

## Technical Note

### Expanding Pressure Limits to Avoid Pump Alarms during HD03 Recirculation and Vascular Access Measurements

#### Introduction

Trasonic HD03 Recirculation and Access Flow measurements require administration of normal saline into the extracorporeal circuit. This can be performed two ways:

- 1) **Saline Release:** open the saline bag line and release the saline into the arterial line. *Note:* Do not clamp off the arterial line while doing this.
- 2) **Saline Bolus:** inject a bolus of saline through a syringe into the venous drip chamber. *Note:* Do not clamp off the arterial line while doing this.

Since saline has a different viscosity than blood, saline infusion can trigger Arterial Pressure or Venous Pressure Alarms on the hemodialysis machine. The HD03 Hemodialysis Monitor requires that the blood pump is on during a measurement. If the pump stops in response to an alarm, an error message on the HD Monitor will instruct the user to repeat the measurement.

This technical note details the ways to widen the Arterial and Venous Pressure set points to avoid alarms. The method depends on the specific brand of the hemodialysis machine. Ways to expand the alarm set points for three of the most common hemodialysis machines used in the USA follow.

#### B Braun Dialog+

The B Braun Dialog+ automatically adjusts the Arterial and Venous Pressure alarm windows to the current pressure reading.

To prevent a pressure alarm triggered by the sudden change in pressure from saline administration, the Blood Flow Rate can be adjusted up and down to reset the alarm window.

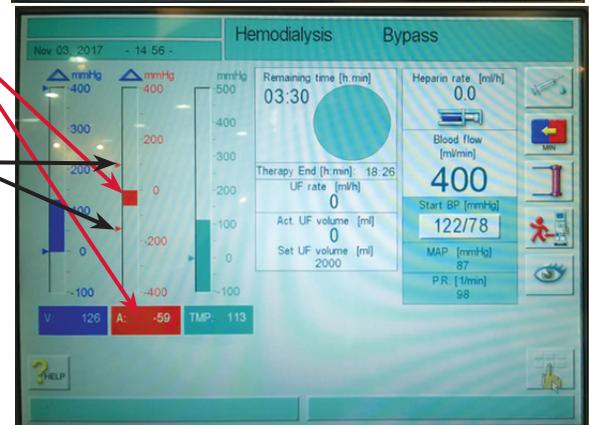


#### B Braun Dialog+ cont.

Venous Display and Arrows showing alarm limits



Arterial Display and Arrows showing alarm limits



The Blood Flow Rate is adjusted by the - and + softkeys next to the blood pump Start/Stop softkey



The Blood Pump Speed can be quickly adjusted up and down by 10 mL/min. This will readjust the alarm limit to prevent the blood pump from stopping. The blood flow rate can be adjusted up and down until the saline has cleared the extracorporeal line and the pressures are stabilized. The user should watch the dialysis machine display and adjust the blood flow rate as needed. Once stabilized pressures are obtained, the flow can remain set while the Recirculation or Access Flow result is displayed on the Trasonic HD03 Monitor

## Expanding Pressure Limits to Avoid Pump Alarms during HD03 Recirculation and Vascular Access Measurements cont.

### Phoenix

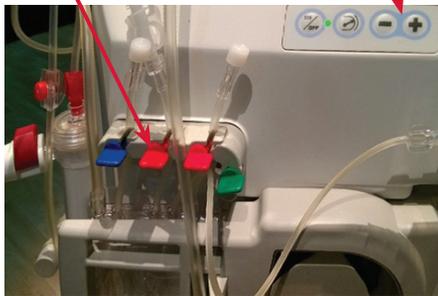


The Phoenix automatically adjusts the Arterial and Venous Pressure alarm windows to the current pressure reading. To prevent pressure alarm triggered by a sudden change in pressure from saline administration, the Blood Flow Rate can be adjusted up and down to reset the alarm window.

The saline is released by opening the saline clamp

The Blood Pump is adjusted using the +/- softkeys.

The user can use one hand to open and close the saline bag and the other hand to adjust the Blood Pump up and down by 10 mL/min.

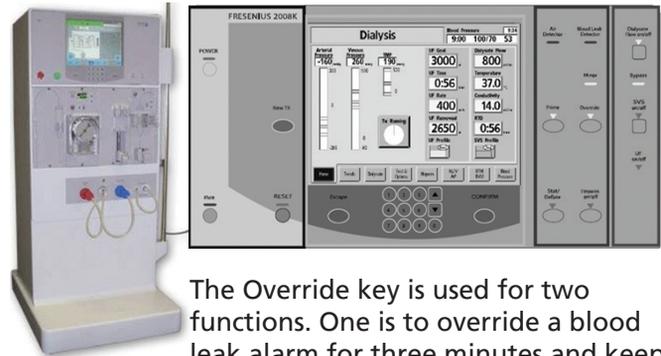


Red arrows shows current arterial and pressures. The blue or red shaded boxes show the alarm windows.



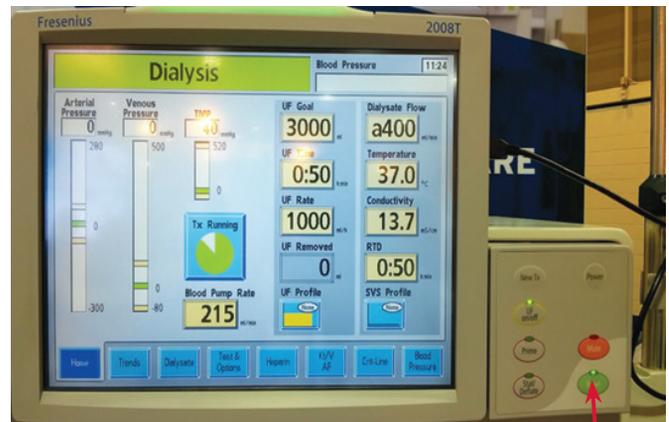
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### Fresenius K and Older HD Machines



The Override key is used for two functions. One is to override a blood leak alarm for three minutes and keep the blood pump going with the Override light illuminated. In the absence of a Blood Leak Alarm- the override will spread the arterial and venous pressure limits 300 mm Hg and the TMP alarm for 30 seconds. The Override light will not illuminate.

### Fresenius T Machines



Press and Hold the Reset Button for two seconds to spread the arterial and venous pressure alarm limits by 300 mm Hg and fully open the TMP pressure for 30 seconds. This can be performed as the saline line is opened to allow the infusion of saline. Thirty seconds should be enough time to prevent an Arterial or Pressure alarm. If more time is need the Reset can be pressed and held again to allow for another 30 second alarm speed.