Unpacking and Setting Up the SpectraMax Paradigm Multi-Mode Detection Platform

Before unpacking and setting up the SpectraMax® Paradigm® Multi-Mode Detection Platform, prepare a dry, flat work area that has sufficient space for the instrument, host computer, and required cables. See the specifications in the *SpectraMax Paradigm Multi-Mode Detection Platform User Guide*.

Unpacking and setting up the instrument includes the following procedures:

- Unpacking the instrument and saving the original packaging. See Unpacking the SpectraMax Paradigm Instrument on page 1.
- Removing the transport locks from the PMT shutters and drawers. See Removing the Transport Locks on page 4.
- Physically setting up the instrument, connecting it to the host computer, and installing the controlling software on the computer. See Connecting the SpectraMax Paradigm Instrument Cables on page 8.
- Unlocking the instrument using the controlling software. See Unlocking the SpectraMax Paradigm Instrument on page 10.

In addition, you can connect a CO_2 supply line to the back of the instrument. See Connecting and Disconnecting the Carbon Dioxide Supply on page 11.

Unpacking the SpectraMax Paradigm Instrument

The packaging is specifically designed to protect the instrument during transportation.

Transport locks are placed on the photo multiplier tube (PMT) shutter, the detection cartridge drawers, and the microplate drawer to protect the instrument from damage during shipping. Transport locks must be removed before turning on power to the instrument.

WARNING! To prevent injury, use at least two people to lift the instrument.

Note: All packaging materials, including transport locks, should be retained in case of any future transport needs. Do not use tools that can damage the packaging.

CAUTION! When transporting the instrument, warranty claims are void if damage during transport is caused by improper packing.

To unpack the instrument:

1. Check the box for any visible damage during transportation. In case of damage, inform the supplier immediately and keep the damaged packaging.

CAUTION! Keep the box upright. Do not tip or tilt the box or place it on its side.

2. With the box facing up as indicated on the packaging, use a box cutter to carefully cut open the side of the box labeled **Open Here** (Figure 1-1).
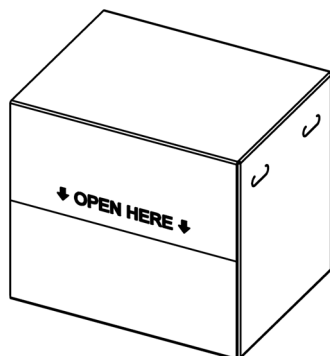

Figure 1-1 Opening the Box

3. Grasp the handle and slide the instrument out of the box (Figure 1-2).

Tip! It might be easier if a second person holds the box in place while the instrument is slid out on the cardboard.
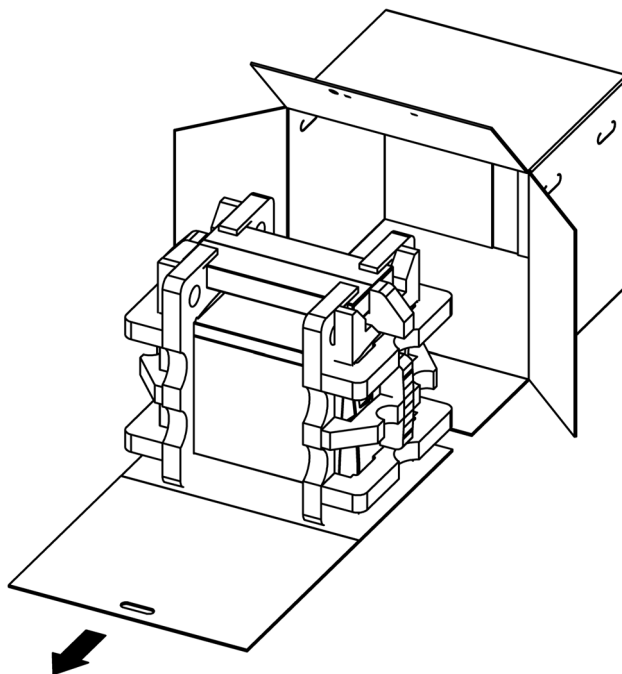

Figure 1-2 Sliding the Instrument Out of the Box
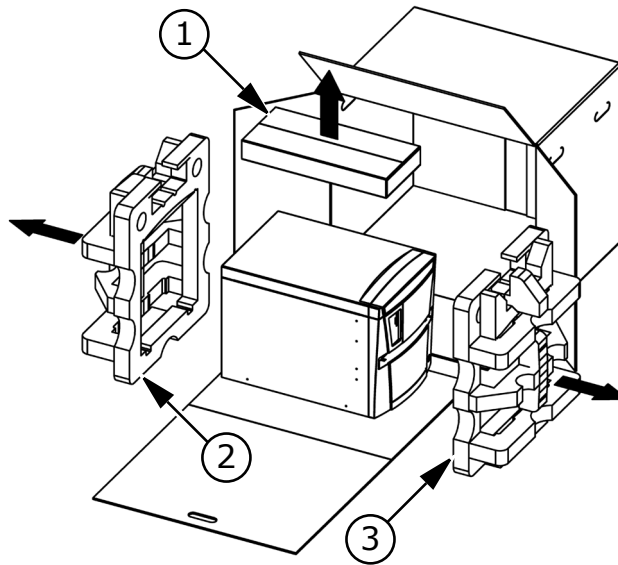
4. Remove the accessories box (Figure 1-3).

Figure 1-3 Removing the Accessories Box and Foam Packaging

Item	Description
1	Accessories box
2	Foam packaging
3	Foam packaging

CAUTION! Keep the instrument upright and level when lifting. Do not tip or shake the instrument to prevent damage to the moving components inside the instrument.

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5. Lift one end of the instrument slightly and remove the foam packaging from that end (Figure 1-3).
6. Gently return the instrument to the ground.
7. Lift the other end of the instrument slightly and remove the foam packaging from that end (Figure 1-3).
8. Gently return the instrument to the ground.
9. Remove the large plastic bag from the instrument. It might be necessary to slightly lift the instrument to get the bag over the feet.
10. With one person on each end, lift the instrument and gently place the instrument on a dry, flat area. For information about the weight of the instrument, see the specifications in the *SpectraMax Paradigm Multi-Mode Detection Platform User Guide*.

Note: The feet are sticky and the instrument does not slide well. It can mark the work surface if slid.

Removing the Transport Locks

CAUTION! The instrument can be damaged if the transport locks are not removed before the instrument is powered on.

Transport locks are placed on the photo multiplier tube (PMT) shutter, the detection cartridge drawers, and the microplate drawer to protect the instrument from damage during shipping. Transport locks must be removed before powering on the instrument.

Removing the microplate drawer transport lock requires a 2.0 mm Allen wrench as is provided with the instrument. The detection cartridge drawer transport lock and PMT shutter lock can be removed by hand.

CAUTION! Do not touch or loosen any screws or parts other than those specifically designated in the instructions. Doing so could cause misalignment and possibly void the warranty.

CAUTION! The front cover is held onto the front of the instrument by powerful magnets. Keep magnetic storage devices or strips, such as hard drives, key cards, and credit cards, away from the instrument covers.

To remove the transport locks:

1. Firmly pull on the top front cover to remove it and then set it aside (Figure 1-4). The front cover is held on to the front of the instrument by powerful magnets.

   Note: It is easiest to remove the top cover by pulling from the bottom.
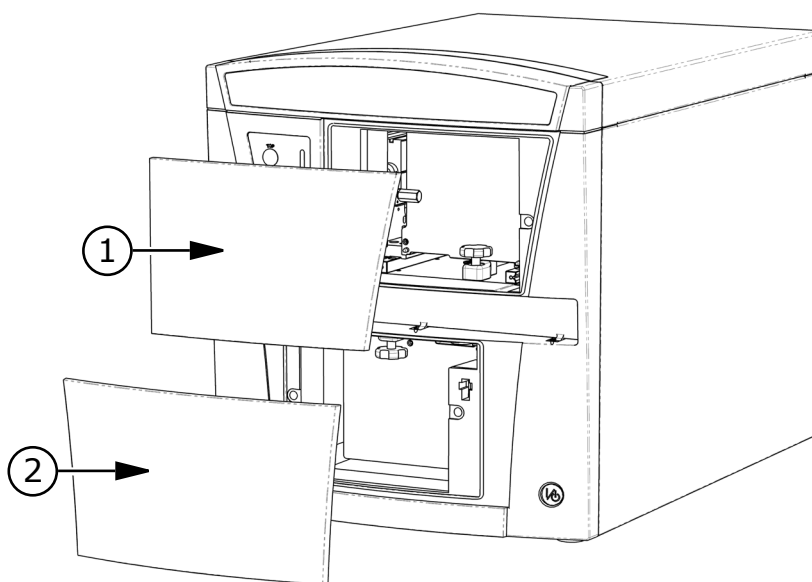

Figure 1-4 Removing the Front Covers

Item	Description
1	Top front cover
2	Bottom front cover

2. Firmly pull on the bottom front cover to remove it and then set it aside (Figure 1-4). The front cover is held on to the front of the instrument by powerful magnets.

Note: It is easiest to remove the bottom cover by pulling from the top.

3. Turn the PMT shutter transport lock counter-clockwise until it comes loose and then remove it from the instrument (Figure 1-5). Store the transport lock in the instrument accessories toolbox.
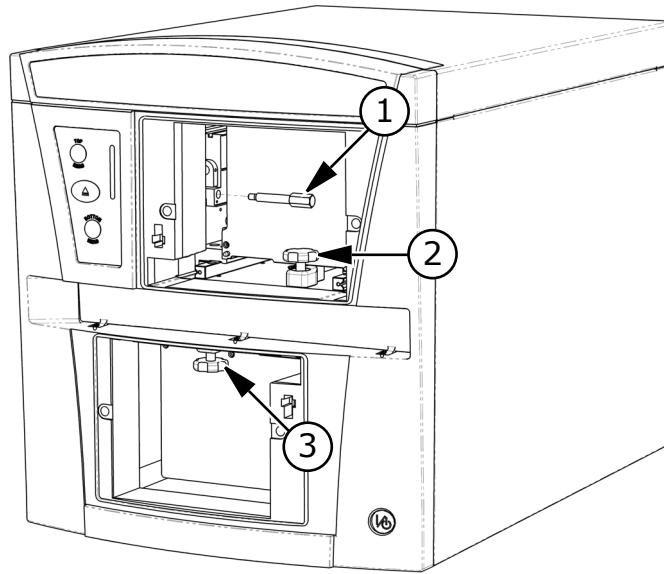

Figure 1-5 Removing PMT Shutter Transport Lock

Item	Description
1	PMT shutter transport lock (shutter)
2	Top read detection cartridge drawer transport lock (upper cartridge)
3	Bottom read detection cartridge drawer transport lock (lower cartridge)

4. Turn the top read detection cartridge drawer transport lock counter-clockwise to loosen it.

5. Slide the top read detection cartridge drawer forward until it is outside of the main instrument (Figure 1-6).
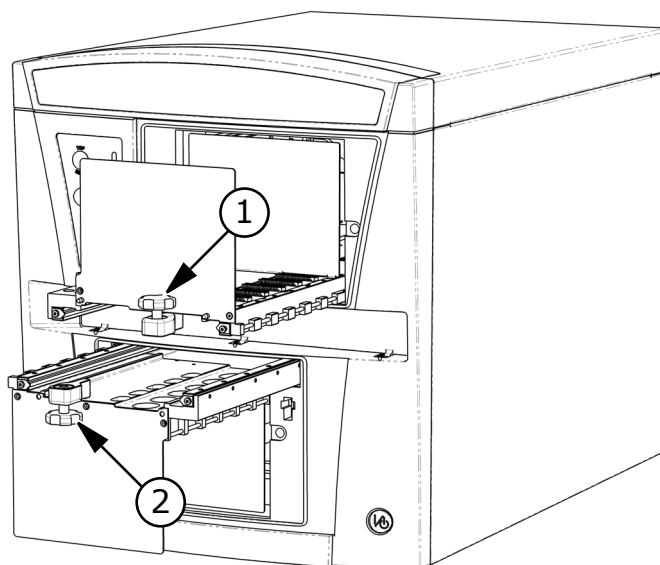

Figure 1-6 Removing Transport Locks from Detection Cartridge Drawers

Item	Description
1	Top read detection cartridge drawer transport lock
2	Bottom read detection cartridge drawer transport lock

6. Remove the top read detection cartridge drawer transport lock (Figure 1-6). Store the transport lock in the instrument accessories toolbox.

7. Turn the bottom read detection cartridge drawer transport lock counter-clockwise to loosen it.

8. Slide the bottom read detection cartridge drawer forward until it is outside of the main instrument (Figure 1-6).

9. Remove the bottom read detection cartridge drawer transport lock (Figure 1-6). Store the transport lock in the instrument accessories toolbox.

10. Gently push both the top and bottom read detection cartridge drawers back inside the instrument.

11. Replace the top and bottom front covers by aligning the magnets on the inside of the front covers with the magnets on the instrument base.

12. Gently pull the plastic tab protruding from the microplate chamber door. The door opens, revealing the transport lock that fastens the microplate drawer to the internal frame of the instrument (Figure 1-7). The microplate drawer door must be held open manually while removing the transport lock.

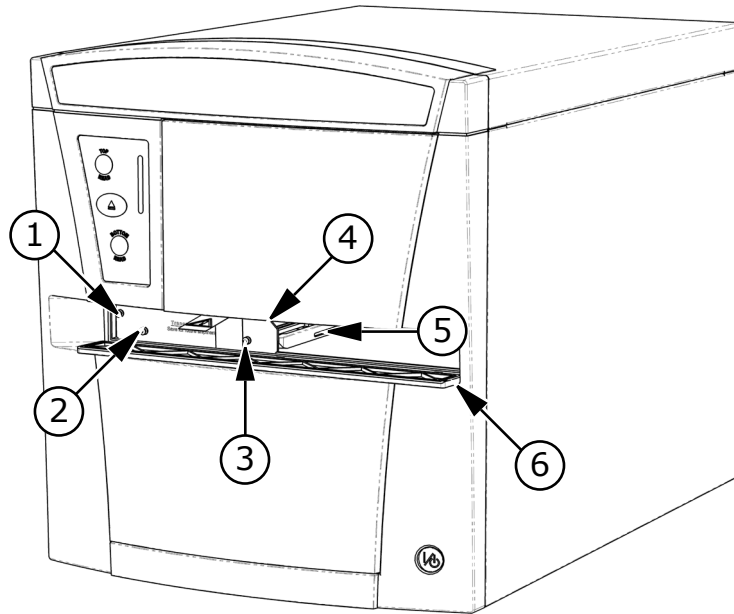**Figure 1-7** Microplate Drawer Transport Lock (plate transport)

Item	Description
1	Screw #1 fastens the lock to the internal frame of the instrument
2	Screw #2 fastens the lock to the microplate drawer
3	Screw #3 fastens the lock to the microplate drawer
4	Transport lock
5	Microplate drawer
6	Microplate chamber door (open)

13. Using the 2.0 mm Allen wrench, loosen screw #1 in the upper-left corner of the transport lock until the lock disconnects from the instrument frame (Figure 1-7). The screw is equipped with a retaining washer that prevents it from being removed from the lock.

14. Loosen screws #2 and #3 until the lock comes free of the microplate drawer (Figure 1-7). The screws are equipped with retaining washers that prevent them from being removed from the lock. Store the transport lock in the instrument accessories toolbox.

15. Gently close the microplate chamber door.

16. Save the original carton, foam inserts, accessories box, and transport locks in case the instrument must be shipped in the future.

Connecting the SpectraMax Paradigm Instrument Cables

Setting up the instrument includes selecting a suitable work area, connecting the host computer, and installing the software that controls all the actions performed by the instrument.

The instrument can be connected to the controlling computer using either the included 9-pin serial cable or a USB cable. While both cables are supported, it is not necessary to connect both.

To set up the instrument:

1. Place the instrument and host computer on a dry, flat work area with sufficient space for both devices and the required cables. To ensure adequate ventilation, a 20 cm to 30 cm (7.9 in. to 11.8 in.) gap should be left between the back of the instrument and the wall.

2. Make sure that the power switch on the back of the instrument is in the Off position.

3. Connect the instrument to the host computer using either the supplied 9-pin serial cable, the supplied 9-pin serial to USB adaptor cable, or a USB cable. While both 9-pin serial and USB cable connections are supported, only one cable connection is necessary.

   ◆ **9-pin Serial Cable:** Connect one end of the supplied 9-pin serial cable to the serial port on the computer and connect the other end of the cable to the serial port on the back of the instrument (Figure 1-8).

Note: Use only the original 9-pin serial cable supplied with the instrument. Other serial cables with identical connectors might not establish communication between the instrument and computer.

   ◆ **9-Pin Serial to USB Adapter Cable:** Connect the USB end of the supplied adapter cable to one of the USB ports on the computer and connect the 9-pin serial end of the cable to the serial port on the back of the instrument (Figure 1-8).
   ◆ **USB Cable:** Connect the flat thin end of the USB cable to one of the USB ports on the computer and connect the other end of the USB cable to the USB port on the back of the instrument (Figure 1-8).

Note: A USB cable is not supplied with the instrument. The USB cable should be no longer than 1.8 meters (6 feet). If the serial or adapter cable is connected, it is not necessary to also connect a USB cable.
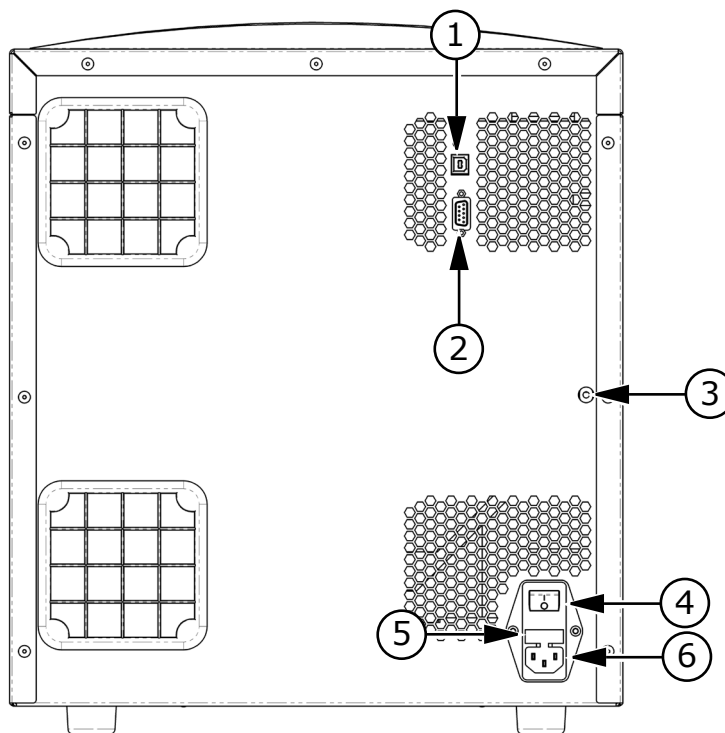
Figure 1-8 Power Switch and Connection Ports

Item	Description
1	USB port
2	Serial port
3	CO_2 quick-connect fitting
4	Power switch
5	Fuse carrier
6	Power port

4. Connect the power cable to the power port on the back of the instrument (Figure 1-8) and to a grounded electrical wall socket.

5. If desired, connect CO_2 to the instrument. See Connecting and Disconnecting the Carbon Dioxide Supply on page 11.

6. Turn on the power to the host computer.

7. Install the SoftMax Pro Software on the computer. See "Installing SoftMax Pro Software" in the *SoftMax Pro Software User Guide*.

Unlocking the SpectraMax Paradigm Instrument

When the instrument is first installed, the hardware transport locks need to be removed. As an additional safety precaution, internal locks controlled by the software prevent the drawers from opening until the instrument is detected and initialized by the controlling software.

> **Note:** Do not install detection cartridges until after you have completed the following instructions to unlock the drawers and initialize the instrument.

To unlock the drawers and initialize the instrument:

1. Make sure that the hardware transport locks have been removed. See Removing the Transport Locks on page 4.

   > **CAUTION!** The instrument can be damaged if all the transport locks are not removed before unlocking the drawers and initializing the instrument.

2. Make sure that all drawers have been pushed back into the instrument, the front panel has been replaced, and the microplate door is closed.

3. Make sure that the instrument is connected to the host computer and to a power source, and that the SoftMax Pro Software has been installed on the host computer. See Connecting the SpectraMax Paradigm Instrument Cables on page 8.

4. Turn on the power switch on the back of the instrument.

   If the **Standby** button on the front lower-right corner of the instrument is illuminated, press the button to take the instrument out of standby mode.

   The LEDs on the status panel flash and turn off, and then the amber LED turns on indicating that the instrument drawers are locked.

5. Start the SoftMax Pro Software as described in the *SoftMax Pro Software User Guide*.

   The amber LED on the status panel turns off and the green LED turns on, indicating a successful connection between the instrument and the software.

6. After successfully connecting to the instrument, the **Instrument Unlocking Procedure** wizard appears.

   If the **Instrument Unlocking Procedure** wizard does not appear, then use the **Instrument Connection** dialog to select and connect to the instrument as described in the *SoftMax Pro Software User Guide*.

   > **Note:** If the instrument does not appear in the **Available Instruments** list of the **Instrument Connection** dialog, then click **Refresh** above the list.

7. Follow the on-screen instructions in the **Instrument Unlocking Procedure** wizard to unlock the drawers and initialize the instrument.

After completing the **Instrument Unlocking Procedure** wizard, the instrument performs an initialization procedure that moves the optics and microplate drawers to home positions. The green LED on the status panel turns on, the amber LED flashes and turns off, and then the green LED remains on.

Connecting and Disconnecting the Carbon Dioxide Supply

A CO_2 supply can be connected to the SpectraMax Paradigm Multi-Mode Detection Platform. This is useful when reading plates as part of a cell-based assay in which a CO_2 environment needs to be provided to keep cell cultures alive. The CO_2 is not regulated or monitored by the SpectraMax Paradigm Multi-Mode Detection Platform.

To connect CO_2 to the SpectraMax Paradigm Multi-Mode Detection Platform:

1. Using a flat-head screwdriver, pry off the small black cap on the back of the instrument along the right edge to access the quick-connect fitting (Figure 1-8). Save the cap for later use.

2. Connect the tubing to the quick-connect fitting.

    To remove the tubing from the quick-connect fitting, use the CO_2 unlock tool (part number: S MS 135 100).

3. Connect the other end of the tubing to the CO_2 supply.

4. Set the CO_2 supply to the desired input pressure.

Note: For the maximum allowable air supply pressure for the CO_2 inlet and CO_2 tubing specifications, see the specifications in the *SpectraMax Paradigm Multi-Mode Detection Platform User Guide*.

To disconnect the CO_2 tubing from the SpectraMax Paradigm Multi-Mode Detection Platform:

1. Use the tubing removal tool to press the quick-connect fitting and release the tubing.

2. Remove the tubing from the quick-connect fitting.

3. Replace the black cap over the quick-connect fitting.