

# ARROWgard Blue PLUS<sup>®</sup> Pressure Injectable Multi-Lumen CVC Information

Catheter tested for ten (10) pressure injections.<sup>1</sup>

Patient ID: \_\_\_\_\_

Date of Birth (mm/dd/yy): \_\_\_\_/\_\_\_\_/\_\_\_\_

First Name: \_\_\_\_\_

Male       Female

Last Name: \_\_\_\_\_

Notes: \_\_\_\_\_

Location (unit/ward/bed): \_\_\_\_\_

Insertion Site:       Subclavian       Jugular

Other: \_\_\_\_\_

### Catheter Tip Configuration:



Kit No.: \_\_\_\_\_

Date Inserted (mm/dd/yy): \_\_\_\_/\_\_\_\_/\_\_\_\_

## Injection Log

	Date	Lumen	Media	Volume	Flow Rate
1					
	Notes:				
2					
	Notes:				
3					
	Notes:				
4					
	Notes:				
5					
	Notes:				
6					
	Notes:				
7					
	Notes:				
8					
	Notes:				
9					
	Notes:				
10					
	Notes:				



Patient Label

**7**<sup>Fr.</sup> | **3**<sup>Lumen</sup> | **16**<sup>cm</sup>  
catheter length

ARROWgard Blue PLUS<sup>®</sup> Pressure Injectable  
Multi-Lumen CVC Kit

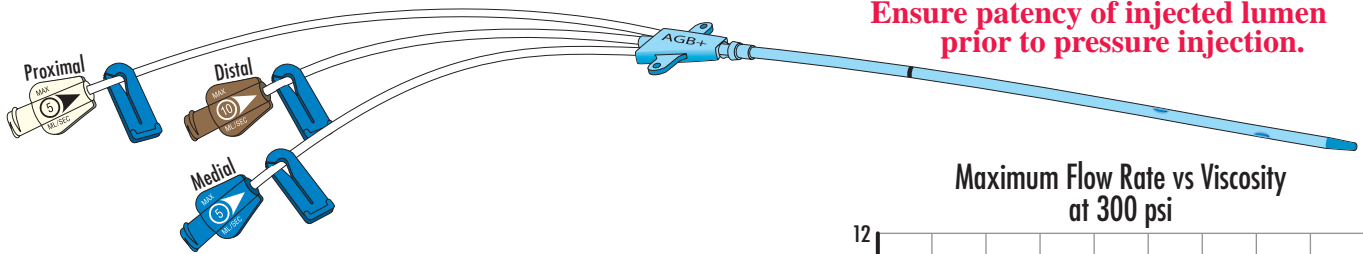
U-42703-100A (4/08)

# ARROW<sup>g+</sup> Blue PLUS<sup>®</sup> Pressure Injectable Multi-Lumen CVC Information

*Catheter tested for ten (10) pressure injections.<sup>1</sup>*

Using maximum viscosity media <sup>2</sup> at body temperature (11.8 Centipoise (cP) at 37°C)					
Catheter Lumen	At 300 psi Injector Pressure Setting		At 400 psi Injector Pressure Setting <sup>4</sup> Maximum Indicated Catheter Rating		Minimum Static Burst Pressure <sup>3</sup>
	Pressure Injection Flow Rate	Maximum Catheter Pressure During Flow Rate	MAX Indicated Pressure Injection Flow Rate	Catheter Pressure During Maximum Flow Rate	
Distal (16 Ga.)	6 mL/sec	146 psi	10 mL/sec	210 psi	343 psi
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

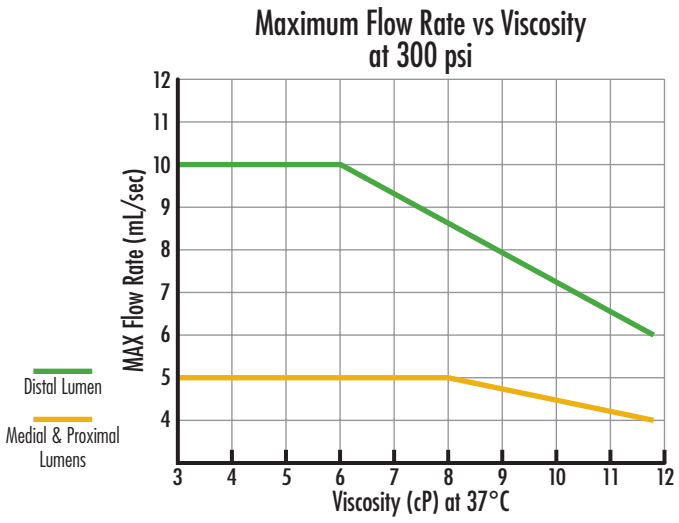
<sup>1</sup> Tested using 125 mL injection volume.  
<sup>2</sup> See Pressure Injectable Catheter Performance chart below for information on lower viscosity contrast media.  
<sup>3</sup> Static Burst Pressure is the failure point of the catheter when the lumen is completely occluded. Occluded catheter failure occurred at or above this minimum pressure.  
<sup>4</sup> Achieved using 400 psi rated 60" administration set tubing and nominal injector values. Injector equipment pressure variation may result in slightly diminished flow rates.



### Pressure Injectable Catheter Performance:

For pressure injection equipment limited to 300 psi, the following chart (graph) shows the maximum achievable flow rates as a function of viscosity.

Contrast Media Viscosity at 37°C	MAX Flow Rate Distal Lumen at 300 psi	MAX Flow Rate Medial & Proximal Lumens at 300 psi
11.8 cP	6 mL/sec	4 mL/sec
9.4 cP	7.5 mL/sec	4.5 mL/sec
6.3 cP	9.5 mL/sec	5 mL/sec
4.7 cP	10 mL/sec	5 mL/sec



### Warnings and Precautions related to Pressure Injection:

- 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 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 ten (10) injections or 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.

### A Suggested Procedure for Pressure Injection:

- Use sterile technique.**
- Warning:** Obtain a visual image to confirm catheter tip position prior to each pressure injection.
  - 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. **Warning:** 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.
  - Precaution:** To minimize the risk of catheter failure and/or tip displacement, do not exceed ten (10) injections or catheter's maximum recommended flow rate located on product labeling and catheter luer hub.
  - Inject contrast media in accordance with hospital protocol. **Precaution:** 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.