

PVC Float System Eliminates Wasted Irrigation Water



As float rises with the water level, the vertical cap puts pressure on bushing to seal off a pond inlet pipe.

Jason Sewell, Carbondale, Colo., irrigates his fields with a homemade, on-demand PVC float system he designed for an irrigation pond inlet in order to eliminate excess wastewater.

"We use side rolls and mobile big guns to irrigate our hay fields, and Senninger Wobblers to irrigate our market garden," says Sewell. "The water we use flows from a small lateral ditch through a 15-in. HDPE pipe that drops into the pond.

"In the past, we had run excess water

through the pond to make sure the irrigation pumps would always have water, depending on their demand. The excess water ran out of the pond through an outlet pipe into a nearby hay field, and the constant overflow turned the hay into swamp grass which greatly lowered the feed quality."

He says the on-demand float system drops the water level in the pond a few inches and only allows in the water that he uses in his irrigation system, so that no excess water escapes from the pond. "The system is self regulating, so we're only using the water we need for our irrigation system. Our neighbors are happy because we're not wasting ditch water that they could use on their crops," says Sewell.

The float system is made from about \$250 worth of new 6-in. schedule 40 PVC fittings and consists of 2 parts - a 90-degree elbow with a 6 by 8-in. bushing on the bottom, and an H-shaped float with a 6-in., center-mounted vertical cap. "As the float rises with the water level in the pond, the vertical 6-in. cap puts pressure on the bushing, which seals off the inlet pipe," explains Sewell.

A 6-in. PVC inlet pipe runs from the elbow to the 15-in. HDPE pipe and is attached with a homemade steel cap and a bolt on a PVC flange, in order to adapt the different size pipes to each other.



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"I had to make the float big so that it is buoyant enough to hold back the pressure coming out of the 6-in. pipe," says Sewell. "The level of the incoming water from the ditch is exactly 4 ft. above the 6 by 8-in. bushing. Thus, I calculated that the float had to displace a column of water that was 6 in. wide and 4 ft. high.

"When we ran our first test, the float was rocking back and forth from cavitation, which was wearing out the cap on the float and also wearing out the bushing."

To prevent the cavitation, Sewell mounted a thin steel splash guard on top of the float. "Without the splash guard, water was shooting straight down out of the elbow. It was aerating the water and making it less dense, which caused the float to rock back and forth. The splash guard prevents the rocking motion," notes Sewell.

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Simple Workbench Made From Wire Spool

"I made a simple workbench and tool holder out of a big wooden spool originally used to hold wire or cable," says Carthell Dubberly, Waycross, Ga.

"You can get these spools free from power companies or drainage tile companies that get plastic drain tiles on spools.

"I divided the circumference of the spool

by 12, which is the number of slots I wanted. Then I installed 12-in. boards vertically from top to bottom before installing shelves in the middle.

"I attached 4 heavy-duty 4-in. caster wheels to the bottom of the reel so it's easy to move around. The caster wheels can be locked in place.

"My bench-mount tools - vise, grinder, etc. - are mounted on 2 by 6's cut to size. I clamp them to the top of the reel with C-clamps when needed and remove them when I don't."

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Dubberly installed 12-in. boards vertically from top to bottom on spool, then installed shelves in the middle.

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