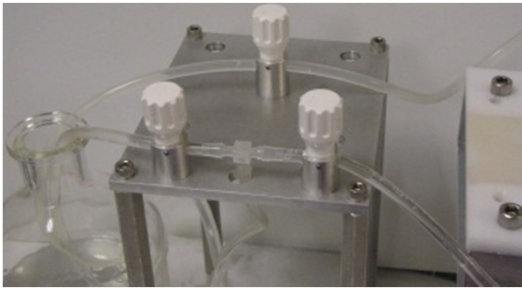
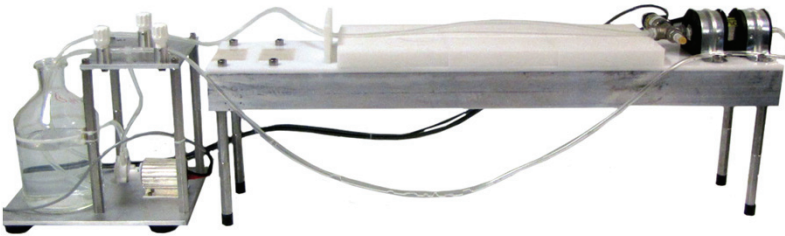


Simulating venous and arterial flow

Summary

Development of products and skills involving the circulatory system is extremely challenging in the absence of a realistic model system. While several visually and tactilely accurate models are available, none of these systems can produce the physiologically relevant flow and pressure required for accurate evaluation of biomedical products and realistic phlebotomist training. The CPG venous test bed provides an accurate physiological model for test and development of phlebotomy tools and procedures. Such a system also provides a simple training platform for medical staff.

The CPG Vein simulator



Description

The simulated vein bed creates a physiologically relevant venous flow through a blood-safe, self-sealing vein segment. Flow-rate and pressure are controlled through custom software that allows high speed recording of data from a range of standard and optional external sensors.

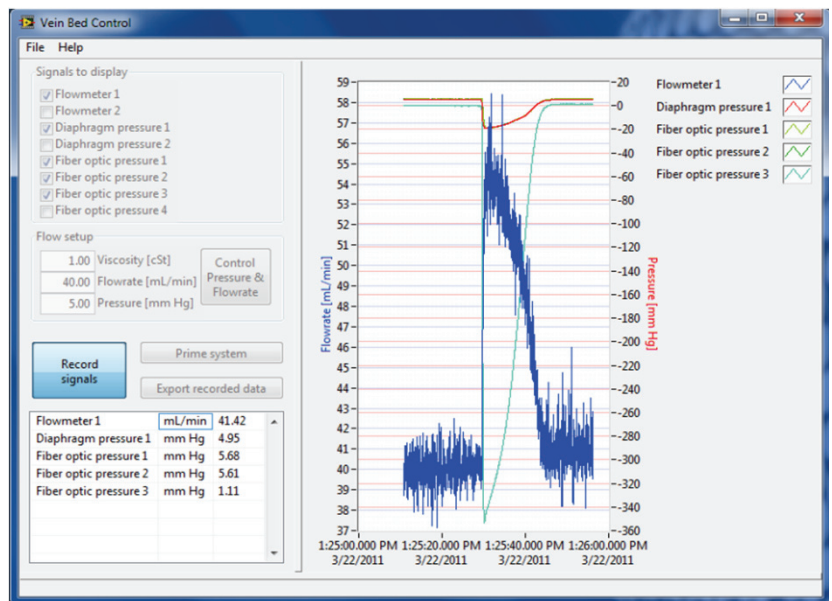
The system can be quickly configured to generate commonly encountered flow-rate and pressure conditions. Once flow conditions have been reached, any changes to these parameters are monitored to investigate the effect of intravenous devices or phlebotomist action on venous flow. Introduction of a needle, or vacuum drawing of blood can generate vein collapse and backflow, and it is important to understand how the procedure impacts these properties in a simple test platform.

Specifications

Specification	Value
Flowrate [mL/min]	10 - 120
Pressure [mm Hg]	Control: 0-20 Acquire: (-700) – 300
Viscosity [cSt]	1 - 40

Markets

- Phlebotomist training
- Phlebotomy product development
- Intravenous product development



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Cambridge Polymer Group, Inc. is a contract research laboratory specializing in materials. We partner with our clients to solve problems utilizing our multi-disciplinary research team and full service laboratory.

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- **Design prototypes for proof-of-concept studies**
- **Create and execute experimental design**
- **Validate and verify manufacturing processes**
- **Perform root-cause analysis in product failures**

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