

POWERPORT®

Implantable Port

POWERLOC®

Safety Infusion Set

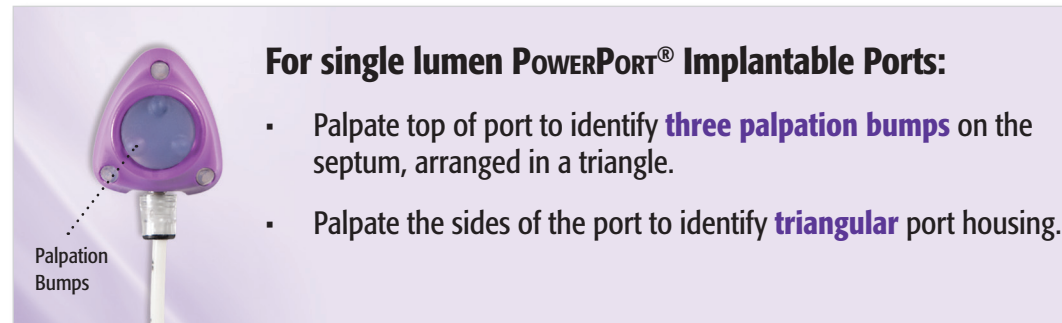


1 Identifying A Patient With the POWERPORT® Implantable Port

Always verify the patient has a POWERPORT® Implantable Port by at least two means.

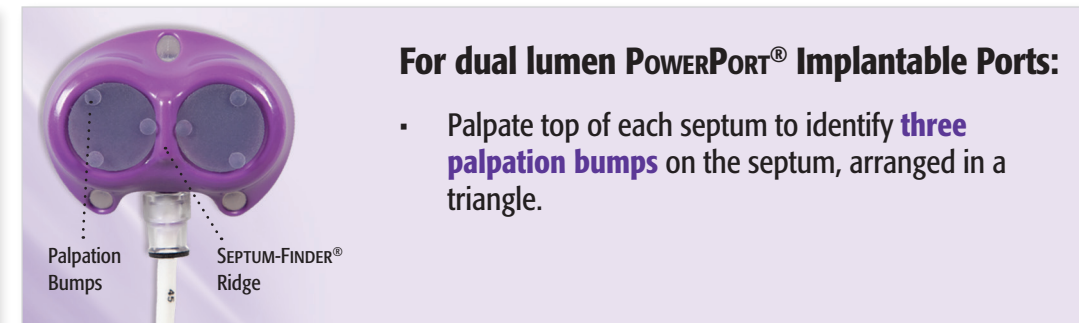


When in doubt, SCOUT.



For single lumen POWERPORT® Implantable Ports:

- Palpate top of port to identify **three palpation bumps** on the septum, arranged in a triangle.
- Palpate the sides of the port to identify **triangular port housing**.



For dual lumen POWERPORT® Implantable Ports:

- Palpate top of each septum to identify **three palpation bumps** on the septum, arranged in a triangle.

2 Power Injection Procedure

- Access the port with a POWERLOC® Safety Infusion Set device. Ensure that needle tip is inserted fully within the port. *See Warning 1*
- Attach a syringe filled with sterile normal saline.
- Instruct the patient to assume the position they will be in during the power injection procedure, before checking for patency. The optional position is with the arms above the shoulder with the palm of the hand on the face of the gantry. *See Note 2*
- Aspirate for adequate blood return and vigorously flush the port with at least 10 mL of sterile normal saline. *See Warning 3*
- Detach syringe.
- Warm contrast media to body temperature.
- Attach the power injection device to the POWERLOC® Safety Infusion Set device. Ensure connection is secure.
- Check indicated flow rate of safety infusion set and confirm CT settings. *See Warning 4*

Flow Rate

POWERLOC® Safety Infusion Set Device Gauge Size	19 Ga.	20 Ga.	22 Ga.
POWERLOC® Safety Infusion Set Device Gauge Color	Cream	Yellow	Black
Maximum Flow Rate Setting	5 mL/sec	5 mL/sec	2 mL/sec

- Instruct the patient to communicate immediately any pain or change in feeling during the injection.
- Inject warmed contrast. Do NOT exceed the flow rate limits. If local pain, swelling, or signs of extravasation are noted, stop injection immediately. *See Warning 5*

- Disconnect the power injection device.
- Flush the POWERPORT® Implantable Port with 10 mL of sterile normal saline.
 - For dual lumen POWERPORT® Implantable Ports:** Flush each septum separately.
- Perform heparin lock procedure for open-ended catheters. *See Caution 6*
 - For implantable ports with GROSHONG® Catheters:** A sterile normal saline lock may be used.
 - For dual lumen POWERPORT® Implantable Ports:** Perform locking procedures on each septum.
- After therapy completion, flush port per institutional protocol. Close clamp while injecting last 0.5 mL of flush solution.

Warning 1 **Warning:** The PowerPort® Implantable Port System is only power injectable when accessed with a POWERLOC® Safety Infusion Set Family¹ device. **Note:** Follow institutional protocol to verify correct catheter tip position prior to power injection.

Note 2 **Note:** This allows for uninterrupted passage of injected contrast through the axillary and subclavian veins at the thoracic outlet.

Warning 3 **Warning:** Failure to ensure patency of the catheter prior to power injection studies may result in port system failure.

Warning 4 **Warning:** Do not exceed a 300 psi pressure limit setting, or the maximum flow rate setting shown in table below, on the power injection machine if power injecting through the POWERPORT® Implantable Port.

Warning 5 **Warning:** Exceeding the maximum flow rate may result in port system failure and/or catheter tip displacement.

Caution 6 **Caution:** Remember that some patients may be hypersensitive to heparin or suffer from heparin induced thrombocytopenia (HIT) and these patients must not have their port locked with heparin flush solution.

Important Information

A POWERLOC® Safety Infusion Set device must always be used to access the POWERPORT® Implantable Port for power injecting contrast media.

- Contrast media should be warmed to body temperature prior to power injection. **Warning:** Failure to warm contrast media to body temperature prior to power injection may result in port system failure.

- Check for blood return, then flush the POWERPORT® Implantable Port using at least 10 mL of sterile normal saline prior to and immediately following the completion of power injection studies. Always ensure the patency of the POWERPORT® Implantable Port to prevent damage to the port system. Resistance to flushing may indicate catheter occlusion. Do not proceed with power injection study until occlusion has been cleared. **Warning:** Failure to ensure patency of the catheter prior to power injection studies may result in port system failure.

- For implantable ports with GROSHONG® Catheters, heparin lock procedures are not necessary. Sterile normal saline lock may be used.**

POWERPORT® Implantable Ports Under X-ray

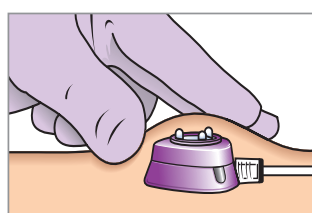


3 Use and Maintenance

Accessing Implantable Ports

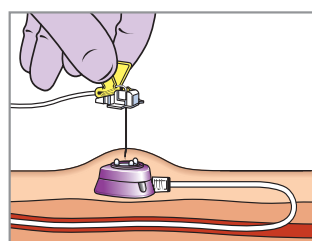
Procedure:

- Perform aseptic site preparation.
- Locate port septum by palpation.
 - Locate base of port with non-dominant hand.
 - Triangulate port between thumb and first two fingers of non-dominant hand. Aim for center point of these three fingers.



For dual lumen POWERPORT® Implantable Ports: Locate center by palpating SEPTUM-FINDER® Ridge on top of port and place index finger of dominant hand to mark.

- Insert POWERLOC® Safety Infusion Set device perpendicular to port septum. Advance needle through the skin and port septum until reaching bottom of reservoir.
- Confirm correct positioning of the needle within the port reservoir by aspiration of blood ("flashback"). If there is doubt regarding proper needle placement, have a radiographic dye procedure done to confirm placement.



- Always flush the port following injection.
- Perform heparin lock procedure for open-ended catheters. *See Caution 7*

For implantable ports with GROSHONG® Catheters: A sterile normal saline lock may be used.

For dual lumen POWERPORT® Implantable Ports: Perform locking procedures on each septum.

- After therapy completion, flush port per institutional protocol. Close clamp while injecting the last 0.5 mL of flush solution. Use positive pressure technique.

Caution 7 **Caution:** Remember that some patients may be hypersensitive to heparin or suffer from heparin induced thrombocytopenia (HIT) and these patients must not have their port locked with heparin flush solution.

Note 8 **Note:** Alcohol should not be used to soak or decontaminate polyurethane catheters because alcohol is known to degrade the polyurethane catheters over time with repeated and prolonged exposure.

Lock Procedures for Catheters

To help prevent clot formation and catheter blockage, implantable ports with open-ended catheters should be flushed per institutional protocol using a turbulent push-pause flushing method after each use. Clamp the tubing while infusing the last 0.5 mL of fluid to reduce potential for blood back-flow into the catheter tip, which could encourage catheter clotting. If the port remains unused for long periods of time, the 5 mL of heparin solution should be changed at least every 28 days for each septum. **For GROSHONG® Catheters flush and lock every 90 days with sterile normal saline when port is not in use.** *See Caution 7*

Determine Port Volume

To calculate a close approximation of port system volume for each lumen, check the patient's chart to determine the length of the catheter used for the individual patient. For POWERPORT® Implantable Port catheters, use formula and tables below:

Port System Volume:

$$\text{Catheter length: } \underline{\hspace{2cm}} \text{ cm} \times \frac{\text{catheter volume}}{\text{cm}} + \text{reservoir volume.}$$

Note: This calculated volume represents the port system volume for each port reservoir.

Catheter Volumes		Reservoir Volumes	
Procedure	Volume/cm (per lumen)	Port	Reservoir Volume (per lumen)
6F CHRONOFLEX® Catheter	0.014 mL	POWERPORT® Implantable Port, POWERPORT® isp Implantable Port, POWERPORT® Duo Implantable Port	0.6 mL
8F CHRONOFLEX® Catheter	0.02 mL		
9.6F Silicone Catheter	0.02 mL		
8F GROSHONG® Catheter	0.02 mL	POWERPORT® Slim Implantable Port	0.5 mL
9.5F CHRONOFLEX® Catheter (dual lumen)	0.02 mL		

Recommended Flushing Volumes

Open-Ended Catheter Flushing Volumes (per lumen)	
Procedure	Volume (100 U/mL)
When port is not in use	5 mL heparin flush solution every 28 days
After each infusion of medication or TPN	10 mL sterile normal saline, then 5 mL heparin flush solution
After blood withdrawal	20 mL sterile normal saline, then 5 mL heparin flush solution
After power injection of contrast media	10 mL sterile normal saline, then 5 mL heparin flush solution

GROSHONG® Catheter Flushing Volumes (per lumen)	
Procedure	Volume
When port is not in use	5 mL sterile normal saline every 90 days
After each infusion of medication or TPN	10 mL sterile normal saline
After blood withdrawal	20 mL sterile normal saline
After power injection of contrast media	10 mL sterile normal saline

Procedure

Review Site Preparation in the POWERPORT® Implantable Port CT Guide, and Accessing Implantable Ports section before proceeding with the following:

- Explain procedure to patient and prepare injection site.
- Attach a 10 mL syringe filled with sterile normal saline to needle.
- Aseptically locate and access port with POWERLOC® Safety Infusion Set device, or other non-coring safety needle. Confirm correct positioning of the needle within the port reservoir by aspiration of blood ("flashback"). If there is doubt regarding proper needle placement, have a radiographic dye procedure done to confirm placement.
- After therapy completion, flush port per institutional protocol, then repeat with 5 mL 100 U/mL heparin flush solution, or with volume calculated above. Close clamp while injecting last 0.5 mL of flush solution. *See Note 8*

¹ POWERLOC®, POWERLOC® Clear, POWERLOC® MAX Safety Infusion Sets

Indications For Use

The POWERPORT® Implantable Port is indicated for patient therapies requiring repeated access to the vascular system. The port system can be used for infusion of medications, I.V. fluids, parenteral nutrition solutions, blood products, and for the withdrawal of blood samples. When used with the POWERLOC® Safety Infusion Set Family¹ device, the POWERPORT® Implantable Port is indicated for power injection of contrast media. For power injection of contrast media, the maximum recommended infusion rate is 5 mL/s. This device is contraindicated for 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. All materials are biocompatible, can be used with virtually all injectable solutions and are safe with CEPT.

See the POWERPORT® Implantable Port CT Guide for more details. Please consult product labels and inserts for additional safety information and instructions for use.

This product and packaging do not contain natural rubber latex

This device does not contain DEHP



A patient can be scanned safely immediately after placement under the following conditions: Static magnetic field of 3 Tesla or less. | Spatial gradient field of 3000 Gauss/cm or less.

An issued or revision date for these instructions is included for the user's information. In the event two years have elapsed between this date and product use, the user should contact Bard Peripheral Vascular, Inc. to see if additional product information is available. Bard, Chronoflex, Groshong, PowerPort, PowerLoc, and Septum-Finder are trademarks and/or registered trademarks of C. R. Bard, Inc. All other trademarks are the property of their respective owners. © Copyright 2014. All rights reserved. Revised date: June 2014.