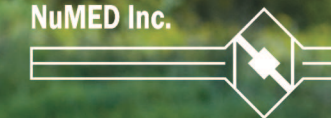




NuMED Inc.



Product Catalogue 2010

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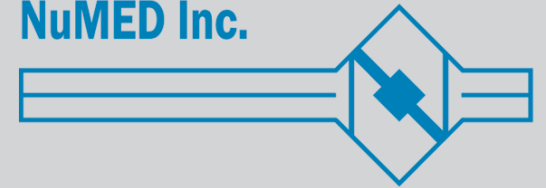
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NuMED Product Catalogue Company 2010

NuMED Inc.



NuMED, Inc. and **NuMED** Canada Inc., manufacturers of angioplasty and valvuloplasty catheters, have a long-standing commitment in meeting and satisfying their customers' expectations and improving the quality of life of the patients by providing alternatives to surgery.

In 1982, NuMED, Inc. was founded as a flagship company in Hopkinton, New York which consists of a manufacturing facility, an extrusion facility for working with and extruding a full range of catheter materials, and a fully equipped research and development department for designing, testing and introducing many of the new catheters.

In 1990, NuMED Canada Inc. was founded in Cornwall, Ontario at first as a distribution facility to sell and market the medical devices purchased from the parent company to cater to the worldwide market with the intent of establishing a manufacturing department. It has since expanded into a new facility manufacturing products that are shipped to over 50 countries worldwide.

In 2000, NuMED Canada Inc. purchased a new building (18,000 square ft.) in the downtown area of Cornwall, Ontario to move their operations in a larger manufacturing facility which today has 2 clean rooms dedicated to the production of angioplasty and valvuloplasty catheters to meet the increased orders from all over the world.

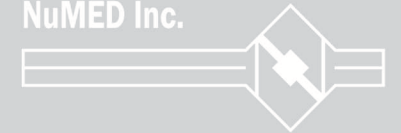
In 2003, Mr. Allen J. Tower was the recipient of the PICS Award for Outstanding Achievement in recognition of his innovative contribution in the field of Pediatric Interventional Cardiology, presented to him in Orlando, Florida.

Mission Statement

NuMED's mission is to improve the quality of patient care and the productivity of health care by developing and advocating less-invasive medical devices and procedures. This will be accomplished by continuing to refine our existing products, and researching new technologies that can reduce risk, trauma, cost, procedure time and the need for aftercare

NuMED offer a wide range of vascular interventional products that have been developed in response to the specific needs of pediatric and adult cardiologist. With their input, we have discovered new ways to add safety, precision and convenience to cardiac catheterization procedures.

NuMED offers a full line of Percutaneous Transluminal Angioplasty (PTA), Percutaneous Transluminal Valvuloplasty (PTV), Atrioseptostomy, Sizing Balloon and Angiographic catheters.



KMT (Khosro Medisa Teb) is a leading healthcare group in the Middle East with more than 16 years market presence in the Persian Gulf region. Group's regional offices are located in UAE (Dubai) and Iran (Tehran). The main activities are divided in to Business Development, Market Research, Market-entry Strategies and Distribution of Medical products for a collection of leading international medical and healthcare manufacturers.

KMT's extensive network of specialized marketing companies, accurate SCM (Supply Chain Management) and direct distribution network throughout the region has ensured excellent market coverage.

The group is structured in a "Divisional" basis of five specialized business divisions. These are Consumer Healthcare, Dental, Laboratory, Medical and Pharmaceutical. The Medical Division is the largest with five specialized departments of Hospital Equipment, Disaster Management, Cardiovascular, Ophthalmology and Aesthetics. These units are managed by qualified Medical Doctors & Bio-Medical Engineers. They are supported by a centralized & highly educated sales support team, logistics department and a skilled after Sales service centre.

KMT actively participates in several international and local medical congresses. The group emphasises strongly on educational & scientific approach in marketing. Each business division participates in local medical exhibitions as well as holding regular dedicated workshop events throughout the year for the principal specialists in each field.

Medical as the largest division of the group has a client base of more than 5000 Private/Public Hospitals, Clinics, Medical Centers, Specialists and General Physicians.

Cardiovascular as the oldest department of KMT with more than ten years experience in the Iranian market is the leading group for the introduction of the latest techniques in adult & pediatric Interventional Cardiology.

KMT is the sole distributor of **Heart Medical (The Netherlands)**. The below range are in our Cardiovascular Department product portfolio

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Tyshak

Tyshak-X

Tyshak II

Z-Med

Z-Med-X

Z-Med II

Z-Med II-X

Nucleus



Percutaneous Transluminal Valvuloplasty Catheters

TYSHAK® balloon Characteristics



The **TYSHAK®** balloon dilatation catheter is a coaxially constructed catheter with a distally mounted non-compliant balloon. The catheter exhibits an extremely low profile. Due to the coaxial construction, the catheter inflates and deflates extremely fast. The **TYSHAK®** catheter is available in over 100 configurations with balloon lengths from 1.0 to 10.0 cm and balloon diameter from 2.0 to 25.0 mm.

Micro-Thin Balloon

The **TYSHAK®** balloon is super thin for a low deflated profile that maintains tip flexibility. The exceptionally low profile balloon requires the smallest introducer possible. Nominal dimensions are maintained over the entire length of the balloon.

Maximum Trackability

The distal shaft through the balloon is highly flexible for exceptional maneuverability. This combined with the pushability of the coaxial shaft provides outstanding tracking performance.

Radiopaque marker

Platinum marker bands facilitate reliable positioning of the balloon.



Tyshak® Specifications

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	Catalog No.
2.0	1.0	4	3.5	70	0.018	10	PDC162
4.0	1.0	4	3.5	70	0.018	5	PDC001
4.0	2.0	4	3.5	70	0.018	5	PDC021
4.0	2.0	5	4	70	0.018	5	PDC172
4.0	2.0	6	5.5	100	0.035	5	PDC138
4.0	3.0	6	5.5	100	0.035	5	PDC141
5.0	1.0	4	3.5	70	0.018	5	PDC002
5.0	2.0	4	3.5	70	0.018	5	PDC073
5.0	2.0	6	5.5	70	0.035	5	PDC003
5.0	2.0	6	5.5	100	0.035	5	PDC029
5.0	3.0	4	3.5	70	0.018	5	PDC022
5.0	4.0	4	3.5	90	0.018	5	PDC049
5.0	4.0	5	4	70	0.018	5	PDC035
6.0	1.0	4	3.5	70	0.018	5	PDC004
6.0	1.5	4	3.5	70	0.018	5	PDC173
6.0	2.0	4	3.5	70	0.018	5	PDC061
6.0	2.0	5	4	70	0.021	5	PDC088
6.0	2.0	5	5	70	0.025	5	PDC062
6.0	2.0	6	5.5	70	0.018	5	PDC174
6.0	2.0	6	5.5	70	0.035	5	PDC005
6.0	2.0	6	5.5	100	0.035	5	PDC030
6.0	3.0	4	3.5	70	0.018	5	PDC156
6.0	3.0	6	5	70	0.025	5	PDC023
6.0	3.0	6	5.5	100	0.035	5	PDC202
6.0	4.0	5	5	90	0.025	5	PDC087
6.0	4.0	6	5	70	0.025	5	PDC036
6.0	5.0	6	5.5	70	0.035	5	PDC102
6.0	6.0	6	5	90	0.025	5	PDC050
6.0	8.0	6	5.5	100	0.035	5	PDC103
7.0	1.5	5	4	70	0.021	5	PDC006
7.0	2.0	4	3.5	70	0.018	5	PDC175
7.0	2.0	5	4	70	0.021	5	PDC109
7.0	2.0	5	4	70	0.018	5	PDC126
7.0	2.0	6	5.5	70	0.025	5	PDC176
7.0	2.0	7	6	75	0.035	5	PDC124
7.0	3.0	5	4	70	0.021	5	PDC118
7.0	3.0	5	4	70	0.018	5	PDC157
7.0	3.0	6	5.5	70	0.025	5	PDC024
7.0	4.0	6	5	70	0.025	5	PDC037
8.0	1.5	5	5	70	0.021	5	PDC007
8.0	2.0	5	4	70	0.018	5	PDC127
8.0	2.0	5	5	70	0.025	5	PDC177
8.0	2.0	6	5.5	70	0.025	5	PDC063
8.0	2.0	6	5.5	100	0.035	5	PDC045
8.0	3.0	5	4	70	0.025	5	PDC178
8.0	3.0	5	5	70	0.018	5	PDC115

Tyshak® Specifications

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	Catalog No.
8.0	3.0	6	5.5	70	0.025	5	PDC031
8.0	3.0	6	5.5	70	0.035	5	PDC025
8.0	3.0	6	5.5	100	0.035	5	PDC008
8.0	4.0	5	5	70	0.025	5	PDC179
8.0	4.0	6	5	70	0.025	5	PDC038
8.0	4.0	6	5.5	70	0.025	5	PDC051
8.0	4.0	6	5.5	100	0.035	5	PDC067
8.0	5.0	6	5.5	70	0.035	5	SO011
8.0	6.0	6	5.5	70	0.025	5	PDC052
8.0	6.0	6	5.5	100	0.035	5	PDC068
8.0	8.0	6	5	100	0.021	5	PDC147
8.0	8.0	6	5.5	100	0.035	5	PDC069
9.0	2.0	5	5	100	0.025	5	SN012
9.0	2.0	5	5	110	0.025	5	PDC155
9.0	2.0	6	5.5	70	0.025	5	PDC009
9.0	2.0	6	5.5	100	0.035	5	PDC113
9.0	3.0	6	5	70	0.018	5	PDC116
9.0	3.0	6	5.5	70	0.025	5	PDC180
9.0	3.0	6	5.5	70	0.035	5	PDC026
9.0	4.0	6	5.5	100	0.035	5	PDC086
10.0	2.0	6	5.5	85	0.025	5	PDC010
10.0	2.0	6	5.5	85	0.035	5	PDC064
10.0	2.0	6	5.5	100	0.035	5	PDC114
10.0	2.0	7	6	100	0.035	5	PDC181
10.0	3.0	6	5.5	100	0.035	5	PDC117
10.0	3.0	6	6	100	0.025	5	PDC080
10.0	3.0	6	6	80	0.025	5	PDC081
10.0	3.0	6	4	70	0.018	5	PDC130
10.0	3.0	6	5.5	70	0.025	5	PDC163
10.0	3.0	7	6	85	0.025	5	PDC164
10.0	3.0	7	6	100	0.035	5	PDC011
10.0	4.0	6	5.5	70	0.025	5	PDC044
10.0	4.0	6	5.5	100	0.025	5	PDC053
10.0	4.0	6	5.5	100	0.035	5	PDC182
10.0	4.0	7	6	100	0.035	5	PDC012
10.0	5.0	6	5.5	85	0.025	5	PDC089
10.0	5.0	6	5	70	0.025	5	PDC132
10.0	5.0	7	6	100	0.035	5	PDC047
10.0	6.0	6	5.5	100	0.025	5	PDC055
10.0	6.0	6	5.5	100	0.035	5	PDC054
10.0	6.0	7	6	100	0.035	5	PDC183
10.0	8.0	6	5	100	0.025	5	PDC146
10.0	8.0	7	6	100	0.025	5	PDC074
10.0	8.0	7	6	100	0.035	5	PDC129
10.0	10.0	7	6	100	0.025	5	PDC075
10.0	10.0	7	6	100	0.035	5	PDC090



Tyshak® Specifications

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	Catalog No.
11.0	3.0	6	5	70	0.018	4.5	PDC150
11.0	3.0	7	6	100	0.035	4.5	PDC159
12.0	2.0	7	5.5	85	0.025	4.5	PDC166
12.0	2.0	7	5.5	100	0.025	4.5	PDC148
12.0	2.0	7	5.5	100	0.035	4.5	PDC186
12.0	2.0	7	6	85	0.025	4.5	PDC167
12.0	2.0	7	6	100	0.035	4.5	PDC032
12.0	2.5	7	5.5	85	0.025	4.5	PDC165
12.0	2.5	7	5.5	100	0.035	4.5	PDC184
12.0	2.5	7	6	85	0.025	4.5	PDC013
12.0	2.5	7	6	100	0.035	4.5	PDC185
12.0	3.0	7	5.5	85	0.025	4.5	PDC169
12.0	3.0	7	5.5	100	0.025	4.5	PDC149
12.0	3.0	7	5.5	100	0.035	4.5	PDC188
12.0	3.0	7	6	85	0.025	4.5	PDC170
12.0	3.0	7	6	100	0.025	4.5	PDC133
12.0	3.0	7	6	100	0.035	4.5	PDC014
12.0	3.5	7	5.5	85	0.025	4.5	PDC168
12.0	3.5	7	5.5	100	0.035	4.5	PDC187
12.0	4.0	7	5.5	85	0.025	4.5	PDC171
12.0	4.0	7	6	100	0.025	4.5	PDC134
12.0	4.0	7	6	100	0.035	4.5	PDC015
12.0	5.0	7	6	100	0.035	4.5	PDC039
12.0	6.0	7	6	100	0.035	4.5	PDC056
12.0	7.0	7	6	100	0.035	4.5	PDC057
12.0	8.0	7	6	100	0.035	4.5	PDC091
12.0	10.0	7	6	100	0.035	4.5	SO015
13.0	3.0	7	6	100	0.035	4	SO010
13.0	4.0	7	6	100	0.035	4	PDC152
13.0	5.0	7	6	100	0.035	4	PDC098
13.0	6.0	7	6	100	0.035	4	PDC158
14.0	3.0	8	7	100	0.035	3.5	PDC190
14.0	3.5	8	7	100	0.035	3.5	PDC189
14.0	4.0	7	6	100	0.035	3.5	PDC191
14.0	4.0	8	7	100	0.035	3.5	PDC192
14.0	5.0	9	7	100	0.035	3.5	PDC153
14.0	6.0	8	7	100	0.035	3.5	PDC193
15.0	2.0	7	6	100	0.035	3.5	PDC095
15.0	2.0	8	7	100	0.035	3.5	PDC033
15.0	3.0	8	7	100	0.035	3.5	PDC016
15.0	4.0	8	7	100	0.035	3.5	PDC046
15.0	4.0	9	8	100	0.035	3.5	PDC128
15.0	5.0	8	7	100	0.035	3.5	PDC040
15.0	6.0	8	7	100	0.035	3.5	PDC058
15.0	7.0	8	7	100	0.035	3.5	PDC121
15.0	8.0	8	7	100	0.035	3.5	PDC092

Tyshak® Specifications

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	Catalog No.
15.0	10.0	8	7	100	0.035	3.5	PDC070
16.0	3.0	8	7	100	0.035	3.5	PDC195
16.0	3.5	8	7	100	0.035	3.5	PDC194
16.0	4.0	8	7	100	0.035	3.5	PDC196
16.0	6.0	8	7	100	0.035	3.5	PDC197
16.0	6.0	9	7	100	0.035	3.5	PDC144
17.0	6.0	9	7	100	0.035	2	PDC151
18.0	2.0	8	7	100	0.035	2	PDC094
18.0	2.0	9	8	100	0.035	2	PDC034
18.0	3.0	9	8	100	0.035	2	PDC017
18.0	4.0	9	7	80	0.035	2	PDC122
18.0	4.0	9	8	85	0.035	2	PDC097
18.0	4.0	9	8	100	0.035	2	PDC076
18.0	5.0	9	8	100	0.035	2	PDC041
18.0	5.5	11	9	120	0.035	2	PDC142
18.0	6.0	9	8	100	0.035	2	PDC027
18.0	8.0	9	8	100	0.035	2	PDC093
18.0	10.0	10	8	100	0.035	2	PDC059
19.0	9.0	9	8	100	0.035	2	PDC099
20.0	3.0	10	8	100	0.035	2	PDC042
20.0	4.0	9	8	100	0.035	2	PDC198
20.0	4.0	10	8	100	0.035	2	PDC018
20.0	5.0	10	8	100	0.035	2	PDC048
20.0	5.5	10	9	120	0.035	2	PDC085
20.0	5.5	12	9	120	0.035	2	PDC143
20.0	6.0	9	8	100	0.035	2	PDC199
20.0	6.0	10	8	100	0.035	2	PDC028
20.0	8.0	10	8	100	0.035	2	PDC104
20.0	10.0	10	8	100	0.035	2	PDC060
20.0	9.0	9	8	100	0.035	2	PDC100
22.0	3.0	11	9	100	0.035	2	PDC065
22.0	4.0	11	9	100	0.035	2	PDC019
22.0	5.0	10	9	120	0.035	2	PDC084
22.0	5.5	10	9	100	0.035	2	PDC108
22.0	5.5	10	9	120	0.035	2	PDC083
22.0	6.0	10	9	100	0.035	2	PDC200
22.0	6.0	11	7	100	0.035	2	PDC131
22.0	6.0	11	9	100	0.035	2	PDC139
23.0	5.5	11	9	100	0.035	2	PDC120
25.0	4.0	11	9	100	0.035	1.5	PDC020
25.0	4.0	11	9	120	0.035	1.5	PDC154
25.0	5.0	11	9	120	0.035	1.5	PDC077
25.0	5.5	11	9	120	0.035	1.5	PDC082
25.0	6.0	10	9	100	0.035	1.5	PDC201
25.0	6.0	11	9	100	0.035	1.5	PDC072



TYSHAK-X™ balloon Characteristics



Tyshak™ X balloons are originally thinner walled version of the Z-Med II balloons. The same as original Tyshak™, these balloons are manufactured from a micro thin, minimally compliant, thermoplastic elastomer, which gives them an initial, low, deflated profile relative to the balloon diameter. However after they have been inflated and then deflated in the body, they collapse to a significantly larger profile with a rough outer surface.

These balloons are available in diameters up to 25 mm, however they are mounted on catheter shafts which are one French size (for balloons up to 18 mm) and two to three French size (for balloons of 20-25 mm) smaller than the comparable Z-Med™ II and Z-Med™ II X balloon.

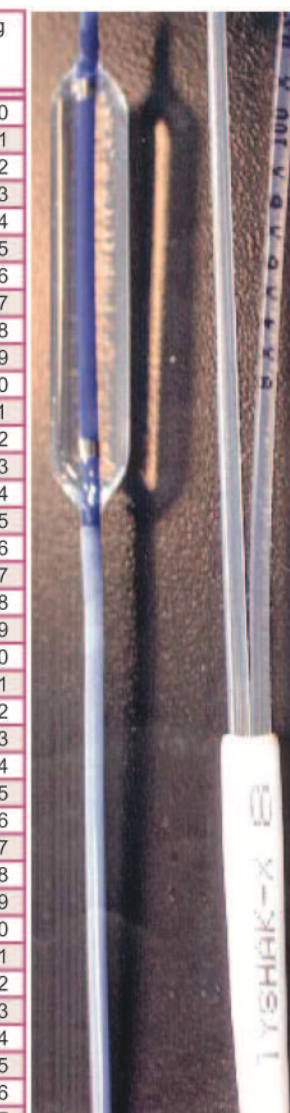
Braided catheter shaft

As all XLine Catheters the Tyshak X™ balloon has a new, thicker, braided catheter shaft which accommodates a much larger guidewire (0.035) without requiring a larger introducer and has far smoother and more satisfactory “pushability” compared to the original Tyshak I & II™ balloons. These balloons have a relatively low, maximum burst pressure ranging from 5 ATMs for the smallest diameter balloons, to 1.5 ATMs for the largest diameter balloons.

As a consequence of the thinner balloon material and the smaller diameter catheter shaft, these balloons with a mounted stent can be introduced through a slightly smaller sheath. However, the thin walls of the balloon and the small catheter shaft make these balloons generally more prone to puncture and, as a result, particularly unsatisfactory for the delivery of stents with exposed, sharp ends and also stenting to a large diameter vessel.

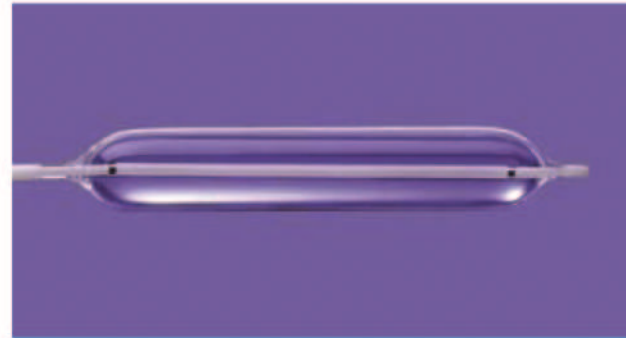
TYSHAK-X™ Specifications

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	Catalog No.
8	2	6	6	100	0.035	5.0	PDC300
8	3	6	6	100	0.035	5.0	PDC301
8	4	6	6	100	0.035	5.0	PDC302
8	5	6	6	100	0.035	5.0	PDC303
8	6	6	6	100	0.035	5.0	PDC304
9	2	6	6	100	0.035	5.0	PDC305
9	3	6	6	100	0.035	5.0	PDC306
9	4	6	6	100	0.035	5.0	PDC307
9	5	6	6	100	0.035	5.0	PDC308
9	6	6	6	100	0.035	5.0	PDC309
10	2	6	6	100	0.035	5.0	PDC310
10	3	6	6	100	0.035	5.0	PDC311
10	4	6	6	100	0.035	5.0	PDC312
10	5	6	6	100	0.035	5.0	PDC313
10	6	6	6	100	0.035	5.0	PDC314
12	2	7	6	100	0.035	4.5	PDC315
12	3	7	6	100	0.035	4.5	PDC316
12	4	7	6	100	0.035	4.5	PDC317
12	5	7	6	100	0.035	4.5	PDC318
12	6	7	6	100	0.035	4.5	PDC319
14	3	8	7	100	0.035	3.5	PDC320
14	4	8	7	100	0.035	3.5	PDC321
14	5	8	7	100	0.035	3.5	PDC322
14	6	8	7	100	0.035	3.5	PDC323
15	3	8	7	100	0.035	3.5	PDC324
15	4	8	7	100	0.035	3.5	PDC325
15	5	8	7	100	0.035	3.5	PDC326
15	6	8	7	100	0.035	3.5	PDC327
16	3	8	7	100	0.035	3.5	PDC328
16	4	8	7	100	0.035	3.5	PDC329
16	5	8	7	100	0.035	3.5	PDC330
16	6	8	7	100	0.035	3.5	PDC331
18	3	9	8	100	0.035	2.0	PDC332
18	4	9	8	100	0.035	2.0	PDC333
18	5	9	8	100	0.035	2.0	PDC334
18	6	9	8	100	0.035	2.0	PDC335
20	3	10	8	100	0.035	2.0	PDC336
20	4	10	8	100	0.035	2.0	PDC337
20	5	10	8	100	0.035	2.0	PDC338
20	6	10	8	100	0.035	2.0	PDC339
22	3	10	9	100	0.035	2.0	PDC340
22	4	10	9	100	0.035	2.0	PDC341
22	5	10	9	100	0.035	2.0	PDC342
22	6	10	9	100	0.035	2.0	PDC343
25	3	11	9	100	0.035	1.5	PDC344
25	4	11	9	100	0.035	1.5	PDC345
25	5	11	9	100	0.035	1.5	PDC346
25	6	11	9	100	0.035	1.5	PDC347





TYSHAK II® balloon Characteristics



The TYSHAK II® catheter is a coaxially constructed catheter with a distally mounted non-compliant balloon. The catheter exhibits an extremely low profile that allows the interventionalist to use the small introducer possible. Due to the coaxial construction, the catheter inflates and deflates extremely fast. The TYSHAK II® catheter provides smaller introducers and in some cases slightly lower burst pressures than the TYSHAK®.

Super Thin Balloon

The TYSHAK II® PTV balloon is super thin for a low deflated profile that maintains tip flexibility. The exceptionally low profile balloon requires the smallest introducer possible. Nominal dimensions are maintained over the entire length of the balloon.

Maximum Trackability

The distal shaft through the balloon is highly flexible for exceptional maneuverability. This combined with the pushability of the coaxial shaft provides outstanding tracking performance.

Radiopaque marker

Platinum marker bands facilitate reliable positioning of the balloon

Tyshak II® Specifications

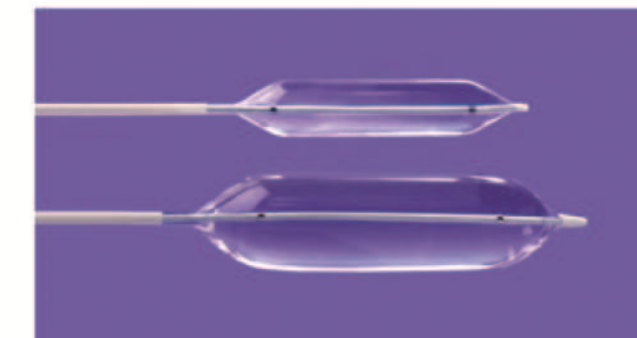
Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	*Nominal Pressure (ATM)	Catalog No.
4.0	2.0	4	4	70	0.021	6	4.5	PDC500
4.0	2.0	4	4	100	0.021	6	4.5	SN003
4.0	10.0	4	4	70	0.021	6	4.5	PDC551
5.0	2.0	4	4	70	0.021	6	4.5	PDC501
5.0	2.0	4	4	100	0.021	6	4.5	SN004
5.0	3.0	4	4	70	0.021	6	4.5	SO020
6.0	2.0	4	4	70	0.021	4	3.5	PDC502
6.0	2.0	4	4	100	0.021	4	3.5	SN005
6.0	3.0	4	4	70	0.021	4	3.5	SO021
7.0	2.0	4	4	70	0.021	4	3.5	PDC503
7.0	2.0	4	4	100	0.021	4	3.5	SN006
7.0	3.0	4	4	70	0.021	4	3.5	PDC509
7.0	3.0	4	4	100	0.021	4	3.5	SN010
8.0	2.0	4	4	70	0.021	4	3.5	PDC504
8.0	2.0	4	4	100	0.021	4	3.5	SN007
8.0	3.0	4	4	70	0.021	4	3.5	PDC510
8.0	3.0	4	4	100	0.021	4	3.5	SN011
8.0	4.0	4	4	70	0.021	4	3.5	SO029
8.0	5.0	4	4	70	0.021	4	3.5	SO032
8.0	6.0	4	4	70	0.021	4	3.5	SO030
9.0	2.0	5	5	90	0.025	3.5	3	SO007
9.0	3.0	5	5	90	0.025	3.5	3	PDC505
9.0	3.0	5	5	100	0.025	3.5	3	SN008
10.0	2.0	5	5	90	0.025	3.5	3	SO003
10.0	3.0	5	5	90	0.025	3.5	3	PDC506
10.0	3.0	5	5	100	0.025	3.5	3	SN009
10.0	4.0	5	5	90	0.025	3.5	3	SO001
10.0	5.0	5	5	90	0.025	3.5	3	SO031
10.0	6.0	6	6	100	0.025	3.5	3	SO009
11.0	2.0	5	5	90	0.025	3.5	3	SN11290
11.0	3.0	5	5	90	0.025	3.5	3	SO017
11.0	4.0	5	5	90	0.025	3.5	3	SO002
12.0	2.0	5	5	90	0.025	3.5	3	SO008
12.0	2.0	6	6	90	0.035	3.5	3	SO014
12.0	3.0	5	5	90	0.025	3.5	3	PDC507
12.0	4.0	6	6	90	0.035	3.5	3	PDC508
12.0	5.0	5	5	90	0.025	3.5	3	SO033
12.0	6.0	6	6	90	0.035	3.5	3	SO004
13.0	2.0	6	6	100	0.035	3	2.5	SO035
13.0	3.0	6	6	100	0.035	3	2.5	SO036
13.0	4.0	6	6	100	0.035	3	2.5	SO034
13.0	5.0	6	6	100	0.035	3	2.5	SO069
14.0	2.0	7	7	100	0.035	3	2	SO018
14.0	3.0	7	7	100	0.035	3	2	PDC511
14.0	4.0	7	7	100	0.035	3	2	PDC512
14.0	5.0	7	7	100	0.035	3	2	PDC513



Tyshak II® Specifications

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	*Nominal Pressure (ATM)	Catalog No.
14.0	6.0	7	7	100	0.035	3	2	PDC514
15.0	3.0	7	7	100	0.035	3	2	PDC515
15.0	4.0	7	7	100	0.035	3	2	PDC516
15.0	5.0	7	7	100	0.035	3	2	PDC517
15.0	6.0	7	7	100	0.035	3	2	PDC518
16.0	2.0	7	7	100	0.035	2.5	2	SN002
16.0	3.0	7	7	100	0.035	2.5	2	PDC519
16.0	4.0	7	7	100	0.035	2.5	2	PDC520
16.0	5.0	7	7	100	0.035	2.5	2	PDC521
16.0	6.0	7	7	100	0.035	2.5	2	PDC522
17.0	3.0	7	7	100	0.035	2.5	2	PDC523
17.0	4.0	7	7	100	0.035	2.5	2	PDC524
17.0	5.0	7	7	100	0.035	2.5	2	PDC525
17.0	6.0	7	7	100	0.035	2.5	2	PDC526
18.0	3.0	8	8	100	0.035	2	1.5	PDC527
18.0	4.0	8	8	100	0.035	2	1.5	PDC528
18.0	5.0	8	8	100	0.035	2	1.5	PDC529
18.0	6.0	8	8	100	0.035	2	1.5	PDC530
20.0	2.0	8	8	100	0.035	2	1.5	SN001
20.0	3.0	8	8	100	0.035	2	1.5	PDC531
20.0	4.0	8	8	100	0.035	2	1.5	PDC532
20.0	5.0	8	8	100	0.035	2	1.5	PDC533
20.0	6.0	8	8	100	0.035	2	1.5	PDC534
22.0	2.0	8	8	100	0.035	2	1.5	SN013
22.0	3.0	8	8	100	0.035	2	1.5	PDC535
22.0	4.0	8	8	100	0.035	2	1.5	PDC536
22.0	5.0	8	8	100	0.035	2	1.5	PDC537
22.0	6.0	8	8	100	0.035	2	1.5	PDC538
23.0	3.0	9	9	100	0.035	2	1.5	PDC539
23.0	4.0	9	9	100	0.035	2	1.5	PDC540
23.0	5.0	9	9	100	0.035	2	1.5	PDC541
23.0	6.0	9	9	100	0.035	2	1.5	PDC542
25.0	3.0	9	9	100	0.035	1.5	1	PDC543
25.0	4.0	9	9	100	0.035	1.5	1	PDC544
25.0	5.0	9	9	100	0.035	1.5	1	PDC545
25.0	6.0	9	9	100	0.035	1.5	1	PDC546
30.0	3.0	10	9	100	0.035	1.5	1	PDC547
30.0	4.0	10	9	100	0.035	1.5	1	PDC548
30.0	5.0	10	9	100	0.035	1.5	1	PDC549
30.0	6.0	10	9	100	0.035	1.5	1	PDC550
30.0	10.0	10	9	100	0.035	1.5	1	PDC552

**Z-MED™
balloon Characteristics**



The **Z-MED™** high pressure dilatation catheter is a coaxially constructed catheter with a distally mounted non-compliant high pressure balloon. The catheter exhibits a comparable profile to other marketed catheters by also combines this profile with a high pressure balloon suitable for resistant stenosis. The **Z-MED™** balloon catheter is available in over 50 configurations ranging in diameter from 2.0 to 40.0 mm.

Balloon

The **Z-MED™** PTV balloon has a low deflated profile that maintains tip flexibility. The exceptionally low profile balloon requires the smallest introducer possible. Nominal dimensions are maintained over the entire length of the balloon.

Maximum Trackability

The distal shaft through the balloon is highly flexible for exceptional maneuverability. This, combined with the pushability of the coaxial shaft, provides outstanding tracking performance.

Radiopaque Marker

Platinum marker bands facilitate reliable positioning of the balloon.



Z-Med™ Specifications

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	Catalog No.
2.0	2.0	6	5.5	90	0.035	10	SO022
3.0	2.0	6	5.5	90	0.035	10	SO024
3.0	4.0	6	5.5	90	0.035	10	SO025
4.0	2.0	6	5	85	0.025	10	PDZ300
4.0	2.0	6	5	100	0.025	10	PDZ323
5.0	2.0	6	5	85	0.025	10	PDZ301
5.0	2.0	6	5	100	0.025	10	PDZ324
6.0	2.0	6	5	85	0.025	10	PDZ302
6.0	2.0	6	5	100	0.025	10	PDZ325
6.0	3.0	7	6	100	0.035	10	PDZ344
7.0	2.0	6	5	85	0.025	10	PDZ303
7.0	2.0	6	5	100	0.025	10	PDZ317
8.0	2.0	7	6	85	0.035	10	PDZ304
8.0	2.0	7	6	100	0.035	10	PDZ326
8.0	3.0	7	6	100	0.035	10	PDZ327
9.0	2.0	7	6	85	0.035	10	PDZ314
9.0	2.0	7	6	100	0.035	10	PDZ328
9.0	3.0	7	6	100	0.035	10	PDZ329
10.0	2.0	7	6	85	0.035	9	PDZ305
10.0	2.0	7	6	100	0.035	9	PDZ330
10.0	3.0	7	6	85	0.035	9	PDZ306
10.0	3.0	7	6	100	0.035	9	PDZ331
10.0	4.0	7	6	100	0.035	9	PDZ341
11.0	3.0	7	6	100	0.035	7	PDZ371
12.0	2.0	8	6	100	0.035	7	PDZ342
12.0	3.0	8	6	85	0.035	7	PDZ307
12.0	3.0	8	6	100	0.035	7	PDZ318
12.0	3.0	8	7	100	0.035	7	PDZ364
12.0	3.0	9	8	110	0.035	7	PDZ372
12.0	4.0	8	6	100	0.035	7	PDZ332
12.0	4.0	8	7	100	0.035	7	PDZ365
12.0	6.0	8	6	85	0.035	7	PDZ377
12.0	6.0	8	6	100	0.035	7	PDZ378
13.0	3.0	9	7	100	0.035	6	PDZ348
13.0	5.0	9	7	100	0.035	6	PDZ349
14.0	2.0	9	7	120	0.035	6	SO065
14.0	3.0	9	7	85	0.035	6	PDZ308
14.0	3.0	9	7	100	0.035	6	PDZ333
14.0	3.0	9	8	100	0.035	6	PDZ368
14.0	4.0	7	6	85	0.035	6	PDZ379
14.0	4.0	7	6	100	0.035	6	PDZ380
14.0	4.0	9	7	100	0.035	6	PDZ334
14.0	4.0	9	8	100	0.035	6	PDZ369
14.0	5.0	9	7	100	0.035	6	PDZ351
15.0	2.0	9	7	100	0.035	5	PDZ359
15.0	3.0	9	7	100	0.035	5	PDZ335

Z-Med™ Specifications

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	Catalog No.
15.0	4.0	9	7	100	0.035	5	PDZ336
15.0	4.0	9	8	100	0.035	5	PDZ366
15.0	5.0	9	7	100	0.035	5	PDZ361
16.0	2.0	9	7	120	0.035	5	SO066
16.0	3.0	9	7	85	0.035	5	PDZ309
16.0	3.0	9	7	100	0.035	5	PDZ322
16.0	4.0	9	7	100	0.035	5	PDZ319
16.0	4.0	9	8	100	0.035	5	PDZ367
16.0	6.0	9	7	100	0.035	5	PDZ370
17.0	3.0	10	7	100	0.035	4	PDZ354
17.0	6.0	10	7	100	0.035	4	PDZ355
18.0	2.0	10	8	120	0.035	4	SO067
18.0	3.0	10	7	100	0.035	4	PDZ356
18.0	3.0	10	8	85	0.035	4	PDZ310
18.0	3.0	10	8	100	0.035	4	PDZ373
18.0	4.0	9	8	100	0.035	4	PDZ347
18.0	4.0	10	8	100	0.035	4	PDZ337
18.0	6.0	10	7	100	0.035	4	PDZ357
19.0	6.0	11	7	100	0.035	4	PDZ358
20.0	3.0	12	8	85	0.035	4	PDZ381
20.0	3.0	12	8	100	0.035	4	PDZ382
20.0	3.0	12	8	120	0.035	4	SO048
20.0	4.0	12	8	85	0.035	4	PDZ311
20.0	4.0	12	8	100	0.035	4	PDZ320
20.0	5.0	12	8	100	0.035	4	PDZ360
20.0	5.0	12	8	120	0.035	4	PDZ363
20.0	6.0	12	9	100	0.035	4	SO005
20.0	8.0	12	9	100	0.035	4	SO080
22.0	3.0	12	9	120	0.035	3	SO049
22.0	4.0	12	9	85	0.035	3	PDZ312
22.0	4.0	12	9	100	0.035	3	PDZ338
22.0	6.0	12	9	85	0.035	3	PDZ383
22.0	6.0	12	9	100	0.035	3	SO006
22.0	8.0	12	9	100	0.035	3	SO081
23.0	2.0	12	9	120	0.035	3	SO052
23.0	3.0	12	9	120	0.035	3	SO058
23.0	4.0	12	9	120	0.035	3	SO047
23.0	5.0	12	9	100	0.035	3	SO016
24.0	2.0	12	9	75	0.035	3	SO084
24.0	4.0	12	9	100	0.035	3	SO059
25.0	3.0	12	9	85	0.035	3	PDZ384
25.0	3.0	12	9	100	0.035	3	SO056
25.0	3.0	12	9	120	0.035	3	SO057
25.0	4.0	12	9	85	0.035	3	PDZ313
25.0	4.0	12	9	100	0.035	3	PDZ339
25.0	5.0	12	9	100	0.035	3	PDZ362



Z-Med™ Specifications

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	Catalog No.
25.0	5.0	12	9	120	0.035	3	PDZ346
25.0	6.0	12	9	100	0.035	3	PDZ374
25.0	8.0	12	9	100	0.035	3	SO082
26.0	2.0	12	9	100	0.035	3	SO061
26.0	3.0	12	9	75	0.035	3	SO085
26.0	4.0	12	9	75	0.035	3	SO063
26.0	4.0	12	9	100	0.035	3	SO060
28.0	2.0	12	9	85	0.035	2	SO043
28.0	2.0	12	9	120	0.035	2	SO053
28.0	3.0	12	9	85	0.035	2	SO027
28.0	3.0	12	9	120	0.035	2	SO050
28.0	4.0	12	9	75	0.035	2	SO064
28.0	4.0	12	9	85	0.035	2	PDZ386
28.0	4.0	12	9	100	0.035	2	PDZ387
28.0	4.0	12	9	120	0.035	2	SO046
30.0	2.0	14	9	85	0.035	2	SO041
30.0	2.0	14	9	120	0.035	2	SO054
30.0	3.0	14	9	85	0.035	2	SO026
30.0	3.0	14	9	120	0.035	2	SO051
30.0	4.0	14	9	75	0.035	2	SO062
30.0	4.0	14	9	85	0.035	2	PDZ316
30.0	4.0	14	9	120	0.035	2	SO055
30.0	6.0	14	9	85	0.035	2	PDZ393
30.0	6.0	14	9	100	0.035	2	PDZ394
30.0	8.0	14	9	100	0.035	2	SO083
33.0	4.0	16	11	100	0.035	1.5	SO073
33.0	6.0	16	11	100	0.035	1.5	SO074
35.0	4.0	16	11	100	0.035	1.5	SO075
35.0	6.0	16	11	100	0.035	1.5	SO076
40.0	4.0	16	11	100	0.035	1	SO077
40.0	6.0	16	11	100	0.035	1	SO078

**Z-MED X™
balloon Characteristics**



Z-Med X™ balloons are manufactured from a slightly thicker, minimally compliant, thermoplastic elastomer material. The thicker material imparts slightly more resistance to puncture and allows a higher pressure for inflation, but because of the thicker material/higher burst pressures, they have thicker, more irregular deflated profiles and require a slightly larger introducer size than the Tyshak-X™ balloons of comparable sizes. These balloons have a rated burst pressure of 10 ATMs for the smaller diameter sizes with the pressure decreasing down to 1.5 ATMs for the largest diameter (28 & 30 mm) balloons.

Braided catheter shaft:

As all XLine Catheters the Z-Med X™ balloons are on the same braided catheter shaft as the Tyshak X™ balloons and accommodate a larger guide wire than the original Z-Med™ balloons.

Stenting :

With a stent mounted on them, these balloons require an 8-French sheath for the smallest diameter balloons and up to 15- or 16-French sheaths for the largest balloons. As a consequence these balloons offer nearly the same advantage for the delivery of stents to large initial diameters compared to the BIB™ balloons.

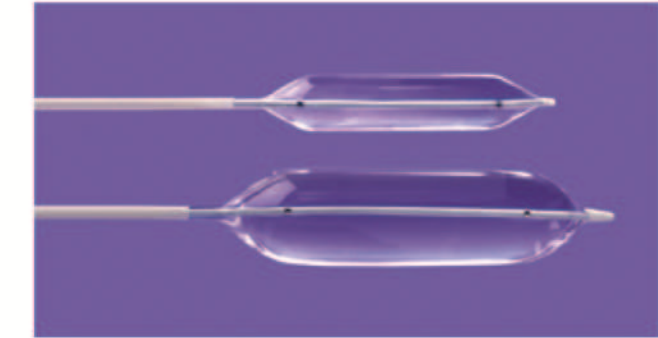


Z-MED-X™ Specifications



Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	Catalog No.
8	2	7	6	100	0.035	10.0	PDZ400
8	3	7	6	100	0.035	10.0	PDZ401
8	4	7	6	100	0.035	10.0	PDZ402
8	5	7	6	100	0.035	10.0	PDZ403
8	6	7	6	100	0.035	10.0	PDZ404
9	2	7	6	100	0.035	10.0	PDZ405
9	3	7	6	100	0.035	10.0	PDZ406
9	4	7	6	100	0.035	10.0	PDZ407
9	5	7	6	100	0.035	10.0	PDZ408
9	6	7	6	100	0.035	10.0	PDZ409
10	2	7	6	100	0.035	9.0	PDZ410
10	3	7	6	100	0.035	9.0	PDZ411
10	4	7	6	100	0.035	9.0	PDZ412
10	5	7	6	100	0.035	9.0	PDZ413
10	6	7	6	100	0.035	9.0	PDZ414
12	2	7	6	100	0.035	7.0	PDZ415
12	3	7	6	100	0.035	7.0	PDZ416
12	4	7	6	100	0.035	7.0	PDZ417
12	5	7	6	100	0.035	7.0	PDZ418
12	6	7	6	100	0.035	7.0	PDZ419
14	3	8	7	100	0.035	6.0	PDZ420
14	4	8	7	100	0.035	6.0	PDZ421
14	5	8	7	100	0.035	6.0	PDZ422
14	6	8	7	100	0.035	6.0	PDZ423
15	3	8	7	100	0.035	5.0	PDZ424
15	4	8	7	100	0.035	5.0	PDZ425
15	5	8	7	100	0.035	5.0	PDZ426
15	6	8	7	100	0.035	5.0	PDZ427
16	3	9	7	100	0.035	5.0	PDZ428
16	4	9	7	100	0.035	5.0	PDZ429
16	5	9	7	100	0.035	5.0	PDZ430
16	6	9	7	100	0.035	5.0	PDZ431
18	3	10	8	100	0.035	4.0	PDZ432
18	4	10	8	100	0.035	4.0	PDZ433
18	5	10	8	100	0.035	4.0	PDZ434
18	6	10	8	100	0.035	4.0	PDZ435
20	3	11	8	100	0.035	4.0	PDZ436
20	4	11	8	100	0.035	4.0	PDZ437
20	5	11	8	100	0.035	4.0	PDZ438
20	6	11	8	100	0.035	4.0	PDZ439
22	3	11	9	100	0.035	3.0	PDZ440
22	4	11	9	100	0.035	3.0	PDZ441
22	5	11	9	100	0.035	3.0	PDZ442
22	6	11	9	100	0.035	3.0	PDZ443
25	3	12	9	100	0.035	3.0	PDZ444
25	4	12	9	100	0.035	3.0	PDZ445
25	5	12	9	100	0.035	3.0	PDZ446
25	6	12	9	100	0.035	3.0	PDZ447
28	3	12	9	100	0.035	2.0	PDZ448
28	4	12	9	100	0.035	2.0	PDZ449
28	5	12	9	100	0.035	2.0	PDZ450
28	6	12	9	100	0.035	2.0	PDZ451
30	3	13	9	100	0.035	2.0	PDZ452
30	4	13	9	100	0.035	2.0	PDZ453
30	5	13	9	100	0.035	2.0	PDZ454
30	6	13	9	100	0.035	2.0	PDZ455

**Z-MED II™
balloon Characteristics**



If you need high rated burst pressures, look no further than **Z-Med™ II**. Comparing to the original Z-MED™ balloons, Z-MED II™ dilatation catheter provides higher pressure and in some instances a larger introducer than the Z-MED™. This innovative catheter has the widest range of sizes- 4mm to 30 mm balloon diameters-all available with improved burst pressures. With Z-Med™ II, you will have the best selection for the best course of treatment.

Z-Med™ II offers quick inflation/deflection times that minimize procedure time and maximize reperfusion. A short, flexible distal tip with short balloon tapers aids maneuverability and trackability through tortuous anatomy. Additional Z-Med™ II features include well defined balloon shoulders and a coaxial shaft design which provides columnar strength and exceptional pushability.



Z-MED II™ Specifications

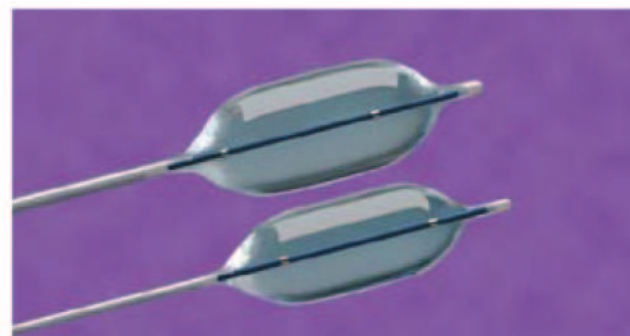
Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	*Nominal Pressure (ATM)	Catalog No.
4.0	2.0	5	5	100	0.025	15	6	PDZ600
4.0	2.0	5	5	120	0.025	15	6	SN037
4.0	3.0	5	5	100	0.025	15	6	PDZ601
4.0	4.0	5	5	100	0.025	15	6	PDZ602
4.0	5.0	5	5	100	0.025	15	6	PDZ603
4.0	6.0	5	5	100	0.025	15	6	PDZ604
4.0	10.0	5	5	100	0.025	15	6	PDZ676
5.0	2.0	6	5	100	0.025	15	6	PDZ605
5.0	2.0	6	5	120	0.025	15	6	SN038
5.0	3.0	6	5	100	0.025	15	6	PDZ606
5.0	4.0	6	5	100	0.025	15	6	PDZ607
5.0	5.0	6	5	100	0.025	15	6	PDZ608
5.0	6.0	6	5	100	0.025	15	6	PDZ609
6.0	2.0	6	5	100	0.025	15	6	PDZ610
6.0	2.0	6	5	120	0.025	15	6	SN039
6.0	3.0	6	5	100	0.025	15	6	PDZ611
6.0	4.0	6	5	100	0.025	15	6	PDZ612
6.0	5.0	6	5	100	0.025	15	6	PDZ613
6.0	6.0	6	5	100	0.025	15	6	PDZ614
7.0	2.0	6	5	100	0.025	15	6	PDZ615
7.0	2.0	6	5	120	0.025	15	6	SN040
7.0	3.0	6	5	100	0.025	15	6	PDZ616
7.0	4.0	6	5	100	0.025	15	6	PDZ617
7.0	5.0	6	5	100	0.025	15	6	PDZ618
7.0	6.0	6	5	100	0.025	15	6	PDZ619
8.0	2.0	7	6	100	0.035	15	6	PDZ620
8.0	2.0	7	6	120	0.035	15	6	SN041
8.0	3.0	7	6	100	0.035	15	6	PDZ621
8.0	4.0	7	6	100	0.035	15	6	PDZ622
8.0	5.0	7	6	100	0.035	15	6	PDZ623
8.0	6.0	7	6	100	0.035	15	6	PDZ624
9.0	2.0	7	6	100	0.035	14	6	PDZ625
9.0	2.0	7	6	120	0.035	14	6	SN042
9.0	3.0	7	6	100	0.035	14	6	PDZ626
9.0	4.0	7	6	100	0.035	14	6	PDZ627
9.0	5.0	7	6	100	0.035	14	6	PDZ628
9.0	6.0	7	6	100	0.035	14	6	PDZ629
10.0	2.0	7	6	100	0.035	13	6	PDZ630
10.0	2.0	7	6	120	0.035	13	6	SN043
10.0	3.0	7	6	100	0.035	13	6	PDZ631
10.0	4.0	7	6	100	0.035	13	6	PDZ632
10.0	5.0	7	6	100	0.035	13	6	PDZ633
10.0	6.0	7	6	100	0.035	13	6	PDZ634
11.0	2.0	8	6	120	0.035	10	6	SN044
11.0	3.0	8	6	100	0.035	10	6	SO028
11.0	4.0	8	6	100	0.035	10	6	SO039
12.0	2.0	8	6	100	0.035	10	6	PDZ635
12.0	2.0	8	6	120	0.035	10	6	SN045
12.0	2.5	8	6	100	0.035	10	6	SO068

Z-MED II™ Specifications

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	*Nominal Pressure (ATM)	Catalog No.
12.0	3.0	8	6	100	0.035	10	6	PDZ636
12.0	4.0	8	6	100	0.035	10	6	PDZ637
12.0	5.0	8	6	100	0.035	10	6	PDZ638
12.0	6.0	8	6	100	0.035	10	6	PDZ639
14.0	2.0	9	7	120	0.035	10	5	SN046
14.0	3.0	9	7	100	0.035	10	5	PDZ640
14.0	4.0	9	7	100	0.035	10	5	PDZ641
14.0	5.0	9	7	100	0.035	10	5	PDZ642
14.0	6.0	9	7	100	0.035	10	5	PDZ643
15.0	3.0	9	7	100	0.035	8	5	PDZ644
15.0	4.0	9	7	100	0.035	8	5	PDZ645
15.0	5.0	9	7	100	0.035	8	5	PDZ646
15.0	6.0	9	7	100	0.035	8	5	PDZ647
16.0	3.0	9	7	100	0.035	8	4	PDZ648
16.0	4.0	9	7	100	0.035	8	4	PDZ649
16.0	5.0	9	7	100	0.035	8	4	PDZ650
16.0	6.0	9	7	100	0.035	8	4	PDZ651
18.0	3.0	10	8	100	0.035	7	4	PDZ652
18.0	4.0	10	8	100	0.035	7	4	PDZ653
18.0	5.0	10	8	100	0.035	7	4	PDZ654
18.0	6.0	10	8	100	0.035	7	4	PDZ655
20.0	3.0	12	8	100	0.035	5	2	PDZ656
20.0	4.0	12	8	100	0.035	5	2	PDZ657
20.0	5.0	12	8	100	0.035	5	2	PDZ658
20.0	6.0	12	8	100	0.035	5	2	PDZ659
22.0	3.0	12	9	100	0.035	4	2	PDZ660
22.0	4.0	12	9	100	0.035	4	2	PDZ661
22.0	5.0	12	9	100	0.035	4	2	PDZ662
22.0	6.0	12	9	100	0.035	4	2	PDZ663
23.0	3.0	14	9	100	0.035	4	2	PDZ664
23.0	3.0	14	9	120	0.035	4	2	SO044
23.0	4.0	14	9	100	0.035	4	2	PDZ665
23.0	5.0	14	9	100	0.035	4	2	PDZ666
23.0	6.0	14	9	100	0.035	4	2	PDZ667
25.0	2.0	14	9	85	0.035	4	2	SO042
25.0	2.0	14	9	100	0.035	4	2	SO040
25.0	3.0	14	9	100	0.035	4	2	PDZ668
25.0	3.0	14	9	120	0.035	4	2	SO045
25.0	4.0	14	9	100	0.035	4	2	PDZ669
25.0	5.0	14	9	100	0.035	4	2	PDZ670
25.0	6.0	14	9	100	0.035	4	2	PDZ671
26.0	2.0	14	9	100	0.035	4	2	PDZ672
26.0	4.0	14	9	100	0.035	4	2	SO070
28.0	2.0	16	11	100	0.035	3.5	2	PDZ673
28.0	4.0	16	11	100	0.035	3.5	2	SO071
30.0	2.0	16	11	100	0.035	3	2	PDZ674
30.0	4.0	16	11	100	0.035	3	2	SO072
30.0	5.0	16	11	100	0.035	3	2	SO079
30.0	6.0	16	11	100	0.035	3	2	PDZ675
30.0	10.0	16	11	100	0.035	3	2	PDZ677



Z-MED II-X™ Balloon Characteristics



Z-MED II X™ Balloon Catheters are originally peripheral angioplasty balloons with relatively short shoulders.

Z-Med II X™ are modification of the Z-Med X™ balloons and are made from a sturdier, slightly thicker thermoplastic elastomer balloon material, which allows a higher inflation pressure but at the expense of a very rough, bulky, re-fold configuration.

Z-Med™ II X balloons are relatively non-compliant which have fairly thick walls and are fairly puncture resistant. The nominal inflation pressures of these balloons are 6 atms for the smaller (8–10mm) diameter balloons decreasing to 2 ATMs for the very large (28–30 mm) diameter balloons and the burst pressures for the same balloons range from 15 ATMs for the smaller diameter balloons to 3 atms for the very large diameter balloons. These balloons require larger introductory sheaths.

Braided catheter shaft

The Z-Med II X™ balloons have the same braided, more rigid, catheter shaft of all of the other NuMED™ “X” balloons, which makes them easier to push through the vascular system and to control during inflation.

Stenting

With a stent mounted on them, these balloons require an 8-French sheath for the smallest diameter balloons and up to 15- or 16-French sheaths for the largest balloons. These balloons have nearly the same advantage for the delivery of stents to large initial diameters vessel compared to the BIB™ balloons.

Z-MED II-X™ Specification

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	*Nominal Pressure (ATM)	Catalog No.
8	2	7	6	100	0.035	15.0	6.0	PDZ700
8	3	7	6	100	0.035	15.0	6.0	PDZ701
8	4	7	6	100	0.035	15.0	6.0	PDZ702
8	5	7	6	100	0.035	15.0	6.0	PDZ703
8	6	7	6	100	0.035	15.0	6.0	PDZ704
9	2	7	6	100	0.035	14.0	6.0	PDZ705
9	3	7	6	100	0.035	14.0	6.0	PDZ706
9	4	7	6	100	0.035	14.0	6.0	PDZ707
9	5	7	6	100	0.035	14.0	6.0	PDZ708
9	6	7	6	100	0.035	14.0	6.0	PDZ709
10	2	7	6	100	0.035	13.0	6.0	PDZ710
10	3	7	6	100	0.035	13.0	6.0	PDZ711
10	4	7	6	100	0.035	13.0	6.0	PDZ712
10	5	7	6	100	0.035	13.0	6.0	PDZ713
10	6	7	6	100	0.035	13.0	6.0	PDZ714
12	2	8	6	100	0.035	10.0	6.0	PDZ715
12	3	8	6	100	0.035	10.0	6.0	PDZ716
12	4	8	6	100	0.035	10.0	6.0	PDZ717
12	5	8	6	100	0.035	10.0	6.0	PDZ718
12	6	8	6	100	0.035	10.0	6.0	PDZ719
14	3	9	7	100	0.035	10.0	5.0	PDZ720
14	4	9	7	100	0.035	10.0	5.0	PDZ721
14	5	9	7	100	0.035	10.0	5.0	PDZ722
14	6	9	7	100	0.035	10.0	5.0	PDZ723
15	3	9	7	100	0.035	8.0	5.0	PDZ724
15	4	9	7	100	0.035	8.0	5.0	PDZ725
15	5	9	7	100	0.035	8.0	5.0	PDZ726
15	6	9	7	100	0.035	8.0	5.0	PDZ727
16	3	9	7	100	0.035	8.0	4.0	PDZ728
16	4	9	7	100	0.035	8.0	4.0	PDZ729
16	5	9	7	100	0.035	8.0	4.0	PDZ730
16	6	9	7	100	0.035	8.0	4.0	PDZ731
18	3	10	8	100	0.035	7.0	4.0	PDZ732
18	4	10	8	100	0.035	7.0	4.0	PDZ733
18	5	10	8	100	0.035	7.0	4.0	PDZ734
18	6	10	8	100	0.035	7.0	4.0	PDZ735
20	3	12	8	100	0.035	5.0	2.0	PDZ736
20	4	12	8	100	0.035	5.0	2.0	PDZ737
20	5	12	8	100	0.035	5.0	2.0	PDZ738
20	6	12	8	100	0.035	5.0	2.0	PDZ739
22	3	12	9	100	0.035	4.0	2.0	PDZ740
22	4	12	9	100	0.035	4.0	2.0	PDZ741
22	5	12	9	100	0.035	4.0	2.0	PDZ742
22	6	12	9	100	0.035	4.0	2.0	PDZ743
23	3	13	9	100	0.035	4.0	2.0	PDZ744
23	4	13	9	100	0.035	4.0	2.0	PDZ745
23	5	13	9	100	0.035	4.0	2.0	PDZ746
23	6	13	9	100	0.035	4.0	2.0	PDZ747
25	3	14	9	100	0.035	4.0	2.0	PDZ748
25	4	14	9	100	0.035	4.0	2.0	PDZ749
25	5	14	9	100	0.035	4.0	2.0	PDZ750
25	6	14	9	100	0.035	4.0	2.0	PDZ751
28	4	16	11	100	0.035	3.5	2.0	PDZ752
30	4	16	11	100	0.035	3.0	2.0	PDZ753



Nucleus™ Percutaneous Transluminal Valvuloplasty catheter

Catheter Characteristics



The NuMED NuCLEUS™ PTV catheter is engineered for maximum steering and tracking. The coaxial shaft design provides enhanced column strength and pushability combined with a flexible distal tip for optimum steerability. The innovative single balloon design facilitates positive positioning while holding the balloon in the correct location prior to and during inflation.

Radiopaque Marker Platinum marker bands facilitate reliable positioning of the balloon and are located at the 'waist' center and beneath the shoulders of the balloon for clear identification under fluoroscopy.

Maximum Trackability The distal shaft through the balloon is highly flexible for exceptional maneuverability. This, combined with the pushability of the coaxial shaft, provides outstanding tracking performance.

Micro-Thin Non-Compliant Balloon The NuMED NuCLEUS™ PTV patented design allows for accurate balloon placement. Initial inflation will hold balloon in the desired position, further inflation expands the center of the balloon to effect satisfactory dilatation.

The NuMED NuCLEUS™ PTV balloon is micro-thin for a low deflated profile that maintains tip flexibility. The exceptionally low profile balloon requires the smallest introducer possible. Nominal dimensions are maintained over the entire length of the non-compliant balloon.

Nucleus™ Specifications

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	Catalog No.
10	3.0	7	6	110	0.035	9	PVN218
10	4.0	7	6	110	0.035	9	PVN219
10	5.0	7	6	110	0.035	9	PVN236
10	6.0	7	6	110	0.035	9	PVN237
12	3.0	7	6	110	0.035	7	PVN220
12	3.0	8	6	110	0.035	7	PVN221
12	4.0	7	6	110	0.035	7	PVN222
12	4.0	8	6	110	0.035	7	PVN223
12	5.0	8	6	110	0.035	7	PVN238
12	6.0	8	6	110	0.035	7	PVN239
14	3.0	9	7	110	0.035	6	PVN224
14	4.0	9	7	110	0.035	6	PVN225
14	5.0	9	7	110	0.035	6	PVN240
14	6.0	9	7	110	0.035	6	PVN241
16	3.0	9	7	110	0.035	5	PVN226
16	4.0	9	7	110	0.035	5	PVN227
16	5.0	9	7	110	0.035	5	PVN242
16	6.0	9	7	110	0.035	5	PVN243
18	3.0	10	8	110	0.035	4	PVN228
18	4.0	10	8	110	0.035	4	PVN229
18	5.0	10	8	110	0.035	4	PVN244
18	6.0	10	8	110	0.035	4	PVN245
20	4.0	12	8	110	0.035	4	PVN230
20	5.0	12	8	110	0.035	4	PVN246
20	6.0	12	8	110	0.035	4	PVN247
22	4.0	12	9	110	0.035	4	PVN231
22	5.0	12	9	110	0.035	4	PVN248
22	6.0	12	9	110	0.035	4	PVN249
25	4.0	12	9	110	0.035	4	PVN232
25	5.0	12	9	110	0.035	4	PVN250
25	6.0	12	9	110	0.035	4	PVN251
28	4.0	12	9	110	0.035	2	PVN233
28	4.0	14	9	110	0.035	2	PVN234
28	5.0	14	9	110	0.035	2	PVN252
28	6.0	14	9	110	0.035	2	PVN253
30	4.0	14	9	110	0.035	2	PVN235
30	5.0	14	9	110	0.035	2	PVN254
30	6.0	14	9	110	0.035	2	PVN255



INTRODUCING
THE NEW X™ LINE CATHETERS

PTS-X™
Tyshak-X™
Z-Med-X™
Z-Med II-X™
Mullins-X™

NEW Design

Special Features

- Xtra high inner lumen strength
- Xtra fast guidewire movement (even with balloon inflated)
- Increased pushability from new braided inner tubing
- Radiopaque inner tubing

Nucleus-X™



Recommended for Percutaneous Transluminal Valvuloplasty (PTV) for mitral and aortic position and centered balloon angioplasty applications. The use of this catheter is particularly indicated in stenosis where difficulty in balloon positioning during inflation is experienced.

Nucleus-X™ Specifications

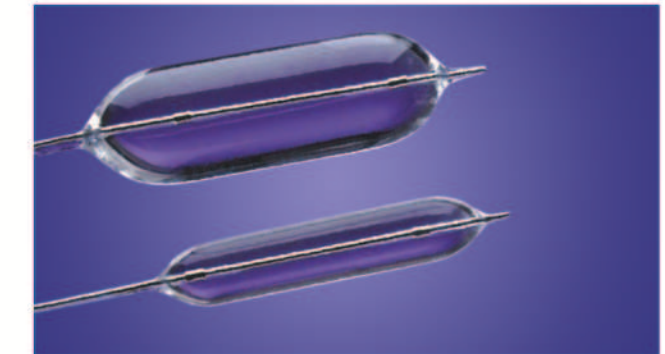
Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	Catalog No.
18.0	4.0	10	9	110	0.035	4	PVN400
18.0	5.0	10	9	110	0.035	4	PVN401
18.0	6.0	10	9	110	0.035	4	PVN402
20.0	4.0	12	9	110	0.035	4	PVN403
20.0	5.0	12	9	110	0.035	4	PVN404
20.0	6.0	12	9	110	0.035	4	PVN405
22.0	4.0	12	9	110	0.035	3	PVN406
22.0	5.0	12	9	110	0.035	3	PVN407
22.0	6.0	12	9	110	0.035	3	PVN408
25.0	4.0	12	9	110	0.035	3	PVN409
25.0	5.0	12	9	110	0.035	3	PVN410
25.0	6.0	12	9	110	0.035	3	PVN411
28.0	4.0	12	9	110	0.035	2	PVN412
28.0	5.0	12	9	110	0.035	2	PVN413
28.0	6.0	12	9	110	0.035	2	PVN414
30.0	4.0	14	9	110	0.035	2	PVN415
30.0	5.0	14	9	110	0.035	2	PVN416
30.0	6.0	14	9	110	0.035	2	PVN417



Tyshak Mini
Coefficient

**P e d i a t r i c
V a l v u l o p l a s t y**

Catheter Characteristics



The **TYSHAK Mini®** Pediatric Valvuloplasty catheter has been designed and engineered with a super thin but relatively non-compliant balloon of 1.0 or 4.0 cm in usable length along with a 2.5/3.5 Fr shaft and mini distal tip, making the **TYSHAK Mini®** the lowest profile of any available balloon in its diameter. The Tyshak Mini™ balloons up to 8 mm in diameter pass through a 3-French sheath while the 9 and 10 mm Mini™ balloons require a 4-French sheath.

The very small Tyshak Mini balloons are the preferred balloons for very small infant and neonatal with sever pulmonary and aortic valve dilations.

Super Thin Balloon

The **TYSHAK Mini®** Pediatric Valvuloplasty balloon is super thin for a low deflated profile that maintains tip flexibility. The exceptionally low profile balloon requires the smallest introducer possible.

Double Tapered Balloon

The **TYSHAK Mini®** Pediatric Valvuloplasty catheter has short tapers at the distal and proximal ends for enhanced transition across the stenosis and post dilatation ease of withdrawal into the introducer.

Tyshak Mini® Specifications

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	*Nominal Pressure (ATM)	Catalog No.
4.0	2.0	3	2.5	65	0.014	6	4.5	PDC400
5.0	2.0	3	2.5	65	0.014	6	4.5	PDC401
6.0	2.0	3	2.5	65	0.014	4	3.5	PDC402
7.0	1.0	3	2.5	65	0.014	4	3.5	SO101
7.0	2.0	3	2.5	65	0.014	4	3.5	PDC403
8.0	1.0	3	2.5	65	0.014	4	3.5	SO102
8.0	2.0	3	2.5	65	0.014	4	3.5	PDC404
9.0	1.0	4	3.5	65	0.014	3.5	3	SO103
9.0	2.0	4	3.5	65	0.014	3.5	3	PDC405
9.0	4.0	4	3.5	65	0.014	3.5	3	PDC407
10.0	1.0	4	3.5	65	0.014	3.5	3	SO104
10.0	2.0	4	3.5	65	0.014	3.5	3	PDC406
10.0	4.0	4	3.5	65	0.014	3.5	3	PDC408



Coefficient™ Pediatric Valvuloplasty catheter



Catheter Characteristics

The COEfficient™ Pediatric Valvuloplasty catheter is engineered for maximum steering and tracking. The coaxial shaft design provides enhanced column strength and pushability combined with a flexible distal tip for optimum steerability.

Radiopaque Marker

Platinum marker bands facilitate reliable positioning of the balloon.

Balloon

The COEfficient™ Pediatric Valvuloplasty balloon has a low deflated profile that maintains tip flexibility. The exceptionally low profile balloon requires the smallest introducer possible. Nominal dimensions are maintained over the entire length of the balloon.

Maximum Trackability

The distal shaft through the balloon is highly flexible for exceptional maneuverability. This, combined with the pushability of the coaxial shaft, provides outstanding tracking performance.

Coefficient™ Specifications

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	Catalog No.
4.0	2.0	4	3.5	75	0.018	13	COE101
4.0	2.0	4	3.5	135	0.018	13	COE128
4.0	3.0	4	3.5	75	0.018	13	COE102
4.0	4.0	4	3.5	75	0.018	13	COE103
5.0	2.0	4	3.5	75	0.018	12	COE104
5.0	2.0	4	3.5	135	0.018	12	COE129
5.0	3.0	4	3.5	75	0.018	12	COE105
5.0	4.0	4	3.5	75	0.018	12	COE106
6.0	2.0	5	3.5	75	0.018	12	COE107
6.0	2.0	5	3.5	135	0.018	12	COE130
6.0	3.0	5	3.5	75	0.018	12	COE108
6.0	4.0	5	3.5	75	0.018	12	COE109
7.0	2.0	5	3.5	75	0.018	11	COE110
7.0	2.0	5	3.5	135	0.018	11	COE131
7.0	3.0	5	3.5	75	0.018	11	COE111
7.0	4.0	5	3.5	75	0.018	11	COE112
8.0	2.0	6	3.5	75	0.018	10	COE113
8.0	2.0	6	3.5	135	0.018	10	COE132
8.0	3.0	6	3.5	75	0.018	10	COE114
8.0	4.0	6	3.5	75	0.018	10	COE115
9.0	2.0	6	3.5	75	0.018	10	COE116
9.0	3.0	6	3.5	75	0.018	10	COE117
9.0	4.0	6	3.5	75	0.018	10	COE118
10.0	2.0	6	3.5	75	0.018	10	COE119
10.0	3.0	6	3.5	75	0.018	10	COE120
10.0	4.0	6	3.5	75	0.018	10	COE121
11.0	2.0	6	3.5	75	0.018	8	COE122
11.0	3.0	6	3.5	75	0.018	8	COE123
11.0	4.0	6	3.5	75	0.018	8	COE124
12.0	2.0	6	3.5	75	0.018	7	COE125
12.0	3.0	7	3.5	75	0.018	7	COE126
12.0	4.0	7	3.5	75	0.018	7	COE127



Ghost PTA

High Five

Mini Ghost

Ghost II

DH

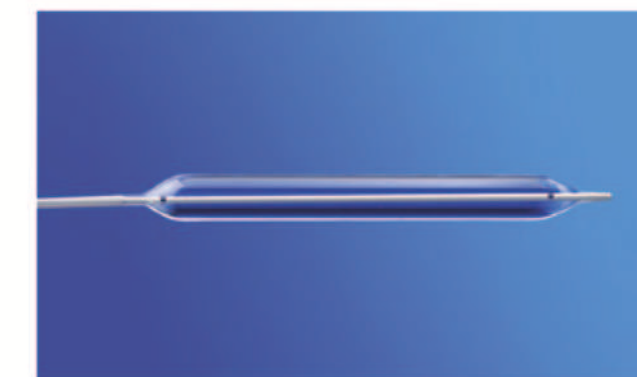
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PTA Balloons Catheters



GHOST PTA™ Dilatation catheter



Catheter Characteristics

The **GHOST PTA™** dilatation catheter is engineered for maximum steerability and pushability. The coaxial shaft design provides a proximal shaft with enhanced column strength for pushability and decreased distal shaft for optimum steerability.

Flexible Balloon

The micro-thin balloon maintains tip flexibility when deflated allowing exceptional trackability through tortuous vessels.

High Pressure Non-compliant Balloon

The **GHOST PTA™** dilatation catheter provides a micro-thin, non-compliant balloon with a low profile. It has nominal dimensions at the low end of working range and a high rated burst pressure. The flexible tip is achieved using a tapered tip design. It has minimal winging for improved crossability.

Double Tapered Balloon

The **GHOST PTA™** dilatation catheter balloon is tapered at the distal and proximal ends for enhanced transition across the stenosis and post dilatation ease of withdrawal into the introducer.

Vessel Conformability

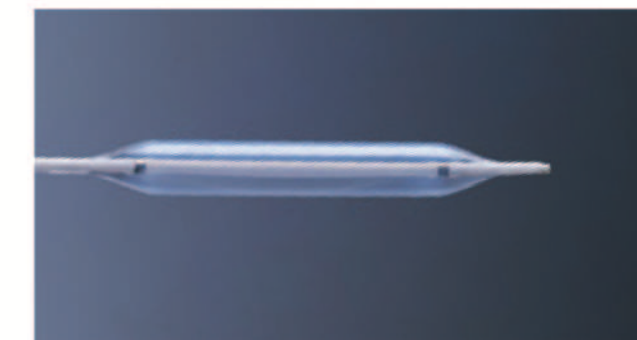
NuMED balloons have the ability to conform to vessel shape while maintaining maximum inflation pressure. This reduces trauma to delicate vessel intima.



Ghost PTA™ Specifications

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	Catalog No.
3.0	2.0	6	5.5	90	0.035	10	PTA530
3.0	4.0	6	5.5	90	0.035	10	PTA531
4.0	2.0	6	5.5	90	0.035	10	PTA522A
4.0	4.0	6	5.5	90	0.035	10	PTA501A
4.0	5.0	6	5.5	90	0.035	10	PTA532
4.0	10.0	6	5.5	90	0.035	10	PTA508A
5.0	2.0	6	5.5	90	0.035	10	PTA523A
5.0	4.0	6	5.5	90	0.035	10	PTA503A
5.0	10.0	6	5.5	90	0.035	10	PTA510A
6.0	2.0	6	5.5	90	0.035	10	PTA524A
6.0	4.0	6	5.5	90	0.035	10	PTA505A
6.0	6.0	6	5.5	90	0.035	10	PTA535
6.0	10.0	6	5.5	90	0.035	10	PTA512A
7.0	2.0	6	5.5	90	0.035	10	PTA525
7.0	4.0	6	5.5	90	0.035	10	PTA506
7.0	6.0	6	5.5	90	0.035	10	PTA537
7.0	10.0	6	5.5	90	0.035	10	PTA513
8.0	2.0	6	5.5	90	0.035	10	PTA526
8.0	3.0	6	5.5	90	0.035	10	PTA539
8.0	4.0	6	5.5	90	0.035	10	PTA507
8.0	6.0	6	5.5	90	0.035	10	PTA540
8.0	10.0	6	5.5	90	0.035	10	PTA514
9.0	2.0	7	5.5	90	0.035	10	PTA542
9.0	3.0	7	5.5	90	0.035	10	PTA527
9.0	4.0	7	5.5	90	0.035	10	PTA529
9.0	6.0	7	5.5	90	0.035	10	PTA543
10.0	2.0	7	6	90	0.035	9	PTA544
10.0	4.0	7	6	90	0.035	9	PTA519
10.0	10.0	7	6	90	0.035	9	PTA520

High Five™ PTA ultra-high pressure catheter



Catheter Characteristics

The High Five™ PTA catheter is engineered for maximum steerability and pushability. The coaxial shaft design provides a proximal shaft with enhanced column strength for pushability and decreased distal shaft for optimum steerability.

Visualization

Two image marker bands are placed beneath the shoulders of the balloon to allow reliable positioning of the balloon within the stenosis.

Flexible Balloon

The ultra-high pressure balloon maintains tip flexibility when deflated allowing exceptional trackability through tortuous vessels.

High Pressure Non-Compliant Balloon

The High Five™ PTA catheter provides a micro-thin, non-compliant balloon with a low profile. It has nominal dimensions at the low end of working range and a high rated burst pressure. The flexible tip is achieved using a tapered tip design. It has minimal winging for improved crossability.

Double Tapered Balloon

The High Five™ PTA catheter balloon is tapered at the distal and proximal ends for enhanced transition across the stenosis and post dilatation ease of withdrawal into the introducer.

Vessel Conformability

NuMED balloons have the ability to conform to vessel shape while maintaining maximum inflation pressure. This reduces trauma to delicate vessel intima.



High Five™ Specifications

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	Catalog No.
4.0	2.0	6	5	90	0.035	20	H54002
4.0	4.0	6	5	90	0.035	20	H54004
4.0	10.0	6	5	90	0.035	20	H54010
5.0	2.0	6	5	90	0.035	20	H55002
5.0	4.0	6	5	90	0.035	20	H55004
5.0	6.0	6	5	90	0.035	20	H55006
5.0	10.0	6	5	90	0.035	20	H55010
6.0	2.0	6	5	90	0.035	20	H56002
6.0	4.0	6	5	90	0.035	20	H56004
6.0	6.0	6	5	90	0.035	20	H56006
6.0	8.0	6	5	90	0.035	20	H56008
6.0	10.0	6	5	90	0.035	20	H56010
7.0	2.0	7	5	90	0.035	18	H57002
7.0	4.0	7	5	90	0.035	18	H57004
7.0	6.0	7	5	90	0.035	18	H57006
7.0	8.0	7	5	90	0.035	18	H57008
7.0	10.0	7	5	90	0.035	18	H57010
8.0	2.0	7	5	90	0.035	16	H58002
8.0	3.0	7	5	90	0.035	16	H58003
8.0	4.0	7	5	90	0.035	16	H58004
8.0	6.0	7	5	90	0.035	16	H58006
8.0	8.0	7	5	90	0.035	16	H58008
8.0	10.0	7	5	90	0.035	16	H58010
9.0	2.0	8	5	90	0.035	15	H59002
9.0	3.0	8	5	90	0.035	15	H59003
9.0	4.0	8	5	90	0.035	15	H59004
9.0	6.0	8	5	90	0.035	15	H59006
10.0	2.0	8	5	90	0.035	15	H51002
10.0	3.0	8	5	90	0.035	15	H51003
10.0	4.0	8	5	90	0.035	15	H51004
10.0	5.0	8	5	90	0.035	15	H51005
10.0	6.0	8	5	90	0.035	15	H51006



**MINI GHOST™
Dilatation catheter**

Catheter Characteristics

The **Mini Ghost™** is a coaxial catheter used for dilatations of small vessels. Small required introducer with high Rated Burst pressure made them suitable for peripheral angioplasty. The catheter features a 20 or 12 ATM balloon mounted on 3.5 Fr shaft. The catheter is available in balloon diameters of 2.0mm to 6.0mm and also a variety of balloon and usable lengths. This catheter is not for use in the coronary arteries.

Visualization

Two image bands are placed beneath the shoulders of the balloon to allow reliable positioning of the balloon within the stenosis.

Vessel Conformability

NuMED balloons have an ability to conform to vessel shape while maintaining maximum inflation pressure. This reduces trauma to delicate vessel intima.

Usable Length

Available in lengths of 40 cm, 80 cm, 120 cm, and 150 cm.



Mini Ghost™ Specifications

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Guide Wire (Inches)	Rated Bust (ATM)	Catalog No.			
						Usable Lengths (Shaft Length)			
						40CM	80CM	120 CM	150CM
2	1	4	3.5	0.018	20	MG317	MG318	MG319	MG320
2	1.5	4	3.5	0.018	20	MG321	MG322	MG323	MG324
2	2	4	3.5	0.018	20	MG100	MG101	MG103	
2	3	4	3.5	0.018	20	MG155	MG156	MG157	
2	4	4	3.5	0.018	20	MG104	MG105	MG106	
2	6	4	3.5	0.018	20	MG182	MG183	MG184	
2	8	4	3.5	0.018	20	MG185	MG186	MG187	
2	10	4	3.5	0.018	20	MG188	MG189	MG190	
2.5	1	4	3.5	0.018	20	MG325	MG326	MG327	MG328
2.5	1.5	4	3.5	0.018	20	MG329	MG330	MG331	MG332
2.5	2	4	3.5	0.018	20	MG107	MG108	MG109	
2.5	3	4	3.5	0.018	20	MG158	MG159	MG160	
2.5	4	4	3.5	0.018	20	MG110	MG111	MG112	
2.5	6	4	3.5	0.018	20	MG191	MG192	MG193	
2.5	8	4	3.5	0.018	20	MG194	MG195	MG196	
2.5	10	4	3.5	0.018	20	MG197	MG198	MG199	
3	1	4	3.5	0.018	20	MG333	MG334	MG335	MG336
3	1.5	4	3.5	0.018	20	MG337	MG338	MG339	MG340
3	2	4	3.5	0.018	20	MG113	MG114	MG115	
3	3	4	3.5	0.018	20	MG161	MG162	MG163	
3	4	4	3.5	0.018	20	MG116	MG117	MG118	
3	6	4	3.5	0.018	20	MG200	MG201	MG202	
3	8	4	3.5	0.018	20	MG203	MG204	MG205	
3	10	4	3.5	0.018	20	MG206	MG207	MG208	
3.5	1	4	3.5	0.018	20	MG341	MG342	MG343	MG344
3.5	1.5	4	3.5	0.018	20	MG345	MG346	MG347	MG348
3.5	2	4	3.5	0.018	20	MG119	MG120	MG121	
3.5	3	4	3.5	0.018	20	MG164	MG165	MG166	
3.5	4	4	3.5	0.018	20	MG122	MG123	MG124	
3.5	6	4	3.5	0.018	20	MG209	MG210	MG211	
3.5	8	4	3.5	0.018	20	MG212	MG213	MG214	
3.5	10	4	3.5	0.018	20	MG215	MG216	MG217	
4	1	4	3.5	0.018	20	MG349	MG350	MG351	MG352
4	1.5	4	3.5	0.018	20	MG353	MG354	MG355	MG356
4	2	4	3.5	0.018	20	MG125	MG126	MG127	
4	3	4	3.5	0.018	20	MG167	MG168	MG169	
4	4	4	3.5	0.018	20	MG128	MG129	MG130	
4	6	4	3.5	0.018	20	MG218	MG219	MG220	
4	8	4	3.5	0.018	20	MG221	MG222	MG223	
4	10	4	3.5	0.018	20	MG224	MG225	MG226	
4.5	1	4	3.5	0.018	20	MG357	MG358	MG359	MG360
4.5	1.5	4	3.5	0.018	20	MG361	MG362	MG363	MG364
4.5	2	4	3.5	0.018	20	MG131	MG132	MG133	
4.5	3	4	3.5	0.018	20	MG170	MG171	MG172	
4.5	4	4	3.5	0.018	20	MG134	MG135	MG136	
4.5	6	4	3.5	0.018	20	MG227	MG228	MG229	
4.5	8	4	3.5	0.018	20	MG230	MG231	MG232	
4.5	10	4	3.5	0.018	20	MG233	MG234	MG235	
5	1	4	3.5	0.018	12	MG365	MG366	MG367	MG368
5	1.5	4	3.5	0.018	12	MG369	MG370	MG371	MG372

Mini Ghost™ Specifications

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Guide Wire (Inches)	Rated Bust (ATM)	Catalog No.			
						Usable Lengths (Shaft Length)			
						40CM	80CM	120 CM	150CM
5	2	4	3.5	0.018	12	MG137	MG138	MG139	
5	3	4	3.5	0.018	12	MG173	MG174	MG175	
5	4	4	3.5	0.018	12	MG140	MG141	MG142	
5	6	4	3.5	0.018	12	MG236	MG237	MG238	
5	8	4	3.5	0.018	12	MG239	MG240	MG241	
5	10	4	3.5	0.018	12	MG242	MG243	MG244	
5.5	1	4	3.5	0.018	12	MG373	MG374	MG375	MG376
5.5	1.5	4	3.5	0.018	12	MG377	MG378	MG379	MG380
5.5	2	4	3.5	0.018	12	MG143	MG144	MG145	
5.5	3	4	3.5	0.018	12	MG176	MG177	MG178	
5.5	4	4	3.5	0.018	12	MG146	MG147	MG148	
5.5	6	4	3.5	0.018	12	MG245	MG246	MG247	
5.5	8	4	3.5	0.018	12	MG248	MG249	MG250	
5.5	10	4	3.5	0.018	12	MG251	MG252	MG253	
6	1	4	3.5	0.018	12	MG381	MG382	MG383	MG384
6	1.5	4	3.5	0.018	12	MG385	MG386	MG387	MG388
6	2	4	3.5	0.018	12	MG149	MG150	MG151	
6	3	4	3.5	0.018	12	MG179	MG180	MG181	
6	4	4	3.5	0.018	12	MG152	MG153	MG154	
6	6	4	3.5	0.018	12	MG254	MG255	MG256	
6	8	4	3.5	0.018	12	MG257	MG258	MG259	
6	10	4	3.5	0.0188	12	MG260	MG261	MG262	



GHOST II™ Dilatation catheter

Catheter Characteristics

The **Ghost II™** is a dual lumen catheter for use in PTA applications. The catheter features a high pressure, low profile balloon mounted on a 5.0 Fr shaft. This catheter is available in a wide variety of balloon lengths and diameters and also four different usable lengths. This catheter is not for use in the coronary arteries.

Visualization

The radiopaque marker(s) are placed beneath the 'working area' of the balloon.

Vessel Conformability

NuMED balloons have an ability to conform to vessel shape while maintaining maximum inflation pressure. This reduces trauma to delicate vessel intima.

Usable Length

The shaft length is available in lengths of 40 cm, 75 cm, 120 cm, 150 cm.

Ghost II™ Specifications

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Guide Wire (Inches)	Rated Bust (ATM)	*Nominal Pressure (ATM)	Catalog No.				
							Usable Lengths (Shaft Length)				
							40CM	75CM	120 CM	135CM	150CM
3.0	1.5	5	5	0.035	15	6	GII100	GII101	GII102	N/A	GII103
3.0	2.0	5	5	0.035	15	6	GII104	GII105	GII106	GII322	GII107
3.0	4.0	5	5	0.035	15	6	GII108	GII109	GII110	GII323	GII111
3.0	10.0	5	5	0.035	15	6	GII112	GII113	GII114	N/A	GII115
4.0	1.5	5	5	0.035	15	6	GII116	GII117	GII118	N/A	GII119
4.0	2.0	5	5	0.035	15	6	GII120	GII121	GII122	N/A	GII123
4.0	4.0	5	5	0.035	15	6	GII124	GII125	GII126	N/A	GII127
4.0	10.0	5	5	0.035	15	6	GII128	GII129	GII130	N/A	GII131
5.0	1.5	5	5	0.035	15	6	GII132	GII133	GII134	N/A	GII135
5.0	2.0	5	5	0.035	15	6	GII136	GII137	GII138	GII324	GII139
5.0	3.0	5	5	0.035	15	6	GII250	GII251	GII252	N/A	GII253
5.0	4.0	5	5	0.035	15	6	GII140	GII141	GII142	GII325	GII143
5.0	5.0	5	5	0.035	15	6	GII254	GII255	GII256	N/A	GII257
5.0	6.0	5	5	0.035	15	6	GII258	GII259	GII260	N/A	GII261
5.0	8.0	5	5	0.035	15	6	GII262	GII263	GII264	N/A	GII265
5.0	10.0	5	5	0.035	15	6	GII144	GII145	GII146	N/A	GII147
6.0	1.5	5	5	0.035	15	6	GII148	GII149	GII150	N/A	GII151
6.0	2.0	5	5	0.035	15	6	GII152	GII153	GII154	N/A	GII155
6.0	3.0	5	5	0.035	15	6	GII266	GII267	GII268	N/A	GII269
6.0	4.0	5	5	0.035	15	6	GII156	GII157	GII158	N/A	GII159
6.0	5.0	5	5	0.035	15	6	GII270	GII271	GII272	N/A	GII273
6.0	6.0	5	5	0.035	15	6	GII274	GII275	GII276	N/A	GII277
6.0	8.0	5	5	0.035	15	6	GII278	GII279	GII280	N/A	GII281
6.0	10.0	5	5	0.035	15	6	GII160	GII161	GII162	N/A	GII163
7.0	1.5	6	5	0.035	15	6	GII164	GII165	GII166	N/A	GII167
7.0	2.0	6	5	0.035	15	6	GII168	GII169	GII170	N/A	GII171
7.0	3.0	6	5	0.035	15	6	GII282	GII283	GII284	N/A	GII285
7.0	4.0	6	5	0.035	15	6	GII172	GII173	GII174	GII326	GII175
7.0	5.0	6	5	0.035	15	6	GII286	GII287	GII288	N/A	GII289
7.0	6.0	6	5	0.035	15	6	GII290	GII291	GII292	N/A	GII293
7.0	8.0	6	5	0.035	15	6	GII294	GII295	GII296	N/A	GII297
7.0	10.0	6	5	0.035	15	6	GII176	GII177	GII178	N/A	GII179
8.0	1.5	6	5	0.035	15	6	GII180	GII181	GII182	N/A	GII183
8.0	2.0	6	5	0.035	15	6	GII184	GII185	GII186	N/A	GII187
8.0	3.0	6	5	0.035	15	6	GII188	GII189	GII190	N/A	GII191
8.0	4.0	6	5	0.035	15	6	GII192	GII193	GII194	N/A	GII195
8.0	5.0	6	5	0.035	15	6	GII298	GII299	GII300	N/A	GII301
8.0	6.0	6	5	0.035	15	6	GII302	GII303	GII304	N/A	GII305
8.0	8.0	6	5	0.035	15	6	GII196	GII197	GII198	N/A	GII199
9.0	1.5	7	5	0.035	14	6	N/A	GII243	N/A	N/A	N/A
9.0	2.0	7	5	0.035	14	6	GII200	GII201	GII202	N/A	GII203
9.0	3.0	7	5	0.035	14	6	GII306	GII307	GII308	N/A	GII309
9.0	4.0	7	5	0.035	14	6	GII204	GII205	GII206	GII327	GII207
9.0	5.0	7	5	0.035	14	6	GII310	GII311	GII312	N/A	GII313
9.0	6.0	7	5	0.035	14	6	GII314	GII315	GII316	N/A	GII317
9.0	8.0	7	5	0.035	14	6	GII318	GII319	GII320	N/A	GII321
10.0	2.0	7	5	0.035	13	6	GII208	GII209	GII210	N/A	GII211
10.0	4.0	7	5	0.035	13	6	GII212	GII213	GII214	N/A	GII215
10.0	5.0	7	5	0.035	13	6	N/A	GII247	N/A	N/A	N/A
12.0	2.0	8	5	0.035	10	6	GII216	GII217	GII218	N/A	GII219
12.0	4.0	8	5	0.035	10	6	GII220	GII221	GII222	GII328	GII223
12.0	6.0	8	5	0.035	10	6	GII224	GII225	GII226	N/A	GII227
12.0	8.0	8	5	0.035	10	6	N/A	N/A	N/A	N/A	GII248



DH High Five™ PTA ultra-high pressure catheter

Catheter Characteristics

The DH High Five™ PTA catheter is engineered for maximum steerability and pushability. The coaxial shaft design provides a proximal shaft with enhanced column strength for pushability and decreased distal shaft for optimum steerability.

Visualization

Two image marker bands are placed beneath the shoulders of the balloon to allow reliable positioning of the balloon within the stenosis.

High Pressure Non-Compliant Balloon

The DH High Five™ PTA catheter provides a micro-thin, non-compliant balloon with a low profile. It has nominal dimensions at the low end of working range and a high rated burst pressure. The flexible tip is achieved using a tapered tip design. It has minimal winging for improved crossability.

Double Tapered Balloon

The DH High Five™ PTA catheter balloon is tapered at the distal and proximal ends for enhanced transition across the stenosis and post dilatation ease of withdrawal into the introducer.

Flexible Balloon

The ultra-high pressure balloon maintains tip flexibility when deflated allowing exceptional trackability through tortuous vessels.

Vessel Conformability

NuMED balloons have the ability to conform to vessel shape while maintaining maximum inflation pressure. This reduces trauma to delicate vessel intima.

DH High Five™ Specifications

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	Catalog No.
4.0	2.0	6	4.5	60	0.025	20	DH4260
4.0	2.0	6	4.5	90	0.025	20	DH4290
4.0	4.0	6	4.5	60	0.025	20	DH4460
4.0	4.0	6	4.5	90	0.025	20	DH4490
5.0	2.0	6	4.5	60	0.025	20	DH5260
5.0	2.0	6	4.5	90	0.025	20	DH5290
5.0	4.0	6	4.5	60	0.025	20	DH5460
5.0	4.0	6	4.5	90	0.025	20	DH5490
6.0	2.0	6.5	4.5	60	0.025	20	DH6260
6.0	2.0	6.5	4.5	90	0.025	20	DH6290
6.0	4.0	6.5	4.5	60	0.025	20	DH6460
6.0	4.0	6.5	4.5	90	0.025	20	DH6490
7.0	2.0	7	5	90	0.025	18	DH7290
7.0	4.0	7	5	90	0.025	18	DH7490
8.0	2.0	7	5	90	0.025	16	DH8290
8.0	4.0	7	5	90	0.025	16	DH8490
9.0	2.0	8	5	90	0.025	15	DH9290
9.0	4.0	8	5	90	0.025	15	DH9490
10.0	2.0	8	5	90	0.025	15	DH10290
10.0	4.0	8	5	90	0.025	15	DH10490



DHC High Five™ PTA ultra-high pressure catheter - Curved

Catheter Characteristics

The **DHC High Five™ Curved** PTA catheter is engineered for maximum steerability and pushability. The coaxial shaft design provides a proximal shaft with enhanced column strength for pushability and decreased distal shaft for optimum steerability.

Visualization

Two image marker bands are placed beneath the shoulders of the balloon to allow reliable positioning of the balloon within the stenosis.

High Pressure Non-Compliant Balloon

The **DHC High Five™ Curved** PTA catheter provides a micro-thin, non-compliant balloon with a low profile. It has nominal dimensions at the low end of working range and a high rated burst pressure. The flexible tip is achieved using a tapered tip design. It has minimal winging for improved crossability.

Double Tapered Balloon

The **DHC High Five™ Curved** PTA catheter balloon is tapered at the distal and proximal ends for enhanced transition across the stenosis and post dilatation ease of withdrawal into the introducer.

Flexible Balloon

The ultra-high pressure balloon maintains tip flexibility when deflated allowing exceptional trackability through tortuous vessels.

Vessel Conformability

NuMED balloons have the ability to conform to vessel shape while maintaining maximum inflation pressure. This reduces trauma to delicate vessel intima.

DHC High Five™ Curved Specifications

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	Catalog No.
4.0	2.0	6	4.5	60	0.025	20	DHC4260
4.0	2.0	6	4.5	90	0.025	20	DHC4290
4.0	4.0	6	4.5	60	0.025	20	DHC4460
4.0	4.0	6	4.5	90	0.025	20	DHC4490
5.0	2.0	6	4.5	60	0.025	20	DHC5260
5.0	2.0	6	4.5	90	0.025	20	DHC5290
5.0	4.0	6	4.5	60	0.025	20	DHC5460
5.0	4.0	6	4.5	90	0.025	20	DHC5490
6.0	2.0	6.5	4.5	60	0.025	20	DHC6260
6.0	2.0	6.5	4.5	90	0.025	20	DHC6290
6.0	4.0	6.5	4.5	60	0.025	20	DHC6460
7.0	2.0	8	5	90	0.025	18	DHC7290
7.0	4.0	8	5	60	0.025	18	DHC7460
8.0	4.0	8	5	60	0.025	16	DHC8460



MULLINS-X™ Ultra high pressure dilatation catheter



Mullins X™ balloons are a replacement for the original large, Mullins™ high pressure balloons. They are manufactured from a coextruded double layer laminate of non-compliant thermoplastic elastomer materials, which allows a very high pressure, yet a relatively low profile, which does, however, result in a rough surface upon refold after inflation. The 12 mm balloons have a rated burst pressure of 14 ATMs with the maximum burst pressure decreasing with increasing balloon size down to 11 ATMs for the 20 mm balloon. Each diameter of the Mullins X™ balloon is available in 3 and 4 cm lengths. The balloon catheters, like the other “X” balloons from NuMED™ are manufactured from stiffer, braided shaft material, which gives them a greater “pushability” and better positional control of the balloon during inflation..

For larger stents with **residual stenosis**, the Mullins X™ balloons are available in diameters between 12 and 20 mm with a burst pressure of at least 11 ATMs for the largest balloons. These balloons can only be used safely when the stent is fixed very securely in place in the vessel.

Mullins-X™ Specifications

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	Catalog No.
12	3	9	7	100	0.035	14.0	PTM440
12	4	9	7	100	0.035	14.0	PTM441
14	3	10	8	100	0.035	14.0	PTM442
14	4	10	8	100	0.035	14.0	PTM443
15	3	10	8	100	0.035	13.0	PTM444
15	4	10	8	100	0.035	13.0	PTM445
16	3	11	8	100	0.035	12.0	PTM446
16	4	11	8	100	0.035	12.0	PTM447
18	3	12	8	100	0.035	12.0	PTM448
18	4	12	8	100	0.035	12.0	PTM449
20	3	13	8	100	0.035	11.0	PTM450
20	4	13	8	100	0.035	11.0	PTM451
22	3	14	9	100	0.035	10.0	PTM452
22	4	14	9	100	0.035	10.0	PTM453
23	3	14	9	100	0.035	9.0	PTM456
23	4	14	9	100	0.035	9.0	PTM457
25	3	16	9	100	0.035	9.0	PTM454
25	4	16	9	100	0.035	9.0	PTM455

MULTI-TRACK™ Angiographic Catheter

Feature: Distal tip offset from catheter's central lumen
Benefit: Perform angigraphy without removing guidewire

Feature: Imaging band imbedded in distal tip
Benefit: Precisely control pull-back or push-up pressure tracings

Feature: Tip does not have a preformed curve shape
Benefit: Place multiple catheters on the guide wire

Benefit: Obtain simultaneous pressure gradient measurements

Benefit: Visualize catheter placement

Benefit: Reduces catheter inventory



The NuMED MULTI-TRACK™ Kit is a well established innovative system for Mitral Dilatation.

This operator friendly system has the advantages of double balloon techniques while using a simple, single guide wire approach. The procedure times easily match those of single balloon techniques while achieving consistently higher valve areas post dilatation. The mismatch of the round shape of a single balloon with the oval mitral orifice probably explains the better results with double balloon dilatation (Figures A & B).

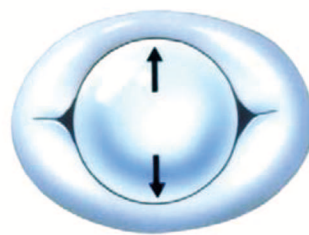


Figure A
30mm Balloon

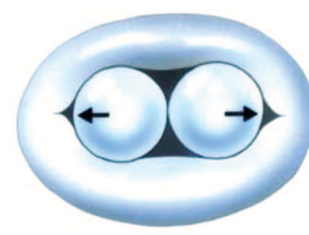
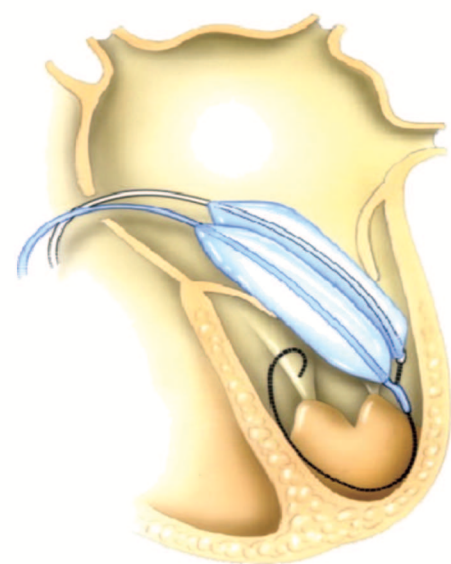


Figure B
Two 18mm Balloons



With the guidewire still in place a MULTI -TRACK™ angiographic catheter is advanced into the left atrium for the measurement of the transmitral gradient after the dilatation. If the result is satisfactory, all catheters can then be removed, otherwise balloons of different sizes could still be advanced over the wire.

The MULTI-TRACK™ system allows to measure the transmitral gradient even through a single venous approach. This is obtained by gliding two MULTI-TRACK™ angiographic catheters along the wire which is positioned in the mitral orifice. Therefore the arterial approach routinely used for mitral dilatation can be avoided.

Bonhoeffer MULTI-TRACK™ Mitral Dilatation Kit Contents

- 1 MULTI-TRACK™ balloon dilatation catheter (14,16,18 or 20 mm in diameter) X 5 cm in length
- 1 Matched Rapid Exchange balloon dilatation catheter
- 1 14F, 70cm Dilator
- 1 MULTI-TRACK™ angiographic catheter (5F X 80 cm)
- 1 Super Stiff, preformed 0.035" guidewire.

Each kit is packaged in a 120 cm long box and all catheters are individually pouched thereby maintaining sterile integrity

Balloon Diameter(MM)	Balloon Length (CM)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	Part No. included in Kit	Catalog Order No.
14.0	5.0	7	80	0.035	6.0	MTK145	BMK14
14.0	5.0	7	80	0.035	6.0	REMC145	
N/A	N/A	5	80	0.035	1000 PSI	MMTA0580	
N/A	N/A	14	70	0.035	N/A	D1470	
N/A	N/A	0	210	0.035	N/A	J3FC-SS C 210-035	
16.0	5.0	7	80	0.035	5.0	MTK165	BMK16
16.0	5.0	7	80	0.035	5.0	REMC165	
N/A	N/A	5	80	0.035	1000 PSI	MMTA0580	
N/A	N/A	14	70	0.035	N/A	D1470	
N/A	N/A	0	210	0.035	N/A	J3FC-SS C 210-035	
18.0	5.0	7	80	0.035	4.0	MTK185	BMK18
18.0	5.0	7	80	0.035	4.0	REMC185	
N/A	N/A	5	80	0.035	1000 PSI	MMTA0580	
N/A	N/A	14	70	0.035	N/A	D1470	
N/A	N/A	0	210	0.035	N/A	J3FC-SS C 210-035	
20.0	5.0	7	80	0.035	4.0	MTK205	BMK20
20.0	5.0	7	80	0.035	4.0	REMC205	
N/A	N/A	5	80	0.035	1000 PSI	MMTA0580	
N/A	N/A	14	70	0.035	N/A	D1470	
N/A	N/A	0	210	0.035	N/A	J3FC-SS C 210-035	



MULTI-TRACK™ Angiographic catheter

The MULTI-TRACK™ angiographic catheter utilizes a unique concept of guidewire location to increase flow rate and maneuverability of the catheters. Designed from radiopaque materials, the catheters are easily placed and can be used in conjunction with different types of interventional catheters.

The MULTI-TRACK™ angiographic catheters' is a hybrid catheter. The main lumen of the Multi-track™ catheter have an open distal tip; however, in addition to this catheter lumen, there is a small, short tube of the catheter material which accommodates a guide wire and is attached to the side of the distal tip of the shaft of the catheter. The short tube at the tip is passed over a pre-positioned guide wire, which allows the catheter to be advanced along the wire over the short tube at the tip, which, in turn, guides the tip of the catheter over the wire. As a consequence, the wire runs outside of the true lumen of the catheter and adjacent to its shaft, and the true lumen of the catheter is not used or compromised at all by the wire. This allows for larger volume angiography or the passage of an additional wire through the true lumen of the catheter while the original guide wire still is in place and supporting the tip of the catheter through the short tube.

There are multiple potential uses for the MULTI-TRACK™ catheter. It simplifies many procedures, enabling clinicians to:

- Perform angiography without removing and repositioning the guidewire.
- Obtain simultaneous gradient pressure measurements.
- Obtaining direct post-dilation information
- Place multiple catheters/balloons on the guidewire.
- Precisely control pull-back or push-up pressure tracings.

The MULTI-TRACK™ angiographic catheter system allows for high quality angiography and pressure recordings during diagnostic and interventional cardiac catheterization. The advantage of the system is that both angiography and pressure recording can be performed repeatedly from stable catheter positions using a previously placed guidewire.

The MULTI-TRACK™ angiographic catheter is excellent for obtaining direct post-dilation information without having to remove the secured wire .This reduces the need for guidewire manipulations or catheter exchanges and decreases procedure time and the risk of complications .

Use of Multi-track™ in management of vessel tear/rupture:

If the balloon had been removed over the wire before the tear/rupture was noted, this is one circumstance where a Multi-Track™ catheter introduced over the same wire is useful to introduce the second catheter rapidly into the area of the pulmonary artery tear. With a large enough introductory sheath, a balloon catheter can be introduced over the same wire, behind the Multi-Track™ catheter in order to “tamponade” the leaking vessel.

A Multi-Track™ catheter is the most proper system for aortic valve balloon valvuloplasty monitoring.

If there is no prograde catheter in the left ventricle, the results of the dilations must still be determined. A Multi-Track™ catheter provides the most “secure” way of identifying the major residual problem (Gradient/AI), without having to remove the wire from the left ventricle. Pressures are recorded and angiograms are performed through the Multi-Track™ catheter anywhere along the course from the left ventricle to the descending aorta and all without having to remove the wire, which can be maintained positioned in the left ventricle.

You may use a small, stiff wire in the true catheter lumen of the Multi-Track™ catheter to stiffen and support the catheter shaft as Multi-Track™ is being advanced over the exchange wire.

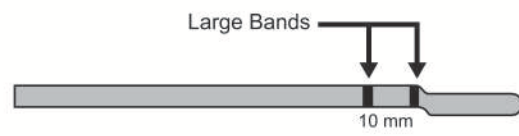
Once the Multi- rack™ catheter is in the left ventricle, the wire within the true lumen is removed. Angiograms are performed where appropriate and pressures are recorded as the Multi-Track™ is withdrawn over the exchange wire.

If a lesion is to be re-dilated, the Multi-Track™ is removed over the wire and the appropriate balloon dilation catheter reintroduced to the selected valve area.

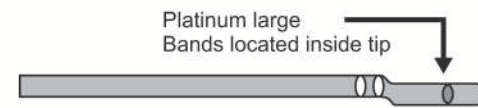
The Multi-Track™ catheter must be two French sizes smaller than the internal diameter of the sheath in order for the Multi-Track™ catheter to pass adjacent to the wire through the sheath.



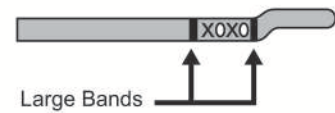
5.0 French Shaft



Other than 5.0 French Shaft



Reverse Side



- x = Is the hole facing you
- o = Is the hole on the opposite side of the shaft
- * = Large bands are 10 mm

MULTI-TRACK™ Specifications

Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Flow Rate (mL/sec)	Maximum Injection (PSI)	Catalog No.
4.0	2.5	80	0.021	2.7	1000	MMTA2580
4.0	2.5	60	0.021	3.5	1000	MMTA2560
5.0	3.0	100	0.025	4.0	1000	MMTA03100
5.0	3.0	80	0.025	5.5	1000	MMTA0380
5.0	3.0	60	0.025	6.5	1000	MMTA0360
6.0	4.0	100	0.035	11.0	1000	MMTA04100
6.0	4.0	80	0.035	13.0	1000	MMTA0480
7.0	5.0	100	0.035	20.0	1000	MMTA05100
7.0	5.0	80	0.035	22.0	1000	MMTA0580
8.0	6.0	100	0.035	25.0	1000	MMTA06100

PTS

PTS-X

Sizing Cathetres





PTS® Sizing Balloon Catheter



Catheter Characteristics

The PTS® Sizing Balloon catheter has been designed for use in patients with cardiovascular defects where accurate measurement of the defect is important to select the appropriately sized Occluder device. The NuMED™ sizing balloon is a very thin walled, very low-pressure, which is used for very accurate, non-stretched, static measurements of the defects. These sizing balloons inflate at such a low pressure that or stretching the atrial septum at all.

The softer, NuMED™ static sizing balloons have the advantages of:

- 1: Giving a very accurate and reproducible, non-stretched diameter of the defect .
- 2: Conforming to the shape of the defect and, in turn, demonstrating oblong or odd shapes of the ASD.
- 3: Platinum marker bands facilitate reliable positioning of the balloon and calibration for accurately sizing the defect.
- 4: Not stretching the ASD at all during the sizing procedure, possibly allowing for the use of a smaller Occluder.

The NuMED™ balloons are available in three, four and five centimeter lengths and in diameters between 10 and 40 mm (in 5 mm increments).

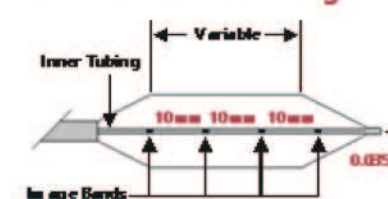
A NuMED™ sizing balloon with a balloon diameter that is approximately two times the TEE or ICE diameter of the ASD is suggested to use in the measurement of the non-stretched, static, ASD diameter. The diameter of the “waist” achieved with these balloons inflated at “zero” pressure, when properly aligned and there is no residual flow, represents the **non-stretched, static balloon diameter of the atrial septal defect**. At this extremely low pressure, the balloon within the defect conforms to the size (and shape) of the defect without stretching or distorting it.

When the NuMED™ balloon is used with the Amplatzer™ type ASD Occluder devices, a device is used that is 2–4 mm larger than the **non-stretched** diameter obtained with the NuMED™ balloon.

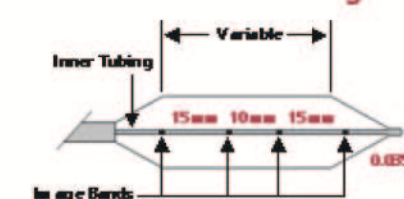
Radiopaque Marker

The NuMED™ balloons also have Platinum marker bands embedded in the shaft of the catheter within the area of the balloon. The bands are 1.0 , 1.5 and 2 cm A apart in different balloon length types . These bands are measured from inside to inside of the adjacent bands. These marks are accurate for calibration only when they are aligned exactly perpendicular to the X-ray beam and when they appear as distinct, short straight lines.

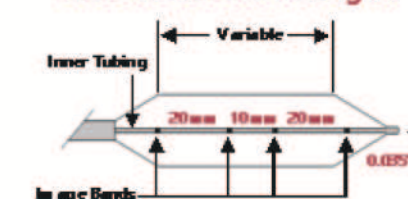
3.0 cm Balloon Length



4.0 cm Balloon Length



5.0 cm Balloon Length

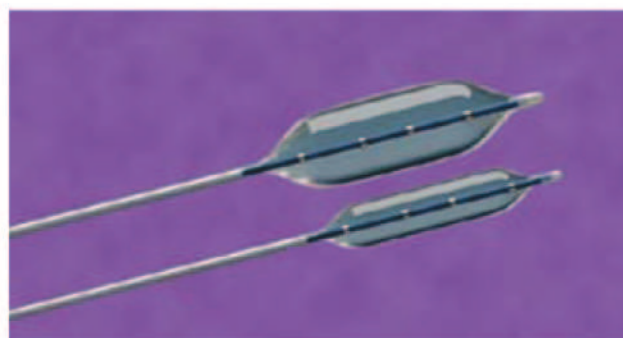


PTS® Specifications

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	Catalog No.
20.0	3.0	8	8	80	0.035	1.5	PTS203
25.0	3.0	8	8	80	0.035	1.5	PTS253
30.0	3.0	8	8	80	0.035	1.0	PTS303
30.0	4.0	8	8	80	0.035	1.0	PTS304
30.0	5.0	8	8	80	0.035	1.0	PTS305
40.0	3.0	9	8	80	0.035	0.5	PTS403
40.0	4.0	9	8	80	0.035	0.5	PTS404
40.0	5.0	9	8	80	0.035	0.5	PTS405



PTS-X™ Sizing Balloon Catheter



Xtra high inner lumen strength

- Xtra fast guidewire movement (even with balloon inflated)
- Increased pushability from new braided inner tubing
- Radiopaque inner tubing
- Available in three, four, five and six centimeter lengths and in diameters between 20 and 40 mm).

PTS-X™ Specifications

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	Catalog No.
20.0	3.0	8	8	80	0.035	1.5	PTSX203
20.0	4.0	8	8	80	0.035	1.5	PTSX204
25.0	3.0	8	8	80	0.035	1.5	PTSX253
30.0	3.0	8	8	80	0.035	1.0	PTSX303
30.0	4.0	8	8	80	0.035	1.0	PTSX304
30.0	5.0	8	8	80	0.035	1.0	PTSX305
40.0	3.0	9	8	80	0.035	0.5	PTSX403
40.0	4.0	9	8	80	0.035	0.5	PTSX404
40.0	5.0	9	8	80	0.035	0.5	PTSX405
40.0	6.0	9	8	80	0.035	0.5	PTSX406

The NuMED™ and the Amplatzer™ sizing balloons

The NuMED™ sizing balloon usually is used to provide a static, but non-stretched diameter of the atrial defect while the Amplatzer™ (AGA Medical Corp., Golden Valley, MN) usually are used to measure the stretched diameter of the defect.

With the CardioSEAL™ (NMT Medical Inc., Boston, MA) and the STARFlex™ (NMT Medical Inc., Boston, MA) devices with self-centering mechanism, a non-stretched, static balloon sizing technique that is compatible with the accurate ASD defect is preferred.

The balloon material of the Amplatzer™ “static” sizing balloons is more elastic, it expands progressively with increasing volume of fluid and pressure in the balloon and is used to purposefully stretch the defect and then provides a more “stretched” static diameter of the defect.

The NuMED™ “static” sizing balloon is a very non-compliant balloon, when inflated in the defect at a very low pressure (zero pressure!), has a very soft consistency, does not stretch the defect in order to provide a “non-stretched”, static diameter of the defect.

Unlike the earlier, but still occasionally used, “pull through” “occlusion” balloons used for sizing, neither of the static sizing balloons (NuMED™ and Amplatzer™) is withdrawn through, or moved purposefully within the defect but rather positioned exactly within, and straddling the atrial septal defect during the sizing.

The Amplatzer™ and the NuMED™ sizing balloons are positioned in an identical fashion and the angulation of the X-ray tubes adjusted appropriately and identically for both types of static balloon sizing.

Although the two different types of static balloons are positioned across the defect in an identical manner, the techniques for sizing and the measurements obtained are different for the two balloons. Both measurements are accurate but provide different information.

The device that is used following the “zero-pressure” measurement with the NuMED™ balloon, should be at least 2–4 mm larger than the non-stretched diameter of the ASD obtained with the Amplatzer™ or the NuMED™ balloon. On the other hand, when the NuMED™ sizing balloon is inflated to its full diameter and/or with any measurable pressure in the balloon, the non-compliant material of the balloon does generate pressure and will stretch the ASD. When the NuMED™ balloon is inflated purposefully with some pressure, a stretched diameter, which is comparable to the Amplatzer™ sizing balloon diameter, is obtained and the device used should be the same size as the measured diameter of the waist on the balloon.



Z-5

Atrioseptostomy

Made To Order.

Z-5™ Atrioseptostomy catheter



Catheter Characteristics

The NuMED Z-5™ Atrioseptostomy catheter is engineered for maximum steering and tracking. The dual lumen shaft design provides pushability, coupled with exceptional pull strength. The NuMED™ Z-5™ septostomy balloons are available in two sizes. The smaller Z-5™ balloon reaches a diameter of 9.5 mm when inflated with 1 ml of fluid while the larger Z-5™ balloon has a 13.5 mm diameter when inflated with 2 ml of fluid. As a consequence, although they have a volume of only 1 or 2 ml when fully inflated, they produce very rigid balloons with diameters of exactly 9.5 and 13.5 mm.

Micro-Thin Non-Compliant Balloon

The NuMED Z-5™ Atrioseptostomy balloon is micro-thin for low deflated profile that maintains tip flexibility. At the same time these balloons are manufactured from a non-compliant thermoplastic elastomer, that when inflated with the recommended volume results essentially in rigid balloon with fixed diameter. The deflated 9.5 and 13.5 mm balloons pass through 5- or 6-French sheaths, respectively.

Reduced Balloon Size

In very small infants under 2 kg in weight and also in patients in whom the shunting is right to left at the atrial level (particularly in those with total anomalous pulmonary venous return), the left atrial chamber is very small. When the balloon is inflated and either filling the atrium or pulled against the atrial septum, all systemic cardiac output will be stopped totally! Under these circumstances, the balloon inflation must be carried out very cautiously but at the same time, rapidly to avoid too long a period of hypotension, bradycardia and even cardiac arrest.

This new innovation in NuMED Z-5™ Atrioseptostomy catheter design which has reduced inflated balloon size is of potential importance in these patients and makes Atrioseptostomy easier to perform on them.



Inner Lumen

The NuMED Z-5™ Atrioseptostomy catheter has an inner lumen. The separate lumen allows the smaller and larger catheters to be introduced over 0.014 and 0.021 wires, respectively. The wire can be positioned securely in the left atrium or a pulmonary vein separately through a more maneuverable end-hole catheter, and then the balloon septostomy catheter is passed over the pre-positioned wire. This is very beneficial in directing the balloon into a very small or malpositioned left atrium and to be absolutely sure that the balloon is in the proper position.

The wire through the balloon catheter can be left in place during the rapid balloon withdrawal during the septostomy.

The wire remaining in place is helpful in re-entering the left atrium for a repeated balloon. With the wire removed from the catheter lumen, pressures can be recorded or small contrast injections for angiograms can be performed through this separate lumen to verify the exact location of the balloon.

Tip Angulation

To facilitate crossing the atrial septum, the distal shafts of the Z-5™ septostomy balloons are angled to approximately 35° just proximal to the location of the balloon to facilitate passage into the left atrium.

Radiopaque Catheter Body & Balloon Image Marker

The NuMED Z-5™ Atrioseptostomy catheter body is Radiopaque to facilitate reliable positioning of the catheter. A platinum image marker band is placed under the balloon for clear identification under fluoroscopy.

Z-5™ Specifications

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Maximum Volume (CC)	Catalog No.
9.5	0.95	5	4	50	0.014	1	SPT002
13.5	1.35	6	5	50	0.021	2	SPT003

CP STENT™ AND BIB PLACEMENT™ CATHETER

BIB

CP Stent

Mounted CP Stent

Tempered Platinum-Iridium wire
Superior radiopacity and radial strength

Laser welded "zig" design
Minimal stent Shortening
Rounded leading and trailing edge
eliminates trauma to vessel and balloon

Allows expansion from 6 mm to 25 mm
Multiple length available
BIB balloon concept enhances safety and precise placement



BIB® Stent Placement catheter for vessels over 8.0 mm in diameter



The BIB™ balloons are the only balloon designed specifically for stent delivery in the pediatric/congenital population, and particularly for stent delivery to lesions greater than 12 mm in diameter.

Balloon In Balloon™ (BIB™) balloons are exactly what the name implies. A separate inner balloon, which inflates within a separate outer balloon. The balloons are designed specifically for sequential dilations and more specifically for the implant of intravascular stents.

The sizes of the BIB™ balloons are labeled according to the diameter and length of the outer balloon. The inner balloons are 1/2 of the diameter of the outer balloon and 1 cm shorter. The inner balloons all have a burst pressure of 4.5–5 ATMs while the outer balloons have burst pressures from 10 ATMs for the 8 mm diameter BIB™ decreasing to 3 ATMs for the 24 mm diameter BIB™. BIB™ balloons are available in various lengths from 2.5 to 3.5 cm for the smallest balloons and from 3 to 5.5 cm for the largest balloons, all in increments of 0.5 cm.

Because of the “two-balloon” construction, these balloons have a significantly larger and somewhat rougher profile and require a significantly larger introductory sheath. All Catheters have length of 110 cm and are for use with a 0.035" wire.

BIB® Outer Ballon Spersificataions

Balloon Diameter (MM)	Balloon Length (CM)	Introducer Size (FR)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	Catalog No.
12.0	2.5	8	8	110	0.035	7	BB003
12.0	3.0	8	8	110	0.035	7	BB006
12.0	3.5	8	8	110	0.035	7	BB009
12.0	4.0	8	8	110	0.035	7	BB033
12.0	4.5	8	8	110	0.035	7	BB037
12.0	5.0	8	8	110	0.035	7	BB034
12.0	5.5	8	8	110	0.035	7	BB051
14.0	2.5	8	8	110	0.035	6	BB022
14.0	3.0	8	8	110	0.035	6	BB052
14.0	3.5	8	8	110	0.035	6	BB025
14.0	4.0	8	8	110	0.035	6	BB038
14.0	4.5	8	8	110	0.035	6	BB035
14.0	5.0	8	8	110	0.035	6	BB039
14.0	5.5	8	8	110	0.035	6	BB053
15.0	2.5	9	9	110	0.035	5	BB054
15.0	3.0	9	9	110	0.035	5	BB055
15.0	3.5	9	9	110	0.035	5	BB056
15.0	4.0	9	9	110	0.035	5	BB057
15.0	4.5	9	9	110	0.035	5	BB058
15.0	5.0	9	9	110	0.035	5	BB059
15.0	5.5	9	9	110	0.035	5	BB060
16.0	2.5	9	9	110	0.035	5	BB023
16.0	3.0	9	9	110	0.035	5	BB010
16.0	3.5	9	9	110	0.035	5	BB026
16.0	4.0	9	9	110	0.035	5	BB013
16.0	4.5	9	9	110	0.035	5	BB016
16.0	5.0	9	9	110	0.035	5	BB028
16.0	5.5	9	9	110	0.035	5	BB019
18.0	2.5	10	9	110	0.035	4	BB024
18.0	3.0	10	9	110	0.035	4	BB040
18.0	3.5	10	9	110	0.035	4	BB027
18.0	4.0	10	9	110	0.035	4	BB041
18.0	4.5	10	9	110	0.035	4	BB029
18.0	5.0	10	9	110	0.035	4	BB030
18.0	5.5	10	9	110	0.035	4	BB031
20.0	3.0	10	9	110	0.035	4	BB011
20.0	3.5	10	9	110	0.035	4	BB042
20.0	4.0	10	9	110	0.035	4	BB014
20.0	4.5	10	9	110	0.035	4	BB017
20.0	5.0	10	9	110	0.035	4	BB032
20.0	5.5	10	9	110	0.035	4	BB020
22.0	3.0	11	9	110	0.035	3	BB061
22.0	3.5	11	9	110	0.035	3	BB062
22.0	4.0	11	9	110	0.035	3	BB063
22.0	4.5	11	9	110	0.035	3	BB064
22.0	5.0	11	9	110	0.035	3	BB065
22.0	5.5	11	9	110	0.035	3	BB066
24.0	3.0	11	9	110	0.035	3	BB012
24.0	3.5	11	9	110	0.035	3	BB067
24.0	4.0	11	9	110	0.035	3	BB015
24.0	4.5	11	9	110	0.035	3	BB018
24.0	5.0	11	9	110	0.035	3	BB036
24.0	5.5	11	9	110	0.035	3	BB021



BIB® Balloon characteristics

The BIB™ balloons are the only balloon designed specifically for stent delivery in the pediatric/congenital population, and particularly for stent delivery to lesions greater than 12 mm in diameter.

Many of the smaller, standard, angioplasty balloons are satisfactory for the delivery and implant of stents up to an initial diameter of 10 mm. Although some stents are pre-mounted on smaller sizes balloons for easier delivery, the pre-mounted stents, to date, only expand to a maximum of 11–12 mm diameter and are only used in small peripheral pulmonary arteries and very peripheral systemic veins.

The major problems that still occur with the balloons for the delivery of the majority of stents, occur when the stents eventually must be dilated to diameters much greater than 10 mm and, in turn, must be individually hand mounted on the balloons.

The large majority of balloons currently used for stent deployment still are adapted from the adult peripheral vascular angioplasty and “Biliary” applications.

For the implant of stents to an initial diameter of over 12 mm, the Balloon in Balloon™ (BIB™) balloons are recommended and used routinely. As the name indicates, the BIB™ balloon has a smaller diameter inner balloon within an outer, larger diameter balloon.

The inner balloon is one half the diameter and one centimeter shorter than the outer balloon. During stent implants, the inner balloon is inflated first, expanding the stent uniformly to half of its final diameter.

Once the stent has been expanded uniformly on the inner balloon, an angiogram is performed through side arm of long sheath to adjust the proper final stent implantation and then the outer balloon is inflated. This expands the stent to the full diameter of the outer balloon without the marked flaring of the ends of the stent .

The BIB™ balloons have three distinct and important advantages for the expansion and implant of stents to the larger diameters:

- As a stent is expanded initially on a single, large diameter balloon to an initial diameter of more than 12 mm, the angles of the flaring ends of the stent become even more acute and align almost perpendicularly to the long axis of the stent and the vessel wall before the center of the stent begins to expand. With the current stents, the initial expansion at the ends of the stent results in a circumferential ring of sharp points at each end of the stent (Figure A)! These sharp points align perpendicularly to, and can actually penetrate, the vessel wall as the stent expands to its larger diameter. This initial flaring of the ends of the stents is minimized by the initial uniform expansion to one half of the maximum

diameter by the shorter, inner balloon of the BIB™ balloons.

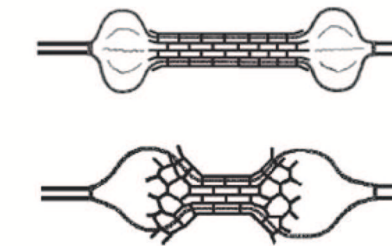


FIG A

- The uniform diameter of the “half expanded” stent throughout its length, also allows the stent to be repositioned within the lesion before the full expansion of the stent with the outer balloon is begun.
- The final, and possibly most important advantage of the BIB™ balloons, is during the implant of a stent to an initial diameter of 15 mm or larger. When a stent is expanded initially and directly to these larger diameters with a standard, single, large diameter balloon, the angle of the expanding ends and the flaring of the two ends of the stent are even more acute. As the two flaring ends “meet” at the center, non-expanded, area of the stent, the struts of the stent wall can develop an acute angle, or kink, in the struts toward the central lumen and at the center of the stent (Figure B). As the remainder of the stent expands to its full diameter, this acute, central “kink” often cannot be forced out of the stent and remains as a permanent, non expanded “waist” or stenosis in the stent (and vessel) (Figure C). The initial, partial and more uniform expansion with the inner balloon of the BIB™ balloons eliminates this problem.



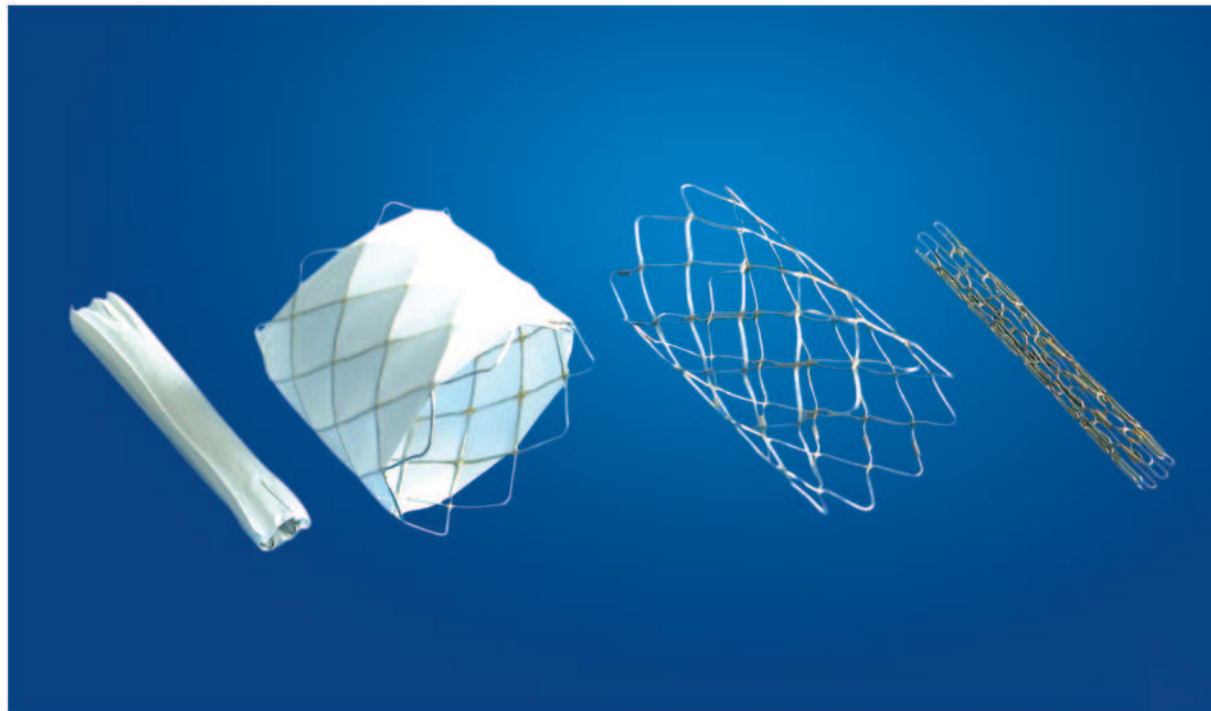
FIG B



FIG C



CP™ Stents



Stent Characteristics

The CP Stent™ are balloon expandable stents. They are composed of 0.013" platinum / iridium wire that is arranged in a "zig" pattern, laser welded at each joint and over brazed with 24K gold. This configuration results in a closed-cell, tubular stent, but the larger "zigs" allow the passage of a catheter/balloon through the opening in the "zigs" in the side-wall of the larger stents. The size of each "zig" and number of rows of "zigs" determine the diameter of the stent, while the number of "zigs" in a row determines the length of the stent.

CP Stent™ design allows expansion from 8.0 mm to 24.0 mm.

The design of the CP™ stents gives them some of the favorable characteristics of the open cell stents. They have rounded smoother ends as well as some flexibility in both their non-expanded and expanded configurations.

The larger sizes of the C-P™ stents allow access to side vessels/branches through the individual "cells" of the stent. The side cells can be traversed and at the same time the stents are very stable after implant.

Bare Stent

Indicated for implantation in the native and/or recurrent Coarctation of the aorta on patients with the following clinical conditions:

- Stenosis of the aorta resulting in significant anatomic narrowing as determined by angiography or non-invasive imaging, i.e. echocardiography, magnetic resonance imaging (MRI), CT Scan;
- Stenosis of the aorta resulting in hemodynamic alterations, resulting in systolic pressure gradient, systemic hypertension or altered left ventricular function;
- Stenosis of the aorta where balloon angioplasty is ineffective or contraindicated;
- Stenosis diameter >20% of the adjacent vessel diameter.

Covered CP Stent™

The Covered CP Stent™ is comprised of the Bare CP Stent that is covered with an expandable sleeve of eptfe. Indicated for implantation in the native and/or recurrent Coarctation of the aorta on patients with the following clinical conditions:

- Stenosis of the aorta resulting in significant anatomic narrowing as determined by angiography or non-invasive imaging, i.e. echocardiography, magnetic resonance imaging (MRI), CT Scan;
- Stenosis of the aorta resulting in hemodynamic alterations, resulting in systolic pressure gradient, systemic hypertension or altered left ventricular function;
- Stenosis of the aorta where balloon angioplasty is ineffective or contraindicated;
- Stenosis diameter <20% of the adjacent vessel diameter;
- Stenosis that would present increased risk of vascular damage or disruption;
- Aneurysm associated with Coarctation of the aorta.

Cheatham-Platinum™ (C-P™) stents Radial force

Configuration of a closed-cell stent made of 0.013" platinum / iridium wire arranged in a "zig" pattern with laser welded at each joint and over brazed with 24K gold has given the unique radial force to the CP Stent™.

The wall strength of Cheatham-Platinum™ (C-P™) stents is not only greater than the self expandable stents with characteristic low radial force but also more than any available balloon expandable stents of the same diameters.

"Custom sizes" Cheatham-Platinum™ (C-P™) stents

Cheatham-Platinum™ (C-P™) stents are available in a very wide range of lengths (from 15 to 90mm)



and in diameters (up to 30mm) by special or custom order.

The size and number of rows of “zigs” in each stent determine its size and strength.

The larger Bare or Covered stents are manufactured of thicker wires, with more rows of cells and in longer lengths.

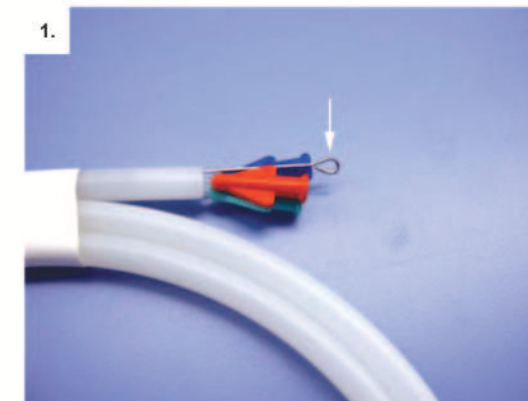
The ability to order “custom sizes” allows the use of C-P™ stents in extremely versatile and often unique circumstances, which are not possible with any other stent.

CP Stent™ Specifications

Stent Length (CM)	Configuration (Number of Zigs)	Platinum Wire (Inches)	Bare Stent Catalog No.	Covered Stent Catalog No.
1.6	8	0.013	CP8Z16	Cvrd. CP8Z16
2.2	8	0.013	CP8Z22	Cvrd. CP8Z22
2.8	8	0.013	CP8Z28	Cvrd. CP8Z28
3.4	8	0.013	CP8Z34	Cvrd. CP8Z34
3.9	8	0.013	CP8Z39	Cvrd. CP8Z39
4.5	8	0.013	CP8Z45	Cvrd. CP8Z45

NuMED recommends using the BIB Stent Placement Catheter.

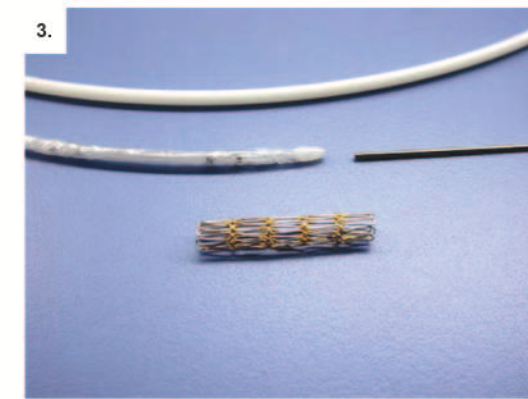
NuMED Bare And Covered CP Stent Mounting Procedure



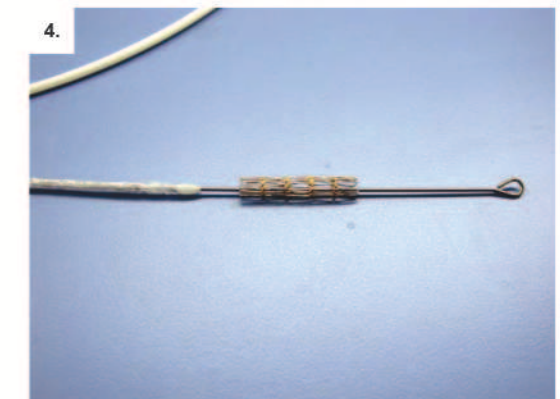
1. REMOVE BIB CATHETER AND RING MANDRIL FROM PACKAGING HOOP



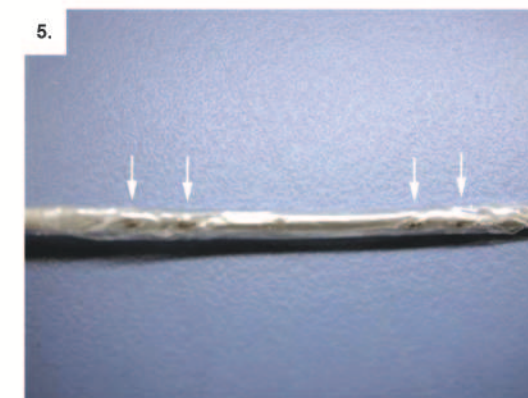
2. REMOVE CP STENT FROM THE PACKING VIAL



3. REMOVE BALLOON PROTECTOR FROM BIB CATHETER AND ASSEMBLE MATERIALS (BIB CATH, RING MANDRIL, & CP STENT)



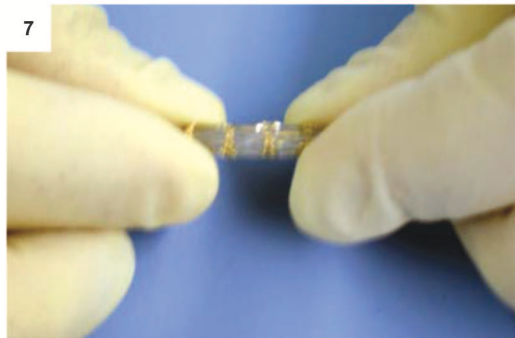
4. INSERT THE RING MANDRIL THROUGH THE CP STENT AND INTO THE GUIDEWIRE LUMEN OF THE BIB CATHETER



5. LOCATE THE FOUR IMAGE BANDS ON THE BIB CATHETER



6. POSITION THE STENT SO IT IS CENTERED BETWEEN THE TWO OUTER IMAGE BANDS



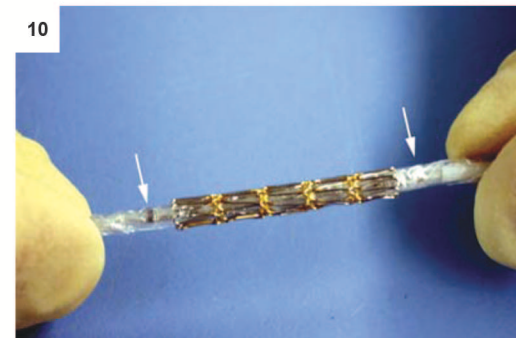
7. CRIMP THE STENT BY COMPRESSING IT TO THE BALLOON WITH PRESSURE GENERATED WITH THUMB AND FOREFINGER.



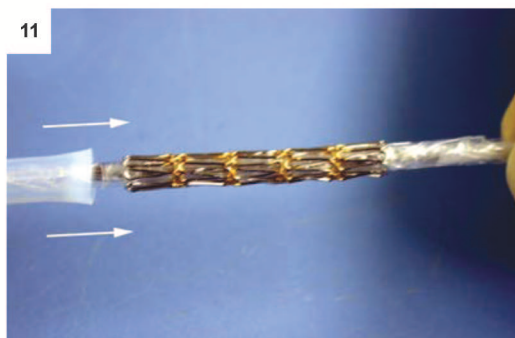
8. ROTATE THE STENT 90 DEGREES AND REPEAT CRIMPING MOTION. REPEAT THIS STEP UNTIL ENTIRE CIRCUMFERENCE OF THE STENT IS CRIMPED.



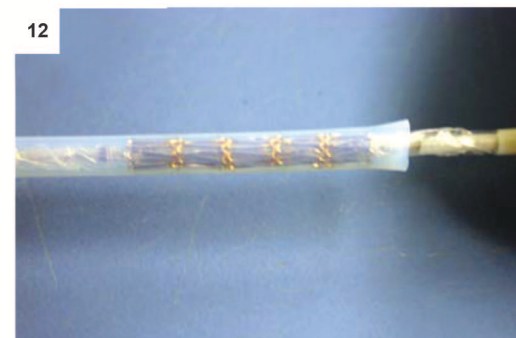
9. INSURE THAT THE CENTRAL AREA OF THE STENT IS CRIMPED



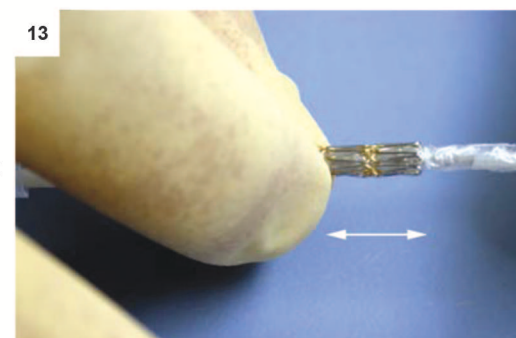
10. AFTER STENT IS FULLY CRIMPED, INSURE THAT STENT IS STILL CENTERED BETWEEN THE TWO OUTER IMAGE BANDS.



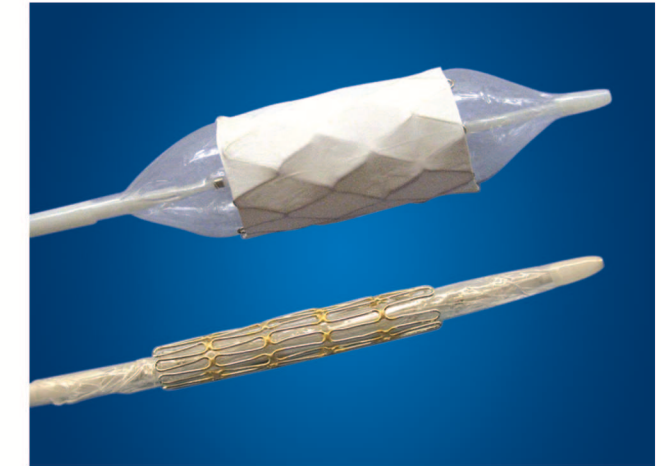
11. REMOVE THE RING MANDRIL AND THREAD THE SIZING TOOL OVER THE MANDRIL. REPLACE THE END OF THE TOOL SHOULD BE FACING THE STENT.



12. SLIDE THE SIZING TOOL OVER THE STENT.



13. REMOVE THE SIZING TOOL AND GENTLY INSURE THAT THE STENT IS TIGHT ON THE BIB CATHETER.



Mounted CP Stent™

Mounted CP Stent

The **Mounted CP Stent™** consists of a bare CP Stent™ pre-mounted on a **BIB Catheter**. This system allows the physician the flexibility of using the pre-mounted complete system and will save the time required to mount the stent on the catheter. The **CP Stent™** is composed of 0.013" platinum/iridium wire that is arranged in a "zig" pattern, laser welded at each joint and then over brazed with 24K gold. It allows expansion from 12.0mm to 24.0mm. The CP Stent is pre-mounted on a BIB (balloon in balloon) catheter.

Covered Mounted CP Stent

The **Covered Mounted CP Stent™** consists of a **Covered CP Stent™** pre-mounted on a **BIB Catheter**. This system allows the physician the flexibility of using the pre-mounted complete system and will save the time required to mount the stent on the catheter. This may be critical in some cases of aneurismal repair or in cases where vascular damage has occurred. The **Covered CP Stent™** is comprised of the bare **CP Stent™** that is covered with an expandable sleeve of ePTFE.



Mounted CP Stent™ Specifications

Stent Length(CM)	Configuration (Number of Zigs)	Outer Balloon Diameter(MM)	Outer Balloon Length(CM)	Shaft Size (FR)	Usable Length (CM)	Guide Wire (Inches)	Rated Burst (ATM)	Mounted CP Stent Cat. No.	Covered Mounted CP Stent Cat. No.
1.6	8	12.0	2.5	8	110	0.035	7	MCP001	CMCP001
1.6	8	14.0	2.5	8	110	0.035	6	MCP002	CMCP002
1.6	8	16.0	2.5	9	110	0.035	5	MCP003	CMCP003
2.2	8	12.0	2.5	8	110	0.035	7	MCP004	CMCP004
2.2	8	14.0	2.5	8	110	0.035	6	MCP005	CMCP005
2.2	8	16.0	2.5	9	110	0.035	5	MCP006	CMCP006
2.2	8	18.0	2.5	9	110	0.035	4	MCP007	CMCP007
2.8	8	14.0	3.0	8	110	0.035	6	MCP008	CMCP008
2.8	8	16.0	3.0	9	110	0.035	5	MCP009	CMCP009
2.8	8	18.0	3.0	9	110	0.035	4	MCP010	CMCP010
2.8	8	20.0	3.0	9	110	0.035	4	MCP011	CMCP011
3.4	8	14.0	3.5	8	110	0.035	6	MCP012	CMCP012
3.4	8	16.0	3.5	9	110	0.035	5	MCP013	CMCP013
3.4	8	18.0	3.5	9	110	0.035	4	MCP014	CMCP014
3.4	8	20.0	3.5	9	110	0.035	4	MCP015	CMCP015
3.4	8	22.0	3.5	9	110	0.035	3	MCP016	CMCP016
3.9	8	14.0	4.0	8	110	0.035	6	MCP017	CMCP017
3.9	8	16.0	4.0	9	110	0.035	5	MCP018	CMCP018
3.9	8	18.0	4.0	9	110	0.035	4	MCP019	CMCP019
3.9	8	20.0	4.0	9	110	0.035	4	MCP020	CMCP020
3.9	8	22.0	4.0	9	110	0.035	3	MCP021	CMCP021
3.9	8	24.0	4.0	9	110	0.035	3	MCP022	CMCP022
4.5	8	14.0	4.5	8	110	0.035	6	MCP023	CMCP023
4.5	8	16.0	4.5	9	110	0.035	5	MCP024	CMCP024
4.5	8	18.0	4.5	9	110	0.035	4	MCP025	CMCP025
4.5	8	20.0	4.5	9	110	0.035	4	MCP026	CMCP026
4.5	8	22.0	4.5	9	110	0.035	3	MCP027	CMCP027
4.5	8	24.0	4.5	9	110	0.035	3	MCP028	CMCP028
4.5	8	14.0	5.0	8	110	0.035	6	MCP029	CMCP029
4.5	8	16.0	5.0	9	110	0.035	5	MCP030	CMCP030
4.5	8	18.0	5.0	9	110	0.035	4	MCP031	CMCP031
4.5	8	20.0	5.0	9	110	0.035	4	MCP032	CMCP032
4.5	8	22.0	5.0	9	110	0.035	3	MCP033	CMCP033
4.5	8	24.0	5.0	9	110	0.035	3	MCP034	CMCP034

BIB™ – CP Stent™ – INTRODUCER MATCHING REFERENCE

BIB DELIVERY CATHETER BALLOON DIAMETER AND INTRODUCER SIZE	REQUIRED INTRODUCER WITH BARE CP STENT	REQUIRED INTRODUCER WITH COVERED CP STENT
12MM (8F)	10F	12F
14MM (8F)	10F	12F
15MM (9F)	11F	12F
16MM (9F)	11F	12F
18MM (10F)	11F	14F
20MM (10F)	12F	14F
22MM (11F)	12F	14F
24MM (11F)	12F	14F



NUMED CP STENT-QUICK REFERENCE GUIDE

CP Stent	BIB Catheter Catalog Number	Inner Balloon Diameter x Length	Outer Balloon Diameter x Length	BIB Delivery Catheter Balloon Diameter Profile	Required Introducer Size with Bare Stent	Required Introducer Size with Covered Stent
CP8Z16 16 mm	BB003	6 x 1.5	12 x 2.5	8 F	10 F	12 F
	BB022	7 x 1.5	14 x 2.5	8 F	10 F	12 F
	BB054	7 x 1.5	15 x 2.5	9 F	11 F	12 F
	BB023	8 x 1.5	16 x 2.5	9 F	11 F	12 F
	BB024	9 x 1.5	18 x 2.5	10 F	11 F	14 F
	BB011	10 x 2	20 x 3	10 F	12 F	14 F
	BB061	11 x 2	22 x 3	11 F	12 F	14 F
	BB012	12 x 2	24 x 3	11 F	12 F	14 F

CP8Z22 22 mm	BB003	6 x 1.5	12 x 2.5	8 F	10 F	12 F
	BB022	7 x 1.5	14 x 2.5	8 F	10 F	12 F
	BB054	7 x 1.5	15 x 2.5	9 F	11 F	12 F
	BB023	8 x 1.5	16 x 2.5	9 F	11 F	12 F
	BB024	9 x 1.5	18 x 2.5	10 F	11 F	14 F
	BB011	10 x 2	20 x 3	10 F	12 F	14 F
	BB061	11 x 2	22 x 3	11 F	12 F	14 F
	BB012	12 x 2	24 x 3	11 F	12 F	14 F

CP8Z28 28 mm	BB006	6 x 2	12 x 3	8 F	10 F	12 F
	BB052	7 x 2	14 x 3	8 F	10 F	12 F
	BB055	7 x 2	15 x 3	9 F	11 F	12 F
	BB010	8 x 2	16 x 3	9 F	11 F	12 F
	BB040	9 x 2	18 x 3	10 F	11 F	14 F
	BB011	10 x 2	20 x 3	10 F	12 F	14 F
	BB061	11 x 2	22 x 3	11 F	12 F	14 F
	BB012	12 x 2	24 x 3	11 F	12 F	14 F

NUMED CP STENT-QUICK REFERENCE GUIDE

CP Stent	BIB Catheter Catalog Number	Inner Balloon Diameter x Length	Outer Balloon Diameter x Length	BIB Delivery Catheter Balloon Diameter Profile	Required Introducer Size with Bare Stent	Required Introducer Size with Covered Stent
CP8Z34 34 mm	BB009	6 x 2.5	12 x 3.5	8 F	10 F	12 F
	BB025	7 x 2.5	14 x 3.5	8 F	10 F	12 F
	BB056	7 x 2.5	15 x 3.5	9 F	11 F	12 F
	BB026	8 x 2.5	16 x 3.5	9 F	11 F	12 F
	BB027	9 x 2.5	18 x 3.5	10 F	11 F	14 F
	BB042	10 x 2.5	20 x 3.5	10 F	12 F	14 F
	BB062	11 x 2.5	22 x 3.5	11 F	12 F	14 F
	BB067	12 x 2.5	24 x 3.5	11 F	12 F	14 F

CP8Z39 39 mm	BB033	6 x 3	12 x 4	8 F	10 F	12 F
	BB038	7 x 3	14 x 4	8 F	10 F	12 F
	BB057	7 x 3	15 x 4	9 F	11 F	12 F
	BB013	8 x 3	16 x 4	9 F	11 F	12 F
	BB041	9 x 3	18 x 4	10 F	11 F	14 F
	BB014	10 x 3	20 x 4	10 F	12 F	14 F
	BB063	11 x 3	22 x 4	11 F	12 F	14 F
	BB015	12 x 3	24 x 4	11 F	12 F	14 F

CP8Z45 45 mm	BB037	6 x 3.5	12 x 4.5	8 F	10 F	12 F
	BB035	7 x 3.5	14 x 4.5	8 F	10 F	12 F
	BB058	7 x 3.5	15 x 4.5	9 F	11 F	12 F
	BB016	8 x 3.5	16 x 4.5	9 F	11 F	12 F
	BB029	9 x 3.5	18 x 4.5	10 F	11 F	14 F
	BB017	10 x 3.5	20 x 4.5	10 F	12 F	14 F
	BB064	11 x 3.5	22 x 4.5	11 F	12 F	14 F
	BB018	12 x 3.5	24 x 4.5	11 F	12 F	14 F



CP Stent™ Foreshortening Chart

INFLATED BALLOON DIAMETER	CP8Z16 (LENGTH AFTER EXPANSION) (%SHORTENING)	CP8Z22 (LENGTH AFTER EXPANSION) (%SHORTENING)	CP8Z28 (LENGTH AFTER EXPANSION) (%SHORTENING)	CP8Z34 (LENGTH AFTER EXPANSION) (%SHORTENING)	CP8Z39 (LENGTH AFTER EXPANSION) (%SHORTENING)	CP8Z45 (LENGTH AFTER EXPANSION) (%SHORTENING)
12mm	1.61cm (2.8%)	2.18cm (0.8%)	2.62cm (4.4%)	3.23cm (3.1%)	3.72cm (1.9%)	4.17cm (3.8%)
14mm	1.54cm (6.5%)	2.08cm (5.4%)	2.56cm (6.8%)	3.15cm (5.4%)	3.66cm (3.6%)	3.97cm (8.4%)
15mm	1.51cm (8.5%)	2.02cm (7.9%)	2.51cm (8.6%)	3.10cm (7.0%)	3.54cm (6.6%)	3.94cm (9.2%)
16mm	1.48cm (10.6%)	1.98cm (10.1%)	2.45cm (10.7%)	3.00cm (9.8%)	3.48cm (8.2%)	3.84cm (11.4%)
18mm	1.43cm (13.7%)	1.89cm (14.0%)	2.38cm (13.3%)	2.88cm (13.5%)	3.20cm (15.6%)	3.71cm (14.5%)
20mm	1.32cm (20.0%)	1.80cm (17.9%)	2.30cm (16.3%)	2.63cm (20.9%)	2.96cm (21.9%)	3.27cm (24.7%)
22mm	1.23cm (25.4%)	1.67cm (23.9%)	2.09cm (24.0%)	2.46cm (26.0%)	2.85cm (25.0%)	3.15cm (27.3%)
24mm	1.05cm (36.4%)	1.46cm (33.8%)	1.91cm (30.3%)	2.07cm (37.9%)	2.27cm (40.1%)	2.83m (34.9%)