Warning: Before loading or unloading the syringe, always turn off fluid flow to the patient using a tubing clamp. Uncontrolled fluid flow can occur when the administration set is not clamped or turned off and may cause serious injury or death.

Loading the syringe:
1. Pull syringe barrel clamp out, rotate it to the left and gently release it.
2. Twist gripper control clockwise to raise the drive head (gray) to its fully extended position.
3. Insert the syringe by sliding the flat edges between the barrel flange grippers (see drawing).
4. Lock syringe in place by closing the barrel clamp. To close the barrel clamp, pull out and rotate it to right.
5. Twist gripper control clockwise, gently lower drive head and release gripper to lock the plunger in place.

Priming the syringe using the Alaris™ PCA module:
Note: Do not prime the syringe while it is attached to the patient.
1. PRIME softkey is available only after syringe type and medication selection (prior to infusion mode selection).
2. At the Infusion Mode screen, press OPTIONS, then press PRIME SET WITH SYRINGE.
3. Press and hold PRIME key to prime tubing.

Programming guide initial setup:
1. Load the syringe with the administration set attached.
2. Press the SYSTEM ON key.
3. Select Yes or No to New Patient?
4. Select appropriate profile.
5. If required, enter patient identifier or press EXIT.
6. Press the CHANNEL SELECT key.
7. Set key to PROGRAM position.
8. Confirm time of day or change time if necessary.
9. Select the correct syringe type and size. Press CONFIRM.
   Note: Applies to all syringes.
10. Select correct medication and concentration.
11. At Infusion Mode screen, press OPTIONS, then press PRIME SET WITH SYRINGE.
12. Press and hold the PRIME key to prime tubing.
   Note: Do not prime the tubing while it is attached to the patient.
13. Press EXIT when priming is complete.
14. Select desired infusion mode and follow on-screen prompts to enter dosing parameters.
15. Close and lock the door.
16. Attach administration set tubing to the patient.
17. Review and verify settings.
18. Open tubing clamp.
19. Press START.

Programming the Alaris™ PCA module with PCA Pause Protocol enabled:
1. Perform steps 1–10 of initial setup and then continue with the following steps.
2. Review the Clinical Advisory: Attach an Alaris™ SpO₂ or Alaris™ EtCO₂ module now.
3. Press CONFIRM.
   Note: If a monitoring module is not attached and started, PCA Pause Protocol will not activate.
4. Press the NEXT key to verify medication parameters.
5. Review Advisory.
6. Press PAUSE LIMITS to review the settings or press CONFIRM.
7. Select desired infusion mode and follow on-screen programming prompts.

Change syringe and use Restore feature
1. Press PAUSE on PCA module.
   Note: Always clamp administration set before changing syringe.
2. Use the PCA key to unlock the door; remove the syringe and press SILENCE.
3. Attach the new syringe to the tubing and load the new syringe into the PCA module.
4. Set key to the Program position and close door.
5. Press the CHANNEL SELECT key.
6. Select and confirm correct syringe type and size.
7. If using the same drug, dosing units and concentration, then press RESTORE.
8. Verify that the drug, concentration and dosing parameters are correct.
9. Lock door and open tubing clamp.
10. Review settings and press START.

Change program/mode:
1. Press CHANNEL SELECT key.
2. Press PROGRAM.
3. Set key to Program position or enter authorization code (if enabled).
4. Press CHANGE MODE. Select desired infusion mode and follow on-screen prompts.

Give a clinician bolus dose:
1. Press CHANNEL SELECT key.
2. Press BOLUS DOSE.
3. Set key to Program position or enter authorization code (if enabled).
4. Enter the bolus dose amount and lock the door.
5. Press CONFIRM.
6. Review settings and press START.

Beginning of shift/Summary review:
1. Press CHANNEL SELECT key and verify settings.
2. Press START key.

Access drug event history:
1. Press CHANNEL SELECT key.
2. Press OPTIONS; then press DRUG EVENT HISTORY.
3. Press EXIT and then press START.
Patient history/24-hour history:
1. Press the CHANNEL SELECT key.
2. Press OPTIONS.
3. Press PATIENT HISTORY.
   **Note:** The top of the PATIENT HISTORY screen displays
   - The exact time frame for patient history. History from
   - Time that past history was LAST CLEARED
4. Press the ZOOM key (time interval) as appropriate and review drug totals.
5. To clear the patient history, press CLEAR HISTORY and then press YES or NO.
   **Note:** This is a moving window of time, meaning that after 24 hours the patient history rewrites.
7. Press EXIT and then press START.

PCA/Monitoring trend data:
**Note:** This function requires use of the Alaris™ PCA monitoring module(s):
1. Press CHANNEL SELECT on monitoring module.
2. Press OPTIONS.
3. Press PCA/Monitoring trend data.
4. To exit: Press (EtCO2 or SpO2) MAIN.
5. Press MAIN SCREEN.

Change PCA Pause alarm limits:
1. Press the CHANNEL SELECT key on the PCA module.
2. Press OPTIONS.
3. Press PCA PAUSE LIMITS.
4. Select desired parameter and enter value.
   **Note:** If acceptable range value is not within the hospital defined range, a prompt is provided.
5. Follow on-screen prompts.
6. Press CONFIRM and press START.

Responding to a PCA Pause alarm:
1. Always follow hospital protocol.
2. Press CONFIRM.
   **Note:** Main screen shows PAUSED. The Alaris™ PCA module cannot be restarted until the patient’s monitoring values have been reestablished and are within hospital established limits.
3. Press RESTART.
   **Note:** To view time and patient PCA pause value that caused the PCA module to pause, access drug event history.

Disabling and enabling the PCA Pause alarm:
1. Press the CHANNEL SELECT key on the PCA module.
2. Press OPTIONS.
3. Press PCA PAUSE LIMITS.
4. Select Disable SpO2 or Disable EtCO2.
5. Press CONFIRM.
6. Press START.
   **Note:** To enable the PCA Pause function, follow steps 1–3, then press Enable SpO2 or Enable EtCO2.

Change dose request cord audio and light setting:
1. Press the CHANNEL SELECT key.
2. Press OPTIONS.
3. Press Dose Request Setup.
4. Select desired dose cord profile.
   - (1=light flashes, 2=light on, 3=light off)
5. Press CONFIRM. Then press START.

To attach the dose request cord:
Align the red markings on both the Alaris™ PCA module and Dose Request Cord.

To detach the dose request cord:
Hold the body of the latching connector on the Dose Request Cord and pull straight away from the Alaris™ PCA module, without twisting or turning.

Detaching the Alaris™ PCA module:
Use the PCA key to unlock the door. Locate the black lever inside at the bottom left and depress. At the same time: Hold the Alaris™ PCA module and move the bottom of the Alaris™ PCA module away from the Alaris™ PC Unit.

Troubleshooting: Alarms, errors, messages
**Note:** During an alarm state, the Alaris™ PCA module is not infusing.

Incorrect concentration or dosing:
An incorrect concentration or dosing parameter may have been programmed, which could result in an excessive volume or dose being delivered.

1. Remove the syringe.
2. Verify the concentration listed on the syringe matches the concentration (DRUG AMOUNT and DILUENT VOLUME) programmed into the PCA module.
3. Reprogram.
   **Note:** This message can be the result of an incorrect DRUG AMOUNT and/or DILUENT VOLUME entry, or it can occur if hospital-established Guardrails™ software limits are very wide. Be sure to enter either a drug amount per 1 mL or total drug amount per total volume. For example, a 30 mL syringe with concentration of 1 mg/1 mL can be entered in one of two ways:
   - DRUG AMOUNT 1 mg
   - DILUENT VOLUME 30 mL
   or
   - DRUG AMOUNT 30 mg
   - DILUENT VOLUME 30 mL

Maximum limit reached:
The programmed maximum limit has been reached over the time period specified. Infusion paused until time limit has expired. Alarm message Max Limit Reached will scroll in channel message display on the Alaris™ PCA module. To silence safety alarm tone, press the SILENCE key. The Alaris™ PCA module will remain silent.

Near End of infusion alert (NEOI):
The alert message, Near End alternates with remaining VTBI on the screen until the syringe is empty. The alert message will scroll in the channel message display on the Alaris™ PCA module. The Alaris™ PCA module remains functional and will continue infusing. To silence the safety alert tone, press the SILENCE key. The Alaris™ PCA module will remain silent until the Syringe Empty alarm sounds. When programmed in PCA dose-only mode, the green indicator light illuminates only when a PCA dose is being delivered. When programmed in PCA dose and continuous mode, the green indicator light remains illuminated. The yellow indicator light will flash during an NEOI alert.

Syringe Empty:
The alarm message, Syringe Empty will scroll in the channel message display on the Alaris™ PCA module. To silence the safety alarm tone, press the SILENCE key. The Alaris PCA™ module will remain silent for approximately two minutes and will sound again.