Equibiaxial Loading Stations™

Product Information Sheet
07/25/16 Rev. 2.0

Equibiaxial Loading Stations™ are designed to provide uniform radial and circumferential strains to cells cultured on BioFlex® culture plates and stretched with the Flexcell® Tension System. Loading Stations™ are comprised of a 3.3" x 5" Lexan® plate, and all styles except the 25mm Loading Station™ consist of two Delrin® (nylon) support and centering posts, and six removable Delrin® planar faced cylinders (or loading posts; Fig. 1). The 25mm strain posts and support and centering posts are made from VisiJet® (a diacrylate compound). The two centering posts are intended to support the BioFlex® plate under high vacuum and also center the BioFlex® plate over the six loading posts. The six loading posts provide the strain surface. The posts are positioned on the Lexan® plate such that each is centered beneath the 35 mm well bottom of a BioFlex® culture plate. When vacuum is applied to a BioFlex® culture plate, the membrane deforms across the loading post face creating equibiaxial strain. For more information, see the Loading Station™ product webpage at http://www.flexcellint.com/LoadingStation.htm.

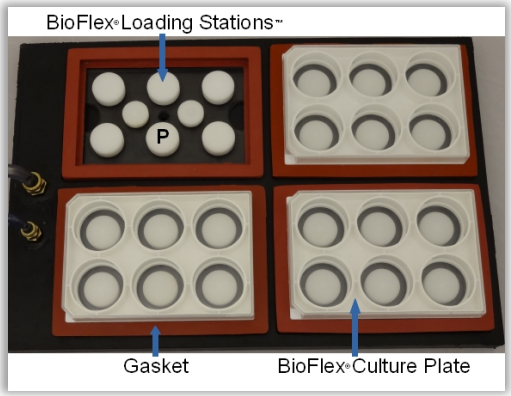

Figure 1. *A BioFlex® baseplate with cylindrical Loading Stations™ in each baseplate well. Loading Stations™ have six loading posts (P) and two central centering posts. The BioFlex® culture plates in red, rubber gaskets sit atop each Loading Station™.*

Lubricant Application to Loading Stations™

Once the Loading Stations™ are placed within the BioFlex® baseplate wells, lubricant should be applied to the tops and sides of the six loading posts on each Loading Station™. Use the Loctite® silicone lubricant supplied with the Loading Stations™. Use your finger to spread a thin, even layer of lubricant over the top and edge of each post in sufficient quantity to form a friction barrier. Ensure lubricant is not over-applied, as over-application will form lumps under the membrane, affecting the strain profile. For more information and setting up your baseplate, see *Tech Report 110: Tension Baseplate Assembly:* http://www.flexcellint.com/documents/110_TensionBaseplateAssemblyTech.pdf, or the instructional video, *Tension BioFlex® Baseplate Assembly,* accessible on our webstite: http://www.flexcellint.com/videos-instruct.htm. ***NOTE: For each new experiment, be sure to clean and re-lubricate the Loading Stations™.***

Loading Station™ Specifications

Table 1. *Min and max achievable % elongation for each Loading Station™ diameter.*

Diameter	Min %	Max %
25 mm	0.8	23.0
28 mm	1.0	15.9
31 mm	0.8	6.0

Equibiaxial Loading Stations™ have maximum and minimum strain capabilities with respect to vacuum level. Table 1 lists the minimum and maximum % elongations for each of the three equibiaxial Loading Station™ sizes when used with the FX-5000™ Tension System. When creating regimens, do not exceed these values in the *min%* and *max%* boxes for experiments in which cylindrical Loading Station™ will be used. The pressure-strain conversion charts can be found in *Tech Report 101: Loading Stations. Quantification of Strain on the Membrane Surface*, available at http://www.flexcellint.com/documents/101_LoadingStationsTech.pdf.

Assigning and Downloading Regimens in the FX-5000™ FlexSoft® Program

In the FX-5000™ FlexSoft® Program, select the REGIMEN drop down menu and then ASSIGN. If 25 mm Loading Stations™ are being used, select the ***BFlx Loading Station (25mm)*** option under ***Platforms***. For the 28 mm or 31 mm Loading Stations™, choose ***BFlx Loading Station (28mm)*** or ***BFlx Loading Station (31mm)***, respectively. If no Loading Stations™ are being used, select ***BFlx Plate, no Loading Stations.*** *NOTE: Failing to select the appropriate* ***Platform*** *assignment will produce inaccurate elongation values. The* ***Platform*** *assignment must match the actual culture plate and Loading Station™ configuration being used for the desired strain to be applied.*

Ordering Information

6-Place Loading Stations™ can be purchased in a set of four: 25 mm (Cat. No. LS-3000B25.VJW), 28 mm (Cat. No. LS-3000B28), and 31 mm (LS-3000B31).

Flexcell® culture plates are protected by the following patents: US Patents 4,789,601 and 4,822,741 (International Patents DE3855631D1, DE3855631T2, EP0365536B1); US Patent 6,048,723; US Patent 6,218,178.

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