QUICK GUIDE, VOL.0.1

DMT FILLER SYSTEM - 625FS/3

TRADEMARKS

This document was, as far as possible, accurate at the time of release. However, changes may have been made to the software and/or hardware it describes since then. Danish MyoTechnology A/S reserves the right to alter specifications as required. New information may be supplied separately.

All trademarks are the property of their respective owners

Product: Filler System – 625FS-v3
Part Number: 101057

CONTENTS

SAFETY NOTES

Intended use...
All products manufactured by Danish Myo Technology A/S are intended for use in ex-vivo applications and environments only. Danish Myo Technology products are not intended nor to be used as medical devices or related purposes.

Standards...
All products manufactured by Danish Myo Technology A/S are per European standards as well as they comply with the electromagnetic compatibility requirements under EN61326-1, which encompasses the EMC directive.

Declaration of Conformity
A Declaration of Conformity covering 2004/108/EC Electromagnetic Compatibility (EMC) and 2006/95/EC Low Voltage Equipment directives can be found in Appendix C.

General Instructions
To achieve the optimal safety, consideration should be given to the following when setting up and when using the Filling System. The guidelines are based on principles outlined in the general product safety directive – 2001/95/EC of the European Parliament and the Council.

The end-user is responsible for ensuring any particular configuration of equipment complies with local directives and regulations.

While it is not possible to cover all arrangements of equipment in a system, some general guidelines for safe use of the equipment are presented below:

- Do not open the unit: the internal electronics pose a risk of electric shock.
- To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. Objects filled with liquids should not be placed on the apparatus.
- Install following the manufacturer's instructions.
- Only use secure industry-standard connectors and tubing for water connections. Faults, defects, and mistakes due to wrong connections void warranty. We are not accountable for results and mistakes due to inappropriate hookup.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
- Only use attachments and accessories specified by the manufacturer.

- Unplug this apparatus during lightning storms or when unused for long periods.

The Filling System uses an external power adapter – use only the one supplied by Danish Myo Technology A/S.

Protect the power adapter and cord from being walked on or pinched. Particularly at power plugs and the point where they connect to the apparatus.

Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way such as the power-supply cord or plug is damaged, liquid has spilled onto, or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Environment…

Electronic components are susceptible to corrosive substances and atmospheres and must be kept away from laboratory chemicals.

Operating Conditions

- The temperature in the range 5–35 °C
- Non-condensing humidity in the range 20–80%

OVERVIEW

How to use this guide…

This guide describes how to set up and begin the use of your Filler System. It provides an overview of features and functions. The appendices provide technical information.

The Filler System…

Filler System – 625FS/3

The Buffer Filler is easy ”mounted’ onto your 4-channel Myograph System. It can fill one chamber of choice separately or all 4 baths simultaneously with buffer by a single touch of a button. In addition, a washing protocol can be used.

Volume is individually set on the myograph interface, and build-in heating maintains the buffer temperature (buffer reservoir must be pre-heated).

The Filling System is compatible with;

- Multi Myograph System – model 620M
- Automated Multi myograph System – model 630MA

- Tissue Bath System – model 720MO
- Muscle Strip Myograph – model 820MS

NB: the interface unit of the above models must be firmware 5.20.00 or higher and have an RS232 female connector on the back.

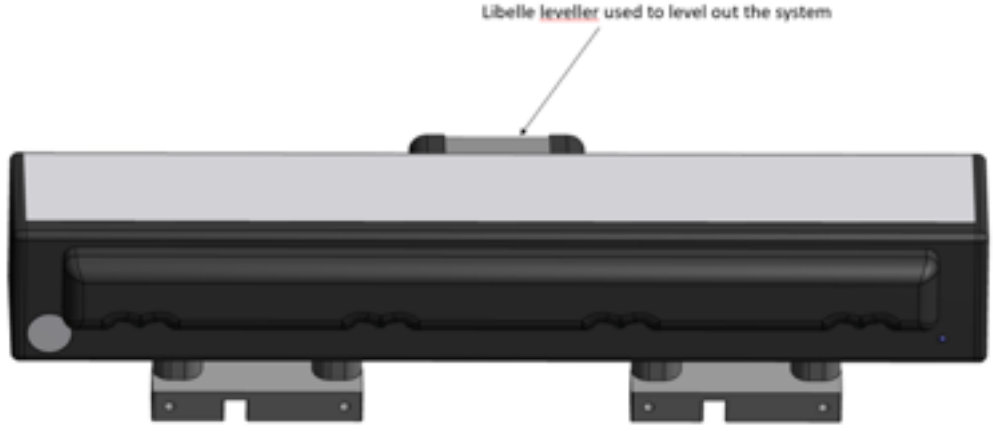
Check the Filler System…

The hardware consists of the Filler System, pump, bottle, screws, tubing, Allen key, and power supply. Before connecting anything, please read this guide and have check the following;

- Check that all items in the accompanying packing list are included.
- Check that there are no signs of external damage

If anything is missing, or damage visually shows, contact Danish Myo Technology A/S representative immediately.

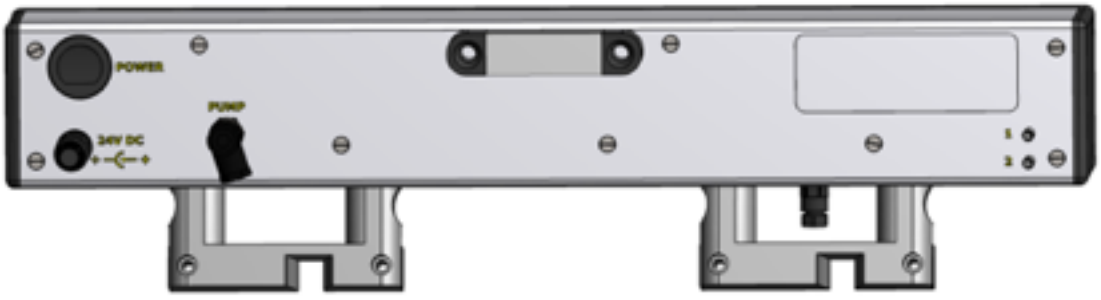
The Front of the Filler System…



Indicator…

When the indicator lights blue, the Filling System is powered on.

The Back of the Filler System...



Power Switch and connector...

The power switch turns the power on and off. The plug from the external power adaptor is securely connected to the power connector. The Power Adaptor is universal and has an input voltage of 100-240VAC

Pump connection

Connection for the bottle pump.

Bubble Leveller

To ensure volume accuracy and correct calibration

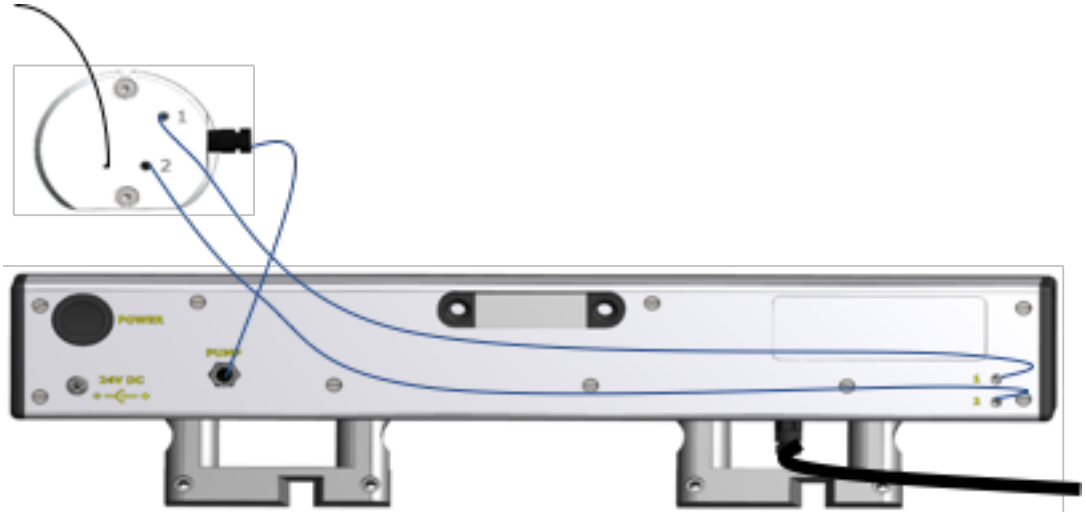
Interface connection

Links the Filler System to the interface unit

Buffer in- and outlet

Connection for filling and recirculation of buffer.

SETTING UP...



Installing the hardware...

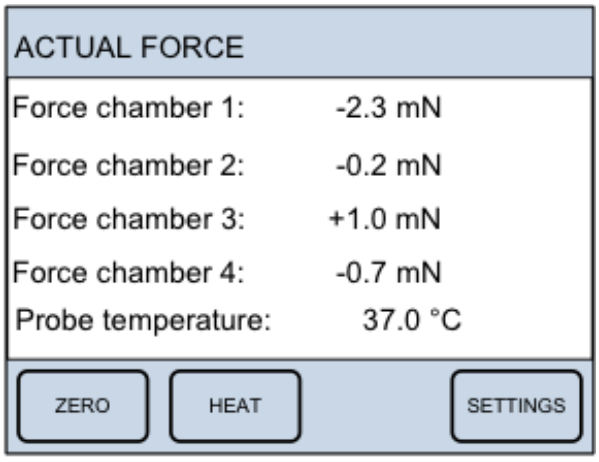
1. Position the Filler System on the back of the interface unit. Using the Allen screws, secure the Filler System using the four holes
2. Before tightening the screws, make sure the filler is positioned level.
3. Connect the cable from the bottle pump to the Filler System and secure the lock-nut.
4. Connect silicone tubing from #1 on the bottle pump to #1 on the Filler System.
5. Connect silicone tubing from #2 on the bottle pump to #2 on the Filler System.
6. Connect oxygen tubing from an external source to the bottle pump head.
7. Connect the cable from the Filler System to the interface by plugging in the 9-pin Sub-D plug to the RS232 plug on the interface unit.
8. Connect the power using the external power adaptor
9. Turn the Filling System on using the ON/OFF switch

Activating the Filler System in the interface unit...

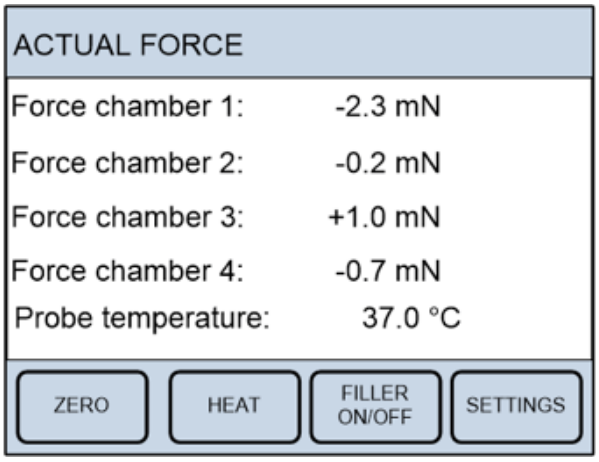
NB: ONLY if the Filler System is added to an existing myograph system, and once the hardware is installed correctly.

1. In the main menu of the interface unit, Enter 'SETTINGS'
2. Enter 'Interface SETTINGS'

3. In the INTERFACE SETTINGS, Enter ‘FACTORY DIAGNOSTICS
4. Using the 5-digit code provided, enter the value and press ‘ENTER’
5. Press ‘ACTIVATE FILLER’
6. In ACTIVATE FILLER, press ‘Select’
7. Press ‘ARROW UP’ until ‘Activate Filler’ is shown in blue.
8. Press ‘ENTER’
9. Turn the power off on the interface unit for 5 seconds
10. Turning the power on, the Filler System menus are now added to the interface under ‘SETTINGS and in the main Force menu.



Interface unit main menu before activation



Interface unit main menu before activation

Calibrating the filling volume…

The Filler System is precalibrated from the factory. Due to transport or whenever moved, it is recommended that the Filler System is calibrated to ensure accurate volume filling and hereby optimal performance.

Before calibration and during all operations, it is important that the Filler System is aligned horizontally. Use the bubble leveler to level the system.

1. Fill the reservoir bottle with pre-heated buffer.
2. Position the reservoir bottle at a matching level of the interface unit.
3. Turn on ‘PUMP’ and ‘HEAT in the FILLER START/STOP menu.
4. In ‘SETTINGS’ enter ‘FILLER SETTINGS’ and then ‘VOLUME CALIBRATION.
5. Disconnect the tubing, from the suction pipe on the interface unit.

6. Place the tubing into the calibration measuring cylinder.
7. Press 'START' on Chamber 1 to start filling the measuring cylinder.
8. Filling continues for a pre-defined time (do not stop the pump).
9. Read the volume of the measuring cylinder.
10. Press 'SELECT' and adjust the chamber volume to your reading using the arrow up or down.
11. Repeat procedures fo Chamber 2, 3 and 4.

NB: instead of using the measuring cylinder, you can use a beaker and weigh the buffer collected. 1g equals 1ml.

Setting the filling volume

As a default, the are two pre-defined volumes (5ml low volume / 8ml high volume) – these may be changed to user-preference.

1. Enter 'SETTINGS'
2. Enter 'FILLER SETTINGS'
3. Enter 'LOW VOLUME' or 'HIGH VOLUME'
4. Press 'SELECT' to activate appropriate chamber or press 'ALL' to activate all chambers.
5. Enter the preferred volume between 2ml and 8ml
6. Press 'ENTER' to store the new volumes.
7. Press 'X' to return to the main menu.

Changing the Filler System temperature

To ensure at correct chamber temperature, the internal temperature of the Filler System may be adjusted. If the chamber temperature is too low, increase the Filler Temperature and decrease if too high.

1. Enter 'SETTINGS'
2. Enter 'FILLER SETTINGS'
3. Enter 'FILLER TEMP'
4. Use 'ARROW DOWN' or ARROW UP' to increase or decrease temperature.
5. Press 'ENTER' to store the new settings.
6. Press 'X' to return to the main menu.

'DEFAULT' reset the Temperature Setpoint to factory default (37.0 degrees Celsius)

Changing the counts of washes

The 'WASH COUNT' is 5 times (Factory Default) and may be changed between 1 and 10.

1. Enter 'SETTINGS'
2. Enter 'FILLER SETTINGS'
3. Enter 'WASH COUNT'
4. Press 'SELECT' to activate appropriate chamber or press 'ALL' to activate all chambers.

5. Use ‘ARROR DOWN’ or ARROW UP’ to increase or decrease the number of washes.
6. Press ‘ENTER’ to store the new settings.
7. Press ‘X’ to return to the main menu.

If 1 wash count is used, the Filler System will drain the chamber and re-fill buffer using the low volume.

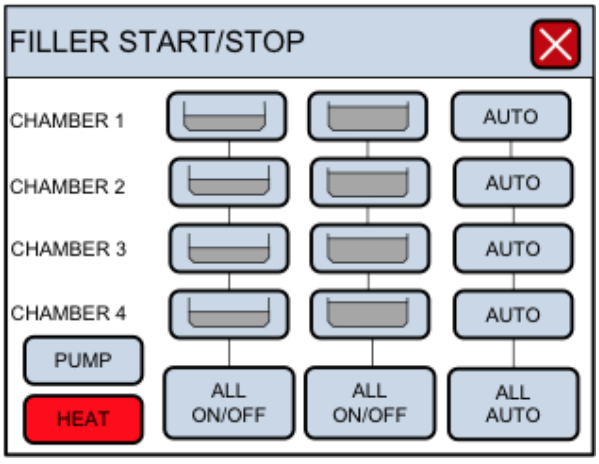
If 2 or more wash counts are used, the Filler System will drain the chamber and re-fill buffer using the high volume. Following the last wash count (drain) the chamber fills with the low volume.

Changing the valve delay

The ‘VALVE DELAY’ sets the time the valves are open and draining the chamber. The time needed to drain the chamber is relative to the vacuum used.

Using the Filler System…

Enter ‘SETTINGS’ and enter ‘FILLER ON/OFF’ will open the ‘FILLER START/STOP’ menu. From here the functions used are turned on/off.



Start/Stop the bottle pump.

Turn heat ON/OFF.


Start/Stop the filling – LOW volume.


Start/Stop the filling – HIGH volume.

ON/OFF ALL.

Start/Stop the AUTO washing protocol.

Start/Stop the AUTO washing protocol for all chambers.

APPENDIX

Appendix A...

Cleaning the Filler System

To avoid deposits from the buffer, and to ensure accuracy, it is important the Filler System is cleaned after use. The simple method of cleaning the system is using the wash routine.

1. Using an empty reservoir bottle, start the 'PUMP'
2. Leave the pump running for one minute to ensure all buffer is drained from the system and tubing.
3. Turn the pump off and replace the reservoir bottle with a bottle containing distilled water.
4. Turn the pump on, and leave it running for one minute.
5. Turn the external vacuum pump on.
6. Press 'AUTO ALL'

NB: It is recommended to wash out minimum 6 times.

Appendix B...

Specifications

System

Number of channels:	4
Tubing length:	Max. 100 cm
Tubing diameter:	6x3 mm
Chamber temp. setpoint:	20 - 45°C
Chamber temp. resolution:	0.1°C
Chamber temp. stability:	+/- 0.3°C
Auto washing routine:	1 – 10 empty/fill cycles

Filling

Low volume range:	2 – 8 ml
High volume range:	2 – 8 ml
Volume accuracy:	0.2 ml
Filling speed:	20 ml/min

Operating Requirements

Operating voltage:	100-240 VAC (automatic) / 24 VDC adapter +/-10%
Current:	max. 3.3 Amp

Physical configuration

Dimensions (LxDxH):	390 mm x 900 mm x 1000 mm
Weight:	2.1 kg
Humidity:	20% - 80% RH (none condensing)
Operating temperature:	15-30°C
Storage temperature:	4 - 70°C

Appendix C…

Declaration of Conformity

The manufacturer of this product(s) is;

Name: Danish Myo Technology A/S
Address: Rho 14
8382 Hinnerup
Denmark
Comp. Reg.: DK-21798274

The product(s) covered in this declaration are;
Buffer Filling System – model 625FS-v3

DMT A/S
Certify and declare that the following apparatus:

Conformity:
The below-mentioned product(s) comply with the essential requirements of the electromagnetic compatibility directive and low voltage directive.
The following standards have been applied;

EMC Directive 2014/30/EU;
EN 61326-1:2013
EN 61326-2-3:2013

General warning:
Do not use this device in close proximity to sources of strong electromagnetic radiation (e.g., unshielded intentional RF sources), as these may interfere with the proper operation.

Restrictive use:
For laboratory use ONLY.

LVD Directive 2014/35/EU;
EN 61010-1:2010
EN 61010-2-030:2010
EN 61010-2-201:2013

Danish Myo Technology A/S

E-mail: sales@dmt.dk
Tel.: +45 87 41 11 00
Fax: +45 87 41 11 01

DMT-USA,Inc.

E-mail: sales@dmt-usa.com
Tel.: +1 734 707 0250
Fax: +1 678 302 7013

DMT-China

Tel.: +86 21 6486 9685
Fax: +86 21 5877 0063

DMT-Asia Pacific

Tel.: +61 2 8814 1597