Neonatal & Paediatric Catheters
Specialist Products for Newborns & Young Children
Introducer and Access Point Selection

Table 1 - Introducer Method

<table>
<thead>
<tr>
<th>Introducer Method</th>
<th>Application</th>
<th>Advantage</th>
<th>Disadvantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut-down</td>
<td>Umbilical catheters</td>
<td>Direct vision insertion</td>
<td>A surgical procedure</td>
</tr>
<tr>
<td>Microflash</td>
<td>Peripherally inserted catheter</td>
<td>Plastic through plastic insertion</td>
<td>Introducer is larger than the catheter</td>
</tr>
<tr>
<td>Breakaway Needle</td>
<td>Peripherally inserted catheter</td>
<td>Venepuncture hole is smaller than a cannula</td>
<td>Plastic through metal insertion</td>
</tr>
<tr>
<td>Removable Needle</td>
<td>Peripherally inserted catheter</td>
<td>Small venepuncture hole</td>
<td>Large needle, two part construction</td>
</tr>
<tr>
<td>Seldinger</td>
<td>Arterial or venous, peripheral or central insertion routes</td>
<td>The venepuncture hole is smaller than the catheter</td>
<td>Can be tricky with an uncooperative child</td>
</tr>
</tbody>
</table>

Table 2 - Primary Access Points

<table>
<thead>
<tr>
<th>Preferred Venous Sites</th>
<th>Veins</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand</td>
<td>Digital, metacarpal</td>
</tr>
<tr>
<td>Forearm</td>
<td>Supplementary cephalic, basilic, median antebrachial</td>
</tr>
<tr>
<td>Antecubital fossa (ACF)</td>
<td>Median basilic, median cephalic, median cubital</td>
</tr>
<tr>
<td>Upper arm (below axilla)</td>
<td>Basilic, cephalic</td>
</tr>
<tr>
<td>Foot (before walking age)</td>
<td>Greater saphenous, lesser saphenous</td>
</tr>
<tr>
<td>Scalp (before six months)</td>
<td>Occipital, metopic, temporal</td>
</tr>
<tr>
<td>Lower leg (before walking age)</td>
<td>Greater saphenous, lesser saphenous</td>
</tr>
</tbody>
</table>

Table 3 - Secondary Access Points

<table>
<thead>
<tr>
<th>Secondary Venous Sites</th>
<th>Potential Complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wrist</td>
<td>Superficial veins: infiltration in this area may result in pressure on the radial nerve</td>
</tr>
<tr>
<td>Abdomen</td>
<td>Superficial veins: rarely used, usually limited to neonates and chronically hospitalised patients; infiltration may result in damage to abdominal wall</td>
</tr>
<tr>
<td>Axilla</td>
<td>Axillary vein: usually limited to neonates; infiltration may cause pressure on structures in chest cavity</td>
</tr>
<tr>
<td>Knee</td>
<td>Popliteal vein: usually limited to neonates due to decreased mobility</td>
</tr>
</tbody>
</table>

Please Note: Sites are listed in order of preference, but consider individual characteristics. Secondary sites should be considered only when preferred sites are not available.

Product Selection Matrix

Now put together the information you have gathered and consult the matrix to find the recommended product to meet your requirements.

<table>
<thead>
<tr>
<th>NEWBORN &lt; 1kg</th>
<th>Preferred Introducer Method</th>
<th>Preferred Access Point</th>
<th>Recommended Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Venous</td>
<td>Cut-down</td>
<td>Umbilical</td>
<td>Umbilical Catheter (1270 Single, 1272 Double)</td>
</tr>
<tr>
<td>Arterial</td>
<td>Breakaway Needle</td>
<td>Scap, ACF, lower leg, foot</td>
<td>28G Premicath (1261.21)</td>
</tr>
<tr>
<td></td>
<td>Microflash</td>
<td>Scap, ACF, lower leg, foot</td>
<td>28G Premicath (1261.22/208)</td>
</tr>
<tr>
<td></td>
<td>Microflash</td>
<td>Scap, ACF, lower leg, foot</td>
<td>24G Nutrine Twin-Flo (1252.239)</td>
</tr>
<tr>
<td>Seldinger</td>
<td>Central Venous</td>
<td>Umbilical</td>
<td>Umbilical Catheter (1270 Single, 1272 Double)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NEWBORN &gt; 1kg</th>
<th>Preferred Introducer Method</th>
<th>Preferred Access Point</th>
<th>Recommended Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Venous</td>
<td>Cut-down</td>
<td>Umbilical</td>
<td>Umbilical Catheter (1270 Single, 1272 Double)</td>
</tr>
<tr>
<td>Arterial</td>
<td>Microflash</td>
<td>Scap, ACF, lower leg, foot</td>
<td>24G Nutrine (1352)</td>
</tr>
<tr>
<td></td>
<td>Removable Butterfly Needle</td>
<td>Scap, ACF, lower leg, foot</td>
<td>24G ECC (2184)</td>
</tr>
<tr>
<td></td>
<td>Microflash</td>
<td>Scap, ACF, lower leg, foot</td>
<td>24G Nutrine Twin-Flo (1252.239)</td>
</tr>
<tr>
<td>Seldinger</td>
<td>Central Venous</td>
<td>Umbilical</td>
<td>Umbilical Catheter (1270 Single, 1272 Double)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHILD &gt; 1yr</th>
<th>Preferred Introducer Method</th>
<th>Preferred Access Point</th>
<th>Recommended Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Venous</td>
<td>Seldinger</td>
<td>ACF, upper arm, femoral, forearm, jugular</td>
<td>22G Leaderflex (1212)</td>
</tr>
<tr>
<td>Arterial</td>
<td>Peelable Cannula</td>
<td>ACF, upper arm, forearm</td>
<td>20G Nutrine (1353.302)</td>
</tr>
<tr>
<td></td>
<td>Seldinger</td>
<td>Wrist, femoral, foot</td>
<td>22G Leaderflex (1212)</td>
</tr>
</tbody>
</table>

Complementary Products

Long Line Placement Pack (80.199.519)
Umbilical Catheters

The safest choice for short-term vascular access in neonates

A range of single and double lumen umbilical catheters for both venous and arterial use. Patient safety has been improved by the use of polyurethane, which, unlike traditional PVC catheters, remains inert for the life of the catheter.

Features and Benefits

Polyurethane catheter
remains stiff during insertion but softens at body temperature, minimising vessel trauma and enhancing stay time.

X-ray opaque
for accurate tip location without additional contrast medium.

Numerical graduations
aid accurate tip placement.

Atraumatic tip
reduces risk of vessel damage during insertion.

Double lumen venous catheter
decreases the need for additional IV access.

Slide clamps (on double lumen only)
for line management and safety.

Ordering Information

<table>
<thead>
<tr>
<th>Product Codes</th>
<th>Description</th>
<th>Size (Fr)</th>
<th>Length (cm)</th>
<th>Priming Volume (ml)</th>
<th>Flow Rate (ml/min)*</th>
<th>Unit of Sale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1270.02 FSY023</td>
<td>Single lumen PUR catheter with 1 x 3-way tap</td>
<td>2.5</td>
<td>30</td>
<td>0.21</td>
<td>2.35</td>
<td>8</td>
</tr>
<tr>
<td>1270.03 FSY024</td>
<td>Single lumen PUR catheter with 1 x 3-way tap</td>
<td>3.5</td>
<td>40</td>
<td>0.34</td>
<td>11.10</td>
<td>8</td>
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<tr>
<td>1270.04 FSY025</td>
<td>Single lumen PUR catheter with 1 x 3-way tap</td>
<td>4.0</td>
<td>40</td>
<td>0.36</td>
<td>11.30</td>
<td>20</td>
</tr>
<tr>
<td>1270.05 FSY026</td>
<td>Single lumen PUR catheter with 1 x 3-way tap</td>
<td>5.0</td>
<td>40</td>
<td>0.46</td>
<td>24.00</td>
<td>20</td>
</tr>
<tr>
<td>1270.08 FSY027</td>
<td>Single lumen PUR catheter with 1 x 3-way tap</td>
<td>8.0</td>
<td>40</td>
<td>0.84</td>
<td>79.00</td>
<td>20</td>
</tr>
<tr>
<td>1272.14 FSY028</td>
<td>Double equal lumen PUR catheter with 1 x 3-way tap</td>
<td>4.0</td>
<td>20</td>
<td>0.26 / 0.26</td>
<td>15.00</td>
<td>10</td>
</tr>
</tbody>
</table>

*Tested to ISO 10555

NEWBORN

< 1kg

NEWBORN

> 1kg

The use of double lumen venous umbilical catheters in critically ill neonates is well tolerated and decreases the need for additional venous catheters.[1]

Reference
Insertion Technique

General
1. Use strict aseptic technique, cleanse the anterior abdominal wall and cord stump.
2. Loosely tie a piece of ribbon gauze around the cord stump to control bleeding. Cut the umbilical cord at its base, tangentially to the abdomen, remove any clots which may obstruct the vessel lumen.
3. Arteries are small, thick-walled spiralling vessels, whilst the vein is larger and thin-walled (see diagram 1).
4. Prime the catheter and if required dilate the vessel using iris forceps (see diagram 1).
5. Advance the catheter using short, smooth strokes.

Arterial Catheterisation
1. For babies less than 1.5kg in weight place the catheter tip at the upper aorta, above the diaphragm, X-ray T6-T10 (see table 1 and diagram 2).
2. For babies over 1.5kg in weight place the catheter tip at the lower aorta, below the renal arteries, X-ray L4-L5 (see table 1 and diagram 2).
3. Check the legs and buttocks for pallor or blueness and palpate the femoral pulses.
4. Confirm catheter location by X-ray.
5. Fixate the catheter.

Venous Catheterisation
1. Use strict aseptic technique, cleanse the anterior abdominal wall and cord stump.
2. Loosely tie a piece of ribbon gauze around the cord stump to control bleeding. Cut the umbilical cord at its base, tangentially to the abdomen, remove any clots which may obstruct the vessel lumen.
3. Arteries are small, thick-walled spiralling vessels, whilst the vein is larger and thin-walled.
4. Prime the catheter and if required dilate the vessel using iris forceps.
5. Advance the catheter using short, smooth strokes.
6. Locate the catheter tip into the inferior vena cava via the ductus venosus. If the catheter will not pass through the ductus venosus locate the tip in the portal sinus (see diagram 2).

Please note: Any resistance to the catheter’s advancement must lead to immediate withdrawal of the catheter by 2-3cm before any new attempt is made. Do not cover the umbilicus with any dressing as the cord air dries in the incubator.

Catheter removal: Withdraw the catheter slowly and gently. If resistance is felt, stop and identify the cause before continuing.

Warnings: Avoid the use of alcohol or acetone to clean the catheter as this may result in catheter damage and premature removal. Avoid the use of small syringes less than 10ml for bolus injections as they generate high pressures which may result in catheter damage.
28G Premicath has been designed specifically for use with babies under 1kg who require the smallest catheters. As with our other polyurethane catheters Premicath utilises thin-wall technology to enable high flow rates to be achieved.

Clinicians have the choice of either a small breakaway needle introducer, which is ideal for use in the tiniest of veins, or the slightly larger peelable cannula which provides the added security of removing the needle and advancing the catheter through the plastic cannula.

**Features and Benefits**

**Polyurethane catheter**
- remains stiff during insertion but softens at body temperature, minimising vessel trauma and enhancing stay time.

**X-ray opaque**
- for accurate tip location without additional contrast medium.

**Catheter graduations every cm**
- aid accurate tip placement.

**Small 28G catheter**
- for the smallest veins.

**One-piece catheter construction**
- simplifies insertion.

**Integral extension with wing**
- permits secure catheter fixation, reducing the risk of mechanical phlebitis.

**Choice of introducer:**
- **Microflash introducer**
  - unique split cannula, allows easy removal from the PICC line, and eyelet gives rapid visibility of flashback. Provides additional safety and security of advancing the catheter through plastic.
- **Small 24G breakaway needle**
  - for small veins.

**Kit Contents**
- 1 x Catheter
- 1 x Microflash introducer or breakaway needle

**Ordering Information**

<table>
<thead>
<tr>
<th>Product Codes</th>
<th>Description</th>
<th>Size (G)</th>
<th>Length (cm)</th>
<th>Priming Volume (ml)</th>
<th>Flow Rate (ml/min)*</th>
<th>Introducer Information</th>
<th>Unit of Sale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1261.21</td>
<td>X-ray opaque graduated catheter</td>
<td>28</td>
<td>20</td>
<td>0.15</td>
<td>0.5</td>
<td>Breakaway needle</td>
<td>5</td>
</tr>
<tr>
<td>1261.22</td>
<td>X-ray opaque graduated catheter</td>
<td>28</td>
<td>20</td>
<td>0.15</td>
<td>0.5</td>
<td>Microflash</td>
<td>5</td>
</tr>
<tr>
<td>1261.208</td>
<td>X-ray opaque graduated PUR catheter with stylet</td>
<td>28</td>
<td>20</td>
<td>0.06**</td>
<td>0.5</td>
<td>Microflash</td>
<td>5</td>
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<tr>
<td>7366.510</td>
<td>Breakaway needle only</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td>Breakaway needle</td>
<td>25</td>
</tr>
<tr>
<td>7370.19</td>
<td>Microflash introducer only</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td>Microflash</td>
<td>25</td>
</tr>
</tbody>
</table>

*Tested at 1bar/14.5psi  **with stylet in place
28G Premicath
Neonatal catheter (PUR) with choice of introducer

Insertion Technique

**Preparation for Catheter Insertion**

Open the outer wrap using aseptic technique. Add any sterile supplementary equipment needed. Put on sterile gloves and prepare tray contents ready for catheter insertion:

1. Draw up saline and heparin flushes, using filter needle to remove particulate material.
2. Attach injection membrane to catheter hub (except Premicath with stylet 1261.208).
3. Flush catheter prior to insertion.

**Microflash Cannula Insertion Technique**

1. Select, prepare, clean (see diagram 1) and drape site of venepuncture. Apply tourniquet.
2. Perform venepuncture with the peelable cannula provided (see diagram 2).
3. Advance cannula until venepuncture is confirmed by free flowing blood into the flashback chamber (see diagram 3). Please note: With Microflash, you may see flashback from the needle eyelet. Also, the cannula can be syringe-mounted if preferred.
4. Release tourniquet, advance cannula off the introducer needle and advance gently into vessel. Please note: To avoid excessive bleeding or possible air aspiration place a gloved finger over the cannula opening following needle withdrawal. Insert catheter through cannula using non-toothed forceps and short, steady strokes (see diagram 4).

Should catheter advancement become difficult, infuse a little fluid whilst simultaneously advancing the catheter. This has the effect of dilating the vessel distal to the catheter tip.

**Premicath Peelable Cannula Removal**

1. Secure the catheter by applying light finger pressure on the catheter beyond the cannula, and slowly withdraw the cannula. Carefully peel the cannula apart whilst maintaining forward pressure on the catheter, taking care not to dislodge the catheter from the vein. Finally advance the catheter to the desired position (see diagram 1).

**Premicath Catheter Fixation**

1. Anchor the catheter using adhesive skin strips. Clean the insertion site with gauze swab. Place small swab over insertion site (see diagram 1).
2. Loop the extension tube back beside this gauze and apply a transparent dressing (see diagram 2). Light pressure over the insertion site should be maintained for 24 hours. Then change as per hospital protocol.

**Premicath Breakaway Needle Removal**

1. Follow the general guidelines as per the peelable cannula insertion technique. Following venepuncture advance the catheter through the breakaway needle and withdraw the needle from the vein. Pinch needle wings firmly together to initiate breaking of the needle (see diagram 1).
2. Peel needle smoothly until the needle halves are held together only at the tip. It is not necessary to entirely separate both halves of the needle (see diagram 2).
3. Lift catheter carefully out of needle lumen (see diagram 3).

Caution: Do not grip the needle wings tightly as this may cause the needle to break prematurely. At no time should the catheter be withdrawn back through the needle. If it becomes impossible to advance the catheter to a satisfactory position, the needle and catheter must be withdrawn simultaneously.

**Warnings:** Avoid the use of alcohol or acetone to clean the catheter as this may result in catheter damage and premature removal. Avoid the use of small syringes less than 10ml for bolus injections as they generate high pressures which may result in catheter damage.
24G Nutriline Twin-Flo has been designed specifically for use with babies who require multiple infusions. As with our other polyurethane catheters Nutriline utilises thin-wall technology to enable high flow rates to be achieved.

The Nutriline Twin-Flo’s dual lumen design offers enhanced fluid management.

**Features and Benefits**

**Polyurethane catheter**  
remains stiff during insertion but softens at body temperature, minimising vessel trauma and enhancing stay time.

**X-ray opaque**  
for accurate tip location without additional contrast medium.

**Catheter graduations every cm**  
aid accurate catheter placement.

**Dual lumen to tip**  
for enhanced IV management.

**One-piece construction**  
simplifies insertion.

**Slide clamps**  
for line management and safety.

**Integral extension with wing**  
permits secure catheter fixation, reducing the risk of mechanical phlebitis.

**Microflash introducer**  
unique split cannula, allows easy removal from the PICC line, and eyelet gives rapid visibility of flashback.

**Kit Contents**

1 x Catheter  
1 x Neonatal Statlock®  
1 x Microflash introducer

**Ordering Information**

<table>
<thead>
<tr>
<th>Product Codes</th>
<th>Description</th>
<th>Size (G)</th>
<th>Length (cm)</th>
<th>Priming Volume (ml)</th>
<th>Flow Rate (ml/min)*</th>
<th>Introducer Information</th>
<th>Unit of Sale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vygon NPC Type OD-L-G</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1252.235 FSU262 X-ray opaque graduated dual lumen PUR catheter</td>
<td>24</td>
<td>30</td>
<td>2 x 0.2</td>
<td>2 x 1.45</td>
<td>Microflash</td>
<td>1.8-18-20</td>
<td>10</td>
</tr>
<tr>
<td>7370.19 FSP244 Microflash introducer</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td>Microflash</td>
<td>1.8-18-20</td>
<td>25</td>
</tr>
</tbody>
</table>

*Tested at 1 bar/14.5psi
Insertion Technique

Preparation for Catheter Insertion

Open the outer wrap using aseptic technique. Add any sterile supplementary equipment needed. Treat the inner surface of the wrap as the sterile field. Put on sterile gloves and prepare tray contents ready for catheter insertion:

1. Draw up saline and heparin flushes, using filter needle to remove particulate material.
2. Attach injection membrane to catheter hub.
3. Flush catheter prior to insertion.

Microflash Peelable Cannula Insertion Technique

1. Select, prepare, clean (see diagram 1) and drape site of venepuncture. Apply tourniquet.
2. Perform venepuncture with the peelable cannula provided (see diagram 2).
3. Advance cannula until venepuncture is confirmed by free flowing blood into the flashback chamber (see diagram 3). Please note: With Microflash you may see flashback from the needle eyelet. Also, the cannula can be syringe-mounted if preferred.
4. Release tourniquet, advance cannula off the introducer needle and advance gently into vessel. Please note: To avoid excessive bleeding or possible air aspiration place a gloved finger over the cannula opening, following needle withdrawal. Insert catheter through cannula using non-toothed forceps and short, steady strokes (see diagram 4).

Should catheter advancement become difficult, infuse a little fluid whilst simultaneously advancing the catheter. This has the effect of dilating the vessel distal to the catheter tip.

Nutriline Twin-Flo Peelable Cannula Removal

1. Secure the catheter by applying light finger pressure on the catheter beyond the cannula and slowly withdraw the cannula. Carefully peel the cannula apart whilst maintaining forward pressure on the catheter, taking care not to dislodge the catheter from the vein. Finally advance the catheter to the desired position (see diagram 1).

Nutriline Twin-Flo Catheter Fixation

1. Anchor the catheter using adhesive skin strips. Clean the insertion site with gauze swab. Place small swab over insertion site (see diagram 1).
2. Loop the extension tube back beside this gauze and apply a transparent dressing (see diagram 2). Light pressure over the insertion site should be maintained for 24 hours. Then change as per hospital protocol.

Warnings: Avoid the use of alcohol or acetone to clean the catheter as this may result in catheter damage and premature removal. Avoid the use of small syringes less than 10ml for bolus injections as they generate high pressures which may result in catheter damage.
24G Nutriline
Peripherally inserted catheter with Microflash introducer

24G Nutriline’s one-piece catheter construction provides clinicians with a high degree of safety. The peelable introducer cannula enables the catheter to be safely advanced through plastic. Additional security is provided by a small primary wing to help minimise the risk of catheter movement and kinking.

As with our other polyurethane catheters Nutriline utilises thin-wall technology to enable high flow rates to be achieved.

Clinicians have a choice of several catheter lengths to ensure accurate tip placement for most IV access sites.

Therapy areas include long-term IV antibiotics and TPN.

### Features and Benefits

**Polyurethane catheter**
- remains stiff during insertion but softens at body temperature, minimising vessel trauma and enhancing stay time.

**X-ray opaque**
- for accurate tip location without additional contrast medium.

**Catheter graduations every cm**
- aid accurate placement of catheter.

**One-piece construction**
- simplifies insertion.

**Integral extension with wing**
- permits secure catheter fixation, reducing the risk of mechanical phlebitis.

**Slide clamp**
- for line management and safety.

**Microflash introducer**
- unique split cannula, allows easy removal from the PICC line, and eyelet gives rapid visibility of flashback.

### Kit Contents

<table>
<thead>
<tr>
<th>Kit Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 x Ball swabs</td>
</tr>
<tr>
<td>1 x Gallipot</td>
</tr>
<tr>
<td>1 x Sponge wrap</td>
</tr>
<tr>
<td>1 x Microflash introducer</td>
</tr>
<tr>
<td>1 x Injection membrane</td>
</tr>
<tr>
<td>1 x 10ml Syringe</td>
</tr>
</tbody>
</table>

| 1 Filter straw 5µm               |
| 1 x Sterile field/outer          |
| 1 x 5µm Filter straw             |
| 1 x Sterile field/outer wrap     |
| 1 x Sterile field/outer wrap     |
| 1 x Sterile field/outer wrap     |
| 1 x Sterile field/outer wrap     |
| 1 x Sterile field/outer wrap     |
| 1 x Sterile field/outer wrap     |
| 1 x Sterile field/outer wrap     |
| 1 x Sterile field/outer wrap     |

### Product Codes

<table>
<thead>
<tr>
<th>Product Codes</th>
<th>Description</th>
<th>Size (G)</th>
<th>Length (cm)</th>
<th>Priming Volume (ml)</th>
<th>Flow Rate (ml/min)*</th>
<th>ID-DD (mm)</th>
<th>Introducer Size (OD-L-G)</th>
<th>Unit of Sale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vygon NPC</td>
<td>X-ray opaque graduated polyurethane catheter</td>
<td>24</td>
<td>15</td>
<td>0.18</td>
<td>3.0</td>
<td>0.3-0.6</td>
<td>0.7-19-24</td>
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<tr>
<td>1352.152</td>
<td>X-ray opaque graduated polyurethane catheter</td>
<td>24</td>
<td>30</td>
<td>0.21</td>
<td>2.0</td>
<td>0.3-0.6</td>
<td>1.1-19-19</td>
<td>10</td>
</tr>
<tr>
<td>1352.302</td>
<td>X-ray opaque graduated polyurethane catheter</td>
<td>24</td>
<td>15</td>
<td>0.18</td>
<td>3.0</td>
<td>0.3-0.6</td>
<td>1.8-18-20</td>
<td>25</td>
</tr>
<tr>
<td>7370.19</td>
<td>Microflash introducer</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

*Tested at 1 bar/14.5psi

Vygon (UK) Ltd,
T: 01285 657051 | F: 01285 650293 | W: www.vygon.co.uk | E: vygon@vygon.co.uk
24G Nutriline
Peripherally inserted catheter with Microflash introducer

Insertion Technique
Preparation for Catheter Insertion
Open the outer wrap using aseptic technique. Add any sterile supplementary equipment needed. Treat the inner surface of the wrap as the sterile field. Put on sterile gloves, prepare tray contents ready for catheter insertion:
1. Draw up saline and heparin flushes, using filter needle to remove particulate material.
2. Attach injection membrane to catheter hub (except Premicath with stylet 1261.208).
3. Flush catheter prior to insertion.

Microflash Cannula Insertion Technique
1. Select, prepare, clean (see diagram 1) and drape site of venepuncture. Apply tourniquet.
2. Perform venepuncture with the peelable cannula provided (see diagram 2).
3. Advance cannula until venepuncture is confirmed by free flowing blood into the flashback chamber (see diagram 3). Please note: With Microflash you may see flashback from the needle eyelet. Also, the cannula can be syringe-mounted if preferred.
4. Release tourniquet, advance cannula off the introducer needle and advance gently into vessel. Please note: To avoid excessive bleeding or possible air aspiration place a gloved finger over the cannula opening following needle withdrawal. Insert catheter through cannula using non-toothed forceps and short, steady strokes (see diagram 4).

Should catheter advancement become difficult, infuse a little fluid whilst simultaneously advancing the catheter. This has the effect of dilating the vessel distal to the catheter tip.

Nutriline Peelable Cannula Removal
1. Secure the catheter by applying light digital finger pressure on the catheter beyond the cannula, and slowly withdraw the cannula. Carefully peel the cannula apart whilst maintaining forward pressure on the catheter, taking care not to dislodge the catheter from the vein. Finally advance the catheter to the desired position (see diagram 1).

Nutriline Catheter Fixation
1. Anchor the catheter using adhesive skin strips. Clean the insertion site with gauze swab. Place small swab over insertion site (see diagram 1).
2. Loop the extension tube back beside this gauze and apply a transparent dressing (see diagram 2). Light pressure over the insertion site should be maintained for 24 hours. Then change as per hospital protocol.

Warnings:
Avoid the use of alcohol or acetone to clean the catheter as this may result in catheter damage and premature removal.
Avoid the use of small syringes less than 10ml for bolus injections as they generate high pressures which may result in catheter damage.
24G ECC was Vygon’s first purpose-designed neonatal PICC line. The soft silicone catheter has depth graduations to aid insertion, and sits comfortably in the vessel during use. Its two-part design allows the use and removal of an introducer butterfly.

The ECC catheter is probably the most well recognised paediatric catheter in the world today, enjoying over 25 years of unrivalled success.

Features and Benefits

**Soft biocompatible silicone**
- enhances stay time.

**X-ray opaque**
- for accurate tip location without additional contrast medium.

**Catheter graduations every cm**
- aid accurate catheter placement.

**Integral extension**
- limits catheter movement, reducing the risk of mechanical phlebitis.

**Detachable hub**
- allows complete removal of introducing needle.

Kit Contents

| 1 x Catheter | 1 x Winged needle |

Ordering Information

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<th>Description</th>
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*Tested to ISO 10555  **Tested at 14.5psi
Insertion Technique

**Note:** Only use needle supplied. Check catheter patency by flushing. Unscrew compression hub (**do not separate**) and remove catheter ready for use.

1. Place child in comfortable and convenient position. Prep insertion site. Drape as required.
2. Perform venepuncture using 19G needle provided.
3. Using fine non-toothed forceps, introduce catheter through needle (Note graduations I 5cm, II 10cm, III 15cm, IIII 20cm).
4. Apply finger pressure on catheter beyond needle tip and carefully remove needle from vessel.
5. Keeping catheter straight, carefully remove needle from catheter.
6. Insert proximal end of catheter into compression hub until black marker is fully out of sight. Whilst maintaining catheter in this position, tighten compression hub. **Do not separate compression hub.**

**Please note:** Black marking ring must be within hub and out of view. Catheter is secured by tightening compression hub.

**Warnings:** Avoid the use of alcohol or acetone to clean the catheter as this may result in catheter damage and premature removal. Avoid the use of small syringes less than 10ml for bolus injections as they generate high pressures which may result in catheter damage.
The Leaderflex range of 22G Seldinger catheters are for use in a variety of venous and arterial applications. Leaderflex is manufactured from polyurethane, which offers excellent insertion and indwell characteristics. Safety features include: a slide clamp for safe line changes; a clear integral extension to aid air bubble detection; and reinforcement of the catheter/wing junction to help minimise the risk of catheter kinking. Line management is also enhanced by moving hub manipulation away from the insertion site, and reducing the risk of mechanical phlebitis, which can result in premature catheter failure.

### Features and Benefits

**Polyurethane catheter**
- remains stiff during insertion but softens at body temperature, minimising vessel trauma and enhancing stay time.

**X-ray opaque**
- for accurate tip location without additional contrast medium.

**One-piece catheter construction**
- simplifies insertion.

**Short 4cm line**
- for easy and effective arterial access.

**Longer 6 and 8cm lengths**
- for easy and effective venous access.

**Integral extension with wing**
- permits secure catheter fixation, reducing the risk of mechanical phlebitis.

**Slide clamp**
- for line management and safety.

**Flexible guidewire**
- for ease of insertion and line placement

### Kit Contents

1 x Catheter  
1 x Needle  
1 x Guidewire  
1 x Drape

### Ordering Information

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*Tested to ISO 10555
Insertion Technique

The Idea

“I had the polyethylene catheter, the needle and the guidewire, and suddenly in a split second, there came an attack of common sense. The sequence in which these three items ought to be used suddenly became obvious.”

Sven-Ivar Seldinger was born in Mora, Sweden in 1921. After studying medicine at the Karolinska Institute in Stockholm he began his diagnostic radiology training at the Karolinska Sjukhuset in 1950.

Many sensed the great potential of angiography and although methods for introducing a catheter into an artery or vein were available, they were traumatic and involved considerable blood loss. This was the problem that Dr Seldinger set out to solve. He submitted his initial and most important paper on percutaneous catheterisation in 1953.

Dr Seldinger’s medical milestone seems simple now. A needle is introduced, a guidewire is passed into the needle lumen and the needle is removed. The catheter is then fed over the wire, the wire is then removed.

The Seldinger technique was, because of its simplicity, adopted worldwide and since its conception has served millions, permitting safe, simple catheterisation of virtually every important vessel in the body.

Vygon is proud to produce Leaderflex, a refined product utilising the Seldinger technique and today’s technologies. A fitting tribute to Dr Seldinger.

The Technique

1. Venepuncture is performed.
2. Effective venepuncture is confirmed by free aspiration of blood.
3. The syringe is removed and the guidewire, soft tip first, is introduced through the needle.
4. The needle is then removed.
5. The flexible catheter is passed forward over the guidewire.
6. The guidewire is removed and an extension is then connected to the catheter.

Warnings: Avoid the use of alcohol or acetone to clean the catheter as this may result in catheter damage and premature removal. Avoid the use of small syringes less than 10ml for bolus injections as they generate high pressures which may result in catheter damage.
Designed for children and young adults, Nutriline's one piece catheter construction provides clinicians with a high degree of safety. The peelable cannula introducer enables the catheter to be safely advanced through plastic. Additional security is provided by a small primary wing to help minimise the risk of catheter movement and kinking.

As with our other polyurethane catheters Nutriline utilises thin-wall technology to enable high flow rates to be achieved without compromising the safety of the catheter.

### Features and Benefits

**Polyurethane catheter**
remains stiff during insertion but softens at body temperature, minimising vessel trauma and enhancing stay time.

**X-ray opaque**
for accurate tip location without additional contrast medium.

**Catheter graduations every cm**
aid accurate placement of catheter.

**One-piece construction**
simplifies insertion.

**Integral extension with wing**
permits secure catheter fixation, reducing the risk of mechanical phlebitis.

**Slide clamp**
for line management and safety.

**Peelable cannula introducer**
provides the additional safety and security of advancing the catheter through plastic.

### Kit Contents

- 2 x Ball swabs
- 1 x Gallipot
- 1 x Sponge stick
- 1 x Peelable cannula
- 1 x Injection membrane
- 1 x 10ml syringe
- 1 x Filter straw 5µm
- 1 x Sterile field/outer wrap
- 1 x Fenestrated drape
- 1 x Filter straw 5µm

### Ordering Information

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<th>Product Codes</th>
<th>Description</th>
<th>Size (G)</th>
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<th>Priming Volume (ml)</th>
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*Tested at 1 bar/14.5psi
Insertion Technique

Preparation for Catheter Insertion

Open the outer wrap using aseptic technique. Add any sterile supplementary equipment needed. Treat the inner surface of the wrap as the sterile field. Put on sterile gloves and prepare tray contents ready for catheter insertion:

1. Draw up saline and heparin flushes, using filter needle to remove particulate material.
2. Attach injection membrane to catheter hub (except Premicath with stylet 1261.208).
3. Flush catheter prior to insertion.

Nutriline Peelable Cannula Insertion Technique

1. Select, prepare, clean (see diagram 1) and drape site of venepuncture. Apply tourniquet.
2. Perform venepuncture with the peelable cannula provided (see diagram 2).
3. Advance cannula until venepuncture is confirmed by free flowing blood into the flashback chamber (see diagram 3). Please note: With Microflash you may see flashback from the needle eyelet. Also, the cannula can be syringe-mounted if preferred.
4. Release tourniquet, advance cannula off the introducer needle and advance gently into vessel. Insert catheter through cannula using non-toothed forceps and short, steady strokes (see diagram 4). Please note: To avoid excessive bleeding or possible air aspiration place a gloved finger over the cannula opening following needle withdrawal.

Should catheter advancement become difficult, infuse a little fluid whilst simultaneously advancing the catheter. This has the effect of dilating the vessel distal to the catheter tip.

Nutriline Peelable Cannula Removal

1. Secure the catheter by applying light finger pressure on the catheter beyond the cannula, and slowly withdraw the cannula. Carefully peel the cannula apart whilst maintaining forward pressure on the catheter, taking care not to dislodge the catheter from the vein. Finally advance the catheter to the desired position (see diagram 1).

Nutriline Catheter Fixation

1. Anchor the catheter using adhesive skin strips. Clean the insertion site with gauze swab. Place small swab over insertion site (see diagram 1).
2. Loop the extension tube back beside this gauze and apply a transparent dressing (see diagram 2). Light pressure over the insertion site should be maintained for 24 hours. Then change as per hospital protocol.

Warnings: Avoid the use of alcohol or acetone to clean the catheter as this may result in catheter damage and premature removal. Avoid the use of small syringes less than 10ml for bolus injections as they generate high pressures which may result in catheter damage.
Setting the standard, the long line placement pack provides clinicians with equipment to minimise the risk of causing line sepsis during insertion. The components of the pack have been specifically designed for neonates/paediatrics and selected by those who insert IV lines on a daily basis.

Sepsis has been sited as one of the most common complications for percutaneous long lines\(^1\). Having all of the required components in one pack makes it easier for clinicians inserting the catheter to use maximum barrier precautions, thereby increasing the likelihood that the highest standard of asepsis is maintained by all clinicians. 33% of long line complications are due to line infection\(^1\).

**Features and Benefits**

**Transparent drape**
provides a maximum barrier to infection whilst allowing you to see and monitor the baby during insertion. Also keeps the baby warm during the line placement.

**Choice of neonatal forceps**
straight and curved non-toothed forceps to aid the insertion of your long line.

**Neonatal tourniquet**
purpose-designed tourniquet to minimise damage to delicate skin.

**Reduced set-up time**
all your items available in one pack.

**Kit Contents**

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<th>Kit Contents</th>
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<td>1 x Opaque tray</td>
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<tr>
<td>1 x Blue prep forceps</td>
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<tr>
<td>1 x Pack of Steri-Strip(^7) with easy peel</td>
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<td>2 x Tape measures</td>
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<tr>
<td>2 x Tegaderm(^\text{TM}) dressings</td>
</tr>
<tr>
<td>1 x 10ml Syringe</td>
</tr>
<tr>
<td>1 x Neonatal tourniquet</td>
</tr>
<tr>
<td>4 x Ball swabs</td>
</tr>
<tr>
<td>2 x 75 x 45m Drape, adhesive ABS PE</td>
</tr>
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<td>1 x Gallipot 60ml</td>
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<td>2 x Drape towels</td>
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<td>1 x Outer wrap</td>
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**Ordering Information**

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Vygon (UK) Ltd,  
T: 01285 657051 | F: 01285 650293 | W: www.vygon.co.uk | E: vygon@vygon.co.uk
The umbilical placement pack provides clinicians with equipment to minimise the risk of causing line sepsis and provides convenience during insertion. The components of the pack have been specifically designed for neonates and selected by those who insert umbilical lines on a daily basis.

Sepsis has been sited as one of the most frequent complications for umbilical catheters\(^1\). Having all of the required components in one pack makes it easier for clinicians inserting the catheter to use maximum barrier precautions, thereby increasing the likelihood that the highest standard of asepsis is maintained by all clinicians.

### Features and Benefits

**Transparent drape**
- Provides a maximum barrier to infection whilst allowing you to see and monitor the baby during insertion. Also keeps the baby warm during the line placement.

**Choice of neonatal forceps**
- Straight and curved non-toothed forceps to aid the insertion of your long line.

**Reduced set-up time**
- All your items available in one pack.

### Kit Contents

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<td>Hypodermic safety needle 20G 13cm</td>
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<td>Retractable scalpel</td>
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<td>40 x 40cm Fenestrated drape curved 10cm with easy peel</td>
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As part of our ongoing commitment to education and training we can offer you the following:

✓ **Product Specific Workshops**
   Small IV workshops which are tailor-made to meet individual needs and expectations. They are classroom-based and combine lecture with hands-on training opportunities.

✓ **Hands-On Training Aids**
   These aids enable patients and clinicians to practice their catheter care and maintenance skills and are available for workshops or short-term loan.

✓ **Training CD-ROMs**
   These have been made by clinicians for clinicians and have been designed to guide the new user through the essential elements of insertion, care and maintenance of our products.

✓ **Neonatal PowerPoint Presentation**
   Chapters in this presentation include:
   - Why use long lines?
   - Complications
   - Insertion and removal techniques

For further information on any of the above please contact us on 01285 657051 or email us at vygon@vygon.co.uk
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