SmartPort+

with Vortex and Endexo Technologies

The Port Your Patient Deserves.

angiodynamics

UC/VA/BR/204 Rev 03 04/2025

Vortex Technology

Reduce chamber occlusions. Increase nursing efficiency. Reduce overall interventions.

A comparison of conventional vs. Vortex chambered ports shows a clear advantage[1]

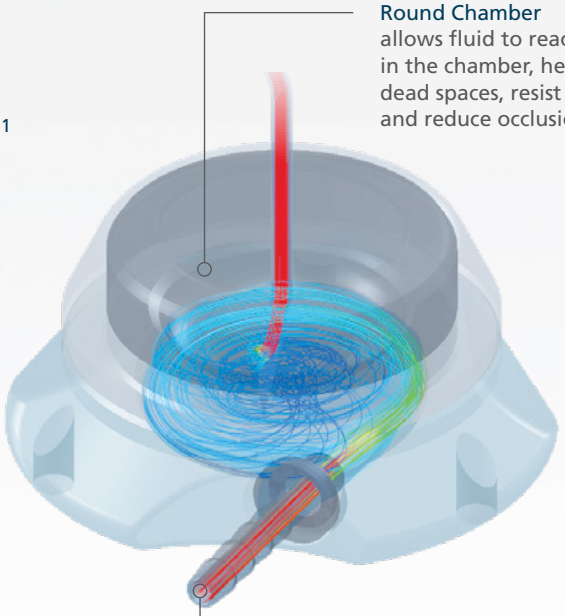
Vortex Technology demonstrated

73% fewer port occlusions[1]

69% fewer secondary interventions[1]

Use of Vortex port technology results in

$1,224 USD average savings per patient over conventional ports[2]



Round Chamber
allows fluid to reach all surfaces in the chamber, helping eliminate dead spaces, resist sludge build-up, and reduce occlusions

Tangential Outlet
helps create a flushing action within the port to hyper cleanse the entire chamber which may lead to a reduced rate of occlusion

BioFlo Catheter with Endexo Technology

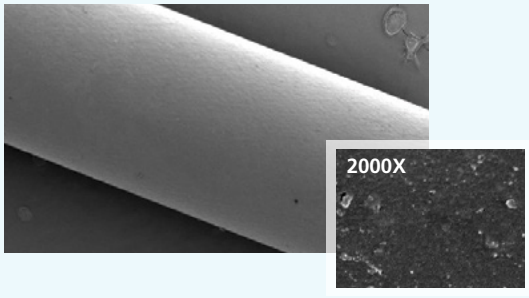
Proven to Reduce Thrombus Accumulation, In Vitro[3]

Endexo Technology is a permanent and non-eluting polymer that is "blended" into the polyurethane from which the catheter is made and is present throughout the entire catheter. Endexo Technology remains present for the life of the catheter and provides a catheter material more resistant to thrombus accumulation[3]

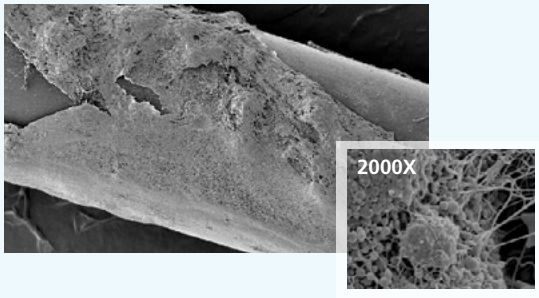
BIOFLO PORT
1.29%
UEDVT RATE
VS
4.5%
BD
X-PORT ISP[4†]

SEM (Scanning Electron Microscopy) Images

BioFlo Port at 15X magnification
Catheter has no visible thrombus, fibrin sheath, or clot.



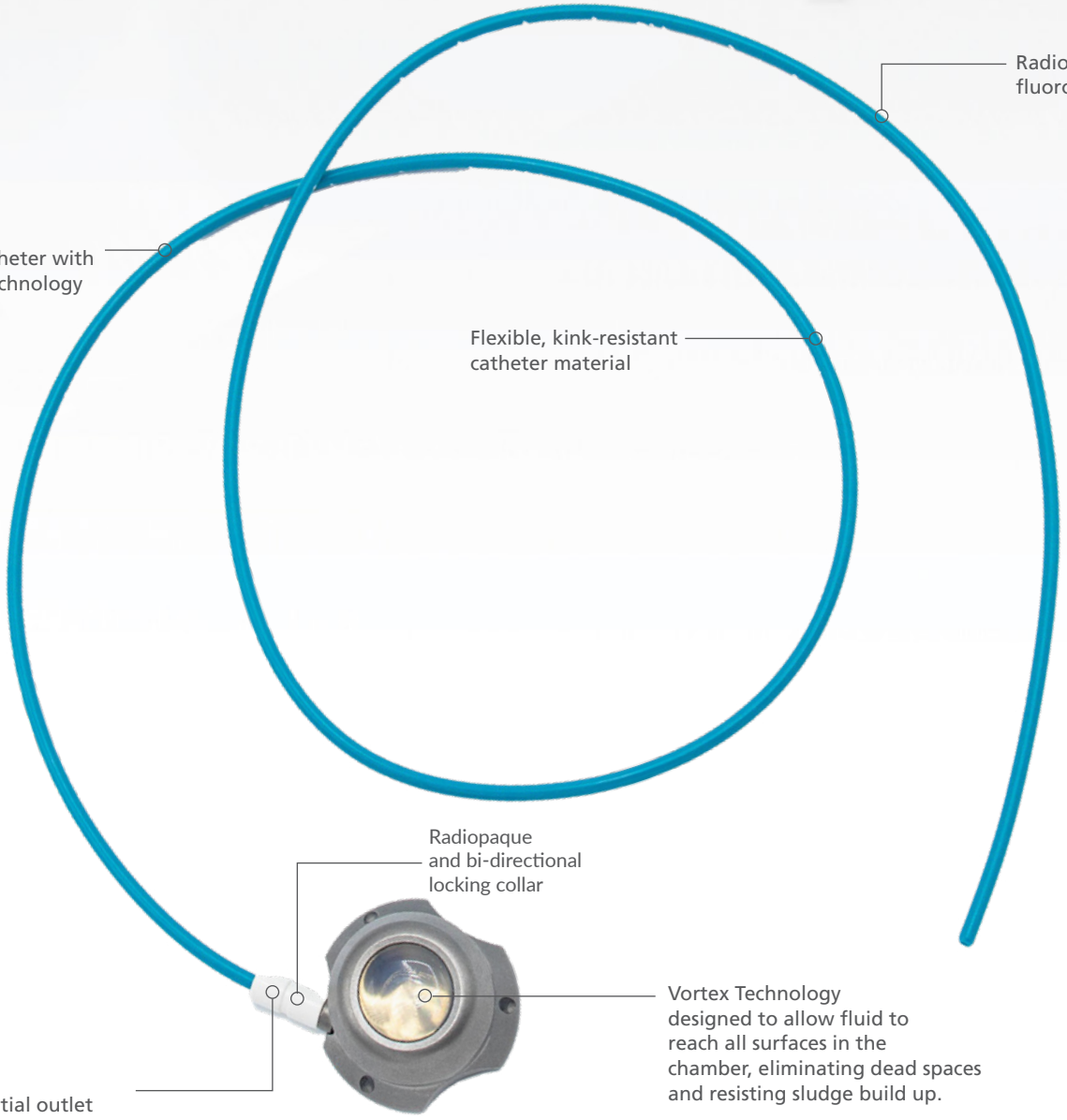
BD PowerPort with ChronoFlex catheter at 15X magnification
Catheter has significant thrombus, fibrin sheath, or clot.



† Results from individual site experience may not be indicative of clinical evidence at other institutions.
Suleman et. al (2019) reported a port-associated DVT rate of 1.29% with the BioFlo port. In a previous study at the same institution with similar sample size and patient population, the port-associated DVT rate was 4.5% (X-port ISP, BD Access Systems Inc, Salt Lake City, US)

Anatomy of the SmartPort+

SmartPort+ – Combining the Two Best in Class Technologies, Vortex Technology and Endexo Technology



SmartPort+ Power Injectable Ports

UPN	CATHETER SIZE	CATHETER MATERIAL	SUTURE HOLE
SINGLE LUMEN STANDARD TITANIUM PORT			
H787CT50STBANFVI0	5FR	ATTACHED BIOFLO	NON-FILLED
H787CT50STBAVI0	5FR	ATTACHED BIOFLO	FILLED
H787CT50STBDNFVI0	5FR	DETACHED BIOFLO	NON-FILLED
H787CT50STBDVI0	5FR	DETACHED BIOFLO	FILLED
H787CT60STBANFVI0	6FR	ATTACHED BIOFLO	NON-FILLED
H787CT60STBAVI0	6FR	ATTACHED BIOFLO	FILLED
H787CT60STBDNFVI0	6FR	DETACHED BIOFLO	NON-FILLED
H787CT60STBDVI0	6FR	DETACHED BIOFLO	FILLED
H787CT80STBANFVI0	8FR	ATTACHED BIOFLO	NON-FILLED
H787CT80STBAVI0	8FR	ATTACHED BIOFLO	FILLED
H787CT80STBDNFVI0	8FR	DETACHED BIOFLO	NON-FILLED
H787CT80STBDVI0	8FR	DETACHED BIOFLO	FILLED
SINGLE LUMEN MINI TITANIUM PORT			
H787CT50PTBANFVI0	5FR	ATTACHED BIOFLO	NON-FILLED
H787CT50PTBAVI0	5FR	ATTACHED BIOFLO	FILLED
H787CT50PTBDNFVI0	5FR	DETACHED BIOFLO	NON-FILLED
H787CT50PTBDVI0	5FR	DETACHED BIOFLO	FILLED
H787CT60PTBANFVI0	6FR	ATTACHED BIOFLO	NON-FILLED
H787CT60PTBAVI0	6FR	ATTACHED BIOFLO	FILLED
H787CT60PTBDNFVI0	6FR	DETACHED BIOFLO	NON-FILLED
H787CT60PTBDVI0	6FR	DETACHED BIOFLO	FILLED

UPN	CATHETER SIZE	CATHETER MATERIAL	SUTURE HOLE
SINGLE LUMEN LOW PROFILE TITANIUM PORT			
H787CT50LTBANFVI0	5FR	ATTACHED BIOFLO	NON-FILLED
H787CT50LTBAVI0	5FR	ATTACHED BIOFLO	FILLED
H787CT50LTBDNFVI0	5FR	DETACHED BIOFLO	NON-FILLED
H787CT50LTBDVI0	5FR	DETACHED BIOFLO	FILLED
H787CT60LTBANFVI0	6FR	ATTACHED BIOFLO	NON-FILLED
H787CT60LTBAVI0	6FR	ATTACHED BIOFLO	FILLED
H787CT60LTBDNFVI0	6FR	DETACHED BIOFLO	NON-FILLED
H787CT60LTBDVI0	6FR	DETACHED BIOFLO	FILLED
H787CT80LTBANFVI0	8FR	ATTACHED BIOFLO	NON-FILLED
H787CT80LTBAVI0	8FR	ATTACHED BIOFLO	FILLED
H787CT80LTBDNFVI0	8FR	DETACHED BIOFLO	NON-FILLED
H787CT80LTBDVI0	8FR	DETACHED BIOFLO	FILLED
SINGLE LUMEN PLASTIC PORT			
H787CT50LPBANFVI0	5FR	ATTACHED BIOFLO	NON-FILLED
H787CT50LPBAVI0	5FR	ATTACHED BIOFLO	FILLED
H787CT50LPBDNFVI0	5FR	DETACHED BIOFLO	NON-FILLED
H787CT50LPBDVI0	5FR	DETACHED BIOFLO	FILLED
H787CT60LPBANFVI0	6FR	ATTACHED BIOFLO	NON-FILLED
H787CT60LPBAVI0	6FR	ATTACHED BIOFLO	FILLED
H787CT60LPBDNFVI0	6FR	DETACHED BIOFLO	NON-FILLED
H787CT60LPBDVI0	6FR	DETACHED BIOFLO	FILLED
H787CT80LPBANFVI0	8FR	ATTACHED BIOFLO	NON-FILLED
H787CT80LPBAVI0	8FR	ATTACHED BIOFLO	FILLED
H787CT80LPBDNFVI0	8FR	DETACHED BIOFLO	NON-FILLED
H787CT80LPBDVI0	8FR	DETACHED BIOFLO	FILLED

SMARTPORT VALVED INTRODUCER CONFIGURATIONS

Catheter French	Introducer Size
5F	6F
6F	6F
8F	8F

KIT COMPONENTS

Port Body
(1) Locking Collar
Single Lumen Catheter
18G Introducer Needle
0.038x 50cm J-tipped Guidewire
Peelable Sheath Introducer
(Valved or Non-Valved)
Tunneler
Plastic Blunt Needle
(1) 10 mL Luer Lock Syringe
(1) 10 mL Slip Lock Syringe
(1) 22G straight huber needle
(1) 22G 90 degree huber needle
(1) Vein Pick

RISK INFORMATION

INDICATIONS FOR USE

The ports are indicated for patients who require long-term access to the central venous system for blood specimen withdrawal and administration of fluids including but not limited to hydration fluids, chemotherapy, analgesics, nutritional therapy and blood products, as well as the administration and adequate removal of nuclear medicine. When used with power injectable needles, the ports are indicated for power injection of contrast media. For power injection of contrast media, the maximum recommended infusion rate is 5 mL/s with 19G or 20G non-coring power injectable needles or 2 mL/s with a 22G non-coring power injectable needle.

Needle Size (G), non-coring power injectable	Catheter Size (F)	Maximum Recommended Flow Rate Setting (mL/s)	Maximum Recommended Pressure Setting (psi)
19/20	5, 6, and 8	5	300
22	5, 6, and 8	2	300

CONTRAINDICATIONS

- Catheter insertion in the subclavian vein medial to the border of the first rib, an area which is associated with higher rates for pinch-off.[5]
- Presence of infection, bacteremia, or septicemia.
- Past irradiation of prospective insertion site.
- Previous episodes of venous thrombosis or vascular surgical procedures at the prospective placement site.
- Local tissue factors to prevent proper device stabilization and/or access.
- Hypercoagulopathy unless considerations are made to place the patient on anticoagulation therapy.
- Presence or suspicion of allergic reaction to materials contained in this device.
- Anatomy is insufficient to accommodate size of the port or the catheter.
- Demonstrated intolerance for an implanted device.

Refer to Directions for Use and/or User Manual provided with the product for complete Instructions, Warnings, Precautions, Possible Adverse Effects and Contraindications prior to use of the product.

Rx ONLY or CAUTION: Federal law (USA) restricts this device to sale by or on the order of a physician.

REFERENCES

1. Stevens, Barbara, et al. "A Randomized, Prospective Trial of Conventional Vascular Ports vs. the Vortex 'Clear-Flow' Reservoir Port in Adult Oncology Patients." Journal of Vascular Access Devices, vol. 5, no. 2, 2000, pp. 37–40.
2. Third party verification by Pinnacle Healthcare Management.
3. The reduction in thrombus accumulation (based on platelet count) is supported by acute in-vitro testing. Pre-clinical in-vitro evaluations do not necessarily predict clinical performance with respect to thrombus formation. Data on file.
4. Suleman A, Jarvis V, Hadziomerovic A, et al., Implanted vascular access device related deep vein thrombosis in oncology patients: A prospective cohort study, Thrombosis Research, Vol 177, 2019; P117-121
5. Hinke, D.H.; Zandt-Stastny, D.A.; Goodman, L.R.' et al. Pinch-off Syndrome: A Complication of Implantable Subclavian Venous Access Devices. Radiology 177: 353-356, 1990.

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