Harvesting a New Standard of Care

Knowledge and Experience

Terumo has conducted extensive research on both design and method, two important factors for consistently successful vein harvesting. The Terumo Method and the design of the VirtuoSaph Plus system address all aspects of the vein harvesting procedure – from initial incision to vein removal – to provide an optimal conduit. Each component of the product design has been tested and refined for optimal performance. The Terumo Method was developed with the design in mind by experienced engineers and clinicians to elevate standards for patient safety, conduit quality, and ergonomics.

Continuing Support

Terumo supports its products and the clinicians who use them with a commitment to service before, during and after the evaluation. Comprehensive training is available including advanced techniques and access to a clinical support team with more than 100 years combined vein harvesting experience. Centers of Excellence are also available to bring together clinicians committed in providing Terumo’s endoscopic vein harvesting products and experienced clinicians already successfully using them. The Centers facilitate the learning of techniques and procedures that can improve patient outcomes through case observations, discussions with experienced clinicians, and product demonstrations.

Ordering Information

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Units/Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>VSP550</td>
<td>5</td>
</tr>
<tr>
<td>MCTRC550S</td>
<td>10</td>
</tr>
<tr>
<td>MCENDO550</td>
<td>1</td>
</tr>
<tr>
<td>UES-40</td>
<td>1</td>
</tr>
<tr>
<td>811497</td>
<td>1</td>
</tr>
<tr>
<td>811496</td>
<td>1</td>
</tr>
</tbody>
</table>

*Manufactured by Olympus Corporation, Tokyo, Japan. Available in the United States only.

For more information on tower components and generator compatibility, please contact your local Terumo sales representative or call Customer Service at (888) 758-8000.

www.terumo-cvs.com/vsplus

Cautions


For more information on tower components and generator compatibility, please contact your local Terumo sales representative or call Customer Service at (888) 758-8000.

www.terumo-cvs.com/vsplus

The handoff. Be confident what you’re passing along is of the highest quality.
What do you need to deliver the optimal conduit? Is it knowing that you controlled hemostasis? Limited thermal spread? Achieved atraumatic dissecting and harvesting? Reduced the risk of CO₂ embolism and intraluminal thrombus? There is a device that is ergonomic and user friendly!

The VirtuoSaph® Plus Endoscopic Vessel Harvesting System delivers all of that with a new standard of care. It integrates key design functions with the knowledge and experience that contribute to successful endoscopic vessel harvesting of the saphenous vein for coronary and peripheral artery bypass grafting.

Here’s how the VirtuoSaph Plus System does it...

### Controls hemostasis
- Superior seal and coagulating capability of the V-Cautery
- Precise control of when and where seal or cautery is applied with controlled bilateral integrated spot cautery, activated by the V-Cautery switch

### Limits thermal spread
- The “cutting tip” – tunnel wall grounding, low wattage, and branch tautness – and a controlled distance between the V-Cautery and V-Keeper for concurrent sealing and cutting of branches
- Delivers low targeted energy to the tunnel wall, away from the main conduit

### Reduces risk of CO₂ embolism and intraluminal thrombus
- “Open” system distal insufflation with PTFE V-glide for optimal two-pass dissecting and one-pass harvesting in one activation
- The V-cautery automatically responds to changes in tissue resistance as the branch is first sealed then cut

### Atraumatic dissecting and harvesting
- Atraumatic conical dissector tip allows full visibility of the vein at the incision site
- V-Keeper gently encapsulates the vein to minimize potential damage to it during dissection. It is designed to set up the proper branch tautness and work in concert with the V-Cautery for optimal sealing and cutting.

### Ease of use
- Dissector or Trocar functions independently to minimize the number of connections and steps, such as the first-of-its-kind integrated bipolar cord
- V-Cautery switch offers consistent and reliable spot cautery

### Endoscopic Tower
- In the United States, Terumo provides the Olympus processing unit (CPU), light source, monitor and cart.
- The dual-lumen angiography catheter is inserted into the incision site to improve procedural stability without adding extra steps to the procedure.
- To engage the V-Cautery, one simple coagulate-and-cut mechanism employs targeted low energy. A simple, built-in function is one way switch. The safety design of the transverse motion is a vertical distance between the V-Cautery and V-Keeper that enables consistent branch lengths and tightens the organ and reduces vascular leakage. The V-keeper is designed to prevent branch perforation. The V-Cautery automatically responds to changes in tissue resistance as the branch is first sealed then cut.

### Trocar
- This device is a simple clip-on trocar. The dissector or V-Keeper gently encapsulates the vein to minimize potential damage to it during dissection. It is designed to set up the proper branch tautness, and work in concert with the V-Cautery for optimal sealing and cutting.
- The V-Keeper is designed to set up the proper branch tautness and work in concert with the V-Cautery for optimal sealing and cutting.

### Harvester
- The first-of-its-kind V-keeper gently encapsulates the vein at the incision site
- The cutting triad – tunnel wall grounding, low wattage, and branch tautness – and a controlled distance between the V-Cautery and V-Keeper for concurrent sealing and cutting of branches

### Dissector
- To dissect the saphenous vein and surrounding branches.
- Atraumatic dissecting and harvesting
- Provides space in the tunnel for increased visibility
- Atraumatic conical tip at the tip, where it counts
- Atraumatic conical tip allows concurrent use of the dissector and V-Cautery
- The V-Cautery automatically responds to changes in tissue resistance as the branch is first sealed then cut
- The “cutting triad” – tunnel wall grounding, low wattage, and branch tautness – and a controlled distance between the V-Cautery and V-Keeper for concurrent sealing and cutting of branches

### Harvesting a New Standard of Care
- Standard of care for endoscopic vessel harvesting including the generator, camera processing unit (CPU), light source, monitor and cart.
- “Open” system distal insufflation with PTFE V-glide for optimal two-pass dissecting and one-pass harvesting in one activation
- The VirtuoSaph® Plus Endoscopic Vessel Harvesting System delivers all of that with a new standard of care. It integrates key design functions with the knowledge and experience that contribute to successful endoscopic vessel harvesting of the saphenous vein for coronary and peripheral artery bypass grafting.
The VirtuoSaph® Plus Endoscopic Vessel Harvesting System delivers all of that with a new standard of care. It integrates key design functions with the knowledge and experience that contribute to successful endoscopic vessel harvesting of the saphenous vein for coronary and peripheral artery bypass grafting.

Here’s how the VirtuoSaph Plus System does it...

Provides space in the tunnel for increased visibility
- Distinctively different O.D. at the tip, where it counts.

Controls hemostasis
- Superior sealing and cutting capability of the V-Cutter
- Practice control of when and where spot cautery is applied with a built-in bi-directional spot cautery, activated by the V-cutter switch.

Limits thermal spread
- The “cutting trio” — tunnel wall grounding, branch avoidance, and branch features — is a contrived distance between the V-Cutter and V-lock for simultaneous sealing and cutting of branches.
- Delivers less targeted energy in the tunnel wall, away from the main conduit.

Reduces risk of CO₂ embolism and intra-abdominal thrombus
- “Open” system distal insufflation with non-occlusive trocar1-5
- Minimizes contact and pressure on the vein during dissection.
- Minimum access and pressure on the skin at the incision site.

Atraumatic dissecting and harvesting
- V-keeper for simultaneous sealing and cutting, controlled distance between the V-Cutter and V-lock for optimal sealing and cutting.
- PTFE V-glide surface and flexibility of dissector reduces tissue drag and resistance and improves ease of dissection.
- The V-keeper gently encapsulates the vein to minimize potential damage to it during dissection. It is designed to set up the proper branch length and width in concert with the V-cutter for optimal sealing and cutting.

Trocar
- This device is a simple clip-on trocar. The dissector or harvester accesses the saphenous vein by entering the skin at a collapsed saphenous vein.1
- Requires a collapsed or non-occluded vein.
- Use of open CO₂ insufflation can lead to dramatic reductions in endoscopic visibility. Research has shown that the frequent presence of instable saphenous vein insufflation and endoscopic visibility with a “closed” CO₂ insufflation circuit.2 Two studies showed that CO₂ insufflation was more precise than 10-15% for the length of branch.3 Also, many surgeons suggested to provide early detection and help prevent development of fatal CO₂ embolism.4

Dissector
- The automatic sealing button at the dissector cone allows the clinician to monitor the location of the dissector cone tip in the vein during dissection for consistent and uniform dissection.
- PTTF V-glider surface and flexibility of dissector reduces tissue drag and resistance and improves ease of dissection.
- The V-keeper gently encapsulates the vein to minimize potential damage to it during dissection. It is designed to set up the proper branch length and width in concert with the V-cutter for optimal sealing and cutting.

Harvester
- The V-cutter automatically responds to changes in the efficiency of surgical preparation by reducing the number of passes and improving the efficiency of surgical preparation.
- The V-cputer automatically responds to changes in the efficiency of surgical preparation by reducing the number of passes and improving the efficiency of surgical preparation.

In the United States, Terumo provides the VirtuoSaph® Plus Endoscopic Vessel Harvesting System, the generator, camera processing unit (CPU), light source, monitor and cart.
The VirtuoSaph® Plus Endoscopic Vessel Harvesting System delivers all of that with a new standard of care. It integrates key design functions with the knowledge and experience that contribute to successful endoscopic vessel harvesting of the saphenous vein for coronary and peripheral artery bypass grafting.

Here’s how the VirtuoSaph Plus System does it...

**Controls hemostasis**
- Superior sealing and cutting capability of the V-Cautery
- Practice control of when and where spot cautery is applied with coaxial and bilateral spot cautery, activated by the V-Cautery switch

**Limits thermal spread**
- The "cutting trocar" – tunnel seal grounding, true angulation, and branch features – is a controlled distance between the V-Cautery and V-Lock for simultaneous sealing and cutting of branches
- Delivers low targeted energy at the tunnel, away from the main conduit

**Reduces risk of CO2 embolism and intraluminal thrombus**
- "Open" system distal insufflation with PTFE V-Glide surface
- \( \text{CO}_2 \) delivered at the tip
- The "cutting triad" – tunnel wall grounding, and a non-occlusive trocar1-5
- **May lower the risk of CO\(_2\) embolism**
- **Minimizes the amount of CO\(_2\) needed**
- **Consistently provides uniform dissection**
- **Optimal two-pass dissecting and one-pass harvesting**
- **Avoids branch avulsions and vessel perforations.**
- **Superior sealing and cutting capabilities**
- **Unique wiper that immediately improves visibility**
- **Integrated device minimizes the number of steps and connections for harvesting.**
- **One-handed manipulation of the device for convenience and ease of use.**

**Atraumatic dissecting and harvesting**
- **PTFE V-Glide** surface and flexibility of the dissector provides optimal tautness during transection
- **V-keeper gently encapsulates the vein to minimize potential damage to it during dissection. It is designed to set up the proper branch handles and used in concert with the V-Cautery for optimal sealing and cutting.**
- **V-keeper bilaterally reduces the amount of pressure on the vein during dissection for consistent and uniform dissection.**

**Dissector**
- To disect the saphenous vein and surrounding branches.

**Harvester**
- To degas the trocar, remove the branches in one easy step.

**Trocar**
- This device is a simple clip-on trocar. The diameter of this trocar accesses the saphenous vein by entering the vein without having to remove the trocar. This makes it possible to avoid converting between proximal ends. It allows for more proximal access to the vein for harvest. The trocar has a simple yet effective design that allows it to be used with a collapsed saphenous vein.
VirtuoSaph®
Endoscopic Vessel Harvesting System

Harvesting a New Standard of Care

Knowledge and Experience

Terumo has conducted extensive research on both design and method, two important factors for consistently successful vein harvesting. The Terumo Method and the design of the VirtuoSaph Plus system address all aspects of the vein harvesting procedure — from initial incision to vein removal — to provide an optimal conduit. Each component of the product design has been tested and refined for optimal performance. The Terumo Method was developed with the design in mind by experienced engineers and clinicians to elevate standards for patient safety, conduit quality, and ergonomics.

Continuing Support

Terumo supports its products and the clinicians who use them with a commitment to service before, during and after the evaluation. Comprehensive training is available including advanced techniques and access to a clinical support team with more than 100 years combined vein harvesting experience. Centers of Excellence are also available to bring together clinicians concerned in evaluating Terumo’s endoscopic vein harvesting products and experienced clinicians already successfully using them. The Centers facilitate the learning of techniques and procedures that can improve patient outcomes through case observations, discussions with experienced clinicians, and product demonstrations.

VirtuoSaph® Plus Endoscopic Vessel Harvesting System

Harvesting a New Standard of Care

Disposable Products

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Units/Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>VSP550</td>
<td>5</td>
</tr>
<tr>
<td>MCTRC550S</td>
<td>10</td>
</tr>
<tr>
<td>MCENDO550</td>
<td>1</td>
</tr>
<tr>
<td>UES-40</td>
<td>1</td>
</tr>
</tbody>
</table>

For more information on tower components and generation compatibility, please contact your local Terumo sales representative or call Customer Service at (800) 758-8000.

www.terumo-cvs.com/vsplus

Manufactured by:

TERUMO CARDIOVASCULAR SYSTEMS CORPORATION

125 Blueball Road

Elkton, Maryland

21921 USA

800 521 2818

734 663 4145

734 663 7981 fax

www.terumo-cvs.com

BE CONFIDENT WHAT YOU’RE PASSING ALONG IS OF THE HIGHEST QUALITY.

FOOTNOTES


For more information on tower components and generation compatibility, please contact your local Terumo sales representative or call Customer Service at (800) 758-8000.

www.terumo-cvs.com/vsplus
Knowledge and Experience

Terumo has conducted extensive research on both design and method, two important factors for consistently successful vein harvesting. The Terumo Method and the design of the Virtuosaph Plus system address all aspects of the vein harvesting procedure – from initial incision to vein removal – to provide an optimal conduit. Each component of the product design has been tested and refined for optimal performance. The Terumo Method was developed with the design in mind by experienced engineers and clinicians to elevate standards for patient safety, conduit quality, and ergonomics.

Continuing Support

Terumo supports its products and the clinicians who use them with a commitment to service before, during and after the evaluation. Comprehensive training is available including advanced techniques and access to a clinical support team with more than 100 years combined vein harvesting experience. Centers of Excellence are also available to bring together clinicians interested in evaluating Terumo’s endoscopic vein harvesting products and experienced clinicians already successfully using them. The Centers facilitate the learning of new techniques and procedures that can improve patient outcomes through case observations, discussions with experienced clinicians, and product demonstrations.

Manufactured by:

TERUMO CARDIOVASCULAR SYSTEMS CORPORATION
125 Blueball Road
Elkton, Maryland 21921
USA
800 521 2818
734 663 4145
734 663 7981 fax

Terumo® and VirtuoSaph® are registered trademarks of Terumo Corporation.

For more information on tower components and generator compatibility, please contact your local Terumo sales representative or call Customer Service at (888) 758-8000.

www.terumo-cvs.com/vsplus

VirtuoSaph® Plus
ENDOSCOPIC VESSEL HARVESTING SYSTEM

Harvesting a New Standard of Care

Disposable Products

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Units/Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>VSP550</td>
<td>5</td>
</tr>
<tr>
<td>MCTRC550S</td>
<td>10</td>
</tr>
<tr>
<td>MCENDO550</td>
<td>1</td>
</tr>
<tr>
<td>UES-40</td>
<td>1</td>
</tr>
<tr>
<td>811497</td>
<td>1</td>
</tr>
<tr>
<td>811496</td>
<td>1</td>
</tr>
</tbody>
</table>

*Manufactured by Olympus Corporation, Tokyo, Japan. Available in the United States only.

FOOTNOTES


For more information on tower components and generator compatibility, please contact your local Terumo sales representative or call Customer Service at (888) 758-8000.

www.terumo-cvs.com/vsplus

Knowledge and Experience

Harvesting a New Standard of Care

The handoff. Be confident what you’re passing along is of the highest quality.