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Engine Oil Filter Test Stand

Client: Fleenor Manufacturing, Pella, Iowa

Problem Statement

- For the current test stand, the cleaning time is too long
- There is no way to run different types of filters
- These problems negates them from collecting more data to compare various filters in various sizes

Objectives

- Add filters in series to the cleaning circuit to cut the cleaning time by 50%
- Gain the ability to test multiple filter types

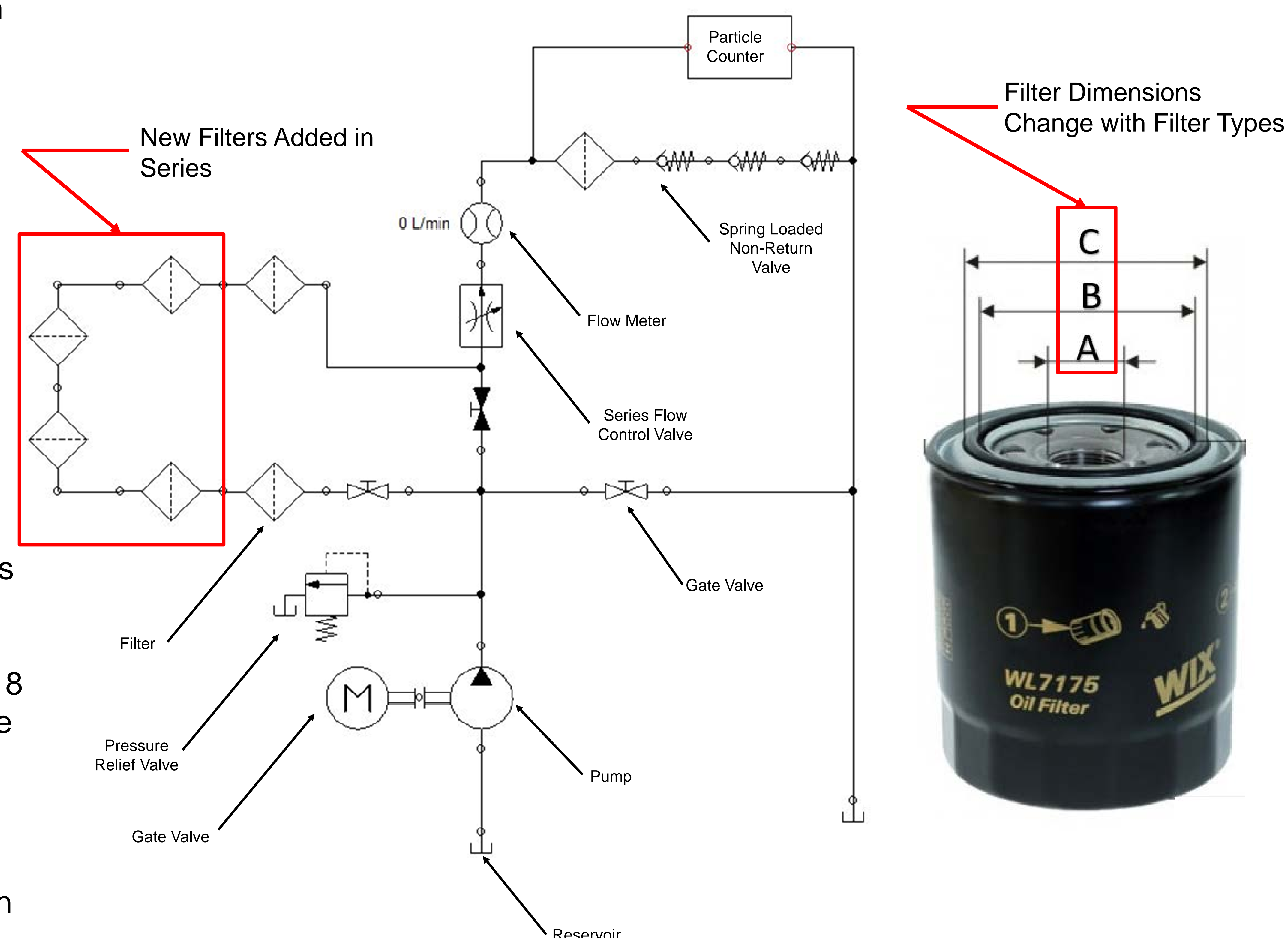
Constraints

- Our budget will vary upon our clients final decision.
- Implement the changes to the test stand and verify them by March 2018
- The changes must improve test time and fit multiple sized filters

Scope

- Improve the current test stand to run tests faster and provide a way to interchange filters.
- We will not be designing a new test stand.

Filter Test Circuit & Filter



Methods

- Develop adapter in Inventor
- Develop support structures in Inventor
- Use Automation Studios to create graphical representations of our systems
- Use Plus One in coordination with Excel for data collection

Proposed Solutions

- Additional filters in series
- Create or purchase an adapter plate

Major Outcomes

- Faster cleaning circuit
- An adapter plate
- Verify new circuit and adapter plate
- Final Report
- Improved testing time
- Interchangeability of filters

Benefit to Client

- Positive exposure for our clients company
- Industry will understand how to build a better filter
- Better filters can lead to a longer motor life.