Heart Valve Testing
Interface Mini™

Industry: Medical and Healthcare

Summary

Customer Challenge

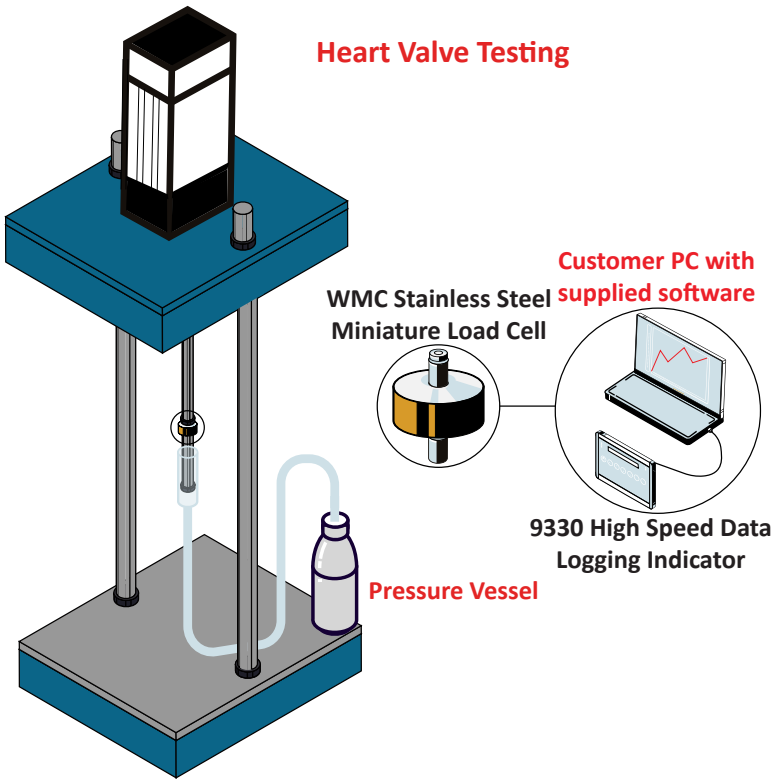
Manufacturers of TAVR (Transcatheter Aortic Valve Replacement) heart valves must ensure their devices can withstand extreme and repeated blood pressure conditions without failure. During durability and burst testing, precise force measurement is required to accurately simulate real-world cardiac pressures. The challenge is integrating a highly accurate, compact load cell into a linear actuator and syringe piston system to validate applied pressure while maintaining repeatability and reliability in a controlled lab environment.

Interface Solution

Interface's WMC Stainless Steel Miniature Load Cell, installed in-line between the linear actuator and syringe piston. As the actuator applies force, the WMC measures the exact load transmitted to the piston, which pumps fluid into a pressure vessel containing the test valve. A check valve controls fluid direction, allowing the system to reach and sustain burst pressures while cycling the valve open and closed. Measurements can be captured using the 9330 Battery Powered High Speed Data Logging Indicator through an SD card, or another laptop directly.

Results

Using the WMC Miniature Load Cell, the customer achieved accurate force validation for pressure and burst testing, ensuring consistent and reliable valve performance data.



Materials

- WMC Stainless Steel Miniature Load Cell
- 9330 Battery Powered High-Speed Data Logging Indicator with supplied BlueDAQ software
- Customer computer

How It Works

1. The WMC Miniature Load Cell is mounted in-line between the linear actuator and syringe piston to measure the force applied during testing.
2. As the actuator pushes the piston, fluid is forced into a pressure vessel containing the heart valve, generating the required test pressure while the load cell captures precise force data.
3. The load feedback is captured using the 9330 Battery Powered High Speed Data Logging Indicator through an SD card, or a another laptop directly with supplied BlueDAQ software. The collected force measurements are used to validate pressure accuracy, burst performance, and durability of the valve during repeated test cycles.

interface
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