THE BELMONT® RAPID INFUSER RI-2

VIRTUAL IN-SERVICE TRAINING PRESENTATION

BELMONT MEDICAL TECHNOLOGIES

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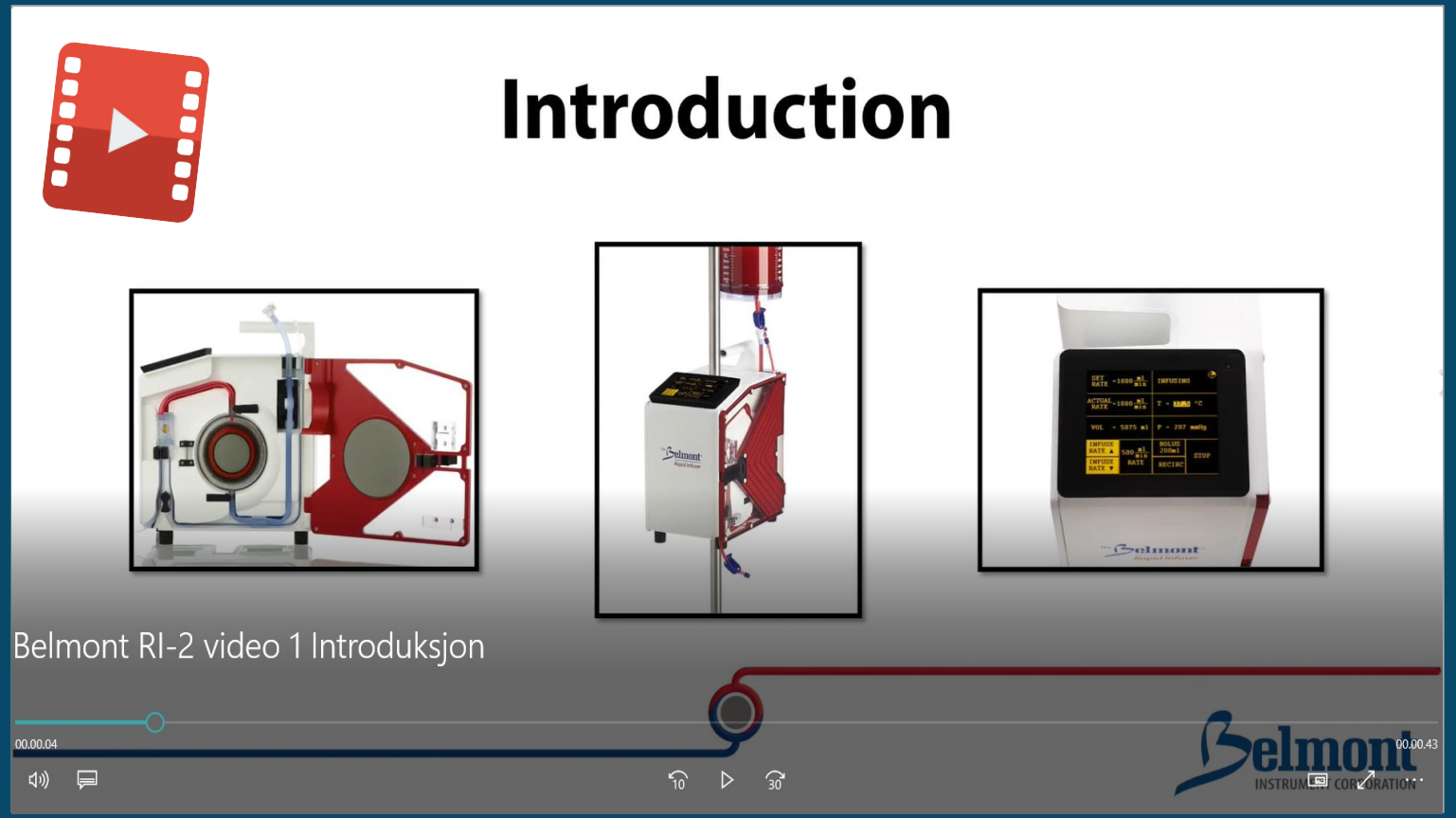
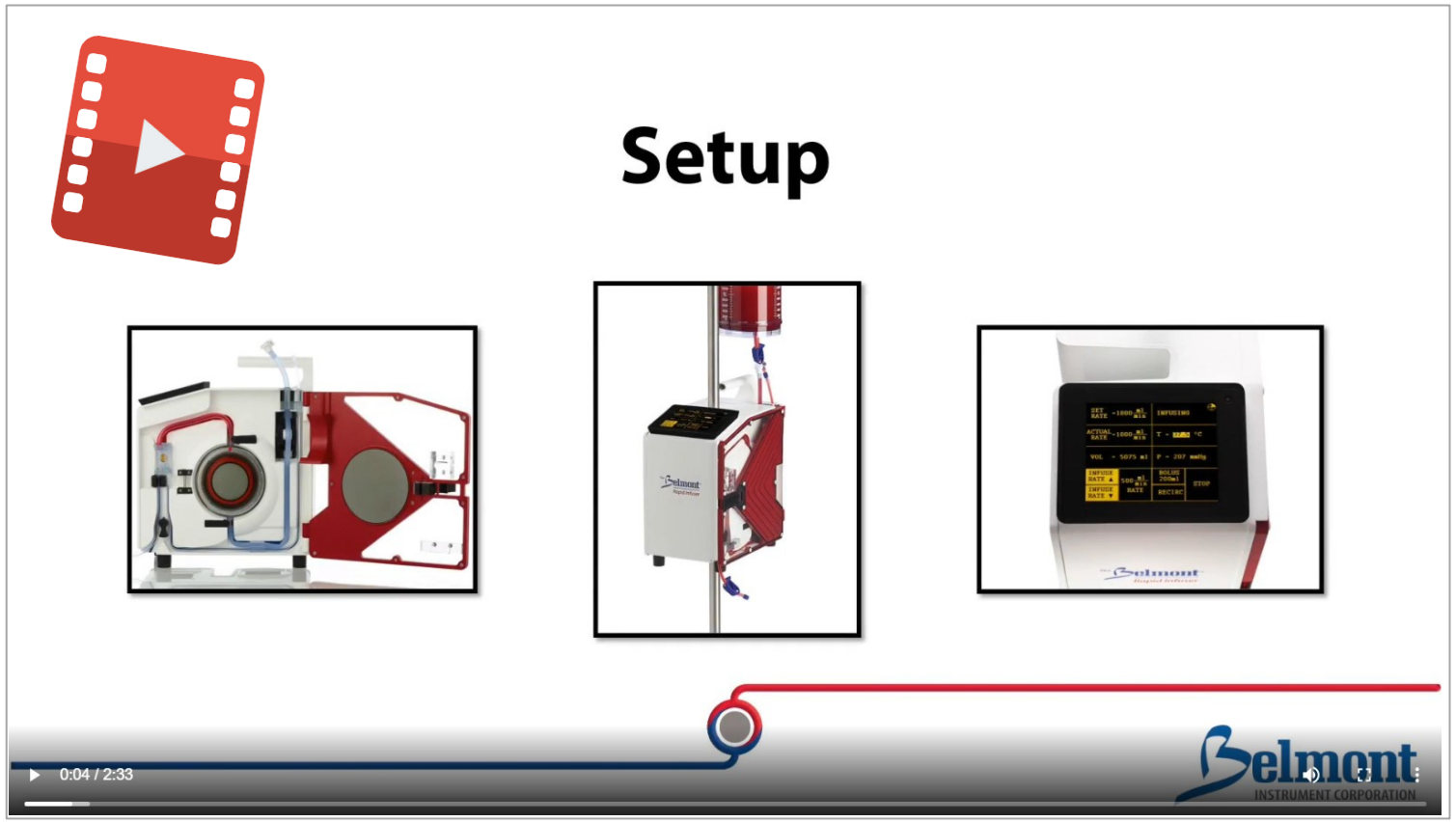
701-00309 Rev A

INTRODUCTION



Video clip extract from 701-00208 Rev C

SET UP

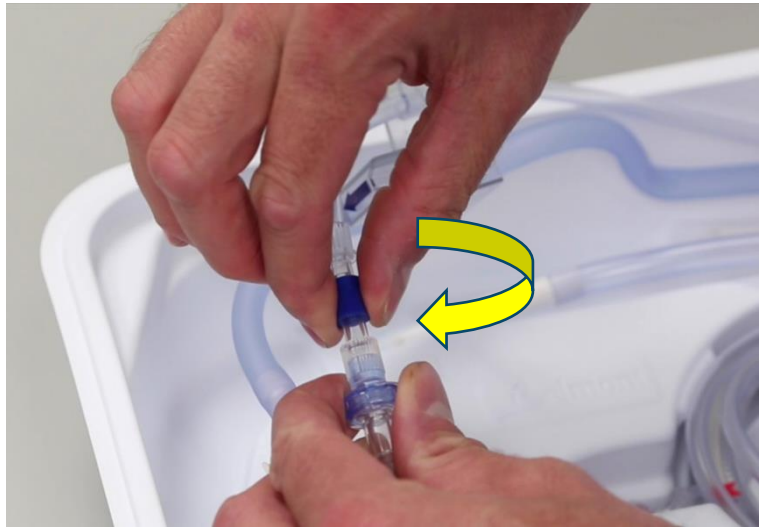


Video clip extract from 701-00208 Rev C

LOADING THE DISPOSABLE

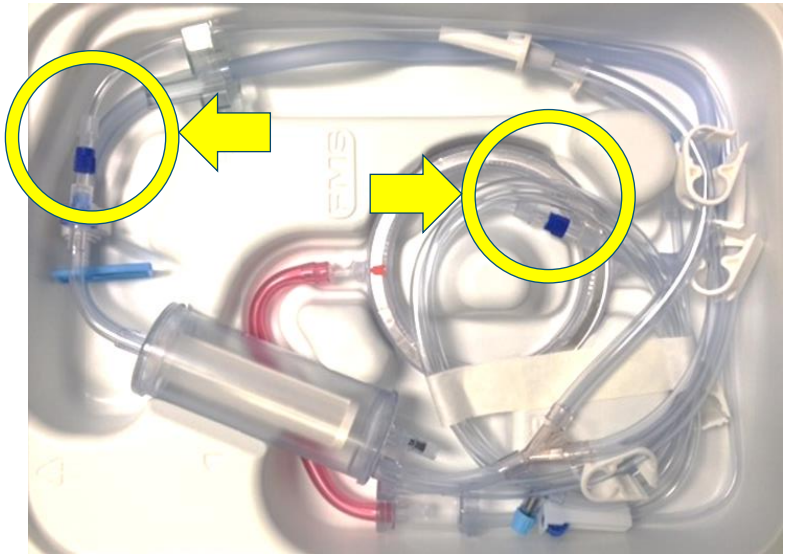
Step 1

- Open the disposable packaging and tighten the two luer locks



Preventing Accidental Contamination

- In extraordinary circumstances, these connections may become loose during sterilization and shipping



Step 3

- Snap the reservoir chamber into the reservoir support

LOADING THE DISPOSABLE

Step 3

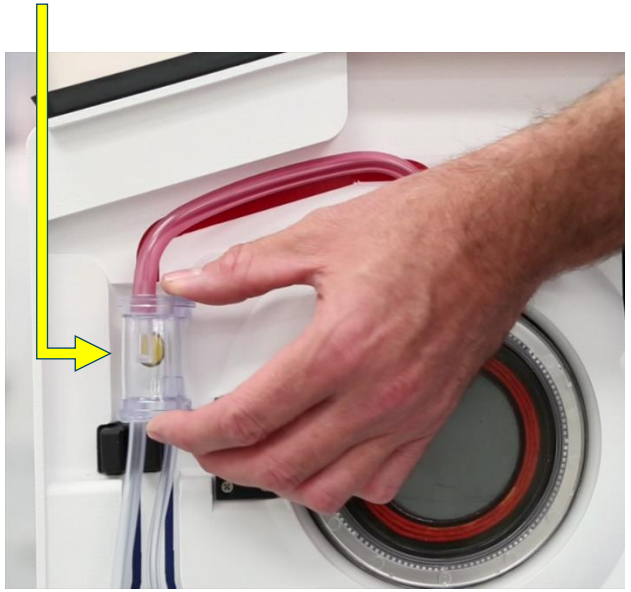
- Open the door of the unit

Step 4

- Load the circular heat exchanger with red arrow pointing up and the red tubing aligned with the red line on the system

Step 5

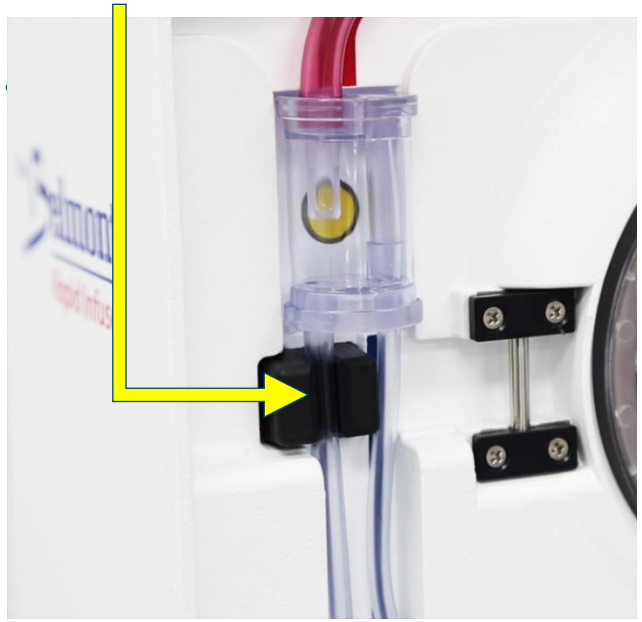
- Align the red tubing on top of the red stripe and placed the pressure chamber into the pressure channel



LOADING THE DISPOSABLE

Step 6

- Press the infuse line into the secondary air detector



Note:

- The infuse line should be within the air detector

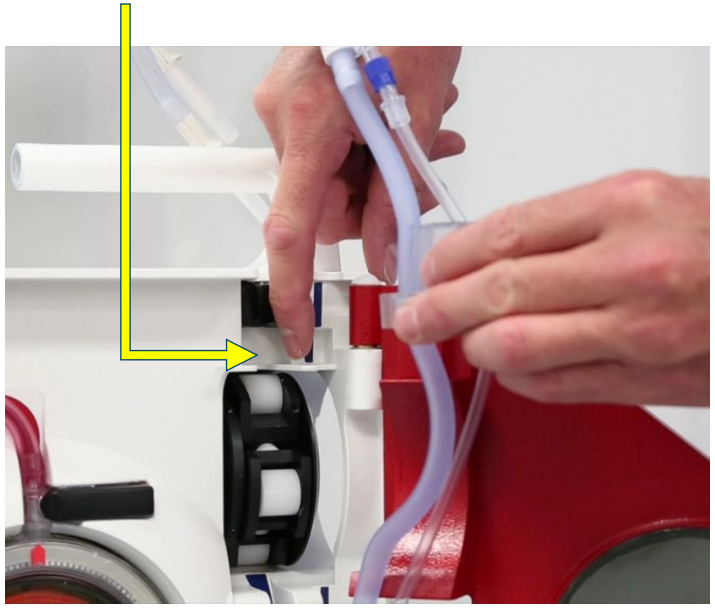
Step 7

- Place the infuse line to the left of the patient safety valve wand
- Place the thinner recirculation line to the right of the air detector, and to the right of the valve wand

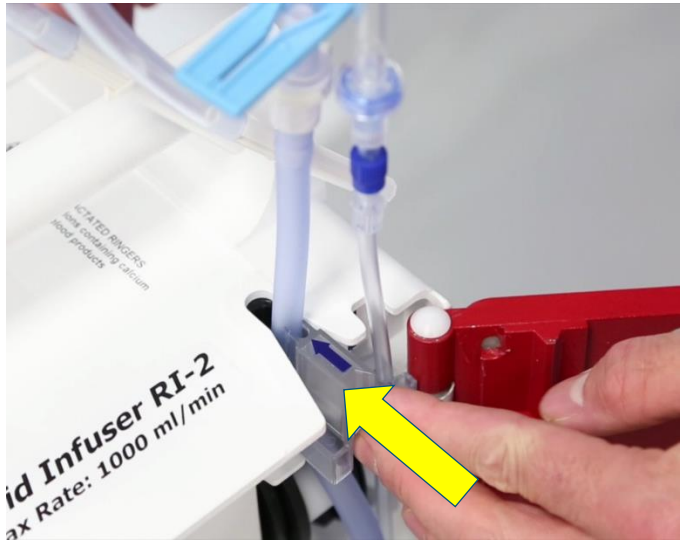
LOADING THE DISPOSABLE

Step 8

- Fit the interlock block on top of the shelf



- The blue arrow should be upright, pointing toward the ultrasonic air detector

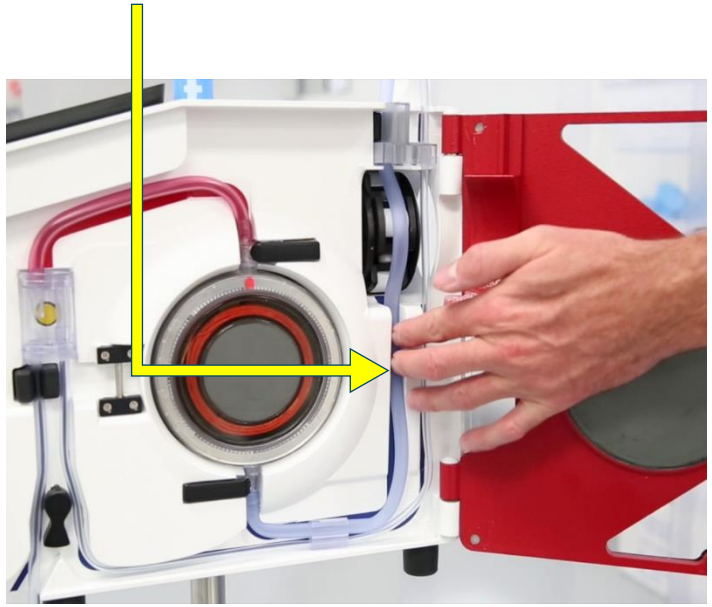


- The interlock block will be flush with the top of the machine

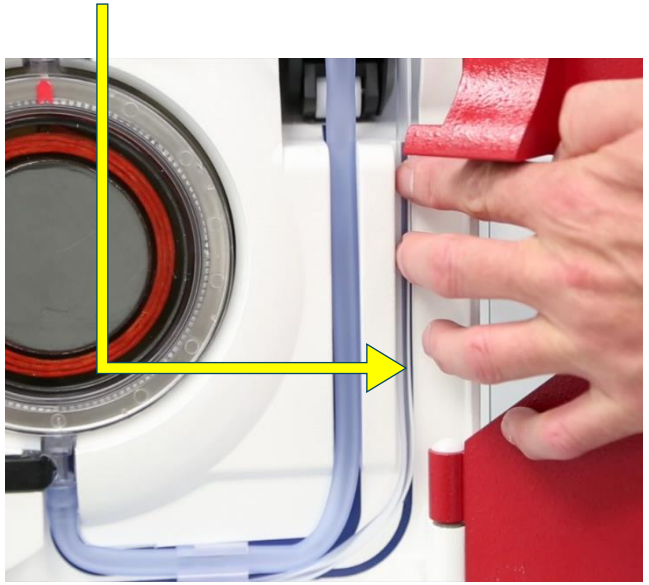
LOADING THE DISPOSABLE

Step 9

- Make sure the larger tubing is in the groove of the wider blue line



- The smaller tubing should be in the groove of the thinner blue line



Note:

- Avoid stretching, kinking, or twisting of the tubing.

Step 10

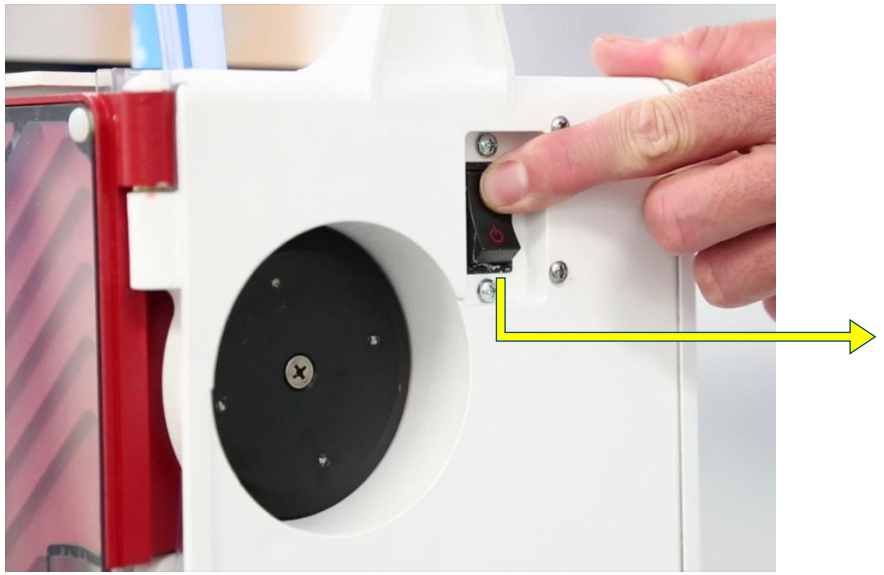
- Finally, close and latch the door, making certain the pump tubing is not caught

POWERING ON THE SYSTEM

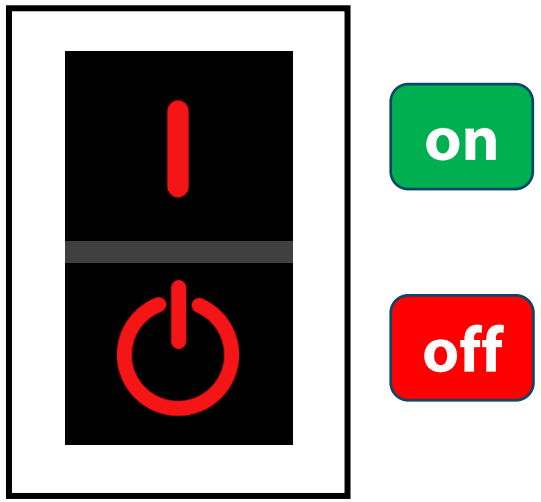
Step 11

- You are ready to power on the system – press the power button firmly to the "on" position located on the back of the device

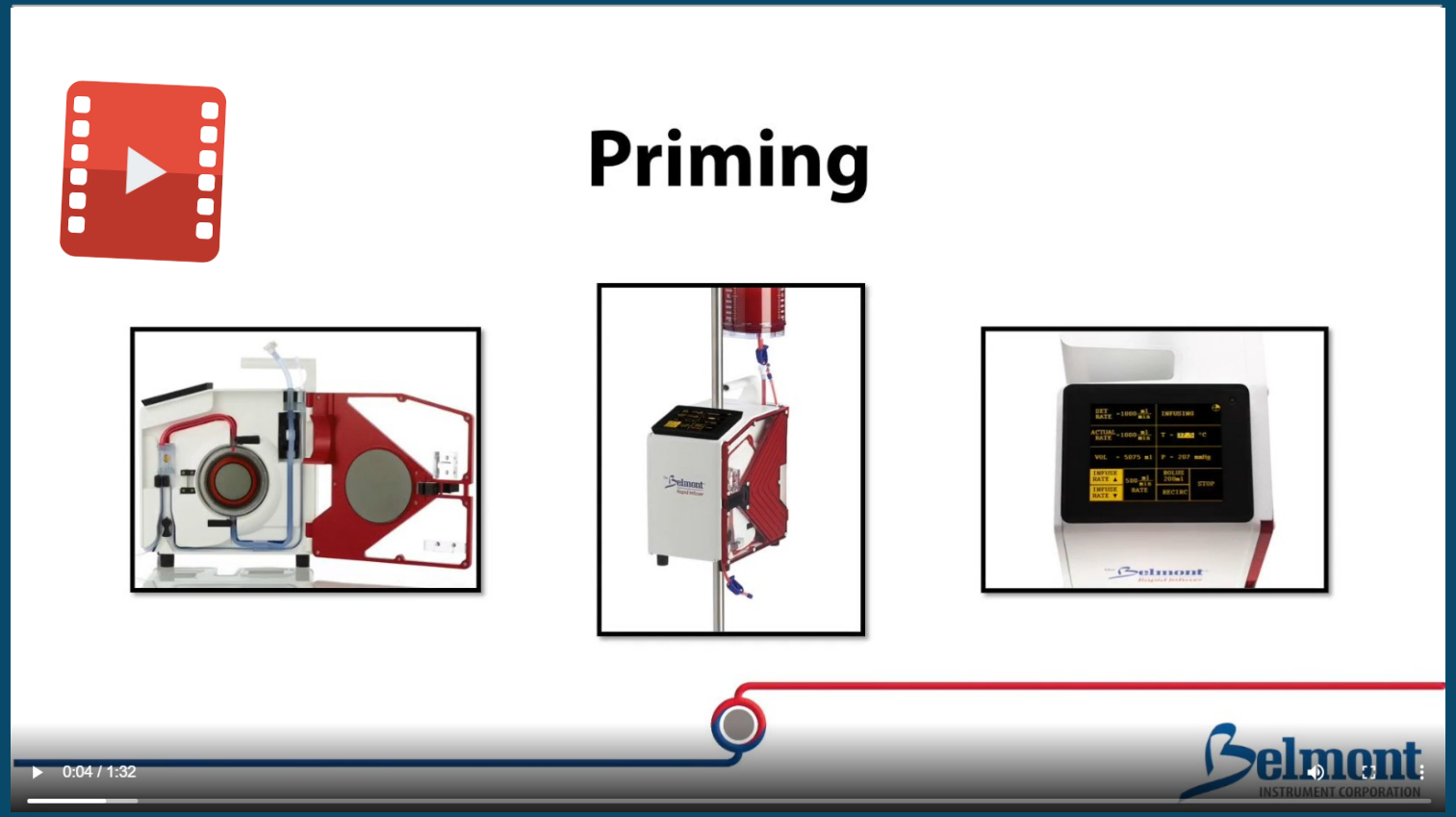
- After a brief self test and service screen option, operational instructions will be displayed on the screen



Power On/Off Position



PRIMING

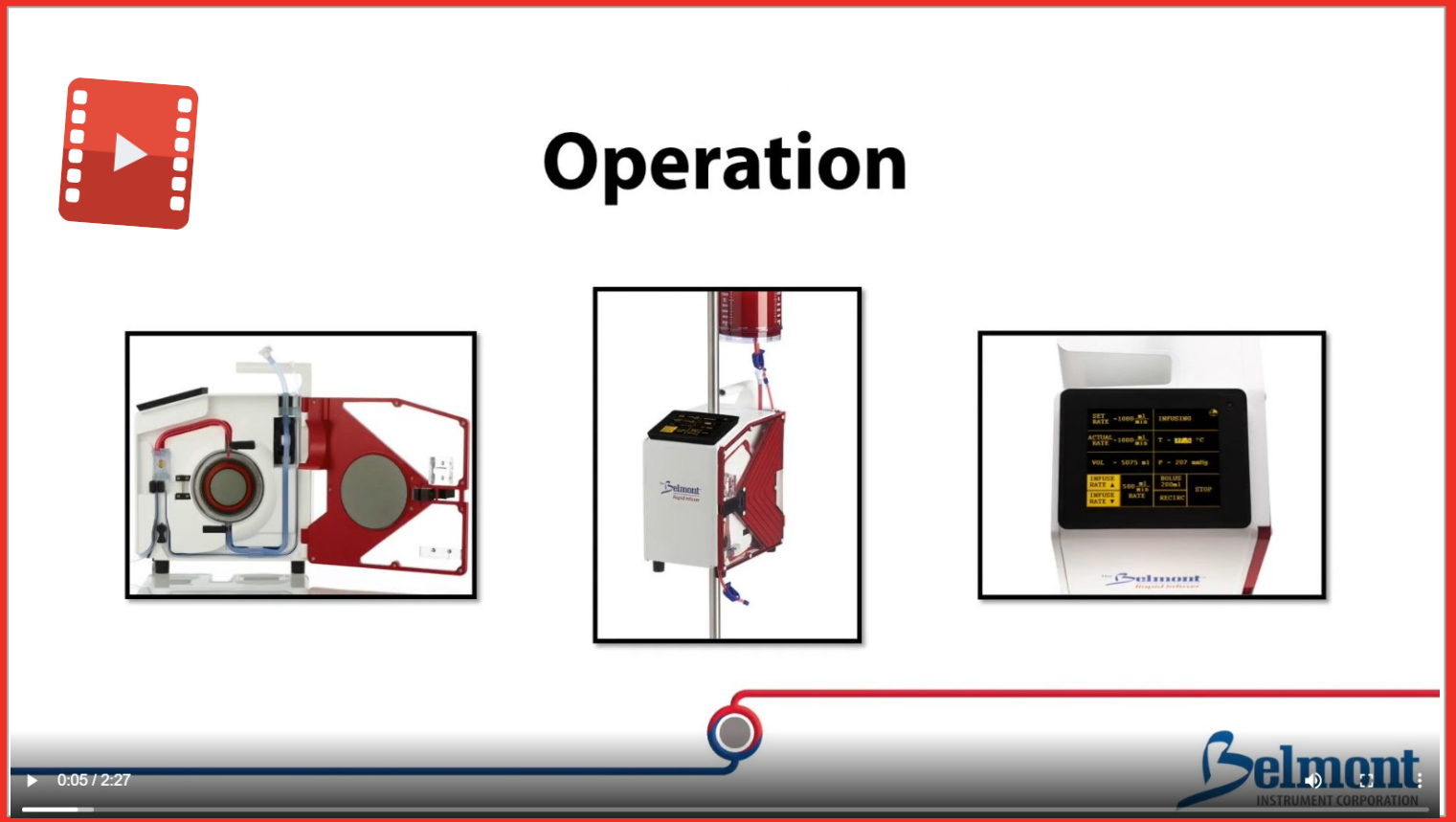


Video clip extract from 701-00208 Rev C

THE SYSTEMS *CAN* BE USED TO WARM:

- Crystalloid
- Colloid
- Blood products
  - Packed red blood cells (PRBCs)
  - Fresh frozen plasma (FFP)
  - Processed Anticoagulated Whole Blood

OPERATION



Video clip extract from 701-00208 Rev C

THE SYSTEM SHOULD *NOT* BE USED TO WARM:

- Platelets
  - Platelets can bond to the inner surfaces of the disposable set, reducing the amount of platelets reaching the patient and consequently affect device operation.
- Cryoprecipitate
  - Cryo should not be run through a rapid infuser to prevent dilution.
- Granulocyte suspensions
  - Granulocytes are fragile cells and therefore should not be administered through a rapid infuser.
- Drugs or biologics

DO *NOT* MIX WITH BLOOD PRODUCTS:

- Lactated Ringer's solution (or solutions containing calcium)
  - Sodium citrate is added to blood products as an anticoagulant, which prevents blood from clotting. The introduction of calcium containing solutions to anticoagulated blood products will lead to clotting of blood, and ultimately affect device operations.
- Dextrose in water
- Hypotonic sodium chloride solutions

OPERATION: BATTERY

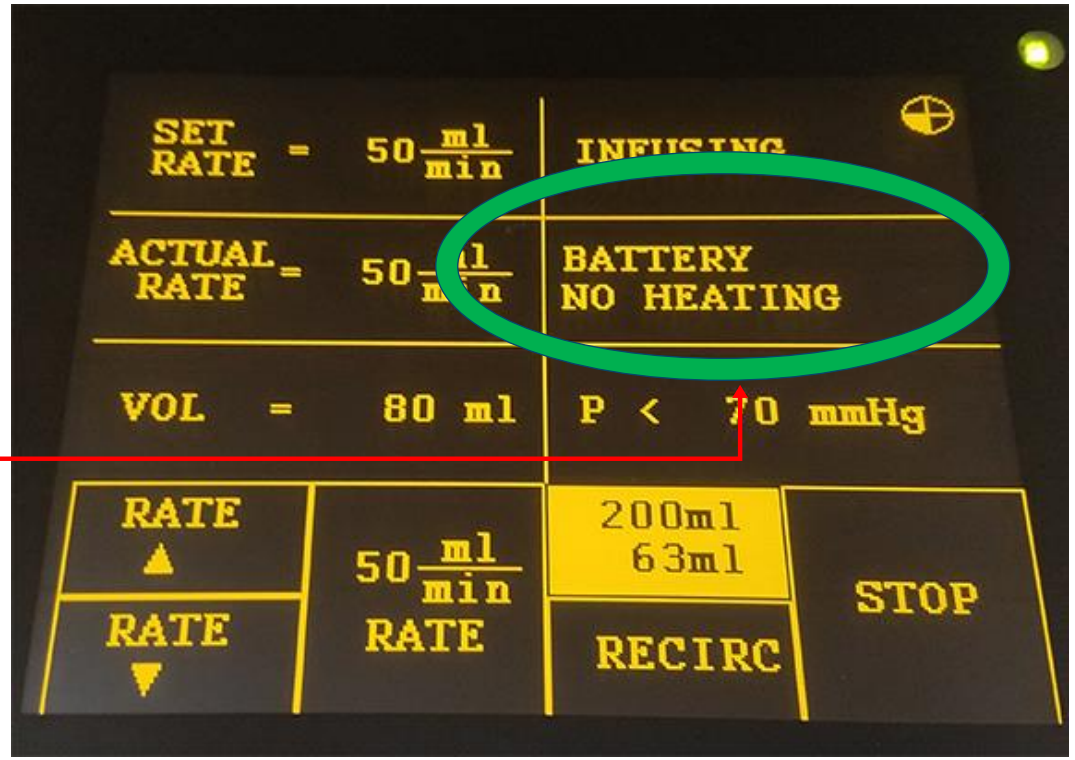
- Battery operation allows for patient transport without the need to disconnect the patient from the fluid warming system or re-setup/prime the device in a different location.

Battery Backup

- Automatic as soon as AC power is disconnected
- Automatically recharges when AC is present
- Operation time on battery: **30 minutes**
- Battery recharge time: **8 hours**

Notes

- During battery operation **heating is disabled**
- Infusion rate is limited to **50 ML/MIN** to prevent infusion of cold fluids
- It is recommended to keep the system plugged into an AC power source when not in use to keep the internal battery at full charge



OPERATION: END OF PROCEDURE

End of Procedure

- Press STOP
- Clamp patient line and bag spikes
- Disconnect from patient
- Turn the system OFF
- Open the door and remove the disposable set

Note:

Keep the patient line **clamped** when opening the door to prevent uncontrolled fluid flow if there is fluid in the disposable set and the system is not powered on

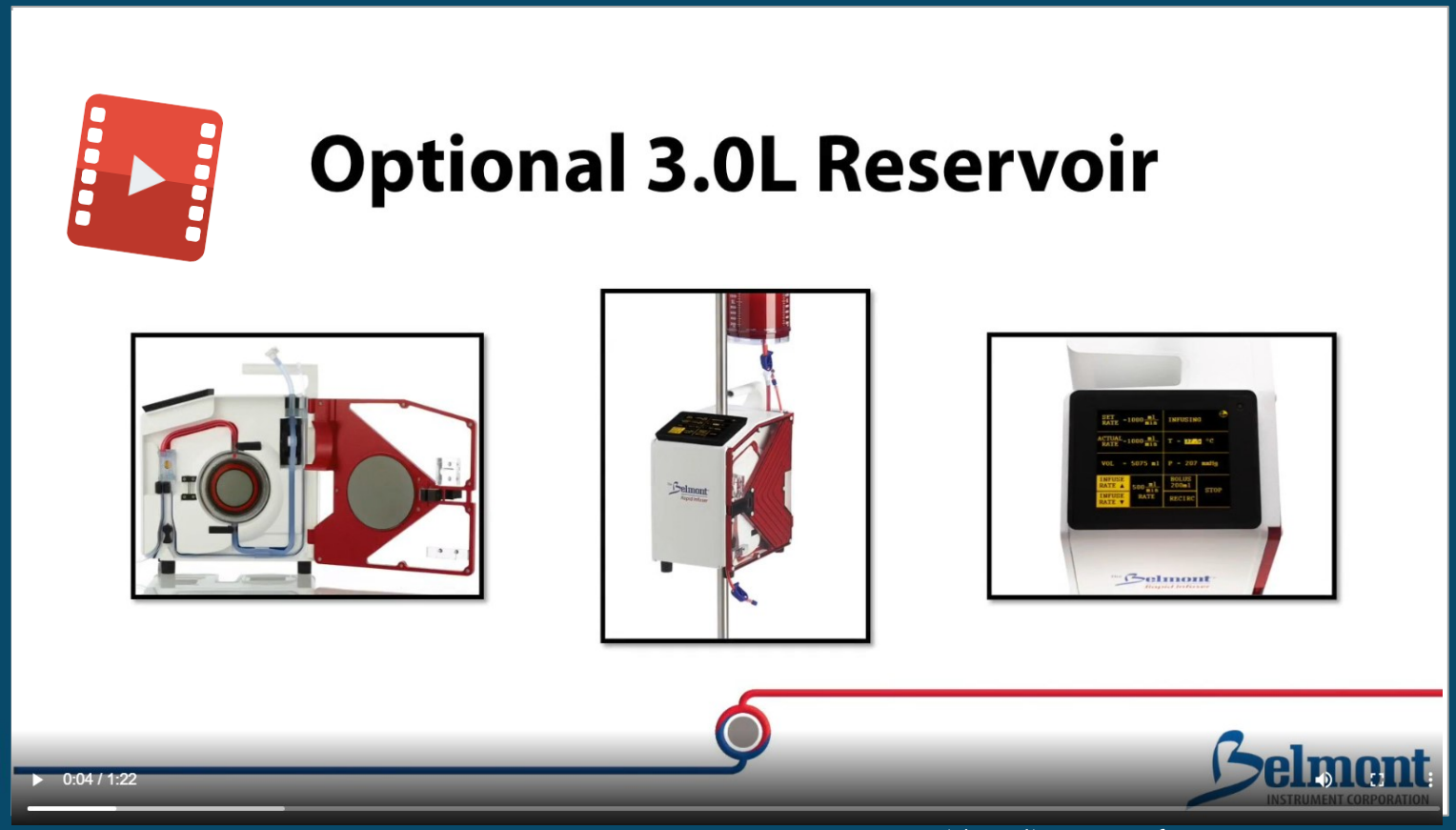
ALARMS AND ALERTS

Video clip extract from 701-00208 Rev C

Note:

The system will alert the user with an audible alarm if it senses a problem and will display instructions for corrective measures – to return to normal operation follow the instructions on the display screen

3.0L RESERVOIR
(OPTIONAL)



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FREQUENTLY ASKED QUESTIONS

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Q: Do the disposables contain latex or Aluminum?

A: Disposables and all accessories are latex free/safe and do not contain Aluminum.

FREQUENTLY ASKED QUESTIONS

Q: Will the system's magnetic field interfere with nearby equipment?

A: No, the RI-2 will not interfere with nearby equipment. The system has been tested and passes IEC 60601-1-2, medical electrical equipment collateral standard.

FREQUENTLY ASKED QUESTIONS

Q: How much power do I need to run the system?

A: The maximum power requirement is 1500 watts. We advise that the system should be on a dedicated 120 volt, 20 amp or greater circuit.

For European models: dedicated 220 volt, 10 amp or greater circuit.

FREQUENTLY ASKED QUESTIONS

Q: Do I have to de-gas the fluid bags before I infuse, and what happens if I get air in the flow path?

A: Unlike pressurized infusion devices, there is no need to de-gas the fluid bags. If air is detected by the air detectors, the patient safety valve wand occludes the patient line to protect the patient from air embolus. The system, without disconnecting the patient line, can be quickly reprimed after replacing fluid bags by pressing 'reprime' on the screen to then automatically vent the air out through the recirculation line.

FREQUENTLY ASKED QUESTIONS

Q: Why is the infusion rate running at a slower rate than the one I set?

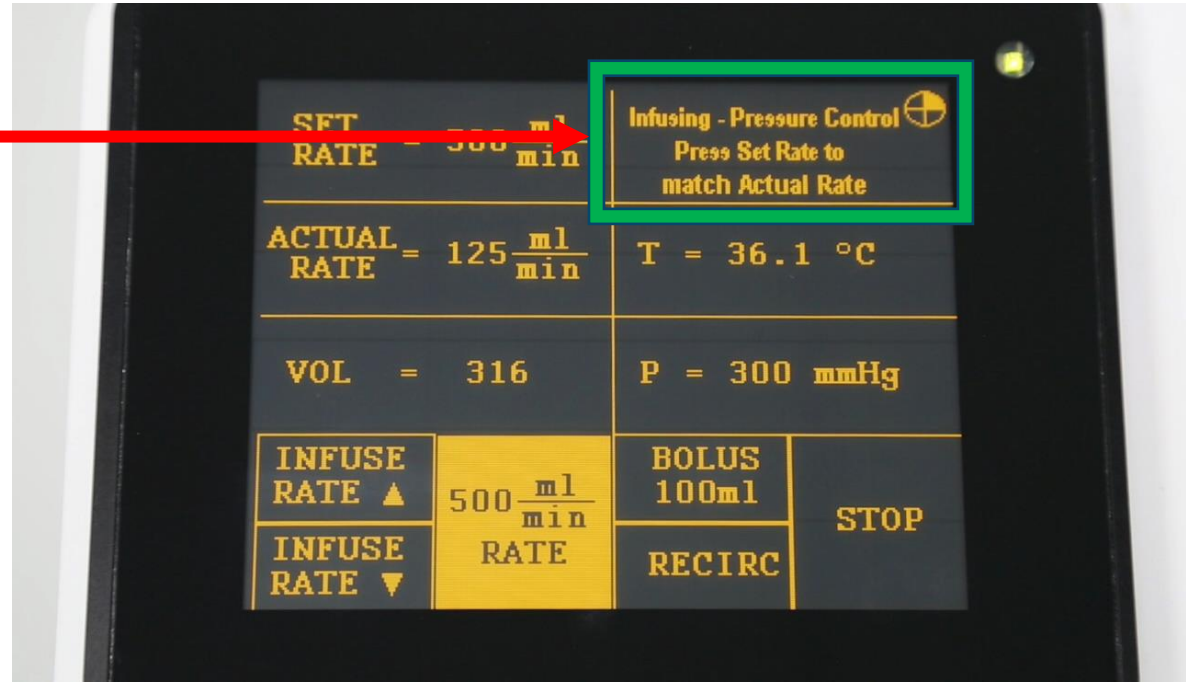
A: The system will keep the in-line pressure under the pressure limit by reducing the infusion rate. Check for obstructions in-line. Use the appropriate infusion set for the flow rate you desire. The pressure limit is pre-set by default to the maximum setting of 300 mmHg, which is the default at power-up.

PRESSURE CONTROL ALARM

Pressure Control Alarm

- Pressure control will display on the screen when the set rate is higher than the maximum achievable infusion rate

- Infusion will continue during the pressure control alert, but will be automatically regulated within safe limits



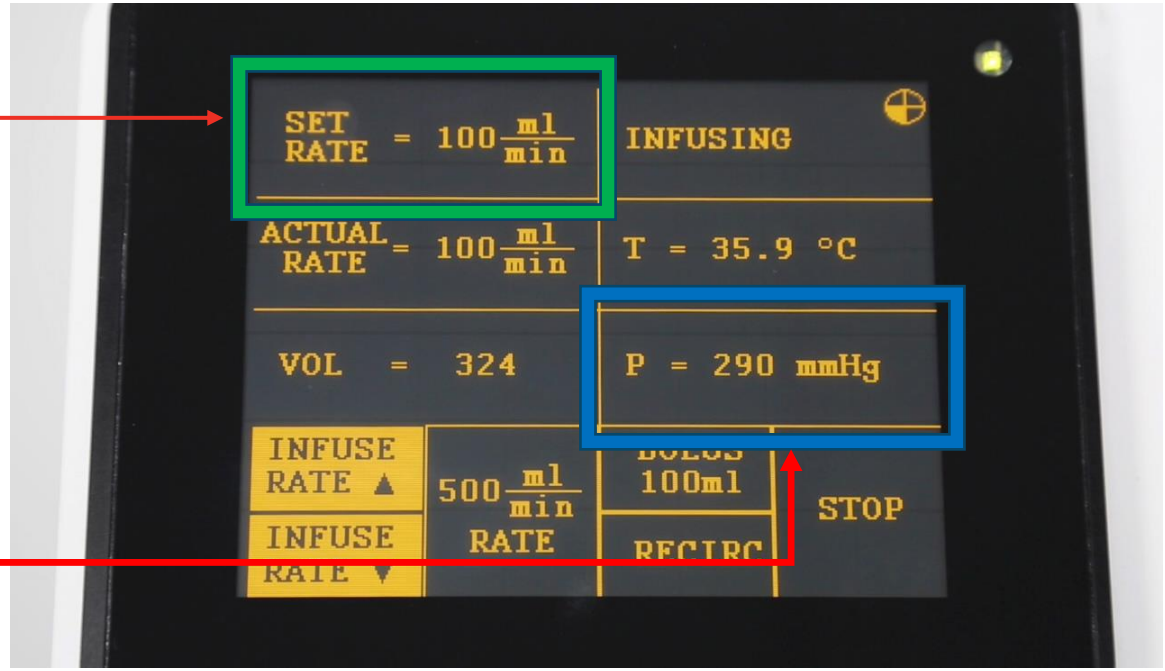
Note:

Patient placement and non-high flow valves, caps or extensions could reduce the maximum achievable infusion rate

PRESSURE CONTROL ALARM

Pressure Control Alarm

- To silence the alarm, press SET RATE to match actual rate
- The system will automatically adjust the set rate to match the actual rate
- After the set rate is adjusted to match the actual rate, you will notice line pressure is within safe limits



HIGH PRESSURE ALARM

High Pressure Alarm

- Check to see that the catheter is not too small or too long, and ensure all tubing between the system and the patient's catheter is able to support the selected infusion rate
- Check line clamps
- Check patient access
- Check blood for clotting

Note:

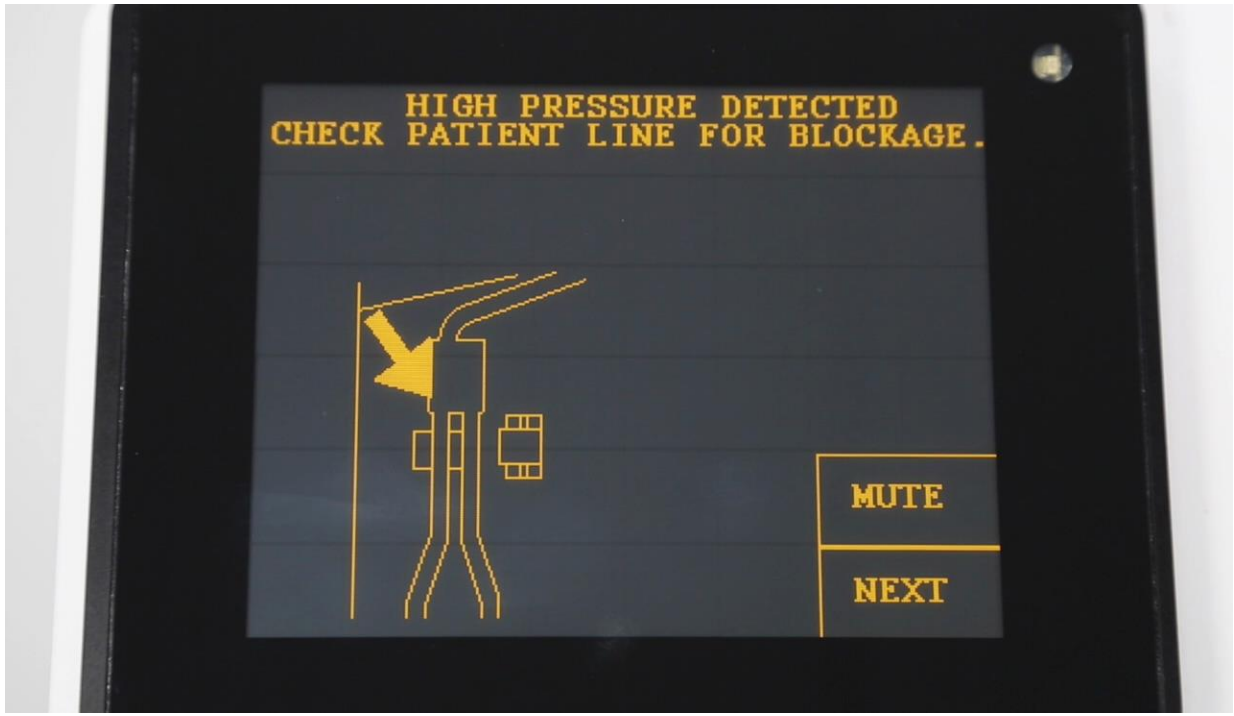
Consider using high flow extension such as the Belmont dual patient line as your default extension product to avoid restrictions and high-pressure alarms.

HIGH PRESSURE ALARM

High Pressure Alarm

- A High Pressure alarm would be triggered if:

1. The patient line is occluded
2. The recirculation line is blocked
3. The infusion site is not well placed



Note:

Automatic blood pressure cuffs near catheter site will restrict access and trigger high pressure alarms

FREQUENTLY ASKED QUESTIONS

Q: How many units of blood can go through the filter?

A: There is no set number. The filter should be changed when it becomes clogged.

RESERVOIR FILTER INFORMATION

- **3-spike Disposable Set, P/N 903-00006**: consists of 3-bag spikes, 120 ml reservoir chamber with 250 micron filter, pump tubing, heat exchanger, pressure chamber, 54 inch patient line, interface to temperature and pressure sensors. It is for SINGLE USE and to be used with the Belmont® Rapid Infuser.
- **3 Liter Reservoir, P/N 903-00018:** consists of 5-bag spikes which can accommodate up to 5 infusion bags at one time, 3000 ml reservoir with 160 micron filter. The 3.0 Liter Reservoir is designed to facilitate cases requiring large volumes of fluid. It is for SINGLE USE and to be used with the Belmont® Rapid Infuser.
- The filters in both reservoirs are gross blood filters meeting the requirements of the American Association of Blood Bankers. They have large surface area and can handle multiple units of blood. The 3-Spike Disposable Set has been used to transfuse >150 units and the 3 Liter Reservoir has been used for >400 units of blood. The filter must be changed when it becomes clogged.
- If the filter becomes clogged, the fluid out sensor will activate and generate an audible alarm, the pump stops pumping and heating. The user will be instructed to first check the filter and then add more fluid if the filter is not compromised.

You can find more detailed installation, operating, and troubleshooting information in your **Operator's Manual**, as well as the **Quick Reference Guide**.

THANK YOU!

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