flushing occluded catheters with small syringes can create excessive pressures. insert the flexible end of the micropuncture guidewire into the introducer needle. advance the needle into the vein. for implantable ports with groshong* catheters, do not cut stylet. withdraw stiffening stylet from catheter prior to cutting.

- do not suture catheter to port, port stem, or surrounding tissue. any damage or constriction of catheter may compromise power injection performance and catheter integrity. bard access systems, inc. does not recommend suturing around the catheter as doing so may not seat securely and lead to dislodgment and extravasation. the catheter must be straight with no sign of kinking. a light pull on the catheter is sufficient to straighten it. advancing the catheter lock over a kinked catheter may damage the catheter. do not allow accidental device contact with sharp instruments. mechanical damage may occur. use only smooth-edged, atraumatic instruments.

- when using peel-apart introducers:
  - do not bend catheter at sharp angles during implantation. this can compromise catheter patency.
  - do not use the catheter if there is any evidence of mechanical damage or leaking.
  - do not allow accidental device contact with sharp instruments. mechanical damage may occur. use only smooth-edged, atraumatic instruments.

- when using an introducer kit, verify that the catheter fits easily through the introducer sheath.

- prior to advancing the catheter lock, ensure that the catheter is properly positioned. a catheter not advanced to the proper region may not seat securely and lead to dislodgment and extravasation.

- avoid inadvertent puncture of the skin or fascia with the tip of the tunneler.

- if local pain, swelling or signs of extravasation are noted during power injection, the injection should be stopped immediately. note changes in distortion grades.

- failure to warm contrast media to body temperature prior to power injection may result in port system failure. if the guidewire must be withdrawn while the needle is inserted, remove both the needle and wire as a unit to help prevent extravasation.

- when suturing a port with a silicone port body, place suture through at least 2 mm of silicone.
Flushing occluded catheters with small syringes can create excessive pressures.

After use, this product may be a potential biohazard. Handle and discard in accordance with accepted medical practice and power injection of contrast media, the maximum recommended infusion rate is 5 mL/s.

Catheter valve helps provide security against blood reflux and air embolism. The Groshong* catheter may in a Triangle PowerLoc* Brand

- Never use a catheter lock that appears cracked or otherwise damaged.
- When utilizing port for arm placement, the port should not be placed in the axillary cavity.
- Inspect kit for presence of all components.
- If the guidewire must be withdrawn while the needle is inserted, remove both the needle and wire as a unit to prevent the needle or damage.
- Sterilized by ethylene oxide. Do not resterilize.

Grade Severity Recommended Action

narrowing

be considered.

monitor progression of

Difficulty with blood withdrawal

Power injector machine pressure limiting feature may not prevent over pressurization of an occluded catheter.

Failure to ensure patency of the catheter prior to power injection studies may result in port system failure.

Failure to warm contrast media to body temperature prior to power injection may result in port system failure.

Infection, including but not limited to pocket, or General Anesthesia, Surgery, and

1. Create a subcutaneous pocket using blunt dissection.
2. Cleanse all system components with irrigation solution.
3. Connect catheter to port:
   a. Advance catheter completely
   b. Advance to midway point
   c. Perform the parin lock procedure
4. Conduct flow studies on each lumen of the catheter using a non-coring needle and 10 mL syringe to confirm that the catheter must not be forced.
5. Flush and lock each lumen of the port system as described under the parin lock procedure for open-ended catheters
6. Warm contrast media to body temperature.
7. Advance catheter to the intended location.
8. Release the locking mechanism and gently withdraw the vessel dilator and "J" wire, leaving the sheath in place.
9. If using a micropuncture set:
   a. Form tunnel by advancing tip of tunneler from the venous entry site to the port pocket site.
   b. A suture may be tied around the catheter between the tunneler body and the large barb to hold it more securely.
10. Do not suture catheter to port, port stem, or surrounding tissue. Any damage or constriction of catheter may compromise stem could lead to "mushrooming" of tubing when the catheter lock is advanced. Should this occur, it is advisable to stop tunneling procedure.

If the guidewire must be withdrawn while the needle is inserted, remove both the needle and wire as a unit to help prevent needle

2. Release the locking mechanism and gently withdraw the vessel dilator and "J" wire, leaving the sheath in place.
3. If using a micropuncture set:
   a. Form tunnel by advancing tip of tunneler from the venous entry site to the port pocket site.
   b. A suture may be tied around the catheter between the tunneler body and the large barb to hold it more securely.
10. Do not suture catheter to port, port stem, or surrounding tissue. Any damage or constriction of catheter may compromise stem could lead to "mushrooming" of tubing when the catheter lock is advanced. Should this occur, it is advisable to stop tunneling procedure.
Flush occluded catheters with small syringes can create excessive pressures. To advance the catheter over the port stem, midway point is recommended. Catheter insertion in the subclavian vein medial to the border of the first rib, an area which is associated with higher rates of pinch-off, is crucial.

- Failure to completely advance the catheter on the dual lumen stem may result in subcutaneous leakage.
- Avoid vessel perforation.
- Do not suture the catheter to the port, port stem, or surrounding tissue. Any damage or constriction of the catheter may compromise power injection of contrast media; the maximum recommended infusion rate is 5 mL/s.

Intended for Single Use. Do not reuse. Reuse and/or repackaging may create risk of patient or user infection, compromise the structural integrity and/or essential material and design characteristics of the device, which may lead to device failure and/or lead to inflammation, necrosis, or scarring of the surrounding tissue.

Contraindications, Warnings, and Precautions:

- Do not use the catheter if there is any evidence of mechanical damage or leaking.
- Precautions are intended to help avoid catheter damage and/or patient injury.
- If the guidewire must be withdrawn while the needle is inserted, remove both the needle and wire as a unit to prevent the needle from kinking or damaging the catheter.
- Only qualified healthcare practitioners should insert, manipulate, and remove these devices.

When the patient is known or is suspected to be allergic to materials contained in the device.

When the patient's body size is insufficient for the size of the implanted device.

If the guidewire must be withdrawn while the needle is inserted, remove both the needle and wire as a unit to prevent the needle from kinking or damaging the catheter.

Note:

- Do not use a syringe smaller than 10 mL.
- Never use a catheter lock that appears cracked or otherwise damaged.
- Do not hold the catheter or cathlock with any instruments that could potentially damage either piece (e.g., hemostats).

When performing the Valsalva maneuver and/or in Trendelenburg position.

Avoid vessel perforation.

Possible Complications:

- Cardiac Puncture
- Cardiac Arrhythmia
- Hematoma
- Inflammation, Necrosis, or Scarring of the Surrounding Tissue
- Device Rotation or Extrusion
- Catheter Embolism
- Peeling-Apart Sheath Introducer Instructions

Percutaneous Procedure:

1. Do not use a syringe smaller than 10 mL.
2. Perform vessel incision after vessel is isolated and stabilized to prevent perforation.
3. Place thumb over exposed opening of sheath or needle or attach syringe filled with sterile normal saline solution to minimize resistance.
4. Perform parin lock procedure.
5. Apply dressing according to hospital practice.
6. Perform the parin lock procedure.
7. After therapy completion, flush each lumen of the port per institutional protocol. Close clamp while injecting last 0.5 mL of flush.
8. Perform the parin lock procedure.
9. If the Groshong* catheter is placed, flush the catheter with sterile normal saline through the pre-loaded stylet connector.
10. Clamp the catheter closed several centimeters from the distal (port) end.
11. After therapy completion, flush each lumen of the port per institutional protocol. Close clamp while injecting last 0.5 mL of flush.
12. Perform dressing change and apply adhesive dressing.

Recommended veins for arm placement are cephalic, basilic, or medial cubital basilic. Port may be placed in lateral subclavian vein based on evaluation by a qualified practitioner.

For Groshong* catheters: Flush catheter with sterile normal saline through the pre-loaded stylet connector.
Flush occluded catheters with small syringes to create excessive pressures. Catheter insertion in the subclavian vein medial to the border of the first rib, an area associated with higher rates of pinch-off.

- Place thumb over exposed opening of sheath or needle or attach syringe filled with sterile normal saline solution to minimize power.
- If the prospective insertion site has been previously irradiated.
- If severe chronic obstructive lung disease exists.

When used with a PowerLoc* Brand Safety Infusion Set*, the PowerPort* implantable port is indicated for patient therapies requiring repeated access to the vascular system. The port system can be so could compress, kink, or damage catheter, including catheter fragmenting and/or fracturing.

Injection performance and catheter integrity. Bard Access Systems, Inc. does not recommend suturing around the catheter as doing so could lead to "mushrooming" of tubing when the catheter lock is advanced. Should this occur, it is advisable to stop positioning the catheter on the chest along the venous path to the right atrium. Cut catheter to length at a 90˚ angle.

- For implantable ports with Groshong* catheters, the Groshong* identification as a Bard power injectable port.

Examples of Radiopaque badge.

- Do not use sutures to secure catheter to the port stem as it could collapse or damage the catheter.
- Do not bend catheter at sharp angles during implantation. This can compromise catheter patency.
- Bard Access Systems, Inc. recommends the use of components provided in the kit. If additional items are to be used, check for proper fit and function.
Warning

• If the prospective insertion site has been previously irradiated.

The PowerPort® implantable port is indicated for patient therapies requiring repeated access to the vascular system. The port system can be accessed by percutaneous needle insertion using a non-coring needle. Power injection is performed using a PowerLoc® or other damage to the catheter could occur.

1,2

• Resistance to infusion of fluids

1.	Create a sterile field and open tray.

5.	Create a subcutaneous pocket using blunt dissection.

3.	If using a vein pick, insert its tapered end through the incision and advance:

7a. For Pre-Attached Catheters: Use a non-coring needle to flush the port and catheter system with sterile normal saline.

7b. Create a subcutaneous tunnel from the venous site to the port pocket site using tunneler or long forceps per the following:

3. Connect catheter to port:

5. Detach syringe.

Note

• Pain at or around port pocket site

• Vascular Thrombosis or Retraction

• Perforation of Vessels or Viscus

• Endocarditis

Catheter or port-related Sepsis

Cardiac Arrhythmia

Brachial Plexus Injury

Dual Lumen PowerPort® Device:

Warning

• Do not power inject through a port system that exhibits signs of clavicle-first rib compression or pinch-off as it may result in port system failure.

Do not attempt to measure the patient's blood pressure on the arm in which a peripheral system is located, since catheter occlusion could clamp or forceps.

Do not allow accidental device contact with sharp instruments. Mechanical damage may occur. Use only smooth edged, atraumatic clamps or forceps.

Do not exceed a 300 psi pressure limit setting on the power injection machine, or the maximum recommended flow rate on the machine.

Note

If local pain, swelling or signs of extravasation are noted, the injection should be stopped immediately.

Do not exceed a 300 psi pressure limit setting on the power injection machine, or the maximum recommended flow rate on the machine.

Ensure that the needle is long enough to accommodate the port and that the port does not lie beneath the incision.

Perform final dressings according to institutional protocol.

Do not advance guidewire if obstruction is encountered.

Place thumb over exposed opening of sheath to minimize blood loss and prevent air embolism. The risk of air embolism:

Do not advance guidewire if obstruction is encountered.

Place thumb over exposed opening of sheath to minimize blood loss and prevent air embolism. The risk of air embolism:

Do not advance guidewire if obstruction is encountered.

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Do not advance guidewire if obstruction is encountered.

Place thumb over exposed opening of sheath to minimize blood loss and prevent air embolism. The risk of air embolism:

Do not advance guidewire if obstruction is encountered.
1. Explain procedure to patient and prepare injection site.

2. Attach a 10 mL syringe filled with sterile normal saline to needle.

3. Aseptically locate and access port.

4. After therapy completion, flush port per institutional protocol. Close clamp while injecting last 0.5 mL of flush solution.


9. Reference:

10. Flushing and Locking Volumes (each lumen):
- After each infusion of 5 mL sterile normal saline when port not in use
- 5 mL heparinized saline after each use
- 20 mL sterile normal saline after each use
- When port remains unused for long periods of time, the saline lock should be changed at least once every 4 weeks.

11. Caution: Polyurethane catheters should not be filled with sterile saline after each use.

12. Heparin Lock Procedure For Open-Ended Catheters:
- After blood withdrawal, flush port per institutional protocol. Then, lock with 5 mL 100 U/mL heparinized saline, or with port catheter saline after each use.
- If the port remains unused for long periods of time, the heparin lock should be changed at least once every four weeks.

13. Notes:

14. Further Reading:
- www.veins4life.com
- www.portadvantage.com
- www.powerportadvantage.com
- Bard Access Systems, Inc. is proud to offer "Your Port Access Advantage" patient education module for helping patients select their implantable port system.

15. References:
- Note: Revised date: December 2011
- www.powerportadvantage.com
- www.portadvantage.com
- www.veins4life.com

16. Further Reading:

17. Contrast Enhanced Computed Tomography Information:
- The PowerPort* device testing included at least 36 power injection cycles with a PowerLoc* Brand Safety Infusion Set*
- See PowerPort* Implantable Port Nursing Guide and/or PowerPort* Implantable Port CT Guide for more details.

18. Further Reading:
Saline Lock Procedure For Groshong® Catheters

Equipment:
- Non-coring needle
- 10 mL syringe filled with sterile saline per lumen

Procedure:
1. Explain procedure to patient and prepare injection site.
2. Attach a 10 mL syringe filled with sterile normal saline to needle.
3. Aseptically locate and access port.
4. If the port catheter length is not known, the saline after each use.
5. If the port remains unused for long periods of time, the saline lock should be changed by flushing at least once every four weeks.

To help prevent clot formation and catheter blockage, implanted ports with Groshong® catheters should be filled with sterile normal saline after each use. If the port remains unused for long periods of time, the saline lock should be changed by flushing at least once every four weeks.

Warning:
- Do not use alcohol to soak or declot polyurethane catheters because alcohol is known to degrade the system volume calculated on page 6.

Close clamp while injecting last 0.5 mL of lock solution.

CT injector pressure limit should be set at a maximum of 300 psi.

Contrast media 10 mL sterile normal saline

Notes:
- See Bard Access Systems’ Sales Representative for more information about any of these products. An issued or revised date: December 2011

Further Reading:

CT injection volumes (each lumen)

- Procedure Volume
- Flushing and Locking Volumes (each lumen)

Other concentrations of heparinized saline (10 to 1000 U/mL) have been found to be effective. Determination of proper concentration and volume should be based on patient’s medical condition, laboratory tests, and prior experience.

Note:
- The PowerPort* device testing included at least 36 power injection cycles with a PowerLoc* Brand Safety Infusion Set*

Tables of flushing and locking volumes are recommended.

www.veins4life.com
www.portadvantage.com
www.powerportadvantage.com

* Bard, Groshong, PowerLoc, PowerPort, the radiopaque symbol and "Your Port Access Advantage" are trademarks and/or registered trademarks of C. R. Bard, Inc. All other trademarks are the property of their respective owners.
After therapy completion, flush port per institutional protocol. Close clamp while injecting last 0.5 mL of flush solution.

1. Explain procedure to patient and prepare injection site.
2. Attach a 10 mL syringe filled with sterile normal saline to needle.
3. Aseptically locate and access port.

**Equipment:**
- 10 mL syringe filled with sterile saline per lumen
- Non-coring needle

If the port catheter length is not known, the saline lock should be changed by flushing at least once every four weeks. If the port remains unused for long periods of time, the saline lock should be changed by flushing at least once every four weeks.

Caution: These patients must not have their port locked with parinized saline.

To help prevent clot formation and catheter blockage, each lumen of the implanted ports with open-ended catheters should be filled with saline after use.

**Heparin Lock Procedure for Groshong® Catheters**

- 10 mL sterile normal saline
- Non-coring needle

Warning: Remember that some patients may be hyper-sensitive to heparin or suffer from heparin induced thrombocytopenia (HIT).

Flushing and Locking Volumes (each lumen):
- 10 mL sterile normal saline

**CT Injector Pressure Limit**

CT injector pressure limit should be set at a maximum of 300 psi. This product and packaging do not contain DEHP. This device does not contain branded contrast media.

**Notes**


Further Reading


**References**


**Access System**

Bard Access Systems, Inc.
Salt Lake City, UT 84116 USA

605 North 5600 West
801-522-5000
800-443-3385

Clinical Information Hotline: 800-443-3385
www.veins4life.com
www.portadvantage.com
www.powerportadvantage.com
www.bardaccess.com

Bard Access Systems, Inc. is proud to offer "Your Port Access Advantage" patient education module for helping patients select their best access option.

See PowerPort* Implantable Port Nursing Guide and/or PowerPort* Implantable Port CT Guide for more details.

Notes:

- 10 mL sterile normal saline
- Non-coring needle

www.veins4life.com
www.portadvantage.com
www.powerportadvantage.com
www.bardaccess.com

*Bard, Groshong, PowerLoc, PowerPort, the radiopaque symbol and "Your Port Access Advantage" are respective owners.

Revision date for these instructions is included for the user's information. In the event two years have elapsed since the date of publication of these instructions, please contact the Bard Access Systems, Inc. Technical Services Department for updated information.
Review Site Preparation and Accessing Implanted Procedure:

• 10 mL syringe filled with sterile saline

Procedure:

1. Explain procedure to patient and prepare injection site.
2. Attach a 10 mL syringe filled with sterile normal saline to needle.
3. Aseptically locate and access port.

Caution

When port not in use, saline after each use. If the port remains unused for long periods of time, the saline lock should be changed by flushing at least once every four weeks.

To help prevent clot formation and catheter blockage, implanted ports with Groshong* catheters should be filled with sterile normal saline.

Heparin Lock Procedure For Open-Ended Catheters

• Non-coring needle
• 10 mL syringe filled with sterile saline per lumen

Equipment:

- Alcohol
- Non-coring needle

Warning

Alcohol should not be used to soak or declot polyurethane catheters because alcohol is known to degrade the system volume calculated on page 6.

Procedure Volume

• 10 mL sterile normal saline

Notes

- After power injection of 20 mL sterile normal saline
- After blood withdrawl
- After each infusion of medication or TPN

Other concentrations of parinized saline (10 to 1000 U/mL) have been found to be effective. Determination of proper concentration and volume should be based on patient's medical condition, laboratory tests, and prior experience.

Note

These patients must not have their port locked with parinized saline.

Further Reading

7. www.portadvantage.com
8. www.powerportadvantage.com
9. Bard Access Systems, Inc. is proud to offer "Your Port Access Advantage" patient education module for helping patients select their access devices. Further Reading

Contrast Enhanced Computed Tomography Information

- The PowerPort* device testing included at least 36 power injection cycles with a PowerLoc* Brand Safety Infusion Set* and 11.8
- The PowerPort* Brand "Your Port Access Advantage" patient education module for helping patients select their access devices.

Published by:

Bard Access Systems, Inc.
605 North 5600 West
Salt Lake City, UT 84116 USA
801-522-5000

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This device does not contain natural rubber latex. This product and packaging do not contain natural rubber latex. This product and packaging do not contain natural rubber latex. This product and packaging do not contain natural rubber latex. This product and packaging do not contain natural rubber latex. This product and packaging do not contain natural rubber latex. This product and packaging do not contain natural rubber latex.
**Heparin Lock Procedure For Open-Ended Catheters**

**Equipment:**
- Non-coring needle
- 10 mL syringe filled with sterile saline per lumen
- Polyurethane catheters

If the port catheter length is not known, the saline should be changed by flushing at least once every four weeks. If the port remains unused for long periods of time, the saline lock should be changed by flushing at least once every four weeks.

To help prevent clot formation and catheter blockage, each lumen of the implanted ports with open-ended catheters should be filled with sterile heparinized saline after each use. If the port remains unused for long periods of time, the heparin lock should be changed by flushing at least once every four weeks.

**Notes**
- Some patients may be hyper-sensitive to heparin or suffer from heparin-induced thrombocytopenia (HIT).
- Other concentrations of heparinized saline (10 to 1000 U/mL) have been found to be effective. Determination of proper heparin concentration can be found in literature such as the Oncology Nursing Society guidelines or other professional organizations.

**Further Reading**

**References**

**Further Reading**
- The PowerPort* device testing included at least 36 power injection cycles with a PowerLoc* Brand Safety Infusion Set*. See PowerPort* Implanta- ble Port Nursing Guide and/or PowerPort* implantable Port CT Guide for more details.

**Notes**
- www.veins4life.com
- www.portadvantage.com
- www.powerportadvantage.com
- Bard Access Systems, Inc. is proud to offer "Your Port Access Advantage" patient education module for helping patients select their best access option.

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- Phone: 800-222-1440
- www.bardaccess.com

**Revision**
- 0731485 1202R

**Revision Date**
- 11.8

**Caution**
- Polyurethane catheters over time with repeated and prolonged exposure.

**Warning**
- Alcohol should not be used to soak or declot polyurethane catheters because alcohol is known to degrade the product.
After therapy completion, flush port per institutional protocol. Close clamp while injecting last 0.5 mL of flush solution.

2. Attach a 10 mL syringe filled with sterile normal saline to needle.

3. Aseptically locate and access port.

4. After therapy completion, flush port per institutional protocol. Close clamp while injecting last 0.5 mL of flush solution.

Review Site Preparation and Accessing Implanted Procedure:

• Non-coring needle

Equipment:

- Catheters – otherwise follow institutional protocol.
- If the port catheter length is not known, the port may contain natural rubber latex. Caution: The presence of natural rubber latex may cause an allergic reaction in some people.

References:

4. CT injector pressure limit should be set at a maximum of 300 psi.
5. CT contrast media 10 mL sterile normal saline
6. Contrast-enhanced computed tomography (CECT) imaging should be performed no sooner than 10 minutes after injection of contrast media.
7. Note: The PowerPort* device testing included at least 36 power injection cycles with a PowerLoc* Brand Safety Infusion Set* and 11.8 mL contrast media 10 mL sterile normal saline.

Further Reading:

- The PowerPort* device is approved for use with the following contrast media: Iopamidol (Isovue), Iohexol (Omnipaque), and Iodixanol (Visipaque). The PowerPort* device is also approved for use with Gadobenate dimeglumine (Gadovist) and Gadopentetate dimeglumine (Magnevist).
- To help prevent clot formation and catheter blockage, implanted ports with Groshong® catheters should be filled with sterile normal saline after each use. If the port remains unused for long periods of time, the saline lock should be changed by flushing at least once every four weeks.
- To help prevent clot formation and catheter blockage, each lumen of the implanted ports with open-ended catheters should be filled with sterile normal saline after each use.
- If the port catheter length is not known, the port may contain natural rubber latex. Caution: The presence of natural rubber latex may cause an allergic reaction in some people.

Warnings:

- Polyurethane catheters over time with repeated and prolonged exposure.

Notes:

- Remember that some patients may be hyper-sensitive to heparin or suffer from heparin induced thrombocytopenia (HIT).
- Alcohol should not be used to soak or declot polyurethane catheters because alcohol is known to degrade the system volume calculated on page 6.
- Contrast-enhanced computed tomography (CECT) imaging should be performed no sooner than 10 minutes after injection of contrast media.
- See Bard Access Systems’ Sales Representative for more information about any of these products. An issued or revision date for these instructions is included for the user’s information.
- In the event two years have elapsed since the date of this publication, the user should contact Bard Access Systems, Inc. to see if additional revision date for these instructions is included for the user’s information.
- See PowerPort* Implantable Port Nursing Guide and/or PowerPort* Implantable Port CT Guide for more details.
- CT injector pressure limit should be set at a maximum of 300 psi.
- CT contrast media 10 mL sterile normal saline
- Contrast-enhanced computed tomography (CECT) imaging should be performed no sooner than 10 minutes after injection of contrast media.
- The PowerPort* device testing included at least 36 power injection cycles with a PowerLoc* Brand Safety Infusion Set* and 11.8 mL contrast media 10 mL sterile normal saline.

Instructions For Use

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www.bardaccess.com

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