



Atrial Septal Defect (ASD) Occluder



Patent Ductus Arteriosus (PDA) Occluder



Ventricular Septal Defect (VSD) Occluder

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Ventricular Septal Defect (VSD) Occluder

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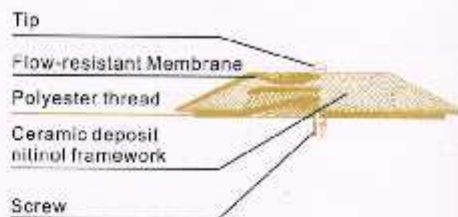




### ASD Device

Atrial Septal Defect (ASD) Occluder

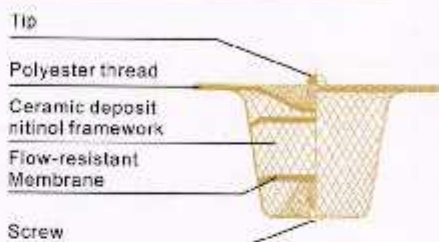
Model: XJFST



### PDA Device

Patent Ductus Arteriosus (PDA) Occluder

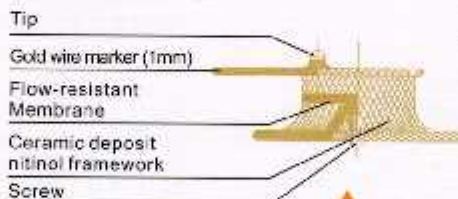
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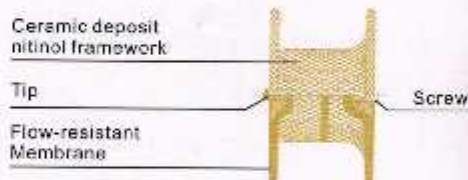
### VSD Device

Ventricular Septal Defect (VSD) Occluder

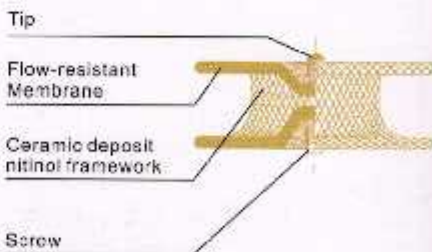
Model: XJFVMT & XJFVJT



Asymmetrical VSD



Symmetrical VSD



## Flow resistant ePTFE membrane with instant sealing effect

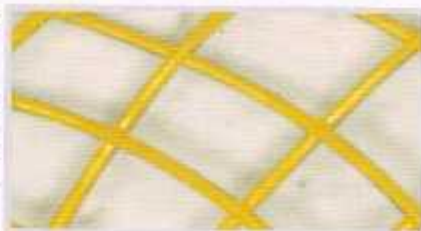
PET flow blocker



### Material: Polyester fiber

**Pitfalls:** PET (Dacron) is a fibrous material with large pore size. Therefore instant sealing cannot be achieved, if there is a pressure gradient. Blood clotting leads to sealing over time, but long term residual shunts may persist.

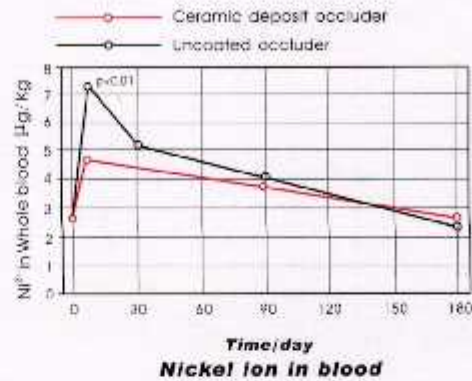
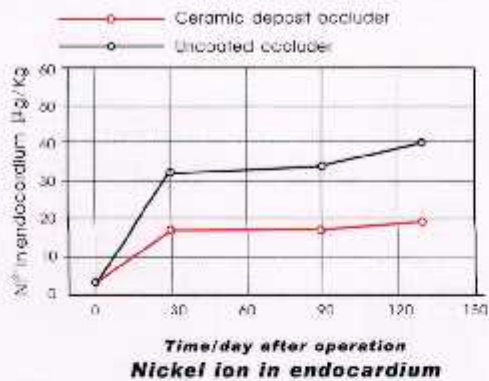
Flow-resistant Membrane of LEFETECH



### Material: ePTFE

**Advantages:** The pore size of the ePTFE membrane is 10 micron. It blocks the blood flow instantly, prevents hemolysis and eliminates residual shunts. ePTFE is used in second generation vascular grafts eliminating the need for pre-clotting, a procedure often required

## Nickel Ion Release



Thicker fibrous tissue with increased neo-vascularization on the Cera occluder surface two months post implant. Fibrocytes aligning orderly with mono-layer endotheliocytes on the ceramic surface of the metal parts of the Cera occluder.

Right atrial frame of a CERA occluder including occluder tip completely covered with neo-endocardial tissue 4 months post implant.

- ▶ The Nitinol alloy framework of the Cera occluder line is treated with proprietary advanced heating processes.

### Advantages:

- a. Better superelastic performance compared to traditional Nitinol alloys with black oxidized surfaces.
- b. Improved shape memory

- ▶ All metal parts (framework, screw and tip) are coated with nano-structured ceramic layers.

### Advantages:

- a. Efficiently reduced the Nickel ion ( $\text{Ni}^{2+}$ ) release into the blood stream and the endocardium
- b. Reduced thrombus formation on the implant surface
- c. Faster and better ingrowth of endothelial cells

- ▶ The flow blocking ePTFE membrane used for PDA and VSD occluders leads to immediate sealing with no residual shunt.

### Advantages:

- a. Reduced hemolysis
- b. Reduced thrombus formation



Ventricular Septal Defect (VSD) Occluder

Product specifications of the Cera™ ASD Occluder

Unmarked unit: mm

Occluder specification	Left disc diameter (mm)	Right disc diameter (mm)	Waist diameter (mm)	Waist length (mm)	Recommended sheath size
ASD-06	18	14	6	4	SFA7F-8F
ASD-08	20	16	8	4	SFA7F-8F
ASD-10	22	18	10	4	SFA7F-8F
ASD-12	26	22	12	4	SFA8F-9F
ASD-14	28	24	14	4	SFA9F-10F
ASD-16	30	26	16	4	SFA9F-10F
ASD-18	32	28	18	4	SFA9F-10F
ASD-20	34	30	20	4	SFA10F-12F
ASD-22	36	32	22	4	SFA10F-12F
ASD-24	38	34	24	4	SFA12F
ASD-26	40	36	26	4	SFA12F
ASD-28	42	38	28	4	SFA12F
ASD-30	44	40	30	4	SFA12F-14F
ASD-32	46	42	32	4	SFA12F-14F
ASD-34	50	44	34	4	SFA14F
ASD-36	52	46	36	4	SFA14F
ASD-38	54	48	38	4	SFA14F
ASD-40	56	50	40	4	SFA14F
ASD-42	58	52	42	4	SFA14F
MF-1818	18	18	-	3	SFA8F-9F
MF-2518	18	25	-	3	SFA8F-9F
MF-2025	25	25	-	3	SFA8F-9F
MF-3030	30	30	-	3	SFA9F-10F
MF-3525	25	35	-	3	SFA9F-10F
MF-3535	35	35	-	3	SFA9F-10F
MF-4040	40	40	-	3	SFA9F-10F
MF-O-1818	18	18	-	3	SFA8F-9F
MF-O-2518	18	25	-	3	SFA8F-9F
MF-O-2525	25	25	-	3	SFA8F-9F
MF-O-3030	30	30	-	3	SFA9F-10F
MF-O-3525	25	35	-	3	SFA9F-10F
MF-O-3535	35	35	-	3	SFA9F-10F
MF-O-4040	40	40	-	3	SFA9F-10F
ASD-O-06	18	14	6	4	SFA7F-8F
ASD-O-08	20	16	8	4	SFA7F-8F
ASD-O-10	22	18	10	4	SFA7F-8F
ASD-O-12	26	22	12	4	SFA8F-9F
ASD-O-14	28	24	14	4	SFA9F-10F
ASD-O-16	30	26	16	4	SFA9F-10F
ASD-O-18	32	28	18	4	SFA9F-10F
ASD-O-20	34	30	20	4	SFA10F-12F
ASD-O-22	36	32	22	4	SFA10F-12F
ASD-O-24	38	34	24	4	SFA12F
ASD-O-26	40	36	26	4	SFA12F
ASD-O-28	42	38	28	4	SFA12F
ASD-O-30	44	40	30	4	SFA12F-14F
ASD-O-32	46	42	32	4	SFA12F-14F
ASD-O-34	50	44	34	4	SFA14F
ASD-O-36	52	46	36	4	SFA14F
ASD-O-38	54	48	38	4	SFA14F
ASD-O-40	56	50	40	4	SFA14F
ASD-O-42	58	52	42	4	SFA14F

Product specifications of the Cera™ VSD Occluder

Unmarked unit: mm

Occluder specification	Waist Diameter (mm)	Right Disc Diameter (mm)	Left Disc Diameter (mm)	Waist length (mm)	Recommended introducer specification
<b>Muscular VSD Occluder</b>					
LT-VSD-MU-04	4	10	10	7	SFP5F-6F
LT-VSD-MU-05	5	11	11		SFP5F-6F
LT-VSD-MU-06	6	12	12		SFP5F-7F
LT-VSD-MU-07	7	13	13		SFP6F-7F
LT-VSD-MU-08	8	14	14		SFP7F-8F
LT-VSD-MU-10	10	16	16		SFP7F-8F
LT-VSD-MU-12	12	18	18		SFP8F-10F
LT-VSD-MU-14	14	20	20		SFP8F-10F
LT-VSD-MU-16	16	22	22		SFP9F-10F
LT-VSD-MU-18	18	24	24		SFP10F-12F
LT-VSD-MU-20	20	26	26		SFP10F-12F
LT-VSD-MU-22	22	28	28		SFP12F
LT-VSD-MU-24	24	30	30	SFP12F	
<b>Membranous VSD Occluder (Symmetric)</b>					
LT-VSD-Sym-04	4	8	8	3	SFP5F-6F
LT-VSD-Sym-05	5	9	9		SFP5F-6F
LT-VSD-Sym-06	6	10	10		SFP6F-7F
LT-VSD-Sym-07	7	11	11		SFP6F-7F
LT-VSD-Sym-08	8	12	12		SFP7F-8F
LT-VSD-Sym-10	10	14	14		SFP7F-8F
LT-VSD-Sym-12	12	16	16		SFP8F-10F
LT-VSD-Sym-14	14	18	18		SFP8F-10F
LT-VSD-Sym-16	16	21	21		SFP9F-10F
LT-VSD-Sym-18	18	23	23		SFP10F-12F
LT-VSD-Sym-20	20	25	25		SFP10F-12F
LT-VSD-Sym-22	22	27	27		SFP12F
LT-VSD-Sym-24	24	29	29	SFP12F	

Occluder specification	Waist Diameter (mm)	Right Disc Diameter (mm)	Left Disc Diameter (mm)	Waist length (mm)	Recommended introducer specification
<b>Membranous VSD Occluder (Asymmetric)</b>					
LT-VSD-Asym-04	4	9	11.6	3	SFP5F-6F
LT-VSD-Asym-05	5	10	12.6		SFP5F-6F
LT-VSD-Asym-06	6	11	13.6		SFP6F-7F
LT-VSD-Asym-07	7	12	14.6		SFP6F-7F
LT-VSD-Asym-08	8	13	15.6		SFP7F-8F
LT-VSD-Asym-10	10	15	17.6		SFP7F-8F
LT-VSD-Asym-12	12	17	19.6		SFP9F-10F
LT-VSD-Asym-14	14	19	21.6		SFP9F-10F
LT-VSD-Asym-16	16	21	23.6		SFP9F-10F
LT-VSD-Asym-18	18	23	25.6		SFP10F-12F
LT-VSD-Asym-20	20	25	27.6		SFP10F-12F
LT-VSD-Asym-22	22	27	29.6		SFP12F
LT-VSD-Asym-24	24	29	31.6	SFP12F	
<b>Membranous VSD Occluder (Eccentric)</b>					
LT-VSD-Ecc-04	4	10	10	3	SFP5F-6F
LT-VSD-Ecc-05	5	11	11		SFP5F-6F
LT-VSD-Ecc-06	6	12	12		SFP6F-7F
LT-VSD-Ecc-07	7	13	13		SFP6F-7F
LT-VSD-Ecc-08	8	14	14		SFP7F-8F
LT-VSD-Ecc-10	10	16	16		SFP7F-8F
LT-VSD-Ecc-12	12	18	18		SFP8F-10F
LT-VSD-Ecc-14	14	20	20		SFP8F-10F
LT-VSD-Ecc-16	16	22	22		SFP9F-10F
LT-VSD-Ecc-18	18	24	24		SFP10F-12F
LT-VSD-Ecc-20	20	26	26		SFP10F-12F
LT-VSD-Ecc-22	22	28	28		SFP12F
LT-VSD-Ecc-24	24	30	30	SFP12F	

Product specifications of the Cera™ PDA Occluder

Unmarked unit: mm

Occluder specification	Retention skirt (mm)	Distal diameter (mm)	Proximal diameter (mm)	Waist length (mm)	Recommended introducer
LT-PDA-0408	10	6	4	7	SFP5F-6F
LT-PDA-0608	12	8	6	7	SFP6F-7F
LT-PDA-0810	14	10	8	7	SFP7F
LT-PDA-1012	16	12	10	7	SFP8F
LT-PDA-1214	20	14	12	7	SFP8F-9F
LT-PDA-1416	22	16	14	8	SFP8F-9F
LT-PDA-1618	24	18	16	8	SFP9F-10F
LT-PDA-1820	26	20	18	9	SFP10F-12F
LT-PDA-2022	28	22	20	9	SFP12F
LT-PDA-2224	30	24	22	10	SFP12F-14F

Occluder specification	Retention skirt (mm)	Distal diameter (mm)	Proximal diameter (mm)	Waist length (mm)	Recommended introducer
LT-PDA-O-0408	10	6	4	7	SFP5F-6F
LT-PDA-O-0608	12	8	6	7	SFP5F-7F
LT-PDA-O-0810	14	10	8	7	SFP7F
LT-PDA-O-1012	16	12	10	7	SFP8F
LT-PDA-O-1214	20	14	12	7	SFP8F-9F
LT-PDA-O-1416	22	16	14	8	SFP8F-9F
LT-PDA-O-1618	24	18	16	8	SFP9F-10F
LT-PDA-O-1820	26	20	18	9	SFP10F-12F
LT-PDA-O-2022	28	22	20	9	SFP12F
LT-PDA-O-2224	30	24	22	10	SFP12F-14F

Notes:

1. The products may be manufactured according to the operator's specific requirements.
2. Check with Lifetech Scientific customer service or your sales representative for products approved for your local market.