

# The Case for Dedicated Pumps

Tanks equipped with their own pumps make better wine using less labor, say convinced winemakers.

Jim Gordon



PHOTOS BY: CECILY RAY FOR PARRISH FAMILY VINEYARD

THE IDEA OF PERMANENTLY attaching a pump to each red wine fermenter in the cellar is a bit of a stretch when first considering it. Why buy multiple pumps when it's easy enough to wheel one pump from tank to tank for pump-overs and cleaning?

Pumps are expensive and aren't needed 24/7, except during fermentation. So why have winemakers all over California, including Chateau Montelena Vineyard in Napa Valley, Bogle Vineyards in Clarksburg and Parrish Family Winery in Paso Robles, invested in dedicated pumps for their tanks?

The winemakers we spoke with on the subject were very clear about the advantages. The main benefit: dedicated pumps help make better wine and require fewer worker hours.

"I just think these things are such labor savers," said David Parrish, owner and winemaker for Parrish Family Vineyard. "They increase the quality of the wine because you can dial things in so much better during fermentation. The foremost thing, is that I can do a lot more pump-overs and space out the timing a lot better over time."

Other advantages include less frequent pump cleaning, automation of tasks, protection against human error, improved worker safety and reduction of hose clutter on the cellar floor.

## Question of Expense

"The price isn't really a disadvantage," said Curtis Phillips, a veteran California winemaker and Wine Business Monthly's senior technical editor. "At its most advantageous, one is using a dozen \$1,000 to \$5,000 pumps to replace a single \$15,000 to \$20,000 positive displacement pump—and that's without having to spend nearly as much labor."

"If you're just trading one Jabsco pump for a dozen, then yeah, maybe you shouldn't be looking at automating. But if you're just using a single Jabsco flexible impeller pump, you're probably too small a winery to see any real advantages in automation anyway."



Jim Gordon, editor at large for Wine Business Monthly, writes and edits articles on grape growing, winemaking and wine marketing. He has been covering wine and the wine business for more than 35 years, notably as the editor of Wines & Vines from 2006 through 2018. A role as contributing editor for Wine Enthusiast magazine began in 2014, in which he reviews California wines and reports on various California wine regions. He was executive director of the annual Symposium for Professional Wine Writers at Meadowood Napa Valley from 2008 to 2015. Dorling Kindersley (DK Books) of London published his first book as editor-in-chief, *Opus Vino*, in 2010, which was chosen as a finalist in the James Beard Awards. In 2002 he was co-creator and managing editor of the long-running Wine Country Living TV series for NBC station KNTV in San Jose/San Francisco.



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A lot of the efficiency in labor provided by dedicated pumps comes from the fact that the cellar crew needs to clean and sanitize a dedicated pump and its hoses only when that tank is done fermenting and is ready to press off. The pump comes into contact with only one wine at a time, so it doesn't require cleaning during a fermentation any more than the tank itself.

But it does result in more pumps to maintain. "The maintenance might be a wash, but with dedicated pumps you're deferring all the pump and hose cleaning and sanitation you have to do several times a day to once every time you drain and press-off a fermenter," Phillips said. "On a fast, three-day ferment tempo, this is exchanging six to nine cleanings for however many fermenters you're running."

## Necessary for Automated Tasks

A dedicated pump is an essential component in a fully automated tank control system. In a December 2017 Wine Business Monthly article, Ted Rieger laid out the reasons: "Many control systems can schedule automated pump-overs—times and frequencies, durations, speed—when individual tanks are designed with dedicated pumps and pump-over systems. This provides significant labor efficiency with greater worker safety, and more reliable and precise processing. Control systems can be designed to integrate temperature control with automated pump-overs and cap irrigations to reduce the temperature stratification that commonly occurs in tanks, particularly during red wine fermentation."



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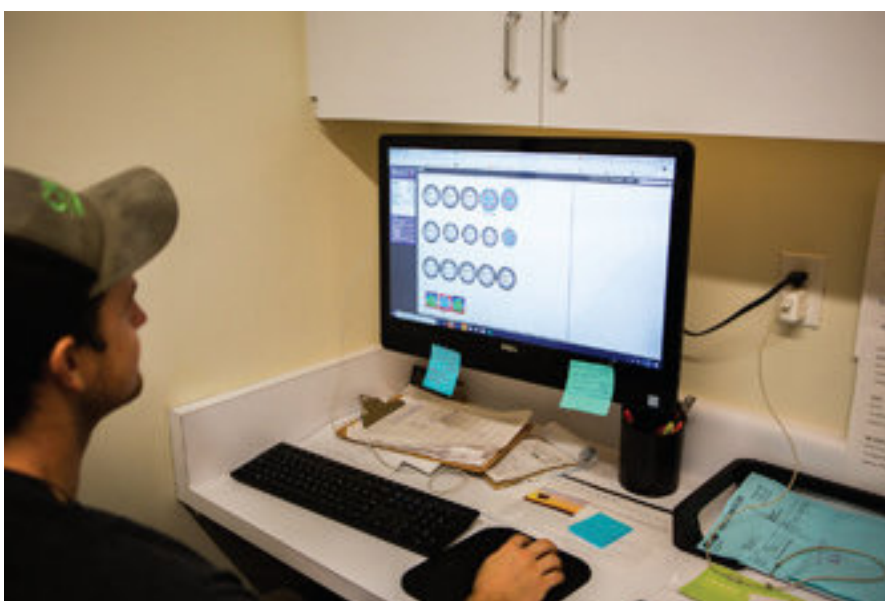
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David Parrish bought 15 tanks set for automated pump-overs, with hot and cold glycol built in. The tanks, which range from 4- to 8-ton capacities, require a 480-volt power supply and can be monitored remotely with a Venturi system.



Parrish Family Vineyard produces 3,500 cases annually, and owner David Parrish and his small crew had been doing pump-overs by hand for 16 years. Then, before the 2017 crush, he bought 15 tanks from Westec Tank & Equipment with dedicated pumps from Burgstahler Machine Works, all set up for automatic pump-overs and with hot and cold glycol built in. The tanks ranged from 4-ton to 8-ton capacities and came from the manufacturer with all the bracketry built in, requiring some coordination between the pump and tank manufacturers to ensure everything would fit.

An electrician attached and set up the designated pumps at the winery; they needed a 480-volt power supply. Parrish also chose to have a Venturi system installed in each one and connected to compressed air to enable automated oxygenation. The control system was connected to each tank so that the various operations can be scheduled and monitored from a computer or mobile device, as well as turned on and off at the tank.

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## The Case for Dedicated Pumps

### Programmed for Pump-overs

"I had maybe 60 to 70 pump-overs in the last week as we finished fermenting," Parrish said regarding the 2019 harvest. He emphasized that during fermentations, especially early in the process when the yeast has just begun multiplying, the time between pump-overs and the volume of each are critical. "But now I can really dial them in. It's a fantastic way to do a lot of pump-overs," he said.

He programs the pump-overs based on the turnover percentage in the tank. Knowing the gallons-per-minute rate of the pumps and the volume of his tanks, he supplemented the charts that came with the equipment to show the minutes needed in each tank for a 100 percent pump-over and what he calls the half and quarter pump-overs. He typically uses 50 percent of the pumps' maximum speed, sometimes 30 percent.



"Before, I would never do four pump-overs in a day, but now I can do that, especially early in the fermentation when it's most crucial," Parrish said, noting he likes to get a lot of skin contact while the must is still basically a water solution in order to get color into the wine. "Color is water-soluble."

Tannin is more alcohol-soluble. I don't want big, tannic wines; I want big, colorful wines with soft tannins."

With his control system and the dedicated pumps doing most of the work during fermentation, and with much less cleaning being done in between pump-overs, his crew now goes home for dinner—or at the latest by 8:30 p.m. "It used to be that my guys would be up all night. It's saving me overtime hours and dollars, and the guys are fresher—not making so many mistakes," Parrish said.

Another convert to dedicated pumps is Matt Crafton, winemaker at 50,000-case Chateau Montelena, who uses them on 30 tanks. Each has a dedicated pump and LOTUS cap irrigator controlled by TankNET, according to an article in the April 2019 issue of WBM by Lance Cutler.

At Bogle, a winery with a much larger production, crew members run pump-overs twice a day in each tank, using attached equipment controlled by TankNET and a TOAD irrigator to wet the cap, but keeping a human eye on the process through 36-inch manways that Eric Aafedt, director of winemaking, specifically requested for this reason. The system makes adjustments in pumping speed and duration as needed.

The 2.5-million-case winery has roughly 350 tanks made by Westec that range in size from 1,000 gallons to 129,000 gallons. The fermentation tanks are outfitted with temperature probes for the cap and for the body of the wine and are integrated into the TankNET system. All of the tanks are set up for semi-automatic pump-overs, and the largest tanks have dedicated pumps.

Vendors of tank control technology in California also include VinWizard, Logix Controls, Moon Valley Circuits and Placer Process Systems. Potentially any tank maker can build their tanks to accommodate dedicated pumps.

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David Parrish, owner and winemaker, Parrish Family Vineyard

## Any Shortcomings?

Back in Paso Robles, Parrish pointed out that dedicated tank pumps are designed to pump juice, not solids, so they may not be up to the task during cold soaks. When he first tried it, the screens used with the dedicated pumps became clogged when trying to mix the cold must. Now his crew does manual pump-overs for the first three days, then adds yeast and pauses until the cap has risen enough to pump just the juice below it.

Parrish said that's a minor shortcoming. His only other quibble was that he would have preferred a 2-inch pipe that goes from the dedicated pump to the top of the tank rather than the 1.5-inch one that the manufacturer installed.

Parrish's enthusiasm for dedicated pumps is as high as Phillips', who said, "Frankly, for any winery producing more than a few thousand cases per year, there are few or no downsides to using automated pump-overs, except the initial capital outlay. And that isn't so bad if one counts the savings in labor."

WBM



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