



3/9/2007

Check Valve Success Story

The Application: Cooling Tower Chilled Water

The Problem: Original swing check valve lasted only a few months

The Solution: 14" DFT GLC® with a light cracking pressure spring

Why DFT?

1. Silent check valves are more stable than swing check valves.
2. Our valve is fully open at the low flow operating point.
3. No waterhammer.



Contact Coyle Supply to find out what DFT can do to improve your systems performance and save you \$\$\$\$\$\$ @ www.coyleSUPPLY.com

The complete story – The chilling tale of the cooling tower.

This installation is at a research center for a major oil producer. They had installed a new chilled water system for their cooling towers. The system consisted of 3 18” lines feeding a common 24” header.

Pump 1, shown in the foreground, is the primary pump which operates continuously during the heating season. It is a variable speed pump which operates between 2100 GPM and 5700 GPM. As the pump runs up into the high range, pump 2 kicks in. You can see the maintenance pump, pump 3, in the background.

Shortly after start up (approximately 2 months), the check valve on pump 1 failed and needed to be repaired. Not long after that, the check valve on pump 2 failed. The end user called in the swing check manufacturer who responded that the valve was mounted too close to the pump ... therefore, there was no warranty.

DFT® was then asked to look at the installation.

A quick analysis revealed that the swing check valve was never fully open and stable. Since it was mounted adjacent to the pump, the swing check disc would flutter in the agitated fluid stream, causing excessive wear and rapid failure of the pin. This is a common problem when variable speed pumps are being used since minimum flow velocities in the 10-12 feet per second range are needed to keep a swing check disc stable in agitated flow.

DFT recommended a 14” **GLC®** with a light cracking pressure spring for the application. The light cracking pressure spring allows the valve to open fully in a low flow condition (as low as 3 feet per second). When the valve is fully open, the disc does not oscillate in the turbulence, and wear does not occur.

After replacing the valve on pump 2, the end user reported that the **DFT Silent Check** has operated flawlessly since installation. As you can see, they subsequently replaced the swing check on pump 1 with another **DFT Silent Check**. They are planning to replace the swing check on pump 3 when it fails.

The moral of the story:

Always specify DFT Silent Check Valves when using a variable speed pump.