The Smart Port® power-injectable port is intended to facilitate frequent blood sampling or the delivery of medications, nutrients, blood products and power injection of contrast media for imaging. Access is performed by percutaneous needle insertion using an anticoring (huber) point needle.

**Guidelines for Health Care Providers**

**HOW TO IDENTIFY THE SMART PORT® POWER-INJECTABLE PORT**

Each Smart Port® power-injectable port is packaged with a Smart Port® Patient Education Packet that includes a Smart Port® Patient Information Booklet, Smart Port® Patient Identification Card, a Key Ring Card and Patient Information Guide or Smart Port® Patient Information Guide or Smart Port® Key Ring Card.

If the patient does not have at least one of the above items needed to identify their port as being capable of power injection of contrast media, the port can be identified by the Smart Angiography Identification technology on the CT and CT Low-Profile models or CT engraving on all models through Check X-Ray or CT Scan.

**IMPORTANT INFORMATION**

Read all instructions prior to utilization of device. The LifeGuard™ Safety Infusion Set 19 or 20 gauge needle should be used in all procedures. These needles have been designed and tested to ensure that septum life is preserved.

Contrast dye should be warmed to body temperature prior to utilization of the Smart Port™ CT Power Injectable Port. Failure to have contrast at body temperature may lead to device failure.

Do not exceed the maximum flow rate of 5 mLs. Failure to result in over pressurization of the port device. The power injection mechanism may not prevent over pressurization in the presence of occlusion or resistance.

Do not exceed 300 psi exceeding pressure of 100 psi could lead to device rupture or catheter malposition.

Failure to assess the patency of the Smart Port® implanted port prior to power injection may lead to device failure or rupture.

Absence of a blood return or a poor blood return can be a sign of a potential complication such as occlusion, kinking, leakage or syringe failure. This should be evaluated prior to device usage. A blood return should be present prior to usage of device for any therapy or testing.

If the patient complains of pain, or if there is needling when the device is flushed or when medication or contrast media is administered, evaluate the device for infiltration, proper needle placement, and potential complications such as occlusion, kinking, leakage, Pinch-Off Syndrome, thrombosis or malposition. Failure to assess these complaints or observations can lead to device failure.

Power injection-machine pressure limiting (safety cut-off) settings may not prevent over pressurization of an occluded device.

10 mL syringes or larger are recommended for all flushing or injection procedures. Use of smaller syringes may result in system damage.

The catheter tip should be evaluated for proper location prior to power injection.

Do not exceed 300 psi or 1 mL/sec when using the LifeGuard™ Safety Infusion Set.

Power injection using the Smart Port® implanted port should be performed by trained clinicians who are knowledgeable about the utilization of the Smart Port™ implanted port.

**PROCEDURE FOR POWER INJECTION**

1. The clinician should first review the patient chart to ensure that the patient has a Smart Port® implanted port that is indicated for power injection of contrast media. The patient should have a Smart Port® Patient Identification Card, Smart Port® Patient Information Guide or Smart Port® Key Ring Card.

Note: The completed patient identification card should be given to the patient, who should be instructed to carry it at all times.

2. The Smart Port® Implanted Port should be accessed with a 19 or 20 gauge non-IV LifeGuard™ Safety Infusion Set for injection of contrast media. The needle trap allows for visual confirmation of contrast media injection into the Smart Port® safety needle should be clamped.

3. Remove the needle cap attached to the end of the LifeGuard™ Safety Infusion Set.

4. Attach a 10 mL or larger syringe to the hub of the LifeGuard™ Safety Infusion Set, release the clamp and aspirate to confirm blood return.

Note: Absence of blood return or a poor blood return can be a sign of a potential complication such as occlusion, kinking, leakage, Pinch-Off Syndrome, fibrin formation, thrombosis or malposition. This should be evaluated prior to catheter usage. A blood return should be present prior to usage of device. Note: Testing apparatus for simulated blood return is 4.5 mL/sec.

5. Flush the Smart Port® Implanted Port with 10-20 mL 0.9% normal saline. The device should flush without resistance. Warning: Not assessing patency may result in device failure.

6. Close the clamp of the LifeGuard™ Safety Infusion Set tubing.

7. Remove the syringes from the LifeGuard™ Safety Infusion Set.

8. Attach the power injection apparatus to the catheter according to recommendations for a luer hub of the LifeGuard™ Safety Infusion Set. Release the clamp.

9. Set the power injection machine per manufacturer’s recommendations for a maximum pressure of 360 psi.

10. Perform the study. Do not exceed 5 ml/sec or 300 psi during injection of contrast dye.

11. Close the clamp. Disengage the power injection tubing from the hub luer of the LifeGuard™ Safety Infusion set.

12. Place a new injection cap on the LifeGuard™ Safety Infusion Set luer hub.

13. Flush the Smart Port® Implanted Port with 10-20 mL 0.9% normal saline.

14. Flush the Smart Port® Implanted Port with 35 mL of 10-150 U/mL heparinized saline. Actual amount and strength depends on facility policy.

**SMART PORT® POWER-INJECTABLE PORT SYSTEM MAINTENANCE**

After each delivery of medication or fluid: Flush with at least 20 mL of normal saline followed by 3.5 mL of heparinized saline solution.

After blood withdrawal: Flush with a minimum of 10 mL of saline followed by 3.5 mL of heparinized saline solution.

Port not in use: 3-5 mL of heparinized saline solution should be administered every four weeks.

After power injection of contrast media: Flush with 10-20 mL normal saline, followed by 3-5 mL of heparinized saline solution.

**LIFEGUARD™ SAFETY INFUSION SETS**

**Smart Port® CT Low-Profile**

- **LifeGuard™ in-line 19 gauge set with 10 mL syringe**
  - **10 mL syringe**
  - **LifeGuard™ in-line 19 gauge set**
  - **19 gauge needle**

**Smart Port® CT Low-Profile**

- **LifeGuard™ in-line 19 gauge set with 10 mL syringe**
  - **10 mL syringe**
  - **LifeGuard™ in-line 19 gauge set**
  - **19 gauge needle**

**Operating LifeGuard™ Safety Infusion Set**

1. Access the Port >> Grasp the wings with thumb and middle finger, placing your index finger on top of the needle hub. >> Insert needle through the skin and advance until it makes contact with the bottom of the reservoir.

2. De-Access the Port >> Raise the needle trap to a 90° angle. >> Using your non-dominant hand, grasp the needle stick guard and pull down firmly.

3. De-Access Port >> While holding the needle guard firmly, grasp the needle wings and pull upward until the needle is completely encapsulated in the needle trap. >> Note: The needle trap allows for visual confirmation that the needle is fully encapsulated and safe. Additionally, you may feel or hear it lock into the safe position.

4. De-Access Port >> Flip the needlestick guard toward the needle trap. >> Dispose in Sharps Container port.