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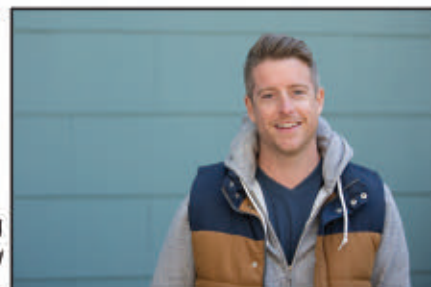
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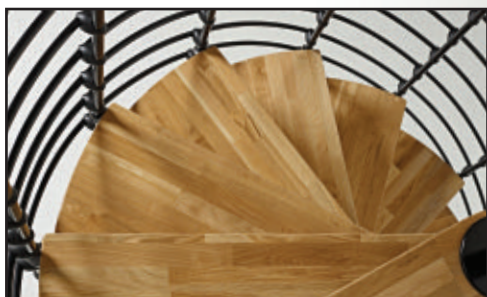
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The stair be used in square or mezzanine applications.

Matching Balcony Rail Kit is available.

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Rustic Meets Modern

Noted Designer and HGTV Host Chip Wade Reimagines a Dated Cabin as “Misty Mill” Idea House on Lake Sinclair in Georgia



Photos Courtesy of Wade Works Creative

As the host of several popular HGTV shows, including *Curb Appeal*, *Designed to Sell* and *Elbow Room*, Chip Wade has seen the development of every type of home product imaginable. That's why when Chip managed a total makeover of his own 2,400 sq. ft. lake house, crowned “Misty Mill” on Lake Sinclair in central Georgia, he wanted the best, top of the line materials for his family. He also plans to use the scenic retreat as an Idea House for media and content, with the theme “Come, Enjoy, Leave Inspired.”

Chip and wife Pauli of Wade Works Creative are design

professionals and lifestyle experts who love sharing their inspiring ideas with DIYers, pros and homeowners.

“All the content for this show house will be about the best in innovative products and installations. I have personally selected the products I feel will be the best representation of this theme,” said Chip.

The premise of Misty Mill is to spend time outdoors taking in views of the lake, without any worries of upkeep or continuous repairs to the home. Coming in from a day of swimming or boating required outdoor spaces where

the family could relax, have family meals or nestle by a cozy fire pit.

The cabin itself was very dated and in desperate need of a modern touch, so Wade did a complete “rustic meets modern” interior overhaul. For the outdoor areas, Wade chose MoistureShield Vision® capped wood composite decking to renovate the 1,400 sq. ft. dock, boathouse deck and 1,000 sq. ft. deck off the main house. The previous dock and decks had been built with pine and cedar and were rapidly deteriorating into splinter-hazards.

Chip went with Vision's Mochaccino color with Cathedral

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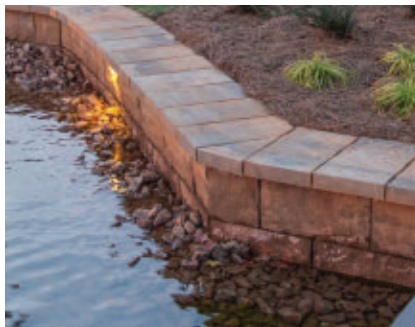
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Stone gray picture framing featuring the brand's unique CoolDeck™ Technology. Decks in direct sun on a blistering hot day can reach temperatures of up to 160 degrees Fahrenheit, but with CoolDeck Technology, surface temperatures can be reduced by up to 35 percent. The deck is topped off with a beautiful outdoor kitchen.



Along with no splinters for bare feet, Vision has a durable cap that reduces maintenance and resists moisture. This is extremely important for the large dock, which stretches hundreds of feet over the water, with splash-overs occurring during high water periods. Vision performs well on the ground, in the water or even underwater.

To speed the installation of the dock, boathouse deck and house deck, Wade used National Nail's CAMO edge screws for a smooth, fastener-free surface, installing them with the lightning-fast CAMO



DRIVE Stand Up tool as well as their hand tool guides –which shaved off weeks of installation time.

For the ailing patio area, he selected Belgard® pavers, an Oldcastle APG backyard leader and sister brand to MoistureShield. Wade used his designer eye to create outdoor spaces feature elements that mimic natural stone and wood textures, pulling together the stunning view of Lake Sinclair and surrounding woods.



Throughout the grounds, Mega-Lafitt® pavers and Anglia Edger® from Belgard® bring natural textures to the design with chiseled finishes and the aesthetic of cut flagstone. The walkway to the boathouse, in particular, features Mega Lafitt in an antique finish to create a distinctive look of stone that has aged over time. The sea

wall harnesses the same natural feel with the hand-chiseled look of Belgard's Mega Tandem Stone® retaining wall system.

Mixed textures flow together on the patio where Mega Lafitt complements Belgard's Noon porcelain pavers, which combines the warmth of natural wood with the elegance of glossy wood.

The cozy space features a fire pit and a retaining wall that doubles as additional seating and showcases the versatility of Belgard's Tandem Wall System, pulling together an outdoor living area that is truly an extension of the home.

The Wades found the perfect get-away on Lake Sinclair, which was created in 1953 as part of the Georgia Power Company's reservoir, with approximately 417 miles of scenic shoreline, winding coves and inlets and just a one-and-a-half-hour drive from Atlanta. Now, the inspirational outdoor living areas at Misty Mill have all of the comforts of the indoors with exterior materials that will keep performing and allow future generations to "Come, Enjoy, and Leave Inspired." **EHT**

For more information visit www.MoistureShield.com and www.Belgard.com



HOT ALTERNATIVES TO HOME HEATING

If this winter turns out to be as robust as the past summer, then we can all expect to do a good bit of shivering and shaking in the next few months. And it's likely to cost people more to heat their homes this year. Although everyone can benefit from weatherproofing and insulation, many people are taking their cost-savings initiatives a step further—looking for alternative forms of home heating. From stoves that burn wood or corn to radiant heating that warms the home through the floor, modern technology has given rise to a wide range of new home heating options to offset the high cost of oil and gas.

THE RUSTIC WARMTH OF WOOD-BURNING STOVES

With home heating costs soaring, more homeowners are installing modern wood-burning stoves. But saving money isn't the only reason to consider this time-honored method of heating your home. There is also an intangible quality of having a wood-burning stove as the center of your home. What could be more welcoming on a cold winter day than the warmth and glow of a crackling fire?



HOT

ALTERNATIVES TO HOME HEATING

The benefits of heating with wood are many: It is environmentally responsible because you are using a renewable resource instead of fossil fuels; it supports the local economy; it lowers your heating bills; and it puts you in control. Wood stoves have come a long way in the past decade. They are more attractive, with styles to fit just about every décor. They are more efficient and cleaner burning than old models. They're also easier to operate and safer.

Aside from the charm of a crackling fire, there is no similarity between wood-burning stoves today and those found in homes 20 years ago, says Thomas Morrissey of Woodstock Soapstone Company of West Lebanon, New Hampshire. "Today's stoves are clean-burning and efficient—most of what goes up the chimney is just carbon dioxide and water vapor. There is virtually no smoke or odor," he notes.

All Woodstock stoves have internal catalytic combustors. The average catalytic stove is 30 percent cleaner burning and 15 percent more efficient than a non-catalytic stove.



With modern stoves, there is virtually no smoke or odor.



There's a lot of difference in modern wood-burning stoves and the stoves that were found in homes 20 years ago.

"Any combustible gases or particles not burned in the firebox are forced through the catalytic combustor and incinerated there," explains Morrissey. The extra heat created by the catalyst is captured by the stove and radiated into your home. That means when you put a pound of wood into the stove, you extract just about every Btu from that energy.

The company manufactures wood-burning stoves from soapstone. "It's nature's perfect stove material," says Laura Scott, Woodstock's customer service manager. It holds twice as much heat per pound as iron or steel, and it radiates that heat steadily, even hours after the fire has died down. Plus, the warm grain and color of soapstone make these

woodstoves attractive pieces of furniture that you can enjoy year-round. (Courtesy of ARA Content)

MULTI-FUEL STOVES

Wood-burning stoves have been a home heating staple for centuries, but more recently, stoves that burn dried wheat or corn, or pellets made from dehydrated, compressed wood chips, have grown in popularity. Multi-fuel stoves are the first heating option that allows you to burn all three environmentally friendly fuels in the same stove.

Like traditional wood or other single-fuel stoves, the multi-fuel stoves, when used as an alternative heat source for your home, can cut your energy bill by up to 70 percent, says Glenda Lehman Ervin of

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Multi-fuel stoves can burn wood, dried wheat or corn.

Lehman's, an old-time general store founded by her father in northeast Ohio in 1955.

"The Environmental Protection Agency rates multi-fuel stoves as the most energy-efficient stoves available," says Lehman Ervin,

who uses a Greenfire brand multi-fuel stove.

"Multi-fuel stoves allow responsible homeowners to take care of the environment and their wallets at the same time," says Lehman Ervin. Purchasing pellets, shelled

and dried corn, or hulled and dried wheat can be cheaper than buying wood and easier than chopping your own free wood. These alternative fuels are good for the environment because they are made of endlessly renewable materials that do not contribute to climate change the way fossil fuels do.

"You need to have the storage space for wood, and it takes a year to properly season wood for your stove," Lehman Ervin notes. Wood must also be stored properly to ensure it is preserved and does not attract rodents or insects close to your home. Corn, wheat and pellets, however, require much less storage space and no special preparation or consideration by the homeowner.

"Anyone who doesn't have access to wood or who would prefer to avoid the chore of chopping it, or the risk of storing it in their home, would find a multi-fuel burning stove a versatile alternative," she says. Like any stove, the

HOT TIPS FOR HEARTH HEATING

For anyone who is thinking of cutting the winter chill with a couple of extra sweaters, the Hearth, Patio & Barbecue Association (HPBA) of Arlington, Virginia, has good news. People can reduce monthly heating expenses by installing a hearth product, such as a freestanding stove or a fireplace insert, as a secondary heater for the high-use zones of a house.

"With a hearth product, people can focus heat where they spend the most time, like family rooms or kitchens," says Carter Keithley, president of the HPBA.

"This concentrated heat requires less energy and helps save money on home heating bills."

The concept of zone heating with a hearth product has the greatest potential for cost savings when people add a wood or pellet-burning stove, or fireplace insert, because of the cost of the fuel. This past winter firewood was approximately 61 percent less expensive than electricity and around 20 percent less than oil and natural gas. The savings with pellet fuel was also significant.

The addition of a gas stove or gas fireplace insert can also provide home heating relief because these state-of-the-art hearth products operate with greater efficiency than many older gas furnaces in homes today and do not lose heat through inefficient ductwork.

The Hearth, Patio & Barbecue Association offers the following tips to help keep home heating costs in control this season:

- **Determine the zones to heat:** Taking an inventory of the rooms most used in a house to help determine where to concentrate heat for the most comfort.
- **Update an existing fireplace:** Most traditional fireplaces are a major source of energy loss. If the chosen zone has a fireplace, adding an energy-efficient fireplace insert can turn the fireplace into an effective heating source.
- **Add a freestanding stove:** Kitchens, living rooms and family rooms without fireplaces are good candidates for freestanding stoves. Most stoves are compact and can easily be installed in rooms with limited space requirements.
- **Choose a fuel:** Natural gas, propane, wood, and wood pellets can be burned in either a fireplace insert or a freestanding stove. (Courtesy of HPBA)

multi-fuel stoves require a chimney. And the convenience of the alternative fuels makes a multi-fuel stove a good option for anyone living in a more urban area.

Multi-fuel stoves cost about the same as a traditional wood-burning stove. However, fuel costs are less than buying wood and far beneath fossil-fueled heat. Dell-Point Europa, manufacturers of Greenfire stoves, cites a vast difference in average annual fuel costs: more than \$1,500 per year for electric, \$1,000 for oil and just \$385 for corn.

"Depending on where you live in the country, finding fuel can be as easy as visiting the local feed store," Lehman says. Or, you can find retailers online at www.pelletheat.org, the website of the

Pellet Fuels Institute, or by searching online for corn and wheat sellers in your area. In bread basket states, corn and wheat are popular fuels. In the Pacific Northwest and Northeast, wood pellets may be more readily available.

To learn more about multi-fuel stoves, log on to www.lehmans.com or check out Alternative Heating Systems at www.corn-stoves.com (1-888-989-2700). (Courtesy of ARA Content)

PORTABLE WARMTH

There's no doubt that the price of oil and heat this winter will shock our wallets. And heating bills are likely to continue to skyrocket, leaving less cash in the bank for other needs. According to the manufacturers of Honeywell

heaters, the average annual cost to heat a house at 70 degrees is \$1,700 (based on an average 1,500 square foot house)? It makes good sense to heat only the rooms in which you spend the most time, rather than the whole house. With a portable heater, homeowners can save hundreds of dollars annually.

A broad line of portable heaters is available to help stay warm without the winter freeze of heating bills. Portable heaters can supplement your central heating, keep drafty basements or workshops warm and create a personal level of comfort in whatever room you're in—a great solution when one spouse is always hot, while the other is always cold. And when lowering the temperature in a

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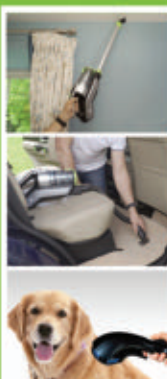
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Portable heaters are great for a personal level of comfort, when one spouse is hot while the other is cold.

house by even one degree, consumers can save up to 2-percent in heating costs per year.

When selecting a portable heater, be sure the unit has plenty of safety features. Know where you will put your heater to help decide on shape, color and style. And make sure your electrical outlet is safe and secure. Many homeowners have more than one portable heater, depending on where they want to supplement their heat. Family rooms and workshops are often where portable heaters are used. For instance, baseboard heaters are perfect for the family room with consistent, silent heating. But in the bedroom, you may prefer a ceramic heater with its focused broad heating. The following is a brief overview of the wide array of portable options to choose from.

Ceramic — A ceramic heater provides quick, focused heating. It can be easily directed to send warmth where it's most needed. Ceramic heaters are the most commonly purchased variety of heater and

are available in several shapes and sizes. They are commonly used in sunrooms, workshops and small offices.

Baseboard — Baseboard heaters are terrific to use in places where you do not currently have heat (like a basement or family room). They are quiet and heat the air in the whole room. Baseboard heaters are low-profile (short and line up against a wall) and are therefore less noticeable.

Fan-Forced — Like ceramic models, fan-forced heaters provide personal, directional heating, creating currents of warm air that can be directed by the user. They are highly efficient at heating the exact space you are in. Fan-forced heaters are commonly found in bedrooms, offices and workshops.

Radiator — A radiator heater efficiently heats the air in the room through ambient heat vs. a direct stream of heat. It is a popular type of heater because it simulates a traditional home radiator and

blends nicely in most environments. It is widely used in basements and family/living rooms.

Quartz or Carbon — This heater also provides quick, focused heating. A quartz/carbon portable heater is a personal heater; it heats you, not the air around you. This makes it much more energy efficient, running at a lower wattage than traditional heaters while still emitting the same amount of powerful heat. It is most commonly used in workshops and basements. (Courtesy of Honeywell Home Products)

HEAT AT THE FEET

It's a fact of life: No matter how warm your house is, if your feet are cold then you feel cold all over. On the other hand, if your entire floor is heated to 72 degrees, then this large heated surface will radiate heat outward to all areas of the room. A heated floor coupled with a 70-degree air temperature does a great job warming you from head to toe, making the home comfortable enough for bare feet in the middle of winter.

Radiant heatflooring is available in two types: electric and hydronic. Hydronic systems generally feature under-floor flexible pipe that carries hot water across the floor. The flowing hot water provides the floor's pervasive warmth. These systems are usually installed in whole-house new-construction applications. Hydronic systems can be powered by gas, oil, electricity or solar energy, making them more flexible and economical than electrical systems for whole-house applications.

Electric systems use mortar-embedded cable or thin under-floor mats that are wired to work much like electric blankets. These systems are often used to heat small areas such as kitchens, bathrooms



Radiant heat flooring radiates warmth outward to all areas of the room.

and entryways. Electric systems are typically easier to install than hydronic systems. They work well in many single-room remodeling projects because many existing homes have electric heat, so it's easier to maintain the same energy source.

Whether hydronic or electric, radiant heat floor systems offer the popular combination of comfort and energy efficiency. The Radiant Panel Association, a trade organization for the radiant heating industry, estimates that these systems can reduce a home's energy usage by 25 to 30 percent when compared to forced-air systems, because they use direct heat rather than air currents.

Silent operation is another bonus. And because these systems are free of the drafts associated with traditional ducted heating systems, they also keep indoor air cleaner by not circulating dust like forced-air systems do.

INFRA-RED HEATING

For commercial use, you might consider an alternative such as infra-red heating. Unless otherwise indicated, infra-red heaters are not certified for residential use or where flammable gasses or vapors are present (such as spray booths). But for private business owners, infra-red heating works well in wood shops, pole barns, auto shops, warehouses or even

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home garages. According to Detroit Radiant, independent studies reveal that gas-fired infra-red heating can save 20 to 50 percent in fuel consumption over forced air heating.

The two types of infra-red heating are High-Intensity and Low-Intensity. High-intensity heaters have been around since the 1950's. These types of heaters require high mounting heights due to an open flame that covers a ceramic surface. High-intensity heaters also have a reflector to help direct the heat where it needs to go. These are used to spot heat areas with few workers and are typically unvented.

The other type of infra-red heating is called Low-Intensity. These heaters have an enclosed flame. When heat is required, the burner control box ignites a gas/air mixture and hot gases are pushed through steel radiant tubing by an

internal fan. The tubing is heated and emits infra-red energy, which is then directed toward the floor by highly polished reflectors. This energy is absorbed by objects in its path, such as the floor, machinery and people. Objects in the path of the infra-red energy in turn re-radiate this heat to create a comfort zone at the floor level.

This method of heating, as opposed to filling a room with warm air, allows the source of heat to begin at the floor level and not the ceiling. With a forced-air system, heat escapes as doors are opened. When the doors close, the system will have to reheat the air as if from a cold startup. However, with infra-red heat the floor acts as a reservoir. When doors are opened the slab loses very little heat, and when the doors close, that huge mass acts as a heat exchanger to reheat the cold air. *(Courtesy of Detroit Radiant)*



MORE HELP FOR HOME HEATING

ELECTRIC FIREPLACE

This Built-In Electric Fireplace from MantelsDirect.com is designed for easy installation in new construction, remodels or existing fireplaces. The zero-clearance design allows flush-mounting to drywall, tile or



installation into a finished cavity. Available in 33- and 39-inch sizes, this electric fireplace features a realistic hand-carved log set, glowing logs and a fully viewable fireplace area. User-friendly controls are easily accessible, and a multi-function remote control is included. Electric fireplaces make a great alternative heating source. This unit can be wired with either 120- or 240-volt service, allowing the units to produce 5,000 or 9,200 BTU's. www.mantelsdirect.com

OPTIMIZE YOUR HEATING SYSTEM

The AirFlow Breeze works with your existing central heating and cooling system, drawing additional air to the problem areas in your home. Once you set your target comfort level,



the built-in temperature sensor takes over. It will direct the powerful, yet quiet fan to pull extra warm or cool air out of weak registers, increasing air flow, and delivering the comfort you demand. By improving the air flow from your existing central heating and cooling system, the AirFlow Breeze provides an affordable alternative to space heaters, costly attic fans and complex zoning systems. www.aftproducts.com

COMPACT BATH HEATER

What room in your home has a noticeable chill in the morning? If you answered "the bathroom," you'd be like most of us. If you could quickly warm up your bathroom without turning up the heat in the rest of the house, imagine your energy savings.



Cadet Manufacturing has just introduced the Com-Pak Bath Heater, which allows you to do just that. This new in-wall electric

fan heater provides instant heat and warms the entire bathroom area. It comes with a built-in 60-minute auto-timer, which overrides the built-in thermostat setting for instant heat, providing you with peace of mind and convenience. The slim profile grill allows the heater to blend into your space and décor. The Cadet Com-Pak Bath Heater is available in 1000 Watts, which shouldn't overload most bathroom circuits. It can be configured for either 120- or 240-volt applications with a quick switch of a wire. www.cadetco.com **EHT**

From Santa's Workshop to Yours



CONSTRUCTION MASTER® PRO
Improve accuracy, reduce costly errors and save time. Model 611

AIRSHIM™
The extra hand you need to lift, shift, align, level and plumb. Holds up to 300 LB. Model 172

LOWE'S

Elf Tested – Pro Approved!

CONSTRUCTION MASTER PRO

- Solves construction math fast
- Accurate, reliable, rugged
- Complete roof, rafter and framing solutions
- Automatic stair layouts – treads, risers, stringers

AIRSHIM

- Inflatable Pry Bar and Leveling Tool
- Great for window, door, cabinet and appliance installs
- Raise and lower to perfect alignments by yourself
- Durable, no-scaff cover

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A photograph of a wooden deck with a stone fireplace and a window looking out onto a lake. The deck is made of light-colored wood and has a dark brown railing. The fireplace is made of rough-hewn stone and has a dark metal grate. The window is framed in dark wood and looks out onto a lake with trees in the background. The text "Last-Deck" is overlaid in large, white, italicized letters, and "THE LAST DECK YOU WILL EVER NEED" is overlaid in smaller, white, italicized letters below it.

Last-Deck

THE LAST DECK YOU WILL EVER NEED

Last-Deck requires no staining or sealing, just mild soap and water for cleaning. No warping, splitting, cracking, rotting, molding, lightweight and fire-resistant. Last-Deck is available in a multitude of options allowing you to design your own luxury outdoor space.

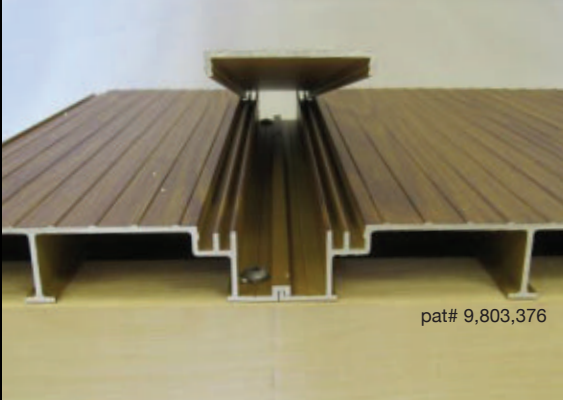
Manufactured in the Midwest of all American made structural-grade aluminum – the same as an aircraft; Last-Deck is built with high quality standards from our family to yours.

LAST-DECK 300 SERIES

The 300 series is a patented, watertight product that has the ability to be replaced without having to start at one end. Should you receive damage at the mid-way point of your deck, simply pop up 2 joiner strips, replace the bad plank, snap the joiner strips back down, and your repairs are finished!



300 SERIES EASILY POP UP AND SNAP BACK DOWN!



pat# 9,803,376



www.lastdeck.com

information@lastdeck.com

toll free: 866-527-8332



Extreme How-To

2019 HOLIDAY GIFT GUIDE

It's that time again—the holidays. As matter of fact, “that time” seems to arrive earlier every year and if retail stores were to have their way we would all be Christmas shopping in July. So it's never too early to consider gift ideas for your favorite home-improvement enthusiast. The *EHT* staff has compiled some suggestions of tools and gadgets—some big, some small—to brighten the faces of your favorite DIY'er this year. Take a look, make your list, and have a great holiday season.



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PRO GRADE **DURABILITY**

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WORK SHARP PIVOT PRO KNIFE & TOOL SHARPENER

The Work Sharp Handheld Pivot PRO Knife & Tool Sharpener quickly and easily restores factory sharpness to knives and a wide range of edge tools. Convex Carbides quickly restore a sharp edge, while the fine grit ceramic rods hone a knife edge to factory sharp results. Pivot Response follows the curve of the blade when sharpening making it easier and more consistent. Includes two additional dedicated sharpening modules, one for fine edge lawn & garden tools and another for scissors and shears. Medium grit diamond plate provides the perfect solution for sharpening a wide range of blades, including axes. Handheld design is effective for use both on a work bench or countertop and out in the yard or at camp. Scissor and Shear sharpener can be removed from handle for convenient use where and when you need it. Sharpens knives, scissors, garden tools, pruners, shears and more. Available on Amazon for only 9.95

WALABOT DIY PLUS

Walabot DIY Plus is the ultimate home improvement tool that can see through and detect items within the three main types of walls used in U.S. homes: lath and plaster, concrete, and drywall. Using Vayyar's highly advanced imaging sensors, Walabot DIY Plus can see up to four inches into a wall and create a 3D image of what's inside in real-time. Part of Vayyar Imaging's Walabot consumer product line, Walabot DIY Plus brings "Superman vision" to homeowners by letting them see



through their walls to tackle any home renovation, construction and DIY project. Visit www.walabot.com/diy to learn more.

COAST HP7 FLASHLIGHT

A longtime *EHT* staff favorite, the HP7 flashlight features the latest in LED technology. Coast's Pure Beam optics produce a pure, bright consistency across the entire beam, whether you want the tightest spot or widest flood of light. The unique spot-beam optics provide a clear, bright center, while also showing a wide angle "halo" so you can see what's going on around your



primary target. The HP7 flashlight is housed in a rugged 5.5-in. aluminum casing. It projects 207 lumens of brilliant light delivering a runtime of 3.5 hours. It has a beam distance of 613 ft. and offers high and low beam modes. Visit www.coastportland.com

TG TOOLS KIK FORSTNER BITS

Forstner bits are the best choice for drilling precise, flat-bottomed holes in wood. The radial cutting edges shear wood fibers at the edge and bottom of the hole, creating a smooth bore with an exact diameter. The Kik Forstner bits



from TG Tools actually have nine cutting edges, which permit cutting curved paths, channels, routing and milling in wood and plastics. They can cut on the edge of a block of wood to create channels and can also be used to create overlapping holes. The Kik bits also come in a nice, dovetailed wooden box to protect the cutting edges. Available on Amazon

APEX® U-GUARD™ FASTENING SET WITH ALPHACASE™

The new line of APEX® u-GUARD™ non-marring covered tools, includes bits, bit holders and nutsetters and is now available for purchase individually

or packaged in the rugged new APEX alphaCASE™ bit storage case. This case has superior durability that contractors, industrial technicians and auto mechanics need, with pivoting insert rails for easy access to the stored bits. Available online at International Tool

A.O. SMITH MAIN FAUCET FILTER

Give the gift of clean healthy water this season. The A.O. Smith



Main Faucet Filter is easy to install under the sink. This filter will reduce up to 99% of 6 harmful contaminants including chlorine, lead, cysts, atrazine, lindane and turbidity. The filter system includes one carbon block filter and all the parts necessary for installation-no plumber required! Available at Lowe's.

WORK SHARP BENCHTOP ANGLE SET KNIFE SHARPENER

The Work Sharp Benchtop Angle Set Knife Sharpener is a complete, versatile and adjustable knife sharpener. The 3 sided sharpening rods provide coarse and fine grit diamond plates to quickly restore a sharp edge, while the fine grit



ceramic stone creates an incredibly keen edge on any knife. Rods rotate for quick indexing between grits making it fast and easy. Sharpening Angles can be set to 15°, 17.5°, 20°, 22.5° or 25°. Conveniently folds down and stows in a compact case. Designed with knife making legend Ken Onion, this sharpener is a must have for any edge enthusiast. Available on Amazon for \$49.95

REOLINK ARGUS 2 SECURITY CAMERA

The Reolink Argus 2 rechargeable battery-operated security camera, featuring 130 degree wide angle and highly sensitive



PIR motion sensor, captures all human movements with almost no false alarms. When motion events are detected, Argus 2 will wake up at once to send you instant alerts and at the same time, the siren or customized voice alert will sound automatically to deter the unwanted. Visit Reolink.com





GREENWORKS PRO 60V BLOWER

Give the lawncare gift that can be used all year round. This blower is powered by advanced lithium-ion battery technology and at 540 CFM (140 MPH) it's more than strong enough to get it done. No emissions and low noise means you won't be disturbing the holiday festivities when you need to tidy up the yard. Available at Lowe's.



HOOVER ONEPWR CORDLESS CLEANING SYSTEM

Handymen and DIYers can use the powerful HOOVER ONEPWR Hand Vacuum and Wet/Dry Utility Vacuums to clean up the garage, basement, shed, workshop, cars, and outdoors. Yard blowers and deck sweepers help keep the outdoors clean. No long



cords to deal with or the hassle of gas-powered storage. Plus, they can PWR ON and PWR UP with time-saving interchangeable batteries without the worry of running out of power! Available at Hoover.com

ROAMWILD MULTI PULL SAW PRO

The Roamwild Multi Pull Saw Pro incorporates new and unique features and leaves a fine finish to wood and plastic. The saw is engineered for great balance, so it's as comfortable to use when cutting a large piece of sheet material or trimming the thinnest



slither from the finest piece of hardwood. The Roamwild Multi-Pull Saw has a general carpentry edge along the base of its blade and a fine-cut edge at a perfect angle along the top of the blade. The saw also encompasses a tack hammer and puller built into in the handle, and even a handy measuring ruler and angle tool too. Available online at homgar-usa.com

DEWALT 20-VOLT MAX LITHIUM-ION CORDLESS COMBO KIT

This 4-tool cordless combo kit includes one 20V MAX drill/driver, impact driver, oscillating multi-tool, LED work light, charger, two batteries, and a tool bag. The DCD771 drill/driver features a two-speed transmission, is light-weight and compact for working



in tight spaces. The DCF885 allows for convenient one-handed loading and accepts up to 1 in. bit tips. The DCS355 oscillating multi-tool has a powerful brushless motor providing the power you need to get the job done. The DCL040 LED light helps illuminate dark work spaces and can be used hand-free. Available at homedepot.com

DRILL DOCTOR 750X

The top of the line, professional-use Drill Doctor 750X sharpens standard twist and masonry bits from 3/32 to 3/4 inch. The custom point angles can easily be set anywhere from 115 to 140



degrees. The adjustable material take-off further extends the life of the bit by allowing users to modify the amount of material removed during sharpening. The longer chuck jaws hold bits precisely, and jaw guides eliminate jaw twisting on small bits. The 750X also creates and restores split-point drill bits. The 750X is fit for sharpening carbide, cobalt, high-speed steel, black oxide, TiN-Coated, twist and Masonry bits. Available online at homedepot.com

KIK SPADE BITS

When it comes to spade bits, the Kik Pro Series bit lineup from TG Tools offers an advantage that—to our knowledge—no other spade bit can claim. It is the unique ability to drill holes at a



curve, changing direction easily during the drilling process. The Kik bits eliminate the spur commonly found on similar bits, which allows the Kiks to alter the drilling trajectory for curved holes. This ability makes many tricky tasks easier for plumbing and electrical installations. Furthermore, since the bit keeps spinning at varying angles, it never binds and stalls in the hole, which is a common problem with spurred spade bits. Engineered with 30 percent more cutting surface, the Kik bits also result in longer life than standard competitors and rank among the fastest drilling spades on the market. Available on Amazon.

GENERAL DIGITAL SLIDING T-BEVEL

The Digital Sliding T-Bevel (828) from General Tools & Instruments takes the guesswork out of angle measurement and duplication, and eliminates the problems associated with interpreting analog readings and transferring manual measurements. The innovative Digital Sliding T-Bevel is the first



and only digital T-bevel on the market. It's perfect for measuring, storing and transferring inside and outside angles for fine carpentry, cabinet building, tile installation and more. It operates as both a digital T-bevel and a protractor, offering easy-to-read angle measurements via a large LCD and integrates an 8-in. stainless steel blade with a steel locking knob. The Digital T-Bevel features a resolution of ± 0.05 degrees and can measure angles ranging from zero to 360 deg. in any plane to an accuracy of ± 0.3 degrees. Visit www.generaltools.com.

SAWSTOP JOBSITE SAW PRO TABLE SAW

The new Jobsite Saw PRO table saw makes a tremendous addition to any wood shop or job site. The upgraded PRO model carries forward all the features that established the original Jobsite Saw as a class leader, including



SawStop's contact detection technology, while adding new capabilities optimized for the construction and woodworking professional. The original Jobsite Saw debuted in 2015 to positive reviews. Rob Robillard with ToolBoxBuzz called it "pure innovation with premium features, functionality and compact portability." Gary Katz with ThisIsCarpentry wrote, "The folks at SawStop really went all-out to engineer a stellar tool. They succeeded." Frequently praised features include one-turn elevation, squeeze-to-tilt balanced trunnion, and an onboard accessory storage drawer.

The PRO model adds to the long feature list, including:

- A New Active Dust Collection Blade Guard (now included with saw)
- New 24.5"+ deep table surface
- New quick-change High/Low T-Glide Fence face

Learn more at SawStop.com

SERTA® ICOMFORT HYBRID BLUE FUSION

When you settle down for that long winter's nap, you want comfort and support. This mattress combines TempActiv™ Gel Memory foam with a layer of Serta® balanced support foam for a firmer feel with breathable, gentle cushioning. Your body gets exceptional support from the Serta® Hybrid



Coil™ support system, built to deliver the ideal trifecta of comfort, support and durability. The Blue Fusion 100 firm mattress is finished with soft, yet durable TempActiv™ Balance fabric for high-performance heat and moisture regulation. Available at Lowe's

CAMO DECK FASTENERS

From the deck boards to the substructure, trim and beyond, Camo provides easy and affordable fastening options with the Camo Hidden Deck Fastening System and Camo Exterior Screws (in composite or stainless steel). The new Camo Drive collated stand-up tool won the the 2019 Best of IBS Awards' Best Outdoor Living Product at this year's International Builders Show (IBS) in Las Vegas. Engineered with insights from decking pros, the Camo Drive tool was designed for



installation speeds up to five-times faster than current methods. This ergonomic deck-board installation tool gets contractors off their knees in a standing, comfortable position. It easily attaches to the contractor's own drill, compatible with three end



attachments that face- fasten, edge-fasten with Camo's proprietary Edge Screws, or installs the new Camo EdgeClips for grooved boards of any decking material. These new clips cut grooved deck-board installation time by more than half when paired with the Never-Miss Guide that's included in every pail. Visit www.camofasteners.com/drive

MILWAUKEE'S NEW MEASURING TAPES STANDOUT AMONG THE REST

This year Milwaukee Tool is taking tape measures to the next level with the introduction of redesigned STUD™ Tape Measures, new Wide Blade Tape Measures, and new Compact Tape Measures. Equipped with custom internal gearing, the new generation of STUD™ Tape Measures utilize a smaller spring to reduce size and allow for a more compact, comfortable, and ergonomic fit in your hand. This new-to-world design allows for an optimized spring to control blade retraction speed, minimizing whip. Cutting-edge EXO360™ Blade Technology protects the tape's blade from ripping and wearing. Milwaukee's new Wide Blade Tape Measures



feature an anti-tear blade coating that reinforces the first 6 inches of the blade, a 5-point reinforced frame for drop protection, a Finger Stop for controlled blade retraction, and 2-sided blade printing for increased readability. The Wide Blade Tape Measures will also have 16-foot and 25-foot magnetic options. Milwaukee's new Compact Wide Blade Tape Measures are a best-in-class compact size and deliver up to 12-feet of standout. The Compact Wide Blade Tape Measures will also be available

in Magnetic models that feature a Finger Stop. For more information, visit www.milwaukeeetool.com

CONSTRUCTION MASTER PRO MAKES CONSTRUCTION MATH EASY

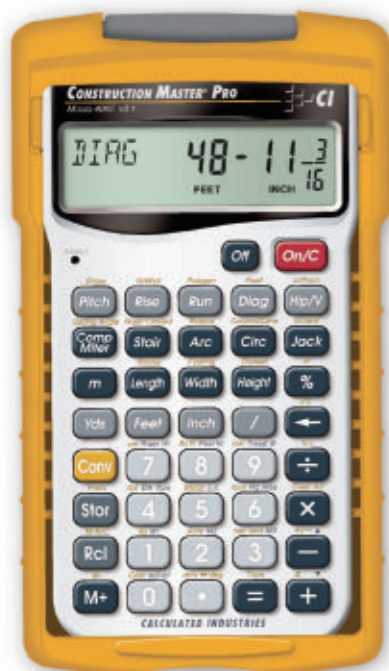
The Construction Master Pro is an advanced feet-inch-fraction calculator with powerful built-in solutions that are designed to be straightforward to use. The calculator works the way you work. You enter measurements the way you say them. Plus, you can enter measurements in a variety of formats and the calculator will convert to your preferred output. It is perfect for completing layouts, plans, bids and estimates. The Construction Master Pro has dedicated function keys that make completing stair layout calculations easy and accurate. You can also use it to determine cut lengths and angles for roofing systems including length, level and plumb cuts. Its built-in right-angle function allow for square-ups, slopes and more. Part of its many built-in functions is its ability to calculate

area and volumes even with circles and columns. With just the press of a button you can work with arcs and radius along with cones for framing, concrete and landscaping work. Its compound miter cut feature lets you adjust the spring angle of your molding so you can work with crown molding of various heights. You can select from standard material sizes for drywall, sheeting, roofing and more enabling you to create material requirements list and to calculate material costs for a project. The calculator comes in a rugged shock, dust and moisture-resistant Armadillo Gear protective case. Additionally, it has a pocket reference guide in both English and Spanish to help you get started. Learn more at www.calculated.com

DEWALT ANNOUNCES 20V MAX XR® 1/4 SHEET SANDER

The 20V MAX* XR® Brushless Cordless 1/4 Sheet Variable Speed Sander (DCW200) is an addition to DEWALT's popular, now six-tool cordless woodworking line. It's also part of the expansive 20V MAX System from DEWALT, featur-

ing over 200 products that serve a wide variety of users in numerous applications. The 20V MAX XR® Brushless Cordless 1/4 Sheet Variable Speed Sander provides users with the power and runtime needed to get the job done. A variable, seven-speed dial offers speed control from 12,000 – 14,000 OPM, allowing users to match the sander's speed to their application. At 5.3 inches tall, 6 inches long, 4.6 inches wide, and 2.1 pounds without a battery, the sander is low-profile, sitting close to the work surface for precision in detailed applications. To aid in dust collection, the sander features a one-handed locking dust bag that attaches securely to the sander through its AIRLOCK™ compatible dust port. Alternatively, the user can attach the sander directly to the DWV010 or DWV012 dust collectors, sold separately. The sander features a rubber over-mold grip that provides comfortable sanding, while a paper clamp is designed to hold paper securely and provide easy installation. More information on DEWALT tools, including additional cordless woodworking options, can be found at www.DEWALT.com





CHAMPION'S "WHAT IF" GENERATOR

At 1500 starting watts and 1200 running watts, this rugged generator with its durable steel frame is easy to transport and provides just what you need small jobs around the house. The next time there's an outage, the 80cc Champion single-cylinder OHV engine will provide the power you need for a few essential items in an emergency - lights, microwave, fan, TV, modem/router, cell phone charger, and more. Power up with Champion's reliable recoil start, plus Cold Start Technology ensures a quick start in cold weather. Champion also makes it easy to monitor voltage, frequency and operating hours with Intelligauge. This unit includes two 120V 20A covered household outlets (5-20R). Designed for safety with convenient push-to-reset circuit breakers, a low oil shut-off sensor plus an included oil funnel for easy changes, this unit has a 0.4-quart oil capacity. The reliable 80cc single-cylinder OHV Champion engine produces 1500 starting watts and 1200 running watts and will run for up to 11 hours at 50 percent load when the 1.9-gallon tank of gasoline is full. With a noise level of 65 dBA

from 23 feet, which is a little bit louder than normal speech, this machine can handle a few basic essentials in an outage. Visit championpowerequipment.com

ACCUMASTER DUO PRO PIN & PINLESS MOISTURE METER OFFERS THE CONVENIENCE OF TWO METERS IN ONE

The AccuMaster Duo Pro Pin and Pinless Moisture Meter offers the most desired dual functions of moisture meters. Its pin option enables you to get precise measurements in building material that you can stick its 15 millimeter pins into. The pad feature lets you measure moisture content to the depth of 3/4-inch in hard material without damage to the surface. This moisture meter is ideal for those who test a variety of materials for moisture content including lumber, firewood, drywall and concrete. It has an accuracy of +/- 3-percent. Its measuring Range for the pin mode is five percent to 50-percent in wood and one percent to 33 percent with other building materials. The pinless mode measures from 0.1 - 100 percent for all materials with a measuring depth up to 3/4-inch. This digital meter has large

easy-to-read digits and features white LED backlighting for easy visibility in low light areas. Additionally, it has a hold button that locks the LCD screen for remote readings for those hard-to-reach locations. It is handy for helping to locate water leaks



hidden behind ceilings, walls and under floors. The meter comes with a protective cover that keeps the test pins clean and prevents injury. The stainless-steel test pins are replaceable. It also comes with a one-year warranty. Learn more at www.calculated.com

WORKSHOP LIGHTING

Visibility is crucial to an organized workshop, and this requires good lighting. To upgrade the ceiling light in a garage-turned workshop, EHT replaced an 8-foot fluorescent tube fixture with Striker Concepts' new MPI MultiPoint Illumination Motion Ceiling Light. Unlike a traditional single-point light fixture, the MPI creates five points of light from a



single standard bulb fixture. These five lights are designed to illuminate all corners of the room and reduce shadows. The MPI system is simple to install by screwing the central hub into bulb fixture, so there is no need to hire an electrician. The surrounding light pods connect to the central hub with push-fit cables and extend up to 9.5 feet, where they can be screwed to the ceiling exactly where you need them. Simply twist the light pods to tighten the cables. After installing the system, *EHT* was pleased to report the combined light output of the MPI far outshines the 8-foot tube, lighting the peripheral edges of the room much more thoroughly than the old central fixture. The MPI's motion sensor keeps the light off until you walk into the room, and a well-lit workshop is crucial to searching for all those tools that tend to go missing. Learn more at www.stkrconcepts.com

INTRODUCING THE NEW IMPACTO® SLK GRIP TRACTION OVERSHOES

One of the latest innovative products added to the Foot Protection Line from Impacto Protective Products Inc. is the SLK GRIP. The new IMPACTO SLK GRIP fits snugly over most shoes and boots and provides outstanding grip and traction to protect from accidental slips and falls. The SLK GRIP's



tread pattern does not mark floors. The SLK GRIP is fully washable and 100 percent waterproof. They are durable and flexible, hard to tear and can be used over and over again. The SLK GRIP is ideal for use indoors or outdoors - at home, the office, schools, gardens, parks, farms or anywhere when walking on wet surfaces. The SLK GRIP is perfect for work sites such as warehouses, offices, and construction applications such as roofing. Visit impacto.ca

SPEED AND CONSISTENCY FROM MURO'S AUTO FEED SCREW SYSTEM

Muro, one of the original developers of Auto Feed Technology still remains prominent within the industry 30 years later. Speed, while important is not the biggest advantage that can be gained by utilizing a Muro Auto Feed Screw System. Consistency and ease of use are more important factors, and a reason why these tools are so popular. Gone are the sore backs and knees normally associated with driving screws. The easy to load 150 screw coils and no jam design, along with the height adjustable handle, allows users to work standing up for hours on end. The built-in countersinking feature removes the guess work when driving and seating screws providing the same depth each and every time. Screw development has also come a long way over the years, twin fast threads, special screw tips which eliminates the need to pre-drill any nibs under the head for countersinking. Everything now is completed in one simple operation: just drive the screw and you are done. Muro has screws for complex composite lumber, engineered joists, OSB flooring, PT chemicals and flooring substrates for tiling applications. Muro even have tools that can



drive screws up to 4 inches long – another first in the industry. Additionally, Muro has even taken another huge step in fastening wood to steel, including heavy gage metal. Visit the Muro.com

DRYER DUCT BOOSTER® SPEEDS DRYING TIMES SAVING TIME & ENERGY

Don't waste time and energy - dry your clothes with one cycle! Dryer Duct Booster® reduces

clothes drying time by 60 percent or more, saving energy and preventing lint build-up, dust and fire hazard potential. Maintains proper velocity in duct runs up to 150 equivalent feet. Features the Lint Blitzer™ material handling wheel and five year no-clog guarantee. 50-watt motor is not exposed to heat, lint or moisture. Includes 115 VAC cord - automatic operation. Suitable for gas and electric dryers. Learn more at www.tjernlund.com

AIRSHIM PRO XL INFLATABLE PRY BAR & LEVELING TOOL PROVIDES AN EXTRA HAND FOR HEAVY PROJECTS

The AirShim Pro XL is an Inflatable Pry Bar and Leveling Tool that is helpful for installing and leveling cabinets, doors, windows, appliances, furniture, countertops and more. Its long, narrow design provides for greater lifting in the contact area without folding. This contractor-grade AirShim Pro XL can support up to 500 pounds. It spans a gap from 3/32-inches deflated up to 3 inches when fully inflated. The impressive feature with the AirShim is the ability to



precisely adjust while lifting, and leveling during installation so you get dead-on accuracy. Plus, its rounded corners and FirmFlex technology enables you to force the AirShim into tight spaces without folding. The AirShim Pro XL has a 10.75-inch long surface which provides for a stable lifting platform that does not wrap or fold around narrow work surfaces like a door edge. The nice part is this inflatable pry bar enables you to lift, shift, level, plumb and align heavy objects by yourself. The bag is 5.25 inch x 10.75 inch on its sides. Its rugged surface avoids tears but is soft so it does not damage delicate surfaces. For more information, visit www.calculated.com



WERNER INTRODUCES LIGHTEST WEIGHT MULTI-POSITION LADDER

The Multi-Position Pro Ladder is the lightest weight multi-position ladder developed by Werner with a 375-pound load rating per side. The new five-position ladder addresses professional users' need for versatility by offering a lightweight product that provides stability and durability for multiple application needs. The Multi-Position Pro Ladder was designed with POWERLITE™ rails to decrease the weight of the ladder making it easier to load,



break, even if run over by a truck! No Bull's signature "diamond dot" no-skid pattern resists sliding and skidding while on the ladder and makes No Bull Bumpers one of the safest ladder bumpers on the market today. Professional

contractors love them for their durability and even the weekend handymen and DIY home improvers appreciate their superior performance. No Bull bumpers are reasonably priced and come with a multiyear warranty making it a sound investment for the protection of your property and your personal safety. Learn more www.nobullproducts.com **EHT**



unload and configure. End users can operate this unit as a twin stepladder, stairway stepladder, wall ladder or two scaffold bases, no additional hinges required. Be aware, plank and tie-downs are not included. The Multi-Position Pro addresses ladder weight concerns while providing stability and durability to ensure confidence under foot when climbing and descending. Learn more at www.wernerladder.com

PROTECT YOUR SIDING WITH BEST-IN-CLASS LADDER BUMPERS

No Bull Ladder Bumpers are the highest quality ladder bumpers on the market today. The unique design with interior structural support will deliver a lifetime of outstanding service even for professional tradesmen who use them in the most demanding environments. What sets No Bull apart from other ladder bumpers on the market is our end caps, located inside the bumpers. The end caps are made with unbreakable nylon polycarbonate and 30 percent glass fiber. They won't

For the first time homeowner and the venerable household handyman, there is no better resource. Learn how to prepare for unwelcome surprises as well as how to handle them when they inevitably happen.

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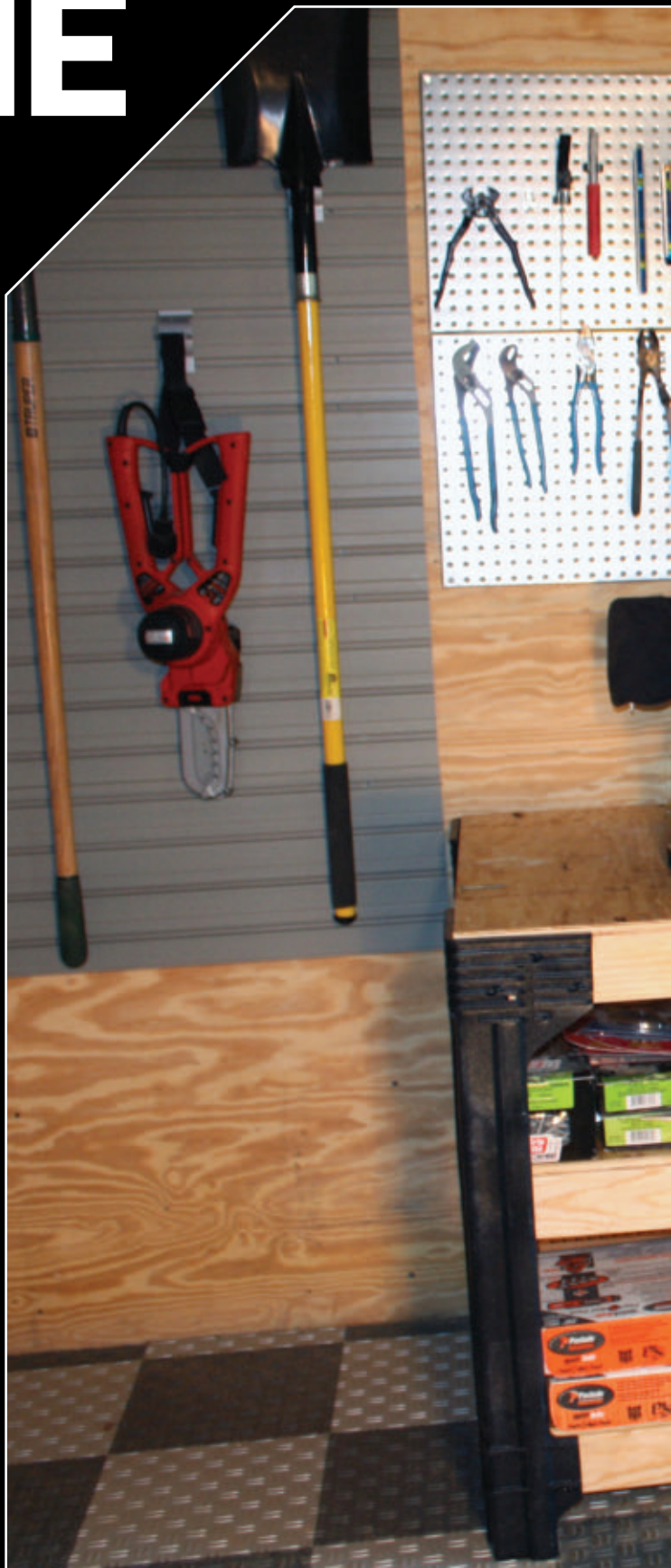
By Matt Weber

Over the years *Extreme How-To* writers have covered workbenches, tool shelves and shop-made storage cabinets of all shapes and sizes. Just check out our website at www.extremehowto.com to find all sorts of free, helpful tutorials on scratch-made projects that help organize your garage or workshop.

For this article we combined a few ideas, starting with a simple but versatile bracket system that simplifies the process of building a bench or shelves. We combined the new storage structures with a couple of wall-mounted tool organizers, and the end result was an orderly expansion of our workshop's westward wall. This kept tools and materials off the floor and created approximately 76 square feet of additional storage space, both vertical and horizontal.

TIME-SAVING SHORTCUT

I came across a bracket system called 2x4 Basics from F3 Brands at the 2012 National Hardware Show in Las Vegas. I was struck by the system's simple design and modular nature, which enabled a DIY'er to build a customized shelf system and/or workbench structure in a wide range of designs and configurations. Whether you need a broad work platform, a simple shop desk, a combination of desk and shelves, or a vertical storage rack for long-handled tools, if you can visualize your system made from standard 2x4 lumber, then you can probably build it with the brackets.



EHT takes a look at a variety of DIY-friendly storage products for the garage and workshop.



The 2x4 Basics brackets are used to connect the structure's building components much like Simpson Strong-Tie products are used for building decks. The system eliminates the need for miter joints and cross-bracing and requires little more than a saw, tape measure and screwdriver for construction.

Plus, any building technique that saves time is worth a look. Working with all straight 90-degree butt-joints and prefab brackets spared me a lot of time that I'd otherwise spend measuring and fabricating shop-made brackets. I was able to assemble a triple-decker work table and a three-tiered storage shelf in just a few hours.

F3 Brands offers a variety of brackets, including shed kits, bench brackets, etc. For this project I selected the company's WorkBench Legs and ShelfLinks, and designed my shelves to provide ample storage while economizing my trip to the lumberyard (www.2x4basics.com).



These four leg brackets combine with 2x4's and plywood for an easy-to-build bench.

TRIPLE-DECKER WORKBENCH

I used a single 4x8 sheet of 3/4-inch plywood to make my three work table shelves, which meant I had enough material to rip three equal sections, each measuring 4 ft. by 32 inches. The design of the

leg brackets requires the shelves to be mounted on top of 2x4 support rails. This told me I needed to cut three sets of 2x4s that would each assemble into a rectangular frame with an outside perimeter of 4 feet by 32 inches.

After cutting the components to size, begin assembly by fastening three of the longest 2x4 rails into the prefab legs. Each leg is made from structural foam plastic resin and includes preformed screw holes that guide 3-inch decking screws at an offset angle into the 2x4s. This toe-nailing effect creates a strong joint that cinches the corners tightly together.

Proceed to fastening the six short rails into the leg assembly. To keep the structure level during assembly, I temporarily propped the lower short rails on a couple of vertical 2x4 blocks.

Before adding the final two legs, you'll need to slip in the lower and middle plywood shelves, which should fit flush over the tops of the rails. Screw the plywood onto the rails with 1-1/2-inch wood screws. Once



The bench and the shelves shown in this story require only straight 90-degree cuts for assembly.

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I cut the rails of the workbench to create a frame with an outside perimeter of 32x48", enabling me to rip three bench shelves from a single sheet of 4x8 plywood.



When cutting plywood, fully support the sheet on each side of the cut. In this photo, the top of Workmate bench beneath the saw guide is separated into two sections, creating a clear channel for the saw blade as it passes through the wood.

The 2x4 Basics bench legs include predrilled fastener holes at offset angles for toe-screwing the rails to create a secure connection.

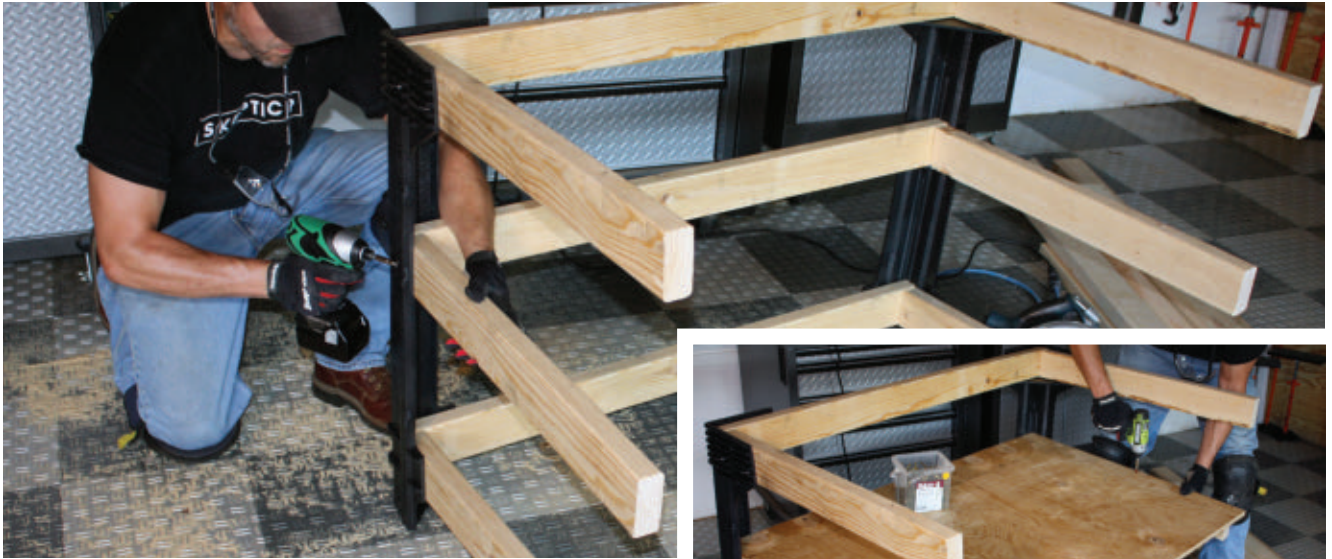


these middle shelves are in place, you can add the final long rails and the other two legs. The last step is to install the top shelf (the table top).

Note that I used sturdy 3/4-inch sheathing for my table shelves, which I felt would have plenty of holding capacity. If you choose to use 1/2-inch ply instead of 3/4, then I would suggest incorporating a diagonal 2x4 cross-member support below the table top, which will bear the most weight.

THREE-TIERED STORAGE SHELF

The storage shelf came together quickly and relied on six simple shelf brackets—two for the ends of each shelf. I cut the four legs of the shelves to 5-1/2 feet each. You don't want to make it too tall, because the shelf rack can get top heavy and won't have



First, install three of the long rails, followed by the short rails.

Insert the bench shelves before installing the final two leg brackets.



the structural rigidity that you need for a durable storage unit. On the other hand, items such as miter saws and benchtop drill presses require significant overhead storage room, so I wanted ample room between the shelves. I settled on 5-1/2 ft. because it "felt about right"—not much science was involved.

To get the most wood from an 8-ft. board, I decided to make the shelves about 32 in. long (squeezing three shelf lengths from each board with minimal waste). This meant the lumber order for the shelves was two 12-ft. 2x4's for the legs and four 8-ft. 2x4's.

When picking up your lumber, remember to inspect each board carefully and choose the straightest boards available.

Last step is to screw on the 3/4" plywood table top.

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Six shelf brackets are the cornerstone of the 2x4 Basics three-tiered storage unit.

First step in assembly is to screw two brackets to the underside of four 32-in. shelf boards, flush with the ends. Screw on the outer boards first, and then space the two inner boards equally (about 1/2 in. apart). This comprises the top shelf.

Next, partially assemble the middle and lower shelves by fastening the two inner 32-in. boards flush with the outer edges of the shelf brackets. Leave the outside boards off at this point.

After cutting the legs to length, simply slip the legs through the holes in the shelf brackets. Screw the bottom shelf in place first. Determine the height of your middle shelf, check with a level and fasten it securely. Predrilled holes in the brackets will indicate fas-

tener locations. The top shelf installs last.

After each shelf is fastened, measure between the 2x4 legs to determine the length of the final outside shelf boards. Cut to fit and install, which completes the unit.

WALL-MOUNTED STORAGE

Optimizing wall space for storage is an excellent way to economize space, and a wide variety of wall systems have flooded the market, offering modular hooks, straps, shelves, baskets and platforms



Assemble the shelves first.



The shelves simply slide over the 2x4 legs. Fasten the shelf brackets in place and then complete the lower and middle shelves by cutting 2x4's to fit between the legs.

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that fit virtually any storage need faced by the DIY'er.

A few years ago we installed a full slat-wall system on the South wall of our workshop. We use it extensively and decided to expand the system onto our West wall. To avoid deflection in the slat-wall panels, we first installed 1/4-in. plywood over the studs. The plywood was installed with 1-1/4-in. drywall screws roughly every 16 inches. You can cut the plywood to size so the sheets break on stud centers, providing a solid fastening surface behind the edges. Or you can add blocking between the studs to create a solid nailing surface when the plywood edges extend beyond the studs.

Typically available in 1-by-4- and 1-by-8-ft. sizes, the slat-wall



A slat-wall system requires the installation of 1/4" plywood over the wall studs to avoid deflection in the panels.



panels are easy to install for a DIY'er. Use a stud finder to locate and mark the studs. Use a T-square to map and mark the stud locations on the panels and fasten with 2-in. decking screws. Slat-wall storage accessories include application-specific tool holders that simply "click" into the slats without tools. The mounting plates of each accessory can be moved and rearranged at any time.

A similar concept in wall storage can be found with traditional peg-board systems. Tool holders such as hooks, screwdriver sleeves, ruler clips and more can fit into the pegboard holes to for easy access to tools and ready visibility when you need to find that one elusive item. However, the press-board material of standard pegboards tends to warp, swell or

The panels have interlocking edges and install with decking screws driven into the wall studs.



crack when it absorbs moisture. We installed an all-steel pegboard panel with a formed flange around the perimeter, making the metal panels 10 times as strong as conventional pegboard (www.alligatorboard.com). When mounted to the wall studs, the 20-gauge steel pegboard holds up the 90 lbs. Add tool holders as you need them and rearrange at any time.

MORE IDEAS FOR UPDATING YOUR WORKSPACE

Gladiator GarageWorks. If you spend as much time in the workshop as the EHT staff, an investment in ready-made cabinetry and storage accessories is

We also installed a metal pegboard, which is stronger and withstands moisture better than standard pressboard.

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something you won't regret. We use some select Gladiator GarageWorks products, including a rock-solid workbench, versatile tool drawers and a lockable shelf case. The storage components rest on steel casters and feature top-quality materials, including heavy-gauge steel and solid bamboo or maple wood. We love the rolling cabinets, which tuck beneath the table when not in use, or they can be rolled to the center of the workshop to provide a handy new work platform. (www.gladiatorgarageworks.com)



Garage Door Insulation Kits.

Easily installed in metal garage doors for a more comfortable work environment in the garage, Garage Door Insulation Kits from Energy Efficient Solutions consist of foam garage-door panels that can drop garage temperatures by 15 to 20 degrees in the summer. The expanded polystyrene panels do not sag or fall out like the fiberglass-type garage door kits, and they also come with a high-impact protective coating for a finish that is clean and aesthetically pleasing.

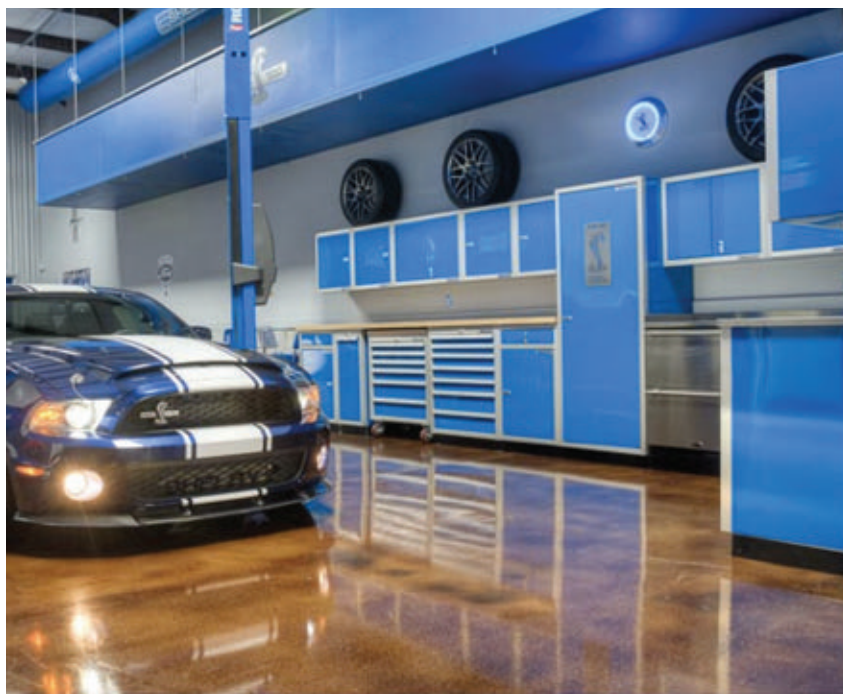


One kit fits single-car garage doors up to 9 ft. wide, or purchase two kits for double-car garage doors up to 18 ft. wide. (www.energyefficientsolutions.com)

Moduline Cabinets. Originally designed for the automobile racing industry, Moduline Cabinets are top-quality modular aluminum storage and tool cabinets designed and manufactured in the United States. Featuring a sleek, modern

design that will complement most any décor, they include full ball-bearing slides on the drawers, double wall door construction, and each cabinet has its own sealed and anodized frame, allowing each piece to stand alone. With almost endless configurations, Moduline cabinets are designed to adapt with your changing storage requirements. (www.modulinecabinets.com)

Flow Wall Cabinets. The slat-wall system installed in the EHT workshop is manufactured by Flow Wall, which has expanded its product line to include cabinet systems that snap into the wall holders. The cabinets are constructed from a high-density press board with textured PVC laminate in charcoal grey. The company's designer doors are constructed from high-quality MDF with radius corners wrapped in durable thermoformed laminate. They're easy to assemble and hang directly on the panels using a patented cleat-and-bracket system. Simply





attach the brackets to the wall and hang your cabinets. The cabinets are designed so the load is distributed evenly on the wall, so you can store heavy and bulky items with confidence. (www.flowwall.com)

New Roll-Out Garage Flooring.

The unique new roll-out garage floors from Better Life Technology, LLC, have all the attributes of BLT's traditional rolled flooring—easy installation, protection from stains and cushioned noise reduction—as well as multiple other benefits. This new concept offers a full series of designer floors to provide the look of hardwoods, granites, marble, epoxy or the classic black-and-white checkerboard. Custom looks and images are also available, as in crests, names or favorite pictures. Imagine your garage floor appearing as a golf



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course or tennis court; the possibilities are endless. These vinyl floors can also be coated to resist the harshest of chemicals. (www.bltilc.com)

3rd Hand Work Support.

Create your own freestanding conveyor system using the FastCap 3rd Hand work-support products. Great for cutting long trim pieces and 2x4's into shorter pieces with a miter saw, the 3rd Hand system



also makes one-person cutting of plywood and sheet stock on a table saw much easier and safer. The unit pictured includes a 3rd Hand Tripod, an Upper Hand support and is topped with a 3rd Hand Roller Top. (www.wwhardware.com)

Hyloft Ceiling Units. Diamond Storage Concepts offers a wide range of Hyloft ceiling storage units designed and engineered

not only to fit in any garage with any ceiling truss configuration, but also for any environment. Specifically, a limited amount of sway is engineered into the products to absorb and disperse energy from forces such as earthquakes. Extremely durable but light in weight to reduce the overall load put onto the ceiling, each product is backed by a lifetime warranty. (www.hyloft.com)

Racor 450 Rack. Racor's Model PLM-1R multi-purpose wall storage rack can hold the heaviest of items—up to 150 lbs. on each of three tiers for a total of 450 lbs. It provides a heavy-duty storage solution for the largest of ladders, metal piping and lumber. The 450 Rack is also handy for oversized items like





patio umbrellas, skis, surfboards or other bulky items that get in the way. The three tiers are 16-in. deep and come pre-drilled if you want to fasten your own shelves to the rack. (www.racorstoragesolutions.com)

Racor Ladder Lift. The “number one” bulky storage problem in the garage is where to put the large, heavy ladder. The new Racor Ladder Lift is an easy way to store any ladder overhead and free up garage space. Ladders can weigh up to 150 lbs., so it’s not easy to lift them onto wall hooks. The Ladder Lift uses a rope-and-pulley system along with a fixed hook that is mounted on the ceiling. Homeowners can easily lift and lower a 150-lb. ladder up to 12 ft. by simply lifting the ladder onto the fixed hook, attaching the strap to the bottom of the ladder and pulling on the rope with an 8:1 mechanical advantage. (www.racorstoragesolutions.com)

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The War On Winter



By Tom Matthews

When the temperature drops and cold weather rolls in, it's time to prepare your home for winter inside and out. Sealing off air leaks and installing adequate insulation are two of the most effective ways to save energy.

SEARCH FOR LEAKS

Whether through walls, floors, the ceiling or ductwork, air leaks represent money out the window. In cold weather, warm air rises into the attic of the home. As it enters the attic, it leaves the living space, which you're paying to heat. It also pulls in cold outdoor air from other cracks and crevices in the home, around doors and windows, and through the basement. In essence,

these leaks create a vicious cycle that can drain away energy and money. Inspect your home carefully for any leaks, which can be difficult to find when hidden beneath insulation. Some common problem areas include the attic hatch, plumbing vents, wiring holes, recessed lights and the soffit boxes that contain them.

A simple way to check for air leaks is to use a burning candle. On a cool, windy day, close all doors and windows and turn off the furnace. Turn on all the vent fans in the house to encourage the leaks. Move the lit candle around the edges of doors and windows. Look for the smoke to flutter or the flame to flicker, which indicates a leak.

TEST THE ROOMS' TEMPERATURE

If temperatures differ more than 1 or 2 degrees in various areas of a room, it may be poorly sealed. Apply weather-stripping and/or caulking as necessary, then retake the temperatures. (If the differences persist, you may have an HVAC airflow problem.)

Certain spots in the home are particularly vulnerable to air leaks. Check round the furnace flue or the duct chaseway (the box that hides the ducts) for leaks. Next, investigate indoor areas including heating and dryer vent penetrations, gaping baseboards and cracks along sill plates and floor-to-wall junctions. On the outside, look for leaks at the bottom of siding edges where they meet the foundation, along garage ceiling and wall joints, and all electric, gas and A/C penetrations. Also examine the basement rim joists and all windows and doors.

Consider investing in an infrared thermometer for a DIY home energy audit. For as little as a hundred bucks, handheld laser-sighted tools can help detect energy loss around doors and windows, insulation, ductwork and other areas throughout the home.

FILL THE GAPS

Once you've pinpointed air leaks, close them off. Use caulking between nonmoving parts of the home with caulking/sealant. You can use a wide variety of products, such as caulk with foam backer rods (for large gaps), as well as silicone-, water-, or rubber-based sealants.

The easiest way to parse the many options in caulks/sealants is



to pay close attention to the indications on the packaging, making sure they match the job at hand. Whether the product is flexible, waterproof, paintable, or contains a mildewcide additive, all features should be listed prominently on the label, and you generally get what you pay for.

Another popular sealant is spray-in expandable foam, which comes in an aerosol can. It's important to select the right insulating foam for the job; too much expansion in the wrong place can put unwanted stress on the construction. Use the "no warp" formula of expandable foam around windows and doors.

SEAL LEAKS BETWEEN MOVING PARTS OF THE HOME WITH VARIOUS TYPES OF WEATHER-STRIPPING

Compression Strips include open and closed-cell foam or rubber tapes, as well as tubular strips. The open-cell tape will give you a quick fix until you can properly measure and fit a permanent solution. Closed-cell tapes allow you to correctly size the gap you are working with and are more durable for doors and windows that are used often. Use where there is a pressure stress: along the bottom of vertical sliding windows, around attic

Thresholds attach to the floor to seal the gap beneath a door and some can fill a gap up to 1-3/8".





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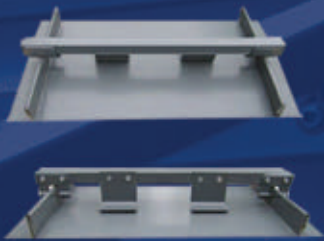


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hatches or on hinged windows and doors.

Tension Strips made of spring vinyl or spring metal are used in similar applications as compression strips. The spring mechanism adapts to long unequal distances from the weather-strip to the door or window.

Combination Types include spring-loaded, self-adjusting strips or magnetic strip systems, which are both effective for doors and hinged windows.

Door Sweeps, Bottoms and Thresholds seal the gap between the door and the floor. Sweeps and bottoms are often made of vinyl or rubber and attach to the bottom of a door. Thresholds attach to the floor, require clearance beneath the door, and include a vinyl or rubber strip for an excellent draft seal.

ELSEWHERE AROUND THE HOUSE

Your local hardware store or home center is likely stocked with a number of specialty sealer products for areas of the home that often go overlooked. When giving your house its annual physical exam, don't forget these crucial areas.

Windows: Ideally, your home should have double pane and low-emissivity coated window glass. You can also insulate your windows using heat-shrink



Use fitted foam gaskets to stop airflow behind electrical switch-plates—a commonly overlooked area of the building envelope.

plastic insulation. One option for wooden-frame windows is to cover the outside with heavy plastic to reduce cold air infiltration. Staple the sheeting over the outside, leaving a 4-inch overhang at the perimeter. Secure the edges with wooden furring strips, fasten to the outside window frame, then trim off the excess plastic.

HVAC: Have an HVAC technician do a full inspection of your furnace for proper performance. If the furnace is made of old-fashioned sheet metal ductwork, consider replacing it with insulated ducts, including the plenum. If you use

propane or heating oil, ensure that the tank has been filled. Use an insulated air-conditioner cover over window units to do the same.

Outlets: Consider using fitted foam gaskets around electrical outlets (behind the switch-plates) to prevent air transfer. This is a commonly overlooked gap because it's hidden from view.

Plumbing: Insulate outdoor hose bibs and exposed plumbing, including those in unheated crawl-spaces. If you go on a winter vacation, leave your heat set to at least 50 degrees Fahrenheit so pipes don't freeze.

SEAL LEAKY DOORWAYS

Even the most energy-efficient HVAC systems can still cost plenty if warm or cool air is wasted through leaky doors. As a house settles over time, door frames often shift, creating a gap around the perimeter. A general rule of thumb: If you can see light between the closed door and the jamb, you have a problem. If this happens to a door leading outdoors or to an unconditioned living space, it equates to leaving a window cracked. The solution here is to install a simple weather-stripping kit.

One of the best types for doors has a rigid aluminum bar along with a soft rubber gasket, called a bulb. The bulb compresses against the closed door to prevent the passage of air and moisture. The kits are usually sold with three pieces—one for the top and two for the door sides (screws included). The pieces often come in standard door heights, but any of the three components can be trimmed to size.

The only tools you'll need are a drill/driver, measuring tape and a hack saw.



Covers for attic doors and window air conditioners can reduce drafts during winter.

Gutter and Roof: Replace worn or damaged roof shingles or flashing, and clean out the gutters to prevent ice dams. An ice dam is a ridge of ice that forms at the edge of a roof and stops melting snow from draining. This causes backed-up water to leak into the home. Clean your gutters to ensure proper drainage, and install gutter covers to prevent debris accumulation. Proper attic

ventilation also removes heat and keeps the roof deck evenly cool to prevent uneven melting of the ice.

Chimneys: Have a pro chimney sweep inspect, clean, and repair any fireplaces, flues, or wood stoves. Add chimney or flue caps to keep out birds and pests. Tuck-point or repair any loose masonry, and make sure the dampers work on fireplaces and stoves.

Attic: Inspect the attic for evidence that the weather seal of the house has been broken. Check for any wet or damp insulation and moldy, rotted attic rafters or ceiling joists, any of which could indicate a leaky roof. Address any problems before they can worsen.

Basement/Foundation: Install covers over the crawlspace ventilation openings. Cover basement windows with plastic shields. Rake leaves and debris away from the foundation. Seal foundation cracks and other openings to keep out mice and other pests.

KEEP PESTS AWAY

Some pests disappear during winter, but not all. In fact, cold, wet or snowy weather is likely to drive pests to seek the warmth and shelter of the indoors. Sealing your home will go a long way toward keeping them outside. Eliminating conditions in your home that appeal to pests, such as open food containers, will also help reduce the attraction. Sink and floor drains often accumulate gunk that can attract pests and provide an ideal breeding site, especially for small flies, so clean and disinfect these areas. Store recyclables outside and away from your home and make sure all containers are thoroughly rinsed and have tight-fitting lids.

To reduce flying bugs around doors and windows, replace standard mercury vapor lights with high-pressure sodium vapor or halogen lights. Bulbs that have pink, yellow or orange tints are less attractive to flying insects.

The EHT staff periodically sprays our homes with the same household insect repellents commonly available at home stores. In many cases, the insecticide is the same chemical used by professionals, although professionals occasionally



Seal your home not just from cold weather but from pests also. Radarcan offers an electronic pest repeller that wards off mice and cockroaches by emitting ultrasound waves.

rotate use of different products on the same property to reduce the likelihood that pests will develop a tolerance to a particular type.

Before applying any spray pesticide treatment, send kids and pets outside to play or to another room in the house. Apply the product along baseboard areas, around doors and windows, and

to any problem areas. Allow it to completely dry before returning to the treated area. Some products, such as foggers, require you to leave your home altogether.

If you are not comfortable with the chemical pollutants of pesticide, then consider one of the newer electronic pest repellers. Companies such as Radarcan

offer a variety of repellers that emit ultrasound waves that are unbearable to pests such as mice and cockroaches, driving them away from the area for hundreds of square feet. It eliminates the need to set and empty mousetraps and provides an alternative solution for allergy sufferers or people with respiratory problems. **EHT**

SEAL ALL GAPS WHILE YOU CAN

A friend of the EHT staff, Keith Lively, contracted construction of a new house and decided to do much of the work himself. One night after the house was framed and the sheathing installed, he noticed something as the sun set: light. Lots of light shone throughout the house framing and sheathing panels. Anywhere light can pass, so can unconditioned air, so Lively took the opportunity to seal his new house before the insulation and drywall were ever installed. Every pipe, seam and joint got a dose of caulk/sealant or expandable foam to keep air transfer low and energy bills to a minimum. If you ever build a home, or add a wing to your existing one, you should do the same and seal all the gaps while you can reach them.



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