CASE STUDY

SPECIALTY JUICE MANUFACTURING

OBJECTIVE

Design a filtration system that efficiently removes fruit pulp from juice while meeting the specified flow rate and volume requirements.

EXISTING

The customer was using a simple conical kitchen strainer, relying on gravity (manual pouring) to pass bulk juice through the coarse mesh.

THE PLAN

1 Analyze the Application

The existing process was highly manual and the strainer required frequent cleaning. The flow rate was limited by how quickly the operator could transfer juice from one drum to another. Additionally, the open system posed a risk of airborne contaminants entering the raw juice. Lastly, a significant amount of pulp was passing through the screen, making the final product undesirable.

2 Determine the Requirements

Flow Rate: 25 GPM to transfer raw juice to blending tank
Particle Retention: TBD – Tight enough to capture pulp without excessively restricting flow.
Special Requirements: FDA Compliant Sanitary Filter Housings & Filters.

3 Select the Proper Filter Media

CC Day provided 200, 400, 600, and 800 micron nylon mesh filter bags for evaluation. Through gravity-fed testing, the customer determined that the **600 MICRON** mesh was sufficient for all incoming juices.

4 Calculate the Size

At the current production level, a #1 Size filter housing and bag would have been adequate. Given the company's rapid growth, we recommended upgrading to at **#2 SIZE HOUSING** to provide additional capacity as production volume increases.

CONCLUSION

The customer installed a Sanitary #2 size bag filter housing paired with our FDA-rated 600-micron Nylon mesh filter bags. A small centrifugal pump was incorporated to create a cleaner, more efficient transfer system.

Following installation, the bottleneck was eliminated, resulting in nearly a 50% increase in production output.
This customer has continued to grow and has since added multiple filter housings to support simultaneous production lines.

Contact C.C. Day Filtration to learn how we bring the right solution to every application!

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