Q&A

Q. Can a Power Vent Supplement Ridge Venting?

Would an attic that has a properly sized and installed soffit and ridge venting system benefit from the installation of a power vent?

A. *Paul Fisette, director of Building Materials and Wood Technology at the University of Massachusetts Amherst and a* JLC *contributing editor, responds:* There are two reasons to vent an attic: to remove moisture and to control attic temperature.

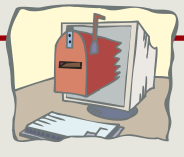
If the attic has moisture problems despite functioning soffit and ridge vents, find the bypasses that are allowing moisture-laden air to reach the space and seal them with expanding foam; this is a more effective — and less expensive — solution than adding power venting. If the attic is too hot, consider roof color. Research suggests that it — not attic venting — has the biggest impact on reducing roof temperature.

However, if you decide to add a power vent anyway, remember that air follows a driving force along the path of least resistance. If there's a ridge opening located within a few feet of the power vent, air will simply be pulled from the ridge into the exhaust vent, achieving nothing. To avoid that, seal the ridge vent and make sure the lower soffit vents are distributed uniformly throughout the attic.

By design, a power vent depressurizes the attic and requires makeup air. So be sure to seal air-leakage pathways in the attic floor/house ceiling interface to prevent the vent from sucking conditioned indoor air into the attic and out the exhaust port. And carefully follow the manufacturer's recommendations regarding fan sizing; an oversized fan can create enough negative indoor pressure to make dangerous back-drafting of gas-fired appliances a real concern.

GOT A QUESTION?

Send it to Q&A, *JLC,* 186 Allen Brook Lane, Williston, VT 05495; or e-mail to jlc-editorial@hanleywood.com.



Q. Frozen Polyurethane Glue

The label on my bottle of Rhino Ultra Glue states (in capital letters) "Keep from freezing," but doesn't say what to do if you don't. Can polyurethane glues be thawed and reused? When they freeze and then thaw, is it obvious that they've been affected? Even though these glues are pretty expensive, I'm wondering if my small $13 bottle needs to be thrown out because I accidentally left it in the truck overnight.

A. *Mark Stypczynski, manager of technical development at Macco Adhesives/ICI Paints in Strongsville, Ohio, responds:* Rhino Ultra Glue (800/634-0015, www.liquidnails.com) is freeze/thaw–stable. While it will thicken at low temperatures, it won't separate or otherwise be adversely affected, and it'll return to its normal viscosity upon warming.

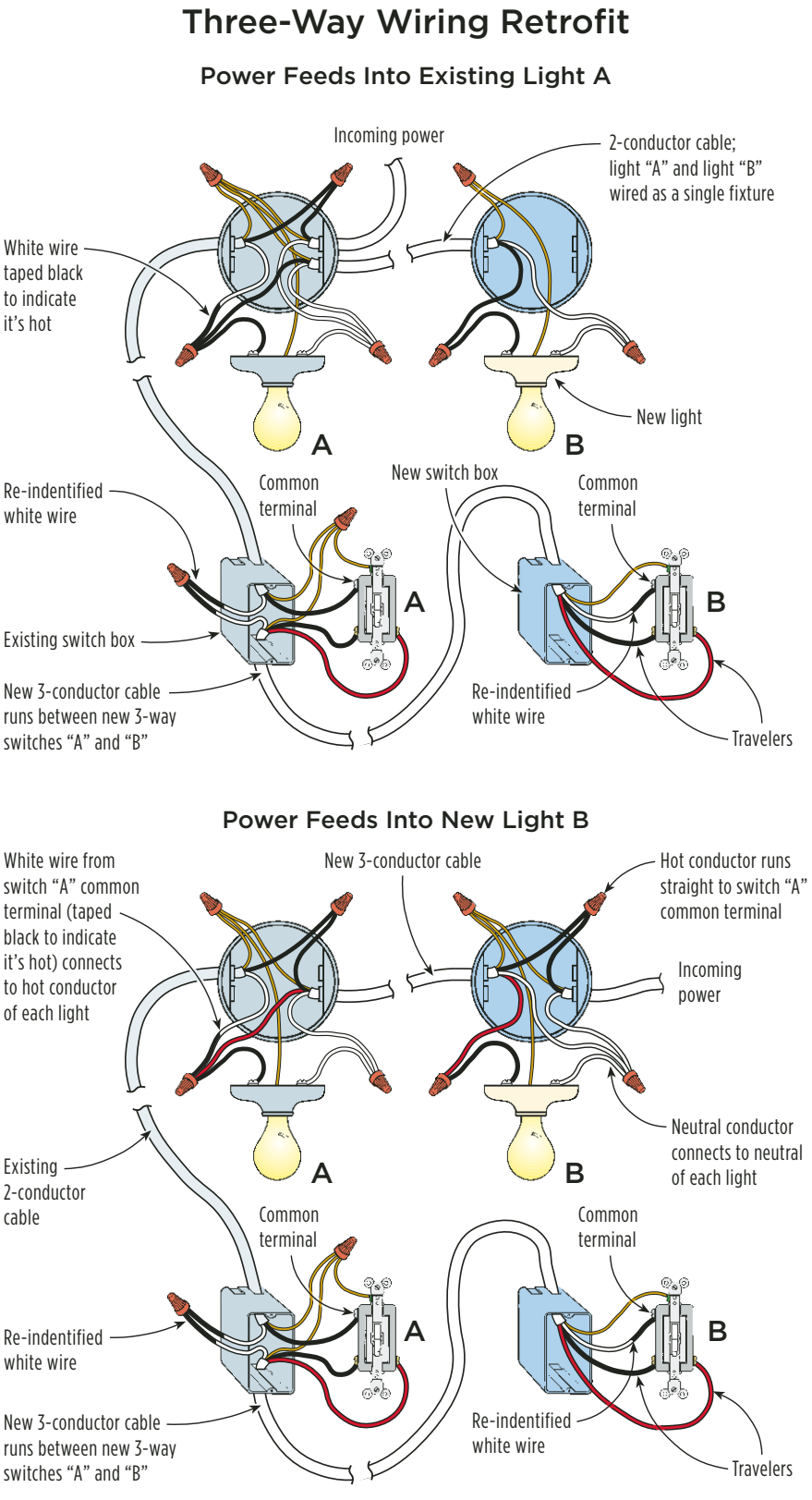
Still, adhesives shouldn't be stored in a freezing environment. Because these products' viscosities are considerably higher when they're cold, it's possible that an inadequately warmed-up adhesive won't completely wet one (or both) of the bonding surfaces, which could result in a failure at some point in the life of the assembly.

In addition, cold adhesives — whether latex, rubber-based, or reactive (such as polyurethane) — take longer to dry or cure, increasing the possibility that panels or parts will shift before the adhesive has hardened; that too can result in failure.

Finally, while most manufacturers test for freeze/thaw stability (typically for five cycles), repeated freezing and thawing can ultimately cause irreparable damage to some types of adhesives, especially latexes, making them unfit for use.

Q. Adding a Three-Way Switch

My clients want to add another light and a second switch to one of their existing lighting circuits, a wall sconce controlled by a single-pole switch. Power feeds the light before running to the switch; because of existing conditions, the easiest option would be to replace the single-pole switch with a three-way switch, add another three-way switch at the new location, and connect the



two switches with three-conductor cable. Will this work, or will my electrician ask me to open up the walls so he can get access to the entire circuit?

A. *Rex Cauldwell, a master electrician in Rocky Mount, Va., responds:* The answer depends in part on the location of the new sconce. If the power cable feeds the fixture closest to the switch, you simply wire the most distant sconce into the first sconce and treat both as a single fixture (**see illustration**).

But if the power cable goes to the most distant light first, a three-conductor cable between the two lights is required to connect the second light's neutral conductor back to the first light's neutral conductor (in other words, the lights have to be wired in parallel). Without this three-conductor cable, the circuit won't function properly, regardless of whether it's controlled by a single-pole switch or a pair of three-way switches. This means that in addition to running three-conductor cable between the two new switches, your electrician may need to run three-conductor cable between the old and new fixtures.

In general, the first rule of three-way switching is to bring the hot conductor straight to the common terminal of a three-way switch. The second rule is to bring the hot cable's neutral conductor straight to the neutral of each light and then connect the light's hot conductor to the common terminal of the opposite switch.

By the way, it's always better to bring the hot cable to the switch — rather than the fixture — first. If the circuit develops problems later and the incoming power needs to be checked, working at the switch is easier and safer than climbing a ladder, removing a fixture (or two), and then trying to figure out just where the hot conductors are.