

Cutting Air Release Vents

Airing Our Differences

When cutting a mold, err on the side of too many vents.



1. This anchor mold, which has no vent cuts, was filled at 10 psi with a conventional wax injector. The flash surrounding the pattern is a result of the trapped air being forced out through the parting cut.

2. Numerous vents are added to the mold and lightly dusted with talcum powder to keep them open.

3. The mold is again injected at 10 psi and produces a clean pattern.

By Bernard Reller To those in the jewelry industry who suggest that mold cutters should employ a minimum number of vent cuts to reduce the number of mold lines that result from conventional wax injection, I beg to differ. Vent cuts leave mold lines only if there are too few of them or if the injection pressure is too high. It's much better to err on the side of too many vents, which allow the air to escape through lots of small slits, not just a few expanded ones that allow a little wax to follow the escaping air into the slit, causing a visible line. When making all those cuts, take care not to weaken the sides of the mold, which causes it to expand outward under pressure. Lots of shallow cuts are better than a few deep cuts that destroy the integrity of the mold.

It's also important to note that parting lines and vent lines can be the result of trying to use a mold frame that is too small for the piece. Clamping pressure is applied only from the top of the mold. If the mold cavity is too close to the edge of the mold, the pressurized wax can distort the sides of the mold, causing vent lines and parting lines to form.

Not convinced? Take an old mold and fan it out with a gazillion cuts. Powder it, shoot it, and watch the mold lines disappear. Keep your eyes peeled for a small puff of "smoke" exiting the vent cuts of a newly powdered mold the first time it is injected. It proves that the trapped air is escaping and should remind the wax shooter to re-powder the mold regularly. If you've still got mold lines, you should try a larger mold frame.

If you wish to shoot a vented mold with a vacuum-type injector, you can wash or steam out the talcum powder, then spray the vent cuts with a silicone release agent to seal them. Conversely, when using a silicon release spray with a conventional wax injector, be sure to avoid getting it into the vent cuts. •

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