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ThruPort Systems

Disposable Products for Minimal Incision Surgery
Edwards ThruPort Systems

- EndoVent catheter
- ProPlege device
- Soft tissue retractor
- QuickDraw cannula
- IntraClude device
- EndoReturn cannula
ProPlege Peripheral Retrograde Cardioplegia Device

The ProPlege device is indicated for occlusion of the coronary sinus, delivery of cardioplegia solution, and monitoring of coronary sinus pressure during cardiopulmonary bypass.

- 9 Fr (3.1 mm), 59 cm long, triple-lumen, articulating device
- Designed for occluding the coronary sinus for retrograde perfusion of the coronary circulation
- Balloon expands to occlude a range of coronary sinus diameters
- The large central lumen of the ProPlege device delivers cardioplegic solution to the coronary sinus
- The two remaining lumens serve as conduits for balloon inflation and coronary sinus pressure monitoring distal to the balloon
- The shaft features an articulation mechanism which changes the curvature of the distal end when the positioning dial is manipulated
- The ProPlege device is provided with a contamination guard, which connects to the introducer sheath

1 unit per case

23.2 inch (59 cm) effective length
32.3 inch (82 cm) overall length

PR9  9 Fr (3.1 mm) catheter
     11 Fr (3.7 mm) introducer
EndoVent Pulmonary Catheter

The EndoVent pulmonary catheter is indicated for use in patients undergoing cardiopulmonary bypass. It is intended to remove blood from the pulmonary artery and assist in decompressing the heart.

- 8.3 Fr (2.8 mm), double lumen catheter intended to vent the pulmonary artery
- Preshaped and flexible to facilitate percutaneous placement through the internal jugular vein or the subclavian vein
- An integrated balloon designed to flow-direct the catheter into the pulmonary artery
- The EndoVent pulmonary catheter is protected by a contamination guard which is compatible with the supplied introducer sheath

1 unit per case

25.5 inch (65 cm) overall length

<table>
<thead>
<tr>
<th>EV</th>
<th>8.3 Fr (2.8 mm) catheter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9 Fr (3.0 mm) introducer</td>
</tr>
</tbody>
</table>
IntraClude Intra-Aortic Occlusion Device

The IntraClude intra-aortic occlusion device is indicated for use in patients undergoing cardiopulmonary bypass. The IntraClude intra-aortic occlusion device occludes and vents the ascending aorta when the balloon is inflated. The device’s central lumen allows delivery of cardioplegia to arrest the heart. The pressure lumen allows monitoring of the aortic root pressure.

- 10.5 Fr (3.5 mm), triple-lumen, 100 cm long catheter
- Designed to occlude the ascending aorta in order to partition the aortic root from arterial circulation
- Balloon expands to occlude a range of aorta sizes from 20 to 40 mm
- Designed to be used in the femoral approach with the Edwards EndoReturn (ER21B or ER23B) arterial cannula or the Edwards introducer sheath (IS19A)
- The shaft is provided with an extended strain relief designed to prevent kinking

1 unit per case

39.3 inch (100 cm) overall length

| ICF100 | 0.038 inch (200 cm) guidewire |
| Y-connector | Red and blue pressure lines |

Close up of tip
EndoReturn Arterial Cannula

The EndoReturn arterial cannula and 19 Fr (6.3 mm) arterial cannula are indicated for patients undergoing cardiopulmonary bypass. They are intended to deliver oxygenated blood for cardiopulmonary bypass during surgery. The EndoReturn arterial cannula with hemostasis valve also allows the hemostatic introduction and removal of vascular catheters such as the EndoClamp aortic catheter.

- Kits include a wire-reinforced cannula with hemostasis valve, an introducer and a guidewire
- The cannulae have a wire-reinforced section to provide kink resistance and flexibility
- Tapered tips to aid in insertion and advancement into the femoral artery
- Hemostasis valve designed to allow passage of catheters, such as the EndoClamp aortic catheter
- The introducers accept a .038 inch (0.97 mm) guidewire and are marked to simplify assembly and indicate alignment
- A lubricious coating is applied to the surface of the cannula body, designed to ease insertion and retraction of catheters and introducers

1 unit per case

3.7 inch (9.4 cm) effective length

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ER21B</td>
<td>21 Fr (7.0 mm) 0.038 inch (100 cm) guidewire Introductor Connector hub</td>
</tr>
<tr>
<td>ER23B</td>
<td>23 Fr (7.6 mm) 0.038 inch (100 cm) guidewire Introductor Connector hub</td>
</tr>
</tbody>
</table>

* Mean value derived from in vitro testing performed with water at 21°C. The actual pressure gradients encountered in a clinical situation may vary from those shown, depending on perfusion techniques.
Arterial Cannulae

OptiSite Arterial Cannula

The Edwards Lifesciences arterial perfusion cannulae are indicated for arterial perfusion in the extracorporeal circuit for < 6 hours. Cannulation site selection is left to the discretion of the surgeon and may include the femoral artery or the aortic arch.

- Smoothly rounded tips to facilitate atraumatic insertion
- The proximal ends of the cannulae are designed to accept 3/8 inch (9.5 mm) tubing
- Lock introducer is designed for use with 0.038 inch (0.96 mm) guidewires
- Removable vented luer cap designed to allow cannula venting when guidewire is not in use

1 unit per case

Blunt Tip Introducer with Guidewire

15 cm effective length
20.8 cm overall length

Vented 3/8 inch connector
OPTI16  16 Fr (5.3 mm)
OPTI18  18 Fr (6.0 mm)
OPTI20  20 Fr (6.7 mm)
OPTI22  22 Fr (7.3 mm)
QuickDraw Venous Cannula

Use of the QuickDraw venous cannula is indicated for patients undergoing cardiopulmonary bypass. The QuickDraw venous cannula serves to drain nonoxygenated blood from the venae cavae or right atrium during cardiopulmonary bypass.

- The QuickDraw venous cannula kit includes: a wirewound cannula; introducer(s); guidewire; connector hub; percutaneous insertion components
- The cannula and introducer(s) have tapered tips to aid in insertion and advancement into the femoral vein
- The cannula is marked at 5 cm intervals from the first marker band to indicate the depth of insertion
- The soft, clear tubing near the barbed end of the cannula allows visualization of air and blood and provides a non-reinforced clamp site
- The cannula connector is a 3/8 inch (9.5 mm) barbed connector
- The introducers accept a 0.038 inch (0.97 mm) guidewire for assistance in cannula insertion
- The connector hub secures and immobilizes the introducer within the cannula for easier, one-person insertion of the cannula/introducer assembly
- For percutaneous insertion, percutaneous insertion components are provided

1 unit per case

25.5 inch (65 cm) effective length

<table>
<thead>
<tr>
<th>Model</th>
<th>Fracture</th>
<th>Connector</th>
<th>Introducer</th>
<th>Guidewire</th>
<th>Insertion Kit</th>
<th>Syringe</th>
</tr>
</thead>
<tbody>
<tr>
<td>QD22</td>
<td>22</td>
<td>0.375 inch (9.5 mm)</td>
<td>0.038 inch (180 cm)</td>
<td>5 mL syringe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QD25</td>
<td>25</td>
<td>0.375 inch (9.5 mm)</td>
<td>0.038 inch (180 cm)</td>
<td>5 mL syringe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Mean value derived from in vitro testing performed with water at 21°C. The actual pressure gradients encountered in a clinical situation may vary from those shown, depending on perfusion techniques.
Soft Tissue Retractor

The ThruPort soft tissue retractor is used to allow visualization of intrathoracic structures and provide entry for the instruments into the thoracic cavity during specific cardiac surgical procedures. The ThruPort soft tissue retractor is designed to be inserted into an intercostal incision and retract tissue to form a port.

- Available in three sizes
- Fabric tabs designed to retract tissue from the incision
- Soft, polyester fabric conforms to intercostal incision
- Metallic ring compresses for insertion into thorax

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Ring diameter</th>
<th>Tab length</th>
<th>Tab width</th>
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</thead>
<tbody>
<tr>
<td>TRS</td>
<td>Soft tissue retractor, small</td>
<td>2.2 inch (6.0 cm)</td>
<td>6.0 inch (15.2 cm)</td>
<td>1.5 inch (3.8 cm)</td>
</tr>
<tr>
<td>TRM</td>
<td>Soft tissue retractor, medium</td>
<td>3.0 inch (7.5 cm)</td>
<td>6.0 inch (15.2 cm)</td>
<td>2.0 inch (5.1 cm)</td>
</tr>
<tr>
<td>TRL</td>
<td>Soft tissue retractor, large</td>
<td>3.5 inch (9.0 cm)</td>
<td>6.0 inch (15.2 cm)</td>
<td>2.5 inch (6.4 cm)</td>
</tr>
</tbody>
</table>

Knot Pusher

- Knot pusher facilitates extracorporeal knot tying of valve sutures

| KP1   | 12.9 inch (33 cm) length |
Valve Placement Pack

- Valve probe has a soft, atraumatic tip for testing mechanical prosthetic valve leaflet motion
- Valve seater has a soft, silicone rubber tip designed to seat mechanical prosthetic valves
- Knot pusher facilitates extracorporeal knot tying of valve sutures

VPP 12.9 inch (33 cm) length

Close up of tips
Edwards Cardiac Cannulae

- Arterial Cannulae
- Venous Cannulae
- Femoral Cannulae
- Cardioplegia Catheters
- Blood Management
Aortic perfusion cannulae may be used in pediatric or adult populations based on the flow rate requirements and individual patient anatomy. Please consult labeling to determine pressure drop related to flow rates.
Arterial Cannulae

OptiSite Arterial Cannula

The Edwards Lifesciences arterial perfusion cannulae are indicated for arterial perfusion in the extracorporeal circuit for < 6 hours. Cannulation site selection is left to the discretion of the surgeon and may include the femoral artery or the aortic arch.

- Smoothly rounded tips to facilitate atraumatic insertion
- The proximal ends of the cannulae are designed to accept 3/8 inch (9.5 mm) tubing
- Lock introducer is designed for use with 0.038 inch (0.96 mm) guidewires
- Removable vented luer cap designed to allow cannula venting when guidewire is not in use

1 unit per case

Blunt Tip Introducer with Guidewire

15 cm effective length
20.8 cm overall length

Vented 3/8 inch connector
OPTI16  16 Fr (5.3 mm)
OPTI18  18 Fr (6.0 mm)
OPTI20  20 Fr (6.7 mm)
OPTI22  22 Fr (7.3 mm)
**EZ Glide Aortic Perfusion Cannula**

The EZ Glide aortic perfusion cannula is intended to create a dispersive flow.

- Tip design disperses return flow in a conical spray pattern
- Unique auto-dilating tip

**10 units per case**

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**Straight Cannula**

**14 inch (35 cm) overall length**

3/8 inch vented connector
- EZS21TA  21 Fr (7.0 mm)
- EZS24TA  24 Fr (8.0 mm)

3/8 inch non-vented connector
- EZS21A  21 Fr (7.0 mm)
- EZS24A  24 Fr (8.0 mm)
**EZ Glide Aortic Perfusion Cannula** (continued)

**Curved Cannula with Suture Bump**

14.8 inch (37.6 cm) overall length

3/8 inch vented connector
- EZC21TA  21 Fr (7.0 mm)
- EZC24TA  24 Fr (8.0 mm)

3/8 inch non-vented connector
- EZC21A   21 Fr (7.0 mm)
- EZC24A   24 Fr (8.0 mm)

**Curved Cannula with Suture Flange**

14.8 inch (37.6 cm) overall length

3/8 inch vented connector
- EZF21TA  21 Fr (7.0 mm)
- EZF24TA  24 Fr (8.0 mm)

3/8 inch non-vented connector
- EZF21A   21 Fr (7.0 mm)
- EZF24A   24 Fr (8.0 mm)
Arterial Cannula Accessories

These accessories can be used in conjunction with Edwards arterial cannulae.

10 units per case

Vent caps

Compatible with 3/8 inch connector
SPC2063  20 micron porous vent cap

Vascular Tourniquet

2 per pouch

TK2  5 inch (12.7 cm) sheath
Venous Cannulae

Venous cannulae may be used in pediatric populations or adult populations based on flow rate requirements and patient anatomy. Please see labeling for maximum flow rate information.
**Triple Stage Venous Cannula**

- Thin-Flex triple stage venous cannula offers 34% reduction in wall thickness compared to traditional technology*
- Open lighthouse tip for high flow rates
- Compatible with vacuum assist venous drainage systems
- Optional Trim-Flex low profile venous cannula offers a flattened design*

10 units per case

**Trim-Flex Low Profile Triple Stage Venous Cannula**

14.5 inch (37 cm) overall length

1/2 inch non-vented connector
TRF2937O2A  29/37/37 Fr  
(9.6/12.3/12.3 mm)

1/2 inch acceptance
TRF2937O2  29/37/37 Fr  
(9.6/12.3/12.3 mm)

16 inch (40 cm) overall length

1/2 inch non-vented connector
TRF3646O2A  36/46/46 Fr  
(12.0/15.3/15.3 mm)

1/2 inch acceptance
TRF3646O2  36/46/46 Fr  
(12.0/15.3/15.3 mm)

* As compared to standard venous cannulae, data on file
Venous Cannulae

Triple Stage Venous Cannula (continued)

Thin-Flex Triple Stage Venous Cannula

14.5 inch (37 cm) overall length

1/2 inch non-vented connector
TF293702A  29/37/37 Fr
(9.6/12.3/12.3 mm)

1/2 inch acceptance
TF293702  29/37/37 Fr
(9.6/12.3/12.3 mm)

16 inch (40 cm) overall length

1/2 inch non-vented connector
TF292902A  29/29/29 Fr
(9.6/9.6/9.6 mm)

3/8 inch acceptance
TF292902  29/29/29 Fr
(9.6/9.6/9.6 mm)

1/2 inch acceptance
TF364602  36/46/46 Fr
(12.0/15.3/15.3 mm)
Dual Stage Venous Cannula

- Features patented dual stage drainage baskets designed to provide increased resistance to collapse
- Multiple port tip designed to increase drainage
- Wire-reinforcement helps reduce kinking and twisting
- Optional Thin-Flex dual stage venous cannula with proprietary thin-wall technology designed to maximize flow rates and available space

10 units per case

Trim-Flex Low Profile Dual Stage Cannula

14.5 inch (37 cm) overall length

1/2 inch non-vented connector
TRF2937OA  29/37 Fr (9.6/12.3 mm)

1/2 inch acceptance
TRF2937O  29/37 Fr (9.6/12.3 mm)

16 inch (40 cm) overall length

1/2 inch non-vented connector
TRF3646OA  36/46 Fr (12.0/15.3 mm)

1/2 inch acceptance
TRF3646O  36/46 Fr (12.0/15.3 mm)
Venous Cannulae

**Dual Stage Venous Cannula (continued)**

**Thin-Flex Dual Stage Venous Cannula**

**14.5 inch (37 cm) overall length**

1/2 inch non-vented connector
TF2937OA  29/37 Fr (9.6/12.3 mm)

1/2 inch acceptance
TF2937O  29/37 Fr (9.6/12.3 mm)

**16 inch (40 cm) overall length**

3/8 inch acceptance
TF292901  29/29 Fr (9.6/9.6 mm)

1/2 inch non-vented connector
TF3646OA  36/46 Fr (12.0/15.3 mm)
TF3343OA  33/43 Fr (11.0/14.3 mm)

1/2 inch acceptance
TF3646O  36/46 Fr (12.0/15.3 mm)
TF3343O  33/43 Fr (11.0/14.3 mm)
Dual Stage Venous Cannula (continued)

**Open Lighthouse Tip**

16 inch (40 cm) overall length

1/2 inch non-vented connector
TR3240OA  32/40 Fr (10.6/13.3 mm)

1/2 inch acceptance
TR3240O  32/40 Fr (10.6/13.3 mm)

**Lighthouse Tip**

16 inch (40 cm) overall length

1/2 inch acceptance
TR2838L  28/38 Fr (9.3/12.6 mm)
TR3240L  32/40 Fr (10.6/13.3 mm)
TR3446L  34/46 Fr (11.3/15.3 mm)

**Bullet Tip**

16 inch (40 cm) overall length

1/2 inch acceptance
TR3651B  36/51 Fr (12.0/17.0 mm)
Single Stage Venous Cannula

- One piece wire reinforced cannula
- Proprietary thin-wall design to maximize venous drainage
- Multiple port tip designed to increase drainage
- Thin-Flex venous cannula with proprietary thin-wall technology designed to maximize flow rates

10 units per case

Thin-Flex Straight Open Lighthouse Tip

14 inch (35 cm) overall length

1/4 inch or 3/8 inch acceptance
- TF018L 18 Fr (6.0 mm)
- TF020L 20 Fr (6.7 mm)
- TF022L 22 Fr (7.3 mm)
- TF024L 24 Fr (8.0 mm)

3/8 inch acceptance
- TF026L 26 Fr (8.7 mm)
- TF028L 28 Fr (9.3 mm)

16 inch (40 cm) overall length

3/8 inch acceptance
- TF030L 30 Fr (10.0 mm)
- TF032L 32 Fr (10.7 mm)
- TF034L 34 Fr (11.3 mm)
- TF036L 36 Fr (12.0 mm)
- TF038L 38 Fr (12.6 mm)
- TF040L 40 Fr (13.3 mm)
Single Stage Venous Cannula (continued)

Thin-Flex Right Angled Open Lighthouse Tip

14 inch (35 cm) overall length

1/4 inch or 3/8 inch acceptance
TF024L90  24 Fr (8.0 mm)

3/8 inch acceptance
TF026L90  26 Fr (8.7 mm)
TF028L90  28 Fr (9.3 mm)

16 inch (40 cm) overall length

3/8 inch acceptance
TF030L90  30 Fr (10.0 mm)
TF032L90  32 Fr (10.7 mm)
TF034L90  34 Fr (11.3 mm)
TF036L90  36 Fr (12.0 mm)
TF038L90  38 Fr (12.6 mm)
Single Stage Venous Cannula

- One piece wire reinforced cannula
- Proprietary thin-wall design to maximize venous drainage
- Multiple port tip designed to increase drainage
- Thin-Flex venous cannula with proprietary thin-wall technology designed to maximize flow rates

10 units per case

Thin-Flex 90° Plastic Tip with Side Holes

14 inch (35 cm) overall length

3/8 inch acceptance
- TF018O90 18 Fr (6.0 mm)
- TF020O90 20 Fr (6.7 mm)

15 inch (38 cm) overall length

3/8 inch acceptance
- TF022O90 22 Fr (7.3 mm)
- TF024O90 24 Fr (8.0 mm)
- TF028O90 28 Fr (9.3 mm)
Small Size Dual Stage Venous Cannula

- Thin-Flex venous cannula with proprietary thin-wall technology designed to maximize flow rates
- Patented dual stage drainage baskets designed to provide increased resistance to collapse
- Wire-reinforcement helps reduce kinking and twisting

10 units per case

Thin-Flex Dual Stage Venous Cannula

14 inch (35 cm) overall length

1/4 inch or 3/8 inch acceptance
TF2020O 20/20 Fr (6.7/6.7 mm)
Venous Cannulae

Small Size Single Stage Venous Cannula

- Thin-Flex venous cannula with proprietary thin-wall technology designed to maximize flow rates

10 units per case

Thin-Flex Straight Open Lighthouse Tip

11 inch (28 cm) overall length

1/4 inch acceptance
TF012L 12 Fr (4.0 mm)
TF014L 14 Fr (4.7 mm)
TF016L 16 Fr (5.3 mm)

14 inch (35 cm) overall length

1/4 or 3/8 inch inch acceptance
TF018L 18 Fr (6.0 mm)
Small Size Single Stage Venous Cannula

- Thin-Flex venous cannula with proprietary thin-wall technology designed to maximize flow rates

10 units per case

Thin-Flex 90° Plastic Tip with Side Holes

11 inch (28 cm) overall length

1/4 inch acceptance
TF010O90 10 Fr (3.3 mm)

13 inch (33 cm) overall length

1/4 inch or 3/8 inch acceptance
TF012O90 12 Fr (4.0 mm)
TF014O90 14 Fr (4.7 mm)
TF016O90 16 Fr (5.3 mm)
Femoral Cannulae

Femoral access cannulae may be used in pediatric populations or adult populations based on flow rate requirements and individual patient anatomy. Please consult labeling to determine pressure drop related to flow rates.
Fem-Flex II Femoral Arterial Cannula

Fem-Flex II femoral arterial cannula is designed with thin-wall technology for enhanced flow and flexibility.

- Tapered tip and smooth dilator to cannula transition facilitates insertion
- Polyurethane body with wire reinforcement helps reduce kinking
- Radiopaque striping for visualization during placement
- Accommodates up to 0.038 inch guidewire

1 unit per case

9.5 inch (24 cm) overall length
6.0 inch (15 cm) effective length

3/8 inch vented connector
FEMII016A  16 Fr (5.3 mm)
FEMII018A  18 Fr (6.0 mm)
FEMII020A  20 Fr (6.7 mm)

3/8 inch non-vented connector
FEMII016AS  16 Fr (5.3 mm)
FEMII018AS  18 Fr (6.0 mm)
FEMII020AS  20 Fr (6.7 mm)

5 units per case

Small Size

7.75 inch (19.7 cm) overall length
2.6 inch (6.5 cm) effective length

1/4 inch vented connector
FEMII014AT  14 Fr (4.7 mm)

1/4 inch non-vented connector
FEMII014A  14 Fr (4.7 mm)
Femoral Cannulae

**FemTrak Femoral Venous Cannula**

- Wire-reinforced thin-wall body that helps minimize kinking and maximize flow rates
- Metal ferrule tipped cannula to provide an atraumatic and smooth transition between cannula and introducer
- Soft, flexible tip on the introducer

1 unit per case

---

29 inch (74 cm) overall length
21.6 inch (55 cm) effective length

3/8 inch non-vented connector
FTV020 20 Fr (6.7 mm)

34 inch (86 cm) overall length
26.8 inch (68 cm) effective length

3/8 inch non-vented connector
FTV024 24 Fr (8.0 mm)
**VFEM Femoral Venous Cannula**

- Thin-wall technology enhances venous drainage and provides flexibility for a variety of surgical applications
- Wire-reinforced body to help reduce kinking
- A tapered tip and smooth dilator-to-cannula for ease of insertion
- Extended section of drainage holes designed to maximize venous drainage

1 unit per case

---

29 inch (74 cm) overall length
21.6 inch (55 cm) effective length

3/8 inch non-vented connector

- VFEM018  18 Fr (6.0 mm)
- VFEM020  20 Fr (6.7 mm)
- VFEM022  22 Fr (7.3 mm)

34 inch (86 cm) overall length
26.8 inch (68 cm) effective length

3/8 inch non-vented connector

- VFEM024  24 Fr (8.0 mm)
- VFEM028  28 Fr (9.3 mm)
Fem-Flex II Small Size
Femoral Venous Cannula

Fem-Flex II femoral venous cannula is designed with thin-wall technology for enhanced flow and flexibility.

- Tapered tip and smooth dilator to cannula transition facilitates insertion
- Polyurethane body with wire reinforcement helps reduce kinking
- Radiopaque striping for visualization during placement
- Extended section of drainage holes designed to maximize venous drainage

5 units per case

Small Size

9.5 inch (24 cm) overall length
4.5 inch (11.5 cm) effective length

1/4 inch non-vented connector
FEMII014V  14 Fr (4.7 mm)
**Percutaneous Insertion Kit**

The percutaneous insertion kit is designed to facilitate percutaneous insertion of a femoral cannula. The kit includes the following components:

- Number 11 scalpel
- 18 ga. insertion needle
- 5 mL syringe
- Three dilators: 8 Fr / 12 Fr / 16 Fr
- 0.038 inch guidewire

*5 units per case*

**Arterial Insertion Kit**

| PIKA   | 100 cm guidewire |

**Venous Insertion Kit**

| PIKV   | 210 cm guidewire |
Femoral Cannulae

Femoral Cannulae Accessories

10 units per case

Guidewire Kit

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>ART100</td>
<td>0.038 inch (0.97 mm) guidewire -</td>
</tr>
<tr>
<td></td>
<td>100 cm (39.4 inch) overall length,</td>
</tr>
<tr>
<td></td>
<td>1 ml syringe and</td>
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<td>18 ga. insertion needle</td>
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<tr>
<td>VEN210</td>
<td>0.038 inch (0.97 mm) guidewire -</td>
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<tr>
<td></td>
<td>210 cm (82.7 inch) overall length,</td>
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<td></td>
<td>1 ml syringe and</td>
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<td>18 ga. insertion needle</td>
</tr>
</tbody>
</table>
Retrograde coronary sinus cardioplegia catheters may be used in pediatric or adult populations based on the requirements of individual patient anatomy.
Self-Inflating Retrograde Cardioplegia Catheter with Retractaguard Anti-Retraction Technology

The self-inflating retrograde cardioplegia catheter is designed to maximize patient protection by providing global myocardial protection.

- Balloon self-inflates when cardioplegia is being delivered
- Variety of handle and stylet designs that facilitate insertion for a variety of surgical techniques
- Utilizes proprietary Retractaguard anti-retraction technology, which helps the cannula retain its shape after deployment and prevent balloon slippage

10 units per case

Pre-Shaped Stylet and Handle

10.6 inch (27 cm) overall length

18 mm textured balloon
RC20145 14 Fr (4.7 mm)

12.5 inch (32 cm) overall length

18 mm textured balloon
RC2012 12 Fr (4.0 mm)
RC2014 14 Fr (4.7 mm)
20 mm textured balloon
RC2014LB 14 Fr (4.7 mm)
Self-Inflating Retrograde Cardioplegia Catheter with Retractaguard Anti-Retraction Technology (continued)

Guidewire Stylet

12.5 inch (32 cm) overall length

18 mm textured balloon
RC2012M  12 Fr (4.0 mm)
RC2014M  14 Fr (4.7 mm)
Self-Inflating Retrograde Cardioplegia Catheter

The self-inflating retrograde cardioplegia catheter is designed to maximize patient protection by providing global myocardial protection.

- Balloon self-inflates when cardioplegia is being delivered
- Variety of handle and stylet designs that facilitate insertion for a variety of surgical techniques

Pre-Shaped Stylet and Handle

5 units per case
8 inch (20 cm) overall length

9 mm smooth balloon
RC09 9 Fr (3.0 mm)

10 units per case
10.6 inch (27 cm) overall length

18 mm smooth balloon
RC014 14 Fr (4.7 mm)

14 mm textured balloon
RC014IT 14 Fr (4.7 mm)

18 mm textured balloon
RC014T 14 Fr (4.7 mm)
Guidewire Stylet

5 units per case
8 inch (20 cm) overall length
9 mm smooth balloon
RC09M 9 Fr (3.0 mm)

10 units per case
10.6 inch (27 cm) overall length
18 mm smooth balloon
RC014M 14 Fr (4.7 mm)
Manually Inflating Retrograde Cardioplegia Catheter

The manually inflating retrograde cardioplegia catheter is designed to maximize patient protection by providing global myocardial protection.

- Manual inflation of the balloon allows surgical control over balloon inflation
- Variety of handle and stylet designs that facilitate insertion for a variety of surgical techniques
- Optional Retractaguard anti-retraction technology to prevent balloon slippage

10 units per case

Pre-shaped Stylet and Handle

Pre-shaped Stylet and Handle
12.5 inch (32 cm) overall length

Textured polyurethane balloon and Retractaguard lumen
RC2014MIBB  14 Fr (4.7 mm)

Smooth silicone balloon
RC014MIBB  14 Fr (4.7 mm)
Manually Inflating Retrograde Cardioplegia Catheter (continued)

Guidewire Stylet

12.5 inch (32 cm) overall length

Smooth silicone balloon
PLD014MIBH 14 Fr (4.7 mm)*

*Female luer instead of stopcock

RC014MIB 14 Fr (4.7 mm)
Vent catheters may be used in pediatric or adult populations based on individual patient anatomy.
**Vent Catheter**

10 units per case

**Guidewire Stylet and Silicone Catheter Body**

1/4 inch connector  
15.5 inch (39.4 cm) overall length

E063 20 Fr (6.7 mm)  
6 cm of drainage holes

**Blood Flow Monitoring**

The FLOtector ultrasonic blood flow detector is a battery powered pulsed Doppler ultrasound system designed for the evaluation of blood velocity in vessels.

- A varying audible signal is produced  
- The signal pitch is proportional to blood velocity in the vessel  
- Specifically designed for the evaluation of blood velocity in vessels

**FLOtector Intraoperative Surgical Blood Flow Detector**

1 unit per case  
FLO001 Transceiver

**FLOtector Detector Probes**

4 units per case  
FLO002S 8 Fr (2.7 mm)  
Curved tip
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