WORLD
PRECISION
INSTRUMENTS

TECH SUPPORT BULLETIN

UMP3

Troubleshooting a Jammed UltraMicroPump

www.wpiinc.com

032224

THINGS TO CHECK FIRST

If your UMP3 is stuck, here are some things to check for first:

- Check for damaged/bent pins on UMP3 cable (see Fig. 1).

Fig. 1—View of pins, UMP3 cable

- An indicator of a connectivity issue is a non-active light indicator showing on your UMP3 (see Fig. 2 & 3).

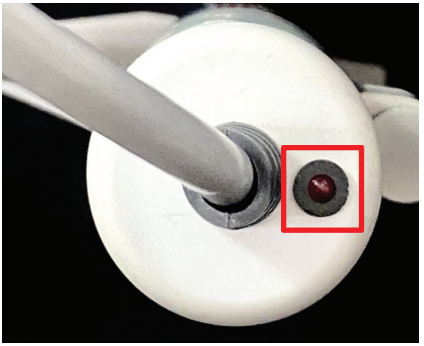


Fig. 2—(Left) UMP3 light indicator (not in use, or connectivity issue).
Fig. 3— (Right) Light Indicator, UMP3 in use.

SETTING PUMP END OF TRAVEL LIMITS

For a UMP3 that is stuck, try resetting the end stop position. If the settings are off, the pump will think the end of the track is closer than it actually is and display the "End limit reached" message.

1. Select the appropriate pump channel on the Command screen by tapping the desired channel on the display.

Fig. 4—Channel 1 is selected, and PUMP1 is shown with a blue field behind it in the upper right corner of the display screen.

2. Press *Configure* to access the Configuration screen for your pump.

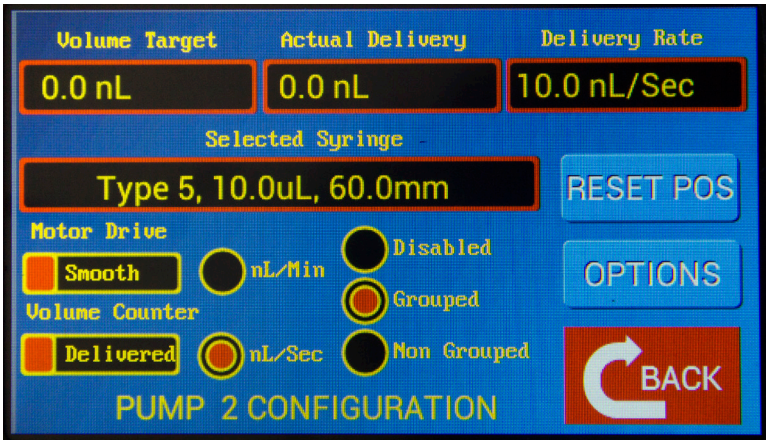


Fig. 5—The Configuration screen allows you to set the limits of travel and define parameters for a selected pump.

3. Press *Reset Pos* to open the Syringe Stop Definition Screen.

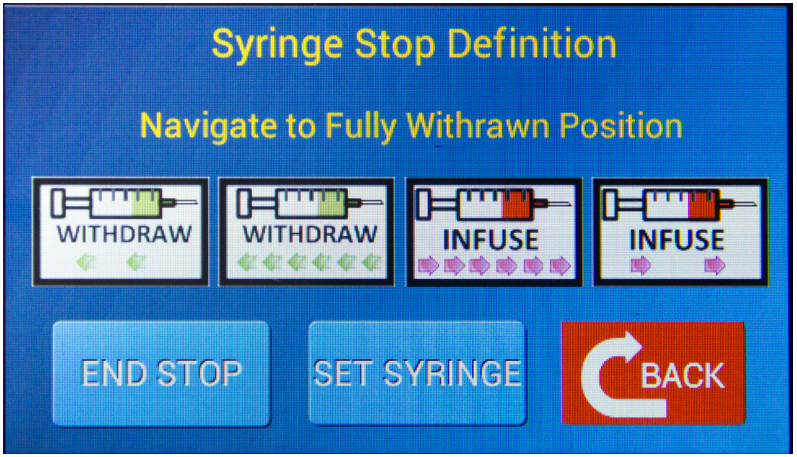
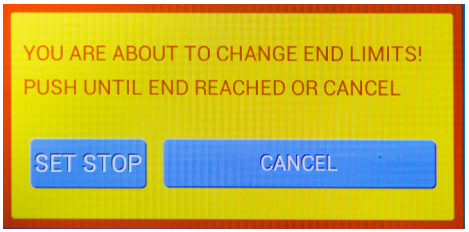


Fig. 6—The Syringe Stop Definition screen lets you define the limits of travel for the pump.

4. Press *End Stop*. A warning message appears indicating that you are about to redefine the stops.



5. To set the new end stop position, press and hold the *Set Stop* button. The pump will continuously withdraw. Continue to press the button until the pump is driving against the mechanical end of travel. The **UMP3** emits a buzzing sound when it reaches its end of travel. You will not damage the pump by doing this. At this point release the button. The pump stops and retracts a short distance from the stop. Press the INFUSE button with six right pointing pink arrows two times very briefly. Push the SET SYRINGE button. The Syringe Stop Definition screen appears again, and the travel limits are stored.

6. Press *Back* to return to the Configuration screen. Press *Back* again to return to the Command screen.

MANUALLY DISENGAGE A UMP3

Pump still jammed? Let's manually disengage a pump jammed at the full-infuse position.

1. Remove your NanoFil syringe from the UMP3.
2. On the Configuration screen (Fig. 7):
   a. Set the Motor Drive to Max Load.
   b. Set the Target Volume to 2000-5000nL.
   c. Set the Delivery Rate to 500nL/Sec.
   d. On Selected Syringe option, choose Type 9, 250µL.

   NOTE: Increasing the volume setting on the MICRO2T ensures max force to get the drive motor back on-track
3. Press RUN or press and hold the MANUAL option while applying pressure on the UMP3 plunger sleeve in the withdraw position.
4. Repeat step 3 until the UMP3 plunger sleeve begins to move from its far most inject position.

   Once your UMP3 is back-on-track...
   - Make sure the correct syringe is selected on your MICRO2T.
   - Prime and attach your NanoFil syringe.

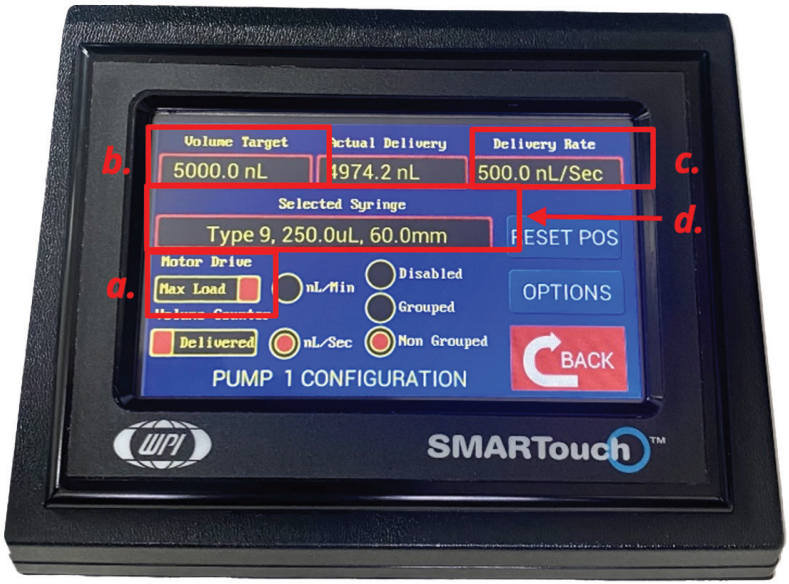


Fig. 7—MICRO2T Configuration Screen

OTHER CONSIDERATIONS, SYRINGE STROKE LENGTH

Refer to this video for more settings information: https://youtu.be/_gjC7Jues10.

Following the video, make sure to set the **END POINT** and **SET SYRINGE**. This needs to be changed if you use a different manufacturer and volume syringe.

The delivery of the UMP3 is based on 60mm or 54.1mm syringes. Please note which syringe length you are using. You may need to adjust the syringe length.

Maker	Syringe	Stroke Length	Use TYPE
Hamilton	1700 Series, 10µL	60 mm	**L**
Hamilton	700 Series 5 µL ,10 µL	54.1 mm	**C,D**
Hamilton	7000 Series	60 mm	**M,N,O,P***
SGE	0.5 µL – 10 µL	54.1 mm	**A,B,C,D**
ILS 5 µL Luer tip	ILS005	28 mm	**M,N,O,P**
SGE, Hamilton 700, Hamilton1700	25 µL – 500 µL	60 mm	**E - L**
WPI	FlexiFil™	54.1 mm	**D**
WPI	NanoFil™	60 mm	**L**

Not all syringes from a particular series or manufacturer are usable on the UMP3.

The minimum delivered volume depends on the syringe size. The actual volume delivered is divisible by the volume per step. For example, using a syringe with a volume per step of 1nL, the actual delivered volume for the given set volume is listed below.

Volume Set	Actual Volume Delivered
0-0.9999nL	0
1 nL-1.999nL	1nL
2 nL-2.999nL	2nL

USA
175 Sarasota Center Blvd., Sarasota FL 34240-9258
Tel: 941-371-1003 • Fax: 941-377-5428 • E-mail: sales@wpiinc.com

UK
1 Hunting Gate, Hitchin, Hertfordshire SG4 0TJ
Tel: 44 (0)1462 424700 • Fax: 44 (0)1462 424701 • E-mail: wpiuk@wpi-europe.com

Germany
Pfingstweide 16, D-61169 Friedberg (Hessen), Germany
Tel: +49 (0)6031 67708-0 • Fax: +49 (0)6031 67708-80 • E-mail: wpide@wpi-europe.com

China & Hong Kong
WPI Shanghai Trading Co., Ltd.
Rm 27A, Liangfeng Building, No 8, Dongfang Road, Pudong New District, Shanghai, PR China
Tel: +86 21 6888 5517 • Toll Free: 400 688 5517 • E-mail:chinasales@china.wpiinc.com

Internet
www.wpiinc.com • www.wpi-europe.com • www.wpiinc.net