PICCLineMan™
Peripherally-Inserted Central Catheter Trainer

Shown with optional Articulating Head (AH-10)

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# Table of Contents

About the PICCLineMan™ System
   - System Overview .......................... 3
   - Skill Development ...................... 3
   - Additional Features .................... 3
   - Landmarks and Anatomy ............... 3

PICCLineMan System Components
   - Replaceable Tissue Options .......... 4
   - Additional Materials .................. 6

PICCLineMan Quick Start .................. 7

Setting up PICCLineMan ................... 8
   - Checking Replaceable Tissue Fluid Levels and Pressure .......................... 8
     - To Check for Excess Air in the Lines: ............................................. 8
     - To Check the Fluid Pressure in the Lines: ........................................ 8
   - Installing the Tissue ................................................................. 9
     - To Install the Replaceable Tissue: ............................................... 9
   - Downloading the Digital X-Rays ......... 9
     - To Download Digital Chest X-Rays: ............................................ 9
   - Attaching the Articulating Head ........ 10
     - To Attach the Arm Support: .................................................... 10
   - Adjusting the Tension on the Articulating Head ................................ 11
     - To Adjust the Left-to-Right Movement: ...................................... 11

Maintaining the PICCLineMan System ..... 12
   - Replacing the Tissue .................... 12
     - To Replace the Tissue: ......................................................... 12
   - Refilling Fluid Reservoirs ............. 13
     - To Refill the Arterial or Venous Fluid: ..................................... 13
     - To Refill the Venous Pressure Regulator: .................................. 14
     - To Refill the Pulse Bulb: ..................................................... 14

Cleaning and Storing PICCLineMan ...... 15
   - To Clean and Store PICCLineMan: ........................................................................ 15

Troubleshooting ............................. 16
   - Issue: Air Bubbles in Vein or Artery .................................................... 16
   - Issue: Fistula in the Line ................................................................. 16
   - Issue: Unrealistic or Non-Optimal Ultrasound Image ......................... 17
   - Issue: Fluid Leaking out of Tissue ...................................................... 17

Replacement Parts Catalog ............... 18
About the PICCLineMan™ System

**System Overview**

PICCLineMan provides a realistic PICC (Peripherally Inserted Central Catheter) line insertion training experience for the beginner as well as advanced-level student.

**PICCLineMan Includes:**
- An upper Body Form torso in supine position.
- A partial right arm set at a 90° angle from the body.
- A replaceable upper arm tissue that is ultrasound-compatible at insertion site.
- A set of digital x-rays.

**PICCLineMan at a Glance**
- Basilic, Cephalic and Brachial vein entry options
- Normal, Obese and Geriatric Tissue options
- Ultrasound-guided, full cannulation
- All pertinent landmarks and responses
- Multi-use, extremely durable Replaceable Tissues
- Digital x-rays teach placement and complications
- Easy to set up and use

**Skill Development**
- Palpable landmarks to learn proper measurement.
- Realistic ultrasound-guidance to learn vein isolation and selection.
- Complete PICC Line procedure including guidewire insertion, dilation and full cannulation.
- Three different vein entry options—including advanced placement into the Brachial Vein.
- Normal, Obese and Geriatric Replaceable Tissue options allow assessing patient variance in vessel depth and sizing.
- Digital chest X-rays allow students to practice confirmation of line placement or complications, and for visualization of the catheter route and tip.

**Additional Features**
- Self-sealing, ultrasound-compatible Replaceable Tissues allow for multiple insertions.
- Arterial pulsation and vein compression are visible under real-time ultrasound.
- Positive flashback of simulated blood upon successful venous access.
- The Median Nerve provides an adjacent structure in the Brachial line placement and also supports ultrasound identification of anatomical structures.
- The optional Articulating Head (AH-10) enhances realism and allows for discussion of complications.

**Landmarks and Anatomy**

**Palpable Landmarks:**
- Antecubital Fossa
- Clavicle
- Acromion
- Humeral Head
- Sternum
- Ribs 1 - 7
- 1st, 2nd, 3rd Intercostal Spaces

**Anatomy under Ultrasound:**
- Basilic Vein
- Brachial Vein
- Cephalic Vein
- Median Nerve
- Brachial Artery
- Humerus
PICCLineMan System Components

PICCLineMan System with Articulating Head (PLM-11) ships with the following pictured items. (The Articulating Head (AH-10) is fully compatible with Simulab’s CentraLineMan System.) Other PICCLineMan packages contain varied configurations to best suit different training needs:

**Optional Articulating Head (AH-10)**
**Body Form (PLM-12)**
**Normal Replaceable Tissue (PLMT-10)**
**Arm End Cap (PLM-1002)**

**Arterial Pulse Hand Pump (CLP-1008)**
**Venous Pressure Regulator (CLP-1001)**

**Normal Replaceable Tissue (PLMT-10)**

**Simulated Arterial Blood (MA-8)**

**Simulated Venous Blood (MV-8)**
PICCLineMan System Components

- Fill Line (CLP-1004)
- Fill Port with Funnel (CLP-1003)
- Digital Chest X-Rays
  Download at: simulab.com/PICCLineManXray
- Soft-sided Carrying Case (PLM-1004)
- Body Form Tray (PLM-1005)
- Arm Support (PLM-1003)
  (for use with Articulating Head)
- Non-Sterile Guide Wires for PICCLineMan (NSG-20) - 25 Pack
Replaceable Tissue Options

Three different Replaceable Tissue options are available with PICCLineMan: Normal, Obese and Geriatric. These tissues offer unsurpassed realism in ultrasound imaging, even after repeated full catheterizations and needle insertions—there is no perceivable residual image of previous procedures. They are also ultra-durable and self-sealing tissues—capable of enduring hundreds of needle insertions and dozens of full catheterizations. The tissues includes the necessary landmarks that are visible under ultrasound.

- Normal Replaceable Tissue (PLMT-10)
- Obese Replaceable Tissue (PLMOT-10)
- Geriatric Replaceable Tissue (PLMGT-10)

Additional Materials

The following additional equipment is suggested to properly perform the PICC Line Insertion procedure.

- Ultrasound Machine
- PICC Line Procedural Kit/Tray
- Gloves
- 21 G Needle 3.5-6 Fr
- Syringe
- Introducer
- Peripheral IV Catheter
- Guidewires (can be purchased at Simulab NSG-20)
- Measuring Tape
- Catheter Stabilization Device and Dressing
Setting up your Classroom
- Set up the table
- Gather all suggested materials

Setting up Your PICCLineMan
- Unpack and inspect your PICCLineMan
- Set all components on the table

Preparing Your PICCLineMan for Procedures
- Attach the Articulating Head and Arm Support (if applicable)
- Check the Replaceable Tissue fluid levels and pressure
- Install the Replaceable Tissue

Checking and Replacing Tissues Between Procedures
- Check the Replaceable Tissue fluid levels and pressure
- Install a new or different Replaceable Tissue (if needed)

Maintaining Your PICCLineMan System
- Install a new Replaceable Tissue
- Refill the Arterial or Venous Fluid
- Refill the Venous Pressure Regulator
- Refill the Pulse Bulb

Cleaning and Storing Your PICCLineMan System
- Clean the Body Form and Replaceable Tissue(s)
- Wrap the Tissue(s) in plastic for storing
- Store the Body Form and Tray, Tissue(s) and Articulating Head properly

Downloading Digital Chest X-Rays
- Download digital x-rays from the Simulab web site at the following URL:
  http://simulab.com/PICCLineManXray
Setting up PICCLineMan

PICCLineMan must be properly set up before each procedure to ensure that students have the best educational experience. This includes checking the fluid level and pressure in the venous and arterial lines, installing the Replaceable Tissue, and connecting and adjusting the optional Articulating Head, if equipped.

Checking Replaceable Tissue Fluid Levels and Pressure

Before you perform a procedure, check the venous and arterial line fluids to ensure the following for the most realistic procedure experience:

- No excess air or air bubbles in the lines
- Proper fluid pressure and level

To Check for Excess Air in the Lines:

1. Remove the Replaceable Tissue from its packaging or from the Body Form.

2. Hold up the arterial and venous lines, and pat the Replaceable Tissue. This allows any trapped air to rise to the top.

3. If there is any air in the lines, go to the “Refilling Fluid Reservoirs” on page 13 for further instructions.

To Check the Fluid Pressure in the Lines:

1. Attach the Fill Port to a line and hold the Funnel so the connector is even with the Body Form top.

2. Fluid released into the Funnel line indicates the vessel is over-pressurized. Allow the Funnel to fill and disconnect over a paper towel once it stops.

3. If no fluid appears in the Funnel, see if the vessel accepts more fluid—if so, continue until it is full, then, disconnect the Funnel over a paper towel.

4. Drain extra fluid from the Funnel by placing the Fill Line into its fluid bottle. Attach the Funnel to the Fill Line and the fluid will empty into the bottle.
Installing the Tissue

The PICCLineMan has three different Replaceable Tissues that each provide a unique procedural experience: Normal, Obese and Geriatric. Select the desired Replaceable Tissue and prepare to install it.

To Install the Replaceable Tissue:

1. Check venous and arterial lines for air bubbles. Replace fluids if needed. See “Refilling Fluid Reservoirs” on page 13.

2. Lift the Body Form from the Body Form Tray.

3. Place the Replaceable Tissue in the arm cavity on the Body Form Tray.

4. Gently lay the arterial and venous tubing in the channel on the Body Form Tray.

5. Replace the Body Form onto the Body Form Tray. The fluid lines will remain in the channel.

6. Attach the Pulse Bulb to the fitting on the end of the red fluid line (arterial line).

7. Attach the Venous Pressure Regulator to the fitting on the blue fluid line (venous line).

Downloading the Digital X-Rays

PICCLineMan comes with a set of digital chest x-rays that allow students to practice confirmation of line placement or complications, and for visualization of the catheter route and tip.

To Download Digital Chest X-Rays:

- Visit Simulab’s web site at the following URL: http://simulab.com/PICCLineManXray, and click the link to download the zipped x-ray images.
Setting up PICCLineMan  

continued

**Attaching the Articulating Head**

The PICCLineMan System can be placed directly on the white tray of the optional AH-10 Articulating Head. If using the Articulating Head, you need to attach the Arm Support to the PICCLineMan Body Form Tray. The Arm Support is stored on the underside of the Body Form Tray.

To Attach the Arm Support:

1. Locate the Arm Support stored on the underside of the Body Form Tray.
2. Remove the Arm Support from its storage area and screw into the designated place on the arm.
3. Once the Arm Support is installed, place the Body Form Tray on the Articulating Head Tray.

**NOTE:** When finished using the System, please detach and stow the Arm Support on the underside of the Body Form Tray for storage.
Setting up PICCLineMan

## Adjusting the Tension on the Articulating Head

You can adjust the Articulating Head’s left-to-right movement to increase or decrease the tension.

### To Adjust the Left-to-Right Movement:

1. To adjust the side to side tension, locate a 3/8” open end or box wrench and a 1/8” Allen wrench.

2. Remove the Body Form and turn the head to one side. There are two metal plates that will stop the head from over-rotating.

3. Place a 3/8” open end or box wrench on the nut at the top of the mechanism and a 1/8” Allen wrench into the screw at the bottom. Turn the wrench about 1/4 of a turn and check the tension. Keep tightening to achieve the desired tension.

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### Tips for Using PICCLineMan During a Procedure

PICCLineMan is designed to provide a realistic PICC line insertion experience. The following tips will ensure your students have the most optimal experience.

**Create an Arterial Pulse**
Create a simulated arterial pulse by lightly pumping the Pulse Bulb that is attached to the end of the red fluid arterial line.

**Demonstrate Venous Pressure**
Demonstrate venous pressure via the Venous Pressure Regulator attached to the end of the blue venous line.
Maintaining the PICCLineMan System

Between procedures, you may need to change the Replaceable Tissue, refill the fluid reservoirs, or clear air bubbles in the lines.

Replacing the Tissue

The PICCLineMan has three different Replaceable Tissue options. Each tissue provides a unique procedural experience: Normal, Obese and Geriatric. Select the desired Replaceable Tissue that you wish to use.

To Replace the Tissue:

1. Remove the Pulse Bulb and Venous Pressure Regulator over a paper towel—there will be some leakage.
2. Lift the Body Form from the Body Form Tray. Remove the Replaceable Tissue and set it aside.
3. Locate the new Replaceable Tissue and check the lines for air bubbles. Replace fluids if needed. See “Refilling Fluid Reservoirs” on page 13.
4. Place the new Replaceable Tissue in the arm cavity on the Body Form Tray. Gently lay the arterial and venous lines in the channel on the Body Form Tray.
5. Replace the Body Form onto the Body Form Tray.
6. Attach the Pulse Bulb to the fitting on the end of the red fluid line (arterial line).
7. Attach the Venous Pressure Regulator to the fitting on the blue fluid line (venous line).
Refilling Fluid Reservoirs

If there is air present in either of the arterial or venous lines, you should add fluid for optimum performance and ultrasound image.

**NOTE:** Air in the Pulse Bulb or Venous Pressure Regulator can introduce air bubbles into the lines.

**To Refill the Arterial or Venous Fluid:**

1. Fluids can also be added to the lines using the included Funnel. Start by attaching the Fill Port with Funnel to the vessel that needs refilling.

2. Slowly add the fluid using the Funnel. Make sure to use the proper color of fluid for each vessel.

3. To fill the line and release all the air, gently squeeze the Replaceable Tissue or the Fill Port's tubing to allow the air to rise up and the fluid to enter into the lines.

4. Once filled, release the Fill Port from the line, using paper towels to absorb any leakage. Place the Fill Line into the appropriate bottle of fluid.

5. Then attach the Funnel to the Fill Line and the fluid will drain.
To Refill the Venous Pressure Regulator:

1. Begin by attaching the Fill Line to the Venous Pressure Regulator.

2. Fill the syringe with the included blue fluid and slowly pull it out of the blue fluid bottle. Use paper towels to absorb any spilled fluid.

3. Remove any air from the syringe and then remove the Fill Line over a paper towel—a small amount of fluid may release.

To Refill the Pulse Bulb:

1. Make sure that the Pulse Bulb is filled with fluid before reattaching it to the Replaceable Tissue. To add fluid to the Pulse Bulb, start by attaching the Fill Line.

2. Add red fluid to the Fill Line.

3. Squeeze the Pulse Bulb. Air will be replaced by fluid. Do this until the Pulse Bulb is full.

4. Remove the Fill Line over a paper towel—there will be a small release of fluid—and reattach to the Replaceable Tissue.
Cleaning and Storing PICCLineMan

The Body Form and Body Form Tray should be cleaned after each class with soap and warm water. This will help preserve the Body Form and Body Form Tray and minimize any major staining from the simulated blood.

When repacking the Body Form and Body Form Tray, position the neck towards the case’s handle. The optional Articulating Head must be stored separately.

To Clean and Store PICCLineMan:

1. Clean the Body Form gently with soap and warm water before storing.

2. Remove the Replaceable Tissue and place it into a plastic bag for storage or disposal. The bag will contain any leakage that may occur.

3. Set the Body Form and Tray in the case with arm facing the top corner of the carrying case in order to avoid weight on arm when case is upright.

4. (Optional Articulating Head) Please store the Articulating Head separately. If stored in the PICCLineMan case, it will compromise the integrity of the PICCLineMan Body Form. Simulab will not cover damage caused by this under warranty.
Troubleshooting

**Issue: Air Bubbles in Vein or Artery**

1. Remove the Replaceable Tissue from the Body Form.
2. Hold up the arterial and venous lines and pat the Replaceable Tissue to allow any trapped air to rise to the top.
3. If there is any air in the lines see “Refilling Fluid Reservoirs” on page 13 for further instructions.

**NOTE:** Air in the Pulse Bulb or Venous Pressure Regulator can introduce air bubbles into the lines.

**Issue: Fistula in the Line**

1. If you experience a fistula and purple fluid is drawn from the arterial or venous line, you will need to drain the lines and refill them.
2. To drain the fluid completely from a line, start by removing the Replaceable Tissue from the Body Form.
3. Attach the File Line to the appropriate line in the Replaceable Tissue and turn it upside down over a sink. Allow the line to drain completely.
4. Refill the line with new fluid. See “Refilling Fluid Reservoirs” on page 13 for further instructions.
Troubleshooting continued

**Issue: Unrealistic or Non-Optimal Ultrasound Image**
1. If the ultrasound image you are seeing is not optimum, reset to vascular setting or default settings by turning machine “off” and then “on”.
2. It may be necessary to adjust the gain, depth, penetration, and exam settings on the ultrasound machine to achieve a very realistic image.
3. If you continue getting an unrealistic ultrasound image, there may be air in the vein or artery. See the “Issue: Air Bubbles in Vein or Artery” on page 16 for additional information.

**Issue: Fluid Leaking out of Tissue**
1. If arterial or venous fluid is leaking out of the surface of the Replaceable Tissue, you may have over-pressurized the fluid in the line.
2. See “To Check the Fluid Pressure in the Lines” on page 8 to reduce the fluid pressure.
## Replacement Parts Catalog

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLMT-10</td>
<td>PICCLineMan Normal Replaceable Tissue</td>
</tr>
<tr>
<td>PLMOT-10</td>
<td>PICCLineMan Obese Replaceable Tissue</td>
</tr>
<tr>
<td>PLMGT-10</td>
<td>PICCLineMan Geriatric Replaceable Tissue</td>
</tr>
<tr>
<td>AH-10</td>
<td>Articulating Head</td>
</tr>
<tr>
<td>NSG-20</td>
<td>PICC Line Non-Sterile Guidewires</td>
</tr>
<tr>
<td>PLM-1002</td>
<td>PICCLineMan Arm End Cap</td>
</tr>
<tr>
<td>PLM-1006</td>
<td>PICCLineMan Arm End Cap - Obese</td>
</tr>
<tr>
<td>PLM-1001</td>
<td>PICCLineMan User Guide</td>
</tr>
<tr>
<td>CLP-1008</td>
<td>Arterial Pulse Hand Pump</td>
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<tr>
<td>CLP-1001</td>
<td>Venous Pressure Regulator</td>
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<tr>
<td>CLP-1004</td>
<td>Fill Line</td>
</tr>
<tr>
<td>CLP-1003</td>
<td>Fill Port with Funnel</td>
</tr>
<tr>
<td>MA-8</td>
<td>Simulated Arterial Blood (Red - 8 oz)</td>
</tr>
<tr>
<td>MV-8</td>
<td>Simulated Venous Blood (Blue - 8 oz)</td>
</tr>
<tr>
<td>PLM-1004</td>
<td>PICCLineMan Soft-sided Carrying Case</td>
</tr>
<tr>
<td>DIGITAL X-RAYS</td>
<td>Download at simulab.com/ PICCLineManXray</td>
</tr>
</tbody>
</table>
Experience Our Passion for Human Realism

We are never satisfied with "good enough."

For over 20 years, Simulab has been INNOVATING.
Our goal is true human realism in simulation.

Why? Because we are committed to providing a total blood-pounding, immersive, scientifically accurate, and clinically relevant experience for every participant.

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