

Water Stories

The legendary Duke Waters pokes hole in big bubble

It's not often that you run into a valve problem on the 17th hole of the Blue Monster at Doral. But that's what happened one day around dusk when Jim Wickman and yours truly were trying to squeeze in 18 holes before dark. (Jim and I ran an engineering consulting firm many years ago. He's still at it but I am more of the semi-retired freelance type. I work whenever it suits me). Anyway, at 7:45 PM with our shadow as long as a freight train, we saw the sprinklers pop up and ruin our game. Oh well, at five over at the time, I found the sprinklers more interesting than my upcoming 180 yard seven iron approach shot.

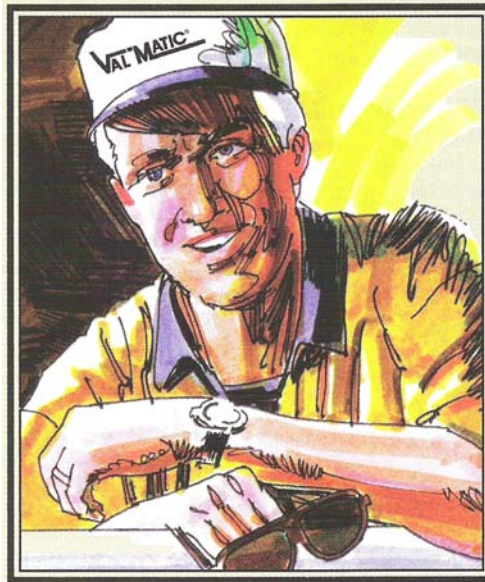
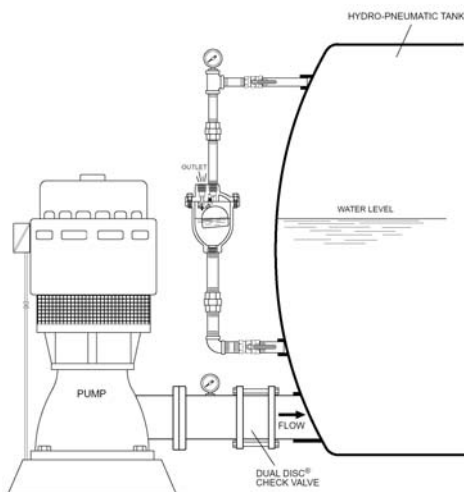
The sprinklers spit and sprayed like a case of cheap champagne on an open fire. They drooped and then fired up again. Jim looked at me and said, 'Boy, do they have a serious air problem in their irrigation system.' Jim happened to know the course superintendent and offered, "You know Duke, I say we make a house call to my old buddy Newton in the morning and solve his water problem.

Then we'll be back out here later with the full VIP treatment." What could I say? I am not one to pass up a VIP round of golf at Doral.



So after a long evening of the three C's (cards, cigars, and cognac), we rose at dawn and headed off in the XK8 with our sticks in tow to see old Newt. We found Newt at the pump house swearing up a blue storm.

He looked up and said, "Well I'll be. If it ain't a couple of angels arriving just in time to stop me from throwing myself into the lake." We exchanged greetings and Newt went on to explain how his pump blows air into the sprinklers ever since he installed a new 4,000



gallon hydro-pneumatic tank. Jim thought that maybe the pressure switch dead band was too tight but I knew that the tank was full or air or "air bound."

I explained to Jim and Newt that his vertical lift pumps send a huge bubble of air into the tank every time they start. The tank is then supposed to automatically maintain an air-over-water mixture to store water under pressure and allow the pumps to cycle less frequently. So Newt said, "OK hot shot. Then why doesn't the water simply squeeze the air in the tank?" I explained that the tank is pressurized with air to the point where air has collected all the way down to the water discharge pipe and since air is lighter than water, it displaces the water out of the tank. Jim piped in and said, "It looks like we need to put a Val-Matic air release valve on top of the tank." I said, "Nice try Jim, but that would discharge all of the air out of the tank and the pump would constantly cycle."

I sketched out a typical layout for a Val-Matic Air Release Valve on the side of a hydro-pneumatic tank with an air equalization pipe above the air valve and explained that the bottom water connection feeds the float chamber and closes the air valve when the water level in the tank is even with the air valve. And when too much air accumulates in the tank, the air release valve opens and discharges air from the top of the tank through the small orifice of the valve.

"You need to remember that air release valves discharge air at full line pressure whenever the water level in the valve body drops. So presto, the air release valve

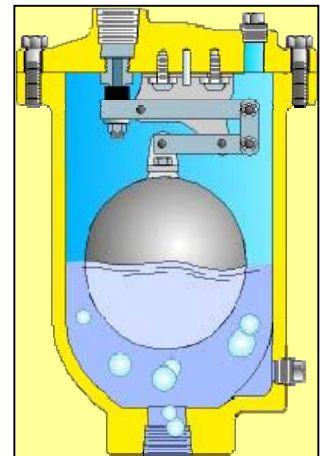
automatically maintains the water level in the tank at the height of the air valve."

Now with a good understanding of the system, Jim and Newt went back to the shop and got an air release valve and a box of pipe and fittings. They made sure that the water pipe below the air release valve was one-inch to match the inlet size of the air valve. They drained the tank and installed the valve while I broke in a new 450 cc titanium driver on the range.

When they were done, Newt just smiled, scribbled a note onto an old scorecard, and sent us up to the first tee as a reward.



Jim and I played 36 that day. But the day was not complete until precisely at 7:45 we saw the sprinklers fire a smooth stream of water onto our fairway. We packed it in and headed back to the beach house for a helping of the three C's.



Air Release Valve
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Val-Matic, 905 Riverside Dr.,
Elmhurst, IL 60126
www.valmatic.com