

PATIENT ASSESSMENT & DEVICE PREPARATION

Syringe Pump

Syringe pumps can be used for the controlled infusion of small volumes

USE FOR

- Delivery of IV fluids to small and sick newborns whilst establishing enteral feeds

STANDARD OF CARE

- Clinical condition, weight, day of life and gestational age determine the rate and volume of IV fluids
- **These must be administered in small, precise amounts in order not to cause harm**

1 COLLECT ALL MATERIALS

- Syringe pump and power cable
- Prefilled 10–60ml syringe
- IV extension tubing
- 70% alcohol
- Cotton wool/gauze
- Gloves



2 PREPARE DEVICE

Follow handwashing protocol

A Position the syringe pump no more than 100cm above or below the infant

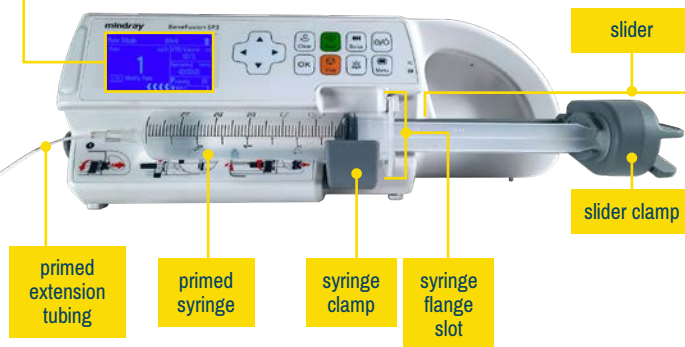
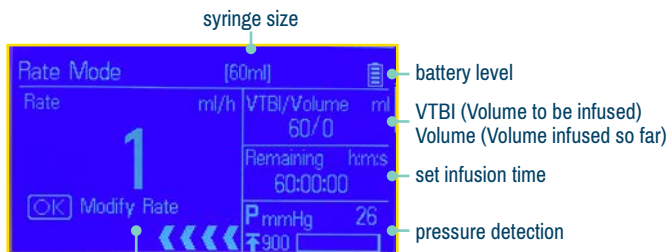
B Plug the power cable into the back of the machine and plug into a socket or extension

C Prepare and prime syringe and extension tubing

Ensure there are no air bubbles in the syringe or tubing

Keep patient end of extension tubing sterile

D Turn on the syringe pump



3 LOAD THE SYRINGE

Open the syringe clamp

Fully extend the slider

A Place the prepared syringe with extension tubing into the syringe flange slot

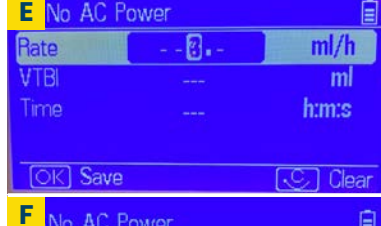
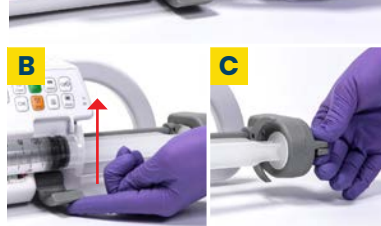
B Close the syringe clamp

C Move the slider against the syringe thumb rest and close slider clamps

D Select **syringe brand and size** using the arrow buttons—press **OK**

E Set the **infusion rate** using the arrow buttons—press **OK**

F Set the **VTBI** (volume to be infused) using the arrow buttons—press **OK**



? COMPLICATIONS

- Infection
- Extravasation injury
- Fluid overload
- Air emboli
- Dehydration
- Hypoglycaemia
- Syringe and tubing errors

! Administering IV fluids to small and sick newborns has significant potential for error and infection

- An occlusion alarm must be responded to immediately
- In the event of a device failure continue administration of fluids by nasogastric tube, cup or breast, as clinically appropriate
- Syringes, extension tubings, IV cannulas and needles must NEVER be re-used

MANAGEMENT OF A PATIENT

Syringe Pump

The appropriate volume and rate of fluid to be infused must be calculated before use

STANDARD OF CARE:

- Monitoring is important and includes:
 - Occlusion alarm
 - Swelling at IV site
 - Redness
 - Cannula displacement
- Involving the guardian can be helpful

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PREPARE PATIENT

Follow handwashing protocol, wear gloves

A Confirm syringe and tubing are free of air bubbles

Disinfect the hub of the cannula with 70% alcohol, allow to dry

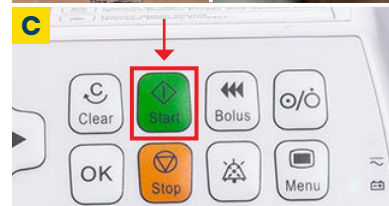
B Connect the extension tubing to the cannula taking sterile precautions

Confirm the settings

C Press the **START** button to initiate infusion

D Confirm screen shows correct rate and VTBI

Document the time, rate and type of fluid commenced



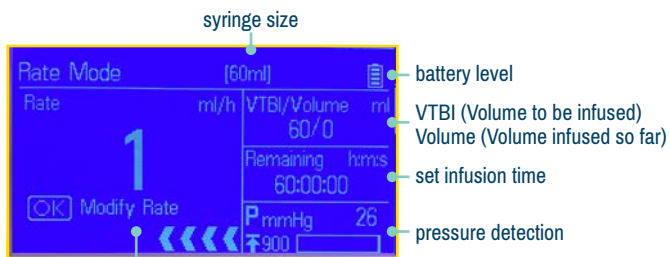
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MONITOR PATIENT

At start of infusion and every 30 minutes check for alarms and assess IV site

Check for redness, swelling of IV site, cannula displacement

Record vital signs and fluid balance



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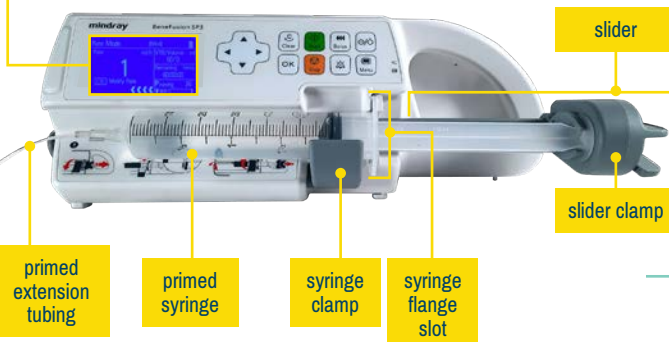
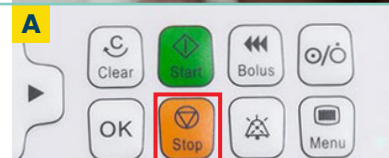
REMOVING A PATIENT

Follow handwashing protocol, wear gloves

A Press the **STOP** button

B Turn the device **OFF**

Disconnect the extension tubing from the cannula and close the cannula with a cap



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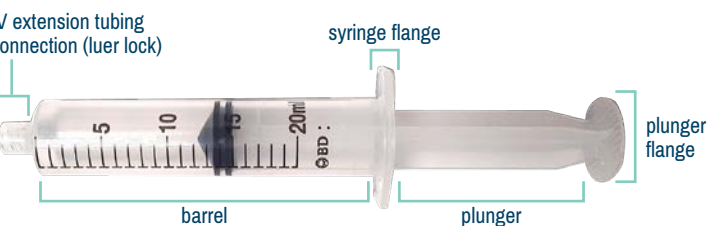
UNLOAD SYRINGE

A Open the syringe clamp

B Squeeze the handle to open the slider clamp

C Move the slider to a position that allows removal of the syringe

Discard the syringe and extension tubing in a clinical waste container



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DISINFECTION & INFECTION PREVENTION

- Clean hands with soap and water or 70% alcohol before and after handling materials that will be used on patients
- Remove the syringe and extension tubing and discard in a clinical waste container
- Device:** Turn off, disinfect with 70% alcohol
- Refer to the General Infection Prevention Module

REPAIR & MAINTENANCE

Syringe Pump

The syringe pump should be securely located, either on a flat surface or on a drip stand. This ensures that it cannot fall on an infant or be knocked to the floor. It should **NEVER** be placed in a cot.



⚙️ DAILY MAINTENANCE

Always wipe the syringe pump with 70% alcohol using gauze or a cotton swab before first use and between patients.

⚙️ PREVENTIVE MAINTENANCE

When not in use, turn on the syringe pump every week. Visually inspect the syringe pump for any missing parts or physical damage.

If the syringe pump is not turning on

Check that the power cable is securely attached



Check that the power socket is turned on

If the syringe pump is not running on battery power

Check that the battery has been charged for 10 hours



The battery is fully charged, charging is not needed



Low battery electric quantity indicates that charging is needed



When the battery is empty, charging is needed immediately

If the syringe pump is charged but still will not run, contact the maintenance department

If the battery's lifetime is shorter than specified, contact the maintenance department

If the flow volume is not accurate OR the device is incorrectly identifying syringes

Contact the maintenance department

! CONTACT A TECHNICIAN OR MAINTENANCE DEPARTMENT IF DEVICE CONTINUES TO NOT WORK PROPERLY AFTER ADDRESSING THE COMMON ISSUES !