VERSION 1.1

AUGUST 4, 2017

PowerStep® Body Weight Support (BWS) System

Quick Start Guide

POWERNEURORECOVERY.COM

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Introduction

Welcome to the Quick Start Guide for the Power NeuroRecovery PowerStep Body-Weight Support System. The PowerStep is intended to allow patients and/or clients to practice stepping, standing, balance, postural tasks, and sit-to-stand maneuvers using manual assistance and body-weight support on a treadmill to promote neuromuscular activity for standing, walking and posture and increase muscular endurance and cardiovascular and aerobic capacity.

A minimum of 2 people are required to operate the unit at all times; one for controlling the computer and another to provide manual stimulation to the client. The 8'10" PowerStep unit accommodates client heights 3'4" to 6'4", while the 9'10" PowerStep unit accommodates client heights 3'10" to 6'10".

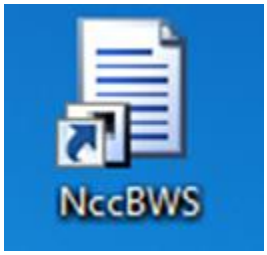
Caution: Do not place water near the unit as it can irrevocably damage the electrical components of the system.

Getting Started

Turning on the Overall BWS System

1. Turn on the air compressor.

2. Turn on the computer and open the NCC BWS system software.



3. Click the on/off button to turn the software on.

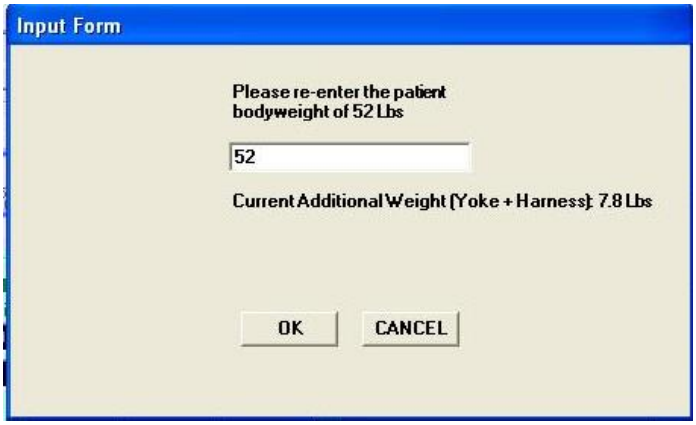
Creating a New Configuration

1. Click the *"no"* button when the software asks you if you want to load a personal configuration.

2. Enter the patients personal "ID".

3. Enter the patient's exact weight *plus* the weight of the harness and the yoke combined.

4. Reenter the patient's weight, on the next pop up screen. In this screen, you will see the yoke and harness weight is accounted for.

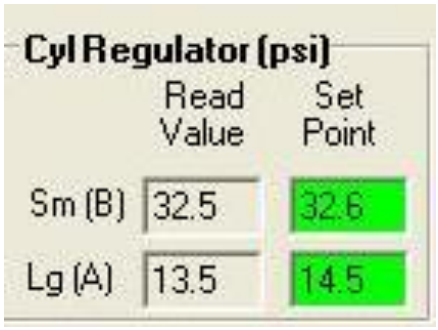


5. Then the pressure settings screen will pop up.

6. Then move Pressure Gauge A and B to their appropriate settings.

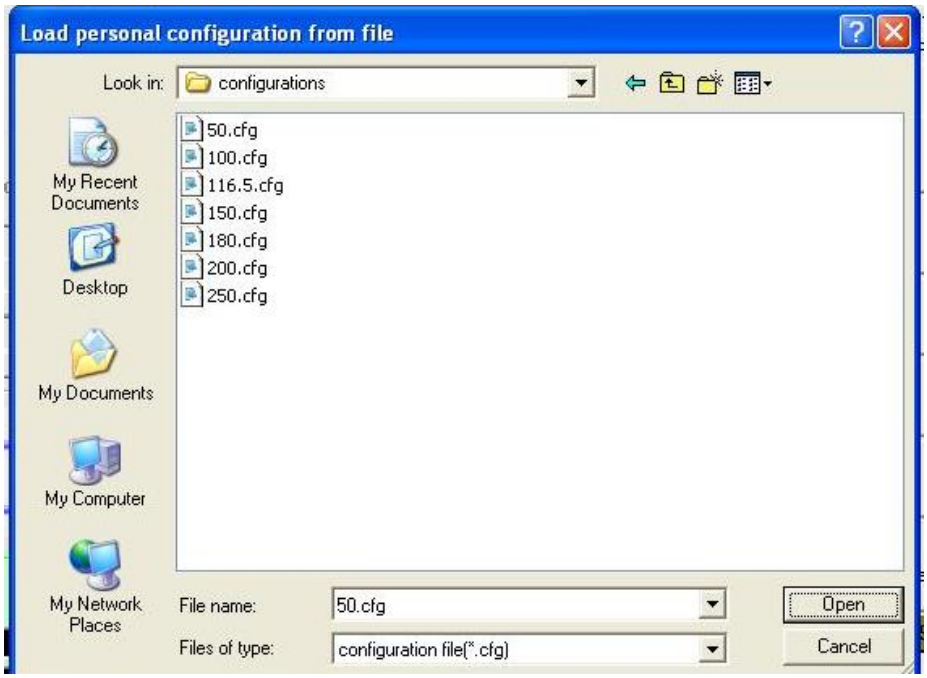
Pressure Gauge B Pressure Gauge A

7. Once you move the pressure gauges to their appropriate values, check the Cylinder Regulator values to see if they match up with the values on the pressure gauges (in psi), and see if the values are green.



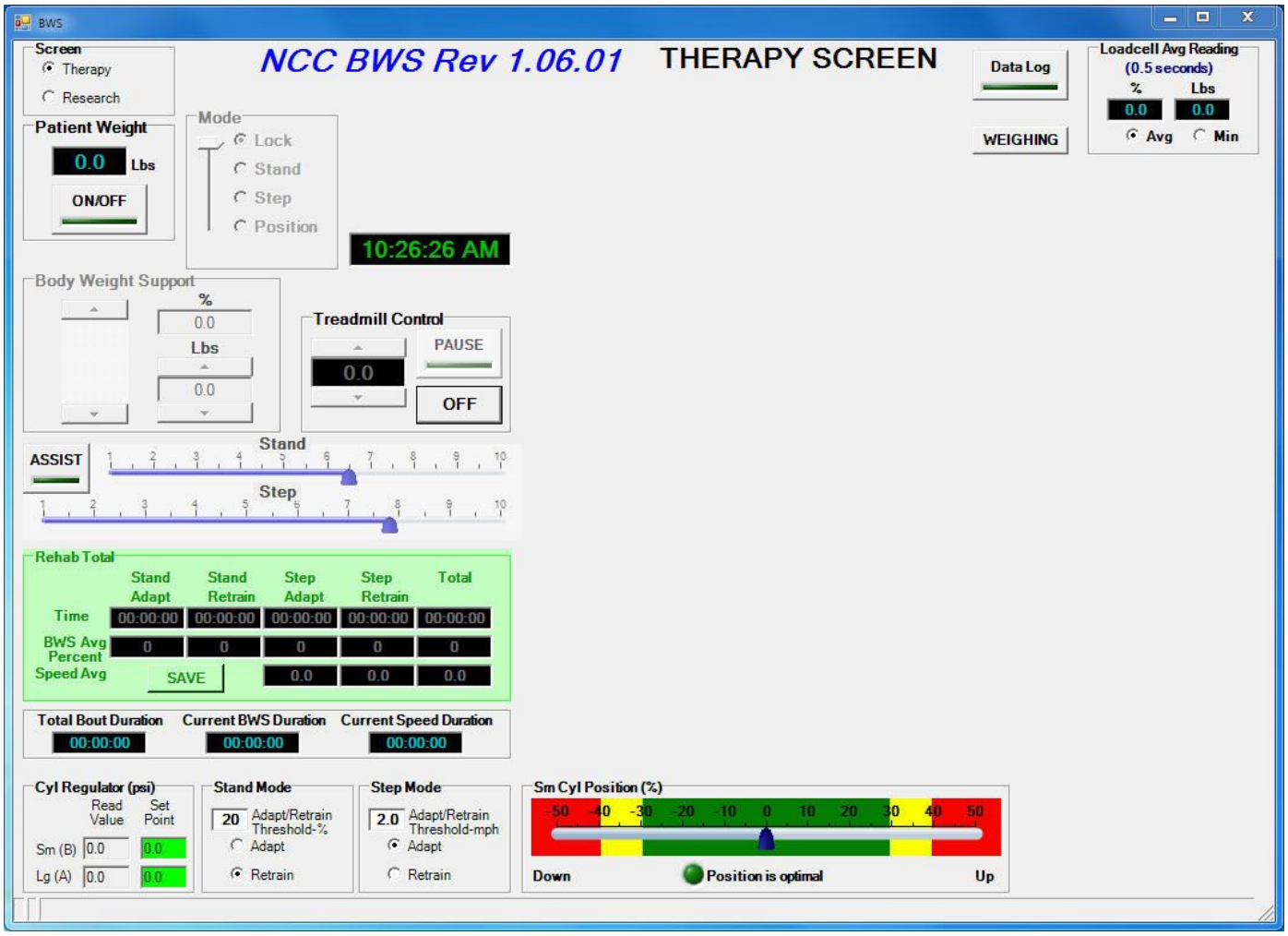
Loading a Personal Configuration

1. Click "yes" when prompted to create/load a configuration (Step 1 in the previous section) and then choose the specific file you are looking for.



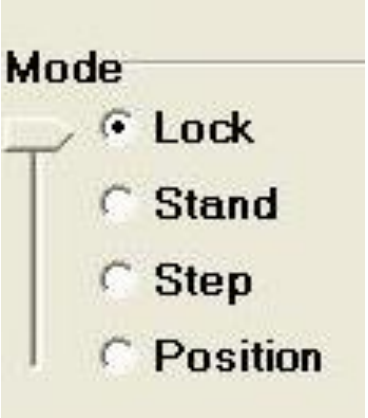
2. It will verify the body weight, click *"yes"* if the body weight is confirmed.
3. Then the pressure window will pop up (Step 5 in the previous section).
4. Move Pressure Gauge A and B to their appropriate settings (Step 6 in the previous section).

Getting to know the Active Home Screen



Note: Only use the therapy screen setting in the top-left box. The research setting is intended to calibrate the machine and is not needed for normal operation after your unit is installed.

Mode Settings Panel

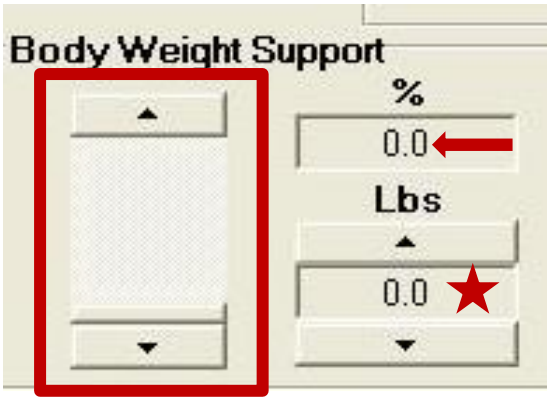


1. "Lock" means the treadmill system is locked into place. The plumb line inside of the treadmill will not move when this is in place.
2. "Stand" mode enables you to load the patient with body support.
    a. This mode is optimal for adjusting the harness, and the yoke. It's also optimal for trainer rotation and upper extremity activities.
3. "Step" mode enables the treadmill speed control. When selecting step, the small cylinder position (%) will automatically reposition before registering step.
4. "Position" mode reinstates optimal position of the patient on the treadmill in reference to their kinematics.

Real Time Window Panel

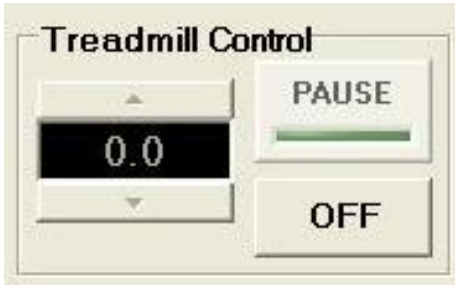
This panel displays the real time of the training session.

Weight Support Panel



1. Adjust the body weight support by using the large column on the left. Increase or decrease the support in increments of one by using the arrows outlined in the red box. **Dragging the bar up or down will stress the BWS. Dragging the bar is not recommended.**
2. The percent reading (red arrow in the above figure) will give you the patient's support of their total body weight. The percentage will adjust accordingly.
3. The 'Lbs' reading (red star in the above figure) gives you how much poundage of support the treadmill is giving the patient.

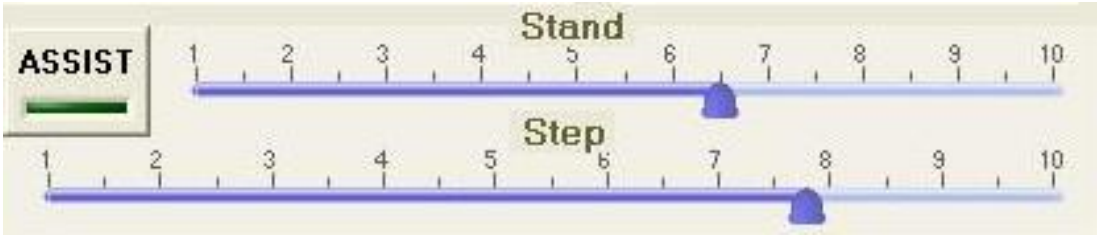
Treadmill Control Panel



1. *Increase/decrease* the treadmill speed with the up and down arrows. When in *"Step"* mode. **Control the speed of the BWS system by using this speed controller. Do not use the controller that correlates with the actual treadmill unit.**

2. *"Pause"* button allows the treadmill to decelerate to a stop when activated/pushed. It will resume the speed of the previous bout.
3. *"Off"* button will stop the treadmill immediately and reset the speed value.
    a. The Emergency Stop Button will stop the speed control *immediately* and puts the treadmill in *"Lock"* mode.
    b. Press down on the red button to activate the Emergency Stop Button.

Assist Panel



1. *"Assist"* button allows the assist function to turn on/off.
2. Stand Assist: Increasing stand assist decreases the margin of movement while in *"Stand"* mode.
3. Step Assist: Increasing step assist will decrease the margin of stabilization while in *"Step"* mode.

Rehab Total Panel

The rehab totals populate your total parameters for the training session.

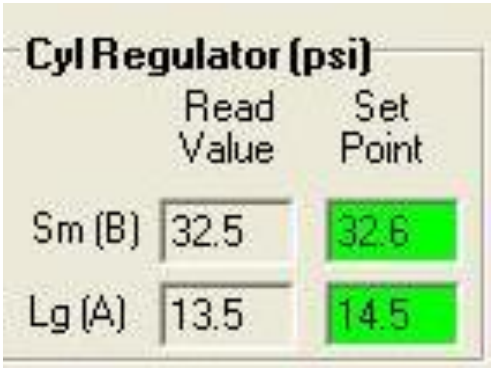
1. *Time:* Populates when parameters are within the designated threshold.
2. *BWS Average Percent:* Will be the average body weight at that designated threshold.
3. *Speed Average:* Will be the average speed at that designated threshold.
4. *Stand Adapt and Stand Retrain:* These will populate while in *"Stand"* mode. The threshold between the two can be adjusted in the *"Stand"* mode panel.
5. *Step Adapt and Step Retrain*: These will populate while in *"Step"* mode. The threshold between the two can be adjusted in the *"Step"* mode panel.
6. *Total*: This is a total of all four fields.

Duration Panel

1. *Total Bout Duration* is the total time at a specific speed without stopping, pausing, or without taking breaks.
2. *Current BWS Duration* changes every time the BWS is decreased or increased.

3. *Current Speed Duration* is the total time you are training at a particular speed. This resets every time the speed is changed.

Cylinder Regulator (psi) Panel



1. *Small (B) Cylinder and Large (A) Cylinder "Read" Valves* are the air pressure values (in psi) that are optimal to run the Body Weight Support.
2. *Small (B) Cylinder and Large (A) Cylinder "Set Point" Values* – are the air pressure (in psi) readings that are set at the beginning of the training sessions.
    a. These values are reached by turning the pressure gauges on the treadmill at the beginning of the training session.
3. The "*Set Point"* values and the *"Read"* values should be similar to each other.
    a. The *"set point"* windows should stay green during an optimal training session however, depending on the weight of the patient both the windows could go between green and yellow.
4. The yellow color indicates a *caution* that the regulators are no longer in optimal support, but the BWS will still work. The speed is not affected by the regulator colors.

Stand Mode Panel

1. The *adapt/retrain threshold %* for "stand" mode can be adjusted based on the patient's kinematics.
    a. Note that the value in the window reflects the body weight percent parameter for the selection below it. (Either Adapt or Retrain).

Step Mode Panel

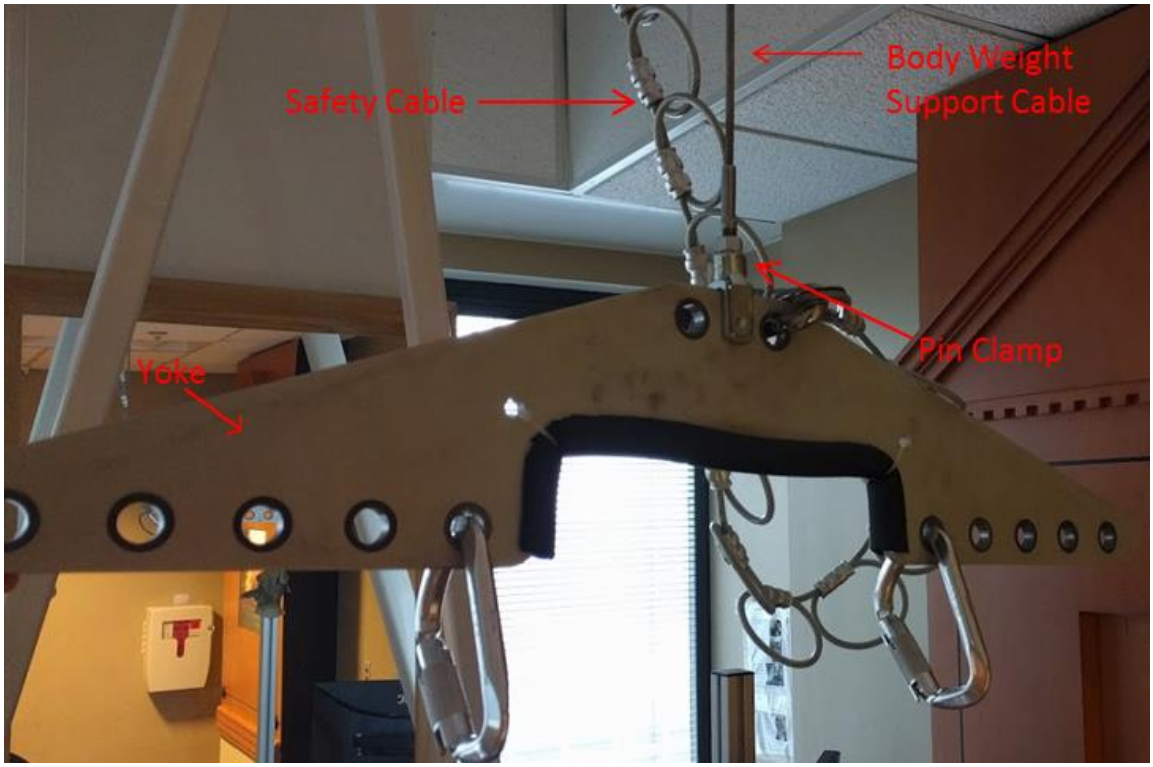
1. The *adapt/retrain threshold %* for "step" mode can be adjusted based on the patient's kinematics.
    a. Note that the value in the window reflects the speed percent parameter for the selection below it. (Either Adapt or Retrain).

Small Cylinder Position (%) Panel

2. When you are in “stand” mode the small cylinder *does not* change.
3. When you are in “step” mode, the small cylinder reading *does* fluctuate based on the movement of the plumb and the yoke.
    a. The optimal range for the small cylinder is within the green (-30 to 30).
    b. The yellow color indicates less then optimal body weight support. (-30 to -40) or (30 to 40). This can be alleviated by improving kinematics.
    c. Once the small cylinder goes into the red range (-40 to -50) or (40 to 50) the system will immediately go into “lock” mode.
4. To get back into “step” mode if the treadmill locks up, click “position” within the “mode” panel preferable in stance phase of the step cycle.
    a. **Remember** to notify the step team before repositioning.

Yoke Removal

1. Current yoke set up should be similar to this current setup.



2. To remove the yoke, the treadmill must be in stand and the pin clamp must be detached from the yoke and the Body Weight Support Cable (BWS).

a. When placing the treadmill into stand mode, load a known configuration and do not turn on the body weight support. This should read 0%.

b. You should now be able to pull down on the BWS cable in order to take the pin clamp off.

c. When removing the pin clamp from both the BWS cable and the yoke, make sure to hold onto the BWS cable. The yoke weight will no longer be on the cable; therefore, the cable will slowly retract into the tower.

3. Hold the yoke and gently move the clamp part on the pin clamp away from the yoke.

4. Once the pin clamp is detached from the BWS cable, then slowly push the pin part of the pin clamp out so that the yoke detaches from the BWS cable.

5. The BWS cable will now be completely detached from the yoke.

6. To reattach the yoke to the BWS cable, push the pin part of the pin clamp back into the middle whole of the yoke and the BWS cable hole. Then clamp the pin clamp back onto the BWS cable.

Preventative Maintenance Activities

Annual servicing by a Power NeuroRecovery representative is required to maintain your PowerStep unit. Service plans are available through our contact information below.

Regular preventative maintenance performed by the end-user is also recommended to ensure optimal device performance. Before performing any maintenance activities, ensure that the treadmill, air compressor, and computer are de-energized and shut down unless otherwise instructed.

Maintenance Requirements		
Maintenance Requirements	**Required Frequency**	**Log Sheet Reference Number**
Visually inspect the ramp pins that connect the wheelchair ramp to the rear platform. Confirm the pins are fully engaged and level with the surface of the ramp.	*Weekly*	*1*
Visually inspect unit cable and the connection to the yoke. Ensure connection is not loose. Check cable for any tears, fraying, etc and contact Power Neurorecovery for a replacement if needed.	*Weekly*	*2*
Drain water reservoir on the air compressor. Refer to the provided Junair manual or http://www.jun-air.com/product_detail.aspx?ProductID=578&ProductTypeID=49 for further details.	*Weekly*	*3*
Plug in and engage the air compressor. Check cut-out and cut-in pressures on the front of the air compressor. These should be 120 psi and 140 psi respectively. If needed, adjust these as described in the provided manual or refer to http://www.jun-air.com/product_detail.aspx?ProductID=578&ProductTypeID=49 for further details.	*Weekly*	*4*
Drain the supply line filters on the pneumatics panel inside the PowerStep tower. Open the exterior panel by unscrewing the secured bolts. Drain the filters by removing the stops at their base and collecting the runoff water. Refer to figures 1 and 2.	*Monthly*	*5*
Visually inspect the connections on the large cylinder inside the PowerStep tower. Remove the rear access panel of the tower. Confirm no connections to the large cylinder and pulley are	*Weekly*	*6*

loose and the cable has no signs of wear, fraying, etc. Refer to figure 3.		
Lubricate treadmill belt. Follow instructions as described in the provided Biodex RTM 600 manual or through the manual available at http://www.biodex.com/physical-medicine/products/treadmills/rtm600. The recommended lubricant is Biodex SlipCoat, and a complimentary bottle was provided. Contact Power Neurorecovery for a replacement if needed.	*Monthly*	*7*

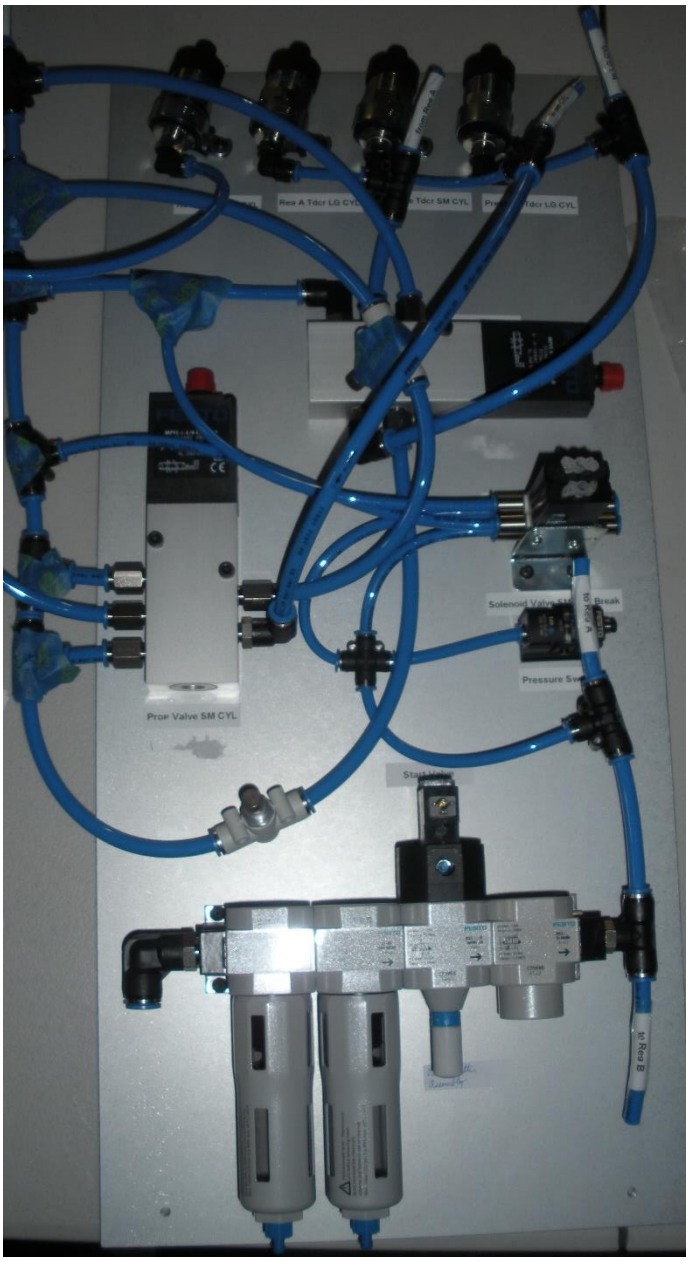


Figure 1: Pneumatics Panel Assembly

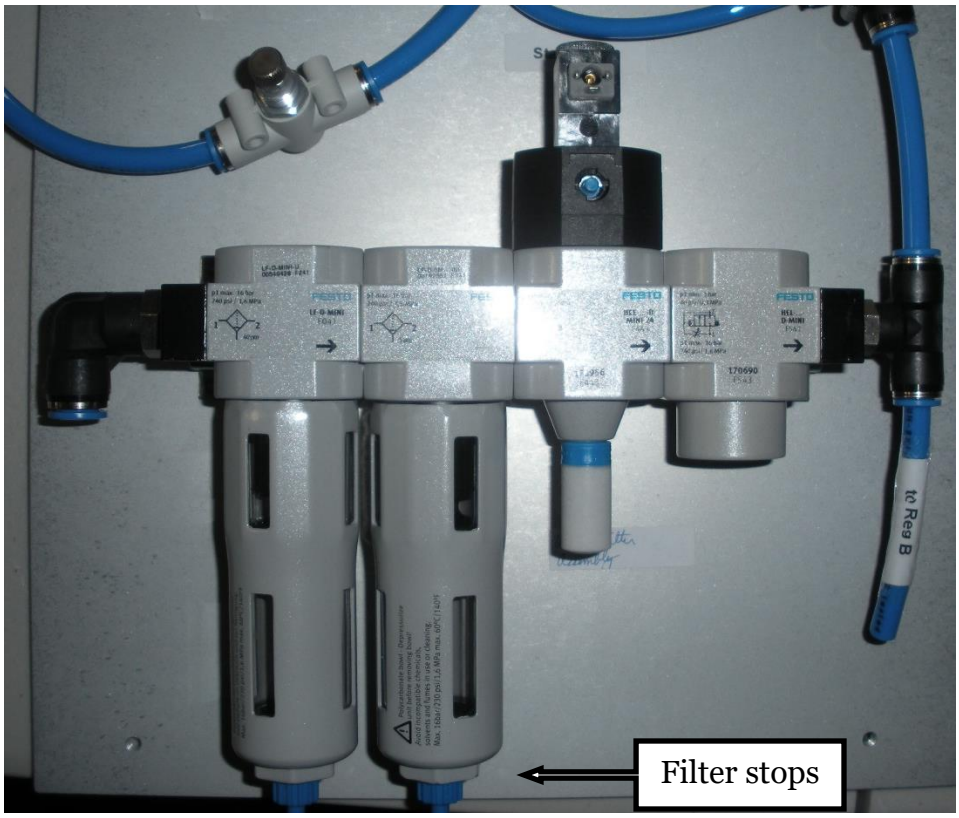


Figure 2: Filters and stops used for drainage

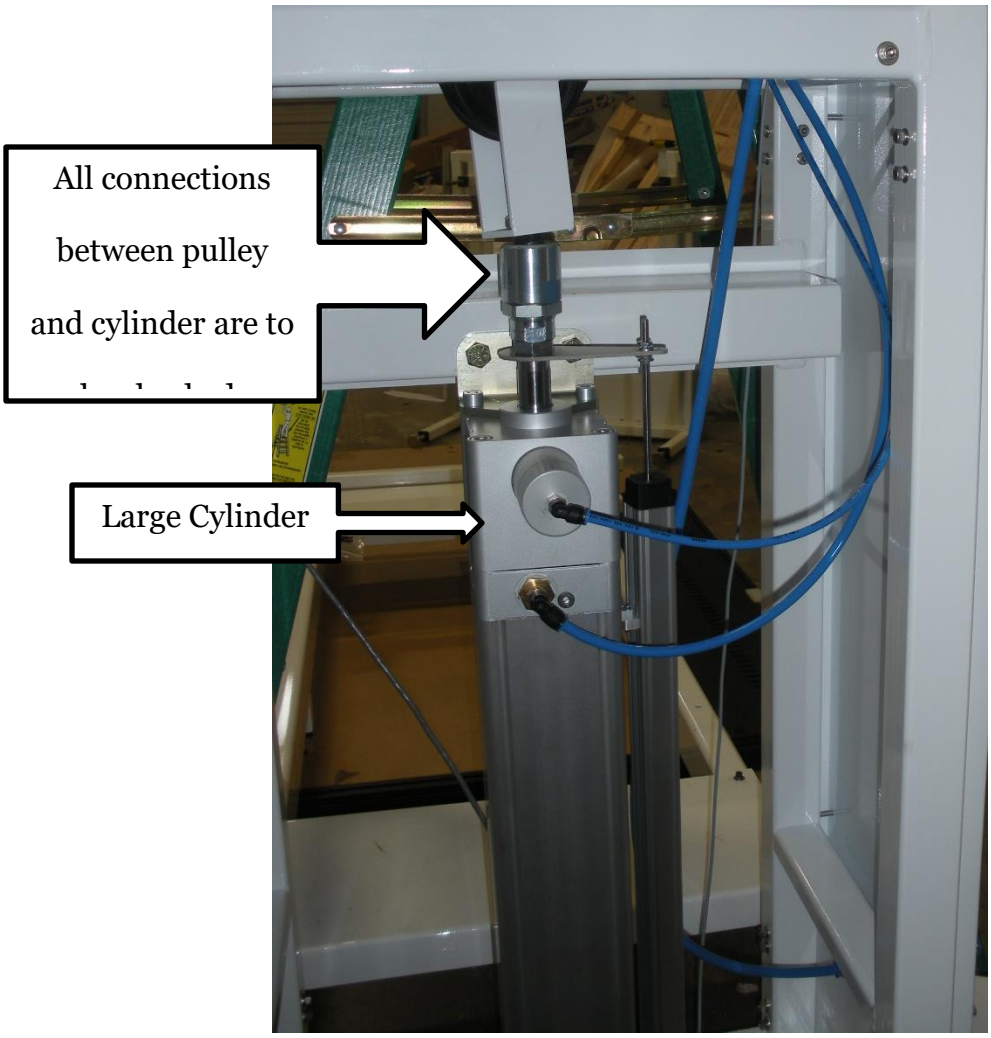


Figure 3: Rear access panel removed revealing large cylinder

Maintenance Log Sheet			
Log Sheet Reference Number	**Actions Performed, Materials Used**	**Date Performed**	**Initials**

