







In The Name Of Allah The Most Gracious The Most Merciful





Executive Summary:

This is an introduction to NABD medical industries, which is one of the first Saudi licensed companies specialized in the production of cardiovascular medical devices used in angioplasty.

It is one of the companies that contribute to the Kingdom's vision to improve quality of human life, this is possible through the provision of medical supplies that help in treating heart attacks and vascular occlusion cases.

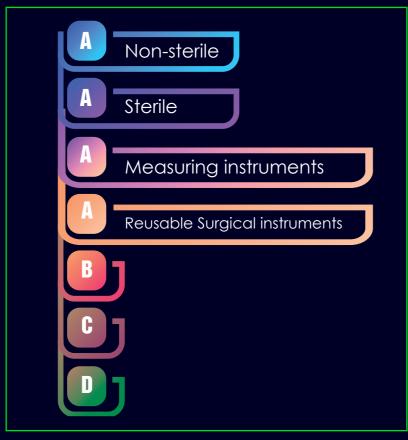


Introduction

The industry of medical devices is known for its profitability in comparison to other industries. However, it is also considered one of the heavily regulated industries that requires more time to for production and approval by the different regulatory authorities both locally and internationally. The food and drug authorities usually categorize medical devices according to their level of risk on patients and the following is the standard followed by SFDA as they use the following classification that acknowledges the direct impact on the health of the individual:







SFDA Medical Device Classification



Many studies indicate that introducing a new medical device to the market takes 3 to 7 years of preparatio on average. The market value of the emerging factory increases according to the number and quality of licenses obtained, as some studies indicate that the market value of the factory increases by 30 million dollars when it obtains marketing permission from the US Food and Drug Administration. It is noticeable that the large medical companies try acquiring the emerging factories for higher prices, despite being able due to their logistical and financial ability to establish their own factories.

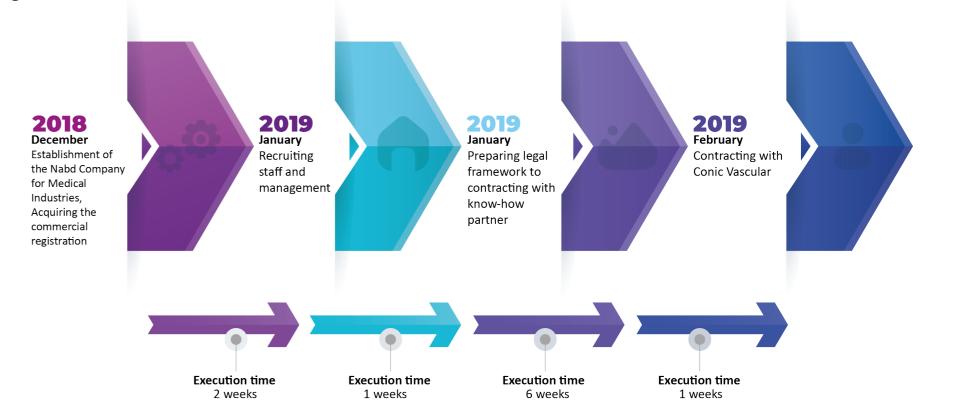
Project Summery





Steps of implementation

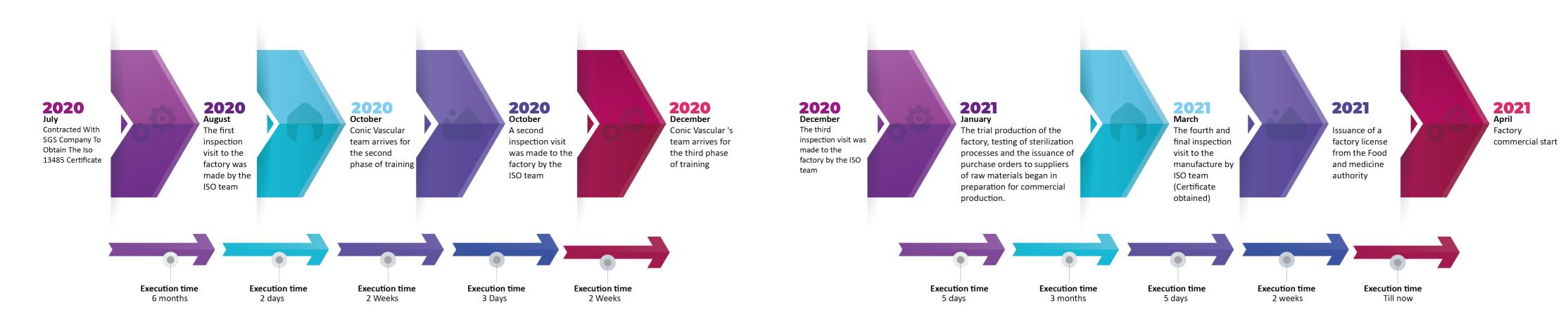
The following timeline outlines the implementation of the project since inception in 2018 till fimal products registration.













Company Team

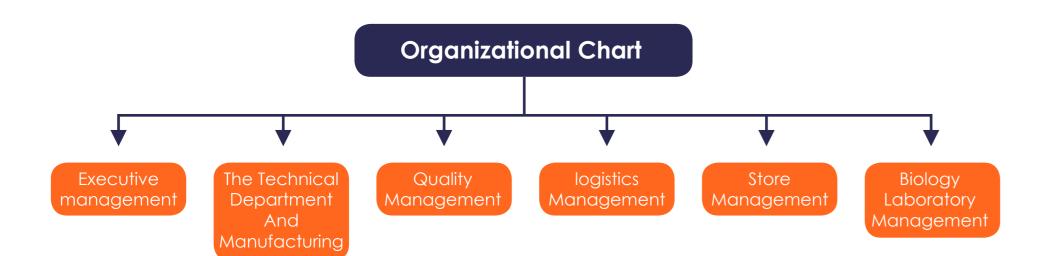






Employees:

A group of outstanding people work at the factory. The organizational structure consists of



Skills Training

Operation	Certification Date
QA Documentation	20/02/2020
Material/Product Training	20/02/2020
Laser Welding	23/02/2020
Final Inspection	23/02/2020
Specification Training	24/02/2020
Cut tubing/Proximal Ball Welding	24/02/2020
Tubing Proximal/Distal Preparation	24/02/2020
Cut Wire exit	26/02/2020

Operation	Certification Date
Hot Jaw Welding	26/02/2020
Retainer preparation	26/02/2020
Balloon Folding	28/02/2020
nner Packaging	28/02/2020
Balloon Neck Down	29/02/2020
Cut Neck to the length	29/02/2020
Balloon Control	29/02/2020
Balloon Final Inspection	29/02/2020
Assembly Marker bands	29/02/2020











The factory management team has been trained on the following skills



3 Technical Capabilities





Medical device manufacturing facilities must meet technical requirements before the products launch to the market.

These requirements vary according to the degree of risk affiliated with the medical device to be manufactured. The higher the risk the higher the requirements and usually are divided to two main parts:

The first part:

It relates to preparing the medical manufacturing facility to conform with the ISO 13485 international standards for medical manufacturing.

The second part:

Verifying quality of the final product through laboratory and physical testing. These requirements are documented in a unified technical file that includes all the requirements of good manufacturing (GMP)

NABD carried out all the works necessary to obtain certificates from the concerned authorities as follows:







The facility licenses:

To obtain a medical facility capable of manufacturing, the following requirements must be met:

A. Class 7 sterile production room:

The production of high-risk medical supplies and devices requires the provision of a seventh-class clean room, which is characterized by its ability to filter particles with a size of 0.3 microns up to %99.9 according to ISO Standard No. -14644i.

The level of sterilization is detected and verified from an internationally accredited neutral body to assure air quality periodically.

B. Storage and support areas

The plant facilities are designed and implemented according to the requirements set forth in ISO 13485 and -14644 1 systems.

These requirements demand certain specifications in the quality of walls and floors and the way they are divided so that they are compatible with the manufacturing process.

A dedicated areas are allocated for sorting, isolating, or clearing the materials entering the factory. It also must be equipped with sensors to measure temperature and humidity and record them daily and follow a strict with pest control policy.

C. quality system:

The quality system is the measure by which the quality of the final product is verified to be free from defects and significant discrepancies through strict adherence to measurable standards to achieve homogeneity and uniformity in the product to satisfy the customers





A-Industrial Establishment Licensing:













c- Marketing of high-risk medical products







A Nabd Company Products





TECHNICAL SPECIFICATIONS

- PTCA Balloon Catheter Rapid Exchange System (RX)
- Non compliant balloon dilatation catheter
- Balloon material: Polyamide
- Balloon transition angles: Tapered shoulders at 42°
- Balloon inflation pressures: Nominal 8 ATM/Bar Rated Burst Pressure (RBP): 20 ATM/Bar
- Catheter tip entry profile: 0.016" (0.406mm)
- Catheter length: 140 cm
- Catheter shaft diameters: 1.9 FR (proximal) and 2.4 FR (distal)
- Compatible Guidewire: 0.014" (0.357mm)
- Minimal Guiding catheter compatible: 5 FR (0.066mm)
- Kissing ballooon technique: 2 balloons on 6 FR guiding catheter



ORDERING INFORMATION

BALLOON	BALLOON LENGTH											
DIAMETER	8 mm	10 mm	12 mm	15 mm	20 mm	25 mm	30 mm					
1.50 mm	NC-150-8	NC-150-10	NC-150-12	NC-150-15	NC-150-20		-					
2.00 mm	NC-200-8	NC-200-10	NC-200-12	NC-200-15	NC-200-20	NC-200-25	-					
2.25 mm	NC-225-8	NC-225-10	NC-225-12	NC-225-15	NC-225-20	NC-225-25	NC-225-30					
2.50 mm	NC-250-8	NC-250-10	NC-250-12	NC-250-15	NC-250-20	NC-250-25	NC-250-30					
2.75 mm	NC-275-8	NC-275-10	NC-275-12	NC-275-15	NC-275-20	NC-275-25	NC-275-30					
3.00 mm	NC-300-8	NC-300-10	NC-300-12	NC-300-15	NC-300-20	NC-300-25	NC-300-30					
3.25 mm	NC-325-8	NC-325-10	NC-325-12	NC-325-15	NC-325-20	NC-325-25	NC-325-30					
3.50 mm	NC-350-8	NC-350-10	NC-350-12	NC-350-15	NC-350-20	NC-350-25	NC-350-30					
3.75 mm	NC-375-8	NC-375-10	NC-375-12	NC-375-15	NC-375-20	NC-375-25	NC-375-30					
4.00 mm	NC-400-8	NC-400-10	NC-400-12	NC-400-15	NC-400-20	NC-400-25	NC-400-30					
4.50 mm	NC-450-8	NC-450-10	NC-450-12	NC-450-15	NC-450-20		-					
5.00 mm	NC-500-8	NC-500-10	NC-500-12	NC-500-15	NC-500-20	-	-					

NABD MEDICAL INDUSTRIES COMPANY

2436 Second Industrial City. Kingdom of Saudi Arabia

SFDA MDNL No.: ML0000000123SFDAA00006



nabdنبض

PARENTE NC

NON COMPLIANT

PTCA Balloon Catheter







HIGH PRESSURE PTCA balloon catheter.

Adequate pressure resistance (Rated Burst Pressure RBP 20 ATM/Bar).

Indicated for HARD CALCIFIED lesions and POST-STENT DILATATION.

Optimum tracking & crossing: low profiles-tip entry and balloon crossing profiles (see chart).

Resistant walled balloon, flexible and optimum balloon refolding.

CONTROLLED balloon compliance to allow **PRECISE** diameter sizing.

Maximize wall apposition due to NC Balloon performance.

Excellent navigability properties and BALANCED pushability, trackability and crossability.

Highly efficient hydrophilic balloon and distal shaft coating with very low friction.

Inflation CENTRAL and UNIFORM dilatation with less risk to cause edge dissection.

Balloon distal transition angle design: tapered shoulders at 42°.

Freedom of motion of guide wire at high pressure balloon inflation. No risk of guide wire collapse.

Patented design of inner tube at distal catheter segment.

BALLOON COMPLIANCE CHART

BAR	1.5 mm	2.00 mm	2.25 mm	2.50 mm	2./5 mm	3.00 mm	3.25 mm	3.50 mm	3./5 mm	4.00 mm	4.50 mm	5.00 mm	d
4	1.48	1.98	2.21	2.44	2.66	2.94	3.21	3.46	3.71	3.93	4.40	4.95	1
	1.49	1.99	2.23	2.47	2.72	2.98	3.23	3.49	3.74	3.98	4.48	4.98	
8	1.51	2.01	2.25	2.50	2.75	3.00	3.25	3.51	3.76	4.01	4.51	5.02	ı
10	1.52	2.02	2.27	2.52	2.77	3.02	3.28	3.53	3.78	4.05	4.55	5.05	1
	1.54	2.04	2.28	2.55	2.79	3.04	3.31	3.56	3.80	4.09	4.58	5.09	ı
14	1.55	2.05	2.30	2.57	2.81	3.07	3.35	3.58	3.81	4.11	4.61	5.13	ı
16	1.57	2.07	2.31	2.59	2.83	3.09	3.37	3.60	3.83	4.13	4.64	5.18	
18	1.59	2.09	2.33	2.61	2.85	3.11	3.40	3.63	3.85	4.15	4.66	5.22	
20 RBP.	1.60	2.10	2.36	2.63	2.88	3.14	3.44	3.65	3.87	4.18	4.68	5.28	
22	1.62	2.12	2.39	2.65	2.91	3.16	3.46	3.67	3.89	4.20	4.71	5.31	
00		00						100					



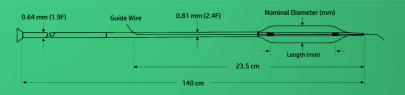






TECHNICAL SPECIFICATIONS

- PTCA Balloon Catheter Rapid Exchange System (RX)
- Semi-Compliant Balloon
- Balloon material: Polyamide
- Balloon transition angles: Tapered shoulders at 42°
- Balloon inflation pressures: Nominal 6 ATM/Ba
- Rated Burst Pressure (RBP): 18 ATM/Bar (16 ATM/Bar > 4.0 mm)
- Catheter tip entry profile 0.016" (0.406mm)
- Catheter length: 140 cm
- Catheter shaft diameters: 1.9 FR (proximal) and 2.4 FR (distal)
- Compatibility Guide wire 0.014" (0.356mm)
- Minimal Guiding catheter compatible: 5 FR (0.066") (1.65mm)
- Kissing balloon technique: 2 balloons on 6 FR guiding catheter



ORDERING INFORMATION

BALLOON	BALLOON LENGTH										
DIAMETER	10 mm	12 mm	15 mm	20 mm	25 mm	30 mm	35 mm	40 mm			
1.00 mm	PR-100-10	PR-100-12	PR-100-15	PR-100-20	-	_	_	-			
1.25 mm	PR-125-10	PR-125-12	PR-125-15	PR-125-20	_	-	-	-			
1.50 mm	PR-150-10	PR-150-12	PR-150-15	PR-150-20	_	_	_	_			
2.00 mm	PR-200-10	PR-200-12	PR-200-15	PR-200-20	PR-200-25	_	_	_			
2.25 mm	PR-225-10	PR-225-12	PR-225-15	PR-225-20	PR-225-25	PR-225-30	PR-225-35	PR-225-40			
2.50 mm	PR-250-10	PR-250-12	PR-250-15	PR-250-20	-	-	_	-			
2.75 mm	PR-275-10	PR-275-12	PR-275-15	PR-275-20	PR-275-25	PR-275-30	PR-275-35	PR-275-40			
3.00 mm	PR-300-10	PR-300-12	PR-300-15	PR-300-20	PR-300-25	PR-300-30	PR-300-35	PR-300-40			
3.25 mm	PR-325-10	PR-325-12	PR-325-15	PR-325-20	PR-325-25	PR-325-30	PR-325-35	PR-325-40			
3.50 mm	PR-350-10	PR-350-12	PR-350-15	PR-350-20	PR-350-25	PR-350-30	PR-350-35	PR-350-40			
3.75 mm	PR-375-10	PR-375-12	PR-375-15	PR-375-20	PR-375-25	PR-375-30	PR-375-35	PR-375-40			
4.00 mm	PR-400-10	PR-400-12	PR-400-15	PR-400-20	PR-400-25	PR-400-30	PR-400-35	PR-400-40			
4.50 mm	_	PR-450-12	_	PR-450-20	PR-450-25	PR-450-30	PR-450-35	PR-450-40			

NABD MEDICAL INDUSTRIES COMPANY

2436 Second Industrial City, Riyadh 14332-6965 Kingdom of Saudi Arabia www.nabd.sa

SFDA MDNL No.: ML0000000123SFDAA00005







PARENTE REGULAR

PTCA BALLOON CATHETER

Product design and patented manufacturing technology.

fast deflation time.

Excellent navigability properties and **BALANCED** pushability, trackability and crossability.

Ideal for crossing difficult and severe lesions (CTO) and TORTUOUS coronary ANATOMIES.
Low profiles - tip entry and balloon crossing. (See charts)
Very thin balloon wall (0.003 mm), very flexible, resistant,

Deliver CENTRAL and UNIFORM dilatation with less risk to cause edge dissection.

Balloon distal transition angle design: tapered shoulder at 42°.

Freedom of motion of guide wire at high pressure balloon inflation. No risk pf guide wire collapse.
Patented design of inner tube at distal catheter segment.

Avoiding balloon "dog bone" effect and potential intima's injuries.

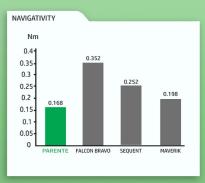
Controlled balloon growth even at high inflation pressures.

Low friction during navigation and crossability.

Highly efficient hydrophilic balloon and distal shaft coating.



(Nm) Average Force needed to access to Sidebranches with High Angulation and Complex Lesions. Lower Force Value = Better Tracking.



(Nm) Average Force needed to get the Target Lesion. Lower Force value = Better Navigability.

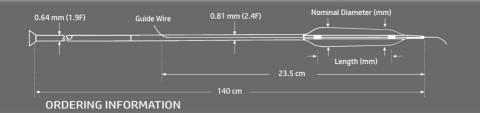
ALLOON COMPLIANCE CHAPT

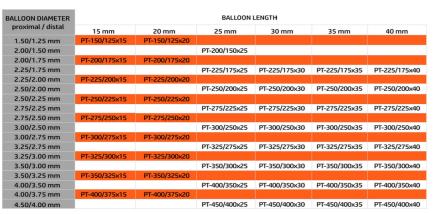
Ø BAR	1.00 mm	1.25 mm	1.50 mm	2.00 mm	2.25 mm	2.50 mm	2.75 mm	3.00 mm	3.25 mm	3.50 mm	3.75 mm	4.00 mm	4.50 mm	0
	0.98	1.15	1.48	1.92	2.20	2.46	2.68	2.92	3.17	3.47	3.71	3.92	4.38	
	1.00	1.24	1.52	2.05	2.28	2.54	3.76	3.04	3.27	3.54	3.74	4.04	4.50	
	1.01	1.26	1.58	2.11	2.31	2.59	2.82	3.09	3.34	3.66	3.76	4.14	4.61	
	1.02	1.27	1.64	2.14	2.37	2.66	3.88	3.15	3.40	3.71	3.78	4.22	4.69	2
	1.03	1.28	1.74	2.18	2.41	2.74	3.94	3.21	3.45	3.78	3.80	4.29	4.75	6
	1.05	1.30	1.78	2.22	2.45	2.82	3.99	3.25	3.49	3.88	3.81	4.36	4.80	ĕ
	1.05	1.31	1.85	2.26	2.49	2.86	3.03	3.29	3.53	3.97	3.83	4.44	4.86	Ĭ
18 RBP	1.06	1.33	2.00	2.30	2.53	2.90	3.07	3.34	3.57	4.04	3.85	4.54	4.93	ħ
	1.07	1.34	2.10	2.38	2.58	2.98	3.12	3.40	3.62	4.15	3.87	4.65	>20	ı
	_	_	_	_	_	_	_	_	_	_	_	_	_	
	_	_	-	_	_	_	_	_	_	>23	>23	>23		
	>25	>25	>25	>25	>25	>25	>25	>25	>25	_	_		_	

PARENTE TAPERED PTCA BALLOON CATHETER

I TECHNICAL SPECIFICATIONS

- PTCA Balloon Catheter Rapid Exchange System (RX)
- Semi-Compliant Balloon
- Balloon material: Polyamide
- Parente balloon diameters: Proximal segment wider than distal segment (see PARENTE TAPERED Product references chart)
- Balloon transition angles: tapered shoulders at 42°
- Balloon inflation pressures: Nominal 8 ATM/Bar. Rated Burst Pressure (RBP): 18 ATM (16 ATM/Bar for balloons > 4.00 mm)
- Catheter tip entry profile 0.016" (0.406mm)
- Catheter length: 140 cm
- Catheter shaft diameters: 1.9 FR (proximal and 2.4 FR distal
- Compatible Guide wire 0.014" (0.356mm)
- Minimal Guiding catheter compatible: 5 FR (0.066")
- Kissing balloon technique: 2 Parente Tarered balloons on 6FR Guiding Catheter





For selection of one PARENTE TAPERED Balloon is recommended to choose by the proximal size of balloon of each product code.







NABD MEDICAL INDUSTRIES COMPANY 2436 Second Industrial City, Riyadh 14332-6965 Kingdom of Saudi Arabia www.nabd.sa SFDA MDNL No.: ML0000000123SFDAA00007

PARENTE TAPERED





PARENTE

SEMI COMPLIANT PTCA BALLOON CATHETER





Ideal for CTO and TIGHT lesions.

Two small diameters in one single balloon 1.25mm distal Ø and 1.50mm proximal Ø

Low profiles - tip entry and balloon crossing. (See charts) Very thin balloon wall (0.008 mm), very flexible, resistant, fast deflation time.

Deliver CENTRAL and UNIFORM dilatation with less risk to cause edge dissection.

Balloon distal transition angle design: tapered shoulders at 42°

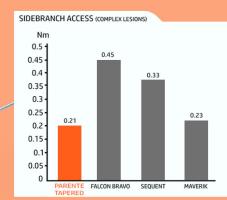
PROGRESSIVE BALLOON DIAMETER. TAPERED **DESIGN MATCHING**

WITH CORONARY ANATOMY.

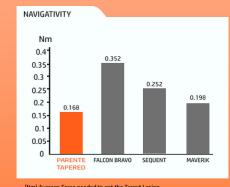
> Freedom of motion of guide wire at high pressure balloon inflation. No risk of guide wire collapse. Patented design of inner tube at distal catheter segment.

Avoiding balloon "dog bone" effect and potential intima's injuries. Controlled balloon growth even at high inflation pressures.

Low friction during navigation and crossability. Highly efficient hydrophilic balloon and distal shaft coating.



(Nm) Average Force needed to access to Sidebranches with High Angulation and Complex Lesions. Lower Force Value = Better Tracking.

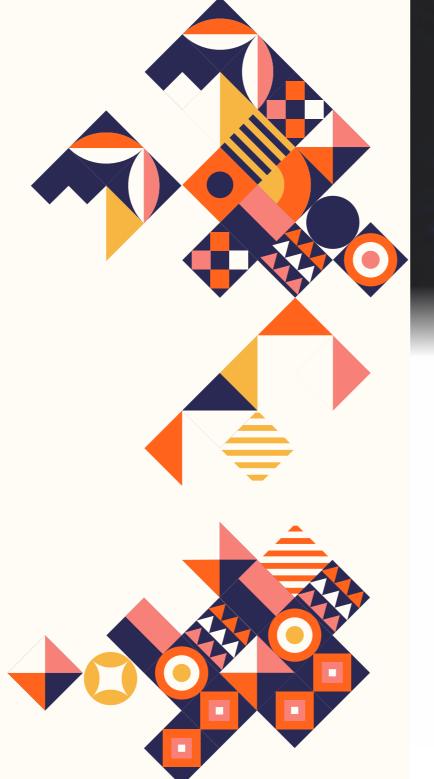


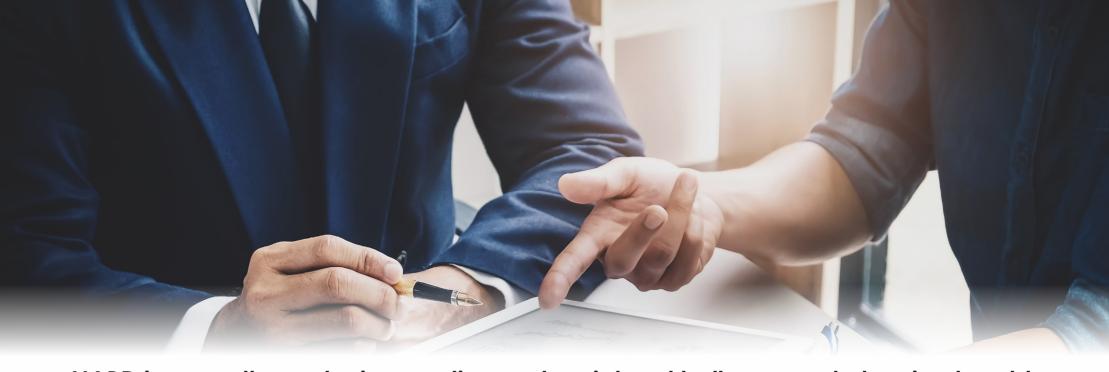
(Nm) Average Force needed to get the Target Lesion. Lower Force value = Better Navigability.

BALLOON COMPLIANCE CHART

Pressure (Bar)	1.25 mm	1.50 mm	1.75 mm	2.00 mm	2.25 mm	2.50 mm	2.75 mm	3.00 mm	3.25 mm	3.50mm	3.75 mm	4.00 mm	4.50 mm
	1.02	1.30	1.53	1.84	1.96	2.36	2.48	2.72	2.84	3.34	3.38	3.66	4.13
	1.23	1.45	1.61	1.92	2.16	2.51	2.68	2.99	3.15	3.49	3.59	3.93	4.36
	1.27	1.54	1.76	2.00	2.26	2.57	2.77	3.06	3.28	3.65	3.77	4.05	4.54
	1.32	1.58	1.83	2.04	2.34	2.62	2.83	3.13	3.35	3.72	3.96	4.13	4.57
12	1.35	1.62	1.84	2.09	2.39	2.71	2.93	3.21	3.39	3.81	4.01	4.15	4.62
	1.39	1.67	1.87	2.18	2.42	2.75	2.99	3.26	3.57	3.94	4.11	4.20	4.68
	1.48	1.80	1.92	2.23	2.47	2.81	3.10	3.34	3.61	4.06	4.24	4.29	4.77
	1.61	1.88	1.94	2.28	2.52	2.85	3.25	3.37	3.70	4.13	4.40	4.38	4.82
	1.82	2.08	1.97	2.31	2.70	2.98	3.32	3.40	3.82	4.21	4.50	4.62	>20
23										>23	>23	>23	
25	>25	>25	>25	>25	>25	>25	>25	>25	>25				
Nom	8	8	8	8	8	8	8	8	8	8	8	8	8
	18	19	18	19	18	19	18	19	19	16	16	16	16

Company Future





NABD is currently producing cardiac and peripheral balloons, and planning to add new related products

Future Products

- Drug eluted cardiac stents
- Drug coated cardiac balloons
- Drug coated peripheral balloons
- peripheral drug eluting stents

Executive Director

Mowaffag Albayouk





