

MEMO 4D[®] Reshaping Mitral Repair



Designed to Best Support Your Technique

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ReChord: Chordal Guide System

Standardizes neochordae implantation

Proven Annular Dynamics

Truly physiological three-dimensional motion to **ensure natural behavior**



Up to size 42 mm to treat large annuli

47



Innovation Starts at the Core

Unique Nitinol Cell Structure

Stability and Support

Anterior rigidity and Posterior flexibility to **best support systolic function**



Exclusive Gradual Saddle Shaping

Designed to optimize the **physiological geometry** in enlarged annuli



Progressive Increase of the Anteroposterior Diameter

Helps accommodate excess leaflet tissue and reduces the risk of Systolic Anterior Motion (SAM)

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.

* 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).



The anterior saddle shape is gradually enhanced from size 34 to size 42. It is designed to optimize the physiological geometry in enlarged annuli that have lost their three-dimensional profile.¹¹

Stability and Support

The right balance of rigidity and flexibility to support any repair

MEMO 4D, semi-rigid annuloplasty ring, provides the stability and support to the annulus while providing dynamic flexibility of movement.



The natural annular dynamics of the MEMO platform is clinically proven and acknowledged

"MEMO 3D preserves annular dynamics and folding dynamics.¹"

"MEMO 3D allows for contraction during systole, an increased depth of coaptation of the leaflets, and an improvement in annular orifice area during diastole.⁴"

Three layer structure

Oval silicone sheath Ease-of-implant with a perfect annular fit

Nitinol cell structure Optimally accommodates the diastolic phase and provides consistent recovery of the natural systolic profile

Maximized Hemodynamics

Truly physiological three-dimensional motion of the mitral annulus with a natural anterior/posterior to lateral/ lateral relationship to maximize blood flow,^{1,2,3,4,5} even five years after implantation.⁶



SYSTOLIC REMODELLING Maximized Coaptation and Reduced Stress Nishi et al. Circulation. 2013;128:A16940



DIASTOLIC DYNAMICS Maximized Hemodynamics Ryomoto et al. Ann Thorac Surg. 2014 Feb;97(2):492-7

"In our study, the semi-rigid MEMO 3D annuloplasty ring was associated with a better hemodynamic at rest and during exercise and clinical status.³"



Ease-of-Implant

The "slim fit" ring seats perfectly to the patient annulus



Wide, streamlined silicone filler facilitates suturability



Optimal fit to the mitral annulus

A Fully Versatile Holder

Chordal Window



One-Cut Removal



Neochordae can pass through the aperture

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

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 reproducible results while accelerating procedure times.⁷⁸



"The chordal guiding system markedly reduces the time of the procedure by facilitating sizing and knotting.⁹"

Information and accessories

Product ordering information

Ordering Number	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

Ordering Number	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



CE 0123

> Extended Uni Handle for MICS

> > MEMO 4D Sizer Set Now with more transparent heads for a better visibility

References

- "Is Physiologic Annular Dynamics Preserved After Mitral Valve Repair With Rigid or Semirigid Ring?" Ryomoto et al., Ann Thorac Surg 2014;97:492–8
- "Annular dynamics after mitral valve repair with different prosthetic rings: A real-time threedimensional transesophageal echocardiography study." Nishi et al., Surg Today 2016 Sep;46(9):1083-90
- "A Comparison of Two Mitral Annuloplasty Rings for Severe Ischemic Mitral Regurgitation: Clinical and Echocardiographic Outcomes." K. Fattouch et al., Semin Thoracic Surg Summer 2016 Vol. 28, Issue 2, Pages 261–268
- "Early Clinical Experience and Echocardiographic Results With a New Semirigid Mitral Annuloplasty Ring: The Sorin MEMO 3D." Bruno et al., Ann Thorac Surg 2009;88:1492–8
- "Physiological mitral annular dynamics preserved after ring annuloplasty in mid-term period." Ryomoto et al., Gen Thorac Cardiovasc Surg. 2017 Nov;65(11):627-632
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- "Physiological mitral annular dynamics preserved after ring annuloplasty in mid-term period." Ryomoto et al., Gen Thorac Cardiovasc Surg. 2017 Nov;65(11):627-632
- "Annular Dynamics of MEMO 3D Annuloplasty Ring Evaluated by 3D Transesophageal Echocardiography." Nishi et al., Gen Thorac Cardiovasc Surg. 2018 Jan 17
- "The Novel Livanova 3D Rechord Semirigid Ring Facilitates Mitral Valve Repair With Artificial Chords: A Matched Pair Analysis." G. Szabó et al., Poster presented at Mitral Conclave 2017, NYC
- "Sovering annuloplasty rings: Experimental pathology in the sheep model." Della Barbera et al., Cardiovascular Pathology 14 (2005) 96-103
- "Statistical Assessment of Normal Mitral Annular Geometry Using Automated Three-Dimensional Echocardiographic Analysis." Pouch et al., Ann Thorac Surg 2014;97:71-7

INDICATIONS: EUROPE and US: The MEMO 4D annuloplasty ring is intended for correction of mitral insufficiencies, steno-insufficiencies or acquired mitral insufficiencies (type I, type II, type II) with dilatation

To the the second state of 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.

MRI conditional.



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MEMO 4D is FDA cleared. For professional use. Please contact us through our website to receive instructions for use containing full prescribing information, including indications, contraindications, warnings, precautions and adverse events. Not approved in all geographies. Consult your labeling.