



**PROACTIVE COUNTERPULSATION<sup>®</sup>**  
Automatic timing accuracy—even during arrhythmias



## WELCOME TO A BREAKTHROUGH IN IABP THERAPY

Teleflex's Arrow International brand of innovative IABP therapy — called ProActive CounterPulsation — enables you to provide 98% inflation timing accuracy during IABP support — even when patients have severe arrhythmias<sup>1,2</sup>.

### WHAT IS PROACTIVE COUNTERPULSATION?

ProActive CounterPulsation is the unique ability of the AutoCAT2 WAVE® system with FiberOptix® catheter technology to proactively anticipate individual AV closures *before* they occur and provide accurate inflation timing as well as triggering, even during severe arrhythmias. Don't settle for traditional “predictive timing” — get proactive with ProActive CounterPulsation.

### THE ANATOMY OF PROACTIVE COUNTERPULSATION

#### Arrow FiberOptix Catheter

Captures and transmits the high-fidelity AP signal at the speed of light, overcoming the delays seen with traditional fluid-filled AP signal systems

#### Proprietary WAVE® Algorithm

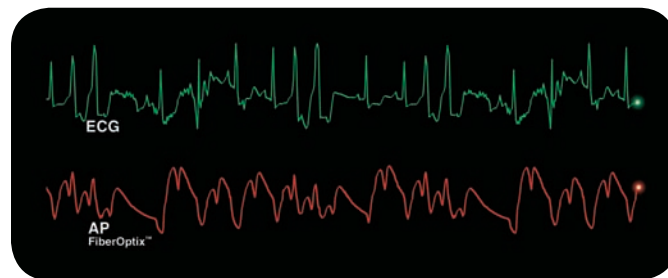
The brain of the pump calculates aortic flow based on the AP signal from the FiberOptix catheter for each beat rather than historic data from previous beats

#### Unique Aortic Flow Timing

Proactively determines AV closure with 98% inflation timing accuracy during IABP support — even when patients have severe arrhythmias<sup>1,2</sup>

#### AutoPilot™ Mode of Operation

Delivers simple, touch-of-a-button monitoring of, and response to, physiologic conditions to ensure consistent triggering and timing



*The AutoCAT2 WAVE consistently tracks this severe arrhythmia and accurately times IAB inflation/deflation — that's ProActive CounterPulsation*

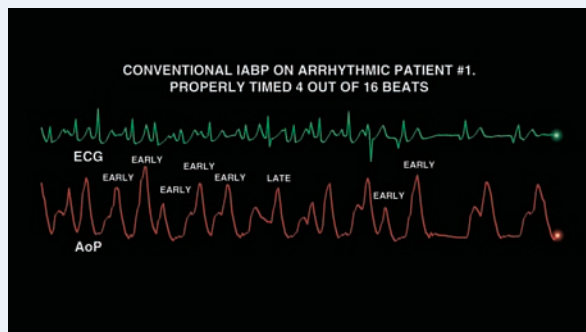
<sup>1</sup> Donelli A, Jansen JRC, Hoeksel B, et al. Performance of a real-time dicrotic notch detection and prediction algorithm in arrhythmic human aortic pressure signals. *J Clin Monit.* 2002;17:181-185.

<sup>2</sup> Schreuder JJ, Castiglioni A, Donelli A, et al. Automatic intraaortic balloon pump timing using an intrabeat dicrotic notch prediction algorithm. *Ann Thorac Surg.* 2005;79:1017-1022.

# THE AUTOCAT2 WAVE

Automaticity, proactivity, and much more.

## TIMING COMPARISON: PROACTIVE COUNTERPULSATION VS TRADITIONAL IABP SYSTEM



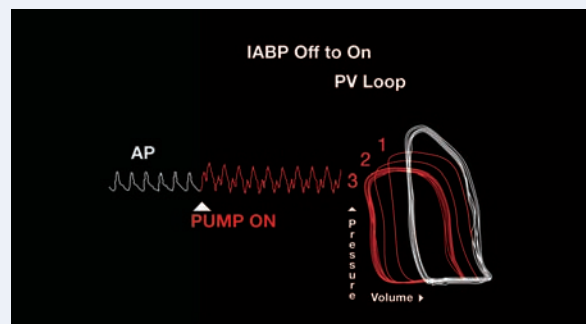
### INACCURATE TIMING CAN REDUCE THE EFFICACY OF IABP

Because the timing of fluid-filled systems is based on historic data, arrhythmic episodes can lead to poor performance in patient support. In this example, the fluid-filled system properly timed only 4 out of 16 beats.



### ACCURATE TIMING RESULTS IN OPTIMAL IABP PERFORMANCE

The AutoCAT2 WAVE sets the inflation point in real time, within the beat — even during arrhythmias. In this example, the AutoCAT2 WAVE properly timed inflation for all 16 out of 16 beats.



### EFFECTIVE IABP THERAPY CAN IMPROVE LEFT VENTRICULAR PERFORMANCE

Once the IABP is turned on, the PV loop indicates lower pressure and increased stroke volume. Simply turning the pump on increases cardiac output by as much as 18%–22% within just 3 beats **when accurately timed**. This direct patient benefit is evident in the PV loop shown here.



## DELIVERING A NEW LEVEL OF IABP RELIABILITY AND EASE OF USE

AutoCAT2 WAVE relies on a unique combination of FiberOptix sensor technology, aortic flow timing, proprietary WAVE software and the AutoPilot mode of operation to achieve its high level of performance — even in patients with severe arrhythmias.

- Speed-of-light AP signal transmission overcomes delays of fluid-filled systems
- Reliably anticipates and determines AV closure — before it occurs
- 98% timing accuracy within 1 millisecond (ms) — even during severe arrhythmias
- WAVE algorithm sets inflation point within the beat, even during arrhythmias
- Increases time for coronary perfusion and decreases afterload
- AutoPilot mode consistently maintains triggering and timing — Proprietary Best Signal Scoring software brings automaticity to a new level of reliability

### WITH THE FIRST AND ONLY PROVEN FIBEROPTIX IAB CATHETER

Arrow FiberOptix, the world's first fiber-optic IAB catheter, has been proven in thousands of patients. It is also the only one that works with the unique components of the AutoCAT2 WAVE to deliver ProActive CounterPulsation.

- **Consistent AP signal:** Transmits better information faster
  - Unaffected by dampening, noise, and movement; will not degrade over time
  - No maintenance of fiber-optic signal
  - No electrical interference from cautery
  - No transducer-induced motion artifact
- **Back-up safety for AP signal:** Should it be required, the FiberOptix catheter can be used as a traditional fluid-filled catheter
- **Abrasion-resistant:** The Cardiothane™ II membrane offers a unique design of abrasion resistant material with hydrophilic coating
- **Universal design:** Sheathed or sheathless insertion options; optional hemostasis device for post-insertion bleeding control

*The accurate, real-time advantages of FiberOptix catheters are available only when the catheter is used with the AutoCAT2 WAVE pump console. However, FiberOptix can be used as a conventional catheter with any IABP, ensuring continuity and ease in cases of patient transfer.*



# ORDERING INFORMATION

## FIBEROPTIX 8 INTRA-AORTIC BALLOON CATHETERS

| PRODUCT NUMBER | PRODUCT DESCRIPTION | CATHETER SIZE | BALLOON VOLUME | INSERTABLE LENGTH† | CATHETER O.D.   | SHEATH LENGTH | CENTRAL LUMEN I.D. (INCH) | MAXIMUM GUIDEWIRE (INCH) | BALLOON MEMBRANE MATERIAL | CATHETER MATERIAL  | BALLOON MEMBRANE LENGTH | INFLATED DIAMETER |
|----------------|---------------------|---------------|----------------|--------------------|-----------------|---------------|---------------------------|--------------------------|---------------------------|--------------------|-------------------------|-------------------|
| IAB-05840-LWS  | IAB Catheter        | 8.0 Fr.       | 40cc           | 27.3" (69.3 cm)    | 8.0 Fr. /0.105" | 6" (15 cm)    | .027                      | .025                     | Cardiothane II            | Polyurethane/Nylon | 10.2" (260 mm)          | 15 mm             |
| IAB-05830-LWS  | IAB Catheter        | 8.0 Fr.       | 30cc           | 25.3" (64.3 cm)    | 8.0 Fr. /0.105" | 6" (15 cm)    | .027                      | .025                     | Cardiothane II            | Polyurethane/Nylon | 9.1" (230 mm)           | 13.9 mm           |

## REPLACEMENT INSERTION KITS

| PRODUCT NUMBER | PRODUCT DESCRIPTION   |
|----------------|---|
| IAK-06845      | Replacement Insertion Kit for use with FiberOptix 8, 30cc and 40cc (IAB-05830-LWS and IAB-05840-LWS) catheters<br>Each kit contains the following: <ul style="list-style-type: none"> <li>• One: 18 Ga. x 2 1/2" Arterial Needle</li> <li>• Two: .025 x 175 cm Teflon® Coated 3 mm 'J' Extra Stiff Wire Guides</li> <li>• One: 8.0 Fr. Sheath Dilator Assembly</li> <li>• One: 8.0 Fr. Vessel Pre-Dilator</li> <li>• One: 8.0 Fr. Sheath with Sideport and Dilator</li> <li>• One: #11 Scalpel</li> </ul> |
| IAK-02691      | Driveline Tubing with Pre-Attached Arrow 30cc Pump Connector for use with Arrow pump consoles and FiberOptix 30cc IAB catheters   |
| IAK-02692      | Driveline Tubing with Pre-Attached Arrow 40cc Pump Connector for use with Arrow pump consoles and FiberOptix 40cc IAB catheters   |
| IAK-02263      | Driveline Tubing for use with Datascope® Balloon Pumps and FiberOptix 30cc and 40cc IAB catheters   |

## AUTOCAT® 2 SERIES

| PRODUCT NUMBER | PRODUCT DESCRIPTION   |
|----------------|---|
| IAP-0500       | AutoCAT 2 WAVE<br>1 (IABP) system includes: <ul style="list-style-type: none"> <li>• FiberOptix sensor technology</li> <li>• WAVE algorithm—proprietary timing software†</li> <li>• Aortic flow timing method</li> <li>• AutoPilot mode of operation</li> </ul> |
| IAP-0400       | AutoCAT 2<br>1 (IABP) system includes: <ul style="list-style-type: none"> <li>• AutoPilot mode of operation</li> </ul>  |

## AERO® SERIES (AIR TRANSPORT MODEL)

| PRODUCT NUMBER | PRODUCT DESCRIPTION         |
|----------------|-----------------------------|
| IAP-0535       | AERO Series: AutoCAT 2 WAVE |
| IAP-0435       | AERO Series: AutoCAT 2      |

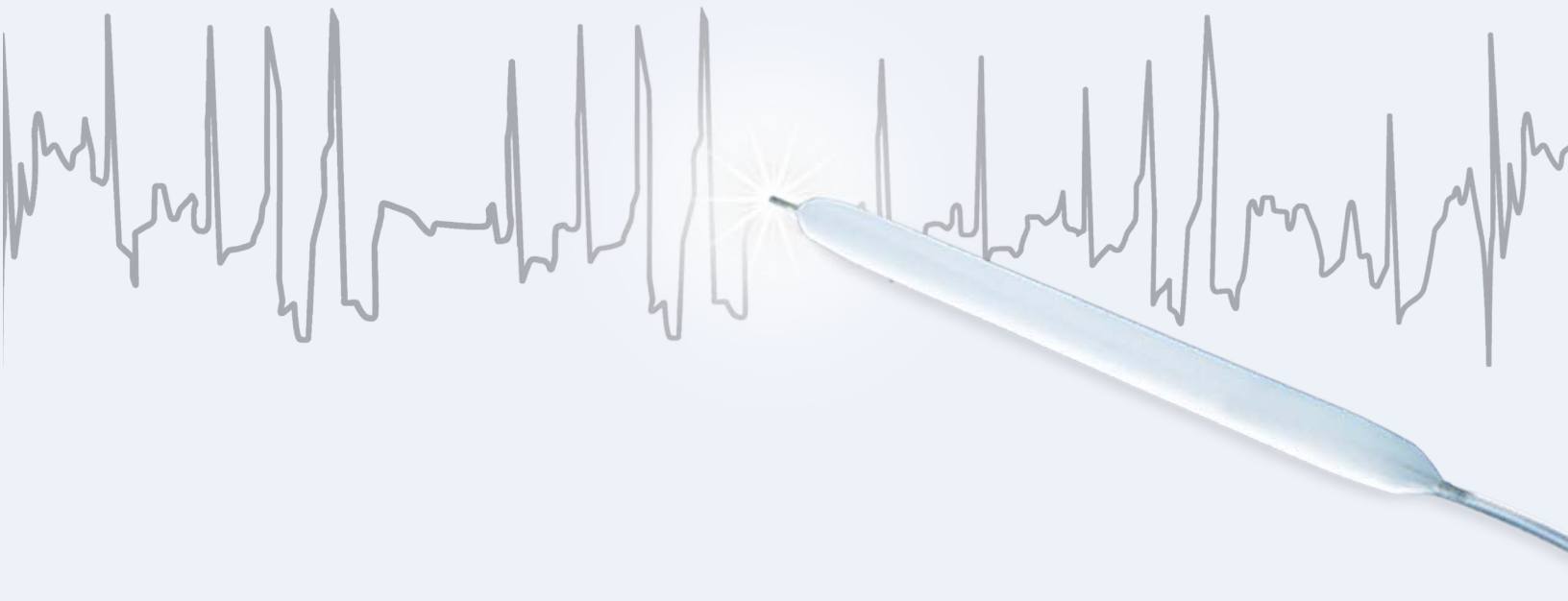
\* These products are also available in multiple languages. Contact Arrow for availability.

† U.S. Patent Nos. 6,258,035, 6,569,103, 6,887,206, and 5,913,814; additional patents pending.

‡ Sheathless insertions without hemostasis device.

**CAUTION:** U.S. Federal law limits 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 and components included in IAB and IAB insertion products. Product specifications, components and part numbers are subject to change without notice.

Each balloon catheter is packaged with a pre-mounted hemostasis device, 60cc syringe, one-way valve, and driveline tubing for Arrow IABP consoles. Each IAB package contains an Insertion Kit (see components left) and separately packaged driveline tubing for Datascope® pump consoles. **Contact customer service at 800-523-8446**



Teleflex is a global provider of medical products designed to enable healthcare providers to protect against infections and improve patient and provider safety. The company specializes in products and services for vascular access, respiratory, general and regional anesthesia, cardiac care, urology and surgery. Teleflex also provides specialty products for device manufacturers.

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