

# ARROWgard Blue PLUS<sup>®</sup> Pressure Injectable Quad-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: \_\_\_\_\_

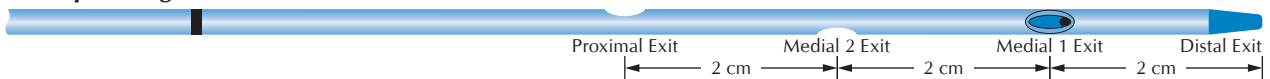
Notes: \_\_\_\_\_

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

8.5Fr. | 4 Lumen | 20 cm catheter length

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

U-45854-100A (4/08)

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4 Lumen

20 cm  
catheter  
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*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)

At 300 psi Injector Pressure Setting

At 400 psi Injector Pressure Setting<sup>4</sup>  
Maximum Indicated Catheter Rating

Catheter Lumen	Pressure Injection Flow Rate	Maximum Catheter Pressure During Flow Rate	MAX Indicated Pressure Injection Flow Rate	Catheter Pressure During Maximum Flow Rate	Minimum Static Burst Pressure <sup>3</sup>
Distal (16 Ga.)	5 mL/sec	119 psi	5 mL/sec	119 psi	264 psi
Medial 1 (14 Ga.)	7 mL/sec	76 psi	10 mL/sec	108 psi	267 psi

Medial 2 (18 Ga.) ● has not been rated for pressure injection.

Proximal (18 Ga.) ○ has not been rated for pressure injection.

<sup>1</sup> Tested using 125 mL injection volume.

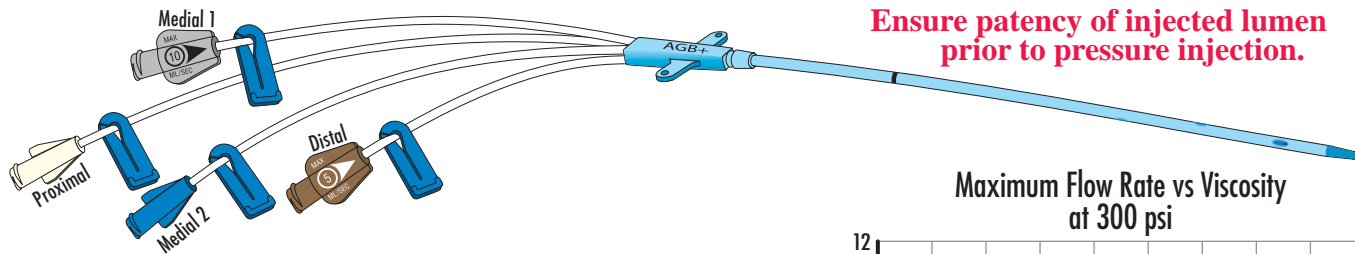
<sup>2</sup> See Pressure Injectable Catheter Performance chart below for information on lower viscosity contrast media.

<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.

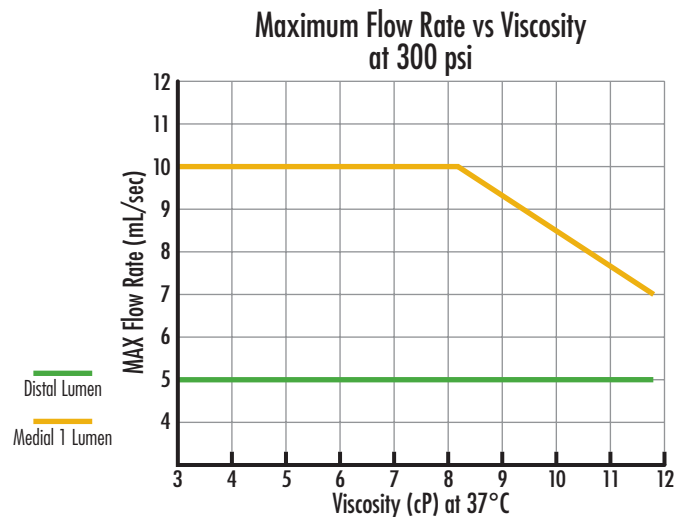
Injector equipment pressure variation may result in slightly diminished flow rates.



## 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 1 Lumen at 300 psi
11.8 cP	5 mL/sec	7 mL/sec
9.4 cP	5 mL/sec	9 mL/sec
6.3 cP	5 mL/sec	10 mL/sec
4.7 cP	5 mL/sec	10 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.

See Instructions for Use (IFU) for additional information.