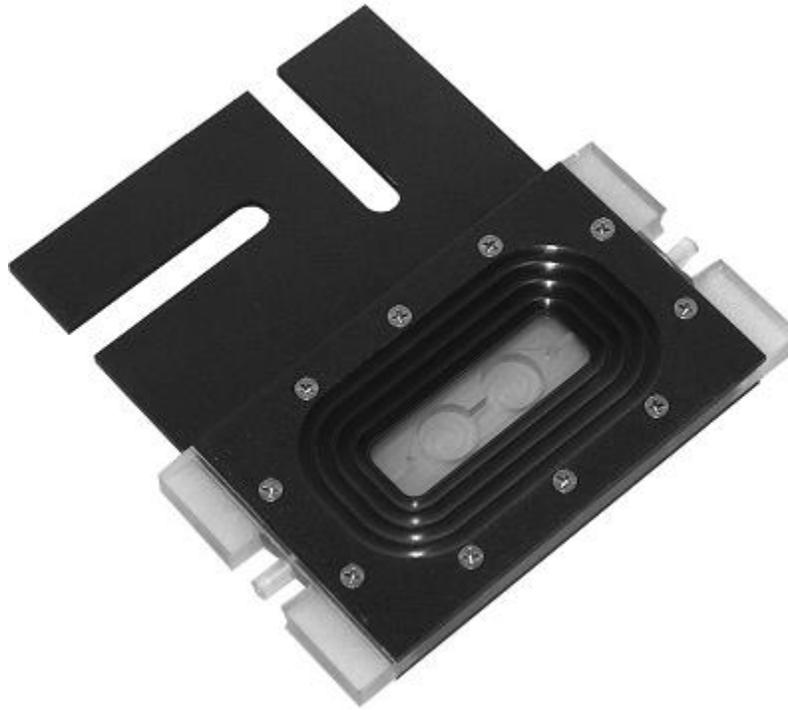


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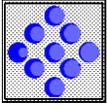
BST FC 71 Flow Cell Operations



The model FC 71 flow cell consists of a polycarbonate or anodized aluminum flow channel. A glass viewing port allows reflected light microscopy of biofilm growth on coupons and in the flow channel.

Viewing Windows:

The viewing window consists a no.2, 24x60 mm cover slip. The glass viewing window is held in place by an aluminum cover plate. The cover plate also compresses the silicone rubber gasket material to provide a leak-proof flow cell.



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FLOW CELL ASSEMBLY AND OPERATION

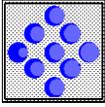
It is very important the flow cells be assembly properly to provide a leak-proof seal.

Disassembly:

1. Remove the 10 screws holding the cover plates in place.
2. Remove the cover plate. (Most likely the gaskets and glass viewing ports will remain with the flow cell).
3. Carefully remove the glass cover slip from the gasket material. If the cover slip is broken, remove and discard these items.
4. Carefully clean the gasket surface, removing all glass and other debris. **It is very important no residual material be left on the gasket surface.**
5. Clean the polycarbonate flow channel. **Do not scrub or mar the glass/flow channel mating surfaces.**

Assembly:

1. Carefully position the clean gasket on the cover plate. Align the screw holes in the gasket and the cover plate (it helps to wet the gasket so it sticks to the cover plate).
2. Carefully position a clean, unbroken cover slip in the slight recess in the flow channel (the cover slip must be properly aligned into the recess to prevent breakage or leaking during and after assembly). **Improper placement will result in leakage around the cover slip and/or cover slip breakage.**
3. Insert two screws through the cover plate and gasket. These screws will help align the cover plate as it is lowered onto the flow channel and cover slip. Carefully place the cover plate with gasket onto the flow channel (it may help to have the cover plate inverted and set the flow channel onto the cover plate. **It is very important the cover slip remain properly positioned (improper placement will result in leakage around the cover slip).**



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9. Place the screws into the beveled screw holes and tighten evenly around the perimeter, alternating sides as the screws are tightened. **It is important the screw holes in the cover plate align with the holes in the gasket material.** Improper alignment may result in leakage.
10. Install tubing on the luer fittings and pump liquid through the flow cell.

AUTOCLAVING INSTRUCTION:

The FC 71 Flow Cell is completely autoclavable.

BioSurface Technologies recommends always using the slow (liquid) exhaust option. The screws holding the cover plates on the flow cell should be loosened to allow for material expansion. Tubing connected to the flow cell should allow free exchange of steam with the surrounding environment. BST recommends using a gas permeable material to cover the tubing ends such as autoclave paper instead of a gas impermeable material, such as tin foil.

Slowly tighten the screws as the flow cell cools or wait until the flow cell is completely cooled before tightening the screws.

SPARE PARTS

Spare screws
Gasket
Cover slips

With proper care, the gaskets should be re-useable for numerous experimental evaluations. The spare gaskets provided require removal of the clear protective polymer sheeting from both sides of the gasket prior to installation.

The Model FC 71 uses no. 2 24x60 mm cover slips as a viewing port.

The gasketing material is 0.020 inches thick silicone rubber. Other materials may be used.

The flow channel is manufactured from polycarbonate or anodized aluminum. The flow cell is completely autoclavable and re-useable.

TROUBLE SHOOTING

Problem: Glass viewing ports keep breaking:

Solution:

- Ensure the gasket surfaces and flow channel mating surfaces are totally free of debris, and the coverslip is aligned in the flow channel recess.

Problem: Flow cell leaks.

Solution:

- Tighten screws further to compress gasket.
- Make sure flow channel and tubings are free and clear of obstructions.
- Make sure glass viewing port is not cracked or broken.
- Check gasket for rips or tears. Clear of all debris. Replace as necessary.
- High flow rates may create too much back pressure to contain leakage. Reduce flow rate. **The flow cell is designed for a maximum flow rate of 3.5 ml/minute.**

If you have any questions concerning the Model FC 71 Flow Cell, please contact BioSurface Technologies Corporation at (406) 585-2812.