Clinical Practice Procedures: Drug administration/ Syringe infusion pump – Perfusor® Space

Policy code	CPP_DFA_SYP_0722
Date	July, 2022
Purpose	To ensure a consistent procedural approach for syringe infusion pump – Perfusor® Space.
Scope	Applies to Queensland Ambulance Service (QAS) clinical staff.
Health care setting	Pre-hospital assessment and treatment.
Population	Applies to all ages unless stated otherwise.
Source of funding	Internal – 100%
Author	Clinical Quality & Patient Safety Unit, QAS
Review date	July, 2025
Information security	UNCLASSIFIED – Queensland Government Information Security Classification Framework.
URL	https://ambulance.qld.gov.au/clinical.html

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Syringe infusion pump – Perfusor® Space

July, 2022

The B. Braun Perfusor® Space is a lightweight and portable syringe infusion pump used for the accurate and safe administration of infusions.

Due to the built-in error reduction software, customised medication library and intuitive navigation menu the Perfusor® Space is widely used in hospital and pre-hospital environments.

Arrow up and down: Scroll through menus, change setting of numbers from 0–9, answer Yes/No questions.

Arrow left and right: Select data from a scale and switch between digits when numbers are entered. Open a function while pump is running or stopped with the left arrow key.

Press to initiate bolus

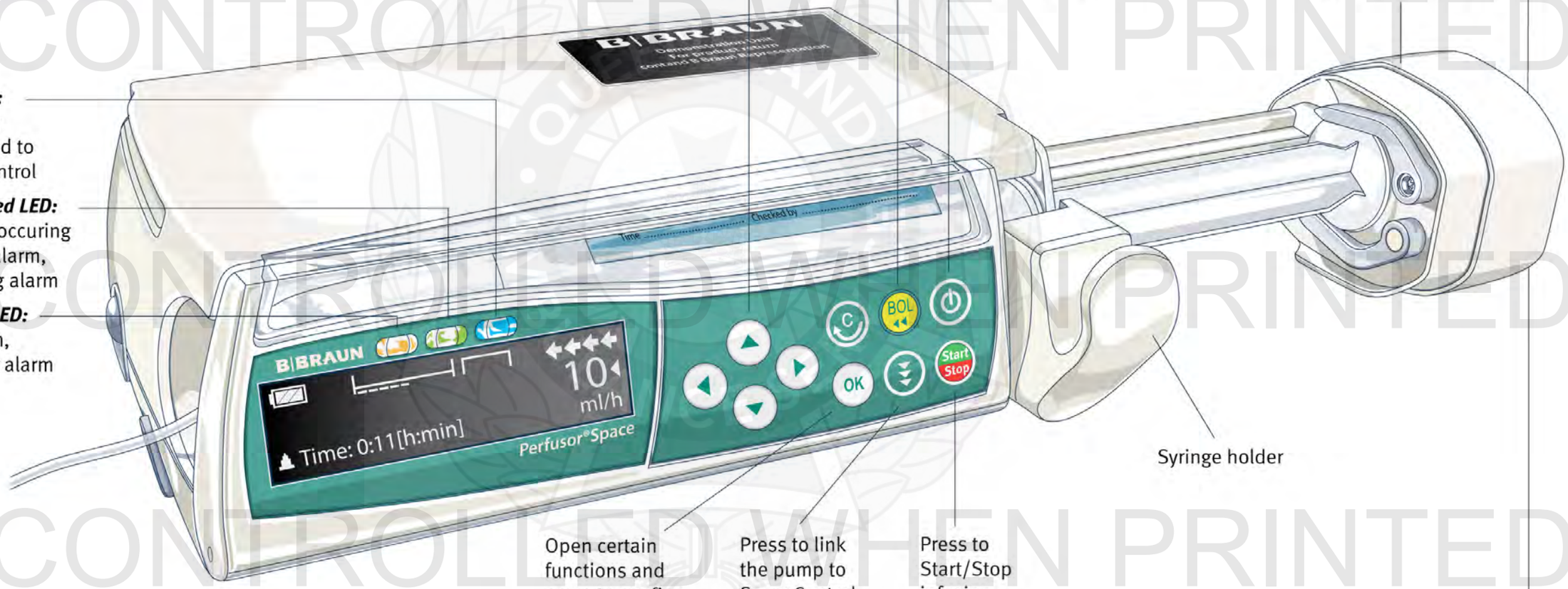
Press to turn pump on/off

Drive head with claws to hold the syringe plunger plate

Blue LED: Currently connected to SpaceControl

Green/Red LED: Infusion occuring /device alarm, operating alarm

Orange LED: Pre-alarm, reminder alarm



Syringe holder

Open certain functions and press to confirm values/settings /alarms.

Press to link the pump to SpaceControl and to assign a barcode after scanning

Press to Start/Stop infusion

Indications

- Administration of intravenous (IV) or intraosseous (IO) infusions

Contraindications

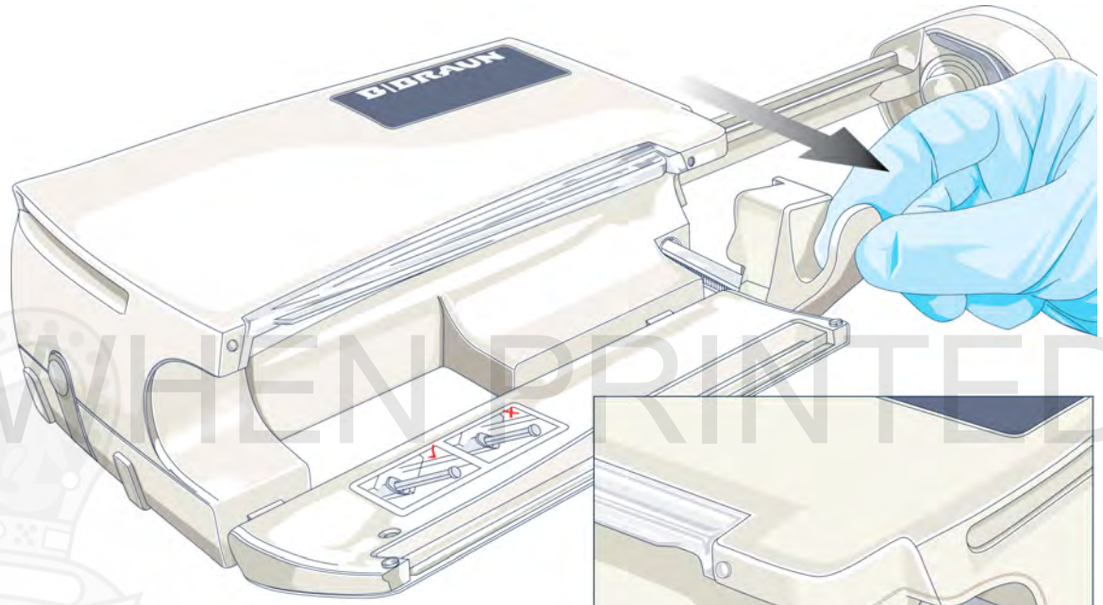
- Evidence of an incorrectly positioned or dislodged cannula or IO needle

Complications

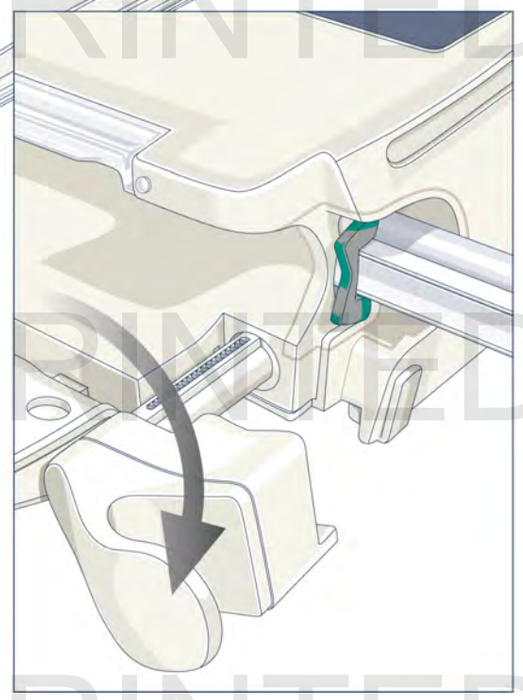
- Pain or discomfort from medication infusion
- Air embolism
- Infection
- Extravasation and possible tissue necrosis

Commencing an infusion using the pre-programmed QAS drug library

1. Prepare a compatible syringe and primed Minibore IV Extension Set with Antisyphon Valve, with the required medication in the correct concentration.
2. Press ⏻ to switch the unit on – an automatic self-test will commence. At the completion of the self-test the drive head will be extended in preparation for syringe insertion.

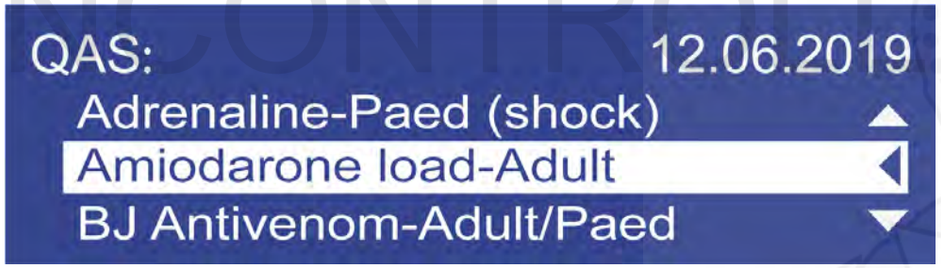


3. Open the front cover.
4. Open the syringe holder by gently pulling and turning to the right.
5. Insert an appropriately labelled syringe with the syringe wings positioned in the slot to the right of the housing – ensure that the syringe graduated markings are facing outwards.



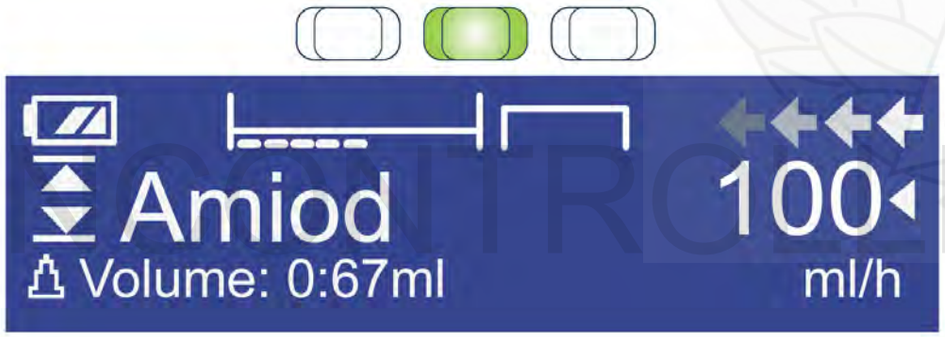
6. Gently close the syringe holder and front cover.
7. Select the correct syringe (brand and volume) by pressing ▲ or ▼. Press ◀ to confirm – the drive head will advance and grip the syringe's pressure plate.

8. When asked 'Use drug library?' – select 'Yes' by pressing ▲.
9. Navigate through the alphabetical drug list by pressing ▲▼.
10. Select the appropriate drug by pressing ◀.



11. Check the dosing protocol (concentration and rate) is correct and press Start Stop to commence the infusion.

12. Running arrows on the display and a green LED above the screen will indicate the pump is infusing.

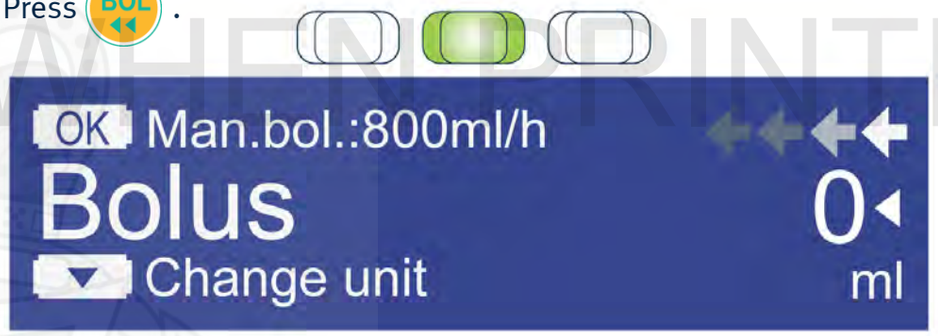


13. The infusion may be ceased at any time by pressing Start Stop.

Administering a bolus on an infusion pump

Manual Bolus:

1. Press BOL.



2. Press ◀.

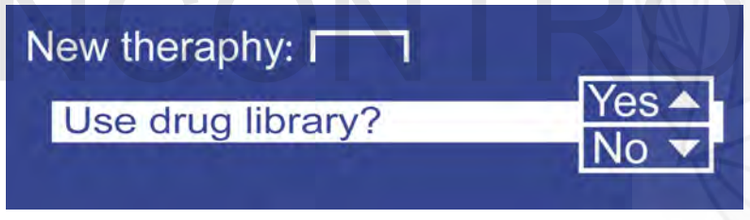
3. Confirm bolus dose and press BOL.

Ending an infusion

1. Press Start Stop to cease the infusion – the green LED will disappear.
2. Disconnect the extension tubing from the patient's intravenous access.
3. Open the front cover.
4. Open the syringe holder by gently pulling and turning right.
5. Remove the syringe, close the syringe holder and close the front cover.
6. Press ⏻ for 3 seconds to switch the pump off – the driver will move into the park position.

Commencing a simple mL/hr infusion

1. Prepare a compatible syringe and Minibore IV Extension Set with Antisyphon Valve, with the required medication.
2. Press ⏻ to switch the unit on – an automatic self-test will commence. At the completion of the self-test the drive head will be extended in preparation for syringe insertion.
3. Open the front cover.
4. Open the syringe holder by gently pulling and turning to the right.
5. Insert an appropriately labelled syringe with the syringe wings positioned in the slot to the right of the housing – ensure that the syringe graduated markings are facing outwards.
6. Gently close the syringe holder and front cover.
7. Select the correct syringe (brand and volume) by pressing ▲ or ▼. Press ◀ to confirm, the drive head will advance and grip the syringe's pressure plate.
8. When asked 'Use drug library?' – select 'No' by pressing ▼.



9. Enter the required information in the Start Up Menu with ▲ and ▼, until 'rate' is displayed in the main menu.

10. Press ◀ and set the desired rate using ◀▲▼▶.

11. Confirm the rate by pressing OK.
12. Connect the extension tubing to the patient's patent intravenous access.
13. Press Start Stop to commence the infusion – running arrows on the display and a green LED above the display will indicate the pump is infusing.

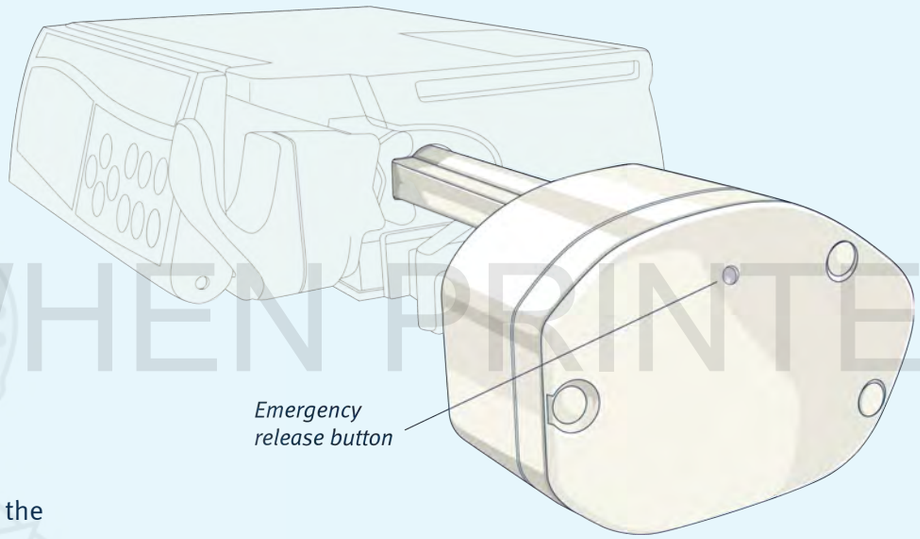
14. The infusion may be ceased at any time by pressing Start Stop.

Adjusting the administration pressure (e.g. for IO infusions)

1. If adjusting the pressure prior to commencing an infusion proceed to step 2. If an infusion is running, press C to enter the main menu.
2. Scroll down to 'options' buy using the ▲ and ▼ buttons.
3. Press ◀ to confirm selected.
4. Press ◀ to enter the **Pressure** menu.
5. Adjust the pressure setting to 5 and press OK to confirm. If required, increase to a maximum pressure setting of 9 to achieve the required infusion pressure.

Additional information

- Battery capacity is displayed on the screen during all pump administrations.
- During use, the device must be securely fixed in accordance with QAS Fleet & Equipment requirements. Positioning changes and severe shock may lead to minor changes in delivery accuracy.
- A fully charged battery can provide 6–16 hours of operation. Connecting the supplied 240 volt power supply cables enables continuous operation.
- To avoid incorrect dosing, always disconnect the pump from the patient before changing the syringe.
- Never leave the pump unattended during a syringe change.
- Users will be prompted to conduct a battery reconditioning process every 6 months. This can be completed by following the instructional prompts displayed on the screen.
- If the syringe is unable to be removed (claws are in a locked position) the syringe can be freed by removing the drive head's cover and pressing the Emergency Release Button with a pointed pen or similar device.
- Following DTP updates, the Perfusor® Space medication library may be temporarily outdated due to logistical delays with reprogramming devices. If using a syringe driver that has not been updated, clinicians should administer the required dose at the required flow (mL/hr) by manually calculating the correct infusion rate.



The Perfusor® Space has been programmed with a QAS Drug Library with the following default settings:

Drug Name	Syringe required (mL)	Concentration	Default dose	Bolus enabled	Default bolus amount
Adrenaline-Adult (shock)	50	3 mg/50 mL	10 microg/min	Y	20 microg
Adrenaline-Paed (shock)	50	3 mg/50 mL	0.2 microg/kg/min	Y	0.5 microg/kg
Amiodarone load-Adult	50	300 mg/50 mL	100 mL/hr	N	N/A
Fent 200/Midaz 20-Adult	20	200 microg: 20 mg/20 mL	5 mL/hr	Y	20 microg: 2 mg
Fent 200/Midaz 20-Paed	20	200 microg: 20 mg/20 mL	0.8 microg/kg/hr	Y	0.25 microg/kg (fixed)
Glyceryl Trinitrate-Adult*	50	5 mg/50 mL	3 mL/hr	N	N/A
Levetiracetam – 1 of 2	50	60 mg/kg/100 mL (in 2 separate syringes)	600 mL/hr	N	N/A
Levetiracetam – 2 of 2	50		600 mL/hr	N	N/A
Morph 20/Midaz 20-Adult	20	20 mg: 20 mg/20 mL	5 mL/hr	Y	2 mg: 2 mg
Morph 20/Midaz 20-Paed	20	20 mg: 20 mg/20 mL	0.08 mg/kg/hr	Y	0.025 mg/kg (fixed)
Oxytocin-Adult	20	10 IU/20 mL	20 mL/hr	N	N/A
Propofol-Adult	20	200 mg/20 mL	50 mg/hr	Y	10 mg
Vasopressin-Adult*	50	20 units/50 mL	0.02 units/min	N	N/A

* Not currently in use