



**MEMO 4D™**

MITRAL  
ANNULOPLASTY RING

Reshaping  
mitral repair



 **CORCYM**  
WE TAKE LIFE TO HEART

## MEMO 4D™

Designed to support  
a comprehensive range  
of techniques<sup>1</sup>



## RESHAPING MITRAL REPAIR

**ReChord:  
CHORDAL GUIDE SYSTEM**  
Standardizes neochordae  
implantation<sup>2,3</sup>



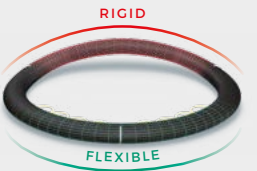
**PROVEN  
ANNULAR DYNAMICS**  
Truly physiological  
three-dimensional motion  
to ensure natural behavior<sup>4,5,6</sup>



**INNOVATION  
STARTS AT THE CORE**  
Unique Nitinol Cell Structure



**STABILITY  
AND SUPPORT**  
Anterior rigidity and  
Posterior flexibility  
to support systolic function<sup>5,7</sup>



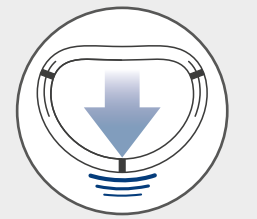
**EXCLUSIVE GRADUAL  
SADDLE SHAPING**  
Designed to accommodate the  
physiological geometry  
in enlarged annuli<sup>8</sup>



42

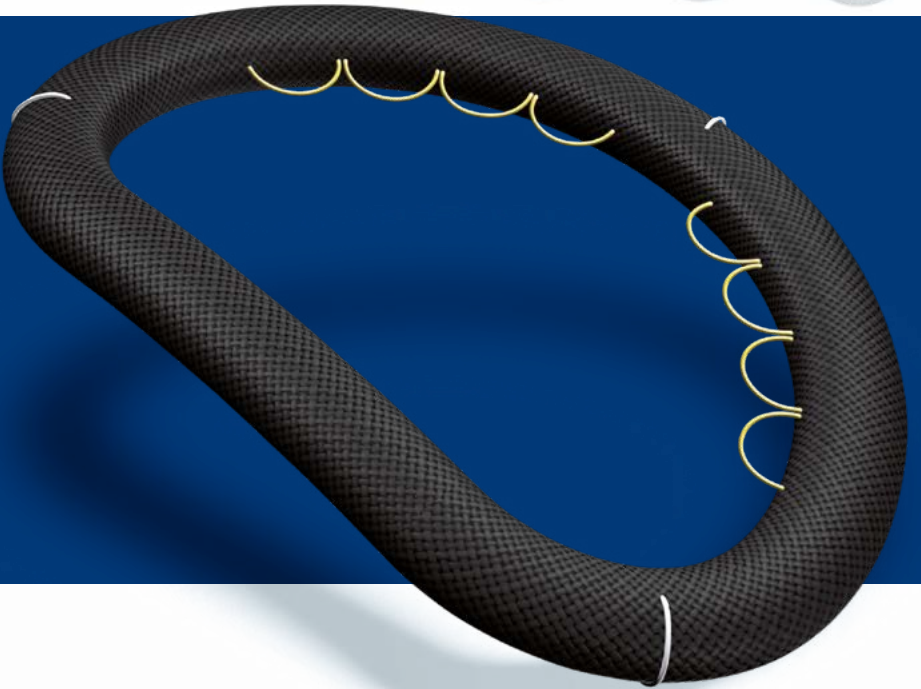
**UNIQUE RANGE  
OF SIZES**  
Up to size 42 mm  
to treat large annuli

**PROGRESSIVE INCREASE OF THE  
ANTEROPosterior DIAMETER**  
Helps accommodate excess leaflet tissue and  
reduces the risk of Systolic Anterior Motion (SAM)<sup>9</sup>



# Unique Range of Sizes

A COMPLETE RANGE OF SIZES TO MEET A SIZE-SPECIFIC REPAIR PRINCIPLE. THE 42 MM SIZE IS UNIQUE TO MEMO 4D.\*

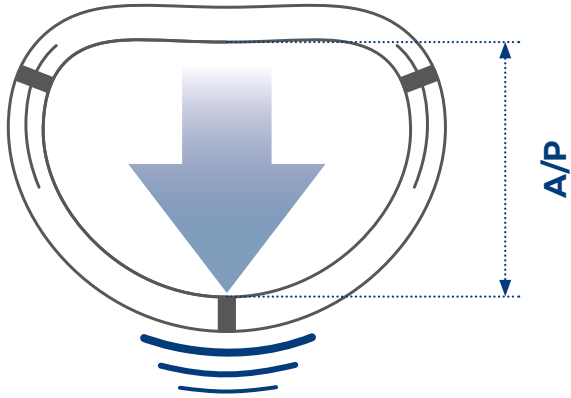


Large sizes are preferred by Surgeons in facilitating repair in the presence of severe degenerative MR like Barlow's disease or big annuli.<sup>9</sup>

\* among semi-rigid annuloplasty rings  
§ Made to order

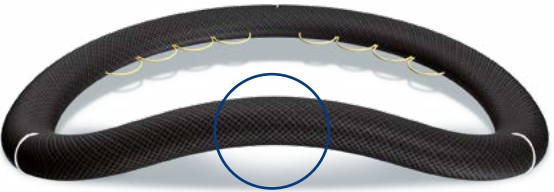
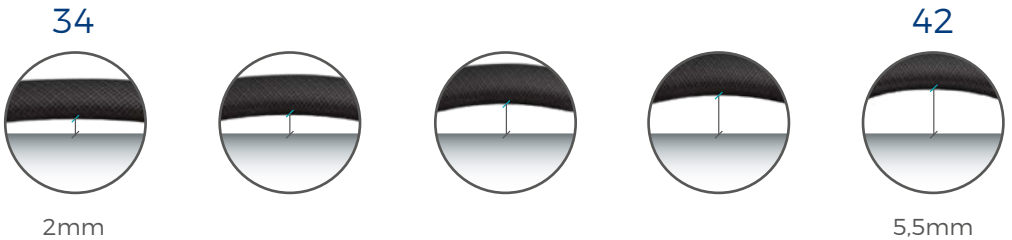
# Progressive Increase of the Anteroposterior Diameter

THE PROGRESSIVE INCREASE OF THE ANTEROPOSTERIOR DIAMETER OF MEMO 4D, from size 34 to size 42, helps accommodate excess leaflet tissue, while reducing the risk of systolic anterior motion (SAM).<sup>9</sup>



# Exclusive Gradual Saddle Shaping

THE ANTERIOR SADDLE SHAPE IS GRADUALLY ENHANCED FROM SIZE 34 TO SIZE 42. Memo 4D is designed to restore the physiological geometry in enlarged annuli that have lost their three-dimensional profile.<sup>8</sup>

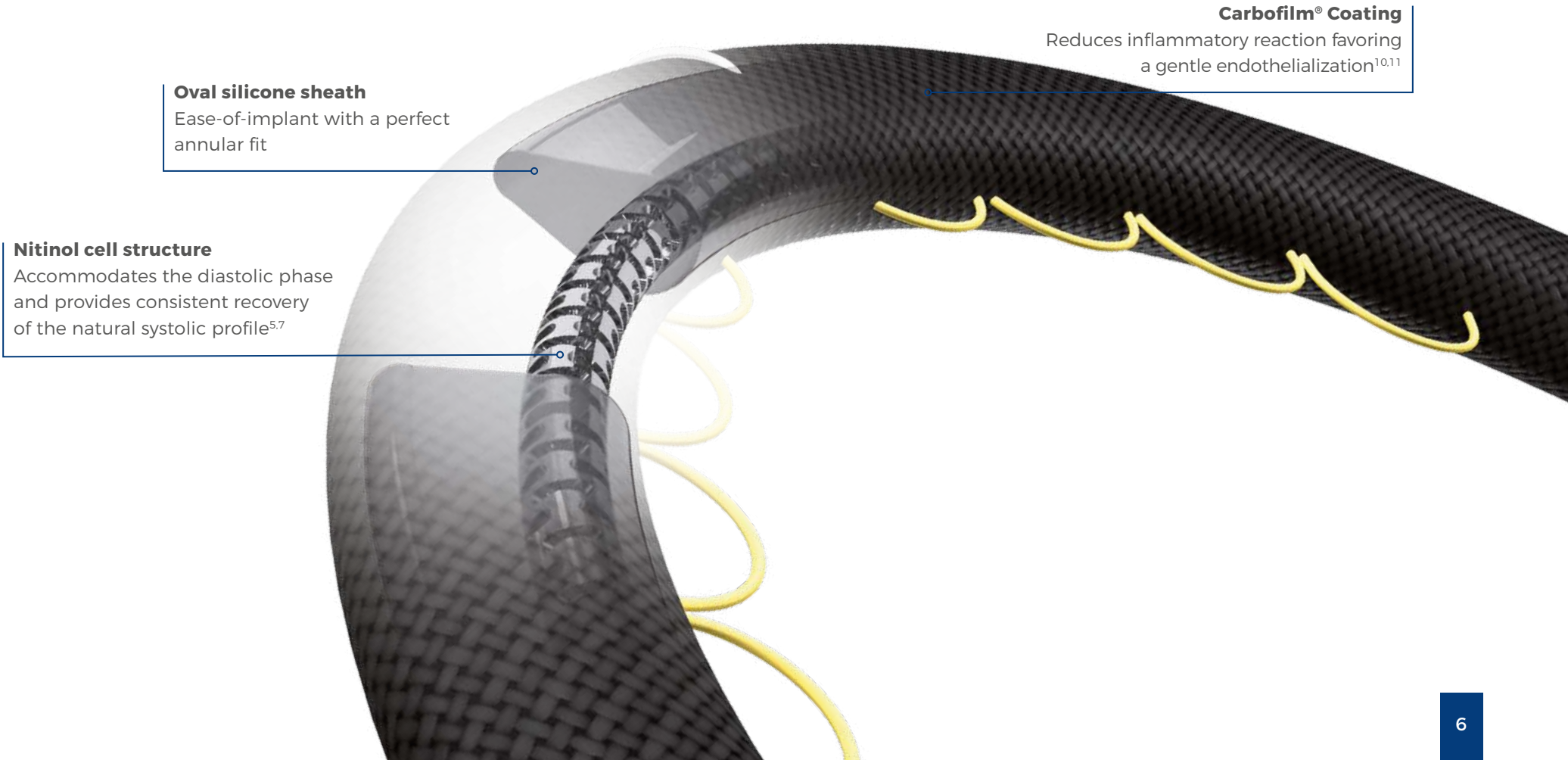


The anterior saddle shape is gradually enhanced from size 34 to size 42. Memo 4D is designed to restore the physiological geometry in enlarged annuli that have lost their three-dimensional profile.<sup>8</sup>



# Three layer structure

**THE RIGHT BALANCE OF RIGIDITY AND FLEXIBILITY TO COVER A COMPREHENSIVE RANGE OF MITRAL VALVE REPAIR NEEDS.<sup>1</sup>**  
MEMO 4D, semi-rigid annuloplasty ring, provides the stability and support to the annulus while providing dynamic flexibility of movement.<sup>1</sup>



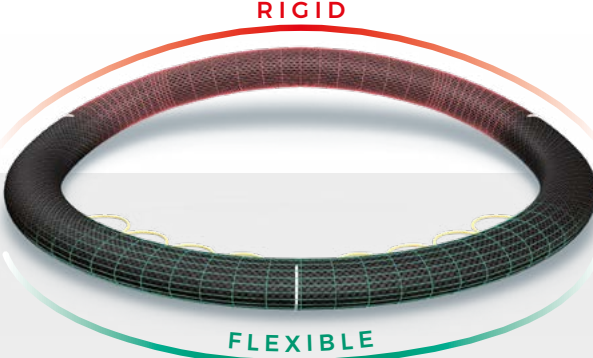
# Stability and Support

**THE RIGHT BALANCE OF RIGIDITY AND FLEXIBILITY TO COVER A COMPREHENSIVE RANGE OF MITRAL VALVE REPAIR NEEDS.<sup>1</sup>**  
MEMO 4D, semi-rigid annuloplasty ring, provides the stability and support to the annulus while providing dynamic flexibility of movement.<sup>1</sup>

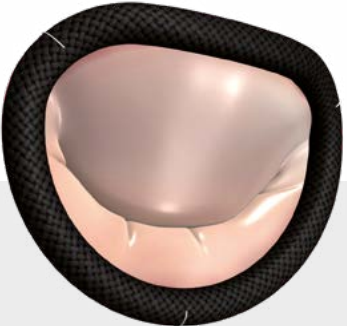
**THE NATURAL ANNULAR DYNAMICS OF THE MEMO PLATFORM IS CLINICALLY PROVEN AND ACKNOWLEDGED.<sup>5,7</sup>**

# Optimized Hemodynamics<sup>5,6,7</sup>

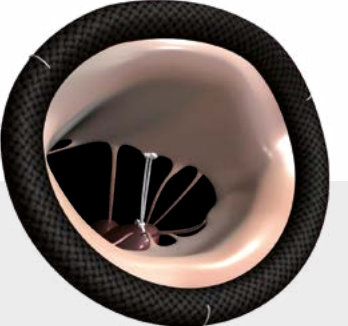
**TRULY PHYSIOLOGICAL THREE-DIMENSIONAL MOTION**  
of the mitral annulus with a natural anterior/posterior to lateral/lateral relationship to maximize blood flow,<sup>7</sup> even five years after implantation.<sup>5,13</sup>



*“MEMO 3D preserves annular dynamics and folding dynamics.”<sup>12</sup>*  
*“MEMO 3D allows for contraction during systole, an increased depth of coaptation of the leaflets and an improvement in annular orifice area during diastole.”<sup>10</sup>*



**Systolic remodelling**  
Maximized Coaptation and Reduced Stress<sup>6,7,10</sup>

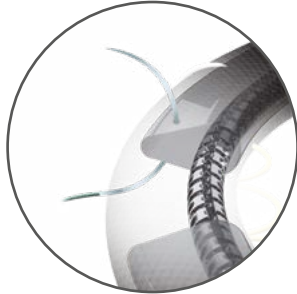


**Diastolic dynamics**  
Maximized Hemodynamics<sup>12</sup>

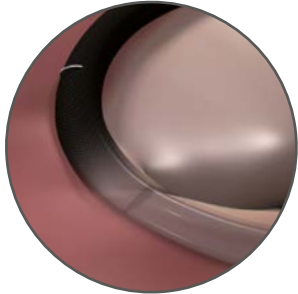
*“In our study, the semi-rigid MEMO 3D annuloplasty ring was associated with a better hemodynamic at rest and during exercise and clinical status.”<sup>6</sup>*

# Ease-of-Implant

THE "SLIM FIT" RING DESIGNED TO FIT OPTIMALLY TO THE PATIENT ANNULUS.



Wide, streamlined silicone filler facilitates suturability

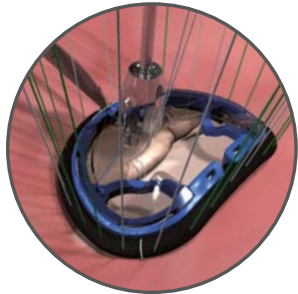


Designed to optimally fit to the mitral annulus

A FULLY VERSATILE HOLDER



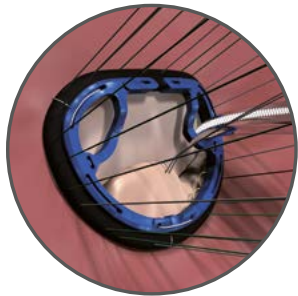
**Chordal window**  
Neochordae can pass through the aperture



**One-cut removal**  
Single cut to unhook the whole holder



**Designed to facilitate mics approach**  
Low-profile holder

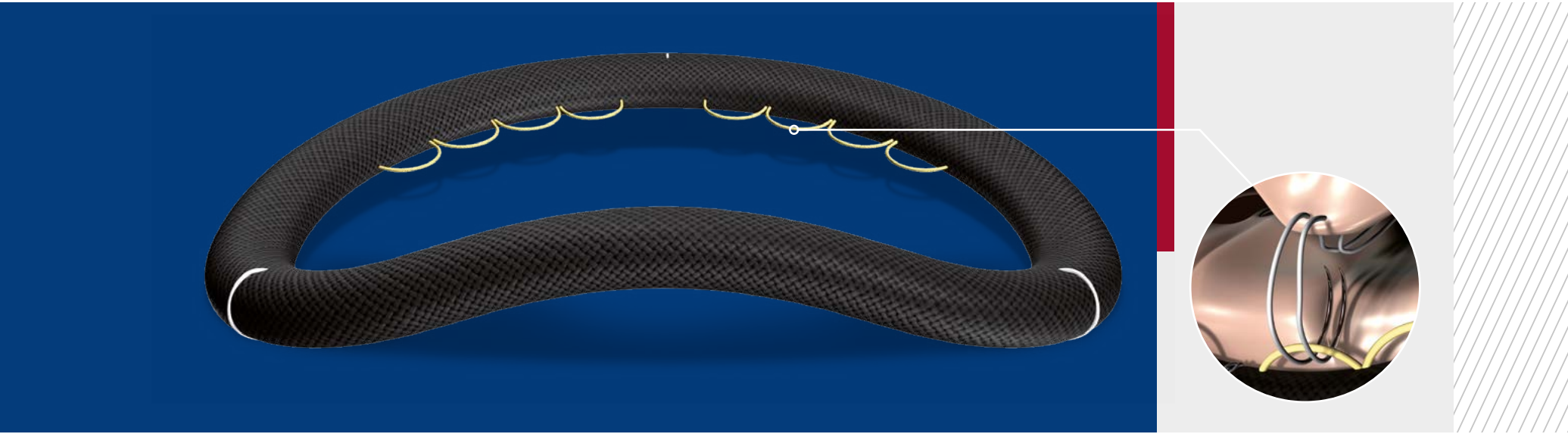


Ultra-slim template with two handles

# ReChord System

A CHORDAL SIZING SYSTEM THAT AIMS TO STANDARDIZE NEOCHORDAE IMPLANTATION WITHOUT THE NEED FOR PHYSICAL MEASUREMENT.<sup>2,3</sup>

A series of loops in the posterior region act as temporary reference elements for easier length sizing of chords for both anterior and posterior repair. The innovative system promotes standardized chord implantation, offering a reproducible technique while accelerating procedure times.<sup>3,14</sup>



*"The chordal guiding system markedly reduces the time of the procedure by facilitating sizing and knotting."*<sup>15</sup>

PRODUCT ORDERING INFORMATION

CODE	SIZE	A (MM)*	N° LOOPS
4DM-24	24**	24	6
4DM-26	26	26	6
4DM-28	28	28	6
4DM-30	30	30	6
4DM-32	32	32	6
4DM-34	34	34	8
4DM-36	36	36	8
4DM-38	38	38	8
4DM-40	40	40	8
4DM-42	42	42	8



\* Inner metal core diameter  
\*\* Made to order

ACCESSORIES ORDERING INFORMATION

CODE	NAME	DESCRIPTION
ICV0664	Uni Handle	Universal Bendable Handle
ICV1342	Extended Uni Handle	Universal Bendable Handle for MICS
ICV1357	Annuloplasty Ring Sizer Set	Complete Sizer Set (24 to 42 mm)
ICV1358	Annuloplasty Ring Accessory Tray	Empty Instrument Tray



REFERENCES

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2. Wan et al., „Mitral valve repair using a semirigid ring: patient selection and early outcomes." *Asian Cardiovascular & Thoracic Annals* 0(0) 1–6 2016

3. Prinzing et al., "Initial Experience With a New Mitral Ring Designed to Simplify Length Determination of Neochords." *Ann Thorac Surg* 2018;105:1784–9

4. Nishi et al., "Annular dynamics after mitral valve repair with different prosthetic rings: A real-time threedimensional transesophageal echocardiography study." *Surg Today* 2016 Sep;46(9):1083-90

5. Ryomoto et al., "Physiological mitral annular dynamics preserved after ring annuloplasty in mid-term period." *Gen Thorac Cardiovasc Surg* (2017) 65:627–632

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7. Nishi et al., "Annular dynamics of memo3D annuloplasty ring evaluated by 3D transesophageal echocardiography." *Gen Thorac Cardiovasc Surg.* 2018 Apr;66(4):214-219

8. Lee et al., "Quantitative Analysis of Mitral Valve Morphology in Mitral Valve Prolapse With Real-Time 3-Dimensional Echocardiography Importance of Annular Saddle Shape in the Pathogenesis of Mitral Regurgitation." *Circulation* 2013;127:832-841

9. Adams et al., "Large Annuloplasty Rings Facilitate Mitral Valve Repair in Barlow's Disease." *Ann Thorac Surg* 2006;82:2096–101

10. Bruno et al., "Early Clinical Experience and Echocardiographic Results With a New Semirigid Mitral Annuloplasty Ring: The Sorin Memo 3D." *Ann Thorac Surg* 2009;88:1492–8

11. Della Barbera et al., "Sovering annuloplasty rings: Experimental pathology in the sheep model." *Cardiovascular Pathology* 14 (2005) 96–103

12. Ryomoto et al., "Is Physiologic Annular Dynamics Preserved After Mitral Valve Repair With Rigid or Semirigid Ring?" *Ann Thorac Surg* 2014;97:492–8

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14. Wan et al., "Mitral valve repair using a semirigid ring: patient selection and early outcomes." *Asian Cardiovasc Thorac Ann* 2016 Sep;24(7):647-52

15. G. Szabó et al., "The Novel Livanova 3D Rechord Semirigid Ring Facilitates Mitral Valve Repair With Artificial Chords: A Matched Pair Analysis." *Thorac cardiovasc Surg* 2018; 66(S 01): S1-S110

#### INTENDED USE/INDICATIONS

**Europe, US, Canada and Australia:** Memo 4D is a mitral annuloplasty ring intended to restore the proper mitral valve leaflet coaptation and valve function by reshaping the mitral annulus.

The Memo 4D is indicated for use in patients suffering from congenital or acquired mitral insufficiencies or steno-insufficiencies with dilatation and/or deformation of the mitral annulus. The decision to undertake a mitral valve repair must remain with the surgeon after having evaluated short- and long-terms risks and benefits towards alternative procedures and on the visual inspection of the lesion in the individual case.

#### KEY CONTRAINDICATIONS

The annuloplasty rings should not be used in the case of: severe organic lesions with retraction of chordae tendinae; congenital malformations with limited valvular tissue; extensive calcification of valve leaflets; evolving bacterial endocarditis.

#### KEY WARNINGS

The annuloplasty ring is a single-use device and is intended for single patient use only. Do not attempt to clean, resterilize, or reuse any prosthesis. Do not sterilize the accessory instrumentation by ethylene oxide (EtO) or radiation methods. The device is not suitable for tricuspid valve repair. Use only appropriate accessories

supplied by Corcym. The use of sizers provided by other manufacturers or the use of the sizing technique employed for another manufacturer's annuloplasty ring may result in misleading sizing information. Do not cut the yellow loops of the RCS. Do not pull the blue and yellow knots of the RCS threads contemporarily. Do not attempt to remove the yellow thread loops by pulling the yellow knot without having completely removed the blue thread first.

#### TOP POTENTIAL SIDE EFFECTS

The use of mechanical prosthetic annuloplasty rings is associated with serious potential complications, which include: death, reoperation and explant, Endocarditis, Sepsis, Anaphylactic shock, Fever, Skin rushes, Epatic impairment, Renal impairment, Anemia, Cardiogenic shock, Myocardial infarction, Tissue damage, Necrosis, Arrhythmia, Stroke/TIA, Multiple organ dysfunction syndrome, Teratogenic effect, Cancer, Decompensated Haemolitic anemia, Heart failure.

#### MRI conditional

For professional use. Instructions for Use are available upon request through the manufacturer's website. Not approved in all geographies. Follow your labeling.



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