



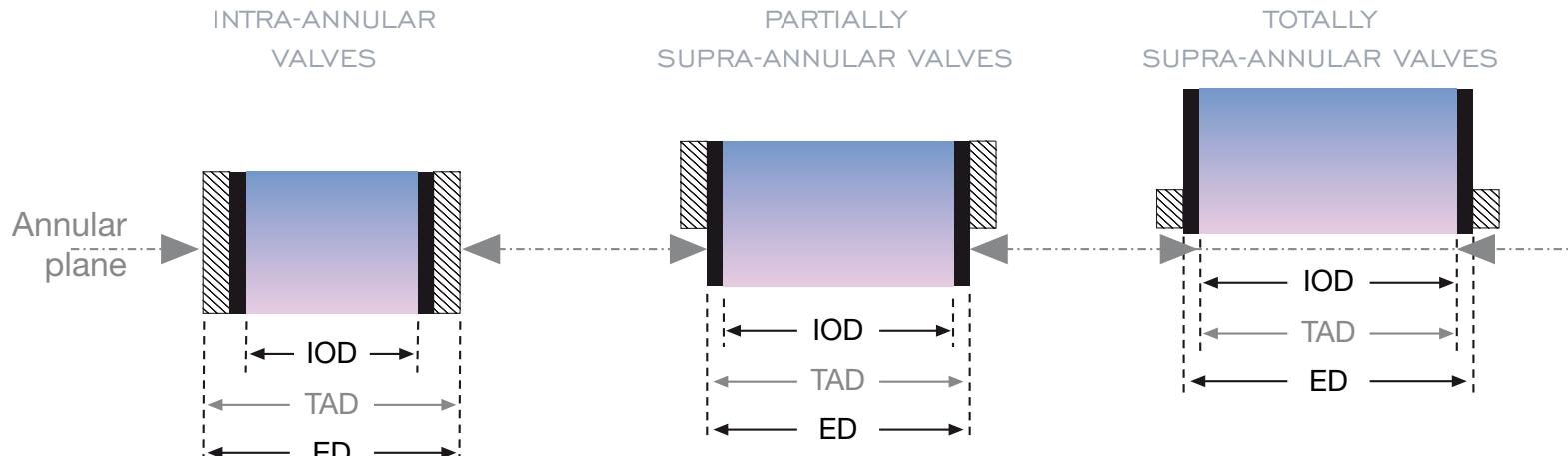
MECHANICAL HEART VALVE TECHNICAL FEATURES





TECHNICAL SPECIFICATIONS

ACCORDING TO VALVE POSITIONING



$$\mathbf{ED = TAD}$$

$$\mathbf{ED = TAD}$$

$$\mathbf{IOD = TAD}$$

IOD - Internal Orifice Diameter

TAD - Tissue Annulus Diameter

ED - External Diameter





INTRA-ANNULAR VALVES

**SJM
Master[◊]**



**Carbomedics
Reduced**



**Bicarbon
Fitline**



**ATS Open Pivot
Standard[◊]**



**Carbomedics
Standard**



Patient TAD	SIZE	ED mm	GOA cm ²	EOA*	SIZE	ED mm	GOA cm ²	EOA*	SIZE	ED mm	GOA cm ²	EOA*	SIZE	ED mm	GOA cm ²	EOA*	SIZE	ED mm	GOA cm ²	EOA*
15 mm	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	16	16.2	1.59	1.00				
16 mm	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	16	16.2	1.59	1.00				
17 mm	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	18	18.8	1.59	1.00				
18 mm	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	18	18.8	1.59	1.00				
19 mm	19	19.0	1.63	0.99	19	18.8	1.59	1.00	19	19.0	1.82	0.97	19	19.5	1.55	1.20	19	19.8	1.59	1.00
20 mm	19	19.0	1.63	0.99	19	18.8	1.59	1.00	19	19.0	1.82	0.97	19	19.5	1.55	1.20	19	19.8	1.59	1.00
21 mm	21	21.0	2.06	1.25	21	20.8	2.07	1.54	21	21.2	2.33	1.54	21	21.5	2.02	1.50	21	21.8	2.07	1.54
22 mm	21	21.0	2.06	1.25	21	20.8	2.07	1.54	21	21.2	2.33	1.54	21	21.5	2.02	1.50	21	21.8	2.07	1.54
23 mm	23	23.0	2.55	1.28	23	22.6	2.56	1.63	23	23.4	2.91	2.07	23	23.5	2.56	1.70	23	23.8	2.56	1.63
24 mm	23	23.0	2.55	1.28	23	22.6	2.56	1.63	23	23.4	2.91	2.07	23	23.5	2.56	1.70	23	23.8	2.56	1.63
25 mm	25	25.0	3.09	1.80	25	25.0	3.16	1.98	25	25.6	3.55	2.39	25	25.5	3.17	2.10	25	25.8	3.16	1.98
26 mm	25	25.0	3.09	1.80	25	25.0	3.16	1.98	25	25.6	3.55	2.39	25	25.5	3.17	2.10	25	25.8	3.16	1.98
27 mm	27	27.0	3.67	2.43	27	27.0	3.84	2.41	27	27.8	4.26	3.06	27	27.5	3.84	2.50	27	27.8	3.84	2.41
28 mm	27	27.0	3.67	2.43	27	27.0	3.84	2.41	27	27.8	4.26	3.06	27	27.5	3.84	2.50	27	27.8	3.84	2.41
29 mm	29	29.0	4.41	2.66	29	29.0	4.44	2.63	29	29.5	5.12	3.45	29	29.5	4.59	3.10	29	29.8	4.44	2.63

◊ These are trademarks of their respective owners
ED and GOA data from technical brochures

n.a.= not available

REFERENCES

SJM MASTER

* E. Chafizadeh, W. Zoghbi - **Doppler Echocardiographic Assessment of the St. Jude Medical Prosthetic Valve in the Aortic Position Using the Continuity Equation** - *Circulation* 1991; 83: 213-223

CARBOMEDICS REDUCED

* J. Chambers, J. Cross, P. Deverall, E. Sowton **Echocardiographic Description of the Carbomedics Bileaflet Prosthetic Valve** - *J Am Coll Cardiol* 1993; 21: 398-409

BICARBON FITLINE

* L. Badano, R. Moccagnani, D. Bertoli, G. De Gaetano, L. Carratino, L. Pasotti, M. Caudullo, A. Budini, B. Manello, G. Passerone - **Normal Echocardiographic Characteristics of the Sorin Bicarbon Bileaflet Prosthetic Heart Valve in the Mitral and Aortic Position** - *J Am Soc Echocardiogr* 1997; 10: 632-643

ATS OPEN PIVOT

* Food and Drug Administration - **PMA Summary of Safety and Effectiveness** - 2000, P990046

CARBOMEDICS STANDARD

* J. Chambers, J. Cross, P. Deverall, E. Sowton **Echocardiographic Description of the Carbomedics Bileaflet Prosthetic Valve** - *J Am Coll Cardiol* 1993; 21: 398-409



PARTIALLY SUPRA-ANNULAR VALVES

SJM Regent[◊]



SJM HP[◊]



Bicarbon Slimline



ATS AP[◊]



On X[◊]



Patient TAD	SIZE	ED mm	GOA cm ²	EOA*	SIZE	ED mm	GOA cm ²	EOA*	SIZE	ED mm	GOA cm ²	EOA*	SIZE	ED mm	GOA cm ²	EOA*	SIZE	ED mm	GOA cm ²	EOA*
15 mm	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
16 mm	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
17 mm	17	n.a.	1.87	n.a.	17	n.a.	1.63	0.88	17	17.2	1.82	1.01 ^A	16	16.2	1.55	1.01	n.a.	n.a.	n.a.	n.a.
18 mm	17	n.a.	1.87	n.a.	17	n.a.	1.63	0.88	17	17.2	1.82	1.01 ^A	16	16.2	1.55	1.01	n.a.	n.a.	n.a.	n.a.
19 mm	19	n.a.	2.39	1.00	19	n.a.	2.06	1.60	19	19.2	2.33	1.50 ^A	18	18.2	2.02	1.42	19	20.1	2.00	1.40
20 mm	19	n.a.	2.39	1.00	19	n.a.	2.06	1.60	19	19.2	2.33	1.50 ^A	20	20.2	2.56	1.49	19	20.1	2.00	1.40
21 mm	21	n.a.	2.90	1.54	21	n.a.	2.55	1.60	21	21.3	2.91	1.90 ^A	20	20.2	2.56	1.49	21	22.2	2.53	1.90
22 mm	21	n.a.	2.90	1.54	21	n.a.	2.55	1.60	21	21.3	2.91	1.90 ^A	22	22.2	3.17	n.a.	21	22.2	2.53	1.90
23 mm	23	n.a.	3.45	1.63	23	n.a.	3.09	n.a.	23	23.4	3.55	2.39 ^B	22	22.2	3.17	n.a.	23	24.3	3.13	2.30
24 mm	23	n.a.	3.45	1.63	23	n.a.	3.09	n.a.	23	23.4	3.55	2.39 ^B	24	24.2	3.84	2.35	23	24.3	3.13	2.30
25 mm	25	n.a.	4.02	1.98	25	n.a.	3.67	n.a.	25	25.6	4.26	3.06 ^B	24	24.2	3.84	2.35	25	26.4	3.73	2.80
26 mm	25	n.a.	4.02	1.98	25	n.a.	3.67	n.a.	25	25.6	4.26	3.06 ^B	26	26.2	4.59	n.a.	25	26.4	3.73	2.80
27 mm	27	n.a.	4.69	2.41	27	n.a.	4.41	n.a.	27	28.0	5.12	3.45 ^B	26	26.2	4.59	2.22	27	26.4	3.73	2.80
28 mm	27	n.a.	4.69	2.41	27	n.a.	4.41	n.a.	27	28.0	5.12	3.45 ^B	28	28.2	5.35	n.a.	27	26.4	3.73	2.80
29 mm	29	n.a.	5.44	2.63	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	28	28.2	5.35	n.a.	29	26.4	3.73	2.80

◊ These are trademarks of their respective owners
ED and GOA data from technical brochures

n.a. = not available

REFERENCES

SJM REGENT

* M. Sudkamp, A. Lercher, F. Muller-Riemenschneider, K. LaRosee, P. Tossios, U. Mehlhorn, E. De Vivie
Transvalvular in Vivo Gradients of the New Generation Bileaflet Heart Valve Prostheses St. Jude Medical Regent in Aortic Position - Thorac Cardiovasc Surg 2003; 51:126-129

SJM HP

* E. Otero, J.L. Pomar, J. Revuelta, J.J. Rufilanchas
Comparative Evaluation of Small-Size Sorin Slimline and St. Jude HP Heart Valve Prostheses - Ann Thorac Surg 2005; 79: 1284-90

BICARBON SLIMLINE

* E. Otero, J.L. Pomar, J. Revuelta, J.J. Rufilanchas
Comparative Evaluation of Small-Size Sorin Slimline and St. Jude HP Heart Valve Prostheses - Ann Thorac Surg 2005; 79: 1284-90

^B L. Badano, R. Moccagiani, D. Bertoli, G. De Gaetano, L. Carratino, L. Pasetti, M. Caudullo, A. Budini, B. Manello, G. Passerone - **Normal Echocardiographic Characteristics of the Sorin Bicarbon Bileaflet Prosthetic Heart Valve in the Mitral and Aortic Position - J Am Soc Echocardiogr 1997; 10: 632-643 - (EOA one size up-sized)**

ATS AP AND AP 360

* A. Sezai, M. Hata, T. Niino, I. Yoshitake, Y. Kasamaki, A. Hirayama, K. Minami - **Fifteen years of Experience with ATS Mechanical Heart Valve Prostheses - J Thorac Cardiovasc Surg 2010; 139 (6): 1494-500**

ON X

* Food and Drug Administration - **PMA Summary of Safety and Effectiveness - 2001, P000037**



TOTALLY SUPRA-ANNULAR VALVES

Carbomedics Top Hat



Bicarbon Overline



Patient TAD	SIZE	IOD mm	GOA cm ²	EOA
15 mm	19	14.7	1.59	1.00 ^A
16 mm	19	14.7	1.59	1.00 ^A
17 mm	21	16.7	2.07	1.40 ^B
18 mm	21	16.7	2.07	1.40 ^B
19 mm	23	18.5	2.56	1.90 ^B
20 mm	23	18.5	2.56	1.90 ^B
21 mm	25	20.5	3.16	2.20 ^B
22 mm	25	20.5	3.16	2.20 ^B
23 mm	27	22.5	3.84	2.90 ^B
24 mm	27	22.5	3.84	2.90 ^B
25 mm	n.a.	n.a.	n.a.	n.a.
26 mm	n.a.	n.a.	n.a.	n.a.
27 mm	n.a.	n.a.	n.a.	n.a.
28 mm	n.a.	n.a.	n.a.	n.a.
29 mm	n.a.	n.a.	n.a.	n.a.

IOD and GOA data from technical brochures.

SIZE	IOD mm	GOA cm ²	EOA*
16	15.5	1.82	0.97
16	15.5	1.82	0.97
18	17.6	2.33	1.54
18	17.6	2.33	1.54
20	19.6	2.91	2.07
20	19.6	2.91	2.07
22	21.7	3.55	2.39
22	21.7	3.55	2.39
24	23.8	4.26	3.06
24	23.8	4.26	3.06
24	23.8	4.26	3.06
n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	n.a.	n.a.

n.a.= not available

REFERENCES

CARBOMEDICS TOP HAT

^A J. Chambers, J. Cross, P. Deverall, E. Sowton
Echocardiographic Description of the Carbomedics Bileaflet Prosthetic Valve - *J Am Coll Cardiol* 1993; 21: 398-409

^B J. Aagaard, H. Nissen, A.S. Geha - **Midterm Evaluation of Hemodynamics of the Top Hat Supraannular Aortic Valve** - *Asian Cardiovasc Thorac Ann* 2010; 18: 1-5

BICARBON OVERLINE

* L. Badano, R. Moccagiani, D. Bertoli, G. De Gaetano, L. Carratino, L. Pasotti, M. Caudullo, A. Budini, B. Manello, G. Passerone - **Normal Echocardiographic Characteristics of the Sorin Bicarbon Bileaflet Prosthetic Heart Valve in the Mitral and Aortic Position** - *J Am Soc Echocardiogr* 1997; 10: 632-643 (EOA two sizes up-sized)



GLOBAL MARKETING:

I3040 SALUGGIA, VC, ITALY
TEL. +39-0161-487-472
FAX +39-0161-487-316

For further information please visit: www.sorin.com

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