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# CONTENIS





#### FEATURES

- **24** Out and About
  Installing Out-swing Double Exterior French Doors
- **32** Protecting Outwood Wood

Expert Advice on Stains & Sealers

**44** Pro Tips for Trim Projects

Keys to Design & Installation

#### **EVERY ISSUE**

- **6** From the Editor
- **63** Advertisers Index

#### COLUMNS

- 8 Q & A
- **Tool School**What's Up with Ladders

#### **DEPARTMENTS**

52 Skill Savvy

Protect Roofing Vents, Quickly and Easily

**56** Everything Auto

Warning Signs of Transmission Failure

58 Hot Products



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### From The Editor-In-Chief

Runny nose. Sneezing fits. Yellow dust everywhere. It must be pollen season.

I've grown used to the seasonal aggravation, having battled allergies my entire life, but now that I have young children staring up at me with itchy, watery eyes as they wipe snot all over our furniture, I've developed a renewed vigilance to fight back.

The enemy attacks you right at your house, coming at you from all sides and triggering an allergic reaction that targets your sinuses without mercy. The fallout of powdery pollen spores coats vehicles, yards, decks, porches, windows and doors, lying patiently in wait to infiltrate your living quarters at any opportunity and contaminate everything it touches.

Don't let your guard down.

You can track pollen indoors with your shoes, so wipe your feet on the mat, then take off your shoes and coat as you enter. If you've been active outdoors, you'll need to clean the stuff off your body and clothes to avoid spreading it throughout the house. Avoid sitting on furniture until you've placed your clothes in the hamper. Wash your hair (and your kids') before bed to avoid pollen-covered pillows.

Your indoor/outdoor dogs, cats and pot-bellied pigs also serve as perfectly suitable vessels for pollen transportation, so give them a thorough brushing and wiping as they come inside. See if your cat will let you vacuum it clean (let us know how that works out), and make sure to empty the vacuum collection bag outdoors.

Even though the weather's getting warm and flowers are blooming, if you want to keep pollen outside, you'd better keep the windows and doors closed. Inevitably, however, that yellow plague will make its way into the house, so dust early and often, and be sure to change your HVAC filters regularly. Remember that HEPA filters can trap more pollen but they also need to be changed monthly.



Although the battle rages on, you and your snotty kids can take heart in the silver lining that soon the air will clear, the plants will be fertilized, and Mather Nature will do that thing where she blesses us all with flowers, fruits and vegetables. So, I guess it's all worth it.





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• Why is plywood sold in odd thickness measurements like 15/32 inch instead of 1/2 inch?

 Plywood can be divided into two different groups—sanded panels and un-sanded panels—which • accounts for some of the odd size descriptions. Sanded plywood panels (used for finished applications such as cabinets and furniture) typically range in thickness from 1/4 to 1-1/4 inch. The sanded panels are manufactured to a tolerance of 1/64 inch for panels up to 3/4-in. thick (with thicker panels being +/- 3 percent of the total). The tolerance (permissible range of variation) for un-sanded plywood is 1/32 inch for panels up to 13/16-in. thick (and +/- 5 percent for thicker plywood). The reason un-sanded plywood, such as sheathing, is described as 15/32-in. thick is to reflect the manufacturer's tolerance of 1/32 inch, even though in layman's terms the sheet is equivalent to a 1/2-in. sheet of plywood.

Should I use bleach to clean mold and mildew off outdoor wood?

• The answer depends on the kind of bleach you're using. Whereas chlorine bleach does an excellent job of killing bacteria and viruses, and will remove superficial mold, it has not been proven effective in killing mold on porous surfaces. This is because the mold's enzyme roots grow inside the pores, and chlorine bleach cannot penetrate the porous material due to its ionic structure. This means the mold problem will likely soon return. Chlorine bleach also damages the lignin in the wood, which is how the wood is bonded together, and this

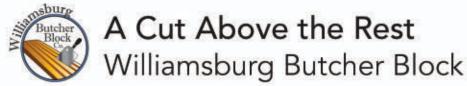


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will make it more prone to aging and splintering along the surface. Chlorine bleach can also cause some deck stain/sealers to fail, removing the color tone and even some of the wood's natural color.

A better alternative is to use oxygen bleach. As found in laundry detergent, oxygen bleach cleans fabrics without disrupting the color or damaging the material. Oxygen bleach can usually be combined with water, applied to the wood and allowed to sit for 10 or 15 minutes, then it can be easily rinsed from the surface with a garden hose. Oxygen bleach can clean the wood without damaging the fibers or harming the sur-

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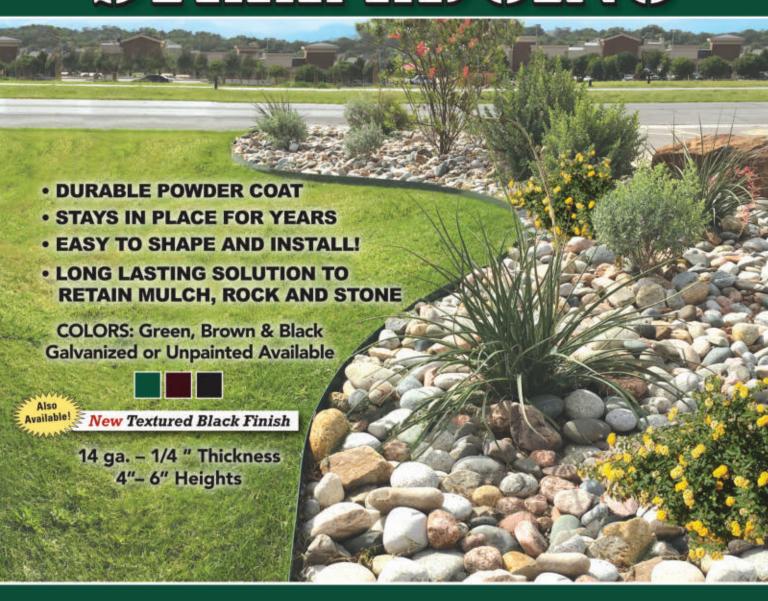
rounding vegetation, which eliminates the need to use plastic or drop cloths for protection.

.....

• I installed a new • stainless kitchen sink and faucet, but now the faucet wobbles. Is there a way to stabilize it?

 Most stainless sinks will flex a bit when coupled with a high-arc faucet. For this reason, manufacturers often include a Kitchen Faucet Stabilization Plate as an accessory with the product. These plates mount beneath the faucet and under the sink to add unseen support for heavy or high-arc faucets. Check the sink/faucet packaging to make sure you haven't left this item out during installation. If the part was not included or has been misplaced, some manufacturers such as Delta sell the stabilization plates separately, although you need to make sure the plate will fit your specific kitchen faucet. EHT

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#### What's Up with Ladders

New Features and Enhanced Designs



Little Giant Ladder, the lightest multiuse ladder on the market is now sold exclusively in Lowe's Home Improvement Stores and on Lowes.com.

A multi-ladder can serve as an A-frame step-ladder, a 90-degree ladder, or an extension ladder.



By adjusting the length of either side, a multi-ladder can be set up over uneven ground, such as a staircase.

Little Giant's new Leveler model features dual, integrated Ratchet Levelers that allow you to adjust to uneven ground to prevent tilting to the left or right.

he basic design of a ladder has remained the same for more than 10,000 years, so making tweaks to that design has meant big business and stiff competition for the world's ladder manufacturers. Here's a look at a few new spins on the old classic for 2018.

#### LITTLE GIANT LADDER LEVELER

Little Giant Ladder Co. brought the multi-ladder to the U.S. based

on a prototype the company founder saw in Germany, and it has since become a favorite choice for professionals and DIY'ers alike. With an articulating hinge and locking rails, these multipurpose ladders can serve as an A-frame step-ladder, an extension ladder, a 90-degree ladder (for getting close to walls), or as two supports for a length of scaffolding. By adjusting the length of each side of the ladder independently when in the A-frame mode,

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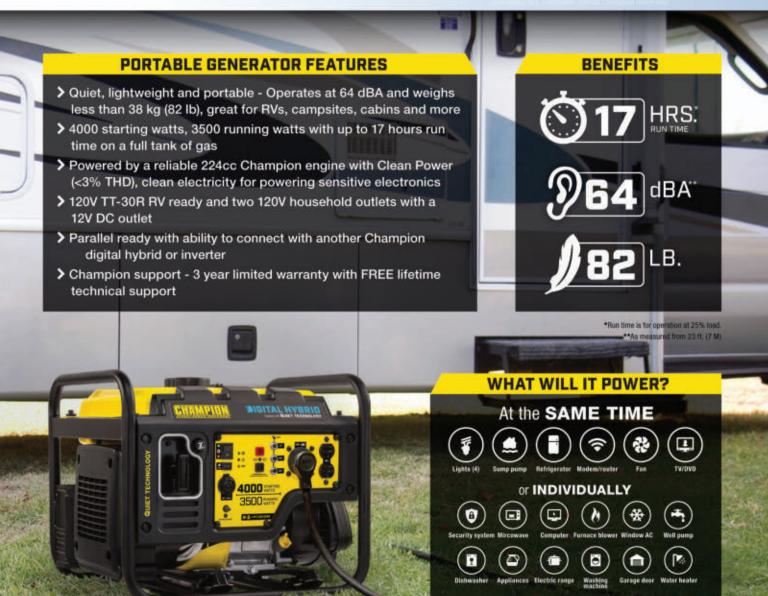
**RUNNING WATTS** 

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#### TOOL SCHOOL

a multipurpose ladder can also provide access over uneven ground such as a staircase.

A new feature of Little Giant's latest multi-ladder, dubbed the Leveler, is the addition of extendable bottom rails. A ladder must always be positioned securely with the rungs level to prevent side tips, and uneven ground can often make it difficult to set one up correctly. Whereas a traditional workaround has been to dig a trench beneath the rail on the high side, the Leveler eliminates the need for that extra step by allowing the user to extend either

The spring-assisted Rapid Lock adjusters are easier to use than manual U-locks of previous models.



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#### FIBERGLASS STEP LADDER

When it comes to quality, nothing can top Louisville Ladder's Cross Step series. The entire line is engineered to exceed industry standards, and along the way it has become the industry standard. But when you're at the top, you become a target for imitations. Try as they might, there are no ladders on the market that match the Cross Step's ability to help you reach higher, reach safer, and reach peak productivity. In any workspace.

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BECAUSE WORK AIN'T PLAY.

#### TOOL SCHOOL

the left or right rail. Similar in concept to the extendable outriggers on the company's Sumo Stance extension ladders, the new Leveler feature is the first of its kind for multi-ladders. Visit www.littlegiantladder.com.

#### LOUISVILLE LADDER CROSS STEP

Ranging in load capacity from 250 to 375 lbs., Louisville Ladder's new two-in-one Cross Step combines a step-ladder and leaning shelf ladder in one. The V-shaped ProTops with slipresistant grips, allow the Cross Step to lean on buildings, in corners, on corners, and fit on poles when in the shelf position. To keep the job moving and your tools close, Cross Step ladders have a magnetic strip and slots



Cross Step ladders have a magnetic strip and slots for tools.

for tools. The locking latch sits on both sides of the rear section and locks the ladder into place, preventing the rear from moving.

When set up in step-ladder position, the unique design of the Cross Step allows you to get 6 inches closer to your work area to reduce overreaching and straining. Each model is equipped with the SHOX impact-absorption system and Raptor Boot that delivers longer ladder life and slip-resistant footing. Visit louisvilleladder.com.



The V-shaped ProTops with slipresistant grips, allow the Cross Step to lean on buildings, in corners, on corners, and fit on poles when in the shelf position.

#### XTEND+CLIMB TELESCOPING LADDER

A telescoping ladder provides a convenient way to store and transport an extension ladder. The *EHT* staff tested the Xtend+Climb model PSE125, which extends up to 12-1/2 feet to provide 16-1/2-ft. reach. Then, it collapses back down to a compact 32-1/2 inches. Featuring extra wide steps for comfortable climbing, the Xtend+Climb is easy to use and built tough for contractor duty,





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#### The OAK 70.XTRA

The Oak 70.XTRA is an adjustable premier series spiral staircase that features solid Oak wooden stair treads and landing to complement and add style to any interior living space. Surrounding the full length of the staircase, the horizontal balusters and railing design is visually unique when compared to the traditional vertical baluster design of most stairs. The staircase can be easily installed by the homeowner in a single day using common household tools. The Oak 70.XTRA is available in 2 diameter sizes and is available in 2 choices of color... Hi-Gloss Black and Hi-Gloss White.

- Standard kit includes 12 oak wood stair treads, a landing, a complete handrail, and all necessary hardware and connectors.
- Diameters available include a 5 ft. 3 in. model and a 4 ft. 3 in. model.
- The height range for the standard kit is adjustable from 8 ft. 3 in. to 10 ft. 2 7/8 in. and with additional components, can be installed to a maximum height of 11 ft. 9 5/16 in.
- Powder coat finished painted in either Hi-Gloss Black or Hi-Gloss White.
- Can be installed in a clockwise or counterclockwise rotation.
- Stair treads and landing are made of solid Oak wood with a natural stain and a polyurethane protective coating.
- Balcony rail kits are available in matching color and horizontal baluster and railing design.
- Handrail is manufactured from an aluminum core surrounded by a soft PVC cover to allow the handrail to be curved at the time of installation to accommodate the radius of the staircase.
- Rise between stair treads is adjustable from 8 3/8 in. to 9 1/4 in.
- Interior installation only.
- A complete installation guide is included in all kits and an installation video is available upon request.
- · Homeowner should consult with local building department concerning building codes prior to purchase.

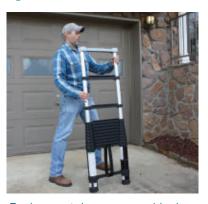


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#### TOOL SCHOOL



The lightweight Xtend+Climb is only 32-1/2 inches when in storage mode.



Each rung telescopes and locks into place.



At full length, the Xtend+Climb extends to 12-1/2 feet.

made of strong and lightweight aerospace-grade aluminum alloy.

As a safety feature, each rung features thumb tabs with colored indicators that show the telescoping rails are locked into place. If the thumb tab shows a green indicator, you know it's safely locked and ready to climb.

In addition to ladders of telescoping various sizes and capacities, Xtend+Climb also offers optional accessories. A silicone rubber top rung protects walls and eaves from damage. And a zip-up carrying bag can store the ladder when not in use. Visit xtendandclimb.com.



Green safety tabs indicate the rung is locked safely into place.

#### WERNER FIRE ESCAPE LADDER

Werner Ladder Co. now offers homeowners the kind of emergency ladder that probably won't get much use until you need it, but once you need it, boy will vou be glad vou have it. With two models available for two- or threestory homes, the new Fire Escape Ladder (ESC 220 and ECS33) installs permanently under a window, making it always there in case of emergency. As a flexible rope ladder, it easily deploys in seconds for a quick escape, supports up to 1,200 lbs. and is easy to use. The rungs are anti-slip and have standoffs for ease in descending, and the climbing



#### TOOL SCHOOL

assist strap aids in exiting the window. The pan size is 8-1/2-by-15-1/4 inch and 3-1/2 in. deep. The ladder also includes a door to help blend with the room décor. Visit www.wernerco.com.



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The Werner Fire Escape Ladder installs permanently, and two models are available for two- or three-story homes.



#### WERNER ALUMINUM COMPACT STEPLADDER

For interior cleaning when the in-laws are coming to town, no one wants to haul a 50-lb. ladder out of the basement for tasks like opening heating vents, dusting fan blades and cleaning windows. The Werner Aluminum Compact Stepladder (model ACS386) can fit in a broom closet and weighs less than 16 lbs. Easy to move and maneuver, it's rated



to carry 250 lbs., so it can stand up to the toughest fall cleaning jobs. This fiberglass compact stepladder is built with double standing platforms, and its slim profile is perfect for those tight spaces. The light-

weight fiberglass construction makes it easy to carry and store. It is a 5-1/2-ft. tall ladder allowing the user to reach 9 to 10 feet from the ground. Visit www.wernerco.com. **EHT** 

#### BE SAFE UP THERE

Missing the last step and overreaching were the two most cited issues as the cause for ladder accidents, according to a study completed by the American Ladder Institute (ALI) in 2016. Close behind were failure to use three points of contact and using the wrong ladder for the job. Side-tips from ladders cause some of the most catastrophic injuries, and working on uneven ground can lead to these accidents. In fact, the U.S. leads the world in ladder deaths with close to one ladder fatality per day. Everyday use of heavy, bulky ladders leads to some of the most common injuries, strains and sprains, so never take safety for granted.

These common causes of ladder accidents can be easily avoided by taking precautionary actions prior to using a ladder. Always select the right type and size of ladder. Set up the ladder correctly. Inspect the ladder for damage and wear. Climb the ladder correctly, maintaining three points of contact (i.e., two feet and one hand; two hands and one foot). Keep in mind that the ladder's rated load capacity refers not only to your personal weight but also the accumulated weight of whatever equipment you are carrying. The safest angle for a ladder is 75.5 degrees; if it is too shallow, the bottom of the ladder is at risk of sliding, and if it is too steep, the ladder may fall backwards. And always be cautious around electrical supply lines.



#### THE LITTLE TOOL MULE

The Little Mule is an accessory that mounts to ladder tops, designed to keep everything you need at hand and safe from dropping. Its placement on the top of the ladder also helps reduce the risk of workers using the top step in violation of OSHA rules. With the removable pan system, you can swap out supplies to work faster and easier. The Little Tool Mule features numerous tool slots for drills, screwdrivers, paint brushes and more. Featuring strong metal constructions, Tool Mule offers two ladder products that between them fit most threelegged or four-legged ladders from all major aluminum or fiberglass brands. By measuring the top of your ladder, you'll know which Little Tool Mule is right for you. Visit www.toolmule.us.





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# OUT AND ABOUT

**By Larry Walton** 

ou've decided on double French doors for your project, but you're a little concerned about how the door swing will affect your interior design plans. Have you considered swinging the doors to the outside rather than into the house?

Out-swing doors could offer a solution to your traffic flow concerns, especially if you want to use the interior wall space adjacent to the doors. Additionally, you'll be able to make the grand gesture of swinging both doors open as you present your newly completed patio project to visitors.

Out-swing exterior doors require a different type of threshold so you can't just buy a stock set of standard swing, pre-hung doors and turn them around. Also, an out-swing door assembly must include a way to secure at least one hinge pin on each door, so intruders cannot remove the hinge pins to gain entrance.

Another important factor to consider with swinging doors is the location and weather exposure the doors may endure. In general, swinging exterior doors should be located where an extended eave, porch or patio cover protects the doors from direct exposure to rain, because water can present a real challenge to typical weather stripping. This is true for both in-swing and out-swing doors.

#### OUT AND ABOUT

We recently installed some exterior out-swing double French doors on a new construction project that was slated for decks with patio covers.

#### STEP BY STEP



Our client ordered a set of doors pre-hung for out-swing installation.

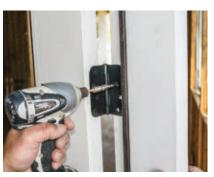


First step was to remove the blocks, braces, corner protectors and staples. Note: If the doors

come with protective covers on the glass, leave them in place until you are sure they are no longer needed as masking for door painting.



We had enough floor space available to lay the door assembly down to remove the protective skids from under the threshold.



We located the hinges with the locking pins and removed the screws from the hinge leaves.



On the remaining hinges, we left the leaves in place and removed only the hinge pins to take the doors off the door jamb. We thought it best to start the jamb installation without the doors this time, because the outside deck was not yet built.



The framers left some extra room in the vertical rough opening. Sometimes we support the threshold with a strip of sheeting to ensure clearance for interior swinging doors, but these doors swing out, so we filled in the space at the header.



#### CHOOSING A DOOR TEXTURE AND FINISH

The door of your home gives any visitor their first impression, so you want to achieve the perfect look with its texture and finish.

You have a variety of options, including wood-grained or smooth; fiber-glass or steel; stained or painted; and your choice of bold or neutral color. Wood-grained doors can be stained or painted, while smooth doors can be painted almost any color you can imagine. Fiberglass provides a wood-like look and durability, while steel doors offer a lower price point.

Insulated fiberglass doors often feature a realistic wood-grain appearance and a convincing texture to match, but they're much more energy-efficient than real wood and require less maintenance. Fiberglass doors will never rot or warp like wood.

If you're looking to make a bolder color statement, consider a smooth, paintable fiberglass door. These doors provide you with a blank canvas and hold the paint for lasting color. Decorative door glass and style options provide the ability to choose a look that matches the distinct style of your house.

Insulated steel doors provide any home with style and affordability. These doors offer numerous styles, design and glass options, and the ability to customize the color. Styles range from triple-shadowed panel embossments to simpler more traditional designs.

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#### OUT AND ABOUT



We installed all of the required vapor barrier products, which will vary by location and code requirements.

After checking the floor for level, we moved the jamb into the opening.

Lining up the outside of the jamb with the exterior sheeting,

we tacked it into place near the top hinge with a 2-1/2-in. finish nail.







We looked for shim locations and shim directions that would offer the most support for the areas near the hinges. Where the framing boards were flat and square, we stacked two shims in opposite directions. Often, however, one shim can be used to better fill a tapered gap.





We filled the gap between jamb and trimmer with a shim and tacked it in place near the second top hinge.

We put the doors back on their hinges before completing the installation.

In order to install the door jamb, we had to have one guy on the

outside checking gaps and door alignments while the guy on the inside shimmed and nailed the jamb into place.



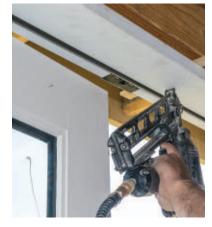




A straightedge on the jamb helped align the jamb for shimming and nailing.



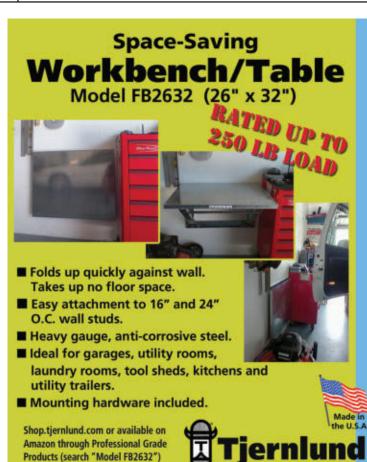
#### OUT AND ABOUT



A shim and nails near the header strike plate will help prevent sagging in the span of the jamb header.

We made sure the doors were on plane, aligned with each other, thoroughly fastened and operating smoothly before leaving them for the siding crew to button up. **EHT** 





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BEST DOOR INSTALLATION TOOL EVER!



## By Matt Weber of preservative stain/sealers. Bryan Carter was kind e're all aware of the wonders of wood as a building material, but to preserve its natural enough to field our questions. good looks when used outdoors, it's neces-What are some of the primary differences in the sary to apply a stain/sealer to protect it from Mother

building material, but to preserve its natural good looks when used outdoors, it's necessary to apply a stain/sealer to protect it from Mother Nature. From mold and ultraviolet rays to insect infestation and rot, the threats to wood are plentiful. Choosing the right sealant, prepping the wood for staining, and proper application of the product are all important to achieving the best results for your porch, pergola, deck, fence, or any other outdoor structure.

We turned to the experts at Armstrong-Clark Wood Stain to get some professional insight into the world What are some of the primary differences in the various formulations of preservative wood stains? And what are the advantages/disadvantages of the different types?

If we are talking about preservative wood stains, we are talking oil stains. The big differences are to what degree you trade longevity for ease of use. Stains that are extremely easy to use may not last long and they may have reduced square footage per



#### PROTECTING OUTDOOR WOOD



If you want the very best cleaning to make sure you address everything, you want to utilize a two-step process. Step one is a bleach-based cleaning (often sodium percarbonate works well unless you have a more serious mold/mildew problem) followed by an oxalic acid cleaning.

There are a few other things to consider if you do not need to address mold/ mildew or tannin. For example: What is the final color you want to achieve? You do not necessarily want to clean with oxalic acid/ cleaner brightener if you are applying a gray stain. Oxalic acid returns a more natural blonde color to the wood, which shifts the color in a different direction from where you are wanting to go with a gray stain. You would want to use a bleach-based cleaner in this circumstance to keep the wood gray.

For projects like constructing furniture or handrails, you might find it easier to stain the wood pieces prior to assembly rather than afterward. What are the most common application mistakes you see being made by inexperienced users? What best practices do you recommend?

The number one mistake inexperienced users make is thinking "more is better." Let the wood tell you how much the wood can absorb. You can achieve this by always conducting a test with a sample can. There are still a few brands out there that still offer them for free.

A quality stain/sealer will protect against water damage and UV rays.

Does the type of wood species have any effect on how well it accepts wood stain?

Definitely, especially if we are talking exotic hardwoods. Exotic hardwoods have very tight cell structures, which inhibit the stain regardless of how old and weathered the wood is. For example, ipe is so dense it doesn't burn and it doesn't float. The most a stain will absorb down into ipe is about the thickness of a thumbnail. Also, species like redwood and western red cedar have higher concentrations of natural oil, so they may take longer after installation to accept stain.

What maintenance steps do you recommend after the stain/sealer has been applied to outdoor wood? Are there certain cleaners or chemicals that should be avoided?

Rinse, sweep, or blow off your deck at least once a month. Dust, dirt and pollen can collect on the surface and can ultimately lead to surface mildew and mold growth.





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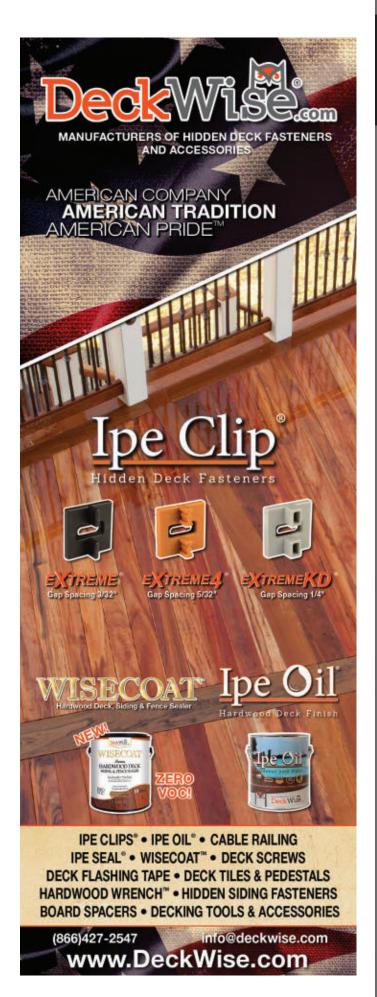
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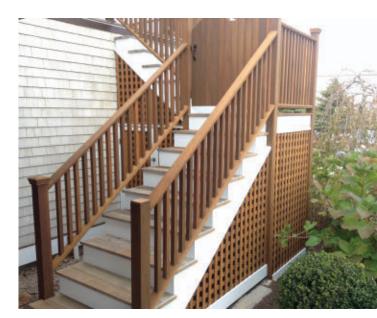
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### PROTECTING OUTDOOR WOOD



Darker, more opaque stains will provide better protection from UV rays than a lighter, transparent sealer.

If you have an issue with mildew or algae, consider an application of "Spray-and-Forget" or "Wet-and-Forget" a few weeks once a year.

For some stains, cleaning with bleach will strip off the stain. My recommendation would be to contact the stain manufacturer about what works best for cleaning wood applied with their product.

Wood stain is available in a wide range of colors and finishes. Are there certain applications where one type of finish would work better than another (i.e. semi-transparent versus opaque)?

For starters – if it's shiny, you will need to strip and neutralize, or sand (or both), before applying a maintenance coat down the road. So, you need to ask vourself what you want to have to do next time, before you narrow down your selection to the brands that fit your plan. Pigment is the sacrificial raw ingredient which absorbs the UV radiation that turns wood gray. If you use a transparent stain, you need to understand the wood will turn grayer sooner, especially if you use a clear. Semi-Transparent colors fit a balance between having color last longer and still allowing you to see the wood. Recently, we have seen a large uptick in people using exotic hardwood colors on softwood. The reason is exotic hardwood colors often have more transparency than semi-transparent colors but better UV protection.



### PROTECTING OUTDOOR WOOD

What is your recommended method for storing any unused stain for future projects?

Keep it in a dry location, preferably an area without big temperature swings. I suspect that on occasion the bottom of a can will rust out because of condensation in the airspace above a stain. In the case of oil stains, the water will sink to the bottom and can rust out the can. **EHT** 





Allow new wood to dry prior to initial stain application.

### TIPS FOR STAIN/SEALER APPLICATION

Always thoroughly mix your stain/sealer product to evenly blend the solids and ensure a consistent color tone throughout the project. Use plastic drop cloths to protect any surrounding walls, plants or other objects from exposure to the product.

For new construction, allow the new wood to dry before staining or sealing. Drying the wood is particularly important for pressure-treated lumber because the waterborne preservatives leaves moisture in the wood. Depending on the condition of the wood (if it's dry enough), you might find it





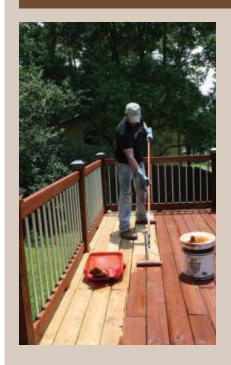
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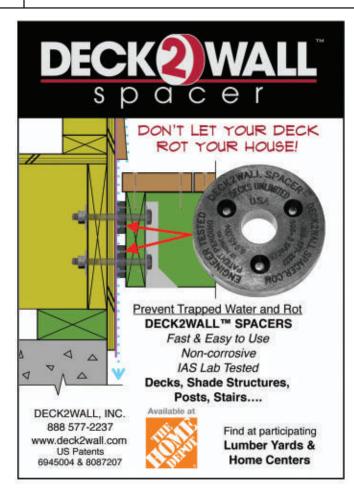
helpful to stain certain wood pieces before assembly. For example, staining wood hand rails prior to assembly makes it easy to access all edges of the boards with a brush.

Although the wood must be dry before application, some products don't perform well when applied in direct sunlight, whereas this is not a problem for other formulations. Refer to the manufacturer's recommendations for your stain/sealer.

When staining both horizontal and vertical structures, brushing is the best method for stain/sealer application because the bristles push the product evenly into the woodgrain to increase absorption. Using a sprayer or roller can apply the stain more quickly, but both of these methods leave much of the stain on the surface without adequate penetration into the pores. If the product doesn't adhere well it can wear away unevenly, so you should still back-brush it into the woodgrain for the most consistent appearance and best protection.









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### PROTECTING OUTDOOR WOOD

### LOG CABINS THAT LAST

One of the most important aesthetic considerations for log and timber homeowners is stain color and tone. By choosing a high-performance finish like Lifeline Ultra-7 from Perma-Chink Systems, you're ensuring the finish will look as beautiful years after application as it did the second day it was applied, thanks to a balanced formula of transparent iron oxides,





mildew inhibitors and an advanced polymer resin.

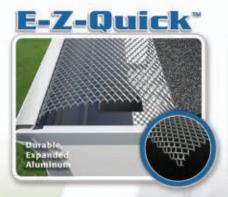
Lifeline Ultra-7 is the most durable exterior stain that Perma-Chink Systems has ever developed. After multiple exposure tests in harshweather areas across the country (think snow country, the sunny southeast and extreme mountain locations), Ultra-7 stands out as the top-of-the-line, long-lasting finish. The secret behind its durability is a state-of-the-art resin that creates a flexible and tough seal on your home's logs. Perhaps more importantly than the



seal's strength, the resin also ensures that the seal is continuous, providing protection from holes and gaps that might otherwise develop with a lower-quality finish. In addition, it has unsurpassed adhesion to wood.

Lifeline Ultra-7 can be used in nearly every application around your home, including exterior walls, siding and railings. It also meets and exceeds all standards for low-VOC exterior finishes in the most restrictive regions in North America, meaning you can use it anywhere your log or timber home happens to be located. Plus, the tools you use to apply your home's finish need only soap and water for cleanup, eliminating the need for any harsh chemicals during the initial application or maintenance. Perma-Chink Systems, Inc. has been one of the most environmentally responsible manufacturers of wood home care products for over 37 years. Visit www.permachink.com.









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rom crown molding and baseboards to elaborate door and window casing, trim work can add character to any room and makes for a popular DIY project. To achieve a successful installation, however, requires carpentry skills, the right tools, careful planning and attention to detail. If you want a professional looking job, then you should work like the pros do. Here are some pro-grade tips we've collected over the years.

### **USE THE RIGHT BLADE**

One aspect of trim work that DIY installers sometimes overlook is the type of saw blade they're using on their circular saws. The quantity of

teeth plays a significant role in the blade's performance. For example, blades best suited for ripping stock along the grain typically have fewer teeth with large gullets for easy chip removal. Blades meant for crosscutting across the grain have more teeth, usually 48 or more, with a smaller gullet for a smoother cut.







The higher number of teeth generally translates into smoother cuts, ideal for trim and finish applications. A blade designed specifically for the application can increase the accuracy of your trim cuts, which helps when mating the joints. For example, a rough cut might require you to sand the cut smooth, but the act of sanding can alter the shape of the cut you just made, so it may no longer fit perfectly during assembly. Spare yourself the frustration on trim projects and equip your circular saw with fine-toothed blade.

### **CHOICES IN FASTENERS**

A brad nail and finish nail might appear to be used for the same jobs, but each type of nail serves a different purpose. A brad nailer is designed to run 18-gauge, fine wire brad nails. These small nails are very hard to drive manually without bending the nails. Once they've been driven into wood, brad nails are nearly invisible to the naked eye, reducing (or eliminating) the need for wood putty to conceal the head. The disadvantage to using brad nails is that they don't have much holding strength for heavier carpentry projects, such as large crown molding or baseboards.



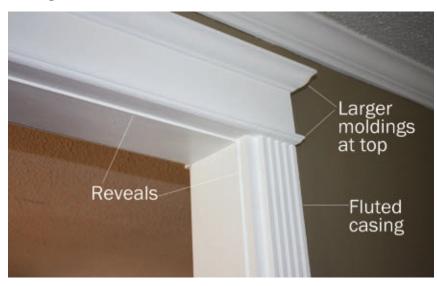
For larger, more bulky wood trim, you will need to use a finish nailer, which drives 15- or 16-gauge finish nails that are slightly larger than a brad nail, giving them better holding power. However, because of the fastener's larger diameter, you will need to conceal the nail heads with putty. Plus, the thicker finish nail is more likely to split the wood than a brad.

For the advanced woodworker who is fastening very small moldings for intricate detail, a pneumatic pin nailer can drive 23-gauge headless pins that measure between 3/8 and 1-1/38 in. long. The pins don't have much holding power, but they can hold a small workpiece in position while adhesive sets.

Speaking of adhesive, it brings some big advantages to trim installation. Did you know that a joint made with high-quality wood glue is stronger that solid wood? You should always use wood glue when joining miters and other critical joints that you don't want to separate. Furthermore, if you use a high-quality adhesive to fasten trim to a wall, then you won't need to use as many nails. And the fewer nails you use, the fewer nail holes you'll have to spackle and paint.

### DESIGNING WITH REVEALS AND SHADOW LINES

When designing a trim project, you can get very creative, but it's usually a good idea to stick within certain general guidelines that have become common practice for good reason. For example: Have you ever noticed that trim installations generally flare outward the higher they go? Think about fireplace mantels, door cross-heads and even crown molding; the uppermost board in the trim package is always the widest. Since the upper boards are wider or deeper than the lower components, they create a reveal where the trim pieces meet, and this reveal results in visible shadow-lines. These shadow-lines give the trim its depth and detail-in other words, its character.





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And reveals do more than simply create shadow-lines. The movement of wood in response to temperature changes or due to the house settling makes it very difficult for flush, even joints to remain flush. By stepping back layers of trim to create reveals, the resulting shadow-lines help conceal minor discrepancies in joints that can develop over time. A 1/16-in. variation along an otherwise flush joint can be very noticeable, but if the casing or fascia is stepped back 1/4 in. or 3/8 in., the discrepancy won't be nearly as a noticeable. So, when designing a custom trim package, build wider as you go higher, and use reveals and shadow-lines to vour advantage.

### **SCRIBE TRIM TO FIT**

Learning how to scribe trim to fit tightly to uneven surfaces is an advanced carpentry skill, but once you get the hang of it, you'll



Here we show how to fit a new window stool onto a sill. As the installers place the window stool in position, they found gaps between the stool and the window. (Photos by Larry Walton)



The installers used a flat shim equal to the thickness of the largest gap to serve as a gauge to make scribe marks to adjust the stool for a tighter fit to the window frame.



The same shim can be used to scribe the stool at any wall sections that may keep the stool from sliding back to close the gap.



A power planer or sanding tool can be used to remove material up to the scribe lines.

see why professionals consider it a vital skill for accurate installations. You can apply this skill to fit door casing against an out-ofplumb wall, or use it to scribe a countertop for a tight fit.

The basic idea is to draw a new cut line along the edge of a workpiece called a "scribe" line that indicates the amount of material that must be removed to achieve a tight fit. A simple lockable compass works well as a scribe tool, but a compass isn't necessary, as long as you scribe a line with a consistent measurement.



Here, an angle grinder with coarse sandpaper is used to remove material to the scribe line on the horn of the stool.

### HOW TO FASTEN CROWN MOLDING

Crown molding is a favorite trim application that provides a transition between walls and ceilings, but how to fasten it correctly can be confusing for first-timers. Drywall and plaster don't have the holding power to keep the molding attached to the ceiling, so nails should be driven through the molding and into the framing members.

Use brads or finish nails to fasten the molding into the top plates (double 2x) or the wall studs. A good rule of thumb: If the molding has a profile of 3

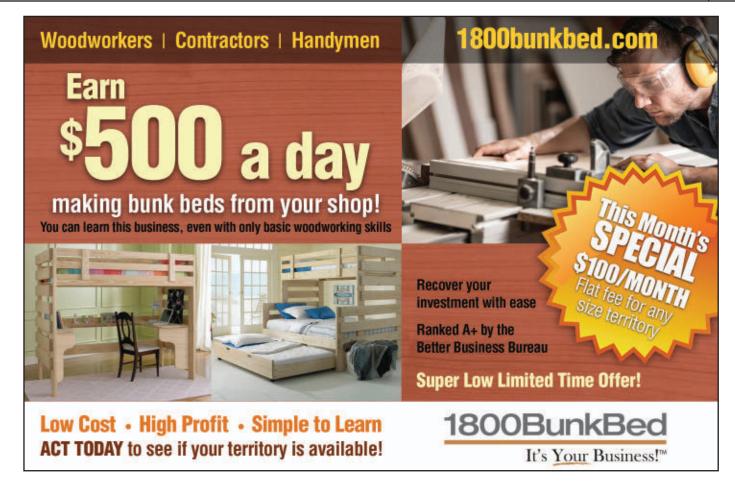


inches or less, then nail it to the top plate. It the crown molding is larger than 3 inches, nail it to the studs. Then, cross-nail the top of the molding into the ceiling joists. Driving two nails at different directions into each joist will hold the top tight to most ceilings. You can also caulk the top and bottom of

the molding joints for an even more secure installation.

Due to the direction of the ceiling joists, two walls in the room won't have the same solid framing for secure fastening. One trick is to predrill and drive a 16D nail at an angle to hit the framing at the top of the wall.

Another option is to cut and install triangular wood filler blocks that fit flush behind the crown molding. Nail the filler blocks into the wall studs, and then nail the crown molding over the blocks. The filler blocks also provide a secure means of installing molding with a large profile that has a large void behind it.







If nails can't reach the joists or top plate, nail triangular blocks to the top plate along the ceiling, then nail the molding into the blocks

#### LARGE ANGLE JIG

Every once in a while, you'll run into a situation when you need to cut a miter greater than the capacity of your miter saw. Some miter saws only cut to 45- or 50-degree angles, but you can make a simple jig that enables you to cut any angle you need. The trick is to create a 45-deg. fence to rest the work piece against. The jig in the photos was simply made of a 1x6 trim board cut on the miter saw at 45 degrees. Rest the long edge of the jig against the fence of your saw and position your workpiece along the angle. Then, simply adjust the saw head to cut the required miter. It might help to clamp the workpiece securely when making the cut.

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Make a simple 45-deg. jig to help you cut miters that are larger than what you can normally cut with your miter saw



### SELECTING TRIM MATERIALS

Paint-grade trim pieces made from finger-jointed wood are widely used in remodeling applications because they're don't have knots and imperfections like solid pieces can have. Available as pre-primed molding and trim boards, these wood moldings can easily be cut, painted and caulked by a DIY'er. MDF is another economical trim material of choice for paint-grade projects.

The Distinction Crosshead door trim package from Fypon looks like a multilayered wood application but is actually a five-piece polyurethane assembly with customizable components. This design saves installation time compared to assembling wood, and the urethane withstands outdoor exposure better than wood.

For stain-grade projects with exposed wood-grain, an experienced carpenter can fashion unique looks from solid woods such as mahogany, maple and poplar. However, installation requires great skill and the cost can grow rapidly.

No matter what material you choose, the more intricate your trim design, the higher the cost of materials. And, if you're hiring someone to install it, the cost of installation rises with the extra time spent creating intricate moldings.

Alternatives to wood products such as polyurethane, composites and other synthetic materials are growing popular because they offer the look of wood when painted and don't have the same maintenance problems associated with wood. Unlike wood trim, synthetics and composites resist insects, cracking, peeling, chipping, swelling, splitting and rotting, making them ideal for exterior use.

These low-maintenance characteristics aren't as critical for interior applications. However, for areas exposed to moisture, such as base molding in a bathroom or crown above a shower, synthetics might be a smart choice.

When selecting trim, also consider the overall price and time spent on the fully installed project. For simple, one-piece interior installations with a basic profile, wood will likely be less expensive than synthetics. However, for complex moldings like crown dentil, synthetics are competitively priced. This is because intricate wood moldings can require a multiple-application process for the various components, adding to the installation time and increasing material cost. On the other hand, synthetic crown dentil comes premolded as a single piece, simplifying the installation procedure. Synthetics are also lighter than wood, which is handy during transport and installation. **EHT** 



### **Protect Roofing Vents, Quickly and Easily**

Prevent Weather Damage and Squirrel Infestation



By Stuart Hanson

early every DIY'er seems to share two common traits; they take extreme pride in their home and always enjoy saving money when it comes to home improvement, maintenance or repair. And it's no surprise that preventive roof maintenance is required, regardless of the season, to keep the roof in tip-top shape and more money in the wallet. Even seasoned pros know that a cold winter, a wet spring and a sweltering summer can aggravate a roof and quickly turn minor defects into costly repair bills; in fact, the most recent "Cost vs. Value" report from Remodeling Magazine estimates the average

roofing replacement cost at over \$20,000.

Special attention to one seemingly small aspect of the roof that many homeowners (and roofing contractors, for that matter) often overlook is actually one of the most likely places for roof damage to occur: roof venting pipes. It's amazing how many astute homeowners simply leave a white plastic pipe sticking out of their roof with no protection from weather and animals (besides being an unsightly display of contrast to most black or brown rooftops).

Plastic or neoprene rooftop venting covers are a cheap alternative but easily and quickly deteriorate a few years after installation due to weather and sun causing them to become brittle and crack. Other low-quality pipe covers contain lead and/or lead tops that corrode over time, which leaves a rust trail on the roof and—to make matters worse—attract squirrels and other critters to relentlessly chew holes and pry their way into your home.

Varmints entering a home via roof pipe jacks and boot covers that have shoddy lead tops can lead to costly roof damage from rain, frost and snow. "Squirrel infestation is a very big problem throughout many areas of the United States, especially older homes," explains Amanda Williams, marketing manager at Quarrix. "Installing a high-quality venting pipe cover protects a vulnerable spot on the roof from leaks that occur due to cracking, corroding and even squirrels."

One increasingly-popular and cost-effective venting pipe cover option is called Pipe Boot, made by Quarrix, manufacturer of high-quality roofing solutions.

Compatible with PVC and other vent pipe materials, Pipe Boot offers roofing, plumbing and remodeling contractors a durable yet easy-to-install way to elegantly camouflage, cover and protect plumbing vent pipes while also withstanding freezing temperatures and pesky varmints.

Pipe Boot is made of all-steel construction and engineered to withstand frigid temperatures and frost damage via a patented design that allows air space to circulate properly, while still resisting freezing. Quarrix has passed





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vigorous 110-mph, wind-driven rain testing as further evidence to the durability of the Pipe Boot.

Additionally, installation is easy as Pipe Boot simply slides over the existing venting pipe, nails into place, and then twist the top to form a weather-tight seal. No specialty tools are needed ... just place it, twist it and done. The telescoping sleeve allows for varying pipe heights, pipe widths and roof pitches, and it comes in four color options (and is paintable to coordinate with any roof color).

Normally, enlisting a certified roofing professional to repair any roofing-related issues is a sound decision, but replacing and installing Pipe Boot is actually quite easy, inexpensive and obtainable for capable DiYer's.

#### STEP BY STEP



Prepare the roof vent pipe by removing up to three courses of shingles above the existing pipe flashing to ensure that the back flange is covered by the shingles. Also, remove and discard the existing pipe flashing and any old roof cement. Apply roofing cement around the pipe and underlayment, as it penetrates the roof to create a weather-tight seal.

If necessary, install new shingles up to the pipe penetration



and notch shingles around the plumbing pipe.



Remove the protective plastic layer (if painted Pipe Boot), then place Pipe Boot next to the plumbing pipe and visually check pitch alignment. If pitch adjustment is needed, pinch the front corners to increase the pitch or push down on the front of the Pipe Boot to decrease the pitch until plumb. Note: The plumbing pipe should extend 2 to 3 inches above the base sleeve to allow for proper roof expansion and contraction. Pipe Boot base sizes are available in both standard and high-pitch sizes (3/12 - 14/12) should a custom fit be needed.



Next, apply a bead of a polyurethane sealant on the rim of the plumbing pipe.



Place Pipe Boot over the plumbing pipe, seating the patented TightLOCK top on to the pipe. Turn the TightLOCK Top clockwise 1/8 inch to ensure that it is secure.

Nail the base to the roof using the embossed guides and install two nails into flange on the back of the base.

Continue installing the shingles, lapping them over the side and back flanges (notching the shingles as required).

Apply a bead of sealant to the exposed nail heads on the base.

For venting pipes that are 15 to 24 inches tall, an optional







extender sleeve is available to adapt the Pipe Boot. Simply slide the expanded end of the extender on to the Pipe Boot inner sleeve. The plumbing pipe should extend enough (2 to 3 inches) above the extender to allow for roof expansion and contraction, and the extender sleeve may be field-cut

to size. The TightLOCK is then seated over the extender.

As you can see, no major tools nor in-depth roofing experience is required to install Pipe Boot. However, should you need more information or simply want to review a thorough seasonal roof maintenance checklist, visit Quarrix.com/Checklist. **EHT** 



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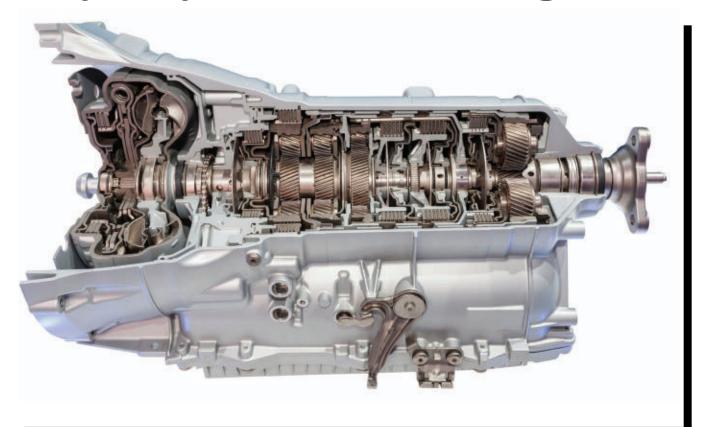
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### Why is My Transmission Shifting Hard?



utomatic transmissions are a mystery to most. Many mechanics will quickly tackle a timing belt job or a head gasket replacement, but when it comes to transmission problems even the most seasoned mechanics often shy away. When they work correctly, we usually don't think about them because they are automatic. When they don't work correctly, it usually goes past annoying and leaves you stranded.

Automatic transmissions use a planetary gear system to transfer power and to create different gear ratios and a reverse option. A planetary gear set has a single center gear, a large ring gear around that with internal teeth, and multiple small gears in between the center and ring

gears. In an automobile transmission, there usually are two sets of these gear systems. This arrangement allows for a variety of gear ratios that can be shifted very easily, but if one part of the system fails, it often renders the whole system inoperable.

Like many problems that arise in your car, there are usually early warning signs to let you know that one of these systems is about to fail. Luckily the automatic transmission in your vehicle has some early warning signs of its own.

Automatic Transmission Failure Early Warning Signs:

- Low fluid level on the dipstick
- · Dark or discolored fluid
- Whining or grinding noises

- · Loose shifting or over-revving
- · Hard or jerky shifting

The best way you can keep tabs on your transmission and make sure it lasts as long as possible is to make sure it always has enough clean transmission fluid. Most passenger vehicles today have a dip stick in the engine bay for the automatic transmission. Check your manual for the location of the dip stick and the recommended procedure for checking the level. On most vehicles the transmission level should be checked with the engine operating, and there will be a "cold" and "hot" range. It is easiest to check the fluid level in the morning after your car has sat all night and is cold. In this case use the "cold" range. If you've been

driving and want to check your fluid level, try operating your vehicle in the lower gear to ensure the transmission fluid is sufficiently hot and use the "hot" range on the dip stick.

While checking the fluid level, check the fluid for discoloration, particles or a burnt smell. If any of these are evident, it may be time to change your transmission fluid. You should always change your transmission fluid at the factory recommended interval using the recommended fluid for your vehicle. If you use your vehicle for towing, driving in the city or in stopand-go traffic, or you live in a significantly warm or cold place, you may need to change your fluid 10 to 25 percent more often.

Another way to diagnose an impending transmission problem is if it starts making whining or grinding noises. This would signal a major problem, and the vehicle should be taken to a dealer or transmission repair shop immediately.

How the transmission shifts compared to normal is another way you can tell if something is going wrong in your automatic transmission. An automatic transmission shifts gears by changing which of the planetary gears are moving, held stationary or coupled to the input or output shafts. These changes are made by a series of clutches and bands and are activated by pressure changes of the transmission fluid. As these clutches and bands wear out, it can cause your shifts to feel sloppy, take longer or even have the engine over-rev. The wear of these clutches and bands is accelerated by having dirty transmission fluid circulating, causing excessive wear and premature failure. In this case, a transmission rebuild is

the only thing that can solve the problem.

If you are experiencing hard transmission shifts, it is possible that the only problem is a low transmission fluid level. Low transmission fluid can change the operating pressures of the transmission, as well as reduce the amount of lubricant present between the clutches and bands, and raise transmission temperatures. All these things can cause hard or jerky shifting. You need to identify why the transmission has a low fluid level and refill it as soon as possible.

If your transmission has a low fluid level, it is likely due to a leak in the transmission. Leaks are most commonly found in input or



output shafts on the transmission, because this is where the moving parts exit the case. There will be a rubber seal around each shaft that can wear, shrink or get brittle over time. These seals can often be difficult and expensive to replace because of their location on the vehicle.

Rather than replacing them, add BlueDevil Transmission Sealer to your automatic transmission fluid. BlueDevil Transmission Sealer is specially formulated to restore dried, cracked or shrunken seals and gaskets in your transmission without harming the transmission. BlueDevil Transmission Sealer is guaranteed to form a permanent seal. BlueDevil products are safe for your vehicle and can remain in the system until your next fluid change.

Look for the early warning signs of transmission problems to save yourself money and a headache down the road. **EHT** 

Editor's Note: This article is sponsored by BlueDevil Products®, manufacturers of quality sealants for the automotive aftermarket industry, supplying over 400 distribution centers across North America, South America, Europe, Asia and South Africa. For more information on BlueDevil Products, visit www.gobdp.com.

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# PRODUCTS

### WORX 20V 6-1/2 IN. CIRCULAR SAW WITH EXACTTRACK

The new Worx cordless circular saw has an innovative feature that's not available on any other saw in the marketplace. The 20V 6-1/2 in. Circular Saw with ExacTrack takes the guesswork out of straight-line cutting by incorporating a tracking guide that enables accurate rip cuts. Making accurate rip cuts in dimensional lumber, such as a 4x8 sheet of plywood can be challenging with conventional saws. Most circular saws come with an edge guide, but more and more saw owners are shifting to the use of track saw guide accessories to ensure accurate rip cuts. What makes WORX ExacTrack different is that it's the only circular saw with a built-in track guide. To rip a sheet of plywood with ExacTrack, simply clamp 1x material to the desired width and mark the cut line. The 1x stock also functions like a fence on a table saw. Begin the cut with ExacTrack gliding right on top of the 1x stock for the duration of the cut. This makes long rip cuts easy for all skill levels. When not set for ripping, ExacTrack is returned to its standard position for cross-cuts and other cutting operations. Learn more at www.worx.com.

### **CRESCENT POWERPIVOT BOLT CUTTERS**

Featuring a compound action design, PowerPivot Bolt Cutters from Crescent/H.K. Porter provide more cutting power but require 30 percent less force to cut than traditionally designed bolt cutters. PowerPivot Bolt Cutters utilize a double compound action design to achieve a higher level of cutting efficiency, delivering superior cutting capability when cutting 7/16-in. HRC-31, 3/8-in. HRC-42, and 5/16-in. HRC-48. Blades are precisely ground then



induction hardened for extended edge life and added ability to cut hard materials. Handles are made of tubular steel for extra strength and have durable rubber grips for added comfort and control. PowerPivot Bolt Cutters are available in five sizes with handle lengths of 14 to 36 inches. All have been designed for high performance cutting capacity, both in diameter and hardness of materials. For example, when cutting HRC-48, the 18-inch model will cut up to 9/32-in. diameter, while the 24-inch model will cut up to 5/16-in. diameter. Visit www.crescenttool.com.



### **STAKE RAKE**

The Stake Rake is the only self-standing, high quality, steel-tined leaf rake. The Stake Rake uses patent-pending technology to easily allow the user to stand the rake vertically by staking it into the ground, allowing gardeners and lawn enthusiasts to take care of their lawn at any age. The rake's handle has internal components that sheath the steel stake while maintaining the look and feel of a typical rake. Visit stake-rake.com.





### **BELL OUTDOOR DECORATOR SWITCH COVER**

Bell has introduced a series of weatherproof decorator style switch covers. These are the first products of their kind on the market, offering convenience and weatherproof safety for outdoor lifestyles. The new Bell Weatherproof Decorator Cover line provides convenient on/off rocker functions just like indoor Decorator style switches. An internal elastomer membrane provides weatherproof protection. These models are compatible with single pole or 3-way decorator switches. The new covers are available in single-gang, 2-gang or 3-gang models. Single-gang colors include gray, white or bronze. Also available is a kit with a gray single-gang cover and a 15A single-pole Decorator device. Applications include exterior wall-mounted patio and deck lighting, BBQ islands, pool and spa controls and more. Visit www.hubbell.com.

### VERSATEX PEEL 'N NEAT PVC TRIMBOARD

Versatex Building Products, LLC, offers a new packaging option designed to keep PVC trimboards clean during transport, storage and installation. Called Peel 'n Neat, it's a tough, clear film that can be factory-applied to 5/8-, 1, and 1-1/4-in. boards, 4 through 16 inches wide, in 18-ft. lengths. The removable protective layer augments standard slipsheets, corner protectors, wrapping and banding at a small additional charge. The film strips away easily, leaves no residue behind, and can be ordered for both S4S and Timber Ridge Versatex boards. Learn more at www.versatex.com.



# PRODUCTS

#### CERAMAX CERAMIC-COATED DOOR HARDWARE

INOX debuts CeraMax, a line of ceramic-coated door hardware for designers, architects and homeowners looking for a finish option that prevents deterioration due to harsh environments, including salt spray, oxidation, humidity and ultraviolet light. INOX is the first and only door hardware manufacturer to offer this finish option. CeraMax is resistant to most solvents and chemicals, providing a high level of hardness and adhesion while also offering a beautiful finish to enhance décor. It withstands the ASTM B117 Salt Spray Corrosion test 85 times longer than stainless steel, and can face extreme exposure to high humidity and ultraviolet light for up to 5,750 hours with no yellowing or loss of luster. Each piece of hardware is finished by hand, and the process includes sand blasting, ultrasonic and



high-pressure air cleaning, and baking in a finishing chamber—all performed under clean-room conditions. The CeraMax line is available in Glacier White, Graphite Black and Flat Black. Visit inoxproducts.com.

### STRESSLESS FURNITURE

Stressless furniture combines innovative functionality with natural materials, such as full-grain leathers and laminated woods. The LegComfort-system is the newest Stressless recliner feature, releasing a hidden footrest with a gentle push to provide optimal and adjustable leg support. The Stressless Plus-system simultaneously aligns the lower back support with the headrest in Stressless recliners and sofas. The BalanceAdapt-system means the sitting angle automatically adjusts to the body's movement—without levers or handles. ErgoAdapt is a built-in tilting mechanism available on select Stressless sofas that adjusts the sofa to the body's sitting angle or sleeping position. Learn more at stressless.com.





### THE DOOR-STUD

Hanging doors was a time-consuming, tedious and a potentially costly process—until The Door-Stud. Home Innovation Holdings' newest innovation, The Door-Stud, cuts typical installation labor time in half. The Door-Stud touts a steel constructed design with a single action clamp and soft-grip handles. This durable tool simplifies the installation of 1-3/8-in. and 1-3/4-in. pre-hung or slab doors. With The Door-Stud, the installer handles a door once. The Door-Stud is vertically adjustable; holding the door upright and leveling the door in three directions for preparation of installation. The Door-Stud enables the installer to conduct a single-person, hands-free installation by mobilizing the door and preventing it from resting against the interior walls of the home; thus preventing damage to the wall or door itself. Once the door installation is complete, The Door-Stud is removed from the bottom edge of the door, ready to be used on the next job. Visit www.thedoorstud.com to learn more or purchase.

### KOOPOWER BATTERY-FREE WIRELESS DOORBELL KIT

The 21st Century has yielded thousands of clever household gadgets but almost all of them suffer from one shared problem—the batteries. Now KooPower offers a Wireless Doorbell Kit that needs no battery for the transmitter. The KooPower Wireless Doorbell utilizes a tiny piezoelectric generator—similar to a push-button barbecue lighter—that creates the electricity and sends a signal to the receivers. The waterproof transmitter is easily mounted outside without wires while the receivers are plugged into any available power outlet. Each receiver features 25 different ringtones along with a flashing LED light for visual indication. With a 500-ft.

(150 meters) range, the receivers work great any place around the home or office. Each receiver will work as a repeater which transfers the signal an extra 500-ft. range. Visit www.koopower.com.



# PRODUCTS

#### **HEALTHFUL HOME AT NHS 2018**

Alexeter Technologies develops and manufactures rapid DIY testing and remediation products for better indoor air-quality. The company's Healthful Home 5-Minute Mold Test is the most accurate and sensitive rapid mold test available. This do-it-vourself kit for households is the only mold kit on the market that gives full immediate results to the consumer. Results reveal both indoor air-quality issues and unhealthy mold problems, while avoiding the high cost of hiring mold inspectors and laboratory testing. The Healthful Home Mold & Bacteria disinfectant and cleaner is a safe and effective way to eliminate unhealthy mold and bacteria contamination without the use of harsh chemicals. A specially formulated state-of-the-art combination of natural ingredients is designed to provide a superior treatment alternative to chemicals and provides a long-lasting residual disinfection. Stop by booth 3510 at the National Hardware Show 2018 or visit www.fiveminutemoldtest.com.



### **CAMPBELL SWIVEL HOIST HOOKS**

The new Swivel Hoist Hooks from Campbell feature a heavy-duty latch and spring assembly and other improvements. The heavy-gauge, high-strength steel latch with reinforcing rib provides ultimate rigidity and bending resistance, and has a yellow chromate finish for corrosion resistance. The double-strength spring ensures the latch is held against the hook to securely retain slings and other components. For added durability, the hooks are designed with dual forged support bosses, providing lateral support for precise latch/hook alignment and engagement. With a 5:1 design factor, the new Swivel Hoist Hooks meet or exceed the requirements of ASME B30.10. The working load limit ranges from 3/4 ton to 22 tons, with hooks available in carbon steel (blue) or alloy steel (orange). Visit www.campbellchainandfittings.com.



1800BunkBed49	Louisville Ladder15
Armstrong ClarkBC	Lumber Liquidators
B'laster	Maze Nails23
Bigfoot Systems	Mychanic
BlueDevil ProductsIFC, 1	Nightlock
Calculated Industries	O'Berry Enterprises14
Champion Power Equipment	Perma-Chink Systems35
Col-Met11	Quickscrews7
Deck2wall Spacer40	Remodeling Show
DeckWise	SePRO
Door Stud31	Slant/Fin
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E-Z Gutter Guard	The Outdoor Greatroom Co
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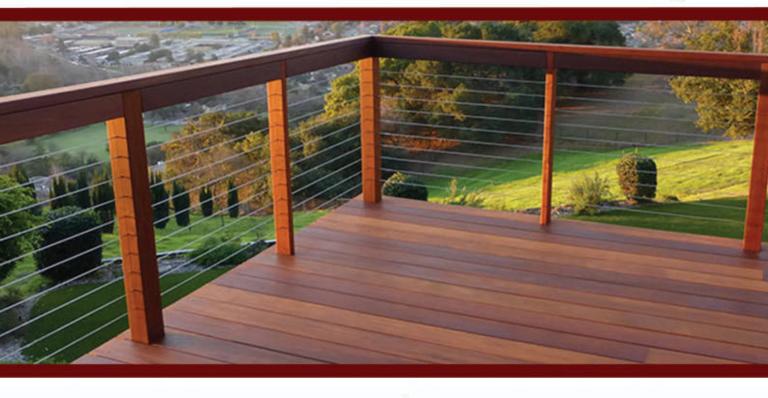
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