

# **Comparison** of iliofemoral venous stents

BD Venovo<sup>™</sup> Venous Stent System vs. Cook Zilver<sup>®</sup> Vena<sup>™</sup> Venous Self-Expanding Stent System





#### **Venovo**<sup>TM</sup>

# Designed for **veins**

The Venovo<sup>™</sup> Venous Stent was designed and developed for the iliofemoral veins in collaboration with clinicians. It offers radial force, crush resistance, and flexibility without compromising on delivery accuracy and is available in the sizes needed for the iliofemoral veins.

# **3x** the Sizes

#### Venovo<sup>™</sup> Venous Stent

- Longer stent lengths up to 160 mm
- Larger stent diameters up to 20 mm
- 80 cm and 120 cm catheter lengths
- Total of 84 codes



#### Zilver<sup>®</sup> Vena<sup>™</sup> Stent

- Stent lengths up to 140 mm
- Stent diameters up to 16 mm
- 80 cm and 120 cm catheter lengths
- Total of 28 codes



# **Delivery** system

The Venovo<sup>™</sup> Venous Stent has a triaxial overthe-wire delivery system designed for precise placement accuracy demonstrating 100% placement accuracy in the VERNACULAR Study.<sup>1</sup>

#### **Triaxial Delivery System**



Venovo<sup>™</sup> Venous Stent

The Zilver<sup>®</sup> Vena<sup>™</sup> Stent has a coaxial pin-and-pull delivery system.

#### Pin-and-Pull Delivery System



Zilver<sup>®</sup> Vena<sup>™</sup> Stent

### Higher radial force

The Venovo<sup>™</sup> Venous Stent was designed with radial force to maximize luminal gain and demonstrated 2 times higher radial resistive force and also showed higher chronic outward force on average than the Zilver<sup>®</sup> Vena<sup>™</sup> Stent.<sup>2</sup>





# More than **2x higher** local compression reisistance

Purpose-built venous stent design with high radial force and compression resistance which demonstrated higher local compression resistance compared to the Zilver<sup>®</sup> Vena<sup>™</sup> Stent.<sup>2</sup>

![](_page_2_Picture_8.jpeg)

Venovo<sup>™</sup> Venous Stent

![](_page_2_Picture_10.jpeg)

Zilver<sup>®</sup> Vena<sup>™</sup> Stent

## More than **2x higher** stent migration resistance

The flared ends on the Venovo<sup>™</sup> Venous Stent are designed to reduce stent migration and maximize wall apposition which demonstrated 2 times higher stent migration resistance than the Zilver<sup>®</sup> Vena<sup>™</sup> Stent.<sup>2</sup>

![](_page_2_Figure_14.jpeg)

#### Venovo<sup>™</sup> Venous Stent System Ordering information

| 120cm Shaft<br>Length       | 80cm Shaft<br>Length | Stent<br>diameter (mm) | Stent length<br>(mm) | Sheath<br>compatibility (F) |
|-----------------------------|----------------------|------------------------|----------------------|-----------------------------|
| VENEL10040                  | VENEM10040           | 10                     | 40                   | 8                           |
| VENEL10060                  | VENEM10060           |                        | 60                   | 8                           |
| VENEL10080                  | VENEM10080           |                        | 80                   | 8                           |
| VENEL10100                  | VENEM10100           |                        | 100                  | 8                           |
| VENEL10120                  | VENEM10120           |                        | 120                  | 8                           |
| VENEL10140                  | VENEM10140           |                        | 140                  | 8                           |
| VENEL10160                  | VENEM10160           |                        | 160                  | 8                           |
| VENEL12040                  | VENEM12040           | 12                     | 40                   | 8                           |
| VENEL12060                  | VENEM12060           |                        | 60                   | 8                           |
| VENEL12080                  | VENEM12080           |                        | 80                   | 8                           |
| VENEL12100                  | VENEM12100           |                        | 100                  | 8                           |
| VENEL12120                  | VENEM12120           |                        | 120                  | 8                           |
| VENEL12140                  | VENEM12140           |                        | 140                  | 8                           |
| VENEL12160                  | VENEM12160           |                        | 160                  | 8                           |
| VENEL14040                  | VENEM14040           | 14                     | 40                   | 9                           |
| VENEL14060                  | VENEM14060           |                        | 60                   | 9                           |
| VENEL14080                  | VENEM14080           |                        | 80                   | 9                           |
| VENEL14100                  | VENEM14100           |                        | 100                  | 9                           |
| VENEL14120                  | VENEM14120           |                        | 120                  | 9                           |
| VENEL14140                  | VENEM14140           |                        | 140                  | 9                           |
| VENEL14160                  | VENEM14160           |                        | 160                  | 9                           |
| VENEL16040                  | VENEM16040           | 16                     | 40                   | 10                          |
| VENEL16060                  | VENEM16060           |                        | 60                   | 10                          |
| VENEL16080                  | VENEM16080           |                        | 80                   | 10                          |
| VENEL16100                  | VENEM16100           |                        | 100                  | 10                          |
| VENEL16120                  | VENEM16120           |                        | 120                  | 10                          |
| VENEL16140                  | VENEM16140           |                        | 140                  | 10                          |
| VENEL16160                  | VENEM16160           |                        | 160                  | 10                          |
| VENEL18040                  | VENEM18040           | 18                     | 40                   | 10                          |
| VENEL18060                  | VENEM18060           |                        | 60                   | 10                          |
| VENEL18080                  | VENEM18080           |                        | 80                   | 10                          |
| VENEL18100                  | VENEM18100           |                        | 100                  | 10                          |
| VENEL18120                  | VENEM18120           |                        | 120                  | 10                          |
| VENEL18140                  | VENEM18140           |                        | 140                  | 10                          |
| VENEL18160                  | VENEM18160           |                        | 160                  | 10                          |
| VENEL20040                  | VENEM20040           | 20                     | 40                   | 10                          |
| VENEL20060                  | VENEM20060           |                        | 60                   | 10                          |
| VENEL20080                  | VENEM20080           |                        | 80                   | 10                          |
| VENEL20100                  | VENEM20100           |                        | 100                  | 10                          |
| VENEL20120                  | VENEM20120           |                        | 120                  | 10                          |
| VENEL20140                  | VENEM20140           |                        | 140                  | 10                          |
| VENEL20160                  | VENEM20160           |                        | 160                  | 10                          |
| 0.035" auidewire compatible |                      |                        |                      | Units per case: 1           |

#### Venovo<sup>™</sup> Venous Stent System

1 The Venovo<sup>™</sup> Venous Stent System was studied in the global VERNACULAR clinical trial, which was a prospective, multi-center, non-randomized, single-arm study of 170 patients. The primary effectiveness endpoint of the study was primary patency (PP) at 12 months post-index procedure. Patients who received a Venovo<sup>™</sup> Venous Stent had a weighted PP rate of 88.3%, demonstrating a statistically significant difference from a literature-derived performance goal (PG) of 74%, with an 81.3% PP rate for subjects with post-thrombotic syndrome and 96.9% PP rate for subjects with non-thrombotic iliac vein lesions. The primary safety endpoint was freedom from major adverse events (MAE) through 30 days post-index procedure. Freedom from MAE was 93.5%, demonstrating a statistically significant difference from a literature-derived PG of 89%. Secondary endpoints included acute technical success and stent fractures. Results demonstrated 100% acute technical success, defined as successful deployment of stent(s) to intended target with adequate lesion coverage as assessed by the Investigator at the time of the index procedure. Starts were evaluated at the 12-month follow-up for fracture analysis. An anteroposterior and lateral x-ray for each evaluated stent were sent to an independent core lab for analysis. 137 subjects' x-rays were analyzed and no stent fractures. Were reported. Missing x-ray analyses were recorded as protocol deviations. VERNACULAR Clinical Study. Data on File. Bard Peripheral Vascular Inc., Tempe, AZ

2 Data on file. Bard Peripheral Vascular Inc. Tempe, AZ. BD Venovo<sup>™</sup> Stent (14 mm x 100 mm, N=6) and Cook Zilver Vena<sup>™</sup> Self-Expanding Stent (14 mm x 100 mm, N=6). Bench data may not be indicative of actual clinical performance. Different test methods may yield different results.

 $\cdot$  Implant radial force was characterized by testing radial resistive force (RRF) and chronic outward force (COF).

A higher radial force indicates the stent exerts more force to keep the vessel open and resists squeezing due to constriction of the vessel.

Mean radial resistive force was 0.126 N/mm and 0.063 N/mm at 1 mm oversizing, respectively. Mean chronic outward force was 0.073 N/mm and 0.042 N/mm at 3 mm oversizing, respectively.

Compression resistance was characterized by evaluating the stent's ability to resist external compression at a single point. Mean implant local compression resistance was 2.8 N and 1.2 N, respectively.

 Migration testing measures the force required for the stent to migrate out of a simulated vessel (silicone tube) at the recommended oversizing. Mean implant migration resistance was 0.110 N and 0.038 N, respectively.

#### Venovo<sup>™</sup> Venous Stent System

Indications for Use: The Venovo<sup>™</sup> Venous Stent System is indicated for the treatment of stenoses and occlusions in the iliac and femoral veins.

**Contraindications:** The Venovo<sup>™</sup> Venous Stent System is contraindicated for use in patients with a known hypersensitivity to nitinol (nickel-titanium) and tantalum, who cannot receive intraprocedural anti-coagulation therapy, or who are judged to have a lesion that prevents complete inflation of a balloon dilatation catheter or proper placement of the stent or the stent delivery system.

Warnings: The Venovo<sup>™</sup> Venous Stent System is supplied sterile and is intended for single use only. Do not resterilize and/or reuse the device. Reuse, resterilization, reprocessing and/or repackaging may create a risk to the patient or user, may lead to infection or compromise the structural integrity and/or essential material and design characteristics of the device, which may lead to device failure, and/or lead to injury, illness, or death of the patient. Reusing this medical device bears the risk of cross-patient contamination as medical devices – particularly those with long and small lumina, joints, and/or crevices between components – are difficult or impossible to clean once body fluids or tissues with potential pyrogenic or microbial contamination have had contact with the medical device for an indeterminable period of time. The residue of biological material can promote the contamination of the device with pyrogens or microorganisms which may lead to infectious complications or death.

Do not use in patients with total venous occlusion that cannot be dilated to allow passage of the guidewire. Do not use the device with contralateral access. Do not use if pouch is opened or damaged. Do not use the device after the "Use By" date specified on the label. Persons with allergic reactions to nitinol (nickel-titanium) alloy and/or tantalum may suffer an allergic response to this implant. Do not expose the delivery system to organic solvents, e.g., alcohol. The stent is not designed for repositioning or recapturing. Stenting across a major branch could cause difficulties during future diagnostic or therapeutic procedures. If a long lesion needs to be stented consider using the longest available stent rather than overlapping stents. If multiple stents are placed in an overlapping fashion, they should be of similar composition (i.e., nitinol). The long-term outcomes following repeat dilatation of endothelialized stents are unknown. The safety and effectivenees of this device for use in the arterial system have not been established.

**Precautions:** The device is intended for use by physicians who have received appropriate training. During system flushing, observe that saline exits at the catheter tip. The delivery system is not designed for use with power injection systems. Recrossing a partially or fully deployed stent with adjunct devices must be performed with caution. Prior to stent deployment, remove slack from the delivery system catheter outside the patient. If excessive force is felt during stent deployment, do not force the delivery system. Remove the delivery system and replace with a new unit. Store in a cool, dark, dry place. Do not attempt to break, damage, or disrupt the stent after placement.

Potential Adverse Events: Allergic/anaphylactic reaction • Amputation • Aneurysm • Arteriovenous fistula • Death related/unrelated to procedure • Dissection • Embolization • Extravasation • Fever • Hemorrhage/bleeding requiring a blood transfusion •Hematoma • Hypotension/hypertension • Incorrect positioning of the stent requiring further stenting or surgery • Intimal injury/dissection • Ischemia/infarction of tissue/organ • Local infection • Malposition (failure to deliver the stent to the intended site) • Open surgical repair • Pain • Pulmonary embolism • Pseudoaneurysm • Renal failure • Respiratory arrest • Restensis • Rupture • Septicemia/bacteremia • Stent Fracture • Stent Migration • Vasospasm • Venous occlusion/thrombosis/restensis

Please consult product labels, package insert and instructions for use for all indications, contraindications, hazards, warnings and precautions.

• These products are to be used by Health Care Professionals only.

BD Switzerland Sarl, Terre Bonne Park – A4, Route De Crassier, 17, 1262 Eysins, Vaud. Switzerland.

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