



**PROACTIVE COUNTERPULSATION®**  
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

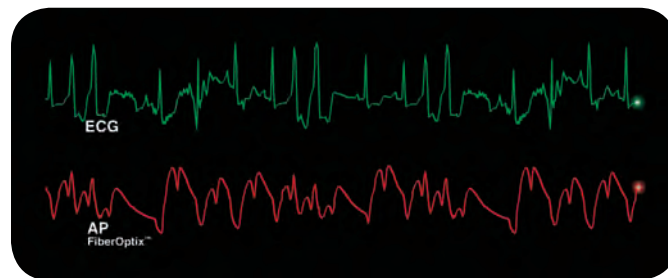
The brain of the pump calculates aortic flow based on the AP signal from the FiberOptix catheter for each beat rather than historic data from previous beats

#### 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 aortic pressure signal detection and prediction algorithm in arrhythmic human aortic pressure signals. *J Clin Monit.* 2002;17:181-185.

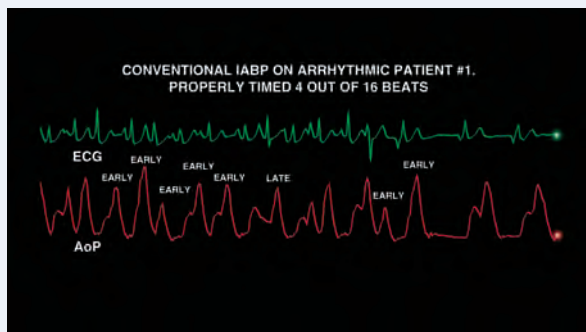
<sup>2</sup> Schreuder JJ, Castiglioni A, Donelli A, et al. Automatic intraaortic balloon pump timing using an intrabeat aortic pressure signal prediction algorithm. *Ann Thorac Surg.* 2005;79:1017-1022.



# THE AUTOCAT2 WAVE

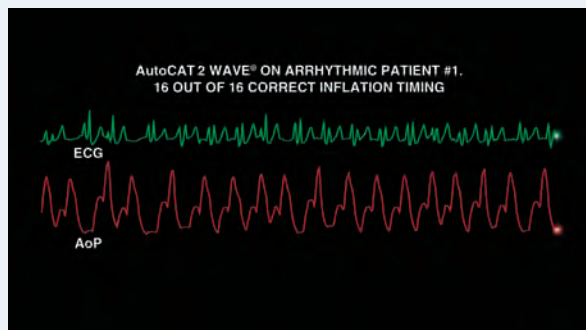
Automaticity, proactivity, and much more.

## TIMING COMPARISON: PROACTIVE COUNTERPULSATION VS TRADITIONAL IABP SYSTEM



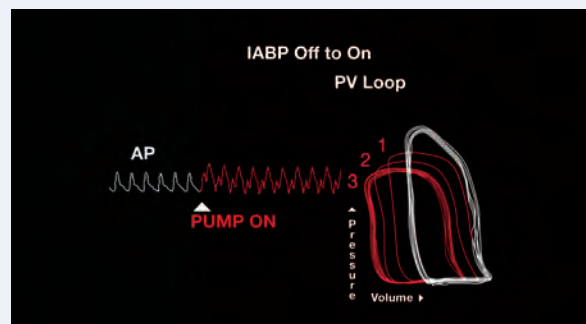
### INACCURATE TIMING CAN REDUCE THE EFFICACY OF IABP

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 12 milliseconds (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 <sup>‡</sup>	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 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 PTFE 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 1 (IABP) system includes: <ul style="list-style-type: none"> <li>• FiberOptix sensor technology</li> <li>• WAVE algorithm—proprietary timing software<sup>†</sup></li> <li>• Aortic flow timing method</li> <li>• AutoPilot mode of operation</li> </ul>
IAP-0400	AutoCAT 2 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

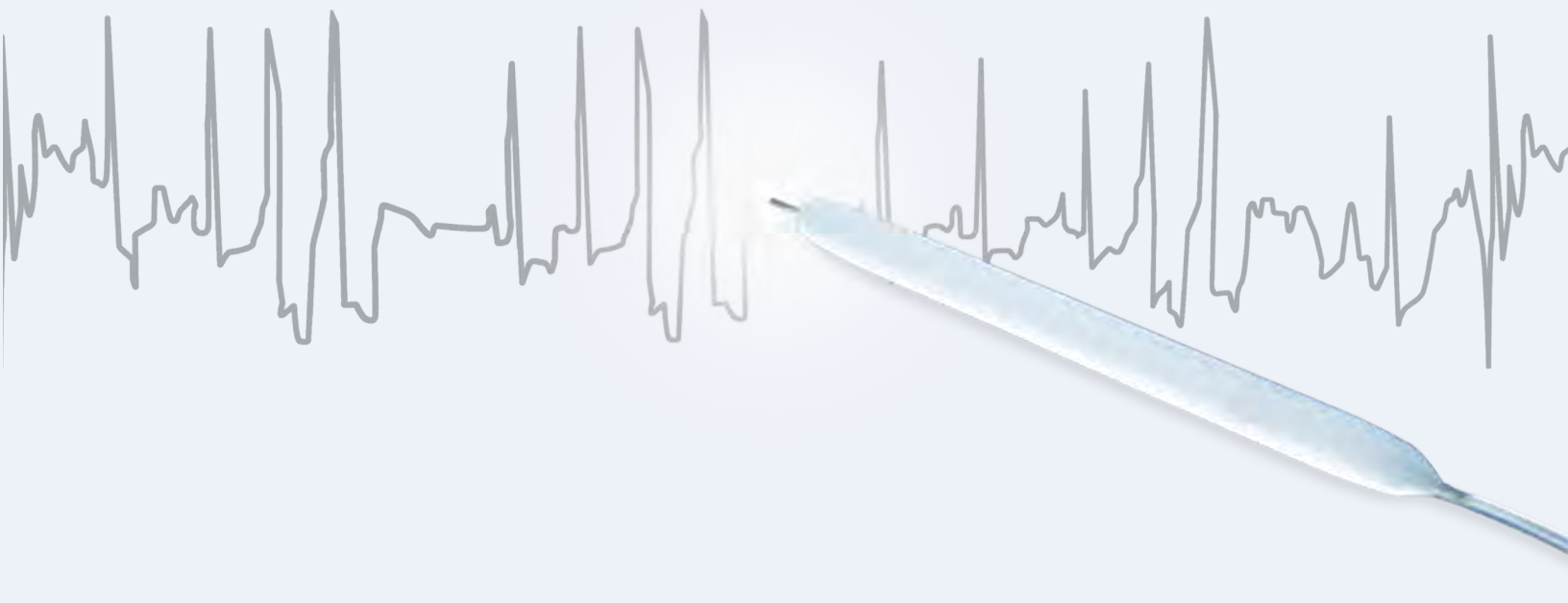
\* These products are also available in multiple languages. Contact Arrow for availability.

† 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.

The Teleflex family of brands includes ARROW®, BEERE MEDICAL®, DEKNATEL®, GIBECK®, HUDSON RCI®, KMEDIC®, PILLING®, PLEUR-EVAC®, RUSCH®, SHERIDAN®, SMD®, TAUT®, TFX OEM®, VASONOVA™ and WECK®, all of which are trademarks or registered trademarks of Teleflex Incorporated or its affiliates. Teleflex Incorporated (NYSE:TFX) has annual revenues of approximately \$1.8 billion and serves healthcare providers in 130 countries.

For detailed information, see [teleflex.com](http://teleflex.com)

#### **TELEFLEX MEDICAL**

PO Box 12600

Research Triangle Park, NC 27709

Toll Free 866.246.6990

Phone 919.544.8000

Intl 919.433.8088

Datascope is a registered trademark of Datascope Corp. Teleflex, Arrow, AutoCAT 2 WAVE, AutoCAT, AutoPilot, WAVE, FiberOptix, ProActive Counterpulsation, Cardiothane, and AERO are trademarks or registered trademarks of Teleflex Incorporated or its affiliates. © 2012 Teleflex Incorporated. All rights reserved. 2012-1257