Clinical Considerations for conserving the BD Alaris™ Pump Module Administration Sets

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To help you make educated practice decisions, we are providing you with some considerations:

- Consider limiting the use of the BD Alaris™ Pump Module administration sets for those infusions that require the use of critical safety features of the device, e.g., rate accuracy of +/- 5%, air-in-line alarms, fast time to occlusion alarms, etc.
- Consider using syringe pumps for some of your low volume/ low rate infusions.
- Consider use of gravity administration sets with flow controller components for electrolyte infusions or certain antibiotics to reduce the use of pump sets.

Tips for using Flow Controller:

1. If utilizing a flow controller extension set, remove end cap from female luer and attach to desired IV set
2. Turn flow controller dial to open position. Open clamp and prime set per facility protocol.
3. Invert flow controller and y-site(s) and tap to expel any trapped air.
   - Where applicable, filter will automatically prime if left in a vertical orientation

4. When all air is flushed, turn controller dial to OFF position.
5. Remove end cap and attach male luer of primed set to desired vascular access device.
6. Leave primary set clamp open. Turn dial to desired rate.
   - **Dial numbers are approximate.**
   - Confirm drip rate by using a timer or watch with a second hand.
7. To stop flow, close clamp and turn flow controller dial to OFF position.
8. If a bolus needs to be administered, must be done below the flow controller only.

- Consider use of gravity sets with a roller clamp for basic hydration as indicated.

  Calculating Drip Rates:

  - Calculating mL per hour
    - Total volume in mLs/total time in hours = mL per hour

      $$\frac{\text{Volume (mL)}}{\text{Time (hr)}} = \text{Flow Rate (mL/hr)}$$

    - Example: The Clinician has ordered 1000mL NS to be infuse over 4 hours
      - 1000mL/4 hours = 250mL/hr
  - Calculating Flow Rate (drops per minute = gtts/min)
    - Determine the drop factor of the tubing you will be utilizing as you will need this for your calculation (Example of where to find this on our BD Alaris™ Pump tubing insert refer to Appendix A)
      - Drop factor: Number of drops in 1 mL of solution referred to as gtts/mL
      - Microdrip tubing: Typically 60 gtts/mL
      - Macrodrip tubing: Typically 10-20 gtts/mL
    - Take the total volume (mLs) divided by time (minutes), then multiple that number by the drop factor (gtts/mL) **=** IV flow rate in drops per minute (gtts/min)

      $$\frac{\text{Volume (mL)}}{\text{Time (min)}} \times \text{Drop Factor (gtts/mL)} = \text{Flow Rate (gtts/min)}$$

    - Example: The clinician has ordered 1000 mL NS to be infuse over 4 hours. You have macrodrip tubing with a drop factor of 10 gtts/mL.
      - Convert hours to minutes
        - 4 hours x 60 minutes = 240 minutes
      - (1000mL/240min) x 10 gtts/mL = 41.66 gtts/min (round to 42 gtts/min)
- Consider delivery of medications via IV push in a syringe following the ISMP Safe Practices Guidelines for adult IV Push Medications[1] as applicable, to reduce the use of gravity sets and components. If giving an IV push into a pump module administration set, occlude the tubing above the injection port closest to the patient to prevent pressure from going up the tubing and possibly ballooning the pumping segment.

For any additional questions related to this information, please visit www.bd.com/MMSCOVID, call 858-617-1316 or email GMB-AlarisMedSafetyProgram@bd.com.

[1] ISMP Safe Practice Guidelines for Adult IV Push Medications. A compilation of safe practices from the ISMP Adult IV Push Medication Safety Summit. 2015

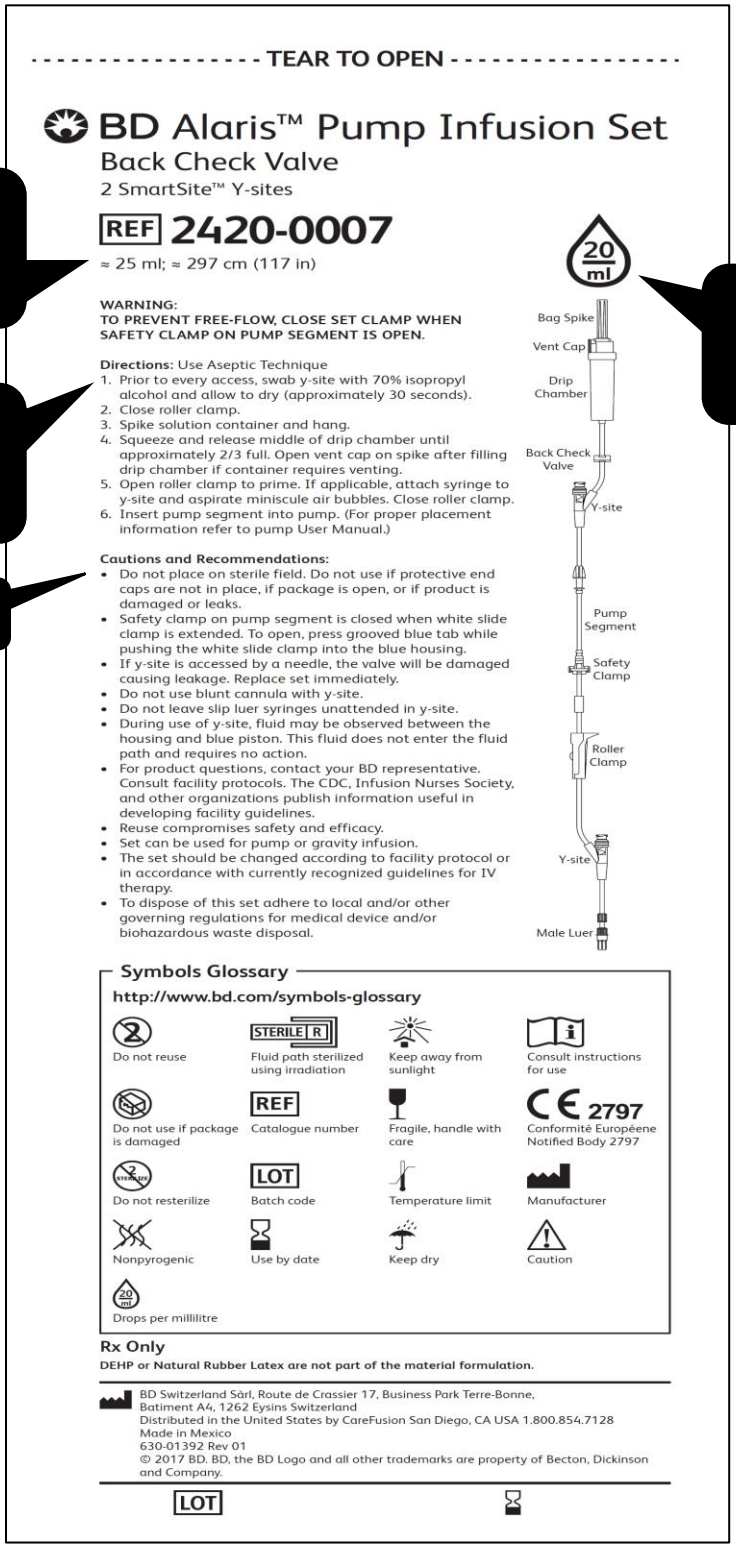
Appendix A: Example of BD Alaris™ Pump Tubing Insert

Priming Volume & Set Length

Directions for Use (e.g. proper priming, etc.)

Recommendations

Drop Factor (i.e. 20 drops per mL)



- - - - - - - - - - - - - - - - TEAR TO OPEN - - - - - - - - - - - - - - - -

BD Alaris™ Pump Infusion Set

Back Check Valve

2 SmartSite™ Y-sites

REF 2420-0007

≈ 25 ml; ≈ 297 cm (117 in)

20 ml

WARNING:
TO PREVENT FREE-FLOW, CLOSE SET CLAMP WHEN SAFETY CLAMP ON PUMP SEGMENT IS OPEN.

Directions: Use Aseptic Technique

1. Prior to every access, swab y-site with 70% isopropyl alcohol and allow to dry (approximately 30 seconds).
2. Close roller clamp.
3. Spike solution container and hang.
4. Squeeze and release middle of drip chamber until approximately 2/3 full. Open vent cap on spike after filling drip chamber if container requires venting.
5. Open roller clamp to prime. If applicable, attach syringe to y-site and aspirate miniscule air bubbles. Close roller clamp.
6. Insert pump segment into pump. (For proper placement information refer to pump User Manual.)

Cautions and Recommendations:

- Do not place on sterile field. Do not use if protective end caps are not in place, if package is open, or if product is damaged or leaks.
- Safety clamp on pump segment is closed when white slide clamp is extended. To open, press grooved blue tab while pushing the white slide clamp into the blue housing.
- If y-site is accessed by a needle, the valve will be damaged causing leakage. Replace set immediately.
- Do not use blunt cannula with y-site.
- Do not leave slip luer syringes unattended in y-site.
- During use of y-site, fluid may be observed between the housing and blue piston. This fluid does not enter the fluid path and requires no action.
- For product questions, contact your BD representative. Consult facility protocols. The CDC, Infusion Nurses Society, and other organizations publish information useful in developing facility guidelines.
- Reuse compromises safety and efficacy.
- Set can be used for pump or gravity infusion.
- The set should be changed according to facility protocol or in accordance with currently recognized guidelines for IV therapy.
- To dispose of this set adhere to local and/or other governing regulations for medical device and/or biohazardous waste disposal.

Bag Spike
Vent Cap
Drip Chamber
Back Check Valve
Y-site
Pump Segment
Safety Clamp
Roller Clamp
Y-site
Male Luer

Symbols Glossary

http://www.bd.com/symbols-glossary

Do not reuse	Fluid path sterilized using irradiation	Keep away from sunlight	Consult instructions for use
Do not use if package is damaged	Catalogue number	Fragile, handle with care	CE 2797 Conformité Européene Notified Body 2797
Do not resterilize	Batch code	Temperature limit	Manufacturer
Nonpyrogenic	Use by date	Keep dry	Caution
Drops per millilitre			

Rx Only

DEHP or Natural Rubber Latex are not part of the material formulation.

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