

CHECK VALVE – SLAM NOISE REDUCTION



PROBLEM

A NSW regional water authority had an issue with noise associated with check valves slamming in a sewage wet well close to a residential area. The issue became so significant that residents engaged local media and political members about the issue to find a resolution.

The valves installed were two DN375 traditional lever arm & weight check valves – refer figure 2 below.

It was also acknowledged that ‘ragging’ was a continual problem with routine maintenance where the old valves had rag tails hanging from the disk pivot arm (as per photo) which prevented full closure of both the check valve disc and the downstream isolation valve.

SOLUTION

HMA Flow & Industrial Pty Ltd were approached to help resolve the issue with our range of unrivalled & proven Val-Matic Surgebuster® Check Valves. The Surgebuster® achieves rapid closure through a short disc stroke of 35° and adjustable Disc Accelerator™. The short disc stroke is less than half the typical 80° to 90° stroke of a conventional swing check valve previously installed; this is achieved by placing the valve seat on a 45° angle while maintaining a full flow area equal to the mating pipe (Figures 1).

The Memory-Flex™ disc and Disc Accelerator™ are the only moving parts; there is no packing, mechanical hinges, pivot pins or bearings to wear out or rag. Furthermore, the one-piece precision moulded disc is backed by a 25 year warranty for the flex portion of the disc to give operators confidence in the long term performance of the valve.

RESULT

HMA Flow and Industrial supplied 2-off DN375 Surgebusters’ from our warehouse and upon installation, the valves were put to the test. The results were vastly improved. The slam noise reduced the dB level from 93dB to 68dB instantly – that’s a significant reduction in slam (hazardous noise level down to conversation level). Problem solved.

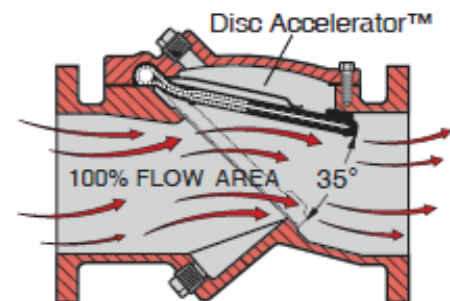


Figure 1. Val-Matic Surgebuster® Valve

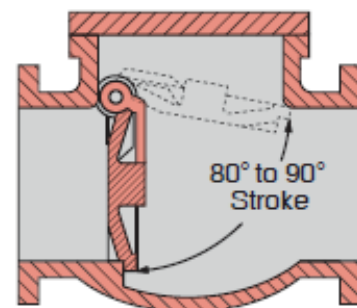


Figure 2. Conventional Swing Check Valve