



### Feel the NEW Standard of Care<sup>™</sup>

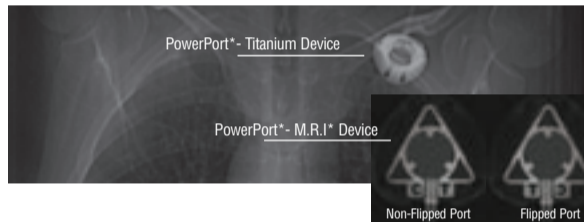
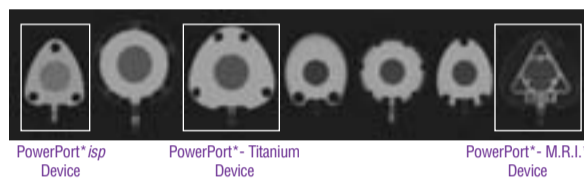
#### Indications For Use

The PowerPort<sup>®</sup> implanted 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<sup>®</sup> Safety Infusion Set, the PowerPort<sup>®</sup> device 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 CECT.



#### IMPORTANT INFORMATION:

**A PowerLoc<sup>®</sup> Safety Infusion Set MUST always be used to access the PowerPort<sup>®</sup> implanted 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<sup>®</sup> device 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<sup>®</sup> device 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.

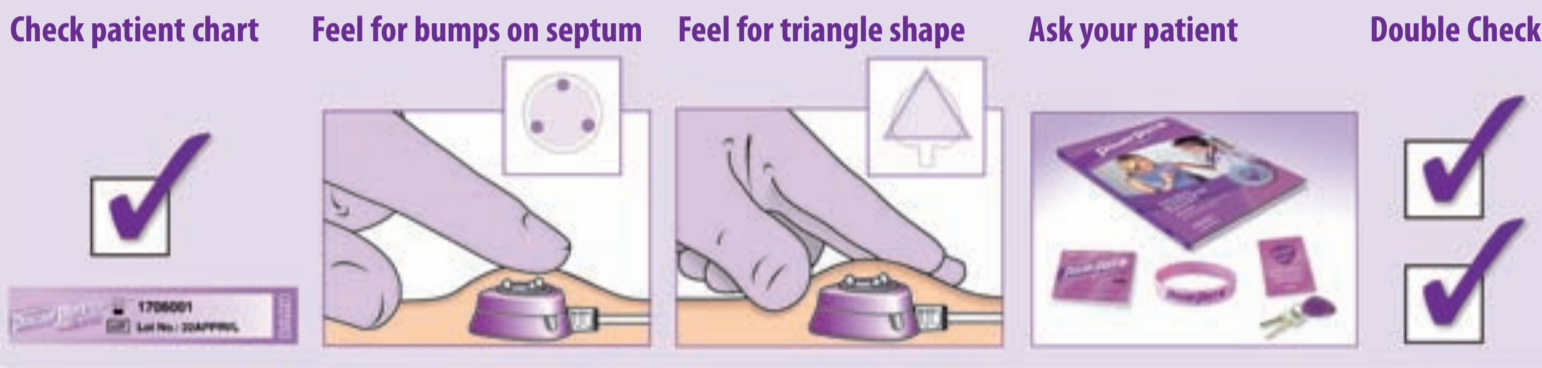
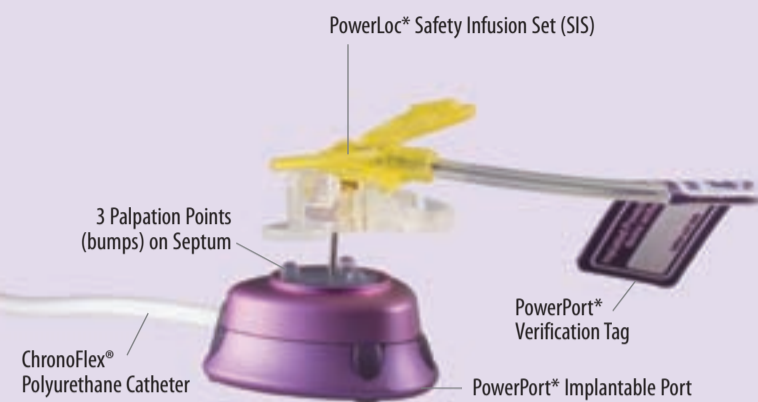
#### Maximum Flow Rates and Pressure

PowerLoc <sup>®</sup> Safety Infusion Set Gauge Size	19 Ga.	20 Ga.	22 Ga.
PowerLoc <sup>®</sup> Safety Infusion Set Gauge Color	Cream	Yellow	Black
Maximum Flow Rate Setting	5 ml/s	5 ml/s	2 ml/s
Maximum Pressure Setting	300 psi		

• Do not exceed a 300 psi pressure limit setting, or the maximum flow rate setting shown above, on the power injection machine if power injecting through the PowerPort<sup>®</sup> device. **Warning:** Exceeding the maximum flow rate may result in port system failure and/or catheter tip displacement. **Warning:** If local pain, swelling or signs of extravasation are noted, the injection should be stopped immediately.

### IDENTIFYING A PATIENT WITH THE POWERPORT<sup>®</sup> IMPLANTED PORT

- Check patient's chart for a PowerPort<sup>®</sup> device patient record sticker.
- Palpate top of port to identify **three palpation points** (bumps) on the septum, arranged in a triangle.
- Palpate the sides of the port to identify **triangular** port housing.
- **Ask the patient.** Patients with a PowerPort<sup>®</sup> implanted port should have a patient identification card, ID bracelet or key ring to help remind them they have a PowerPort<sup>®</sup> device.
- **Always verify** the patient has a PowerPort<sup>®</sup> device by at least two means, and ensure it is accessed with a PowerLoc<sup>®</sup> Safety Infusion Set, prior to power injection.



### POWER INJECTION

#### Power Injection Procedure:

1. Access the port with a PowerLoc<sup>®</sup> Safety Infusion Set. Make certain that needle tip is inserted fully within the port. **Warning:** The PowerPort<sup>®</sup> system is only power injectable when accessed with a PowerLoc<sup>®</sup> Safety Infusion Set. **Note:** Follow institutional protocol to verify correct catheter tip position prior to power injection.
2. Attach a syringe filled with sterile normal saline.
3. Instruct the patient to assume the position they will be in during the power injection procedure, before checking for patency. If possible, the patient should receive power injection with his or her arm vertically above the shoulder with the palm of the hand on the face of the gantry during

injection. This allows for uninterrupted passage of injected contrast through the axillary and subclavian veins at the thoracic outlet.

4. Aspirate for adequate blood return and vigorously flush the port with at least 10 ml of sterile normal saline. **Warning:** Failure to ensure patency of the catheter prior to power injection studies may result in port system failure.

5. Detach syringe.
6. Warm contrast media to body temperature.
7. Attach the power injection device to the PowerLoc<sup>®</sup> Infusion Set ensuring

connection is secure. Check indicated flow rate of safety infusion set and confirm CT settings.

**Warning:** Do not exceed a 300 psi pressure limit setting, or the maximum flow rate setting shown at left, on the power injection machine if power injecting through the PowerPort<sup>®</sup> device.

8. Instruct the patient to communicate immediately any pain or change in feeling during the injection.
9. Inject warmed contrast, taking care not to exceed the flow rate limits. **Warning: If local pain, swelling or signs of extravasation are noted, the injection should be stopped immediately.** **Warning:** Exceeding the maximum flow

rate may result in port system failure and/or catheter tip displacement.

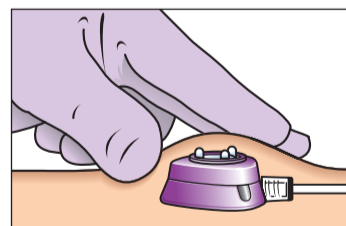
10. Disconnect the power injection device.
11. Flush the PowerPort<sup>®</sup> device with 10 ml of sterile normal saline.
12. Perform heparin lock procedure. Remember that some patients may be hypersensitive to heparin or suffer heparin induced thrombocytopenia (HIT). These patients must not have their port primed with heparinized saline.
13. After therapy completion, flush port per institutional protocol. Close clamp while injecting last 0.5 ml of flush solution.
14. Pull PowerLoc<sup>®</sup> Safety Infusion Set top wings away from the lower wings until you feel a "click" at which time the needle should be captured within the safety mechanism of the PowerLoc<sup>®</sup> safety infusion set.

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PowerLoc <sup>®</sup> Safety Infusion Set Gauge Color	Cream	Yellow	Black
Max. Flow Rate Setting	5 ml/s	5 ml/s	2 ml/s

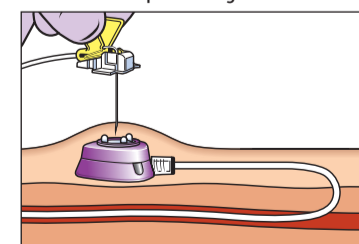
### USE AND MAINTENANCE

#### ACCESSING IMPLANTED PORTS

##### Procedure:

1. Perform aseptic site preparation.
2. Locate port septum by palpation.
  - a. Locate base of port with non-dominant hand.
  - b. Triangulate port between thumb and first two fingers of non-dominant hand. Aim for center point of these three fingers.
3. 
4. Confirm correct positioning of the needle

Insert PowerLoc<sup>®</sup> Safety Infusion Set perpendicular to port septum. Advance needle through the skin and septum until reaching bottom of reservoir.



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.

5. Always flush the port following injection.
6. Perform heparin lock procedure for open-ended catheters. **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 heparinized saline.
7. When deaccessing the port, flush per institutional protocol. Close clamp while injecting the last 0.5ml of flush solution.

#### HEPARIN LOCK

To help prevent clot formation and catheter blockage, implanted ports with open-ended catheters should be flushed with 10 ml sterile normal saline using a turbulent push-pause flushing method after each use followed by 5 ml of heparinized saline. 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 heparin solution should be changed at least every four weeks.

**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 heparinized saline.

#### Determine Port Volume:

For PowerPort<sup>®</sup> implanted ports, you will need to check the patient's chart to determine the length of catheter used for each individual patient. For PowerPort<sup>®</sup> catheters, multiply the catheter length in cm by 0.02 ml, then add 0.60 ml for the port reservoir:

**Example:**  
Catheter length: \_\_\_\_\_ cm x 0.02 ml/cm + 0.6 ml (port reservoir) = \_\_\_\_\_ ml  
volume, total priming volume for patient port and catheter.

#### Recommended Flushing Volumes:

FLUSHING VOLUMES	
Procedure	Volume (100 U/ml)
When port not in use	5 ml heparinized saline every 4 weeks
After each infusion of medication or TPN	10 ml sterile normal saline, then 5 ml heparinized saline
After blood withdrawal	20 ml sterile normal saline, then 5 ml heparinized saline
After power injection of contrast media	10 ml sterile normal saline, then 5 ml heparinized saline

**Procedure:** Review Site Preparation in the PowerPort<sup>®</sup> Nursing Guide, and Accessing Implanted Ports section before proceeding with the following:

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 with PowerLoc<sup>®</sup> Safety Infusion Set, or other non-coring safety needle. Confirm correct positioning of the needle within the port reservoir by aspiration of blood ("flash-back"). If there is doubt regarding proper needle placement, have a radio-graphic dye procedure done to confirm placement.
4. After therapy completion, flush port per institutional protocol, then repeat with 5 ml 100 U/ml heparinized saline, or with volume calculated above. Close clamp while injecting last 0.5 ml of flush solution.
5. To deaccess PowerLoc<sup>®</sup> safety infusion set from the port, activate safety mechanism while withdrawing needle until you feel a "click" at which time the needle should be captured within the safety mechanism of the PowerLoc<sup>®</sup> safety infusion set.

**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.

**SEE POWERPORT<sup>®</sup> CT GUIDE FOR MORE DETAILS.**

Please consult product labels and inserts for any indications, contraindications, hazards, warnings, cautions and instructions for use.