

QUICK REFERENCE GUIDE

WARNINGS:



- To ensure proper operation of the Alaris™ System, you must be familiar with related features, disposables, administration sets, set-up, and programming.
- This guide is not intended to be comprehensive instructions for the set-up and operation of the Alaris™ System. For complete instructions along with Warnings and Cautions, refer to *Alaris™ System User Manual (v9)*.

Programming an Infusion using Guardrails™ Suite MX Protection

The programming user interface is identical for the Alaris™ Pump Module and the Alaris™ Syringe Module.

Set Priming, Loading and Removal

Manual Priming

1. Ensure set is not connected to patient and that device is level with patient's heart.
2. If used, hold pressure sensing disc between two fingers and invert disc so patient side is up.
3. Slowly prime set while gently massaging disc to ensure disc does not become over or under filled and all air is expelled.
4. When priming is complete, clamp set.
5. Load syringe into device and install pressure sensing disc (for proper placement information, refer to the *Alaris System User Manual*).
6. Program infusion.
7. Release clamp and press **START**.

8. Attach set to patient.

Note: Starting infusion before attaching set to patient minimizes any potential bolus that could be released from pressure buildup in set due to normal priming and syringe loading.

Device Priming

1. Ensure set is not connected to patient and that device is level with patient's heart.
2. Load and select syringe type and size.
3. Program infusion parameters but do not start infusion.
4. Press **OPTIONS**.
5. Select **Prime Set with Syringe**.
6. If used, hold pressure sensing disc between two fingers and invert disc so patient side is up.
7. Press and hold **PRIME** while gently massaging disc to ensure disc does not become over or under filled and all air is expelled.
8. Release **PRIME** when fluid flow is observed at end of set.
9. Install pressure sensing disc.



10. Press **EXIT**.
11. Press **START**.
12. Attach set to patient.

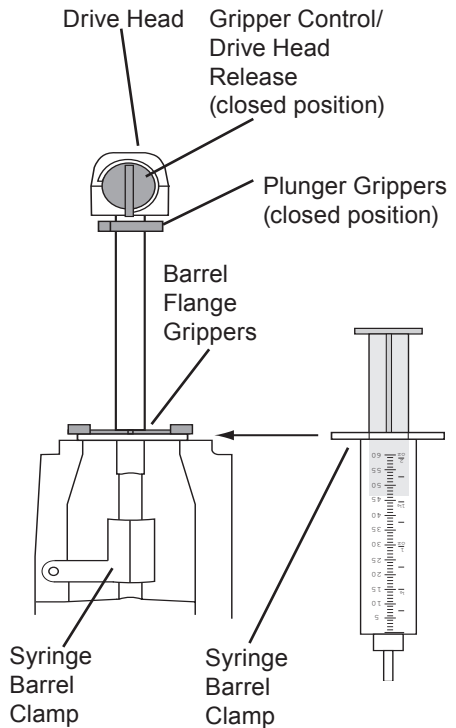
Note: Using the Prime Set with Syringe feature engages the mechanical components of the pump and decreases the syringe's friction and compliance. If manual priming, when complete, use Prime Set with Syringe feature to minimize startup delays and delivery inaccuracies, especially at low infusion rates.

Loading:

Infusions

1. Open syringe barrel clamp until it clears syringe chamber.
2. Twist gripper control clockwise and raise drive head to fully extended position.
3. Insert syringe barrel flange between barrel flange grippers.
4. Lock syringe in place by closing barrel clamp.
5. Twist gripper control clockwise, lower drive head, lock plunger in place with plunger grippers.
6. Insert pressure disc (if used) with membrane facing device. Apply upward pressure until disc snaps into disc housing.

Note: At the start of an infusion program, the system prompts to select and confirm syringe type and size. Ensure syringe manufacturer and size correctly identify the installed approved syringe. Mismatches may cause under-infusion or over-infusion to the patient.



WARNING:



To prevent free flow, close set tubing clamp before loading or unloading syringe.

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Removal:

1. Close tubing clamp.
2. Open plunger grippers and syringe barrel clamp (silence safety alarm).
3. Remove syringe, apply downward pressure to remove disc from housing.

Near End of Infusion

When infusion is near completion, Near End of Infusion is enabled:

- Main display alternates between **NEAR END** and remaining VTBI.
- Yellow standby status indicator flashes.
- An audio prompt sounds which requires being silenced once, and will not reoccur following initial silencing.

All Mode Enabled

If the **ALL** option is enabled for the VTBI, entire contents of the syringe will be delivered (unless your facility has established a KVO volume).

Note: KVO is not available for intermittent infusions.

All Mode Disabled

If the **ALL** option is disabled for the VTBI, a syringe content volume will be displayed after the VTBI soft key is selected.

Selecting Pressure Limits

Pressure Sensing Disc Installed

1. Press **CHANNEL SELECT** key.
2. Press **OPTIONS** key.
3. Press **Pressure Limit** soft key.
4. To enter a new pressure limit value, press **Change Value** soft key and use numeric keys. If Auto Pressure feature is enabled and desired, press **Auto Pressure** soft key.

Note: If Auto Pressure is selected and current pressure is:

- 100 mmHg or less — system adds 30 mmHg to current pressure, to create a new alarm limit.
- Greater than 100 mmHg— system adds 30% to current pressure, to create a new alarm limit.

5. Press **CONFIRM** soft key.

Pressure Sensing Disc Not Installed

1. Press **CHANNEL SELECT** key.
2. Press **OPTIONS** key.
3. Press **Pressure Limit** soft key.
4. Press appropriate soft key: **Low**, **Med**, **High**.
5. Press **CONFIRM** soft key.

Alarms and Troubleshooting:

Alarms

Alarm	Meaning	Response
Channel Disconnected	Channel(s) disconnected while in operation or there is a communication problem.	To silence alarm and clear message from screen, press CONFIRM soft key. Reattach channel if desired, ensuring it is securely “clicked” into place at Channel Release Latch. If alarm is still present, replace module with an operational instrument.
Check Syringe	Plunger grippers opened during infusion and then closed. Infusion stops on affected module.	Securely lock plunger grippers, press CHANNEL SELECT key, and reselect syringe.
	Syringe barrel clamp opened during infusion and then closed. Infusion stops on affected module.	Securely lock syringe barrel clamp and press RESTART key.
	Syringe plunger not captured while in idle state. System alarms after 30 seconds to indicate potential siphoning condition.	Check for potential siphoning. Ensure administration set clamp is in closed position. Securely lock plunger grippers over syringe plunger.
Occlusion	Increased back pressure sensed while infusing. Infusion stops on affected module.	Clear occlusion. Press RESTART key, or press CHANNEL SELECT key and then START soft key.
Pressure Disc Installed	Pressure sensing disc installed during an infusion. Infusion stops on affected module.	Press CONFIRM soft key and restart infusion.

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Alarms and Troubleshooting: Alarms (Continued)

Alarm	Meaning	Response
Pressure Disc Removed	Pressure sensing disc removed. Infusion stops on affected module.	Reinsert pressure sensing disc and press RESTART key.
Syringe Empty	<p>Syringe is empty. If syringe is not empty, other possibilities are:</p> <ul style="list-style-type: none">• Pressure sensing disc inappropriate/defective.• Syringe plunger travel impeded.• Pressure transducer defective.	<p>Set up new infusion or press CHANNEL OFF key.</p> <p>Verify appropriate pressure sensing disc is in use and functioning properly.</p> <p>Verify syringe plunger movement is not impeded.</p> <p>If syringe is not empty and above actions do not correct alarm, contact qualified service personnel.</p>

Errors

Alarm	Meaning	Response
Channel Error	Error detected. Operation stops on affected module.	To silence alarm and continue operation of unaffected modules, press CONFIRM soft key. Replace module with an operational instrument, as required. Service by qualified personnel is required.
Syringe Calibration Required	Error on infusing module indicating calibration is required. Infusion stops on affected module. CALIBRATE scrolls in Message Display.	To silence alarm and continue operation of unaffected modules, press CONFIRM soft key. Replace instrument with an operational instrument, as required. Service by qualified personnel is required.
Syringe Driver Head Error	Noninfusing module, with plunger grippers open, senses excessive pressure being applied downward on Drive Head. OCCCLUSION scrolls in Message Display.	To silence alarm and continue normal operation, press CONFIRM soft key.