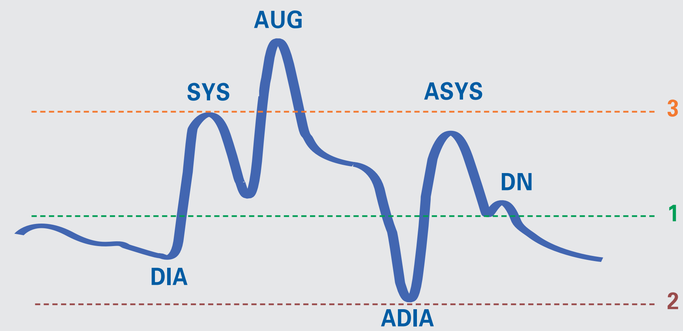
Timing Guidelines

CARDIAC ASSIST | ARROW INTERNATIONAL

Timing Guidelines

Intra-Aortic Balloon Pump

CARDIAC ASSIST | ARROW INTERNATIONAL



Assisted Arterial Waveform (1:2)

Abbreviation	Definition	Abbreviation	Definition
DIA	End Diastolic Pressure	ADIA	Assisted End Diastolic Pressure
SYS	Peak Systolic Pressure	ASYS	Assisted Peak Systolic Pressure (Systole after IAB deflation)
AUG	Diastolic Augmentation/ Peak Diastolic Pressure	DN	Dicrotic Notch

Inflation

Goal: To produce a rapid rise in aortic diastolic pressure (optimize AUG), thereby increasing O_2 supply to coronary circulation.

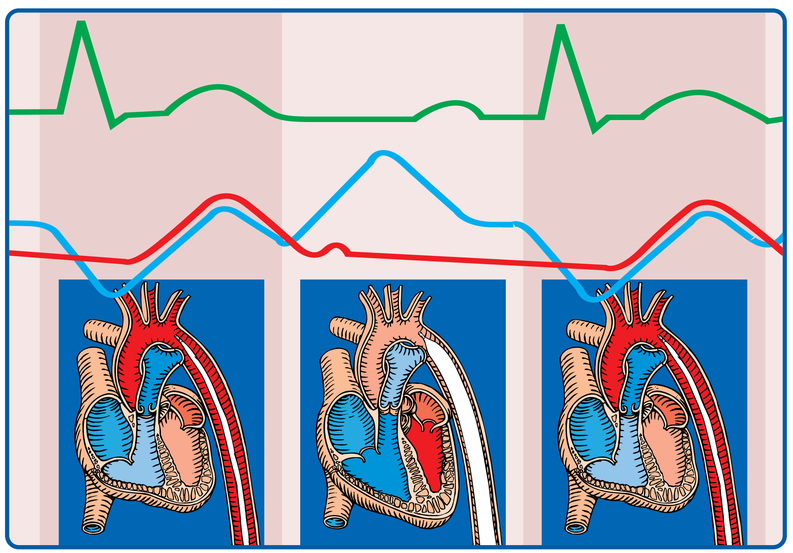
1. Inflate just prior to DN which should result in **AUG > SYS**

Deflation

Goal: To reduce aortic end diastolic pressure (afterload), thereby decreasing MVO_2 while improving the CO (cardiac output).

2. **ADIA ≤ DIA**

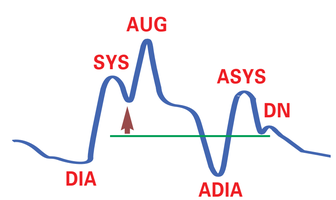
3. **ASYS < SYS**



Mechanical and Electrical Relationship of ECG, AP and Balloon Inflate/Deflate

Balloon Inflation and Deflation Timing

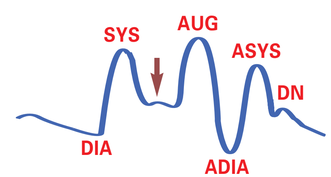
Common Timing Errors



Early Inflation

IAB is inflated well before actual DN (aortic valve closure.) Violates **Rule 1** for inflation.

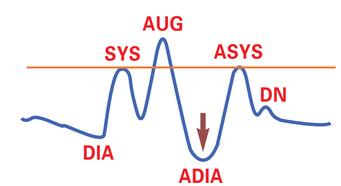
Result:
- Premature closure of aortic valve.
- Reduces stroke volume/CO.
- Increase in LVED volume.
- Increase in LV wall tension.



Late Inflation

DN is visible between points SYS/AUG
Violates **Rule 1** for inflation.

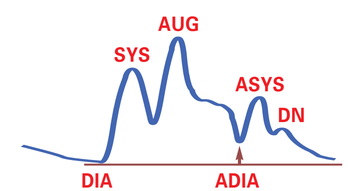
Result:
- AUG less than optimum.
- Decreased perfusion pressure and volume to coronary arteries.



Early Deflation

ASYS = SYS
Violates **Rule 3** for deflation.
May see "U" shape at ADIA.

Result:
- No afterload reduction.



Late Deflation

ADIA > DIA
Violates **Rule 2** for deflation.

Result:
- Increased workload of left ventricle.
- Increased MVO_2.

To locate an Arrow Distributor or for ordering information, contact Customer Service at:

United States
Tel: 800-523-8446
Fax: 800-343-2935

International
Tel: +1-610-655-8522
Fax: +1-610-655-8566

Caution: U.S. Federal law restricts this device to sale by or on order of a physician. Contents of unopened, undamaged package are sterile. Disposable. Refer to package insert for current warnings, indications, contraindications, precautions, and instructions for use.

Distribution Worldwide:
Arrow offices are located in Belgium, Canada, Czech Republic, France, Germany, Greece, India, Italy, Japan, Mexico, Netherlands, Slovakia, South Africa, Spain, United Kingdom and United States.

Arrow International, Inc., 2400 Bernville Road, Reading, PA 19605 U.S.A. Tel: 610-378-0131
www.arrowintl.com

TMG-P 7/06 CRB-06-0150

© 2006 Arrow International, Inc. All rights reserved. Printed in the U.S.A.

ProActiveCounterPulsation.com

24-Hour Intra-Aortic Balloon Product Hotline: 800-447-IABP Worldwide: 617-389-8628

CARDIAC ASSIST | ARROW INTERNATIONAL