

# Wine pumps: necessary, not glamorous

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We hear much in the wine industry about 'minimal intervention' and reducing the impact of the winemaker's hand to best express terroir. There are winemakers the country who live by this creed, either in the vineyard (through reducing sprays or compaction, or introducing biodynamics) or the winery (avoiding crushing, temperature manipulation, or that perennial chestnut filtration). But no matter how little intervention you are aiming for, most of us need at least one pump in our winery. For many larger operations a good pump is indispensable and a major capital expenditure. There are good and bad ways to pump your wine around, and plenty of criteria to consider when you go on the hunt for a new pump.

From open throat must pumps underneath a destemmer/crusher through to transfer/racking pumps and to tank turnover pumps, there are myriad uses for a pump in the winery.

Like every equipment purchase, when looking for a new pump you should first ask yourself a few questions about your process requirements, the wine that will pass through it and its intended destination. It may be that in order to hit a certain price-point your process speed will require a must pump to fill your white wine press direct from the crusher, at the expense of gentle handling. If you are whole-bunching Chardonnay for ultra-premium methode sparkling production however, then perhaps a must pump is not required at all. What about process optimisation? Is your must pump matched to the speed of your destemmer properly? Is it matched to your press at the other end? If your press can handle x tonnes/hr, and so can your crusher, is your pump up to the task of connecting the two? Another example: Perhaps you need to feed your bottling line at certain speed, or need to fit large transfers into a set shift time to hit your labour budget. These are just some of the parameters to consider in the larger winery.

## Gentle options for high value wines

At the other end of the spectrum is the winery that is aiming to reach a high price-point and therefore needs the gentlest of transfers, but cannot use gravity. In some instances pumps may be replaced with conveyors, but this can be oxidative for crushed fruit or wine. Gas transfer in the form of a gas barrel racking spear may be a viable method and avoids entirely a mechanical process, but it is both costly (nitrogen or argon costs) and relatively slow, so may only be suitable for smaller producers, or those able to offset these extra costs with greater returns. As an adjunct to, or replacement for, this process there are peristaltic pumps, which use moving compression of a tubular membrane to create vacuum and achieve flow. Many wineries are considering this option, especially for high-end Pinot Noir or delicate aromatic whites. Peristaltics are available in a variety of sizes and brands, can be used for juice, must and wine, but are comparatively expensive and also require regular maintenance to check the wear on the tube membrane. Where on the spectrum does your winery fit?

## How long does the pump have to last?

The next question to ask yourself is one of time. How long do I think this pump will be used? This will get you thinking



A copertina pump.

about maintenance, whether the retailer offers servicing and spares, and indeed where your winery will be in five years' time. It may be that you're better off buying a larger pump (or indeed more pumps) than you think you need right now if you plan to expand your volumes, and have an inverter fitted to slow it down for your initial purpose. It may save you reinvesting needlessly.

## Do I need multi-use, or specifics?

The next issue to consider is that of application. Is it a multi-use pump or something specific for only one intended purpose? Larger

winery situations are more likely to have purpose-specific pumps, and multiples of them, for the most efficient process possible. In a smaller winery situation, one pump may have to satisfy several applications, so it will be necessary to go for a good all-rounder like a large flexible impeller pump with inverter to accomplish pump-overs, wine transfers and some solids/must movement as well. There are several producers of these on the market, but if it is to be used frequently and variably, then buying reputable quality is a must, as it will be more durable. Brands such as Liverani and Technicapompe are reputable and have good servicing and spares as well.

If you are likely to be processing large quantities of solids, lees, and must, then you may need a helical or elliptical must pump. Some impeller pumps will simply seize up or wear quickly and risk burning out the motor if solids are passed through them. Similarly, the type and shape of impeller may also affect the way in which solids pass through. Seeds and skins can be caught by some smaller fixed impellers, either causing them to seize or shearing them causing an increase in phenols imparted into the juice or wine. Some fixed impellers are curved, which will assist movement of solids, but a flexible impeller may be even gentler, and could meet your needs in this situation. These will, however, wear faster than a stainless steel impeller. Furthermore they may need more gentle cleaning regimes than durable stainless steel that can be washed repeatedly with hot caustic.

Finally, a note on capacity. Any reputable pump salesperson should be able to provide you with a chart detailing the capacities of different pumps at various pressures. Remember, your pump may be able to achieve a certain flow rate and pressure under flat conditions, but pumping uphill will be completely different and in some cases not possible so thoroughly scope your site for the uses, volumes, pressures, distances and flow rates required for each different type of liquid to be pumped before you make your decision. And again, don't just think of now – think ahead! You may find you need something completely different to what you first thought.

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