PCAPPS\_Server by right clicking on PCAPPS\_Server and selecting Start.
- 18) Exit Sybase Central on the server.
- 19) Restart the NT Scheduler/Task Scheduler service that was stopped in Step 4 above and set it to Automatic start.
- 20) Delete the following folder: D:\Nad\4\_xUpgrade.

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## Software Version 4.1 Upgrade Procedure

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### **F) Workstation Upgrade**

#### WPU's

- 1) Gold Disk the workstation as per the Field Gold Disk Instructions.
- 2) Perform installation per the Saturn 4.10 Workstation Installation Instructions

#### NCPU's & 3<sup>rd</sup> Party Clinicals

- 1) Verify System 1, Saturn and NADRepAgent processes are stopped
- 2) Explore to START\CONTROL PANEL\SERVICES
- 3) Stop the MSSQLSERVER and MSDTC services
- 4) Uninstall Saturn - Control Panel, Add\Remove
- 5) If receive a message "Unable to drop local databases", click OK
- 6) If receive message, "Locked File Detected", click IGNORE
- 7) If receive a window "Unable to Set File Attributes for DLL Directory", Click OK
- 8) If presented with a window, "Shared File Detected", click NO
- 9) If prompted to uninstall MSDE, choose NO
- 10) Choose NO to RESTART
- 11) If 3<sup>rd</sup> party clinical, copy serial.sys from the utils directory (either on the machine being worked on or from another WPU, to C:\WINNT\SYSTEM32\DRIVERS
- 12) If 3<sup>rd</sup> party clinical Uninstall touchscreen driver (ELO folder in utils folder)
  - a. Click Start\Settings\Control Panel.
  - b. Double click Add\Remove Programs
  - c. Select "Monitor Mice For Windows NT" and click Add\Remove button.
  - d. Say OK to all prompts.
  - e. Click OK to close Add\Remove Programs window.
  - f. Close Control Panel
- 13) If 3<sup>rd</sup> party clinical, install touchscreen driver (ELO folder in utils folder)
  - a. Explore to C:\UTILS\ELO (will need to copy UTILS folder from a WPU or map a network drive to a share on another computer).
  - b. Double-click SETUP.EXE
  - c. At "Welcome" window, click NEXT
  - d. At "Software License Agreement" window, click YES
  - e. At "Choose Destination Location" window, click BROWSE
  - f. At "Choose folder" window, change path to C:\UTILS\ELOWinNT, Click OK
  - g. When prompted to create the folder, click YES

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### Software Version 4.1 Upgrade Procedure

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- h. At "Choose Destination Location" window click NEXT
  - i. At "Monitor Configuration Type" window, click NEXT
  - j. At "Select COM Port" window, click NEXT
  - k. At "Setup Compote" window, choose NO and click FINISH
  - l. Click on Start->Run from the taskbar and enter Regedit.
  - m. Navigate to  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\MonMouse\Touchscreen\Parameters
  - n. Double-click on the HARDWAREHANDSHAKING parameter
  - o. Change the value data from 1 to 0.
  - p. Reboot the workstation.
- 14) Click START
  - 15) Choose SETTINGS\CONTROL PANEL
  - 16) Double-click ODBC Settings
  - 17) Choose the System DSN tab
  - 18) Delete the periopdm DSN
  - 19) Close the ODBC Settings window
  - 20) Choose ADD\REMOVE PROGRAMS
  - 21) Uninstall SYBASE ADAPTIVE SERVER ANYWHERE
- Note: If you forget to delete it, you can recreate the DSN by using the same name and you will be prompted to overwrite it. Select 'Yes'.
- 22) Click YES to ARE YOU SURE.....
  - 23) Click YES TO ALL for any REMOVE SHARED FILE? Windows
  - 24) Click Yes to YOU HAVE CHOSEN TO REMOVE ALL SHARED.....
  - 25) Once uninstall completes, click OK
  - 26) Close ADD\REMOVE PROGRAMS
  - 27) Explore to C:
  - 28) Delete the SYBASE folder
  - 29) Delete the C:\NAD folder
  - 30) Empty the Recycle Bin (delete NAD items)
  - 31) Browse to C:\WINNT\SYSTEM32\DRIVERS and verify the file KBDCLASS.SYS exists. If it doesn't, copy it from C:\I386, the Windows NT workstation CD-ROM or another Saturn NCPU.
  - 32) Reboot
  - 33) Perform the Saturn installation per the Saturn Workstation Installation Instructions

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### Software Version 4.1 Upgrade Procedure

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#### **G) Server Clean Up**

- 1) Delete the following folders or files:
  - a) D:\Nad\Upgrade
  - b) D:\Nad\Upgrade\Setup
  - c) D:\Nad\Upgrade\QueueChk\bat\_drop\_databases.bat
  - d) D:\Nad\QueueChk
  - e) D:\Nad\db\bu2
  - f) The 3 dat files in D:\Nad directory: CaseAutomaticData.dat, AuditCaseDrugHeader.dat and AuditCaseLabItemHeader.dat.
  - g) D:\Nad\Unload
  - h) The following files in D:\Nad\Db directory: asa6to7rebuild.bat, ReCreateUsers.sql, SPView.sql, Reload.sql, PatientBirth.txt, and PDMCaseBirth.txt.
- 2) Verify that the **Server** service is set to automatic and is started.
- 3) Start the **Scheduler** service and change it to Automatic on Startup.
- 4) Run through the Server section of the Saturn System Checkout procedure.

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## Software Version 4.1 Upgrade Procedure

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### Appendix A - Database Backup Utilities Information

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Note: These files and procedures have been changed for Saturn 4.0. The executable files must be replaced with the newly released files. This information is provided as a courtesy.

The site administrator has the option to either use DMI's backup and validation utilities, which provide administrative username and password security, or use Sybase's backup and validation utilities directly.

If they wish to use DMI's provided utilities then proceed with the information below, otherwise it is up to the site administrator to setup the site's backup and validation processes by utilizing Sybase's utilities directly.

#### Database Utilities Provided by DMI

DMI provides five database utility files used to automate some maintenance routines and to help secure the database by concealing the administrator username and password within the executable files. All five files are copied to the D:\nad\db\bu subdirectory during Saturn installation or upgrade. The NadBackupDb is also copied to the D:\nad\db directory. The utility files and their use follows:

1. NadDbBatch.exe

Creates a batch file (SrvrBackup.bat) to schedule jobs for a full backup of the database and an incremental backup of the transaction log using the Windows NT Task Scheduler service. There is a default 'SrvrBackup.bat' file installed in the 'bu' directory which will perform a full backup every midnight and an incremental log backup every hour starting at 2AM. If those times are not sufficient, then the naddbbatch executable file can be used to create a custom SrvrBackup.bat file for the site.

The syntax for the command is as follows:

Naddbbatch.exe %TD% Time Interval

Where:

%TD% – target drive letter where the database is located (e.g. D)

Time Interval – time interval, in hours, between incremental backup of the transaction log for each day of the week (e.g. 2).

For example, to create a SrvrBackup.bat file that contains the necessary entries to schedule a full database backup every night and incremental (i.e. transaction log file) backups every 5 hours, execute the following command from a DOS command window while in the \nad\db\bu directory:

Naddbbatch.exe D 5

This command will result in the creation of a SrvrBackup.bat file that, once executed, will register events with the NT scheduler to perform a full database backup nightly at 12am and incremental backups every five hours beginning at 2am (NOTE: incremental times begin from 2AM and repeat at the scheduled interval; thus jobs will be scheduled 2AM, 7AM, 12PM, etc. for the given example).

You can modify the SrvrBackup.bat file to meet your facilities needs, for example, having one backup directory instead of one for each day of the week. Keep in mind that doing so would require diligence in nightly copies to tape because the files will be overwritten each day during the scheduled intervals for backups.



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### 2. SrvrBackup.bat

The SrvrBackup.bat file, when executed, will create the NT AT scheduler jobs that will perform the backups, both full and incremental. To work properly, the nadbackupdb.exe file must be in the D:\nad\db production database directory and the NT scheduler service must be started. The scheduled AT job will call the DMI utility 'nadbackupdb'. The DMI utility calls Sybase's utility and passes in all of the parameters required to perform a backup.

### 3. NadBackupDb.exe

The new executable (nadbackupdb.exe) is provided to simplify Sybase's DBBackup command by making use of Sybase's Database Tool Interface. Either a full database and log file backup can be performed or an incremental log file backup can be performed. The NT AT scheduler jobs that are created by the SrvrBackup.bat file will call the executable file NadBackupDB with the correct parameters for either a full or an incremental backup.

Note: The DMI database backup utility will only work with the database server named 'Saturn', as determined by the server service PCAPPS\_Server -n parameter, and the database name is Periopdm. The file also must be located in the %TD%\nad\db directory.

For example, to create a full database backup (the database file and transaction log), the following syntax should be used:

```
Nadbackupdb.exe %TD% subdirectory Full backup flag
```

Where:

%TD% -- target drive letter (e.g. D)

subdirectory -- name of target subdirectory (assumes that the subdirectory is located under %TD%  
:\nad\db\bu)

Full backup flag -- flag to indicate if a full backup (TRUE) or incremental backup (FALSE) is to be performed

NadBackupDb.exe calls Sybase's database backup utility with the following parameters and switches:

-x -- Delete and restart a new transaction log

-q -- Quiet mode -- do not print messages

-y -- Replace files without confirmation

-c -- "uid=...;eng=Saturn;dbn=periopdm.db

Therefore, the result of executing the following command:

```
Nadbackupdb.exe D Saturday TRUE
```

would be creation of a backup copy of the database (D:\nad\db\periopdm.db) and the transaction log file (D:\nad\db\periopdm.log) in the Saturday subdirectory (D:\nad\db\bu\Saturday).

To create an incremental backup of the transaction log only, the following command could be used:

```
Nadbackupdb.exe D Saturday FALSE 2
```

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### Software Version 4.1 Upgrade Procedure

---

Where:

- D – target drive letter
- Saturday -- name of target subdirectory (assumes that the subdirectory is located under D:\nad\db\bu)
- FALSE – create a backup of the transaction log only
- 2 – time, in military hours, of the incremental backup

The result of executing the above command would be creation of a backup copy of the transaction log file in the Saturday subdirectory (%TD%:\nad\db\bu\Saturday\logs). The current transaction log located in the production directory is deleted and a new transaction log is started.

#### 4. NadValidateDb.exe

The database file validation utility is called nadvalidatedb.exe. This executable can be utilized to verify the current production database, or a backed up copy of the database in the 'validate' directory that was previously archived to tape. The database file name must be Periopdm.

For example, to validate the backup database file, start the Validate service and issue the following command:

```
Nadvalidatedb.exe %TD% VALIDATE
```

Where:

- %TD% – target drive letter (e.g. D)
- VALIDATE -- name of target subdirectory (assumes that the subdirectory is located under %TD% :\nad\db\bu)

The result of executing the following command would be validation of a backup copy of the database(periopdm.db) in directory D:\nad\db\bu\validate:

```
nadvalidatedb.exe D VALIDATE
```

Also, passing an additional parameter called FULL, as indicated below can perform a full database validation:

Warning: This option may significantly extend the time required to validate the database.

```
Nadvalidatedb.exe %TD% VALIDATE FULL
```

Where:

- %TD% – target drive letter (e.g. D)
- VALIDATE -- name of target subdirectory (assumes that the subdirectory is located under %TD% :\nad\db\bu)
- FULL – Utilizes the Sybase dbvalid -f switch which, in addition to the default table validation, also verifies the Long Binary, Long Varchar, and Text data type columns, as well as each index on every table.

To validate the current database file, the following command could be utilized

```
Nadvalidatedb.exe %TD% NULL
```

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---

Where:

%TD% – target drive letter (e.g. D)  
NULL – validate database (periopdm.db) in directory '\nad\db\  
under %TD%

The result of executing the above command would be validation of the database (periopdm.db) in directory %TD%:\nad\db

Also, passing an additional parameter called FULL, as indicated below can perform a full database validation:

Warning: This option may significantly extend the time required to validate the database.

Nadvalidatedb.exe %TD% NULL FULL

Where:

%TD% – target drive letter (e.g. D)  
NULL – validate database (periopdm.db) in directory '\nad\db\  
under %TD%  
FULL – Utilizes the Sybase dbvalid –f switch which, in addition to the default table validation, also verifies the Long Binary, Long Varchar, and Text data type columns, as well as each index on every table.

### 5. TapeBUValid.bat

A new Sybase database service called Validate, that is setup during installation, can also be used to validate a database restored from tape. It is incorporated into the TapeBUvalid.bat file. The Validate service assumes that the restored database is located in the D:\nad\db\bu\validate directory. Perform the following steps to utilize the TapeBUValid.bat utility:

- q. Verify the files TapeBUvalid.bat and nadvalidatedb.exe are located in the D:\nad\db\bu directory.
- r. Verify the database and log file, periopdm.db and periopdm.log respectively, have been restored from tape into the D:\nad\db\bu\validate directory.
- s. Open a DOS window and switch to the D:\nad\db\bu directory.
- t. At the command prompt enter the following:

TapeBUvalid.bat D validate

Where:

'D' is the target drive letter

'validate' is the name of the target subdirectory, under %TD%:\nad\db\bu.

Press Enter and the TapeBUvalid will perform the following:

1. Start the Validate service
2. Execute a validation of the restored database in the validate subdirectory
3. Stop the Validate service

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### Appendix B - Pentium IV Processor Considerations

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#### Known Software Issue:

CPUID detection for Intel® Pentium® 4 processor system:

Intel has identified that applications which use the Symantec Just in Time Compiler library file ("symcjit.dll" for Microsoft Windows\* operating system) may not run properly on Pentium® 4 processor systems because the library does not properly identify the processor. The failure typically is that the affected application simply terminates. Under Microsoft Windows\*, the properties of the DLL are: "Symantec Java! JustInTime Compiler Version 3.10.107 for JDK 1.2 Copyright (C) 1996-99 Symantec Corporation Dynamic Link Library file". DLLs older than this will also not work.

\*Refer to the chart on the next page to determine if your server has a Intel® Pentium® 4 processor installed.

The Sybase ASA7 Install program may fail when it tries to launch the Java version of ISQL in order to load the sample database, ASADemo.db, or it may install correctly and fail when attempting to load the Java version of Sybase Central.

Sun has released an executable file to run to update the dll version. Follow the directions listed below.

1. Try to install Sybase ASA7 per the install directions. If it passes, then follow the directions below. If it fails, run the executable per the directions below, then reinstall ASA7.
2. Apply the SUN Systems recommended release JDSE v 1.2.2\_008 for Windows which is located in the D:\Nad\Setup directory. The filename is 'jre-1\_2\_2\_008-win.exe'.
3. When prompted, install the patch into the directory: D:\Sybase\Shared\Sun\jdk122\jre rather than the default location in the installation for JDSE.
4. Verify the files are dated 3/26/2001 in particular, the Symantec Just in Time Compiler (JIT) library file symcjit.dll.
5. Run the previous action that was failing.
6. Verify it runs without an error.

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## Software Version 4.1 Upgrade Procedure

Processor Type	Family	Model	Stepping	Speed
Celeron	6	5	0	266, 300
Celeron	6	5	1	266, 300
Celeron	6	6	0	300A, 333, 366, 400
Celeron	6	6	5	300A, 333, 366, 400, 433, 466, 500, 533
Celeron	6	8	A	733, 766, 800, 850, 900, 950
Celeron	6	8	3	533A, 566, 600, 633, 667, 700
Celeron	6	8	6	566, 600, 633, 667, 700, 733, 766, 800, 850
Pentium	5	4		
Pentium Pro	6	1		
Pentium II	6	3	3	233, 266, 300,
Pentium II	6	3	4	233, 266, 300
Pentium II	6	5	0	333
Pentium II	6	5	1	300, 333, 350, 400,
Pentium II	6	5	2	266, 300, 333, 350, 400, 450,
Pentium II	6	5	3	350, 400
Pentium III	6	B	1	1.133, 1.20, 1.26,
Pentium III	6	7	2	450, 500
Pentium III	6	7	3	450, 500, 533B, 550, 600, 600B
Pentium III	6	8	A	866, 933, 1.0, 1.1
Pentium III	6	8	1	500E, 533EB, 550E, 600E, 600EB, 650, 667, 700, 733, 750, 800EB
Pentium III	6	8	3	500E, 533EB, 550E, 600E, 600EB, 650, 667, 700, 733, 750, 800, 800EB, 850, 866, 933, 1.0
Pentium III	6	8	6	600E, 600EB, 650, 667, 700, 733, 750, 800, 800EB, 667, 700, 733, 750, 800, 800EB, 850, 866, 900, 933, 1.0
Pentium IV	15	0	7	1.3, 1.4, 1.5,
Pentium IV	15	0	10	1.3, 1.4, 1.5, 1.6, 1.7, 1.8,
Pentium IV	15	1	2	1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 2.0

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# 13

## 2003 CPT Codes Installation

*This section provides instructions for installing the 2003 CPT Codes for Saturn Software Versions 4.x. The operator must have a basic understanding of Windows NT and/or Windows 2000.*

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## Purpose

This document specifies the procedure to install the 2003 CPT Codes for a Saturn Information System Version 4.x. The following acronyms are found in this chapter:

- DMIT — Draeger Medical Information Technologies
- AMA — American Medical Association
- CPT — Current Procedural Terminology
- ODBC — Open Database Connectivity

## Requirements

The following is required to install the 2003 CPT Codes for a Saturn Information System Version 4.x.

- DMIT 2003 CPT Codes Installation disk containing the following files:
  - CPTInstall.exe
  - Ranges.txt
  - Groups.txt
  - Subgroups.txt
- AMA 2003 CPT Codes Installation disk purchased by the customer.

## Setup

- Verify that the Saturn Information System Version 4.x is installed at the customer site.
- Copy the files from the DMIT 2003 Codes Installation disk to the workstation or server where the application will be executed.
- Copy the Longul.txt and Shortu.txt files from the CPT2003 directory on the AMA 2003 CPT Codes disk to the same directory where the Installation disk files were copied.
- Verify that the workstation or server has access to the server database through ODBC.
- Verify that the server database is running.
- Verify that the Saturn List Manager application *is not* running on any workstation.



## CPT Codes Installation

To install CPT codes, do the following:

1. Run the CPTInstall.exe. The CPT Codes Installation dialog box appears (Figure 13-1).



Figure 13-1. CPT Codes Installation Dialog Box

2. Select the Start button.

**Note:** If an error occurs, contact your DMIT representative and wait for further instructions.

A progress indicator is displayed in the dialog box (Figure 13-2) with “Installing groups...”, then “Installing subgroups...”, then “Installing CPT Codes...”. Then “Installation Complete” is displayed under the progress indicator and a beep sounds when installation is complete.

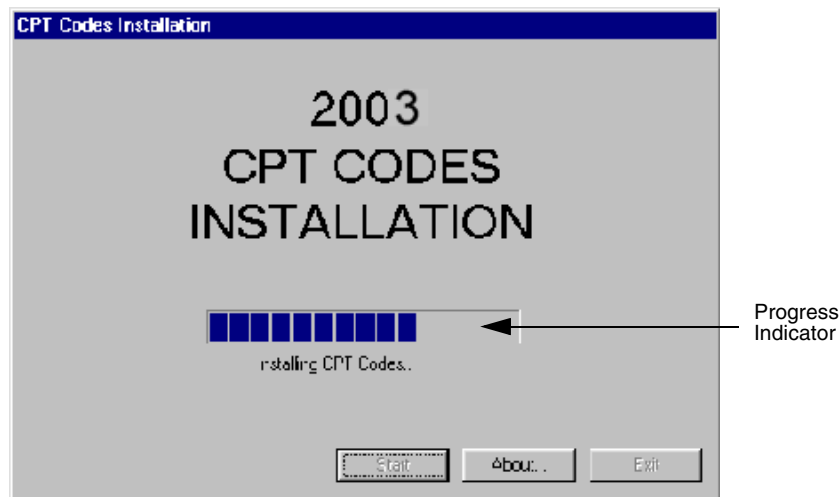


Figure 13-2. CPT Codes Installation Dialog Box with Progress Indicator

3. Select the Exit button.

## Verification

Allow time for the updated codes to replicate to the workstations, then verify that the installation was successful by following these steps in the Recorder application.

1. Display the About dialog box by selecting About Recorder... from the Help menu.
2. Verify that the American Medical Association CPT copyright year is 2002.
3. Close the About dialog box and create a new case by selecting New Case from the File menu.
4. Select the Admission section tab, and then select the Surgery & Anes. page tab.
5. Select the Add button for Surgery Procedure, and then select the Select button in the Enter Procedure dialog box.
6. Verify that the American Medical Association CPT copyright year is 2002.
7. Enter 21046 in the Search for box and select the Find button.
8. Verify that the 21046 code and description is found and displayed.
9. Exit the Surgery Procedure dialog boxes.
10. Select the Add button for Anesthesia Procedure, and then select the Select button in the Enter Procedure dialog box.
11. Verify that the American Medical Association CPT copyright year is 2002.
12. Enter 00921 in the Search for box and select the Find button.
13. Verify that the 00921 code and description is found and displayed.
14. If the verification is unsuccessful, contact your DMIT representative and wait for further instructions.

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Printed in the U.S.A.