B BRAUN
SHARING EXPERTISE

Interventional
Vascular
Diagnostics
and Therapy

Celsite® ACCESS PORTS

Nursing guidelines for use and maintenance

CONTENTS

BACKGROUND

A

INTRODUCTION

Celsite® Access Ports consists of an implantable catheter linked to a reservoir. The device is placed subcutaneously and can be used over a long time period for many types of infusions.
Celsite® Access Ports have considerably facilitated the development and security of general ambulatory treatment, especially in home care. Celsite® Access Ports have also largely improved patient comfort. The nurse plays an important role in the follow-up and maintenance of the access port; following the procedure will thus assure the appropriate function of the port[1].

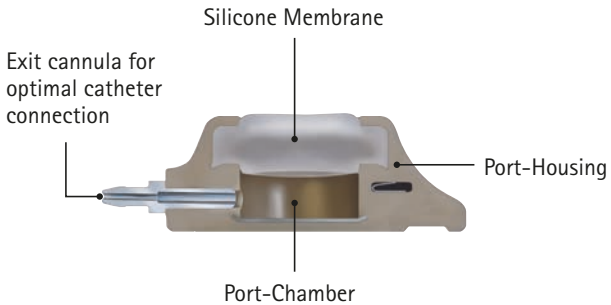
DESCRIPTION

The Celsite® Access Port is a reservoir connected to a radiopaque catheter made of silicone, polyurethane or polyamide. Under echo/fluoroscopic guidance, the atraumatic rounded distal tip of the catheter is positioned at the junction of the superior vena cava, just above the right atrium. The proximal tip of the catheter is connected to a reservoir which is surgically implanted in the sub-cutaneous tissue of the patient.
The reservoir consists of a titanium chamber with an exit cannula. The titanium chamber is covered with a shaped outer housing. The original B. Braun low profile delta shape aids insertion of the port in a small pocket for improved comfort, as well as an aesthetic incision (Celsite® Discreet) on the patient's skin.

The central compressed silicone membrane of the chamber is called septum. Surecan® or Cytocan special bevelled needles are used to pass through this septum into the reservoir, which is connected with the catheter via the exit cannula.

The junction between the exit cannula and the catheter is secured by a connection ring. Pre-connected catheters are also available.

[1] Totally Implantable Venous Access Devices (Chapter 1, page 8), Isidoro Di Carlo, Roberto Biffi, Springer Verlag 2012



Picture of Celsite® Safety Access Ports

INDICATIONS FOR USE

Celsite® Access Ports have become indispensable for venous, arterial, peritoneal, pleural and spinal (epidural/intrathecal) access indications. The main treatments indicated with Celsite® Access Ports as well as Surecan® and Cytocan® Port needles are as follows:

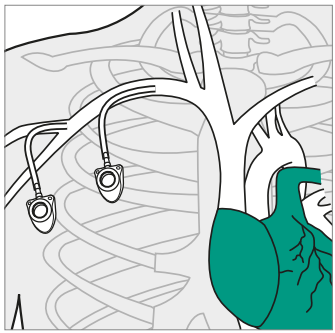
- intra-venous chemotherapy
- intra-venous antibiotic therapy
- long term Total Parenteral Nutrition (TPN)
- loco regional chemotherapy
- drainage of malignant ascites (peritoneal and pleural effusions)
- long term pain treatment
- high pressure injection of contrast media when CT scan is performed
- blood transfusion and blood sampling

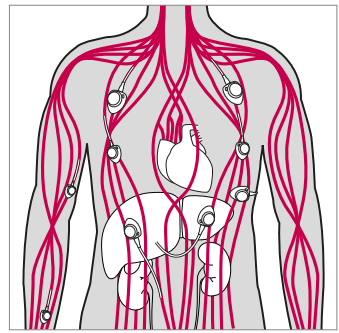
BACKGROUND

A

IMPLANTATION SITES

The implantation site is chosen according to the indication, clinical condition of the patient, his lifestyle and the treatment to be administered.





Potential access routes

Implantation is generally performed under local anesthesia (general anesthesia for children). The access port may be placed in the upper or lower thoracic position or even in a brachial position with a dedicated brachial port.

There are many potential access routes for a central venous catheter and the most commonly used are the internal or external jugular veins, the subclavian vein, the cephalic vein and the axillary vein. Care must be taken with the subclavian route in order to avoid compression of the catheter between the clavicle and the first rib, known as the Pinch-off Syndrome – see chapter **F – Potential Complications** below.
If a brachial access port is used, access should be via the brachial, cephalic or basilic vein.
The femoral veins are not the first choice but can be used in circumstances where other access sites are impossible or contraindicated.

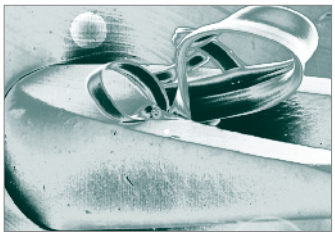
Videos of implantation techniques are available on demand

CHOICE OF THE NEEDLES

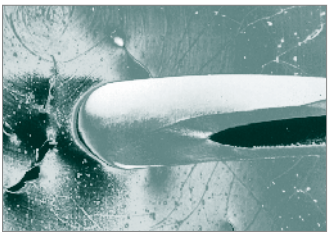
B

CAUTION!

Normal hypodermic needles will damage the septum and may cause leakage of the septum or blockage of the catheters due to small silicone particles.



Coring of the silicone septum



Surecan® non coring needle

Surecan® and Cytocan® non-coring needles are designed to reduce damage or coring of the septum during puncture or rinsing of the device, so as to optimise the port's life.

Small gauge needles (22G) are preferred in order to preserve the septum.

Do not use 19G needles for the Celsite® Babyport.

CHOICE OF THE NEEDLES

B

RECOMMENDATIONS ACCORDING TO INFUSED SOLUTION

Drugs perfused	Viscosity	Size of needle recommended
NaCl 0,9 %	Low	22G
Plasma	Low	22G
Lipid emulsion 10 %	Low	22G
Lipid emulsion 20 %	Average	22G - 20G
Cytotoxics	Average	22G - 20G
Glucose 30 %	Average	22G - 20G
Glucose 50 %	High	20G - 19G
Blood cells	High	20G - 19G
Blood samples	High	20G - 19G

RECOMMENDATIONS ACCORDING TO THE PATIENT'S ANATOMY

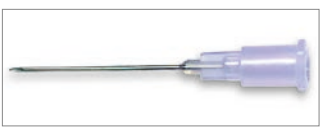
Needle length	Accessing
70-90 mm	gastric band
35-40 mm	obese patient
	deeply implanted access port
25-30 mm	standard access port
	overweight patient
20 mm	standard and small access port
	normal size patient
15 mm	small access port
	thin or undernourished patient
12 mm	Babyport or Brachial port
	superficial port implantation
	baby, child, very thin or cachectic patient

B. BRAUN NEEDLE RANGE

Length	12 mm	15 mm	20 mm	25 mm	30 mm	32 mm	35 mm	38 mm	40 mm	70 mm	90 mm
Surecan® Straight				24G	22G				20G	20G	20G
Surecan® Angled		19G 20G 22G	19G 20G 22G	19G 20G 22G			20G 22G				
Surecan® Winged without Y site	22G	19G 20G 22G	19G 20G 22G	19G 20G 22G	20G						
Surecan® Winged with Y site		20G 22G	19G 20G 22G	19G 20G 22G	22G						
Cytocan		19G 20G 22G	19G 20G 22G	19G 20G 22G							
Surecan® Safety II	19G 20G 22G	19G 20G 22G	19G 20G 22G	19G 20G 22G		19G 20G 22G		19G 20G			
Surecan® Safety II with Y site	19G 20G 22G	19G 20G 22G	19G 20G 22G	19G 20G 22G		19G 20G		19G			

I Surecan® Straight

Surecan® Straight needles are special bevelled needles for access ports used for short-term injection (bolus, injection, flushing...)



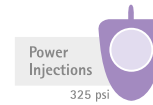
Reference	Size (Gauge)	Cannula Length (mm)
04439953	20	40
04439998	20	70
04440000	20	90
04439848	22	30
04439414	24	25

CHOICE OF THE NEEDLES

B

II Surecan® Angled

Surecan® Angled needles are special bevelled needles for access ports used for short term injection (less than 24 hours). Surecan® Angled is also indicated for high pressure injections of contrast media when CT scan is performed.

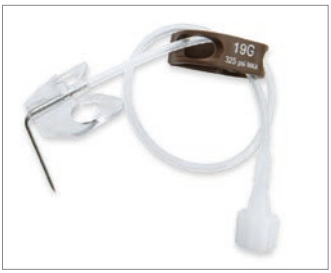


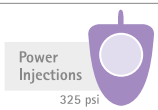
Reference	Size (Gauge)	Cannula Length (mm)
04438000	19	15
04439430	19	20
04439406	19	25
04439929	20	15
04439937	20	20
04439945	20	25
04434862	20	35
04439813	22	15
04439821	22	20
04439830	22	25
04434870	22	35

Surecan® Winged

Surecan® Winged needles are special bevelled needles with a flexible fixation plate and an extension tube including a clamp for long-term infusion for a maximum of seven days.

The DEHP-free and latex free tube allows HP injection of contrast media when CT scan is performed (does not include Surecan® Winged with Y-site).





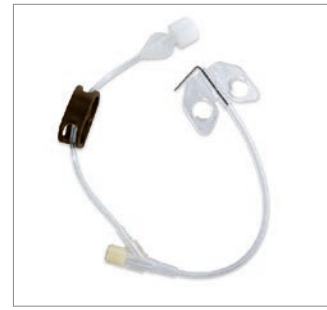
Reference without Y-site	Size (Gauge)	Cannula Length (mm)
04448286	19	15
04448294	19	20
04448308	19	25
04448332	20	15
04448340	20	20
04448359	20	25
04448367	20	30
04448375	22	12
04448383	22	15
04448391	22	20
04448405	22	25

CHOICE OF THE NEEDLES

B

IV Surecan® Winged with Y-site

Surecan® Winged needles are special bevelled needles with a flexible fixation plate and an extension tube including a clamp for long term infusion for a maximum of seven days. The needle is latex- and DEHP-free The Y-Site allows additional access.



Reference with Y-site	Size (Gauge)	Cannula Length (mm)
04448430	19	20
04448448	19	25
04448472	20	15
04448480	20	20
04448499	20	25
04448529	22	15
04448537	22	20
04448545	22	25
04448553	22	30

V Cytocan®

Cytocan® needles are special bevelled non coring needles with an extension tube (DEHP free and latex free) including a clamp and a flexible fixation plate for long-term infusion for a maximum of seven days..

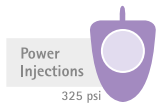
Reference	Size (Gauge)	Cannula Length (mm)
04438035	19	15
04438019	19	20
04438027	19	25
04439759	20	15
04439767	20	20
04439775	20	25
04439694	22	15
04439635	22	20
04439686	22	25

CHOICE OF THE NEEDLES

B

VI Surecan® Safety II

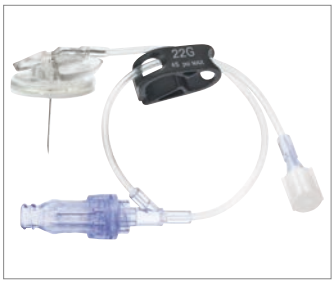
Surecan® Safety II needles are special bevelled non-coring safety needles with a fixation plate and flexible wings for long-term infusion for a maximum of seven days. Surecan® Safety II needles have an extension tube with a clamp. Surecan® Safety II is also indicated for high pressure injections of contrast media when CT scan is performed.

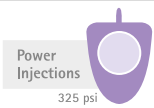


Reference	Size (Gauge)	Cannula Length (mm)
04447042	19	12
04447000	19	15
04447001	19	20
04447002	19	25
04447003	19	32
04447004	19	38
04447043	20	12
04447005	20	15
04447006	20	20
04447007	20	25
04447008	20	32
04447009	20	38
04447044	22	12
04447010	22	15
04447011	22	20
04447012	22	25
04447013	22	32

VII Surecan® Safety II with Y-site and Caresite®

Surecan® Safety II needles are special bevelled non-coring safety needles with a fixation plate and flexible wings. The Y-site with pre-connected Caresite® allows additional access. Please use Caresite® valve for HP injection only. The needles are also indicated for high pressure injections of contrast media when CT scan is performed.





Reference with Caresite®	Size (Gauge)	Cannula Length (mm)
04447057	19	12
04447045	19	15
04447046	19	20
04447047	19	25
04447048	19	32
04447049	19	38
04447058	20	12
04447050	20	15
04447051	20	20
04447052	20	25
04447053	20	32
04447059	22	12
04447054	22	15
04447055	22	20
04447056	22	25

USAGE

C

HYGIENE PRECAUTIONS

Rigorous aseptic rules must be followed, according to the protocol of the hospital, prior to any procedure to prevent infection of the access port.

To avoid any contamination of the injection site, make sure the head of the patient remains turned away from the site during the procedure and refection of the dressing.

It is of primary importance that the nursing staff:

- put on a surgical mask
- wash hands with an antiseptic soap
- put on sterile gloves before starting any procedure.

Hygiene precautions

PREPARATION OF THE INJECTION SITE

Always:

- Inspect the skin over the injection site and along the catheter to make sure that there is no redness, oedema, ulceration or discharge.
- Disinfect the area around the port (the choice of the antiseptic is left to the operator's choice, however make sure that the contact time of the chosen antiseptic is respected).
- Prepare the appropriate dressing components (or existing set) using an aseptic technique.
- Disinfect the area for a second time and allow to dry.
- Prime the needle with saline solution (NaCl) 0.9 % and close the clamp if using a needle with extension tube.

⚠ Caution! Even if a certain number of Celsite® Access Port references could be used with 5 mL or even 2 mL syringes, it is recommended to use only syringes greater or equal to 10 mL to avoid any bursting risk in case of **occlusion** or wrong use of the system.

USAGE

C

ACCESSING THE PORT

- Firmly hold the access port between your fingers and insert the needle into the septum, at right-angle to the skin surface, until the back of the chamber is felt.

⚠ Caution! Excessive pressure during the puncture could damage the needle tip (see photos below) and may result in leakage of the septum and causes pain to the patient while removing the needle (see complication table).

Damaged needle tip

- Patency of the catheter must be checked by aspirating blood and injecting 5 mL of saline solution (NaCl) 0.9 %.
- To preserve the septum's life, it is recommended to always vary the puncture site.
- Local anaesthetic (cream, patch...) can be applied so as to avoid pain to the patient during puncture.
- After withdrawal of the needle, disinfect the puncture site and cover with a small dressing if desired. Short term needles should be changed every 24 hours maximum compared to the long term needles which could be used up to 7 days .

DRESSING

Adhesive strips, (Askina® strips), can be placed on the needle to secure the wings or plate to the skin, and Askina® Derm® type dressing can be placed on top of the needle.

A transparent dressing over the needle and port site is recommended as it allows daily inspection of the insertion site to detect any trouble.
The dressing must be changed every time the needle is changed or before if necessary, and whenever the dressing is spoiled or no longer adhering to the skin.

A non-transparent dressing should be changed every day to allow an inspection of the insertion site and the skin.

When the port is not used, the dressing becomes useless.

INFUSION

To infuse through an access port, a special bevelled non coring needle must be used e.g Surecan® Straight or Surecan® Angled or needles with extension tube e.g. Surecan® Winged, Cytocan®, or Surecan® Safety II. The type of needle must be chosen according to the treatment duration and indication needs.

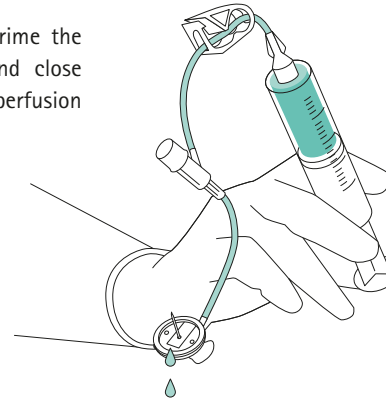
Special bevelled non coring needles are available in different lengths and gauges, and should be selected according to patient's requirements and solution to be infused. To choose the relevant needle, please see chapter B above.

USAGE

C

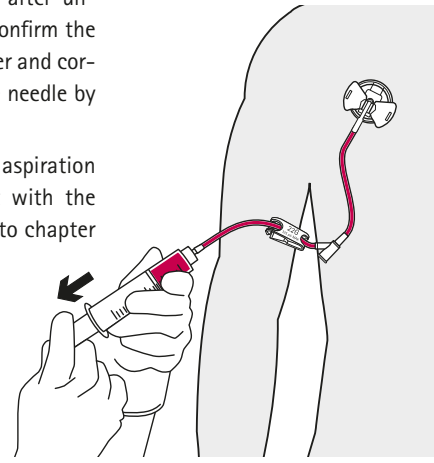
⚠ CAUTION!

I Before any infusion, prime the needle with saline, and close the clamp if using a perfusion set.

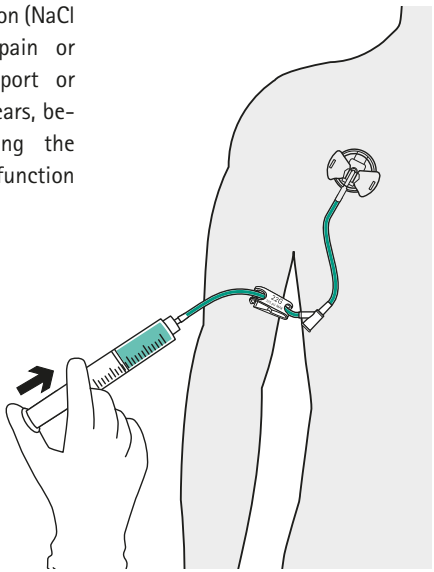


II Before each infusion, after unclamping the needle confirm the patency of the catheter and correct positioning of the needle by blood aspiration.

If there is no blood aspiration possible do not start with the infusion! Please refer to chapter D.

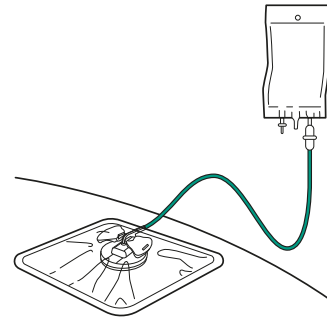


III Inject 10 ml saline solution (NaCl 0.9%). If resistance, pain or swelling around the port or along the catheter appears, before starting or during the treatment, device malfunction should be suspected.



A sterile gauze swab may be placed under the wings of the needle to aid stabilization during infusion.

IV Apply adhesive skin closure strips over the wings of the needle and a transparent dressing over the needle and port site. Change the dressing regularly according to local protocols.

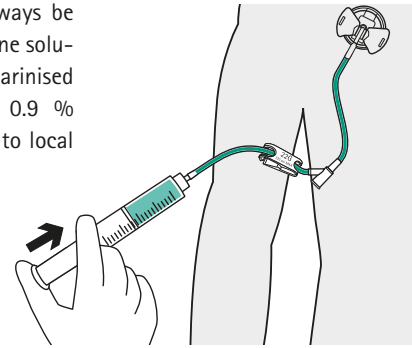


Connect the infusion line to the extension tube and start the infusion. Careful observation is necessary during infusion with chemotherapeutic drugs to detect any dysfunction and limit the extravasation risk of the drugs.

If the patient feels the slightest pain, swelling or redness at the injection site, infusion must be stopped immediately.

Whenever the infused solution has to be changed, rinse the catheter with 10 mL saline solution (NaCl) 0.9 % to avoid precipitation due to drug incompatibility.

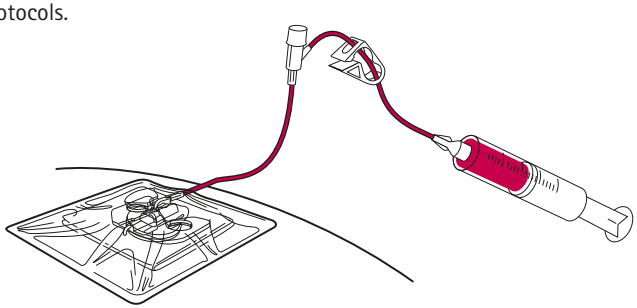
V The catheter should always be rinsed with 10mL of saline solution (NaCl) 0.9 %. Heparinised saline solution (NaCl) 0.9 % may be used according to local protocol.



BLOOD SAMPLING

The Celsite® ports also allow blood samples to be taken. Prepare the injection site and puncture the septum according to the recommendations above. A 19G or 20G needle should be used to avoid haemolysis and to ensure an appropriate flow rate.

Draw up 3-5 mL of blood using a syringe and then clamp the extension tube. With a new syringe (or vacuum blood sampling container), withdraw the required amount of blood for laboratory tests. After the procedure, rinse with 10 mL of saline solution (NaCl) 0.9 % followed with heparinised saline solution (NaCl) 0.9 % if used according to local protocols.



ADMINISTRATION OF BLOOD PRODUCTS

The Celsite® Access Port may be used for administration of blood or blood products. In order to increase the flow rate during the infusion, and to avoid haemolysis, a larger gauge needle such as 19G or 20G should be used.

After administration of blood or blood products, the above rinsing protocol is to be followed.

USAGE

C

TOTAL PARENTERAL NUTRITION (TPN)

For TPN or lipid solution administration, large gauge needles (19G or 20G) may be necessary to maximise the flow.

After parenteral nutrition, rinse with 10mL of normal saline (NaCl) 0.9 %.

If the catheter is blocked, please refer to chapter **F – Potential Complications.**

FURTHER INFORMATION

- All port needles contain nickel.
- All Celsite® Access Ports are PVC, DEHP and latex free.
- All Surecan® and Cytocan® port needles are Latex and DEHP-free.
- Most of the Celsite® Access Ports are suitable for high pressure injection.
- All Celsite® Access Ports as well as all Surecan® and Cytocan® port needles are MR conditional.

MR-CONDITIONAL

Non-clinical testing demonstrated that Celsite® Access Ports and Surecan® / Cytocan® port needles are MR conditional. A patient with these devices can be scanned immediately after placement under the following conditions:

- Static magnetic field of 3-Tesla and 1.5-Tesla.
- Maximum spatial gradient magnetic field of 710 Gauss/cm or less.
- Maximum whole body averaged specific absorption rate (SAR) of 2.9 W/kg for 15 minutes of scanning.

MR image quality may be compromised if the area of interest is in the exact same area or relatively close to the position of the devices. Therefore, optimization of MR imaging parameters to compensate for the presence of these devices may be necessary.

MRI-Related Heating

In non-clinical testing, the Celsite® Access Ports produced the maximum temperature rise during MRI performed for 15-min (i.e., per pulse sequence) in 3-Tesla (Excite, Software G3.0-052B, General Electric Healthcare, Milwaukee, WI) MR systems, of about 2.2°C:

MRI condition	MR system reported, max whole body averaged SAR	Calorimetry value	Highest temperature change	Time for MRI (per pulse sequence)
3-T/128-MHZ	2.9 W/kg	2.7 W/kg	2.2°C	15 min

MAINTENANCE

D

RINSING AND HEPARINISATION

Venous catheters

Always verify that the access port and catheter are functional by aspirating blood into the syringe and injecting 10 mL (or 5 mL for children) of saline solution (NaCl) 0.9 % into the access port/catheter before starting the infusion.

If aspiration of blood is not possible, attempt to inject 2 ml of saline solution (NaCl) 0.9 % into the access port. If resistance, pain or swelling (around the port or along the catheter) appear, before starting or during the treatment, malfunction of the device should be suspected. Further exams should be performed to find out the cause of the problem. A blood clot could obstruct the catheter. Never try to dissolve the blockage using a fluid under high pressure (see chapter F Potential complications).

After each treatment, or every 4 weeks when no treatment is administered, rinsing of the access port and catheter with 10mL (5 mL for children) saline solution (NaCl) 0.9 % should be performed. Heparinisation with heparinised saline solution (NaCl) 0.9 % can follow if required by local protocol.

When heparinised saline solution (NaCl) 0.9 % is used, the system should be rinsed with 10 mL of saline solution (NaCl) 0.9 % alone before rinsing with heparinised saline (NaCl) 0.9 %.

Some drugs react with heparin and may result in blockage of the access port/catheter due to formation of precipitates.

Arterial catheters

The common practice is not to check blood reflux in the arterial system. Arterial ports and catheters should be rinsed with 10mL of saline solution (NaCl) 0.9 % and then heparinised with saline solution (NaCl) 0.9 % after each treatment; regularly, according to clinical needs (i.e. every 4 weeks) when no treatment is being given.

Epidural / Intrathecal catheters

0.5 ml of saline solution (NaCl) 0.9 % may be used to rinse the port and the catheter.

Do not use heparinised saline (NaCl) 0.9 % with Epidural / Intrathecal catheters.

Peritoneal catheters

Rinse with 20 mL of normal saline solution (NaCl) 0.9 % and follow local protocols.

Pleural catheters

These catheters should be rinsed with 20 mL of heparinised saline solution (NaCl) 0.9 %, initially this should occur weekly. The interval between rinsing may be extended according to clinical needs.

Heparin protocol example:

For a solution of 100 IU/mL, add 9 mL of saline solution (NaCl) 0.9 % to 0.02 mL of pure heparin.

MAINTENANCE

D

REMOVAL OF THE NEEDLE

To avoid blood remaining inside the catheter, flush the port with normal saline solution (NaCl) 0.9 %.

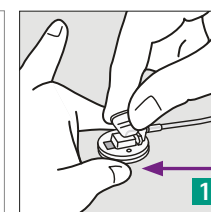
There is no specific recommendation regarding the removal technique of the needle.

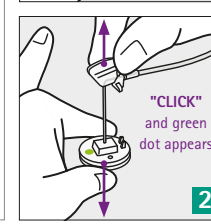
The use of positive pressure or not, upon withdrawal of the needle, does not prevent blood diffusion into the lumen of the catheter over time. More important is to rinse the port and catheter as recommended in the Celsite® IFU's, before, in between **and** after each infusion.

Surecan® Safety II:

Remove the needle according to above recommendations. To activate the safety meachnism, securely hold the needle base with two fingers. Firmly pull the wings up until the green point is visible. The needle is now locked in the safety position. Safely disposing of used sharps is important. Therefore put used sharps into a special sharps container.

Surecan® Safety II before and after activation of safety mechanism





HIGH PRESSURE INJECTION

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RECOMMENDATIONS

Certain Celsite® venous Access Ports may be used for Contrast Enhanced Computerised Tomography (CECT) using high pressure injection.

- Always verify that the implanted Celsite® Access Port is indicated for high pressure injections (please see the IFU or the patient label).
- Always verify that the port and catheter are functional by aspirating 2 mL of blood into a syringe and injecting 5 mL of normal saline solution into the port / catheter before attempting to start an infusion of medication.
- Do not exceed the recommended pressure (325 psi/22,4 bars) and flow rate as access port system failure may occur.
- Contrast media should be warmed to 37°C (98.6°F) before use according to drug manufacturer recommendations. Failure to follow this recommendation will result in up to 50% lower flow rates and/or access port or injection system failure.
- Do not use needles which may not withstand high pressure.
- Use only 20G and 22G needles for Celsite® Babyport® and Brachial ports. Use of 19G needles may lead to leakage of contrast media.
- Ensure that the needle is correctly placed in the port, securely taped to the skin and covered with an adhesive dressing before starting high pressure injection.
- Catheter lengths over 20 cm will reduce the flow rates.
- Depending on the technical characteristics of the injection system, the target flow rate might not be reached.
- The Access Port system should be flushed with 10 mL of saline solution (NaCl) 0.9 % before and after using the port for CECT, followed by usual rinsing procedures.
- Flow rate recommendations are as indicated in the below tables (see next pages)

HIGH PRESSURE INJECTION

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		en: Recommended maximum flow rates (mL/s)*					
		Contrast media at 37°C (98.6°F)					
		Viscosity 5.8 mPa.s (cP)**			Viscosity 11.4 mPa.s (cP)**		
		Winged/Angled Surecan® needle			Winged/Angled Surecan® needle		
		22G	20G	19G	22G	20G	19G
	Babyport® (1.5 x 0.8 mm)	2	4	–	1	3	–
	Brachial (1.6 x 1.1 mm)	2	4	–	1	3	–
	Babyport® S (2.0 x 1.2 mm)	2	4	–	2	4	–
Double port	ST405L (3.2 x 1.3 mm)	2	5	6	2	4	6
Small ports	STL205P - STR205P (2.1 x 1.4 mm)	2	4	6	2	3	5
	ST305P - ST205P - BT305P (2.1 x 1.4 mm)	2	4	6	2	3	4
	ST305C (1.6 x 1.1 mm)	2	4	5	1	3	4
	T/ST305 - T/ST205 - ST505 - SNT305F ST315 - ST215 - T/ST205F ECG - SNT215F (2.2 x 1.1 mm)	2	4	5	2	3	4
	STL205F - STR205F (2.2 x 1.1 mm)	2	4	5	2	3	4
	ST305L - ST505L - T/ST205ECG ST205L - ST315L (2.8 x 1.1 mm)	2	4	5	2	3	5
	ST305H - ST505H - ST205H (2.8 x 1.6 mm)	2	5	7	2	4	6
Double port	ST401L (3.2 x 1.3 mm)	2	5	7	2	4	6
Standard ports	ST301C - ST201C - ST301OTW (1.6 x 1.1 mm)	2	5	6	2	4	5
	T/ST301F - ST311F - SNT301F - T/ST201F T/ST501F - T/ST201F ECG - SNT201F (2.2 x 1.1 mm)	2	5	6	2	4	6
	T/ST301P - ST201P - BT301P (2.1 x 1.4 mm)	2	5	6	2	4	6
	T/ST301 - ST311 - T/ST201 - T/ST501 T/ST201 ECG (2.8 x 1.1 mm)	2	5	6	2	4	6
	STL201L - STR201L (2.8 x 1.1 mm)	2	5	6	2	4	6
	ST201H - T/ST301H - ST311H (2.8 x 1.6 mm)	2	5	7	2	5	7
	STL201H - STR201H (2.8 x 1.6 mm)	2	5	7	2	5	7
	ST301G - ST201G (3.2 x 1.6 mm)	2	5	8	2	5	7

Recommended maximum pressure setting (CT function) 325psi

* With a catheter of 20 cm | ** Or any contrast media with a similar viscosity at 37°C

		en: Recommended maximum flow rates (mL/s)*						Recommended maximum pressure setting (CT function) 325psi
		Contrast media at 37°C (98.6°F)						
		Viscosity 5.8 mPa.s (cP)**			Viscosity 11.4 mPa.s (cP)**			
		Surecan® Safety II			Surecan® Safety II			
		22G	20G	19G	22G	20G	19G	
	Babyport® (1.5 x 0.8 mm)	2	4	–	1	3	–	
	Brachial (1.6 x 1.1 mm)	2	5	–	1	3	–	
	Babyport® S (2.0 x 1.2 mm)	2	5	–	1	4	–	
Double port	ST405L (3.2 x 1.3 mm)	2	5	8	1	4	6	
	STL205P - STR205P (2.1 x 1.4 mm)	2	5	8	1	4	5	
	ST305P - ST205P - BT305P (2.1 x 1.4 mm)	2	5	8	1	4	5	
	ST305C (1.6 x 1.1 mm)	2	5	7	1	3	5	
Small ports	T/ST305 - T/ST205 - ST505 - SNT305F ST315 - ST215 - T/ST205F ECG - SNT215F (2.2 x 1.1 mm)	2	5	8	1	4	6	
	STL205F - STR205F (2.2 x 1.1 mm)	2	5	8	1	4	6	
	ST305L - ST505L - T/ST205ECG ST205L - ST315L (2.8 x 1.1 mm)	2	5	8	1	3	6	
	ST305H - ST505H - ST205H (2.8 x 1.6 mm)	2	6	9	1	4	6	
Double port	ST401L (3.2 x 1.3 mm)	2	5	8	1	4	6	
	ST301C - ST201C - ST301OTW (1.6 x 1.1 mm)	2	5	6	1	3	5	
	T/ST301F - ST311F - SNT301F - T/ST201F T/ST501F - T/ST201F ECG - SNT201F (2.2 x 1.1 mm)	2	6	7	1	4	6	
	T/ST301P - ST201P - BT301P (2.1 x 1.4 mm)	2	5	7	1	4	6	
Standard ports	T/ST301 - ST311 - T/ST201 - T/ST501 T/ST201 ECG (2.8 x 1.1 mm)	2	6	7	1	4	6	
	STL201L - STR201L (2.8 x 1.1 mm)	2	6	7	1	4	6	
	ST201H - T/ST301H - ST311H (2.8 x 1.6 mm)	2	6	8	1	5	7	
	STL201H - STR201H (2.8 x 1.6 mm)	2	6	8	1	5	7	
	ST301G - ST201G (3.2 x 1.6 mm)	2	6	9	1	5	6	

* With a catheter of 20 cm | ** Or any contrast media with a similar viscosity at 37°C

POTENTIAL COMPLICATIONS

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TROUBLESHOOTING

Issue	Solution(s)
Occlusion of the catheter	
▪ extension tube is clamped or kinked	▪ release clamp or place the tube in correct position
▪ 3-way stopclock (if used) is locked	▪ open the 3-way stopclock (if used)
▪ needle has moved from its position under the dressing	▪ check position of the neddle under the dressing and replace it if necessary
▪ patient is malpositioned	▪ check patient's position and reposition his / her arm or trunk in order to reposition the port and catheter
▪ the tip of the catheter might be lying against the wall of the vein	▪ try to rinse the catheter with 10 ml saline solution (NaCl) 0.9 % – caution – the port can only be used if infusion is possible and if there is no localised pain or swelling
▪ possible „Pinch-off" i. e. compression of the catheter between the clavicle and the 1st rib	▪ remove any sub clavian catheter which presents any signs of „pinch-off"
▪ blood clot is obstructing the catheter	▪ **DO NOT ATTEMPT TO FLUSH USING PRESSURE** this risks bursting the catheter. Unlock using a thrombolytic agent given as a bolus If treatment is not effective, the access port has to be removed
▪ Fibrin Sleeve is obstructing the catheter	▪ **DO NOT ATTEMPT TO FLUSH USING PRESSURE** this risks bursting the catheter. Unlock using a fibrinolytic agent given as a bolus If treatment is not effective, the access port has to be removed

TO BE DONE UNDER MEDICAL SUPERVISION ONLY

For countries under CE mark only.

Issue	Solution(s)
Insufficient flow	
▪ the tip of the catheter might be in contact with the vein wall	▪ try to flush with normal Saline solution without any pressure using a syringe with minimum volume of 10 ml.
▪ blood clots can partially occlude the catheter	▪ attempt to dissolve it with a fibrinolytic agent (to be done by the physician)
General state of the patient	
▪ febrile patient	▪ notify physician
▪ inflammation around port site	▪ notify physician

DOCUMENTATION

Brochures

Celsite® Implantable Access Ports: Patients guide for Celsite® Access Ports	(6050189)
Surecan® Safety II: Power-injectable safety needle for Access Ports	(6050173)
Sharps injury: Risk prevention in infusion therapy	(6069095)
Celsite® PICC-Cel: Nursing Guideline	(6050351)

Catalogue Access Port Systems

Celsite®, Surecan®, Cytocan Access Ports, PICCs, Accessories and Non-Coring Needles	(6050179)

Videos

Celsite® Access Ports: DVD implantation techniques	(6050213)

NOTES

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