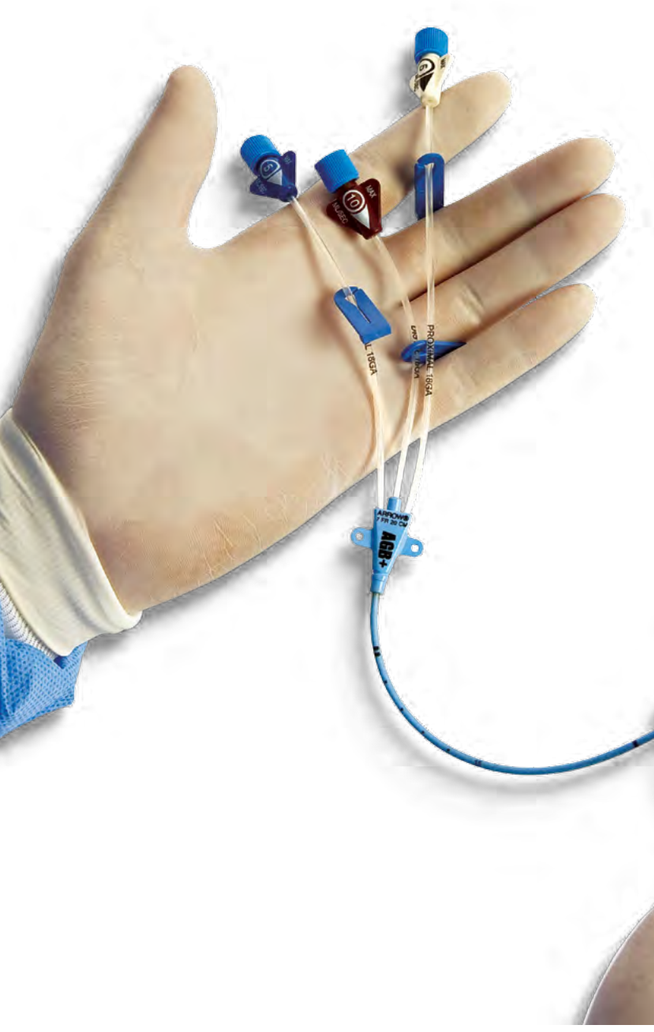
ARROW® PRESSURE INJECTABLE CVC

A PRESSURE INJECTABLE CATHETER PREVENTS THE NEED FOR ANOTHER VASCULAR ACCESS DEVICE

When that CVC is already pressure injectable, there is no need to insert a second line, saving valuable time for both you and your patients. Plus, Arrow pressure injectable CVCs offer a higher flow rate and a larger bore than a typical PICC, which means you can inject contrast efficiently and make your patients comfortable more quickly. Select Arrow pressure injectable CVCs are impregnated with ARROWg+ard Blue Plus®. This antimicrobial technology is a Centers for Disease Control and Prevention 1A precaution for the prevention of Central Line-Associated Bloodstream Infections (CLABSI).[1]



KEY FEATURES

MORE EFFICIENT PROCEDURES

Using an indwelling central line that is indicated for pressure injection negates the need for another type of venous access, which streamlines the scan process and saves crucial time for you and your patients.

DISTINCT LABELING

Pressure-injection capabilities are marked on the extension line hubs with each lumen's maximum flow rate, offering a clear understanding of the catheter's capabilities and performance parameters.

HIGHER FLOW RATE

Pressure injectable up to 10 ml/sec.—that's up to 2 times the maximum flow rate of pressure injectable PICCs.

LARGER BORE

Arrow pressure injectable CVCs have a larger bore than most PICCs, allowing you to inject a larger volume of contrast in a shorter amount of time.

SELECT ANTIMICROBIAL TECHNOLOGY

Many Arrow CVCs are impregnated with ARROWg+ard Blue Plus®—a chlorhexidine-based technology that reduces catheter-related bacteremia by 79 percent.[2]

A SUGGESTED PROCEDURE FOR PRESSURE INJECTION: USE STERILE TECHNIQUE

- Obtain a visual image to confirm catheter tip position prior to each pressure injection.[3]
- Remove injection cap from appropriate extension line of catheter.
- Check for catheter patency:
  - Attach 10 ml syringe filled with sterile normal saline.
  - Aspirate catheter for adequate blood return.
  - Vigorously flush catheter.
- Ensure patency of each lumen of catheter prior to pressure injection to minimize the risk of catheter failure and/or patient complications.
- Detach syringe.
- Attach pressure injection administration set tubing to appropriate extension line of catheter according to manufacturer's recommendations. To minimize the risk of catheter failure and/or tip displacement, do not exceed 10 pressure injections or the catheter's maximum recommended flow rate located on product labeling and catheter luer hub.
- Inject contrast media in accordance with hospital protocol. Warm contrast media to body temperature prior to pressure injection to minimize the risk of catheter failure.
- Disconnect catheter from pressure injector equipment.
- Flush catheter using 10 ml syringe (or larger) filled with sterile normal saline.
- Disconnect syringe and replace with sterile injection cap on catheter extension line.
- Lock catheter with saline or heparinized saline per hospital protocol.

WARNINGS AND PRECAUTIONS RELATED TO PRESSURE INJECTION

- **See Instructions for Use (IFU) for additional information.**
- **Warning:** Assess each patient for appropriateness of a pressure injection procedure. Pressure injection procedures must be performed by trained personnel well versed in safe technique and potential complications.
- **Warning:** Obtain a visual image to confirm proper catheter tip position prior to each pressure injection.
- **Warning:** Ensure patency of each lumen of catheter prior to pressure injection to minimize the risk of catheter failure and/or patient complications.
- **Warning:** Discontinue pressure injections at first sign of extravasation or catheter deformation. Follow hospital protocol for appropriate medical intervention.
- **Precaution:** To minimize the risk of catheter failure and/or tip displacement, do not exceed 10 pressure injections or the catheter's maximum recommended flow rate located on product labeling and catheter luer hub.
- **Precaution:** Warm contrast media to body temperature prior to pressure injection to minimize the risk of catheter failure.
- **Precaution:** Pressure limit settings on injector equipment may not prevent over pressurizing an occluded or partially occluded catheter.
- **Precaution:** Use appropriate administration set tubing between catheter and pressure injector equipment to minimize the risk of catheter failure.
- **Precaution:** Follow the contrast media manufacturer's specified instructions for use, contraindications, warnings and precautions.

REFERENCES:

1 O'Grady, N.P., Alexander, M., Burns L.A.,Dellinger, P., Garland, J., Heard, S.O., Lipsett P.A., Masur, H., Mermel, L.A., Pearson, M.L., Raad, I.I., Randolph, A, Rupp, M.E., Saint, S., Guidelines for the Prevention of Intravascular Catheter-Related Infections, 2011. *The Centers for Disease Control*. http://www.cdc.gov/hicpac/pdf/guidelines/bsi-guidelines-2011.pdf. Accessed May 16, 2011.

2 Maki, D.G., Stolz, S.M., Wheeler, S., Mermel, L.A. Prevention of Central Venous Catheter-Related Bloodstream Infection With an Antiseptic-Impregnated Catheter: A Randomized, Controlled Trial. *Annals of Internal Medicine*. 1997; 127(4): 257-266.

3 *Manual on Contrast Media Version 5.0.* American College of Radiology, 2004.

4 Fleischmann, D. Contrast Medium Injection Protocols for CT Angiography. *Controversies and Consensus in Imaging and Intervention*. 2006; 4(2): 24.

For additional reference information contact Teleflex. Full bibliography available upon request.

Caution: U.S. Federal law limits this device to sale by or on order of a physician.

Teleflex®

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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TELEFLEX MEDICAL
PO Box 12600
Research Triangle Park, NC 27709
Toll Free 800.523.8446
Phone 919.544.8000
Intl 919.361.3964

ARROW PRESSURE INJECTABLE CVC

The first CVC rated for pressure injection

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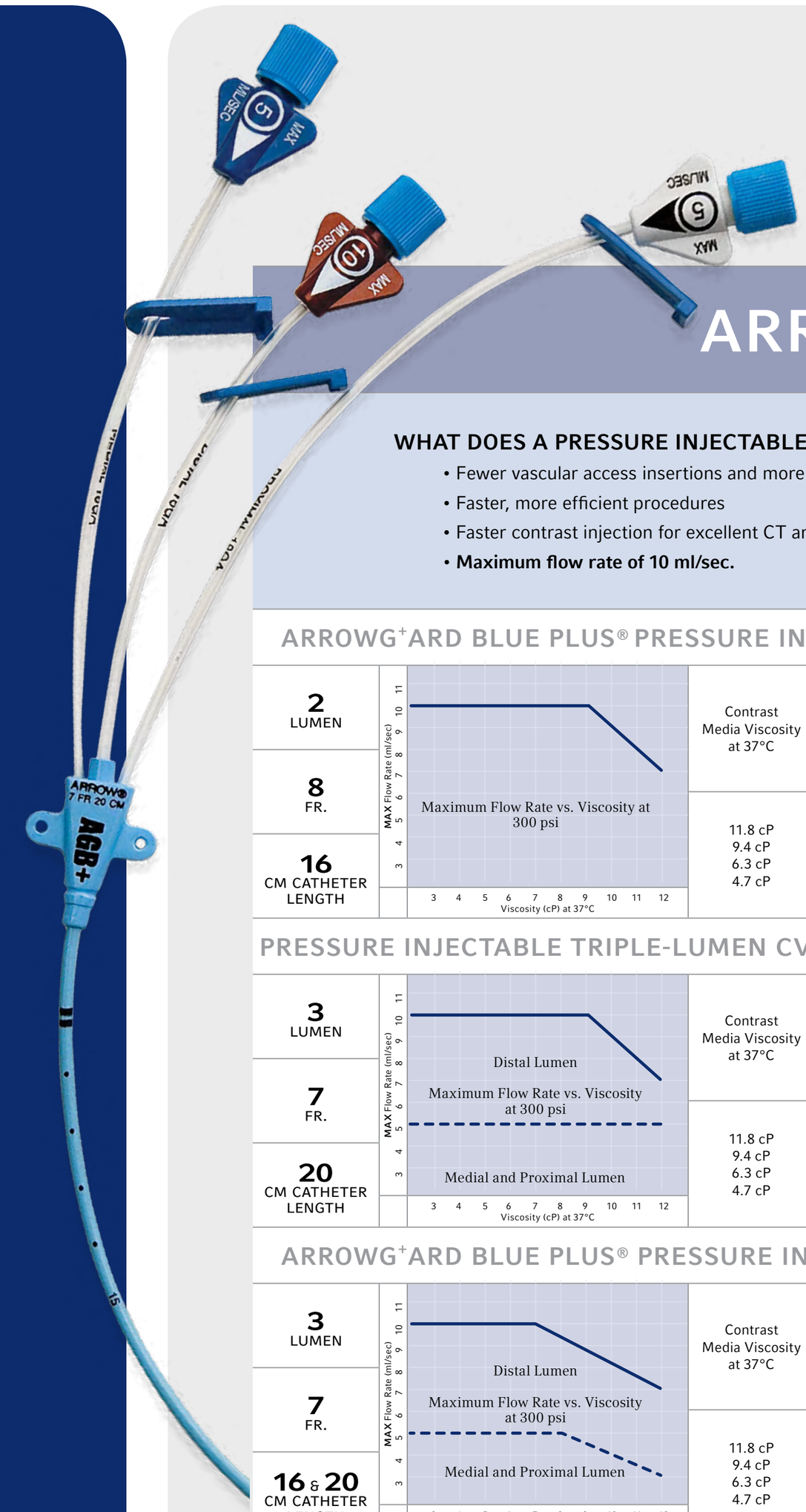
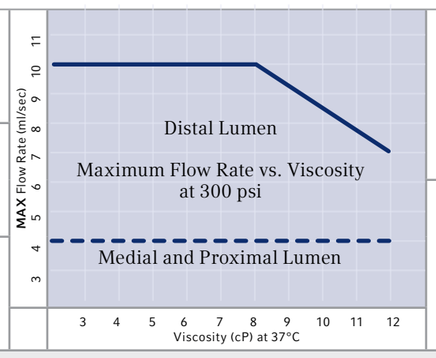


To learn more about Arrow Pressure Injectable Central Lines in the Arrow ErgoPack™ System scan the QR code at the right or visit **ARROWERGOPACK.COM**.

ARROW PRESSURE INJECTABLE CVC

WHAT DOES A PRESSURE INJECTABLE CVC MEAN FOR YOU?

- Fewer vascular access insertions and more comfortable patients
- Faster, more efficient procedures
- Faster contrast injection for excellent CT and CTA imaging[4]
- **Maximum flow rate of 10 ml/sec.**

LUMEN			AT 300 PSI INJECTOR PRESSURE SETTING (When equipment pressure is limited to only 300 psi)		AT 400 PSI INJECTOR PRESSURE SETTING (Maximum indicated catheter rating)		
			PRESSURE INJECTION[6] FLOW RATE[7]	MAX CATHETER PRESSURE DURING FLOW RATE[8]	MAX INDICATED PRESSURE INJECTION FLOW RATE[9]	CATHETER PRESSURE DURING MAXIMUM FLOW RATE[10]	MINIMUM STATIC BURST PRESSURE[11]
ARROWG+ARD BLUE PLUS® PRESSURE INJECTABLE DOUBLE-LUMEN CVC							
2 LUMEN **8** FR. **16** CM CATHETER LENGTH		Contrast Media Viscosity at 37°C	**MAX** Flow Rate Distal Lumen	**MAX** Flow Rate Proximal Lumen					
		11.8 cP 9.4 cP 6.3 cP 4.7 cP	7.0 ml/sec. 9.5 ml/sec. 10.0 ml/sec. 10.0 ml/sec.	7.0 ml/sec. 9.5 ml/sec. 10.0 ml/sec. 10.0 ml/sec.	Proximal 14 Ga.	**7** ML/SEC.	**61** PSI	**10** ML/SEC.	**76** PSI	**254** PSI
PRESSURE INJECTABLE TRIPLE-LUMEN CVC							
3 LUMEN **7** FR. **20** CM CATHETER LENGTH		Contrast Media Viscosity at 37°C	**MAX** Flow Rate Distal Lumen	**MAX** Flow Rate Medial and Proximal Lumen	Distal 16 Ga.	**7** ML/SEC.	**121** PSI	**10** ML/SEC.	**155** PSI	**337** PSI
		11.8 cP 9.4 cP 6.3 cP 4.7 cP	7.0 ml/sec. 8.5 ml/sec. 10.0 ml/sec. 10.0 ml/sec.	5.0 ml/sec. 5.0 ml/sec. 5.0 ml/sec. 5.0 ml/sec.	Medial 18 Ga.	**5** ML/SEC.	**186** PSI	**5** ML/SEC.	**186** PSI	**345** PSI
					Proximal 18 Ga.	**5** ML/SEC.	**180** PSI	**5** ML/SEC.	**180** PSI	**315** PSI
ARROWG+ARD BLUE PLUS® PRESSURE INJECTABLE TRIPLE-LUMEN CVC							
3 LUMEN **7** FR. **16 & 20** CM CATHETER LENGTH		Contrast Media Viscosity at 37°C	**MAX** Flow Rate Distal Lumen	**MAX** Flow Rate Medial and Proximal Lumen	Distal 16 Ga.	**6** ML/SEC.	**146** PSI	**10** ML/SEC.	**210** PSI	**343** PSI
		11.8 cP 9.4 cP 6.3 cP 4.7 cP	6.0 ml/sec. 7.5 ml/sec. 9.5 ml/sec. 10.0 ml/sec.	4.0 ml/sec. 4.5 ml/sec. 5.0 ml/sec. 5.0 ml/sec.	Medial 18 Ga.	**4** ML/SEC.	**221** PSI	**5** ML/SEC.	**222** PSI	**355** PSI
					Proximal 18 Ga.	**4** ML/SEC.	**208** PSI	**5** ML/SEC.	**213** PSI	**341** PSI
ARROWG+ARD BLUE PLUS® PRESSURE INJECTABLE QUAD-LUMEN							
4 LUMEN **8.5** FR. **16 & 20** CM CATHETER LENGTH		Contrast Media Viscosity at 37°C	**MAX** Flow Rate Distal Lumen	**MAX** Flow Rate Medial Lumen	Distal 16 Ga.	**5** ML/SEC.	**119** PSI	**5** ML/SEC.	**119** PSI	**264** PSI
		11.8 cP 9.4 cP 6.3 cP 4.7 cP	5.0 ml/sec. 5.0 ml/sec. 5.0 ml/sec. 5.0 ml/sec.	7.0 ml/sec. 9.0 ml/sec. 10.0 ml/sec. 10.0 ml/sec.	Medial 14 Ga.	**7** ML/SEC.	**76** PSI	**10** ML/SEC.	**108** PSI	**267** PSI

5 Pressure Injection: The transient flow of a moderately viscous aqueous fluid (3-12 cp) injected via mechanical means capable of generating pressures up to or in excess of 300 psi through any one lumen of a vascular catheter at a flow rate that is measured in ml or cc per second rather than per minute or per hour.

6 Pressure Injectable Flow Rate: A measure of the volume of fluid per unit of time that passes through a catheter lumen during a pressure injection, typically expressed in cc/sec or ml/sec.

7 MAX Catheter Pressure during Flow Rate: The pressure in the catheter during a pressure injection.

8 MAX Indicated Pressure Injection Flow Rate: The maximum flow rate that can safety be pressure injected through a catheter lumen.

9 Maximum Catheter Pressure During Maximum Flow Rate: The maximum static pressure within a catheter lumen during a pressure injection at the extremes of flow rate and viscosity.

10 Minimum Static Burst Pressure: The internal static pressure at which an occluded catheter will fail.

ARROW