TECH REPORT

109:

Using Additional FlexLinks®

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Using additional FX5K™ FlexLinks® will allow two or more baseplates (platforms) with different regimens to run simultaneously. Any one FX-5000™ system computer can run up to 4 FlexLinks®, either Tension or Compression (any combination), *at the same time*. For instance, a FX-5000 system can run up to four FX5K™ Tension FlexLinks® or up to four FX5K™ Compression FlexLinks®. In addition, a FX-5000 system can run one FX5K™ Tension FlexLinks® and one FX5K™ Compression FlexLinks®, or the system can run three tension and one compression unit, and vice versa.

When using additional Tension FlexLinks® with a Tension System...

All tubing connections made to the first FlexLink® should be made exactly the same with any additional FlexLinks®. Each FlexLink® will have its own separate ***FLEX IN*** and ***FLEX OUT*** tubing for each baseplate.
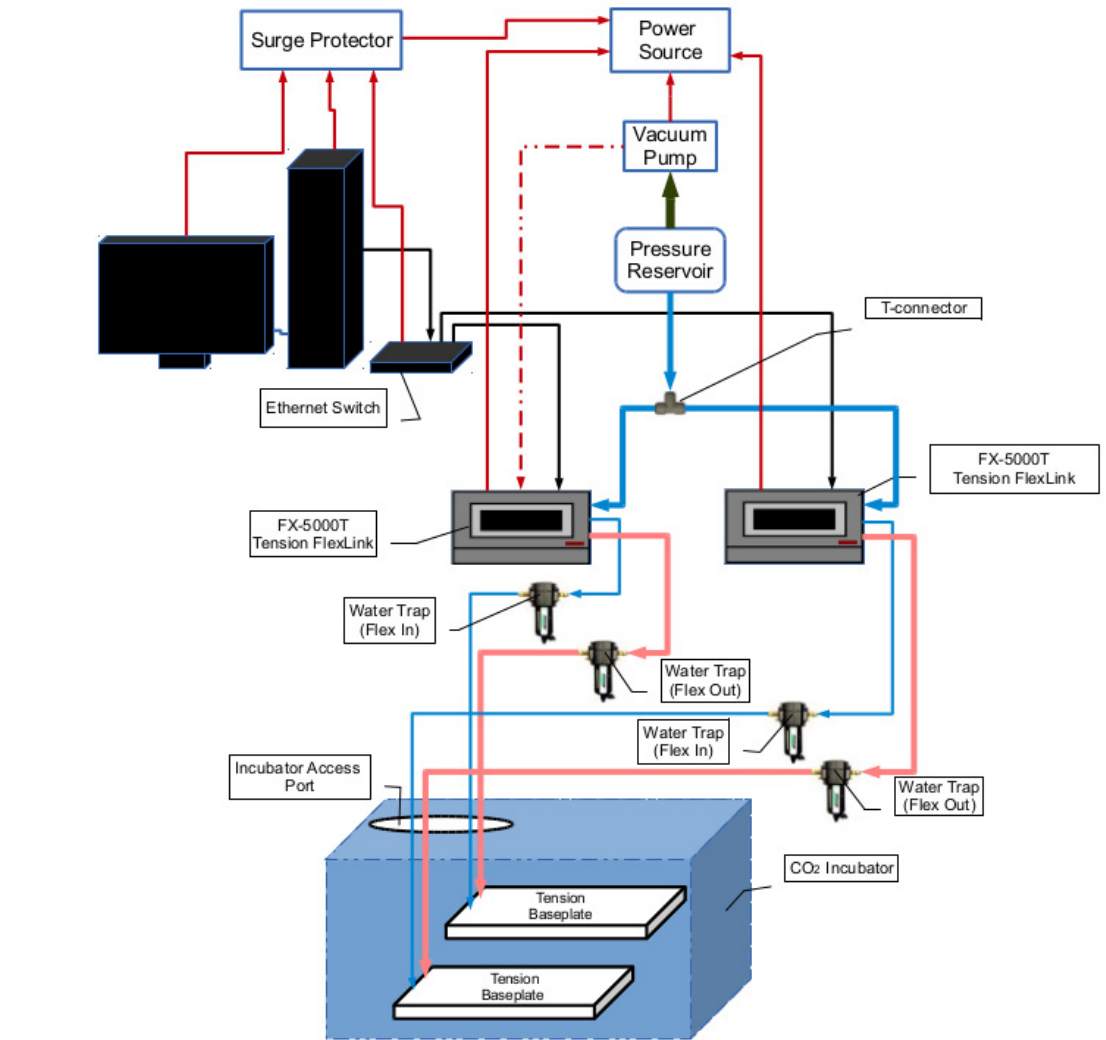
NOTE: The **SYSTEM** tubing can be shared between FlexLinks® with "T" fittings (see Figure 1) as long as the pressure source is capable of running two or more FlexLinks® with the programmed regimens. Regimens with a combination of high frequencies and % elongation levels will require a more powerful pressure source. The capability of the pressure source with more than one FlexLink® will need to be tested experimentally with the users' particular setup.

FlexLinks® must be placed side-by-side during use. If the user desires to use the vacuum pump auto control feature with each Tension FlexLink®, then separate vacuum pumps will need to be used with each Tension FlexLink®.
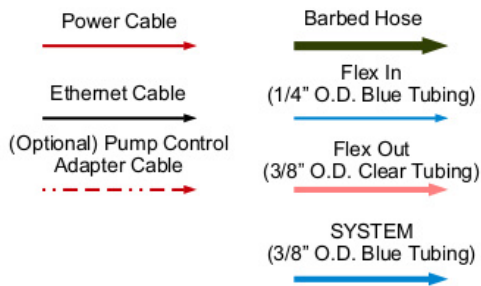
To connect additional FlexLink®(s) to the computer, connect the Ethernet cable from each FlexLink® to an Ethernet hub. Then, connect the hub to the Ethernet port on the back of the computer using the Ethernet communications cable provided (see Figure 1). The LCD on the front of the FlexLink® will display the number (#1-4) that the FX5K™ Tension FlexLink® has been assigned at the time of production.

NOTE: The numbering of each FX5K™ FlexLink® will not depend on what order it appears in the connection chain, but according to the configuration of each FlexLink® as "FlexLink #1, FlexLink #2…etc" during production.

When powering up the FlexLink®(s) and computer, turn the FlexLink®(s) ON before the computer. To use a particular FlexLink®, select the appropriate FlexLink® number (#1, 2, 3, or 4) from the *Controllers* menu in the FX-5000™ software. Assign, download, and run regimens just as would be done when using one Tension FlexLink®.

Cable and Tubing Legend

Power Cable

Ethernet Cable

(Optional) Pump Control Adapter Cable

Barbed Hose

Flex In
(1/4" O.D. Blue Tubing)

Flex Out
(3/8" O.D. Clear Tubing)

SYSTEM
(3/8" O.D. Blue Tubing)

Notes:

1. The *Incubator Access Port* may be located on the top, rear or side of the incubator depending on the manufacturer, make and model.

2. The *Pump Control* feature can only be used as one vacuum pump per FlexLink. Controlling additional FlexLink's will require additional vacuum pumps.

Figure 1. *Setup using two Tension FlexLinks® sharing a single vacuum source.*

When using additional Compression FlexLinks® with a Compression System...

All tubing connections made to the first FlexLink® should be made exactly the same with any additional FlexLinks®. Each FlexLink® will have its own separate **FLEX IN** and **FLEX OUT** tubing for each baseplate.
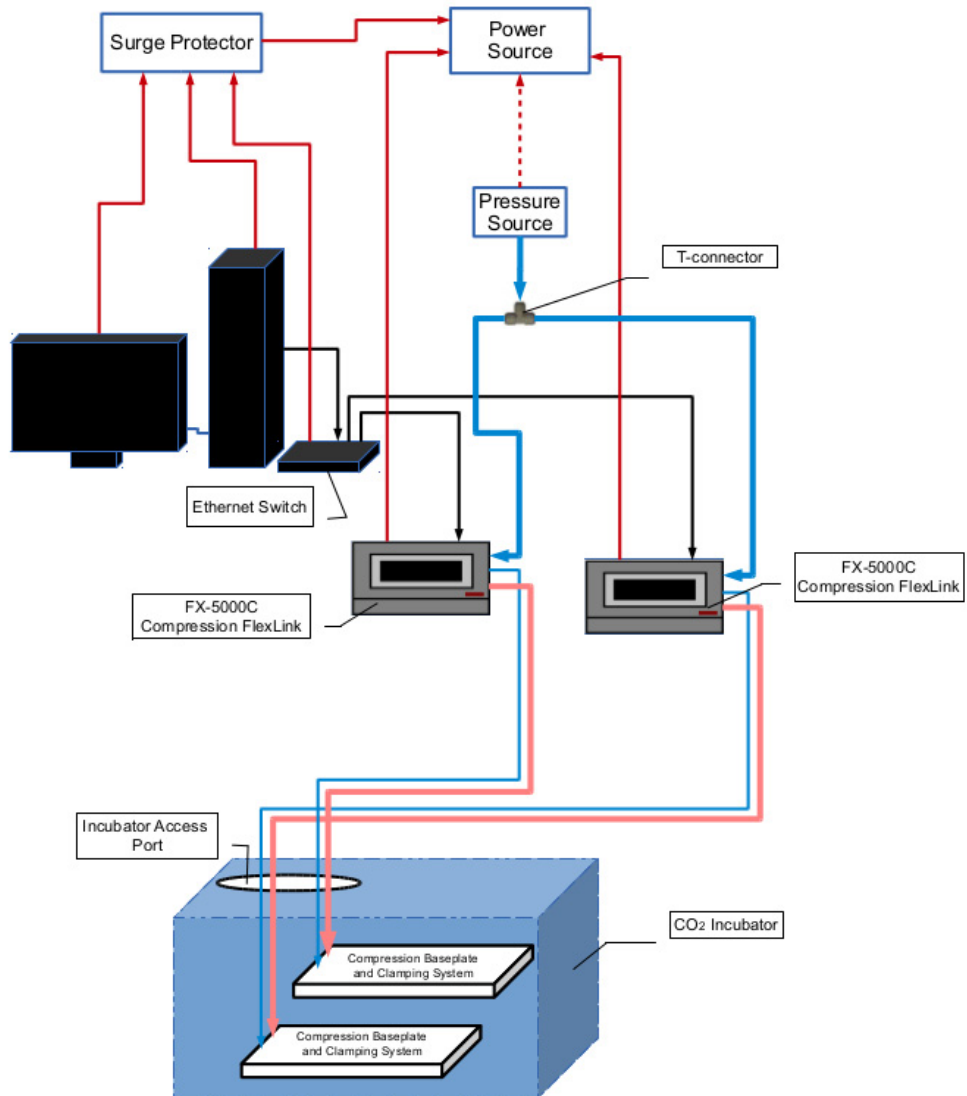
NOTE: The **SYSTEM** tubing can be shared between FlexLinks® with "T" fittings (see Figure 2) as long as the pressure source is capable of running two or more FlexLinks® with the programmed regimens. Regimens with a combination of high frequencies and high force levels will require a more powerful pressure source. The capability of the pressure source with more than one FlexLink® will need to be tested experimentally with the users' particular setup.

FlexLinks® must be placed side-by-side during use.

To connect additional FlexLink®(s) to the computer, connect the Ethernet cable from each FlexLink® to an Ethernet hub. Then, connect the hub to the Ethernet port on the back of the computer using the Ethernet communications cable provided (see Figure 2). The LCD on the front of the FlexLink® will display the number (#1-4) that the FX5K™ Compression FlexLink® has been assigned at the time of production.

NOTE: The numbering of each FX5K™ FlexLink® will not depend on what order it appears in the connection chain, but according to the configuration of each FlexLink® as "FlexLink #1, FlexLink #2...etc" during production.

When powering up the FlexLink®(s) and computer, turn the FlexLink®(s) ON before the computer. To use a particular FlexLink®, select the appropriate FlexLink® number (#1, 2, 3, or 4) from the *Controllers* menu in the FX-5000™ software. Assign, download, and run regimens just as would be done when using one Compression FlexLink®.

Cable and Tubing Legend

Power Cable

Ethernet Cable

(Optional) Dedicated Compressor
Power Cable

Flex In
(1/4" O.D. Blue Tubing)

Flex Out
(3/8" O.D. Clear Tubing)

SYSTEM
(3/8" O.D. Blue Tubing)

Note:

The *Incubator Access Port* may be located on the top, rear or side of the incubator depending on the manufacturer, make and model.

Figure 2. *Setup using two Compression FlexLinks® sharing a single pressure source.*

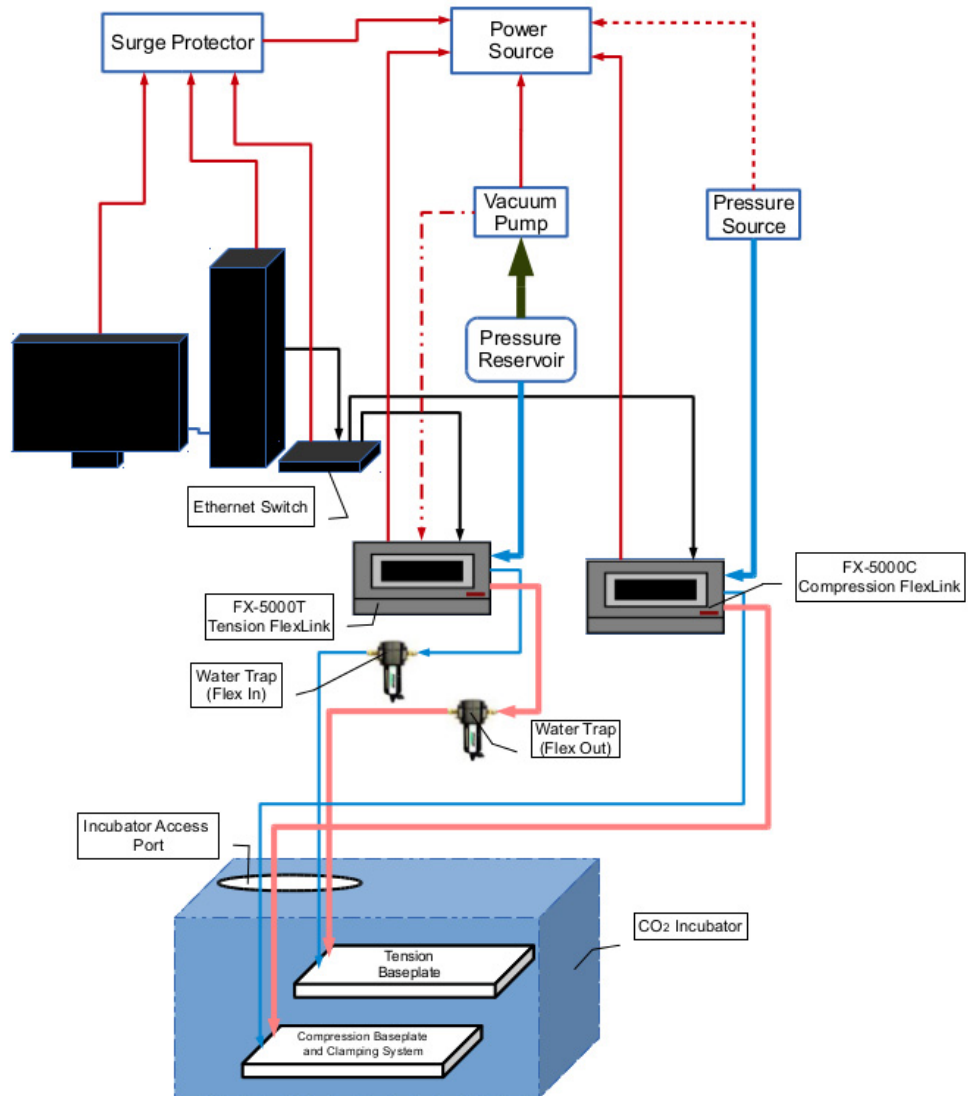## When using additional Compression FlexLinks® with a Tension System (or vice versa)...

All tubing connections made to the first FlexLink® should be made exactly the same with any additional FlexLinks®. Each FlexLink® will have its own separate *FLEX IN* and *FLEX OUT* tubing for each baseplate. The *SYSTEM* tubing will be connected to the vacuum source for the Tension unit and the compressed air source for the Compression unit (see Figure 3).

FlexLinks® must be placed side-by-side during use.

To connect additional FlexLink®(s) to the computer, connect the Ethernet cable from each FlexLink® to an Ethernet hub. Then, connect the hub to the Ethernet port on the back of the computer using the Ethernet communications cable provided (see Figure 3). The LCD on the front of the FlexLink® will display the number (#1-4) that the FX5K™ Tension or Compression FlexLink® has been assigned at the time of production.

NOTE: The numbering of each FX5K™ FlexLink® will not depend on what order it appears in the connection chain, but according to the configuration of each FlexLink® as "FlexLink #1, FlexLink #2...etc" during production.

When powering up the FlexLink®(s) and computer, turn the FlexLink®(s) ON before the computer. To use a particular FlexLink®, select the appropriate FlexLink® number (#1, 2, 3, or 4) from the *Controllers* menu in the FX-5000™ software. Assign, download, and run regimens just as would be done when using one FlexLink®.

Figure 3. *Setup using one Tension FlexLink® and one Compression FlexLink®.*