

Proven Performance in a Demanding Polycarbonate Application

APPLICATION

Filter press application for a leading polycarbonate manufacturer.

CHALLENGE

This application involved multiple valves (NPS 3, 4, 6 | DN 80, 100, 150) installed on a filter press handling primarily water, along with sludge cake, and operating under vacuum conditions at times. While the media itself was not highly corrosive, the high cycle frequency and operating temperature created a demanding service for both valves and actuators.

Due to the extremely high cycling rates (every 20 seconds), previous valves and actuators were experiencing recurring failures — requiring frequent replacement. This resulted in excessive downtime and increased maintenance demands. The customer needed a reliable solution capable of withstanding continuous high-cycle operation without becoming a routine maintenance item.

THE SOLUTION

To meet the high-cycle demands, our technical team recommended the Acris® PFA lined butterfly valve paired with the C-Series double-acting pneumatic actuator. Based on positive performance in other areas of the plant, the customer agreed to trial the valve & actuator combination on the filter press application.

To further increase valve life, angle seating was recommended. The Acris® butterfly valve design allows for tight shutoff with the disc positioned 5 degrees off the center of the liner, making it well suited for this operating strategy. By limiting disc travel, long-term wear on the PFA liner would be reduced.

RESULTS

Both the valve and actuator have performed extremely well in the demanding conditions of continuous cycling, elevated temperatures, and intermittent vacuum — delivering reliable and repeatable results including:

- > Consistently achieving **2,365,200 to 3,153,600 valve cycles**. (equal to approximately 1½ to 2 years of service.)
- > Exceeding **6 million actuation cycles** (equal to 4+ years of service.)

The customer has experienced meaningful benefits including:

- > **Extended valve life** in an extremely high-cycling service.
- > **Exceptional actuator longevity**, even under continuous operation.
- > **Reduced maintenance** frequency and improved filter press **availability**.
- > A **proven valve/actuator combination** suitable for demanding filter press applications.



PROCESS CONDITIONS

Industry	Polycarbonate manufacturing
Application	Filter press
Media	Water with sludge cake
Operating Temperature	Normally 180°F, with spikes up to 212°F
Operating Conditions	Vacuum at times
Operation Requirements	24 hours per day, 365 days per year
Cycle Rate	Every 20 seconds
Cycles Required	-1,576,800 (Annual)

BRAY PRODUCT DETAILS

Valve	Acris® PFA lined butterfly valve
Size	NPS 3, 4, 6 DN 80, 100, 150
Pressure	150 psig 10.34 bar
Materials, Modification, or Upgrades	Angle seating
Actuator	C-Series double-acting rack & pinion pneumatic actuator