# TECH REPORT #208:

# TENSION SYSTEM DUAL BASEPLATE OPERATION

*Culturing Cells in a Mechanically Active Environment*™
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When using the FX-6000T™ and FX-5000T™ Tension System in dual baseplate operation, the user may notice a drop in the overall programmed % elongation, depending upon the desired % elongation and frequency of the regimen. This drop is due to the vacuum source being shared between both baseplates.

It is, therefore, recommended that users reduce the frequency of such a regimen to 0.5 Hz or lower. A lower frequency will allow the Tension System the correct amount of time to intake and exhaust the vacuum, which, in turn, gives the system enough time to reach the desired % elongation.

For example, if an Tension System is connected in the dual baseplate configuration using the BioFlex 25 mm Loading Stations and a regimen is programmed with the following variables:

Waveform = Sine
% Elongation = 20%
Frequency = 1 Hz

The maximum % elongation achieved might only be 10%. Reducing the frequency of the regimen to 0.5 Hz will produce an achievable % elongation of 18%.

The maximum allowable **% elongation** for dual baseplate operation with the Tension System is as follows:

| **Platform** | **Frequency** | |
|---|---|---|
| | ***1.0 Hz*** | ***0.5 Hz*** |
| BioFlex: 25 mm | 10.0 % | 18.0 % |
| BioFlex: 28 mm | 6.5 % | 11.0 % |
| BioFlex: 31 mm | 2.0 % | 3.5 % |
| Tissue Train: Arctangle | 10.0 % | 16.0 % |
| UniFlex: Arctangle | 5.0 % | 8.5 % |
| HT BioFlex | 7.0 % | 11.5 % |


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