PRINTING INSTRUCTIONS:

1. Pull current master copy from document control.
2. Set the copier to a light setting so the document’s pictorial graphics copy legibly.
3. Copy on 20 pound copier bond.
4. Collate and staple packet at left.

-01 SHOWN

LIST OF MATERIALS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

<table>
<thead>
<tr>
<th>QTY</th>
<th>IDENTIFYING NUMBER</th>
<th>DESCRIPTION</th>
<th>CODE IDENT</th>
<th>ITEM</th>
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OEC MEDICAL SYSTEMS, INC.

TITLE
INSTALLATION INSTRUCTIONS, VCR OPTION,
SERIES 7600/7700

SIZE     CODE IDENT NO.     DWG NO.     REV
A         00-880931           A

05-010-9/93
INSTALLATION INSTRUCTIONS,  
VCR OPTION

OVERVIEW

This document contains installation procedures to install a Sony VCR, model # SVO-9500MD/4 (OEC p/n 00-900585), to the S7600 or S7700 Workstations.

The VCR Kit’s Bill of Material is on page 3. Throughout these procedures, the item numbers from the Kit’s BOM are referenced in brackets, [ ], to help identify the components. An interconnect diagram of the VCR option connections is on page 4. Installation procedures begin on page 5.

Most designations of right and left, in the text and Figures, come from a position of someone facing the rear of the Workstation (refer to Figure 1), which is the usual position for the technician when installing the VCR option components.

WARNING: Ensure that you are properly grounded to prevent ESD damage, and observe the usual safety precautions when accessing electronic components.

Required materials for installation:

- standard FS tools for installing & servicing OEC equipment
- VCR Option Upgrade Kit, Series 7600/7700, p/n 00-880932
- 7600S VCR Kit (p/o S7600/7700 VCR Option Upgrade Kit), p/n 00-452521-02; see next page

NOTE: The VCR option cable connections are shown complete in each Figure’s view; no cable is shown hanging freely or disconnected. The call-out numbers in the Figures correspond to the same-numbered steps here. The system being upgraded may differ slightly to what is pictured.
## VCR KIT

**PART NUMBER:** 00-452521-02  
**DESCRIPTION:** KIT, VCR, 7600S

### ITEM #, COMPONENT PART NUMBER

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<tr>
<th>DESCRIPTION</th>
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<td>002 00-452488 VIDEO CABLE, VCR, LONG</td>
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<td>010 00-452167 TRIGGER CABLE</td>
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<tr>
<td>011 00-450036 BMS SOFTWARE (4 IC’S IN PROTECTIVE BOX)</td>
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<tr>
<td>012 PCB SNAP MOUNTS (PLASTIC STANDOFFS)</td>
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<tr>
<td>013 LENGTH OF SHRINK TUBING W/TIE-WRAP</td>
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**NOTE:** The interconnect diagram (next page) is positioned vertically on the page for clarity.
VCR INSTALLATION

1. Switch off the main system power. The power-off switch is located in the lower-right corner of the Workstation control panel.

2. Unplug the power cable from its AC power socket.

3. Disconnect the interconnect cable from the power panel on the rear of the Workstation.

4. If some or most of the power cord is coiled up on the rear of the Workstation, uncoil the power cord so the Workstation’s lower rear cover can be removed.

5. Remove the 10 screws (4 on the power panel, 3 on each side) from the Workstation’s lower rear cover, then remove the lower rear cover. See Figure 1.

6. Remove the 2 screws from the Workstation’s upper rear cover, then remove the upper rear cover. This gives access to the VCR compartment area where factory-installed cables (to be connected in a later step) are located. See Figure 1.

Figure 1
7. Install 6 snap mounts [012] to the lower rear of the Workstation shelf enclosure. See Figure 2.

8. Attach the B107 PCB [001] to the snap mounts and secure the board to the Workstation shelf enclosure. See Figure 2.

Figure 2
8. Disconnect the coax cable from "Video IN" on the BMS 100 frame storage box, BSA-500 panel, located on the lower left side. See Figure 3.

disconnect the coax cable
"Video IN" connection
from BMS 100

Figure 3
9. Connect the previously disconnected coax cable end to the new video cable [007] using the “barrel” connector [008], cover the connection with heat shrink tubing [013], then secure the connection to the lower right side of the frame using tie-wrap. See Figure 4.

connect cable to new video cable using barrel connector, wrap in shrink tubing, tie-wrap connection to lower right of frame

Figure 4
10. Connect the other end of the new video cable [007] to ST9 on the B107 board, located near the lower left corner on PCB. See Figure 5.

11. Connect one end of the long coax cable [002] to ST8 on the B107 board (located in the lower left corner of the PCB), and the other end to Vin on the BSA 500 board, located in BMS 100. See Figure 5.

12. Locate the factory-installed cable connected to BMS 100, NWA-500 V1, access the cable’s free (unconnected) end in the VCR compartment, then connect the free end to ST5 on the B107 board, located on the left of the PCB. (The VCR compartment is located immediately below the monitors; refer to Figure 1.) See Figure 5.

Figure 5
13. Connect one short coax cable [003] to ST7 on the B107 board (located near the lower right corner of the PCB), then label the cable as "V OUT." See Figure 6.

14. Connect the other short coax cable [003] to ST6 on the B107 board (located on the right side of the PCB), then label the cable as "V IN." See Figure 6.

Figure 6
15. Disconnect the ribbon cable from ST1 of the B104 PCB (located on the lower right side of the Workstation), then connect the video control cable [004] to ST1 on B104. See Figure 7.

16. Connect the previously disconnected ST1 ribbon cable end to the T-branch on video control cable [004]. See Figure 7.

Figure 7
17. Disconnect one end of the old interface cable from ST3 on the B104 board (located on the bottom edge of the PCB) and the other end from the "Parallel Port" on BMS 100. This cable will not be re-used. See Figure 8.

18. Connect the new interface cable [009] to ST3 on the B104 board, then connect the trigger cable [010] to the new interface cable's T-branch. See Figure 8.

Figure 8
19. Route the trigger cable [010] to the B107 board, then connect the trigger cable to ST2 on B107, located on the right of the PCB. See Figure 9.

20. Route the video control cable [004] to the B107 board, then connect the video control cable to ST4 on B107, located on the top edge of the PCB, toward the left. See Figure 9.
21. Route the new interface cable [009] around to the front of BMS 100, then connect the cable to "Parallel Port" on BMS 100. See Figure 10.
22. Connect the appropriate end of the power cable [005] to ST1 on the B107 board, located near the upper left corner of the PCB. See Figure 11.

Figure 11
23. Connect the other end of the power cable (with the two exposed wire ends) to the terminal block:
   - blue wire to block # 5
   - brown wire to block # 6

See Figure 12.

Figure 12
24. Connect the VCR remote control cable [006] to ST3 on the B107 board, located in the upper right on the PCB. See Figure 13.

25. Route the other end of the VCR remote control cable [006] up to the inside of the VCR compartment.

Figure 13
NOTE: Steps 26, 27, & 28 are non-applicable for a 7700 system. If upgrading a 7700 system, skip to step 29.

26. Remove the mtg. screw(s) that attach the CPU-100 board to BMS 100, then remove the CPU-100 board. (This is the left-most board on BMS 100 in the view shown below.) See Figure 14.
27. Remove the 4 old IC SW chips from the CPU board, then install the new ICs [011] to the CPU board into the same sockets as the ones removed. See Figure 15.

28. Reinstall the CPU board back into BMS 100.

29. Fit the Sony VCR into the VCR compartment from the front of the Workstation, connect the VCR's video cables, then plug in the VCR's AC power cable.

30. Reinstall the Workstation upper rear and lower rear covers, reconnect the interconnect and power cables, then test the system for proper operation.
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OEC Medical Systems, Inc.
384 Wright Brothers Drive
Salt Lake City, Utah 84116
U.S.A.
(801) 328-9300
Installation Manual

00-441100-01

English

for

Compact Plus Upgrade KIT

00-453221-01
Upgrade Interface for Monitor Cart (110V)
U.S. Version

and

00-453147-01
Upgrade Interface for Monitor Cart (230V)
International Version (ROW)

Upgrade possible all 7700 Compact
Table of Contents

1 PARTS LIST FOR INSTALLATION KIT

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1.2 00-453221-01 UPGRADE KIT INTERFACE FOR MW 110V

2 INSTALLATION PROCEDURE

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2.2 MOUNT PCB B150 (ITEM #1)

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3.2 110 V SYSTEMS

3.2.1 HIP Mode (max 3.8mA or max 10 R/min)

3.2.2 Film Mode (max 15mA)

4 COMPLETE THE SYSTEM

5 TEST PROTOCOL

5.1 POWER ON/OFF

5.2 MINI ALPHA “TEXT KEYBOARD FROM COMPACT” (OPTION)

5.3 MONITOR CART

5.4 PRINT FUNCTION

5.5 COMPACT FUNCTION

6 TECHNICAL REFERENCES

INTERCONNECT DIAGRAM COMPACT PLUS 77C20_XX.DXF
ASSEMBLY DRAWING B100
ASSEMBLY DRAWING B300
ASSEMBLY DRAWING B206
ASSEMBLY DRAWING B118
ASSEMBLY DRAWING B150
# Parts List for Installation Kit

## 1.1 00-453147-01 Upgrade KIT Interface for MW 230V

<table>
<thead>
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<th>Item #</th>
<th>Qty.</th>
<th>P/N</th>
<th>Description</th>
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<td>LP B150 Interface for Monitor Cart Control</td>
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<td>Adapter Cable B150-B206</td>
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<td>Power Input Cable- Compact Plus</td>
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<td>00-903304-01</td>
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<td>Spring washer 4 A2 DIN 137B</td>
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## 1.2 00-453221-01 Upgrade Kit Interface for MW 110V

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<td>00-904088-01</td>
<td>Line Filter FN2060B-20/06</td>
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</tbody>
</table>
2 **Installation Procedure**

2.1 **General**

Remove rear side Cover C-Arm (4 screws)
Remove the Image processor cover (6 screws).

2.2 **Mount PCB B150 (item # 1)**
Located left side from PCB 206.

- Disconnect cables from PCB 206 ST 11 and connect this cable to B150 ST 4
  *Note: remove cable from Shielding Clamp*

Mount cable item # 2 from PCB B150 ST 3 to PCB B206 ST 11
*Note: use Shielding Clamp item #9,10,11 for both cable*

Mount cable item # 3 from PCB150 ST 1 to Cable Connector (blue)
(Cable PCB 111 to Keyboard)
2.3 Mount PCB 118 (item#5)

Locate holes in the Image Processor cover and install PCB holder (item # 4)

Disconnect video cables from Image processor PCB BSA500 (VIDEO IN) and connect this cable to PCB118 ST1

Mount cable (item#6) from PCB BSA500 (VIDEO IN) to PCB 118 ST2

Connect 3 PIN power cable (blue gray black) to B118 ST5
2.4  Mount Power Input Cable- Compact Plus (item#7)

Disconnect Power Input Cable blue/brown from Line Filter
Disconnect Video Cable Image processor NWM500 V1
Remove Power Input Assemble (32pin connector with all cables)

Mount item #7 (Power Input Cable- Compact Plus)
16 pin Ribbon Cable to B100 ST5
10 pin Ribbon Cable short with two connector to B104 ST2
10 pin Ribbon Cable long with one connector to B150 ST2
Video Cable to B118 ST3

Note: use Ground from Image Processor
Power Cable blue/brown to Line Filter
Ground yellow/green to Chassis

2.5  Mount Line Filter (item#12)  only 110V Version

Disconnect Power Input Cable (notice connection)
Remove the used (old)Line Filter and replace it with item#12 Line Filter FN2060B-20/06.
Connect input and output cable
3 Adjustment Procedure

3.1 230 V Systems (no adjustment needed)

3.2 110 V Systems
3.2.1 HIP Mode (max. 3.8mA or max. 10 R/min)
   Setup the HIP Mode (Beckenmode) to 110kV
   Measurement point mA Jumper (see Figure 2)
   (Remove the Jumper and measure the mA in the mA Mode of your mA multimeter)
   Adjustment Pot P8 B143 max. 3.8mA or max. 10 R/min (see Figure 1)
   depending on which borderline reached first

3.2.2 Film Mode (max 15mA)
   Select the film mode.
   During a 2 second, 36kV exposure, adjust P2 (Figure 1) for a 15mA reading on
   the multimeter.
   Replace mA jumper.

(Figure 1) (Figure 2)

4 Complete the System

Replace X-Ray Cover
Replace cover from Image Processor IPS 200
Replace rear side C-Arm Cover
5 Test protocol
Use “User Manual Compact Plus”
Connect the C-Arm with P0-Cable from Monitor Cart

5.1 Power ON/OFF
System Power ON from C-Arm
System Power OFF from C-Arm
System Power ON from Monitor Cart
System Power OFF from Monitor Cart
System Power ON from C-Arm
System Power OFF from Monitor Cart

5.2 Mini Alpha “Text Keyboard from Compact” (Option)
Please type a text
result: only an peep and no TEXT on monitor screen
Note: No Operation allowed

5.3 Monitor Cart
All Function are same as for Series System (see User Manual)
exception: Function Autowindow, Image store, activated from C-Arm have an effect to Monitor Cart and C-Arm
Function Autowindow, Image store, activated from Monitor Cart have only an effect to Monitor Cart.
Function Picture swap activated from C-Arm result inc. Memory (C-Arm) and Picture swap (Monitor Cart)
Function Picture swap activated from Monitor Cart result only Picture swap (Monitor Cart) and no function (C-Arm)

5.4 Print function

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<th>Printer mounted in Monitor Cart</th>
<th>Activated from C-Arm (Main Frame)</th>
<th>Activated from Monitor Cart</th>
<th>C-Arm (Main Frame) Printer print function</th>
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Test Done ___

5.5 Compact Function
Use System without Monitor Cart
All Functions are the same as Compact System (see User Manual)
Mini Alpha Text Keyboard works correctly.

Done ___
6 Technical References

Interconnect Diagramm Compact plus 77C20_xx.dxf
Assembly Drawing B100
Assembly Drawing B300
Assembly Drawing B206
Assembly Drawing B118
Assembly Drawing B150
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**OEC**
Medizinische Systeme, GmbH Wendelstein

**Title**
HYBRID CONTROL

**Title**
HYBRIDE KONTROLLER