

Test your do-it-yourself IQ • Banish bad smells
Neater painting with masking tape

THE FAMILY #1 in DIY Home Improvement

Handyman

Backyard projects!



Easy garden bench—
build it this weekend!



Build a circular patio
and retaining wall

MAY 2014

\$3.99 U.S.



PLUS:

How to polish a car • Taping drywall
Restore a deck in a weekend!
Can you count on your sump pump?



Build this
super-simple
mini shed



EJECTOR SEAT, NO. TOUCH-SCREEN, YES.

WITH EACH PASSING DAY, GMC ENGINEERS STRIVE TO KEEP ABREAST OF THE LATEST TECHNOLOGICAL ADVANCEMENTS. AS A RESULT, WE CREATED THE MOST ADVANCED TRUCK WE'VE EVER BUILT. THE ALL-NEW GMC SIERRA 1500. WE INCORPORATED A STATE-OF-THE-ART TOUCH-SCREEN INTO OUR COMPLETELY REDESIGNED COCKPIT. THE HIGHLY ADVANCED TECHNOLOGY BEHIND OUR AVAILABLE 8-INCH DIAGONAL CUSTOMIZABLE LCD SCREEN PROVIDES INSTANT INFORMATION AND DYNAMIC RESPONSE. THIS NEW SYSTEM CONNECTS YOUR WORLD IN AN ENTIRELY NEW WAY. NOT SURPRISINGLY, MODERN FIGHTER JETS ALSO USE TOUCH-SCREEN TECHNOLOGY TO GIVE THEIR PILOTS INSTANT AND DYNAMIC CONTROL OF A WIDE RANGE OF FUNCTIONS. AND IF IT'S CAPABLE ENOUGH FOR THE SPEED OF SOUND, IT'S CAPABLE ENOUGH FOR US. INNOVATION LIKE THIS PROVES GMC SIERRA IS MORE THAN JUST A TRUCK. IT'S INCREDIBLE THINKING IN THE FORM OF A TRUCK.

THE ALL-NEW GMC SIERRA. THAT'S PROFESSIONAL GRADE.

#INCREDIBLETHINKING

©2014 General Motors. All rights reserved. GMC® Sierra® WE ARE PROFESSIONAL GRADE®



Table of CONTENTS

MAY 2014

familyhandyman.com

FEATURES

20 Mini shed

A convenient storage locker for yard gear—and relief for your cluttered garage.

30 Circular patio and retaining wall

Build a patio, a wall or both. A veteran “hardscape” pro shows you how to do it right.

46 Test your DIY IQ

Think you know what that thingamajig is really called? Test your knowledge and find out.

55 Banish bad smells

Tips and products for handling the stinkiest stuff life throws at you.

60 Backyard bench

An easy-to-build bench with easy-to-add style.

66 Roof under a deck

Turn a drippy space into dry space with a simple under-deck ceiling.

72 Sump pump

Don't risk a flooded basement. Now's the time to make sure your pump will do its job.



waterpik®

showerheads



Powerful showerheads. Be prepared.

Even at low water pressures, Waterpik® showerheads with OptiFLOW® can improve water force up to 30% for a more powerful and invigorating shower experience.

With the patented EasySelect® spray selector on the handle, changing shower settings has never been simpler.



To learn more, go to waterpik.com/easyselect



The Waterpik® Medallion® series, available exclusively at The Home Depot®.



ALL IN A Days' Work!

Contractors and do-it-yourselfers rely on **SAKRETE** for DIY repair and new installation projects. Sakrete helps you complete your project faster and easier.



SAKRETE U.S. COLD PATCH®

One of the safest, most effective asphalt repair products available. Just place and tamp or drive over with no tracking. With high recycled content, this odorless, environmentally friendly pothole patch is the best choice for lasting repairs.



SAKRETE MAXIMIZER®

A high strength (5500 psi), high-yield concrete that provides 67% more coverage by volume than typical concrete mixes. Thus, there are less bags to haul and mix. Can be used for any project where regular concrete mix is used.



SAKRETE FLO-COAT®

A flowable product used to rejuvenate old concrete surfaces. It's a great alternative to expensive concrete replacement and its seamless application makes old, worn concrete look like new.



SAKRETE PAVER SET®

Polymeric sand that's easily applied to paver joints to lock out weeds and keep paver installations looking great. Made to withstand wind, rain, freezing conditions and substrate movement without washing away.

SAKRETE

QUALITY. CONSISTENCY. PROVEN PERFORMANCE.

1.866.SAKRETE ♦ SAKRETE.COM



YOU'VE GOT A PROJECT.

WE'VE GOT THE PRODUCT.



FROM REPAIR TO ONE-OF-A-KIND MASONRY WORK, THERE'S A SAKRETE® SOLUTION FOR ALL YOUR CONCRETE PROJECTS.

SAKRETE® Flo-Coat Resurfacer is a highly flowable material that can be easily applied with a squeegee, making old concrete look like new again without the expense of replacement. The originator of pre-mixed bagged concrete, SAKRETE® has offered contractors and do-it-yourselfers innovative, readily available solutions longer than any other brand. Let us help you find the right product for your project. Visit us at sakrete.com or call 866-725-7383.



SAKRETE® is a registered trademark of Bonsal American, Inc., an Oldcastle Company.

Table of CONTENTS

MAY 2014

familyhandyman.com

DEPARTMENTS

- 9 Stuff We Love**
Stay-cool mud boots, handy wheelbarrow handles, a mini plunger and much more.
- 16 Handy Hints®**
A ladder carrier, a drying cage for paint gear and a fly-trap hat.
- 76 Home Care + Repair**
You can give your wood deck a fresh new look with a deck restoration product.
- 82 Top Ten Tips**
Mask a room for paint with modern tape and these tips.
- 92 Car + Garage**
An auto detailer shows you step by step how to rejuvenate your vehicle's finish yourself.
- 98 Pro Tips**
Get smooth walls and crisp corners with these drywall taping tips from a pro.
- 118 Wordless Workshop™**
Tired of tripping over shoes? Build this drop-down shoe shelf.
- 120 Great Goofs®**
DIYers down, but not defeated, by a furnace, a drill and a sprinkler.



GOT A DIY QUESTION?

Finding answers is easy at familyhandyman.com. Just use the search box at the top of the page to get expert step-by-step help with your project. Or register on the site and join our DIY Forum, where you can ask questions or give advice.

CONTRIBUTOR GUIDELINES

We pay \$100 for Handy Hints®, Great Goofs® and Wordless Workshop™ submissions that we publish. Please include a photo of yourself from the shoulders up. Submit your original contribution, along with photos or sketches, by e-mail to: DIYer@thefamilyhandyman.com, handyhints@thefamilyhandyman.com, greatgoofs@thefamilyhandyman.com, wordless@thefamilyhandyman.com

or mail to: The Family Handyman
2915 Commers Drive, Suite 700, Eagan, MN 55121

Please include your name, mailing address and e-mail address if you have one, and indicate to which department you are submitting. We reserve the right to publish your submission in any appropriate department. If we receive similar submissions, we will pay the person who submitted the item we actually use.

By submitting material (text, photos and illustrations) for publication, you grant Home Service Publications, Inc. and its parent company, subsidiaries, affiliates, partners and licensees unlimited use of the material and your name, and the right to rewrite or modify, reproduce and distribute the material in any and all media and in any manner or appropriate place. We may contact you via phone, e-mail or mail regarding your submission. If we select your submission for print, you will receive \$100.

READER SERVICES

QUESTIONS ABOUT SUBSCRIPTIONS?

For new and gift subscriptions, change of address or help with a subscription problem, write to: The Family Handyman Subscriber Service Dept., Box 6099, Harlan, IA 51593-1599, or call (800) 285-4961. Or send an e-mail to FHMservice@rd.com. Allow two issues for address changes.

CUSTOMER INFORMATION

Reader's Digest may share information about you with reputable companies so they can offer you products and services of likely interest to you. If you don't want us to share this information, please write to: Reader's Digest Mailing List, Attn.: Circ. Dept., Box 6099, Harlan, IA 51593-1599. Please include a copy of your address label.

BACK ISSUES/ARTICLE COPIES

Some past issues are still available for \$5 each. Call (800) 285-4961 from 8 a.m. to 5 p.m. Central, Monday through Friday for availability and ordering. Photocopies of articles are available for \$3 each. Send check/money order to: Back Issues, The Family Handyman, Attn.: Back Issues/Articles, P.O. Box 6099, Harlan, IA 51593-1599. To ask about the availability of past articles, send an e-mail to FHMservice@rd.com.

COMMENTS AND SUGGESTIONS

We welcome your ideas and opinions. Write to: The Editor, The Family Handyman, 2915 Commers Dr., Suite 700, Eagan, MN 55121. Fax: (651) 994-2250. E-mail: editors@thefamilyhandyman.com

BECOME A FIELD EDITOR

Field Editors contribute ideas and experience to every issue of *The Family Handyman*. To join our crew of volunteers, e-mail us: Iwant2beaFieldEditor@familyhandyman.com



AMERICA'S FAVORITE MAGAZINES



NEWS & ADVICE YOU CAN TRUST

Discover the joy, laughter and richness of life! Get the best stories and advice on health, money, family and more!



BEST-LOVED RECIPES

Serve great-tasting, home-style recipes your family will love! Discover easy meal ideas, helpful cooking tips and more from real home cooks.



EASY HOME DIY

Get the job done right with expert tips and complete DIY projects for every level—from seasoned pros to weekend DIYers!



DOWNLOAD
IT NOW.

READER'S DIGEST: WWW.ZINIO.COM/MAGAZINE/READER%27S%20DIGEST/PR-115416004

THE FAMILY HANDYMAN: WWW.ZINIO.COM/MAGAZINE/FAMILY-HANDYMAN/PR-500624799/CAT-CAT1960018

TASTE OF HOME: WWW.ZINIO.COM/MAGAZINE/TASTE-OF-HOME/PR-500616663/CAT-CAT1960018

It's Tips. It's Tricks. *It's Genius!*

ALL-NEW App!
DIY TIP GENIUS from
The Family Handyman!

Look at all you'll get...

- **300+ BEST Tips** for DIY woodworking, painting, organizing and more!
- **Time-saving** shortcuts
- **Budget-friendly** tricks
- **Clever, stress-free** hints and tips
- **Confidence** for every DIYer!

**Organize,
Remodel & Repair...
with Confidence!**

**THE FAMILY
Handyman**



Download the FREE App today at:
familyhandyman.com/diy-tip-genius



iPhone and iPad are trademarks of Apple Inc,
registered in the U.S. and other countries.

STUFF we love

BY TRAVIS LARSON

editors@thefamilyhandyman.com

DIY WORK WEAR

COOLER MUD BOOTS

If you work or play in serious wet weather and mud, completely waterproof boots are the only choice. But in warmer weather, they can be torture—like walking in a swamp of your own sweat.

The Original Muck Boot Company has come up with an improvement. Its “Chore Cool” boots have a moisture-wicking lining to help keep your feet dry. I wore them last spring, and the wicking lining helped, especially on days that started cold (the boots are insulated) but ended warm.

Mostly, though, I love the regular features of Muck Boots: a soft top that doesn't chafe your skin; aggressive Vibram soles; and stretchy, flexible insulation that keeps your feet warm without making you feel like you're wearing buckets on your feet. Comfortable waterproof boots—what a concept! They have a permanent spot in my closet now.

You can find Muck Boots, including the new Chore Cool models, at online stores or sporting goods outlets like L.L.Bean and Cabela's. They cost about \$140.

Ken Collier, Editor in Chief

HANDY WHEELBARROW HANDLES

I recently upgraded my wheelbarrow with Simply Dump It pivoting handles. They slid right over the handles and took me about five minutes to install. I bought the handles because I'm tall—if I don't hunch over when I roll my wheelbarrow around the yard, I end up nose-diving the wheel guard/brace into the ground, resulting in messy spills and the occasional expletive. The Simply Dump It handles raise the grip location a few inches, which lowers the handles, which in turn raises the front wheel brace.

The handles not only prevent my sudden stopping syndrome but also make the wheelbarrow easier to control, especially on rough terrain. And the pivoting action all but eliminates the awkward torque on my wrists when I empty the wheelbarrow. You can get Simply Dump It handles online for less than \$25.

Mark Petersen,
Contributing Editor



POCKET TRANSIT

You're probably thinking, What the heck do I need one of these for? Well, here's the answer: This little sight level is great for getting a close approximation of elevation or aligning XYZ over a long distance (it's way better than a clip-on line level). For example, you can use it to check the pitch of drain tile, estimate the slope of a backyard or fence, check the slope of driveway forms and determine the height for the post of an elevated deck. You just look through the lens the way you do with a telescope and level the tool with the visible bubble inside.

The CST/Berger 17-5502-1 Sight Mark level shown has a 2-1/2-power magnification to help with distant objects. It's available for \$90 at amazon.com. Less expensive models (\$25) with lower-quality lenses and plastic construction work well for the occasional user.

HIGH-TECH SOLUTIONS

DIGITAL ANGLE GAUGE

This tool is 21st-century fun! Yeah, you could adjust your saw's angle using other methods and eventually get it perfect, but this gizmo saves lots of time, and did I mention it was fun? I just crank my blade up, set the magnetic base on my blade and square up the blade to the table (the body of the tool is absolutely square). I then push the zero button to calibrate the tool.

Once it's calibrated, I can adjust my blade to the desired angle, all the while getting an accurate digital readout. When I get the desired angle, whether it's 22-1/2 or 45 degrees, I know it's right on, and I can proceed with my project instead of spinning my wheels micro-adjusting. At \$30 to \$40, it's a bit pricey, but I'll give up my shoes before I give up this tool. The Wixey Digital Angle Gauge is available at woodpeck.com (part No. WIX-WR300) and rockler.com (part No. 27487).

David Radtke, Contributing Editor





Dim

the newest bulbs?

Yes, you can!™

If you want to dim the latest energy-saving bulbs and get the best results, you'll need a compatible dimmer.

Lutron C-L® dimmers were designed specifically for dimmable LEDs and compact fluorescents, as well as for halogens and incandescents.

Create ambiance. Add versatility. Install a dimmer.

C-L dimmers are available in a variety of styles from your local home center, lighting showroom, or from your electrical distributor.

www.YouCanDim.com



Diva® C-L dimmer





A riveting new rivet gun

I've owned rivet guns for years and use them for everything from assembling downspouts to repairing boats. The head on this rivet gun can turn in virtually any direction, enabling me to get into really tight spaces and corners—places that standard rivet guns wouldn't dream of going.

If you get this tool, you'll be adding tool holders to aluminum ladders or fixing items like snow shovels or lawn mower controls quickly and cheaply. As with other rivet tools, all you do is drill a pilot hole, insert the pop rivet and squeeze the trigger. One end of the rivet mushrooms, and the other has a little dish that presses firmly to the surface. If you're new to riveting, you'll find that rivets are a great alternative to bolts and washers. This Ace model, made by Stanley, has multiple heads sized for rivets from 1/8 in. to 3/16 in. in diameter. The tool, No. MR77C, is available for \$26 at acehardware.com. You may also find a yellow-handled version carrying the Stanley name.

David Radtke, Contributing Editor



MINI SINK AND DRAIN PLUNGER

Here's a "great things come in small packages" item for under your sink. The PlumbCraft Mini Bellows Plunger fits nicely in your hand and creates a strong seal. It packs a strong punch to knock out stubborn clogs in your sink, shower or tub. One or two thrusts and your drain is clear. Keep your ugly, long-handled plunger in the garage. The plunger is available in a variety of bright colors. I found it at a big-box retailer for \$2.34. What a deal!

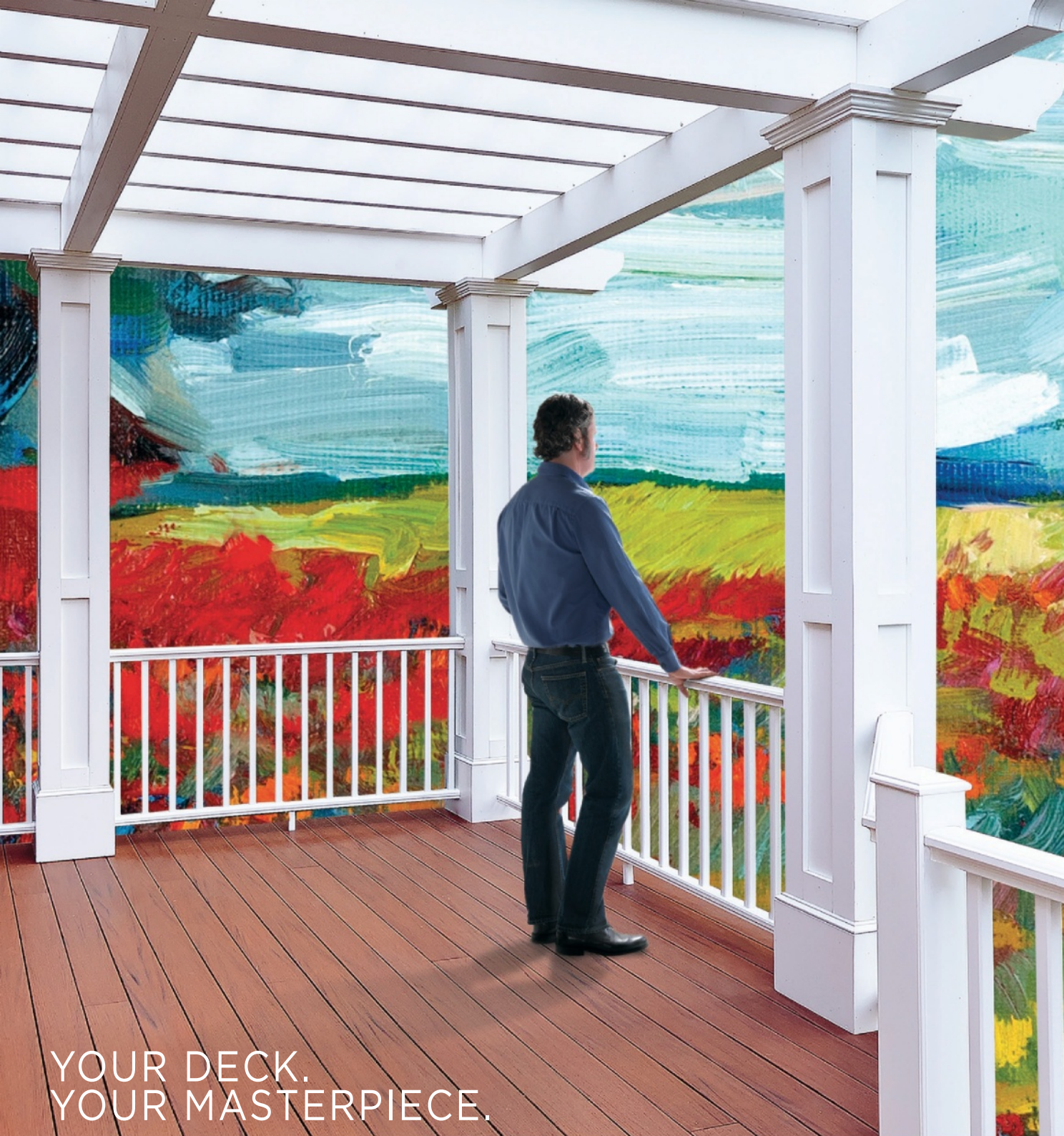
Barry Shultz,
Contributing Editor



PORTABLE MINI VISE

The Irwin 3-in. Clamp-On Vise attaches to any makeshift workbench and is small and light in weight—but not lightweight when it comes to clamping. It's a great tool for holding spade bits for sharpening, steel conduit or chain for cutting, and strike plates for filing. It also grips hard-to-hold bolts for cutting, steel angle for bending ... the list goes on. The jaw measures about 3 in. and it opens to about 3 in. The vise, model No. 226303ZR, is available for \$22 at Home Depot.

David Radtke, Contributing Editor



YOUR DECK. YOUR MASTERPIECE.

Artistry in every detail.

Take whatever inspires you and create an outdoor living space that's a true work of art. Choose from our full palette of 17 luxurious colors that resemble the richness of real wood, but with unparalleled scratch and stain resistance. Low-maintenance AZEK decking allows you to entertain, celebrate and unwind confident that your home is a unique expression of you.

To create your masterpiece, visit AZEK.com/deckdesigner



Deck | Porch | Rail | Trim | Moulding | Pavers azek.com

PRO TOOLS & GEAR

WIRELESS TUNES

Milwaukee recently introduced the M18 Jobsite Radio/Charger, which allows you to play tunes on the radio from the smartphone in your pocket. No more missed phone calls when you can't hear your phone ring because it's plugged into the radio in the other room.

Like other job site radios, the M18 charges your tool batteries when it's plugged in and runs off them when it's not. It's ruggedly built and has USB charging ports to charge your devices. But unlike other radios, the M18 allows you to stream your music from up to 100 ft. away. Buy the radio wherever Milwaukee tools are sold, or at an online retailer for \$230.



99¢ UTILITY BAG

These bags are huge, tough and cheap. So the next time you stop by IKEA for some Swedish meatballs, pick up one—or more! Great way to store or haul anything bulky but not too heavy. They're made from the same tough woven plastic fabric as those blue tarps in your garage, with very strong nylon handles. Sometimes these totes sell for as little as 59¢. You can't beat that!



Drill anywhere, anyplace, any angle

The Milescraft 360-Degree Orbiter has gotten me out of more jams than I care to mention. It's a highly versatile any-angle attachment for a corded or cordless drill.

I install a lot of cabinets and run into crazy situations where I can't fit a drill into an awkward space. I don't use this tool often, but there are times when nothing else can do the job! It's built to last. The tool is easy to set and reset with a quick-release lock in the handle. It's available for about \$30 at kotulas.com.

David Radtke, Contributing Editor

EXCLUSIVELY AT

FamilyHandyman.com/FreeNewsletter

FREE

home improvement newsletters

delivered straight to your inbox!

Treat yourself to FREE home improvement advice, projects and handy hints from the editors of America's #1 DIY home improvement magazine, *The Family Handyman*! Then you'll start enjoying...

- ▶ **FREE step-by-step plans with photos**
- ▶ **New hints shared by fellow DIYers**
- ▶ **Money-saving fix-it and repair tips**
- ▶ **Clever ideas for your yard**
- ▶ **And so much more!**



THEY'RE FREE, SO SIGN UP TODAY AT...

FamilyHandyman.com/FreeNewsletter

Handy HINTS®

FROM OUR READERS

handyhints@thefamilyhandyman.com



READER PHOTOS (2)

Hook-and-ladder truck

Here's how to easily carry long items on a truck. Attach a pair of flip-up tool or bicycle brackets to 2x2 wood posts that fit inside your truck bed pockets. My brackets are attached with drywall screws, but they could be bolted on for added strength. Just make sure to set the height of the brackets so they don't interfere with your side mirror. They install in seconds, store behind the seat in your truck cab, and allow you to carry long items like extension ladders, PVC, gutters and lumber.



Stay within the weight limits of the brackets, and make sure your cargo is strapped tightly. I used to carry long items over the top of my bed cap, but I didn't always have it installed. This Everbilt Flip-Up Heavy Duty Tool Holder (part No. 01192) is available for \$6 at Home Depot.



Brian Zoeller



Painting tool drying cage

An inverted tomato cage makes a great drying rack for rollers, brushes, pads, rags and whatever is wet after painting cleanup. The stuff dries quickly outdoors, and there's room for everything!

Tom Anderson

Mowing in comfort

My mower is now a pleasure to use thanks to the pipe insulation taped to the handle. I used to get numb hands and blisters (we have a big yard!) from the bare metal handle. Make sure the insulation doesn't interfere with your auto-shutoff bar, if you have one.

Joe Eisenbraun





Gardeners! Stop Struggling ...and Save Your Back!

Discover The Mantis Difference...In Your Own Garden!

The Mantis Tiller is the lightest weight, easy-to-use gardening powerhouse that makes back-breaking hand tools...**OBSOLETE!** From sod busting a new garden, to weeding around delicate plants, or digging a hole for a new shrub...the ***Mantis can do it all!***

- Powerful enough for big gardens... nimble enough for small.
- Turns even tough, hard clay soil into rich, crumbly loam.
- So lightweight that it's a breeze to handle in the garden.
- Cuts through tough soil and roots like a chainsaw through wood!
- Create and maintain beautiful planting beds all season long.
- Power weeds the average garden in under 20 minutes!

**SAVE \$30 Plus
FREE SHIPPING!**

(on selected models)
Call for complete details.



Mantis
We Make Gardening Easier®
www.mantistiller.com

Call Toll-Free For Your **FREE**
Catalog and DVD...**TODAY!**

1-888-240-4556

Dept. MT141029



YES! Please rush my **FREE Catalog and DVD** plus details on your one year NO-RISK Trial, \$30 Savings (on selected models) and FREE Shipping.

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

Mail to: Mantis, 1028 Street Rd, Dept. MT141029
Southampton, PA 18966



Upcycled miter saw stand

This year we finally got a new gas grill. But I hated the idea of just throwing away our old one. One day while I was using my miter saw on the ground, it occurred to me that my old grill could provide the perfect base for the saw. I removed the grill housing from the frame and built center framework that allowed the saw to sit flush with the wings of the grill. I can remove my saw and store it underneath, giving me a mobile workbench as well.



Troy Heller



Fly-trap hat

I use this trick to keep those pesky flies from biting. They go for the high spot and find their way onto the trap, which keeps them off my neck! The Mini Reel Fly Tape Kit by Revenge (No. 12281, \$14) is available at domyownpestcontrol.com.

John Wojnas



Free chip clips

Who likes to spend money on items when you can get them free? We get clothes hangers with plastic clips along with the clothing we buy at the local department store. I just clip off the ends and use them to keep my bags of chips fresh.

Chuck Bemben



Seed library

Now that CDs are being replaced with smartphones and other devices, I use my old CD case to organize and store my seed packets. It works great to store them by seed type or even alphabetically. It's a convenient reference to have for the following year. I write notes on the packets to remember which seed variety worked and which didn't.

Lisa Vice



What makes you happy?

Do more of that.

Life's too short to work weekends.

Who says you can't have it all? A comfortable place to kick back and relax – and a stunning space for family and friends.

With TimberTech, you get the beauty of wood without all the work – in colors, styles and mix-and-match options you'll love, with railing and lighting to create your ultimate outdoor oasis. Stop dreaming, start planning at timbertech.com

 **TimberTech®**
Less Work. More Life.

DECKING - RAILING - LIGHTING - FASTENING

MARK'S MINI SHED



**A convenient
storage
locker
for yard
gear—and
relief for
your
overstuffed
garage**

by Mark Petersen
editors@thefamilyhandyman.com

My wife recently complained about having no space for her garden tools. It's true—our garage was overcrowded, and the yard shed was crammed full of stuff. The solution was a mini shed on the exterior wall of the garage just for her. Now my wife is happy to have a place for all her garden tools, and when she's happy, I'm happy.

I spent about \$450, but you could save \$100 if you used pressure-treated trim boards instead of cedar, and three-tab shingles instead of cedar shingles and felt paper. The project took me about 20 hours to build, a few hours at a time. I wanted to build as much of this project as I could in the comfort of my shop, so I made each section an individual unit. You can build two sections like this one or stack a whole bunch of them together. Ours is filled with garden tools, but it would also work great for pet supplies, grilling accessories, toys or whatever.



Cut the box components

Start by cutting the sides (A) and backs (B) to the dimensions given in the Cutting List on p. 27. Clamp two sides together, and crosscut them to length at the same time with a circular saw. Crosscut one back at a time with your circular saw set to a 20-degree angle. This will match the angles you'll be cutting on the sides to achieve the slope of the roof. For all your cuts, make sure the surface of the plywood with the least flaws faces inside the locker. Measure down 6 in. from the top of one of the sides and mark the slope of the roof. Again, clamp two sides together and cut them at the same time.

Rip the three shelves (C) down to size and clamp them all together before crosscutting them. Rip the bottoms (D) to size and crosscut them together as well. The only plywood pieces left to cut are the top braces (F).

Cut the cedar parts that will be installed inside the boxes. These include the door stops (L), hinge supports (M) and the door latch blocks (N). Crosscut one of the 12-ft. cedar 1x6s in half, and then rip down the door stops and the hinge supports out of one of the 6-ft. halves. Always square up the factory edges before cutting any of the boards to length.

Sand and paint the inside parts

Paint all the interior parts of this project before assembling them. Fill any voids and holes in the plywood with wood filler. I spot-sanded the really rough spots with 80-grit paper but didn't sand any of the exterior surfaces.

Only the plywood surfaces that face the inside of the storage locker need painting. Paint all but one of the 3/4-in. sides on the door stops, hinge supports and door latch blocks. The plywood that forms the roof can be painted if you wish, but it really isn't noticeable, and the top braces (F) will be completely covered by trim, so there's no need to paint them. I rolled on a product that was a combination of exterior paint and primer. I was able to get full coverage with one thick coat.

WHAT IT TAKES

Time: 2 weekends

Cost: \$350 to \$450

Skill Level:

Intermediate

Tools: Miter saw or circular saw, 18-gauge brad nailer, compressor, drill, hammer, stapler, level, caulking gun



MEET THE BUILDER

Mark Petersen is a Contributing Editor at TFH. He spent 20 years in construction, first as a siding guy, then as a general contractor.



Assemble the boxes

Set the sides next to each other and mark the location of the shelves with a framing square. Then mark a guideline for the screws on the exterior of the sides. I measured up from the bottom of the sides and marked the top line of the shelves at 22-3/4 in., 37-3/4 in. and 51-3/4. These measurements are based on some specific items I wanted to store. Make your shelves any height you wish, add more shelves, or eliminate them altogether.

Attach one of the sides to the back with 1-1/2-in. stainless or exterior-grade screws. Save time and buy self-drilling screws that don't require a predrilled hole. Space the screws about 16 in. apart. Once one of the sides is attached, transfer the shelf lines to the back with a framing square. Secure the bottom and the shelves with the same type of 1-1/2-in. screw (**Photo 1**). Install three screws per shelf side.

Flip the box on its side, and mark a screw guideline on the back of the back. Secure the bottom and shelves to the back with three screws in each. Flip the project on its back again and attach the other side to the back, and then finish securing the bottom and shelves.

The top braces create a solid surface to fasten the top front trim board to. Screw them to the boxes with one screw in the center of each end, and then go back and tack two more 1-1/4-in., 18-gauge brads, one above and one below the screw. Two screws would likely split the plywood.

The hinge supports add extra strength to the trim board that the hinges will be fastened to. Attach the hinge supports and the door stops by driving 1-1/2-in. screws every 16 in. through the plywood sides into the back of the cedar strips. Install the two door catch blocks with two screws driven through the back side. Space them about 6 in. down from the top and up from the bottom, on the back side of the door stop in the box that has no shelves. The door catches on the other side will be fastened to the shelves.

Build and install the base

Cedar is naturally resistant to rot, but it doesn't do so well in direct contact with the ground. That's why I decided to build the base out of pressure-treated wood and keep the cedar trim at the bottom 3/4 in. from the ground. Screw the base fronts, backs and sides (J and K) together with two 3-in. screws in each connection. Attach the boxes to the base with 2-in. exterior grade screws. Install two screws on each of the four sides of the box. Make sure all screws used with treated wood are compatible with treated lumber.

Install the trim and siding on the sides

Cut the side trim board (P) to length and install it with construction adhesive and 1-1/4-in., 18-gauge brads. The brads just hold the board in place while the adhesive dries, so you don't need more than one in each corner and one in the middle.

Create the smaller trim pieces by ripping the 12-ft. cedar (or treated) boards in half. Find the length of the two side trim boards (Q) by setting them on the side bottom trim board and marking the top angle on the back side of the board. Install them with adhesive and two brads every couple of feet. Make the side top trim board (R) by cutting one 20-degree angle and then marking the other angle in place. Install the side center trim board (S) so the top side is 42-3/4 in. off the ground.

For siding, I chose 1/4-in.-thick cedar planks often used as

1 ASSEMBLE THE BOXES

Paint all the plywood components, then assemble them with self-tapping, trim head screws. Screw one side to the back, then add the shelves and finally the other side.



2 TRIM THE SIDES

Mount the boxes on their bases, then add trim and siding to the sides that will be exposed. Fasten the trim and siding with construction adhesive, plus a few brads to hold them in place while the adhesive sets.

wainscoting (BB). Look for it at home centers near the paneling, not the lumber. If this product isn't available in your area, you could use pine paneling, vinyl siding, fiber cement panels, cedar shingles or whatever is available to you. Just make sure the siding profile is less than 3/4 in. or it will stick out past your trim boards. It just so happened that three of the cedar siding planks I bought fit in between the trim boards on the side without having to be ripped down. There was about a 3/16-in. gap on either side, which I caulked later.

Avoid a big mess by cutting all the siding planks to length and dry-fitting them before applying the adhesive. Tack them in place with 3/4-in. brads (**Photo 2**). Just shoot a couple of brads at the very end of the planks and a few on the edges. After they're all in, pound each plank flat with a rubber mallet or your fist and add one more brad in the center of each groove. The brads are only holding the siding in place until the adhesive sets up. Now repeat all these steps to build the other box.

Join the boxes

It's time to head outdoors. I pulled up some of my hostas and created a platform out of the same pavers I used as my edging. You could pour a small slab, tamp down some gravel or build a pressure-treated wooden platform. If you build a small platform, make sure it's level; larger patios should always slope away from the building.

Push the boxes into their permanent location and clamp the two sections together. Before fastening them, measure and cut the top plywood (E) so it's flush on all four sides. Temporarily set the top in place to see that it sits flat. Slip composite shims under one or both bases until the top is flat, the fronts are aligned and each side of the unit is relatively plumb. Secure the boxes to each other with eight 1-1/4-in. exterior grade screws, four through each side.



3 ADD THE FRONT TRIM

Trim the front after the boxes are attached. Double-check that both door openings are the same size before you permanently attach the center trim board.

Storage locker on steroids!



My design was inspired by this photo sent to us by Robert Colling, a Field Editor from San Diego. He built this storage locker 10 years ago. It's attached to the back wall of his garage, and the doors are hung with heavy-duty piano hinges that can handle hundreds of pounds. He's got quite the shovel collection, eh?

READER PHOTOS

Figure A Mini shed

Overall Dimensions: Approx. 79" tall x 55" wide x 18" deep



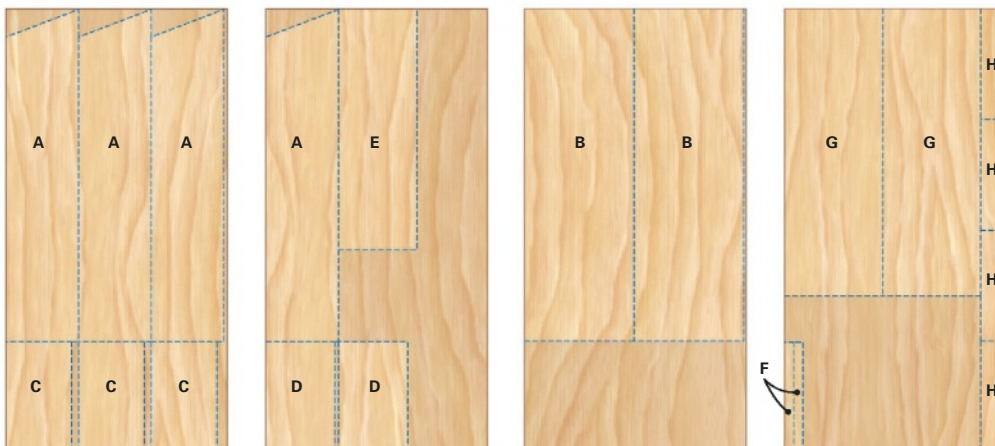
Materials List

ITEM	QTY.
4' x 8' x 3/4" sanded pine plywood	4
1x6 x 12' cedar	6
2x6 x 8' pressure-treated lumber	2
1/4" x 4" x 8' tongue-and-groove cedar paneling (six-pack)	3
Bundle of cedar shingles	1
1-1/4" exterior-grade trim head screws (100-pack)	1
1-1/2" exterior-grade trim head screws (100-pack)	1
2" exterior-grade screws (1-lb. box)	1
3" exterior-grade screws (1-lb. box)	1
1-1/4" 18-gauge brads (small box)	1
3/4" brads (small box)	1
1-1/4" 6d galvanized nails (1-lb. box)	1
Roll of 15-lb. felt paper	1
Construction adhesive (tube)	3
Polyurethane caulking (tube)	2
Composite shims (small bundle)	1
8" decorative T-hinges	4
Door handles	2
Roller door catches	4
1-1/2" fender washers	2
4" structural screws	2
Wood filler (small container)	1
Paint and/or exterior sealant	

Figure C Door construction



Figure B 3/4" plywood cutting diagram



BIRDS & BLOOMS

America's #1 Bird
& Garden Magazine!

free issue!

"It is one relaxing magazine. Thank you for helping me to **LEARN MORE ABOUT NATURE.** *Birds & Blooms* has been my nature bible." —*Lile' B.*

"Thanks for keeping *Birds & Blooms* a magazine for backyard **GARDENERS AND BIRDERS.** You've certainly filled a niche."
—*Ralph M.*

"When your magazine comes in the mail, **I STOP EVERYTHING** and sit down to read."
—*Diane T.*



Try a
FREE
issue

See for yourself why
America LOVES
Birds & Blooms magazine...

For **free issue** details, go to birdsandblossoms.com/freeissue

Or call toll-free **1-888-860-8040** (mention code LNF01V)

ADVERTISEMENT

From Boot Camp to Combat...

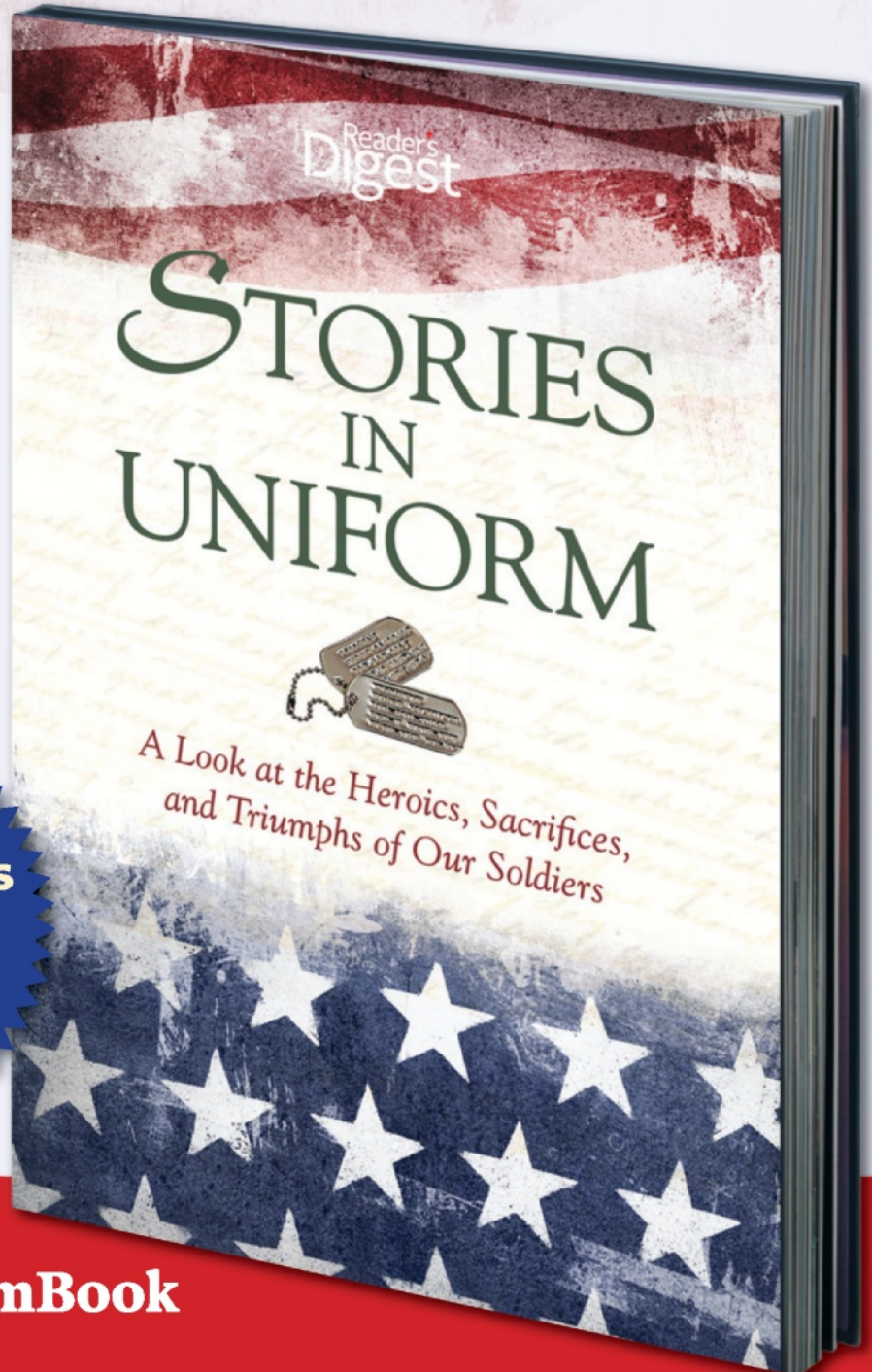
Inspiring Tales of America's Brave Soldiers!



90 YEARS
of True Stories from
Those Who Serve.

You'll be moved and awed by ordinary soldiers and their acts of extraordinary strength, bravery and determination. From World War I to the War on Terror, *Stories in Uniform* will inspire great pride in every American.

**The best
soldiers' stories**
from the pages of
**Reader's
Digest**



Available now at

RD.com/UniformBook

(Or wherever books are sold)

Trim the front

Install the two outside side trim boards (Q) first. Overlap them so they're flush with the trim boards on the sides. Keep them 3/4 in. off the ground like the trim on the sides. These trim boards will be shorter on top than the side trim to accommodate the slope of the roof. Find the length by holding a straight-edge on the roof slope and measure up to that. The drip edge (AA) installed under the shingles will overlap all the top trim boards and cover any imperfections. Install the trim boards with 1-1/4-in. brads and construction adhesive.

Cut and install the front bottom trim board (U). It should be flush with the top of the plywood that makes up the bottom of the boxes. Cut and install the top trim board (V). After you cut the center trim board (W) to length, apply the adhesive. Then center it over the door stops and tack it on with just a couple of brads to hold it in place (**Photo 3**).

Build the doors

Start by cutting the four temporary braces (H) that will hold the door slabs in place while you install the trim. Attach the braces to the back of the door stops and hinge supports. One 1-1/4-in. screw through each side will be enough to temporarily hold the doors.

The door slabs (G) sit flush with the door stops and the hinge supports. Cut each door slab so there's at least a 1/4-in. gap around all sides. The gap can be a little bigger, but a smaller gap may cause the doors to bind. Screw the slabs into place with two screws into each temporary brace (**Photo 4**).

Cutting List

KEY	DIMENSIONS	QTY.	NAME
3/4" BC sanded plywood:			
A	15-3/4" x 72"	4	Sides
B	23-3/4" x 72"	2	Backs
C	14-1/4" x 23-3/4"	3	Shelves
D	15" x 23-3/4"	2	Bottoms
E	17" x 52-1/8"	1	Top*
F	2" x 23-3/4"	2	Top braces
G	21-1/4" x 62-1/4"	2	Door slabs*
H	5-1/4" x 23-1/2"	4	Temporary door brace
*Cut to fit			
Pressure-treated lumber:			
J	1-1/2" x 5-1/2" x 25-1/4"	4	Base fronts and backs
K	1-1/2" x 5-1/2" x 12-3/4"	4	Base sides
Cedar (or pressure-treated):			
L	3/4" x 1-1/4"	2	Door stops*
M	3/4" x 3/4"	2	Hinge supports*
N	3/4" x 1-1/4" x 4"	2	Door latch blocks
P	3/4" x 5-1/2"	2	Side bottom trim boards*
Q	3/4" x 2-3/4"	4	Side trim boards*
R	3/4" x 2-3/4"	2	Side top trim boards*
S	3/4" x 2-3/4"	2	Side center trim boards*
T	3/4" x 2-3/4"	2	Front side trim boards*
U	3/4" x 5-1/2"	1	Front bottom trim board*
V	3/4" x 2-3/4"	1	Front top trim board*
W	3/4" x 2-3/4"	1	Front center trim board*
X	3/4" x 2-3/4"	4	Door side trim boards*
Y	3/4" x 5-1/2"	4	Door top and bottom trim boards*
Z	3/4" x 2-3/4"	2	Door center trim boards*
AA	3/4" x 1-1/8"	3	Drip edge*
BB	1/4" x 3/1/2"		Cedar planks*

*Cut to fit



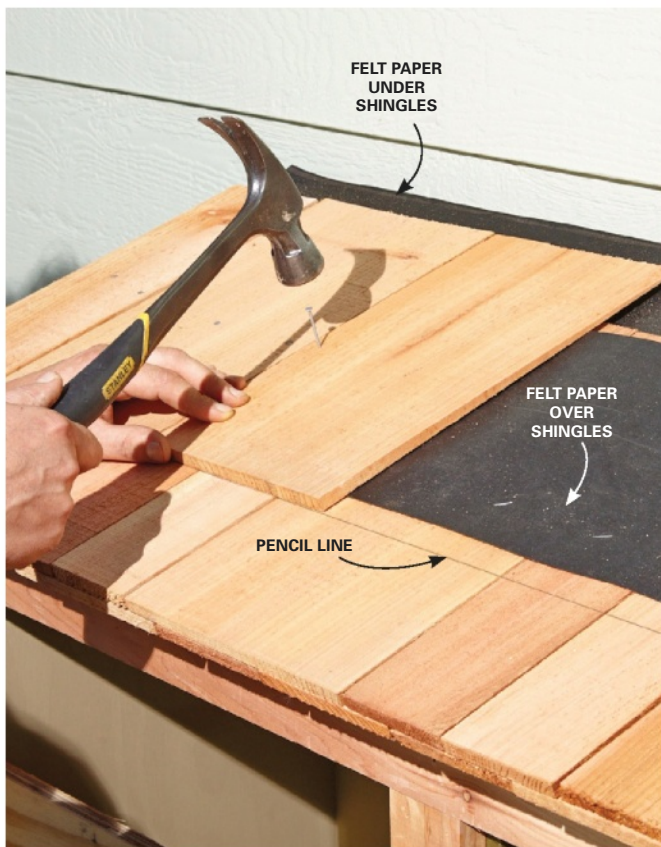
4 MOUNT THE DOOR SLABS

Screw the door slabs to temporary braces. This will let you build the doors in place for a perfect fit. Keep the screws at least 4 in. from the edge of the slab so they won't get covered up by the trim.



5 BUILD THE DOORS IN PLACE

Nail and glue the trim to the slabs, leaving an even gap around the edges. Then screw on the hinges, remove the temporary screws in the slabs, and install the siding back in your garage.



6 SHINGLE THE ROOF

Cover the roof with felt paper. Prevent water from leaking between the shingles by covering every row with a strip of additional felt paper.



7 PREVENT TIPPING!

This shallow locker can tip forward easily, so once you've applied your finish to the exterior, fasten the locker to wall studs with a couple of screws. An oversize hole and a fender washer on your screws will allow the locker to move up or down slightly with ground movement.

Now install the door trim with construction adhesive and 1-1/4-in. brads. Install the sides first (X), then the tops and bottoms (Y; **Photo 5**). Leave a 1/4-in. gap between the outside edge of the door trim and the trim on the face of the locker. Install the door center trim board (Z) so the top is 42-3/4 in. up from the ground, the same height as the center trim board on the sides.

Install the hinges before removing the doors. Cheap hinges tend to sag, which makes the doors a real challenge to hang, so buy good ones. These sturdy strap hinges cost \$8 each. Center the hinge on the top and bottom door trim. These hinge screws required predrilled holes. I held the hinges in place and marked all the hole locations with a pencil. Punch a starter hole in each spot with a nail set before predrilling the holes with a 1/8-in. bit. Mark the depth on the drill bit with a little masking tape so you don't drill too deep.

Once the hinges are installed, take out the screws that hold the slab to the temporary braces, and make sure the doors open and close without binding. Now remove the hinges, and take the doors back to your garage. Doors take a lot of abuse, so I installed additional 1-1/4-in. screws through the plywood slab into the door trim for a little extra support. I spaced them every 16 in. or so.

Install the siding the same way you did on the sides. It looks best if the first and last siding planks are close to the same size. I had to rip about 1/4 in. off the first and last pieces to make them come out even. I'm not much of a math guy, so I just snapped a bunch of pieces of siding together, centered them over the opening and marked how much to take off each side.

Install the roof

There is a difference between cedar shakes and cedar shingles. I tried using shakes on my first attempt, but they looked too gnarly on such a small surface. Fasten the top plywood with two 1-1/2-in. screws along the outside edges and middle, and four more along both the back and the front edges.

Cover the whole roof with 15-lb. felt paper. Install the first row of shingles so they overhang 1-1/2 in. past the trim on the front and sides. Drive in two 1-1/2-in. galvanized 4d nails per shingle about 3/4 in. from each edge and about 1-1/2 in. above the exposure line. Lay down a layer of felt paper about 8 in. wide and cover the whole first row almost to the bottom of the shingles. Install the second row directly over the first, staggering the seams as you go. Install another 8-in. strip of felt paper over this second row about 5-3/4 in. up from the bottom of the shingles. That's an inch higher than the exposure line. In this case, each of the four rows will have a 4-3/4-in. exposure. I used a straightedge and a pencil line to mark each row as I went (**Photo 6**).

Overlap the rest of the rows with felt paper in the same manner. You'll need to trim the back side of the shingles on the



Get even more tips and projects in our iPad edition. It's available at the App Store.

last two rows. It's easier to do this if you pull the locker away from the wall and mark each shingle as you go. The exposed nail heads on the last row will get sealed later on.

Install the drip edge (AA) under the shingles. Install the sides first, then the front. Secure them with construction adhesive and 1-1/4-in. brads spaced every 8 in.

Seal the exterior

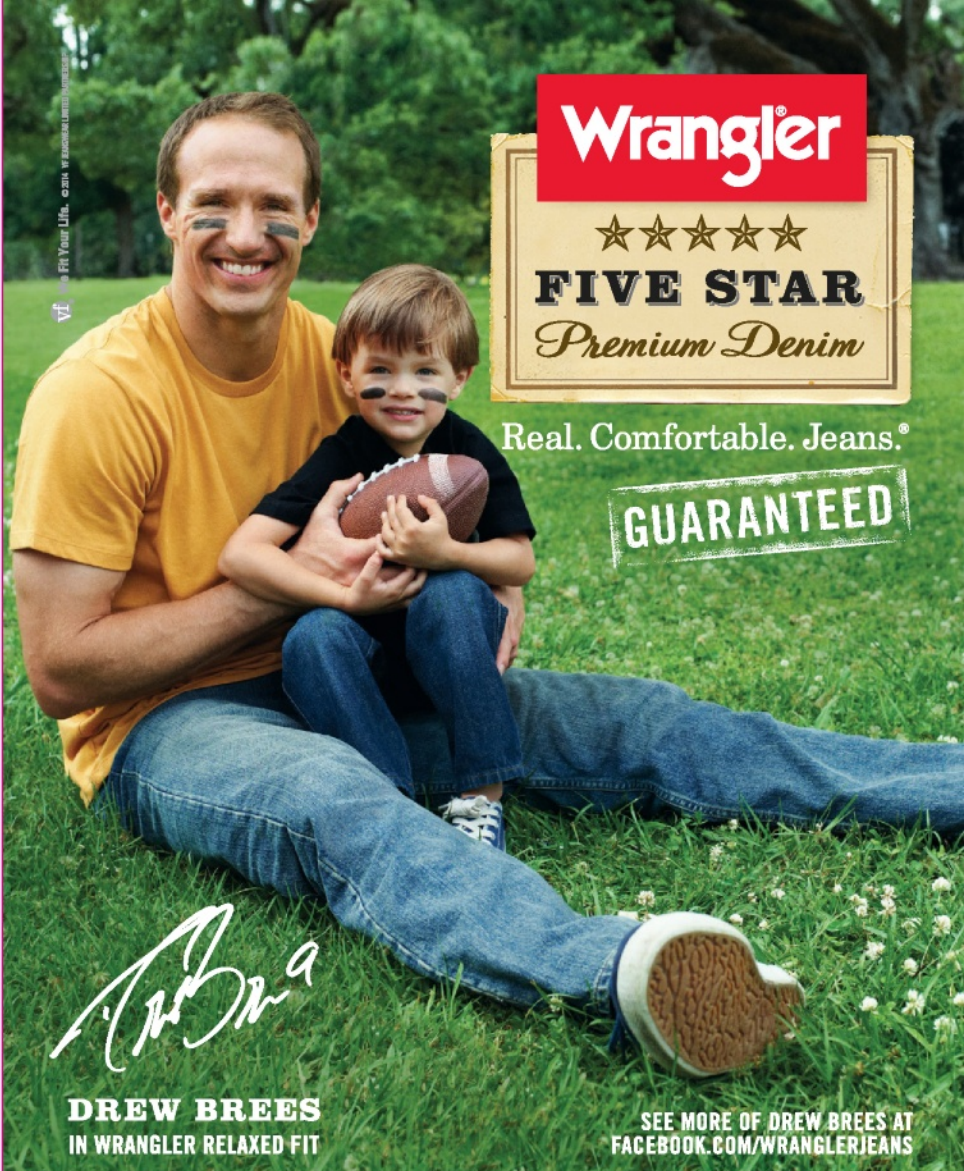
Seal the exterior before you push the storage locker back up against the wall and reinstall the doors. Start with a polyurethane caulk similar to the final color of your project. Seal all the areas where the siding meets the trim. Fill any knotholes or voids in the siding and trim, and don't forget to cover the exposed nails on the shingles. Let the caulk dry overnight before applying the finish.

I coated my storage locker with a wood finish made by Sikken's, which darkened the wood just a bit. This product holds up well, but it's also really stinky. Wear a respirator and finish the doors outside. I laid it down with a roller and back-brushed it. Force a little extra sealant into the holes made by the brads. If you don't want your shingles to turn a weathered gray, cover them with sealant as well (I left mine alone). I applied one coat and will add another coat next year.

Finish it up

The profile of this storage locker is tall and thin, so secure the locker to the wall to prevent it from tipping over. Push it back into place and reinstall the shims so it's tight up against the wall and the sides are plumb. Soil can rise and fall in cold climate regions because of the freeze/thaw cycle. To give the unit a little wiggle room, drill a 3/4-in. hole through the back and secure the locker to your garage wall with two 4-in. screws and 1-1/2-in. fender washers (Photo 7), one on each side. An easy way to find the studs in the garage wall is to locate the nails in the siding.

Reinstall the doors and install the door catches. Install them where you attached the support blocks. On the other side, install one underneath the top and bottom shelves. All that's left is to trim off the shims, attach the handles and fill up your locker.



Wrangler
★★★★★
FIVE STAR
Premium Denim

Real. Comfortable. Jeans.®

GUARANTEED

Drew Brees
DREW BREES
IN WRANGLER RELAXED FIT

SEE MORE OF DREW BREES AT
[FACEBOOK.COM/WRANGLERJEANS](https://www.facebook.com/wranglerjeans)

NOTHING BEATS WRANGLER COMFORT

OTHER JEANS
{ V-PATTERN PINCHES }



VS

Wrangler
{ U-SHAPE PROVIDES MORE ROOM }



AVAILABLE AT
kmart.



WHAT IT TAKES

TIME: 2 to 4 weekends

COST: \$2,500

SKILL LEVEL: Intermediate

TOOLS: Yard tools, hand tamper, rented plate compactor and skid-steer loader



CIRCULAR PATIO & RETAINING WALL

by Jeff Timm
editors@thefamilyhandyman.com

Hilly, small or ho-hum yard? Modular pavers and blocks let you carve out a unique retreat darn near anywhere!

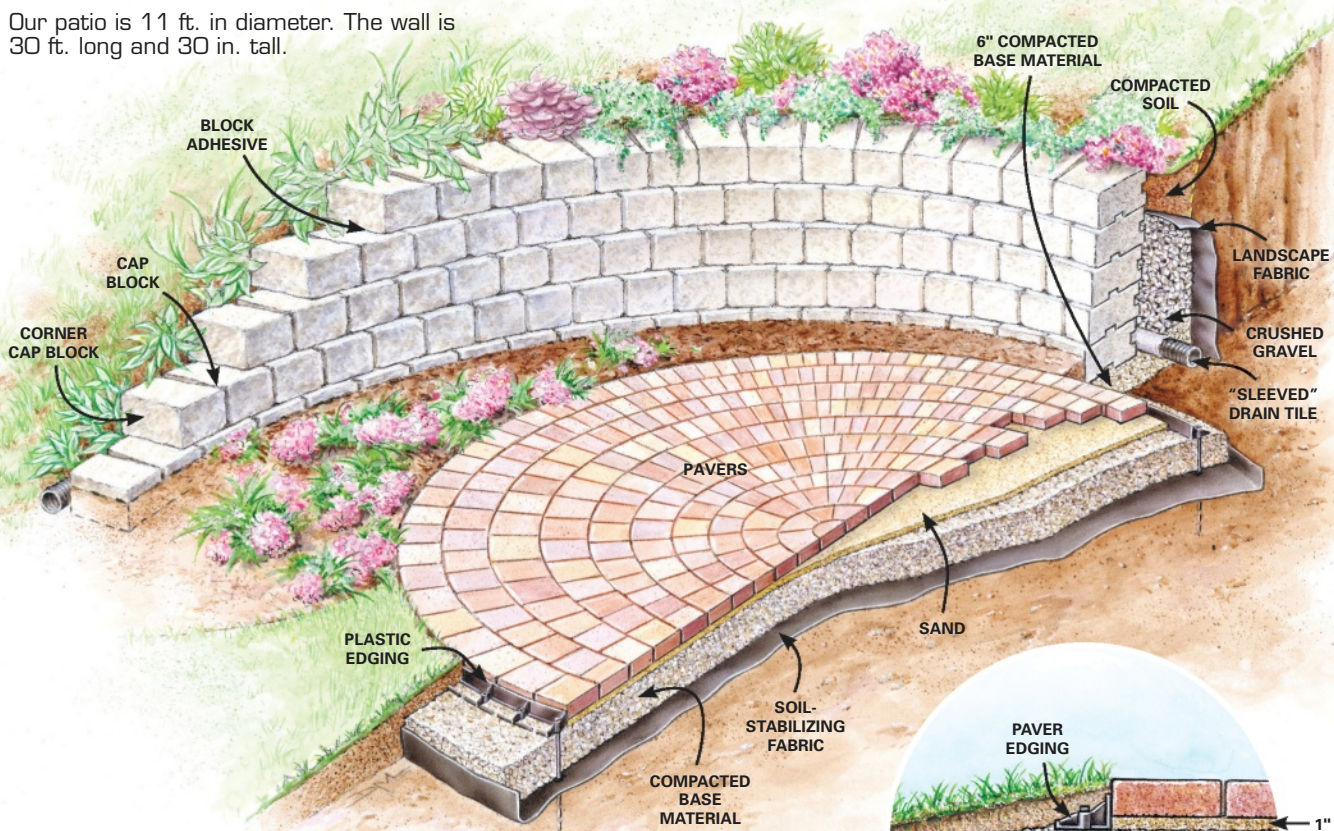
Building this patio and retaining wall is a big job, but it's not a complicated one. In fact, this is as simple as landscape construction gets. The circular patio is built from specially designed pavers that fit together like a simple puzzle. The surrounding wall is made from modular concrete blocks. You simply stack them—you won't have to measure or cut a single block.

You'll never have to lift more than 60 lbs. at a time, but you'll be handling literally tons of material. So you could probably skip your weight training while you're building it!

We'll show you everything you need to know. Allow at least two long, sweaty weekends of labor, one for the patio and one for the wall. When you're finished, you'll have a gorgeous patio for about half the cost of hiring a contractor. Do one or both parts of the project; either way, the following pages will show you how to do it right.

Figure A Patio and retaining wall

Our patio is 11 ft. in diameter. The wall is 30 ft. long and 30 in. tall.



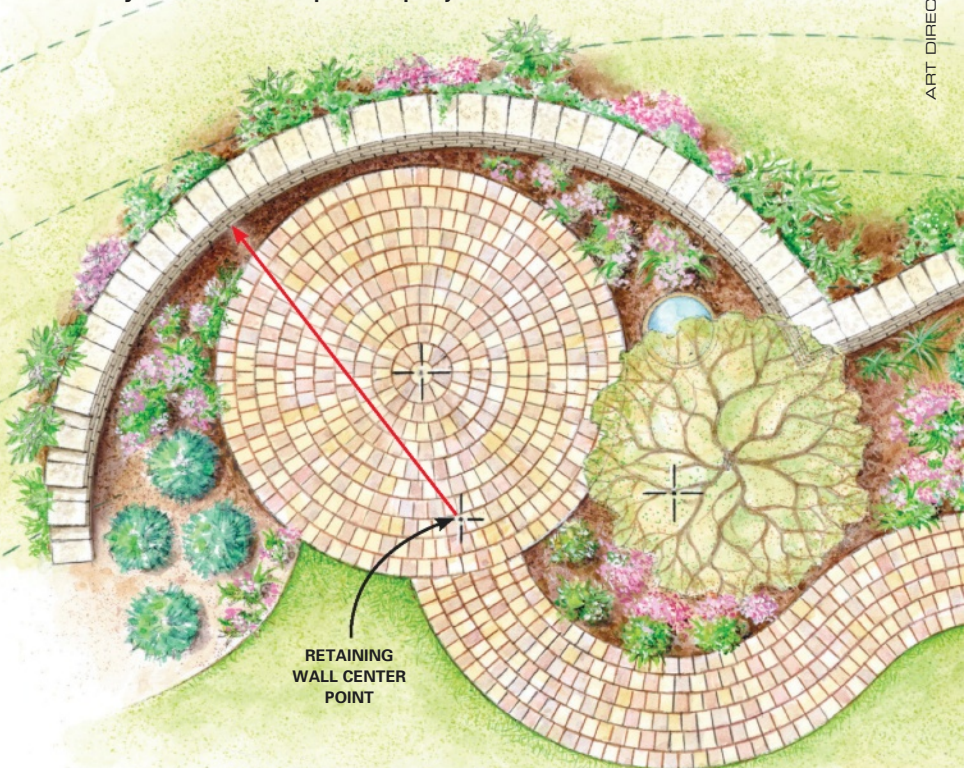
Design your space and estimate the material

Most municipalities don't require a permit for patios or retaining walls less than 4 ft. tall. But check with your local building department to locate setbacks or any easements on your property. Also call 811 to have underground utility lines marked.

Use garden hoses to represent the patio and wall, and move them around until you find a design and size you like. Use marking paint to establish the outlines (Photo 1).

To estimate the wall block quantity, begin by pounding in stakes at the highest and lowest points of the wall, then stretch a string with a line level horizontally between the two. Measure down from the string to the sod at the stake on the lower side of the hill, then add 3 in. (to allow for burying the lowest course of block halfway). Round up to the nearest full block to get the approximate wall height. For the length, simply measure the painted wall layout line (Photo 1) with your tape. Multiply the length by the height to get the total square feet of wall face. The supplier will calculate the

Figure B
Bird's-eye view of completed project



Create Your Own Outdoor Room...In Just Seconds!



Motorized & Manual Awnings Available!

**LOW
Factory
Direct
Prices!**

Introducing The Revolutionary SunSetter Retractable Awning!

If you're tired of having your outdoor enjoyment rained on...baked out...or just plain ruined by unpredictable weather...

At last there is a solution! One that lets you take control of the weather on your deck or patio, while saving on energy bills! It's the incredible SunSetter Retractable Awning! A simple...easy-to-use...& *affordable* way to outsmart the weather and start enjoying your deck or patio more...*rain or shine!*

The SunSetter® is like adding a whole extra *outdoor room* to your home... giving you instant protection from glaring sun...or light showers! Plus it's incredibly easy to use...opening & closing effortlessly in *less than 60 seconds!*

So, stop struggling with the weather...
& start enjoying your deck or patio more!

For a **FREE Info Kit & DVD** email your name & address to freedvd@sunsetter.com

**FREE!
Info Kit
& DVD**

Opens at the Touch of a Button!



Protects you from 99% of UV rays



You choose full sun or total protection in just seconds!

FREE Info Kit & DVD
Call Toll-Free: 1-800-876-8060 Ext. 28844

☒ **Yes!** Please send your **FREE Info Kit & DVD**...including Special Savings now in effect...**TODAY!**

Name _____
Address _____
City _____ State _____ Zip _____
Email _____

(Important: Be sure to give us your email address to receive our best deals!)

184 Charles Street, Dept. 28844, Malden, MA 02148
Visit us today at www.sunsetter.com

SunSetter®
RETRACTABLE AWNINGS

Optional Screen Room Available!

1 MARK OUT THE DESIGN

Position 10-in. spikes to mark the center points of the patio and wall. Swing a tape measure hooked on the spikes and spray-paint arcs to mark the actual face of the wall and the edge of the patio. Paint a second set of arcs to indicate the outer excavation lines, adding 2 ft. 4 in. to the wall radius and 8 in. to the patio radius.



2 DIG INTO THE HILLSIDE

Create a flat area for the patio and wall. Dig 9 in. below the sod, using a point 3 ft. in from the lowest edge of the patio as a reference point. Hire or rent a skid-steer loader to make quick work of removing the bulk of the material. Clean up the perimeter and flatten the bottom with a shovel.



3 LEVEL THE SITE

Check your patio area using a straight 10-ft. 2x4 and a 4-ft. level. It should have a slight slope away from the wall (about 3/4 in. every 4 ft.) and be level side to side. Use a plate compactor to compact any soil you've added or loosened.

block quantity from the square-foot calculation. You'll have some extra because the wall steps down on the ends, but you might need it if any of the blocks are damaged. Figure two corner blocks per row for the ends (**Figure A**). Tell the supplier that your top row will be cap blocks.

To order the patio pavers, just provide your supplier with the diameter; the staff will put together a package containing the right quantity of each stone shape. At first glance it might look complicated, but the manufacturer has directions telling how many of each shape to put in each ring. Ask for the paver layout plan when you order; it's not packaged with the pavers.



4 COMPACT THE WALL BASE

Relocate the spike that marks the wall center point; it may take a little trial and error. Spray-paint a new arc 6 in. shorter than the radius of the face of the wall. Then spread a 2-ft.-wide swath of base material from this line to the back of the excavation. Start with two 2-in.-thick layers, compacting each. Spread about 2 in. more and use your straight 10-ft. 2x4 and 4-ft. level to make it roughly level. Compact again.



Want more Handy Hints?

Subscribe to our DIY Tips & Hints newsletter and we'll e-mail you a new batch of clever problem-solvers every month.



Handyman
DIY Tips & Hints

Dozens of clever, why-didn't-I-think-of-that suggestions from fellow DIYers.

DIY PROJECTS HOME REMEDY DIY TOOLS DIY COMMUNITY MAGAZINE DECKS & PATIOS MY PROJECT SHED

Tip for Easier Gardening

No-stick shovel

Whether you're dealing with wet snow or thick soil, a dose of spray lubricant on your shovel will make the sticky stuff slip right off. Use a lubricant that contains silicone or Teflon and recoat the shovel occasionally.

More easier gardening hints and tips

Clever Cleaning Tips

Clean drills, grinders, grinding surfaces: The results of a simple surface cleaning with mineral spirits may amaze you. Pull 'em back up and the old emulsion is it can muddy the brush, but will wipe away. Don't use stronger solvents, they might dissolve the brush.

Soak a coarse, absorbent, clean cloth with mineral spirits and wipe the brush. Keep applying and wiping until the cloth no longer picks up dirt. There's a final wipe with a brush, clean rag.

More clever cleaning tips

How to Get Rid of Bugs

Disrupt the ant trail

Disrupt the ant trail by spraying with vinegar and water. The vinegar and water, then spray it where you see ants to cover the ant trail.

More tips for getting rid of bugs

FOLLOW US ON

Facebook Twitter YouTube

14-DAY FREE TRIAL

The Family Handyman for Your Nook

Sign Up!

Amazon.com

Get the book you need now

DIY

It's free! And easy—just go to familyhandyman.com and click on **FREE NEWSLETTERS** at the top of the page.



BIRDS & BLOOMS Gardening

#1 BIRD & GARDEN MAGAZINE IN AMERICA

e-newsletter



free monthly newsletter...

Get all-new seasonal gardening tips
and green-thumb advice sent straight
to your inbox from the friendly
editors at *Birds & Blooms*!

Question of the month
with gardening expert,
Melinda Myers.



Monthly Top 10 plant
picks for your garden.



Photo supplied by www.provenwinners.com

Backyard how-to's like
these homemade
garden lanterns.



FREE

Sign up today at:
birdsandblooms.com/newsletters

Rental tools

You'll need several heavy-duty tools to do the job right. You'll have to rent a plate compactor (**Photo 4**). This 200-lb. beast is the secret to a long-lasting patio. Rent it for \$60 a day and move it around with a dolly. You'll need it for two days: one day to pack the gravel footing for the retaining wall and a second day for the patio.

For excavating, you have two choices: a good shovel and a strong back, or a skid-steer loader (see **Photo 2**). If you're just doing the patio, dig it by hand. But for cutting into a hill like we did, a skid-steer is the only way to go. If you're a tool junkie, you can rent one. But bear in mind that by the time you're done hauling it, learning how to operate it, using it and replacing the neighbor's hedge you destroyed, you could probably have gotten the excavating done cheaper and faster by hiring a contractor. A skid-steer loader will rut your lawn, so plan to fill in the path with topsoil and grass seed when you're done.

To get rid of the excavated soil, you can rent a trash container, ask the contractor to haul it away, fill in a low spot or persuade a neighbor to take it.

Rent or buy (about \$25) a hand tamper (**Photo 6**) for compacting the gravel behind the wall, and get a sturdy contractor's wheelbarrow for moving those 300-lb. loads of gravel.

Dig in

Spray-paint the "footprints" of your wall and patio (**Photo 1**), dig just inside the outer layout lines and then reestablish the center points of your arcs after excavation. Dig about 9 in. below the patio's center point to provide room for the gravel, sand and pavers. **Photo 1** shows you where to measure your depth. Because of the sloping hill, the front edge of the patio will be a little higher than the lawn. (You won't dig out as much soil here.) Add soil when you're done to blend the elevations. The bottom of the excavation has to be flat and slightly sloping (**Photo 3**). Be sure to remove all sod and compact any loose soil. If you don't, it will settle over time and the patio will end up with a dip.

Install the wall footing

A wall is only as sturdy as the base you build it on—in this case, crushed gravel that ranges in size from 3/4 in. down to a



5 LAY THE FIRST COURSE

Spray-paint another arc, representing the face of the wall. Precisely align and level each block. Cut a notch out of a 14-in. 1x3 to bridge the "tongue" on top of the block for leveling the block front to back. Make slight adjustments by tapping a corner with the butt end of the mallet, and larger adjustments by adding or removing base material under the blocks. If you add more than 1 in. of base material, compact it with the hand tamper before setting the block. Set cap blocks and corner blocks on the ends of the first row. Install landscape fabric to separate the soil from the gravel you'll use as backfill.



6 BACKFILL AS YOU BUILD

Place 4-in. drain tile behind the bottom row of block from end to end. Fill behind the block with 3/4-in. clean, crushed gravel and compact with a hand tamper. Add subsequent layers of block, starting at the middle of the arc. Center the first block over the joint below and work toward each end. Fill behind the wall with gravel after each course and compact with a hand tamper.

• TRUSTED QUALITY SINCE 1921 •
RUST-OLEUM
 PRESENTS

Inspire. Transform. Complete.

RUST-OLEUM® is the product of choice for people who imagine beautiful things. See how Timothy Dahl, home improvement expert and blogger, transforms his patio.



THE PROJECT PATIO REFRESH!

Timothy's home includes an indoor/outdoor seating area where he and his wife entertain, BBQ and their 2-year old son plays. Equipped with **Rust-Oleum Restore 10x**, he will provide moisture protection, fill uneven cracks and apply a beautiful uniform color to the concrete patio surface.

>> Check out the June issue of *The Family Handyman* to follow Timothy's progress!



TIMOTHY DAHL
 CharlesandHudson.com



• TRUSTED QUALITY SINCE 1921 •
RUST-OLEUM
RESTORE

RustOleum.com



7 CAP THE WALL

Secure the cap blocks and corner blocks with a bead of special construction adhesive for concrete block. (Wrap the fabric over the gravel before placing the cap blocks.) Backfill behind the caps with soil and compact it with the hand tamper. Slope the soil to drain water around and away from the wall.

TIPS FROM THE BUILDER



Jeff Timm is a landscape designer and contractor in St. Paul, MN. Over the past 20 years, he's built hundreds of retaining walls and patios, including this one and several others for *The Family Handyman*. Here are some of his tips for selecting materials:

- Compare retaining wall block at square-foot prices. Blocks come in different sizes, so by-the-piece prices don't provide a true comparison.
- Lighter-colored blocks and pavers generally hold their color better than darker tones.
- After years of weathering, multicolored blends usually look better than a single color.
- If you want a multicolored wall or patio (like the patio shown here), bring home four or five pieces representing the full color range. Set them on the patio site to make sure you're satisfied with the look.
- Fill the gaps between pavers with "polymeric" sand. Unlike regular sand, it contains a glue-like binder to help keep it in place. More expensive products usually contain more binder and are worth paying for. Be sure to follow every detail in the directions—otherwise the binder can stain the pavers.

powder. Suppliers may refer to this material as crushed Class II or various other names. Build a 6-in.-deep layer by spreading 2 in. of base, dampening it, compacting it and then repeating the process (**Photo 4**).

Compact the gravel at least four times. The compactor's tone will change from a dull thud to a sharp whack, and the machine will start to hop when the surface is hard enough. If you're unsure if it's packed well enough, pass over it a few extra times.

The gravel layer should be 3 in. or more below the sod on the ends of the arc, and within an inch of level all the way around.

Set the first row of block

Set the first block, level it in both directions, then add the next. Tweak each block when you set it to make it perfectly level (**Photo 5**). Setting just one slightly out-of-level block will haunt you on consecutive courses. Lay the entire first row. On the ends, place a

Fernandina Beach had a deck problem, Rust-Oleum Restore had a solution.



REPAIRS
DECKING



REPAIRS
CONCRETE

Rust-Oleum Restore 10X is a revolutionary, easy-to-apply repair coating that's 10 times thicker than paint. And it's guaranteed for life. Even in places like Fernandina Beach, Florida, where their boardwalks are subjected to extreme weather and tons of punishing traffic. So if it works there, just imagine what it can do for your deck at home. Don't rebuild. Apply the coating that renews AND repairs, Rust-Oleum Restore 10X.

 **RUST-OLEUM®**

RustOleumRestore.com





8 LAY THE PATIO BASE

Reset a spike at the center point of the patio and spray an arc 8 in. larger than the radius of the patio. Spread two 2-in. layers of base material over the stabilization fabric, compacting each layer with the plate compactor. Build up the perimeter with soil to keep the base material from spreading outward as you compact.



9 SLOPE THE BASE

Set two 1-in. steel pipes about 6 ft. apart on top of the compacted base material. Orient them in the direction of drainage, away from the wall. Slip base material under the pipe until a 4-ft. level with a 3/4-in. block slipped under the low side reads level. Set the other pipe level and parallel to the first.

cap block and a corner block to create a finished look where the wall steps down (Photo 6).

Place 4-in. perforated drain tile with fabric wrapped around it at the base of the wall. Run it the entire length of the wall and leave the ends open. Don't worry about drowning your petunias; water will never gush out. The pipe just relieves water pressure against the wall.

Modular blocks stack fast

Fill behind each layer with 3/4-in. crushed gravel and hand-tamp it (Photo 6). Don't use extra base material for behind the wall; it doesn't drain well. To be sure the gravel continues to drain well, place landscape fabric between the soil and the gravel to keep the dirt from mixing in (Photo 5).

Before placing each course, sweep stray gravel onto the block below. Since the blocks automatically step back with each layer, the wall's radius increases with each course. To keep the joints evenly staggered, start setting each row of block at the center of the arc and work toward the ends (Photo 6). Use construction adhesive formulated for concrete block to secure the cap and corner blocks (Photo 7).

Wrap the landscape fabric over the gravel and fill behind the top layer of block with soil. Grade the soil so water flows around the wall (Photo 7). To prevent water and soil from washing through the joints of the cap block, lay 6-in. squares of fabric over the joints to seal them.

Lay the patio base

After excavating, we laid a special woven "ground stabilization fabric" over the patio area. You don't need it in stable sandy or gravelly soils, but in other soils it's cheap insurance for a flat patio for years to come (a total of \$32 for our patio).

Reestablish the patio's center point. Keep the spike in until you start laying the pavers; it'll mark the starting point for the paver circle. Mark out the patio perimeter plus an extra 8 in. with marking paint. Add and compact two layers of base material in 2-in. layers (Photo 8).

Most pros just level the gravel layer by "eyeball." But screeding it as we did is worth the effort. It provides a perfectly flat base, which makes spreading the sand layer easier. More important, it eliminates "birdbaths," low spots in the

finished patio caused by variations in the thickness of the sand layer.

Position and slope the screed pipes so the patio will drain water away from the wall (**Photos 9 and 10**). The third layer should be no more than 3 in. below the sod at any point. A few inches higher than the sod is better. Add more base material to raise the entire patio if necessary. Slide the 2x4 side to side along the pipes to distribute the base material and create a flat surface. Compact this final layer four times, changing direction each time—north to south, then east to west.

Lay the sand bed

Give yourself enough time—at least one half day—to set the sand bed and lay the pavers. If you leave your meticulously screeded sand overnight, the neighbor's cat, a stray dog and a rain shower are guaranteed to disrupt your hard work.

Lay the pipes on the compacted base (the pipe diameter provides for 1 in. of sand). If you spot gaps larger than 1/2 in. anywhere under the pipe, add gravel in the depression and compact. Pour a few wheelbarrows of coarse washed sand between the pipes, spread it out with a shovel, and screed it the same way you did the base (**Photo 10**). Start at the wall so you have enough room to work. You won't compact the sand layer until after the pavers are laid.

Laying pavers—the fun part

Laying the pavers is the easiest and most rewarding part of the project (**Photo 12**). You'll need five different shapes of pavers to build this circular patio. The manufacturer's chart tells you how many of each shape to put into each ring. Alternate the shapes if a ring has more than one paver shape.

Since you start in the center and work out, you'll have to disrupt that flat sand layer with a few footprints. Minimize the damage by staying in the same footprints, then trowel them flat when the paver rings get close. After you've laid three or four rings, stand on the pavers and have a helper pass you the next pavers. Don't step on the very edge or you'll create a dip. Once you get the first five rings in, it's pretty methodical and will go quickly.



Attracted by
the beauty.

Loved for the
performance.

DeckRite is the beautiful, durable, low maintenance vinyl covering designed for applications on decks, patios, balconies or breezeways. It is slip resistant, mildew resistant, and one of the few waterproof decking systems that may be used over living or storage areas to keep the space below dry.

3912 E. Progress • North Little Rock, AR 72114
1-888-450-DECK • www.deckrite.com

Self-Feeding DR® CHIPPER

Just load a
DR® RAPID-FEED™
CHIPPER, step back,
and watch it chew up
5½" thick branches!

Try a DR® at Home
for 6 Months!

Call for details.

SELF-FEEDING saves time and energy.

Most branches can be dropped into the hopper and will self-feed, instead of you having to force-feed them.

TOP-DISCHARGING is standard on all models, for easily collecting discharged chips in a container or cart.

PRO-SPEC™ CHIPPER KNIFE is made of forged alloy tool steel, making it exceptionally strong with an excellent edge-holding ability.

CHIP BRANCHES UP TO 5 1/2" THICK with powerful engines up to 18 HP.



TRACTOR OWNERS!

3-Point Hitch
model too.

**FREE
SHIPPING**
For a Limited Time

Call for a **FREE DVD and Catalog!**

TOLL FREE **888-200-3210**

DRchipper.com



83104X © 2014



10 SCREED THE BASE

Shuffle a 10-ft. 2x4 side to side along the pipes as you level the final layer of base material and pull it away from the wall. Fill in any depressions and remove any high spots as you work. Remove the pipes and fill the troughs with gravel. Compact this last layer of base material.

42 MAY 2014 familyhandyman.com



11 COVER THE BASE WITH SAND

Place the pipes in the same location as shown in Photo 9. No leveling should be needed since the slope is established from the gravel layer. Repeat the procedure shown in Photo 10, using sand instead of base material. Remove the pipes, fill the troughs with sand and trowel the area smooth. Fill in your footprints as you back out. Remove the center spike.

Garage Overhead Storage Racks



- Fits Any Garage
- Friendly Service
- Lifetime Warranty
- Do-It-Yourself Kits



Special!
25% Off

Online Orders Only

Limited One Use Per Customer

Expires: 07/31/14 Code: HNDY514MG

877-403-1606

Scan to Visit SafeRacks.com



SafeRacks is Installed by Licensed and Insured Contractors...Accept no Substitutes, Make Sure it's the Real Thing. U.S. Patents D533,401 and 7,357,262



12 LAY THE PAVERS

Position the center pavers, then install the outer rings using the shapes and patterns specified in the manufacturer's plan. Stagger the joints. Use only one footpath as you work so you disturb the sand as little as possible. Stand on the pavers once you have a few rings placed and have a helper pass or toss you the pavers for the next half-dozen rings. Add a little sand and trowel out the footprints when you reach them with the installed pavers. Work out to the final size.

familyhandyman.com MAY 2014 43



✓Yes



✓Yes



xNo



✓Yes



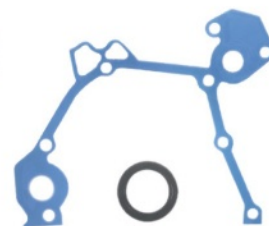
✓Yes



✓Yes



✓Yes



✓Yes

✓ Reliably Low Prices
 ✓ Easy To Use Website
 ✓ Huge Selection
 ✓ Fast Shipping
www.rockauto.com

RA
ROCKAUTO.COM
 ALL THE PARTS YOUR CAR WILL EVER NEED

NEW PODIUM

Work Facing Any Direction.



4X WORK ZONE



The new Werner Podium is built with a large standing platform and extended guardrail so you can work comfortably all day, in every direction. Learn more at

WERNERPODIUM.COM



#1 IN LADDERS™

AD477 ©2014 Werner Co. 02/14



13 LOCK THE PAVERS IN PLACE

Pull the sand away from the perimeter of the patio with a steel trowel until you reach the base material. Snip the back side of the edging with garden pruners to bend it to the arc of the patio. Hold the edging tight to the pavers, then drive 10-in.-long, 3/8-in. spikes every foot through holes in the edging. Connect the edging, leaving no gaps between the pieces.



14 EMBED THE PAVERS

Run the plate compactor on top of the pavers. Pass over the patio four times, switching direction after each pass. Compact around the outer edge after each pass.

If you end up with a gap where a ring comes together, distribute it by spacing several bricks up to 1/8 in. apart. To get an even color mix throughout the patio, draw the pavers from more than one pallet. If you're just using one pallet, you can blend the colors well by drawing from opposite sides; one half is usually darker than the other.

The final details

To contain the pavers and sand, install a paver edging around the perimeter (**Photo 13**). We used Snap Edge (\$1.50 per foot). It costs a little more, but it installs easier and offers better support than less expensive alternatives. Before installing the edging, be sure to scrape the sand away to expose the base material. Conceal the edge with soil or mulch when you're finished.

Run the compactor over the patio to set the pavers, compact the sand and vibrate sand up into the joints, locking the pavers together (**Photo 14**). The steel plate won't hurt the pavers, but it will make your ears ring. Wear hearing protection. (If a paver does break or chip during this step, gently wiggle it out with a pair of flat-blade screwdrivers and replace it.) Spread coarse, dry sand over the patio to fill the joints and repeat the compacting. *The sand has to be thoroughly dry to jiggle into the joints.* Don't try to save money on a tamper rental by skipping this step. The last tamping will vibrate the sand into the joints, locking all the bricks together.

No maintenance!

This type of patio and wall requires little to no maintenance. Don't let dirt build up on them or you'll provide a home for weeds, and be sure to wash the patio down periodically. Sealers are available to enhance the paver color, but once you apply them, you need to repeat the process every few years. I prefer to skip the sealer.

Our iPad edition includes tips for moving landscape materials and other heavy stuff. It's available at the App Store.



It is awesome!



Pat. # -
7,282,074
Design Pat.
Pend.

"I received the **Super Dust Deputy** and all the other items in great shape. I got everything hooked up in our new shop and **WOW**. I can't believe how well the duct system works with the new **Super Dust Deputy** combined with our old dust collector. Almost nothing is getting to the collector. It all goes right into the drum under the cyclone. **It is AWESOME!** Our dust collection system is 100% better because our filters stay cleaner longer and we are not emptying the old separator nearly as often. We have been running in our new shop for almost a week and there is almost nothing in the collector bags. **AMAZING!**"

Dave Eilers
www.davecustomservices.com

■ **An affordable alternative to replacing your existing single stage dust collector.**

■ **Captures 99% of the waste before it reaches your collector.**

Collector, Drum and Hoses Not Included.

800.732.4065 **Call Today or Go Online!**
www.oneida-air.com



The last lawn mower you'll ever buy.

Not so long ago, lawn mowers were built to last. These days they're mostly plastic or inexpensive stamped steel...a year or two out of the box and you're taking it in for repairs or hauling it to the dump.

Introducing the DR® SP22, a classic lawn mower engineered for the long haul. Solid and dependable, it does the job and does it well, year after year. Why keep buying disposable lawn mowers?

LASTS FOREVER. Lightweight, rugged, 22" cast aluminum deck that is so durable we back it with a **LIFETIME** warranty!

STARTS EVERY TIME. GUARANTEED.



The 190cc American-made engine features the famous Briggs & Stratton Starting Promise™!

SINGLE-POINT HEIGHT ADJUSTMENT. Select 9 different cutting heights with one lever!

SELF-PROPELLED, using solid metal gears, makes for dependable and easy maneuvering!

BALL BEARING MOUNTED WHEELS for easy rolling and long life. No plastic sleeves here!



DR® SP22
NEW FOR 2014!

FREE SHIPPING!

Call for FREE Buyer's Guide!

Includes pricing, specs and limited-time offer.

TOLL FREE **888-200-3210**

DRpower.com/sp22

Try a DR® at Home for 6 Months!

Call for details.

83107X © 2014



OK, Einstein, you think you're one smart handyman?
Take our DIY IQ test to find out! Here's how it works:

1. There are easy, intermediate and really tough questions all mixed together.
2. There may be more than one correct answer.
3. You'll find the answers on pp. 52–54.

Good luck!

"Wait a minute—
I think I know
that ..."

"It's right on
the tip of my
brain!"

"I've got it!"



Travis Larson
editors@thefamilyhandyman.com



REAL CEDAR STRUCTURES

TURN THE OUTDOORS INTO THE GREAT OUTDOORS

For outdoor structures like decks, gazebos and pergolas, there's just no substitute for real western red cedar.

Real Cedar is naturally beautiful, light and easy to work with, and has physical properties that give it a natural durability and longevity that make it the ideal building material for outdoor applications.

What's more, Real Cedar is the ultimate green product. It's entirely sustainable and renewable, produces little in greenhouse gases, and has the most benign environmental impact of all building materials. Not bad for such an affordable product.

Turn the outdoors into something great with naturally beautiful, long-lasting, Real Cedar

For more information contact:



www.realcedar.com

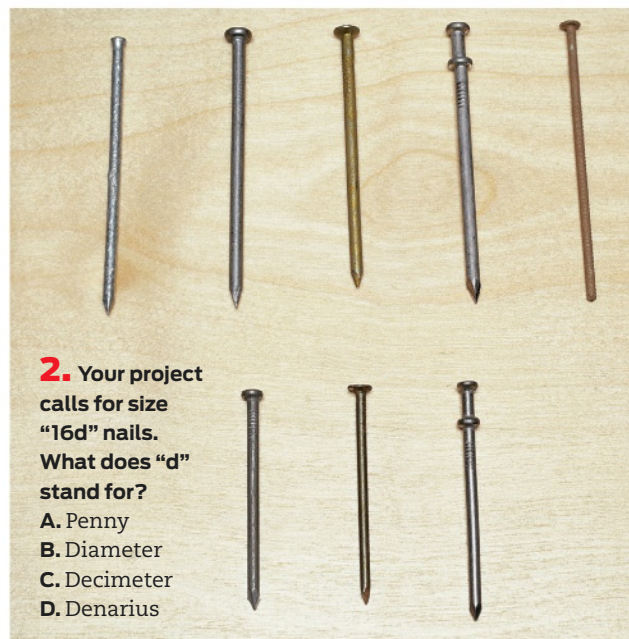
1 866 778 9096

1. The actual width of a 2x12 is:

- A. 11-1/2 in.
- B. 11 in.
- C. 11-1/4 in.
- D. 12 in.

DIY IQ QUESTIONS

8. True or False: This is a “flush trim” router bit.

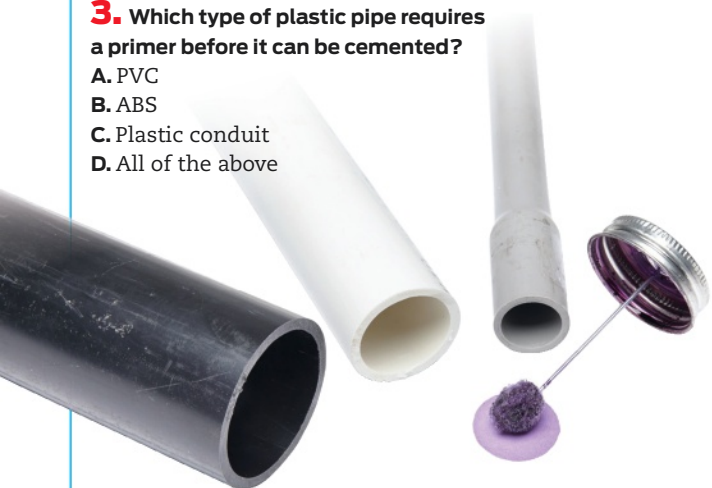


2. Your project calls for size “16d” nails. What does “d” stand for?

- A. Penny
- B. Diameter
- C. Decimeter
- D. Denarius

3. Which type of plastic pipe requires a primer before it can be cemented?

- A. PVC
- B. ABS
- C. Plastic conduit
- D. All of the above



4. Which type of “ell” is the elbow shown?

- A. Short sweep
- B. Long sweep
- C. Tennis
- D. Vent

5. What’s the main difference between mortar and concrete?

- A. No difference. Different names for the same material.
- B. Mortar contains bonding agents; concrete does not.
- C. Concrete has gravel added; mortar only has sand.
- D. Mortar is made from Portland cement. Concrete is made from conventional cement.



6. Let’s say you want to pour a concrete slab that’s 11 ft. x 16 ft. and 4 in. thick. How much concrete would it take to fill the forms?

- A. 3.5 yards
- B. 4 yards
- C. 1.25 yards
- D. 2.2 yards



7. True or False: This method of fastening is called pocket screw joinery.

Snoring? Now there's even an adjustment for that.*



Thanks to our exclusive Partner Snore™ technology, the Sleep Number® mattress and FlexFit™ adjustable base let you sleep peacefully together.

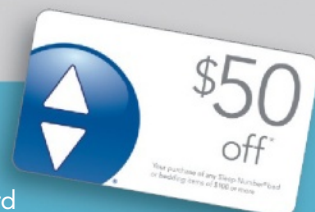
Whether you prefer supreme softness or conforming comfort layers, the SLEEP NUMBER® bed is uniquely designed for a better night's sleep. At the simple touch of a button, DualAir™ technology allows you to find ideal comfort and support with exceptional pressure relief on each side—your SLEEP NUMBER® setting. In fact, it's the only bed clinically proven to relieve back pain and improve sleep quality.‡

Read, watch TV, surf the web and adjust your bed's firmness when you add a FlexFit™ adjustable base to your SLEEP NUMBER® mattress. Our bases include choices you'll love, such as Partner Snore™ technology, which lets you gently raise your partner's head, which may temporarily relieve mild snoring*. Our exclusive FlexTop™ King mattress option combines individual elevations on each side with the feeling of togetherness.

sleep  number.
know better sleep™

Free Information and a \$50 Savings Card§

Visit www.sleepnumber.com/50 or call 1.800.831.1211 (ext. 77324) for information about the Sleep Number bed and a \$50 savings card



FlexTop™ King c4 mattress shown on a FlexFit™ 3 adjustable base. Upholstered headboard, footboard and sideboards sold separately.

*May temporarily relieve common mild snoring in healthy adults. Available with Split King and FlexTop™ King mattresses on FlexFit™ 2 and 3 adjustable bases. †Available with FlexFit™ 3 adjustable base.

‡For a summary of clinical studies, visit sleepnumber.com. Find the technology of the clinical studies in Sleep Number® c2, p5, p6, i8 and i10 mattresses. §Restrictions apply. See savings card for details and expiration date. © 2014 Select Comfort

It's Tips. It's Tricks. It's Genius!

DIY TIP GENIUS App
from *The Family Handyman*!

Look at all you'll get...

- **300+ BEST Tips** for DIY woodworking, painting, organizing and more!
- **Time-saving** shortcuts
- **Budget-friendly** tricks
- **Clever, stress-free** hints and tips
- **Confidence** for every DIYer!



**Organize,
Remodel
& Repair...
with Confidence!**



Download the FREE App today at:
familyhandyman.com/diy-tip-genius



iPhone and iPad are trademarks of Apple Inc, registered in the U.S. and other countries.

**THE FAMILY
Handyman**

10. If your garbage disposer hums but won't spin, what should you check?

- A. The kitchen GFCI
- B. The reset button on the underside of the disposer
- C. The water supply
- D. The disposer to see if there's something lodged inside.



11. What's the proper term for this outlet?

- A. AFCI
- B. GFIF
- C. GFCI
- D. FDCI

12. What is the most common spacing used for wall studs and floor joists?

- A. 16 in.
- B. 19-3/16 in.
- C. 24 in.
- D. 12 in.

13. What is the biggest cause of house fires?

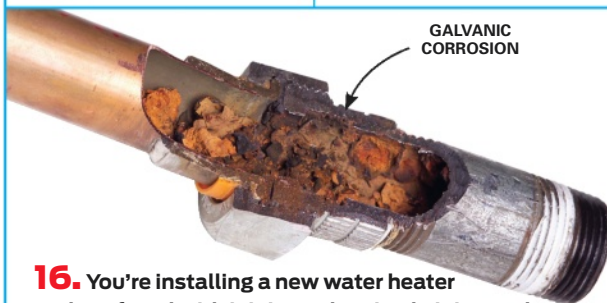
- A. Unattended cooking
- B. Electrical shorts
- C. Open flames (candles, etc.)
- D. Children playing with lighters and matches

14. Which of the following statements is true?

- A. When you are subjected to noise above 85 decibels, you experience permanent hearing loss.
- B. Because of its high pitch, a belt sander poses a particular risk to your hearing.
- C. If your ears aren't ringing, there's no permanent damage.
- D. Damaged hearing will improve if you begin wearing hearing protection.

15. When you wire a receptacle, you should ...

- A. Put the hot (black or red) wire under the brass screw.
- B. Put the neutral (white) wire under the brass screw.
- C. Either (A) or (B); the outlet will work either way.
- D. Neither (A) nor (B); use the stab-in connectors on the back.



16. You're installing a new water heater and are faced with joining galvanized piping and copper tubing. What connector should you use to prevent galvanic corrosion?

- A. Threaded plastic nipple
- B. Dielectric coupling
- C. Copper (threaded or sweat) coupling
- D. Dielectric nipple



17. A double-headed (duplex) nail is used for what purpose?

- A. Bracing temporary walls
- B. Fastening concrete forms
- C. Attaching plywood patches over blown-out or missing windows and doors
- D. All of the above



18. What type of cut is this guy making?

- A. Dado
- B. Rabbet
- C. Groove
- D. Miter

19. You should fill your car tires to what pressure?

- A. The maximum tire pressure listed on the sidewall of the tires to give you the best possible gas mileage.
- B. A good rule of thumb is 10 lbs. under the maximum pressure.
- C. It depends entirely on driving conditions.
- D. The pressure recommended on the driver's-side doorpost.

20. What building product is often referred to by its brand name, "Romex"?

- A. Electrical cable
- B. PVC piping
- C. Drywall
- D. Vinyl siding

**FIND THE
ANSWERS
ON PP. 52-54**

GRK
FASTENERSTM
ÜberGrader



IBC/IRC
COMPLIANT

THE DECKING TEAM

There are screws.. and then there's GRK!



RSSTM
RUGGED STRUCTURAL SCREW

Quit wasting your time with pre-drilling lag bolts!



R4TM
MULTI-PURPOSE FRAMING SCREW

Frame your deck with ease and confidence!



KAMELEONTM
COMPOSITE DECK SCREW

Multiple colors available.



FIN/TRIMTM
FINISHING SCREW

Featuring the smallest head on the market today.



*"Over-engineered to drive with
confidence and peace of mind!"*

VISIT OUR WEBSITE
FOR FREE SAMPLES
OF GRK'S DECKING TEAM!



www.grkfasteners.com
800.263.0463

DIY IQ ANSWERS

1. (C). A 2x12 is typically 11-1/4 in. wide. Two-by-fours are 3-1/2 in. wide and 2x6s are 5-1/2 in. wide. On sizes larger than that, all dimensional lumber drops to the next 1/4-in. increment. A 2x8 is 7-1/4 in. wide and a 2x10 is 9-1/4 in. wide.

2. (A) and (D). It stands for penny and also denarius (hence the “d”). In Roman times there was a small coin called the denarius, and the abbreviation “d” became associated with pennies. Centuries ago, when nails were made by hand, they were priced by how many pennies it took to buy 100 nails. So for a longish nail, 16 pennies (d) would buy 100 nails. The system evolved so that 16d refers just to the length of the nail. The chart shows you what each penny designation means in inches.

Nail sizes decoded

SIZE	LENGTH
4d	1-1/2 in.
6d	2 in.
8d	2-1/2 in.
10d	3 in.
12d	3-1/4 in.
16d	3-1/2 in.
20d	4 in.

(There is some variation.)

3. (A). Only PVC needs primer. It softens the outer surface with a more concentrated solvent than is used in the cement.

4. (D). Vent elbow. Vent elbows have the sharpest bend, because they carry only air, never liquid. Short sweep and long sweep elbows are for liquid, so they have wider bends. Here’s a rule of thumb for knowing whether to use a long or a short sweep. If water is speeding up as it turns the corner (usually going from horizontal to vertical), use a short sweep. If water is slowing down (usually from vertical to horizontal), use a long sweep.

5. (C). Concrete has sand and gravel; mortar has only sand. In both cases, the sand and gravel (“aggregate”) are added to the cement to form a matrix, greatly increasing its strength.

6. (D). The correct answer is 2.2 yards, but it’s very smart to order an extra quarter yard to make sure you have enough. Here’s how the calculation works. Multiply .33 (one-third of a foot, or 4 in.) x 11 x 16 to get 58 cubic feet. Since there’s 27 cubic feet in one cubic yard, you just divide 58 by 27 and get 2.15 yards. Rounded up, that’s 2.2 yards.

7. True.

8. False. A flush trim bit has the bearing below the cutters. The bit shown is called a “pattern” bit. It’s used to follow an existing edge to cut a matching one on a board below. That’s why the bearing is above the cutters.

9. (C). Epoxy is the strongest gap-filling glue. It will not only stick to the surfaces but also fill gaps. Polyurethane, wood glue and cyanoacrylate (that is, superglue) need surfaces in close proximity for a strong bond.

11. (C). GFCI, which stands for “ground fault circuit interrupter.” If it senses that some current is going to a ground (if you dropped an electric razor in a sink full of water, for example), the GFCI shuts off the circuit in a fraction of a second to protect you from an electrical shock.

12. (A). Framing is most commonly spaced every 16 in., but all four spacings are used.



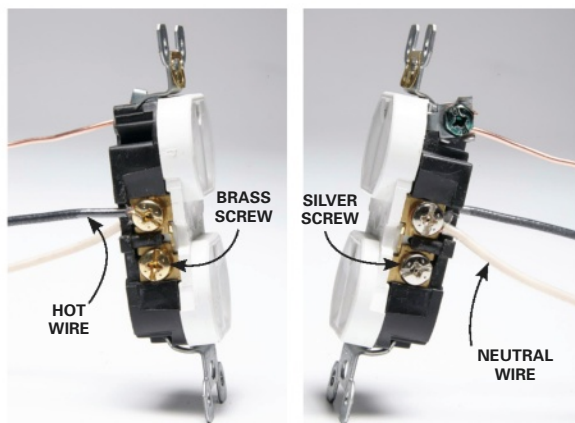
10. (D). Check for blockage. Make sure the power is off, then put your hand in and remove the offending object or material. Celery fibers and potato peels can stop the motor, but you may not be able to pull them free. That’s when you grab an Allen wrench and manually turn the motor to free the cutters. Once it’s turning, you may have to push the reset button on the underside of the disposer (see above) to reset the internal breaker.



13. (A). Unattended cooking, by far. In fact, 23 percent of home fires start on stovetops. Hot grease or oil ignites and in turn ignites anything combustible nearby. A common scenario is someone carrying a flaming frying pan outside and dripping flaming grease on the carpet and furniture on the way out, starting a much larger fire. You should cover pans that are aflame with a lid to smother the fire. By the way, smoking in bed claims the title for the most fatalities.

14. (A). Permanent hearing damage starts at 85dB. Belt sanders are among the quietest power tools, although they are still above the 85dB threshold. Many other power tools exceed that threshold, including shop vacuums. Hammer drills can be louder than 115dB. And once you lose some of your hearing, it's gone forever.

15. (A). The hot wire(s) should go under the brass screw(s). The neutral wire(s), which are almost always white, should go under the silver screw. Remember: Silver = white. The outlet will still work if you do it backward, but many devices you're plugging into it won't be safe. For example, you may be energizing the outside metal parts of a lamp, creating a shock hazard. Stab-in connectors are notoriously unreliable unless they have a setscrew. Then they're fine.



16. (D). Dielectric nipple. Whenever you join copper water lines to galvanized steel pipe, you should be concerned about the corrosion caused by joining two dissimilar metals, called "galvanic corrosion." An electrochemical reaction occurs that causes the steel pipe to rust and clog up.

Short dielectric couplings have a short plastic nipple to keep the metals from touching, but the metals are still close enough to cause a reaction and corrosion. The better solution is to use a longer fitting called a "dielectric nipple." They're available for about \$9 at plumbing supply stores. A 3-in.-long plastic liner inside the fitting keeps the metals far enough apart to greatly reduce corrosion.








14" DELUXE BANDSAW ANNIVERSARY EDITION  CAST IRON WHEELS MADE IN TAIWAN G0555LANV \$545.00 SALE \$525.00 \$79 shipping	17" 2 HP BANDSAW ANNIVERSARY EDITION  See our website for Reviews & Awards MADE IN TAIWAN G0513ANV \$895.00 SALE \$825.00 \$99 shipping
10" HYBRID TABLE SAW W/ RIVING KNIFE  G0715P ONLY \$795.00 \$99 shipping	10" WET GRINDER KIT ANNIVERSARY EDITION  See our website for Reviews & Awards DESIGNED IN GERMANY T10010ANV \$199.95 INTRODUCTORY \$159.95
3/4 HP SHAPER  INCLUDES 1/4" & 1/2" ROUTER BIT ADAPTERS G0510Z ONLY \$425.00 \$79 shipping	12" BABY DRUM SANDER  MADE IN TAIWAN G0459P \$595.00 SALE \$575.00 \$79 shipping
15" PLANER W/ MOBILE BASE  3HP MOTOR G0453P ONLY \$1125.00 \$150 shipping	8" X 72" JOINTER W/ MOBILE BASE  3HP MOTOR G0656P ONLY \$825.00 \$150 shipping

PLEASE VISIT GRIZZLY.COM® FOR COMPLETE DETAILS & SPECIFICATIONS



FREE CATALOG

760 PAGES
HUGE SELECTION OF HIGH QUALITY MACHINES & TOOLS
AT INCREDIBLE PRICES

VIEW VIDEOS AT
grizzly.com

PRICING CODE
14FAMILY
MENTION THIS CODE WHEN PLACING YOUR ORDER
 16131

1-800-523-4777
grizzly.com®

TECHNICAL SERVICE: 570-546-9663 FAX: 800-438-5901



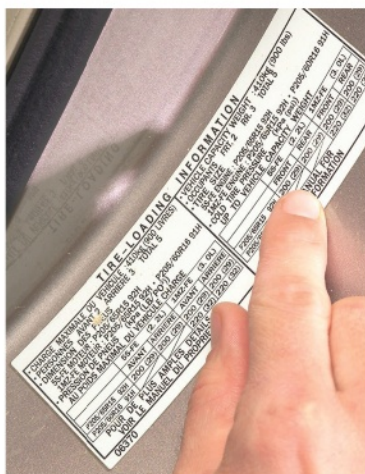




17. (D). Double-headed (duplex) nails are used to temporarily attach any wood parts together. The top head protrudes above the wood, making it easy to pull it out when needed.

18. (C). A groove is a slot that goes with the grain. A rabbet is simply a square notch at the edge of plywood or lumber. A dado is a slot that goes across the grain, used mostly to anchor permanent shelves.

19. (D). Use the pressure listed on the doorpost. The proper pressure is carefully figured out by the car manufacturers, taking into account weight, weight distribution and the handling characteristics for each car model. Maximum pressure is just that. It's the most pressure the tire can handle safely. It is rarely the pressure you should use.



20. (A). Romex is one of the leading brands of NM (non-metallic sheathed) electrical cable, used for most residential home wiring. The name is derived from the original manufacturer's name: the Rome Cable Company, based in Rome, NY.



WHAT'S YOUR LEVEL OF EXPERTISE?

BEGINNER: 0 to 5 correct

INTERMEDIATE: 6 to 10 correct

ADVANCED: 10 to 15 correct

DIY GURU: More than 15 correct

ATTENTION ALL TEST TAKERS. We'd love to know what you think of our little quiz. Too hard? Too easy? Fun? Complete waste of space? Send your comments to editors@thefamilyhandyman.com. If you liked it, we'll do some more!



GOOF PROOF SHOWER® Installation System



Install Your Shower – Fast, Easy & Right

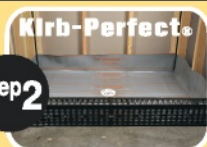
Step 1



A unique tool that creates the proper sub floor slope needed underneath the pan liner to manipulate the water towards the weep holes that are an integral part of shower floor drains.

+

Step 2



A stay-in plastic form designed to eliminate the possibility of any nails puncturing the liner on the top or inside walls of shower curbs.

+

Step 3



A stay-in place screeding guide system that guarantees a properly pitched shower floor every time regardless of size and shape.

=



Waterproofing of Your Choice

Roll-on Liquid Membranes



Tools used:

- 1) Pre-Pitch™
- 2) Kirb-Perfect®
- 3) Quick-Pitch®
- 4) Universal Center Ring

Handi-Kirb with Roll on and Sheet Membranes



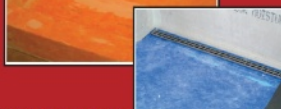
Tools used:
Standard Curb

- 1) Pre-Pitch™
- 2) Handi-Kirb
- 3) Quick-Pitch®

Low Profile curb

- 1) Pre-Pitch™
- 2) Handi-Kirb

Sheet Membranes



Tools used:

- 1) Quick-Pitch®
- 2) Quick-Clips
- 3) Kirb-Perfect®

String-A-Level™



Simultaneously attach and level a continuous stringer on which to stack heavy or large format tile vertically.

BEAT BAD SMELLS

Pets, sewer gas, burnt food, smoke, skunks ... let's face it, sometimes life stinks. Our sense of smell is a powerful one, which explains our powerful urge to get rid of bad ones when we encounter them. We rounded up some of the most putrid, foul, stench-laden scenarios to let you know which products battle them best. With these tips in hand, you may just come out smelling like a rose.

by Mark Petersen

editors@thefamilyhandyman.com

Our editors pick the products that fight the battle against stinkiness.



Chlorinate a stinky drain

Every few months, the water in our little-used basement sink trap starts to stink. The cause is a mystery, but the solution is simple: A half cup of bleach down the drain completely kills the odor ... until the next time.

**Gary Wentz,
Senior Editor**

Job Site # L234

X 1:15 AM
X 3 FT CRAWL SPACE
X BROKEN WATER PIPE



BECAUSE
WORK
DOESN'T WAIT.



TECH GEAR
THE NEXT GENERATION OF TOOL STORAGE

goclc.com
800.325.0455

CLC
WORK GEAR

©2013 Custom LeatherCraft Mfg. Co., Inc.

U.S. and Int'l Patents Pending



Clean your car ducts

Neutralize smoke and other smells in your car with an aerosol can of automotive duct cleaner. Most products require you to spray the cleaner into the vents and the blower motor intake. One way to find your blower motor intake opening is to turn the system on defrost and hold a tissue under the dash. You can buy a can at auto parts stores for \$8 to \$13. One brand is Clean Air, which has an instructional video at cleanairauto.com.

Big-league stench stopper

Hockey equipment has a less than flowery reputation, so we asked Rick Bronwell, the assistant equipment manager for the Minnesota Wild hockey team, how he keeps the pros' stuff smelling good (or at least tolerable). "The most important thing is to air everything out," he said. "In addition to that, we've had success with a product called SportSense. It eliminates bacteria that cause odors, but just as important, it eliminates bacteria that can cause a skin infection."

SportSense is available in several sizes with prices ranging from \$8 to \$30. Look for it at a sporting goods store or find a list of retailers at sportsensespray.com. You can use it on all kinds of sports gear.



BRUCE KLICKHOFF/MIN WILD



Wash your washing machine

Do you notice a moldy smell when you open the door of your front-loading clothes washer? Front loaders, because they must be watertight, are prone to mold and mildew and must be cleaned regularly.

To get rid of the smell, just run the empty washer through a cycle once a month with a mold cleaner designed for washing machines. Our appliance expert recommends a product called Affresh. Look for it at discount stores and home centers or find a retailer at affresh.com. A packet of three costs about \$9. Remember to reduce mold smells by leaving the door open between loads so the interior can dry out.

DE-STINK A MICROWAVE

I once used our microwave as a kiln to dry some walnut coasters I was making. In addition to almost burning our house down, I stank up the microwave something awful. I tried a dozen ways to eradicate the stench. One trick that worked pretty well was to mix 1/2 cup of vinegar with 1/2 cup of water and bring it to a boil. It didn't completely remove the smell, but it made a big difference. I still boil a little vinegar on occasion to get rid of smells from foods like fish and bacon.

Mark Petersen



Freshen up your work boots

At the end of the day, before I retire my work boots to the hall closet, I fill them with cedar chips. (Actually I slide in an old sock that's filled with cedar chips.) I've tried several store-bought products, but cedar chips seem to work the best at absorbing moisture and eliminating odors. I bought a bag of chips sold as animal bedding at my local pet store for \$10, and it will last me for years. I change out the chips ever month or so.

Byron Derringer, Field Editor

SEAL IN SMOKE SMELLS

I was reclaiming a house in which the renters had chain-smoked. I washed down every wall and primed them before painting. Regular primer won't seal in smoke smell (the yellow will bleed through, too), so get a primer designed to seal in stains and odors. It took about 5 gallons, but I got rid of the smoke smell!

Tabitha Bettencourt, Field Editor

Save Time and Materials on All Your DIY Projects!



Home ProjectCalc® Do-It-Yourself Project Calculator

Simplify your home improvement and decorating projects with the easy-to-use Home ProjectCalc.

Available at:



MENARDS

See DEMOS on
YouTube

1-800-854-8075

Learn more at www.projectcalc.com

Keeps Paint Out. Keeps Lines Sharp.®



FrogTape® is the only painter's tape treated with PaintBlock® Technology. PaintBlock forms a micro-barrier that seals the edges of the tape, preventing paint bleed. Visit FrogTape.com to see PaintBlock in action, get painting tips and more!



FrogTape.com
877-FROGTAPE
(376-4827)



©ShurTech Brands, LLC 2013/52291

THERE'S A BRIGHT FUTURE IN EVERY CAN.



When you buy a can, WD-40
Company will donate to a charity
that helps our heroes get hired.

EVERY CAN COUNTS.

Visit us at WD40.com/hero



**HIRING
OUR
HEROES.**

U.S. CHAMBER OF COMMERCE FOUNDATION



SKUNK SPRAY ANTIDOTE

Humans rarely get sprayed by skunks, but for dogs it's almost a rite of passage. If (or when) Fido gets sprayed, leave him outside for a while—the smell will subside dramatically in 24 hours and you won't stink up your whole house the way you would if you brought him in right away. It takes a lot longer than that for the smell to disappear completely, so you'll eventually want to wash the stink out. But before you spend a bunch of money on expensive shampoos, take a tip from the Humane Society: "Mix a quart of hydrogen peroxide with 1/4 cup of baking soda and a teaspoon of liquid dish soap. Bathe the dog in it and rinse." Wear gloves to avoid smelling like a skunk yourself.

Baking soda—the all-around odor absorber

The best thing I've used to make bad smells go away is baking soda. People think about it for their freezer or refrigerator, but it's good for much more than that. You can sprinkle it on carpet, work it in a bit and vacuum it up. For other items, like mattresses, cushions and clothing, dampen the fabric and gently rub with baking soda, then wipe off/rinse with cold water.

Charlene Hamiwkais,
Field Editor



REFRESH THE FRIDGE

If you've ever dealt with a fully stocked refrigerator that has lost power for several days, you truly understand the definition of "putrid." Even after a thorough cleaning/disinfecting, the stench can linger for an eternity.

Try stuffing your fridge with crumpled newspapers and charcoal. The odor will be gone within several days.



HELP HIRE A HERO.

Look for the "Hire a Hero"
WD-40® Smart Straw®
can at Home Depot.



NORTH WOODS BENCH

An inexpensive, easy-to-build classic



WHAT IT TAKES

TIME: Half day

COST: \$12 to \$20 (depending on the finish)

SKILL LEVEL: Beginner to intermediate

TOOLS: Tape measure, square, circular saw or jigsaw, drill, 1-in. hole saw

by **Jeff Gorton**

editors@thefamilyhandyman.com

While visiting a cabin in the woods of northern Wisconsin, I saw the cute red stool shown below. Made by an anonymous carpenter, it was simplicity itself: pine boards, nailed together. And it had an interesting and ingenious design detail: a cloverleaf, clearly made with three overlapping drill holes. It was just the kind of little bench I needed for the backyard, so I went into the shop and made this modern version. A little longer and a little stronger than the original, but the same folk art detail. And since it's made from lumberyard pine, the price can't be beat. Here's how to make one.



This bench is simple enough to build with a few hand tools, but to speed things up, we chose to take advantage of the power tools in our shop. We used a miter saw to cut the stretchers to length and to cut the 10-degree angles on the ends of the center stretcher, and a circular saw for all the other cuts. If you don't own a miter saw, you can use a circular saw or jigsaw for all the cuts.

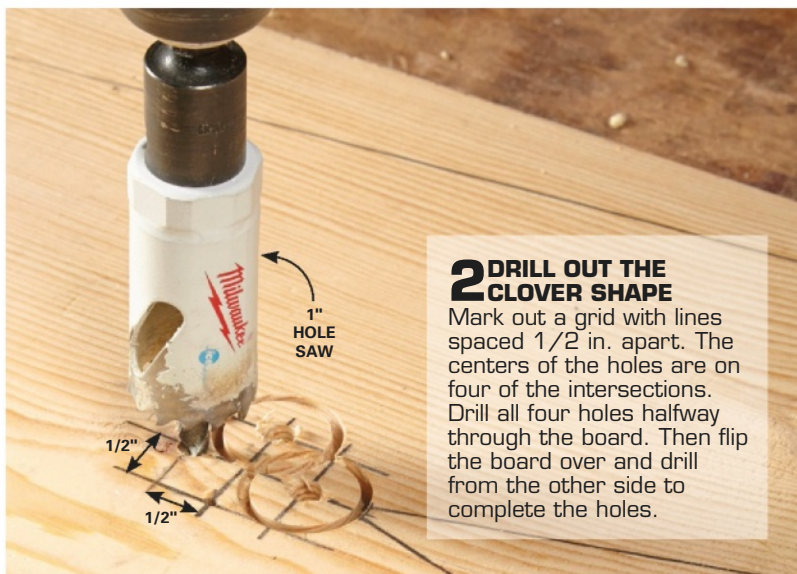
To make the holes for the clover shapes, you'll need a 1-in. hole saw mounted in a corded drill, or a powerful cordless drill.

We used No. 2 knotty pine to build this bench. You'll need one 6-ft. 1x12 and one 10-ft. 1x4. Select boards that are straight and flat, with solid, not loose, knots. We assembled the bench with countersunk 2-in. trim screws and then filled the holes with wood filler. If the bench is going outdoors, be sure to use corrosion-resistant screws.



1 CUT THE LEG BLANKS

Set the saw to cut a 10-degree bevel. Mark the 1x12 and align the saw with the mark. Then use a large square to help guide the cut.



2 DRILL OUT THE CLOVER SHAPE

Mark out a grid with lines spaced 1/2 in. apart. The centers of the holes are on four of the intersections. Drill all four holes halfway through the board. Then flip the board over and drill from the other side to complete the holes.



3 CUT THE LEG ANGLES

Mark the "V" in the center and the two outside angles on the legs. Then cut along the lines with a circular saw. Accurate cutting is easier if you clamp the leg to the workbench.



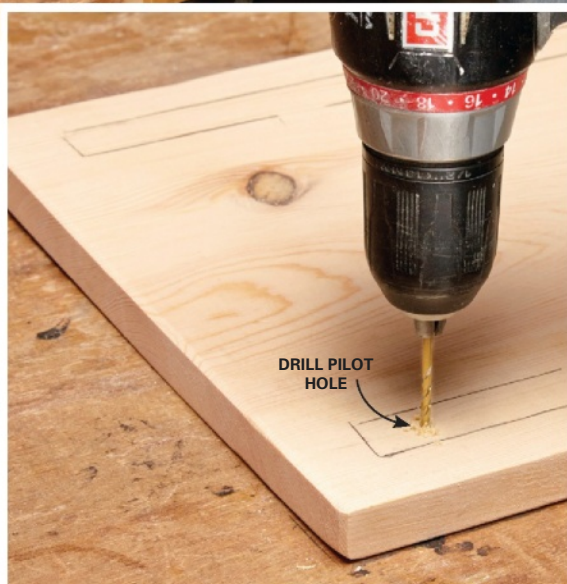
4 SCREW THE APRONS TO THE LEGS

Drive trim screws through the legs into the stretcher. Then attach the outside aprons with trim screws.



5 POSITION THE SEAT SCREWS

Here's a goof-proof way to position the screws to fasten the seat to the bench frame. Center the frame on the seat and trace around the aprons. Then drill pilot holes through the seat to mark screw locations. Drive screws through the seat and into the aprons.



Cut out the parts

Using the Cutting List on p. 63 as a guide, cut the two legs and the top from the 1x12 (**Photo 1**). The legs require a 10-degree bevel on the top and bottom. Be careful to keep both bevels angled the same direction. Then cut the stretcher and aprons to length. The stretcher has a 10-degree angle on each end.

Next, mark the legs and aprons for drilling and cutting, using the dimensions in **Figures B and C** as a guide. Draw the grid layout as shown in **Photo 2** to locate the holes. Use a nail or a punch to make starting holes for the hole saw at the correct intersections.

Drill the 1-in. holes halfway through the boards (**Photo 2**). Make sure the pilot bit on the hole saw goes through the board so you can use the hole to guide the hole saw from the opposite side. Then flip the boards over to complete the holes.

Make the remaining cuts on the legs and aprons with a circular saw (**Photo 3**). Finish up by sanding the parts. We wrapped 80-grit sandpaper around a 1-in. dowel to sand the inside of the holes. Sand off the saw marks and round all the sharp edges slightly with sandpaper. If you plan to paint the bench, you can save time by painting the parts before assembly.

Build the bench

Start by marking the location of the stretcher on the legs. Arrange the legs so the bevels are oriented correctly, and screw through them into the stretcher. Next screw the two aprons to the legs (**Photo 4**).

The only thing left is to screw the top to the aprons. It'll be easier to place the screws accurately if you first mark the apron locations on the underside of the top and drill pilot holes for the screws (**Photo 5**). Stand the bench upright and align the top by looking underneath and lining up the apron marks. Then attach the top with six trim screws.

We finished this bench with old-fashioned milk paint. You can find milk paint online and at some paint stores. If the bench is going outdoors, rub some exterior glue on the bottom ends of the legs. That will prevent the end grain from soaking up moisture and rotting.

Continued on p. 65

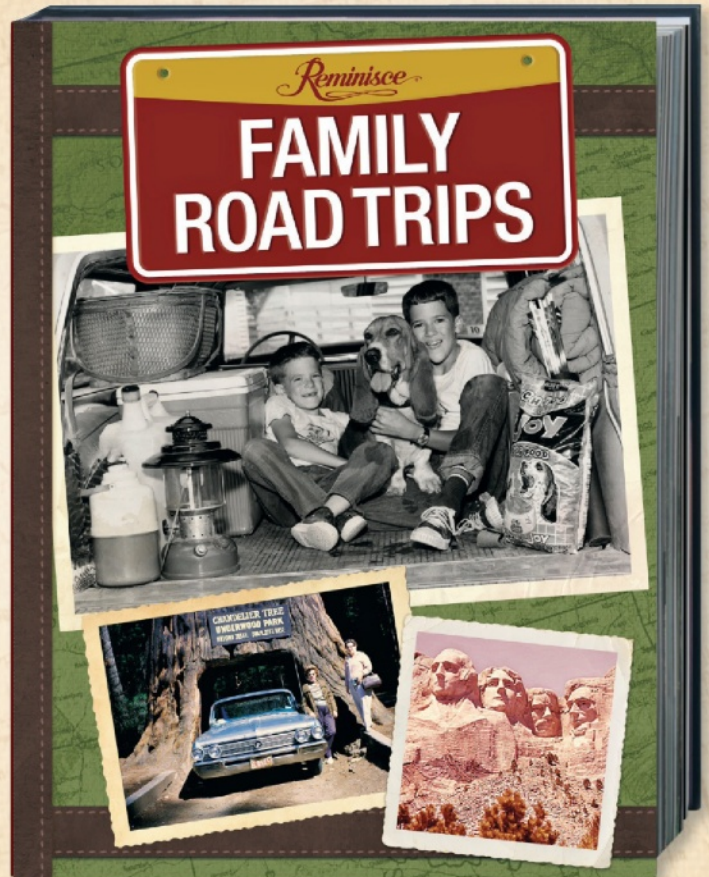
**All-New
Book!**

Get Your Round Trip Ticket... Down Memory Lane!

Load up the station wagon, pack a picnic lunch and set out on an unforgettable adventure! In **Family Road Trips**, *Reminisce* readers share their best memories of hitting the open road with the family in tow. Take a look at all you'll find inside!

“Getting there was more than half the fun!”

- ◆ **400+ entertaining memories** & photos from family vacations in the 30s-60s!
- ◆ **Funny, wild and enduring stories...** unforgettable tales that'll make you smile or laugh out loud!
- ◆ Hundreds of **snapshots from the road**, featuring roadside attractions, National Parks and big city sites.
- ◆ Heartwarming, **humorous tales of travel mishaps**...first family road trips...railway adventures and more.



208-page, gorgeous, 8-3/8" x 11-1/8" hardcover book made to last.

**Remember Seeing America from
the Backseat of the Family Car?**



**ORDER
TODAY**

Order online at reminisce.com/RTSA
or call **1-800/344-2560** mention Suite FRDC3VH04M

Discover the country's *best flavors!*



Take a Culinary Road Trip!

Sink your teeth into **735 All-American Dishes**, from crispy Southern Fried Chicken and tasty Philly Cheese Steak Sandwiches to sweet Hoosier Sugar Cream Pie. It's our **BIGGEST-EVER** collection of regional favorites and a must-have for home cooks coast to coast!

1 Recipes Across America

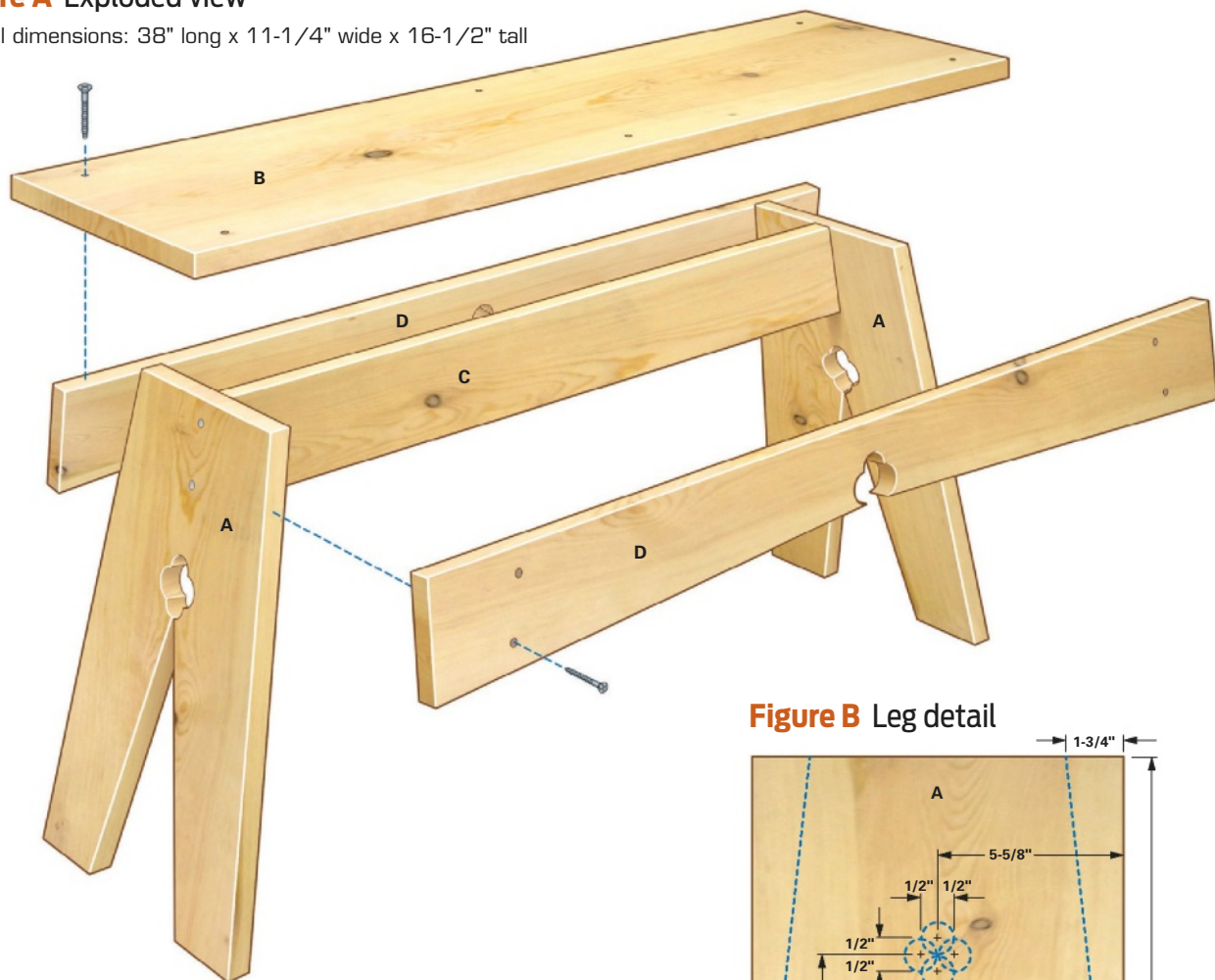
Get yours today exclusively at:
TasteofHome.com/America



Also available for purchase as an eBook or wherever books are sold.

Figure A Exploded view

Overall dimensions: 38" long x 11-1/4" wide x 16-1/2" tall



Cutting List

KEY QTY. SIZE & DESCRIPTION

A	2	3/4" x 11-1/4" x 16" pine (legs)
B	1	3/4" x 11-1/4" x 38" pine (top)
C	1	3/4" x 3-1/2" x 29-3/4" pine (stretcher)
D	2	3/4" x 3-1/2" x 36" pine (aprons)

Figure B Leg detail

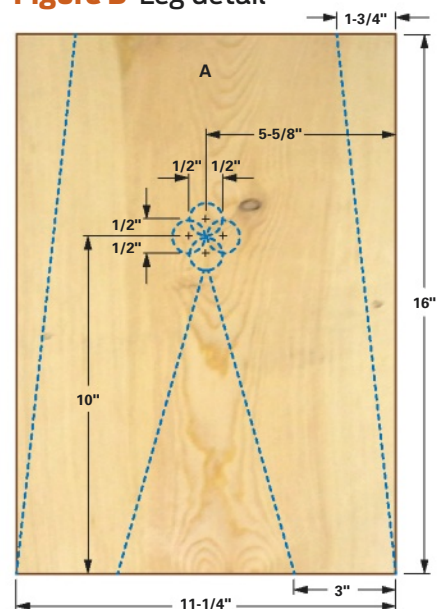
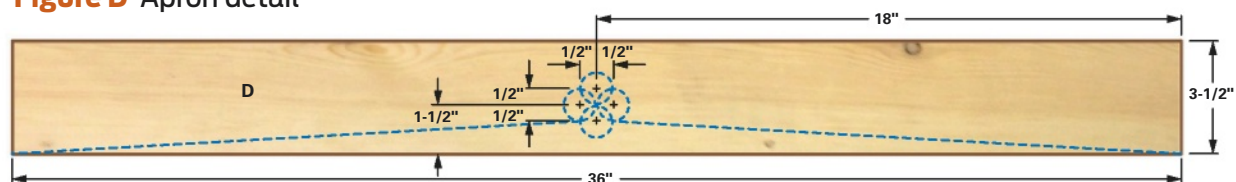


Figure C Stretcher detail



Figure D Apron detail



ROOF UNDER A DECK

**Inexpensive roof
panels keep it
dry down
below**

WHAT IT TAKES

TIME: A weekend or two depending on the size of your deck

COST: About \$2.50 per sq. ft.

SKILL LEVEL: Intermediate

TOOLS: Standard carpentry hand tools, drill, circular saw

SC-122
Redwood
Naturaltone

Give Your Old Deck New Life!



Barefootin' Fun Is Back—With BEHR DECKOVER® Coating

Don't let cracks and splinters spoil your fun. BEHR DECKOVER® coating is more than a stain, it adds a beautiful new surface, fills cracks, and covers splinters. It extends the life of your deck. Why replace?

Now you can resurface old wood and concrete with BEHR DECKOVER coating.

BEHR
GOOD. BETTER. BEHR.®



View our how-to videos
youtube.com/behrpaints

BEHR.com

© 2014 Behr Process Corporation

Exclusively at





MEET THE HOMEOWNER

Rune Eriksen is a retired electrician who has spent the past 20 years building his dream lake-shore cabin, garage and shop.

by Jeff Gorton

editors@thefamilyhandyman.com

One of our readers, Rune Eriksen, sent us photos of his design for a home-built deck drainage system, and we were impressed enough to check it out. His low-cost, easy-to-build system catches the water that drips through the deck boards and redirects it to the outside of the deck. Now Rune can use the area under the deck as a covered patio, where he can enjoy warm summer rainstorms without getting wet.

Several commercial systems are available to create a dry space under a deck (see p. 71), but Rune's seems to be just as effective. And it's inexpensive and easy to build using materials found at any home center. Here are the details in case you'd like to build your own version. Thanks, Rune!

Round up the materials

Rune bought corrugated fiberglass panels at a home center to use for his under-deck roof. The panels he used are 26 in. wide and 12 ft. long and cost about \$34 each. He attached the panels with special roofing screws that have hex heads and neoprene washers for sealing. You'll find these screws where steel or fiberglass roofing is sold. You could also use galvanized steel or plastic roofing panels and install them the same way. Rune screwed treated 2x4 purlins to support the panels and provide the necessary slope (Figure A).

Gutters aren't required, especially if the water drains onto your lawn. But if the water falls onto the patio, gutters can prevent splashing. Rune chose PVC gutters because they're inexpensive and easy to cut and install. If you decide to install gutters, you'll need lengths of gutter, gutter straps, end caps, a downspout outlet, downspouts and special glue to join the sections.



1 HANG THE PURLINS

Rune screwed the 2x4 purlins to spacer blocks. The blocks are incrementally thicker as they approach the outside edge of the deck so the new roof will drain toward the outside.



2 ATTACH THE FIBERGLASS PANELS

Rune attached the fiberglass panels with special screws that have a neoprene washer under the head to seal the holes. The panels overlap at the seams.



Wherever your business takes you, we're there to help.

At Progressive Commercial Auto, we know your business depends on your vehicle. For over 40 years, we've been offering Commercial Auto insurance designed specifically for small business owners. And with 24/7 live support and expert claims representatives, we get you back on the road fast. On the road with you. Now that's Progressive.



Call for a Free Quote | Find an Agent
1-888-375-7905 | **ProgressiveCommercial.com**

PROGRESSIVE
COMMERCIAL

RETROfit Your Kitchen



Looking for originality? You've found it.

Adorned with chrome, nickel, copper or brass, each custom built Elmira Stove Works appliance is true to its era, while offering the performance and features found in the most modern kitchen appliances. Models available in gas, electric, dual fuel or wood-burning.



Let us build one for you.

**Elmira
Stove
Works**

For true originals.

ElmiraStoveWorks.com

1-800-295-8498  

 CUSTOM COLOURS AVAILABLE

RANGES • RANGE HOODS • REFRIGERATORS • MICROWAVES • DISHWASHERS

Attach the purlins

Plan to space the 2x4 purlins parallel to the house and 3 ft. on center. To provide drainage, the panels should slope toward the outside edge of the deck about 1/4 in. per foot. If the span under your deck is 12 ft., for example, the purlin at the outer end of the deck should be 3 in. lower than the purlin along the house ($12 \times 1/4 = 3$).

First, mark all the purlin locations on the deck joists. Install the purlin along the house and the outer purlin. Then stretch a string between them. Measure down from the deck joists to the string at the other purlin locations. Those measurements (minus the thickness of the purlins) will give you the widths of the spacer blocks.

Cut the spacer blocks and screw them to the bottom of the joists at the marks. Then attach the remaining 2x4 purlins by screwing them to the spacers (**Photo 1**).

Screw the panels to the purlins

Starting at one end, attach the first fiberglass panel to the purlin with the roofing screws (**Photo 2**). Place the screws in every other valley. Snug the screws enough to compress the washer slightly. Overlap the next panel onto the one you just installed and attach it the same way. When you get to the end, the last panel may be too long. You can just overlap it a bit more or cut it to fit. It's simple to cut panels to length or width with a circular saw and a carbide blade.

Install gutters and downspouts

If you want to install gutters, plan ahead and leave space for them. You may have to get creative to come up with an attachment method, depending on how your deck is built. Since the in-stock 12-ft. panels didn't quite reach the beams on Rune's deck, he nailed vertical 2x4s to every other joist to provide an attachment point for the gutters. Then he screwed the gutter hangers to the 2x4s. Slope the gutters toward the downspout for drainage.

Got a project to share?

Go ahead and shoot us an e-mail at editors@thefamilyhandyman.com

An American Original!



STRONG • STICKY • WATERPROOF

Trust Duck® brand duct tape to deliver the quality and strength needed for every project.



DuckBrand.com

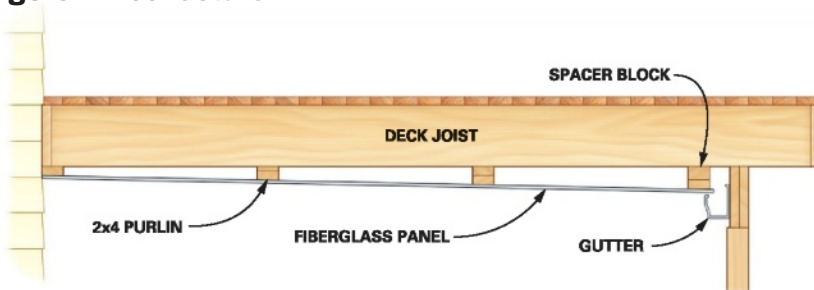
©ShurTech Brands, LLC 2014/57770



3 FINISH UP WITH A GUTTER

To keep rainwater from splashing onto the floor, Rune installed gutters along the beams. The gutters slope to a downspout at the end.

Figure A Roof details



3 WAYS TO KEEP DRY UNDER YOUR DECK

If you want to buy a manufactured system rather than build your own as we show here, you have a lot of choices.



1. One option is to cover the deck boards with a watertight membrane. DeckRite makes a deck floor covering that has the added advantage of creating a dry space below the deck. For more information, visit deckrite.com.

2. If you're building a new deck or replacing your deck boards, you can use a system like Trex RainEscape, which installs in the joist spaces before you install the decking. The advantage of this system is that it allows you to easily add lighting or other wiring in the joists, and cover the bottom of the joists with bead board or any attractive ceiling finish you choose. Learn more at trexrainscape.com.

3. If your deck is already built, you can cover the bottom of the joists with a system like TimberTech's DrySpace (photo left). One advantage

these systems have over simply screwing roof panels to the bottom of the joists is that you can remove a section to gain access to the joists if necessary. To learn more, visit timbertech.com/products/finishing-touches/dryspace-drainage-system.

These are just a few examples of what's available. Search online or visit your local lumberyard or home center to find other options.

FREE Limited Time Offer!
Shipping & American Flag!

...when you order the

Revolutionary SunSetter 20 Foot Telescoping Flagpole!



with gold ball top & American Flag!

- Eliminates the problems ordinary flagpoles create!
- Extends easily from 7 to 20 feet in seconds!
- No ropes to snarl or clang.
- Flies one or two flags.
- Flags rotate freely 360 degrees without tangles!
- Locking collars and base help prevent accidental telescoping or theft.
- Superb quality, maintenance-free.
- 5-Year Limited Warranty.
- Your choice of aluminum, bronze or white finish.
- FREE Nylon American Flag.



Portable!

Great for decks and docks, too!



Sleeve base included for ground installation.

Just \$149⁹⁹ with FREE Shipping!

Plus a FREE 3'x5' nylon American Flag (stitched, not printed!) w/embroidered stars!

Call Toll Free: 1-800-876-2340

Use Savings Code: 14107

24 hrs. a day, or order online at:
www.sunsetterflag.com

SunSetter®
FLAGPOLES

184 Charles St., Malden, MA 02148

CAN YOU COUNT ON YOUR SUMP PUMP?

By **Rick Muscoplat**
editors@thefamilyhandyman.com

**A dead pump can
lead to disaster.
Here's how to
avoid trouble**

A sump pump is one of the most important (and most ignored) disaster prevention devices in a home. When this simple system fails, the results can be catastrophic, leading to thousands of dollars in damage, daily disruptions caused by major repair work and higher insurance premiums for years to come. So spending some time and money on avoiding failure makes a lot of sense. This article will show you how.

What causes primary pumps to fail?

The most common reason for pump failure is a power outage, not some problem with the pump itself. Common events besides power outages can also cut off the supply of electricity. For example, lightning can trip GFCI outlets, or someone can unplug the pump and forget to plug it back in.

Assuming the power stays on, sometimes the pump itself fails. Many inexpensive sump pumps are simply too small to handle the flow from a major downpour or rapid snowmelt. And because inexpensive pumps are built with less durable materials, they lose pumping efficiency. So the pump runs more often and burns out early. Or the motor runs but the pump doesn't eject water.

Float switches are also a frequent cause of pump failure. "Wide angle" tethered float switches, the kind that free-float around the sump basket, are the biggest trouble-makers. They swirl around the sump basket, making them far more likely to get trapped against the pump, discharge pipe or power cord. Once trapped, they can't switch on the pump. Inexpensive switches can also simply wear out or cause motor burnout.

Backup systems

Some homeowners keep a replacement pump on hand in case their pump dies. That's a good idea (home centers often sell out of pumps during storms or floods). But having a replacement handy won't help you if you're on vacation during a power outage or if your pump dies while you're slumbering through a stormy night. That's the beauty of backup systems: No matter what the reason for the pump failure, a backup system will save the day. Here are your options:

Sizing a pump

Whether you're buying a replacement pump or a backup system, you'll have to determine the pump capacity. Here's how: Disconnect your existing pump, pull it out of the basket, and check the GPH rating on the label or check the pump's specifications on the manufacturer's Web site. Buy a new pump with at least that much capacity. If your existing pump sometimes can't keep up with the incoming water, select a model with a higher GPH rating.

BATTERY BACKUP SYSTEMS: \$225 TO \$700

Manufacturers of battery backup systems usually sell three models: good, better and best. The "best" units come with a larger battery and a more sophisticated battery charger. The larger battery gives you a longer run-time, and the better charger prolongs the life of the battery.

So how long will a battery backup system keep your basement dry? That depends on how much water is entering your sump basket (which determines how often the pump will run). Here's an example: one manufacturer's system comes with a 40-amp/hour battery that's projected to last up to 53 hours (pumping at the rate of 2,300 GPH once every five minutes). But, if you have serious water problems such that the pump runs once a minute, that same battery will last only 12 hours. That's hardly enough battery capacity to get you through an extended power outage. In that case, buy a system with a larger battery, or a system with a charger large enough to keep two batteries fully charged.

If you have minor seepage and rarely experience power outages, you're probably safe buying a less expensive battery backup system. Then again, that \$400 savings could cost you big-time if just one 100-year storm knocks out your power and turns a sump trickle into a flood.

Advantages of battery backup systems

- Simple installation—connect to existing discharge pipe or run a separate pipe
- Unlike water-powered systems, battery backup systems work when there's no water supply

Disadvantages

- Battery may run down before power comes back on
- Battery water levels must be checked every few months
- Battery terminals must be cleaned twice a year
- Battery must be replaced every five years (and costs about \$100).

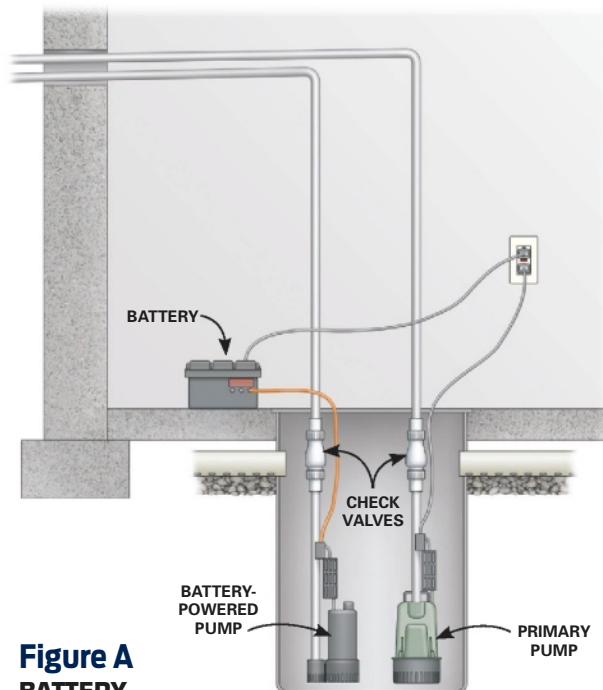


Figure A
BATTERY BACKUP PUMP

If the primary pump fails, the battery-powered pump takes over and ejects water. A maintainer keeps the battery at full charge.



WATER-POWERED BACKUP: \$150 TO \$400

A water-powered backup pump uses water pressure to siphon water out of your sump. Most use 1 gallon of city water for every 2 gallons of sump water they remove. So a pump that's capable of removing 1,500 GPH will use 750 GPH of city water. And that's created a lot of controversy. In fact, a few municipalities prohibit their use due to already severe water shortages. So check with local ordinances before buying a water-powered sump pump. In an area with high water costs, the water bill can run as high as \$170 a day. But keep that in perspective. If your power goes out for a couple of days, you'd happily pay a \$300 water bill to avoid a flood.

Water-powered pumps require at least 40 psi and a 3/4-in. feed line to achieve maximum pumping rates. And they require a separate drain line and some type of backflow prevention to prevent cross-contamination with potable water.

Water-powered pumps come in two styles: **in-sump** and **above-sump**. An in-sump pump (one choice is the Liberty No. SJ10 SumpJet pump; \$200 at home centers and online) is always immersed in drain water, which raises the risk that drain water could contaminate the drinking water supply. To prevent that, most local codes require the installation of an expensive reduced pressure zone (RPZ) backflow prevention valve (\$150). RPZ valves must be professionally installed and tested annually by a licensed plumber. That adds an annual cost to the system. So check with your local building inspection department before you buy an in-sump system.

An above-sump unit (one choice is the Basepump RB750-EZ; \$300 at basepump.com) mounts well above the sump, which reduces the risk of drinking water contamination. Therefore, many plumbing inspectors require only a less expensive atmospheric vacuum breaker (AVB), which costs about \$40.



Advantages

- No limit to run-time; works as long as you have water pressure
- No battery replacement costs
- No routine maintenance

Disadvantages

- If you have a well, this setup won't work during a power outage
- More difficult installation because it requires a new water line, backflow preventer and new drain line
- Annual fee for RPZ valve testing (if required by local code)
- May be expensive to run in areas with high water costs

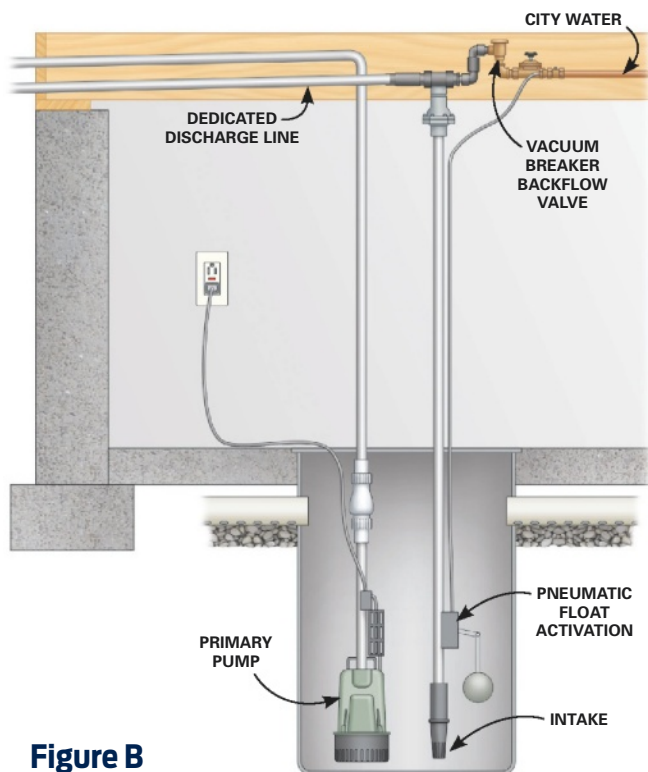


Figure B
ABOVE-SUMP
WATER-POWERED PUMP

This pump operates like an in-sump unit, using city water to pump sump water. Both kinds of water-powered systems require a separate discharge line.

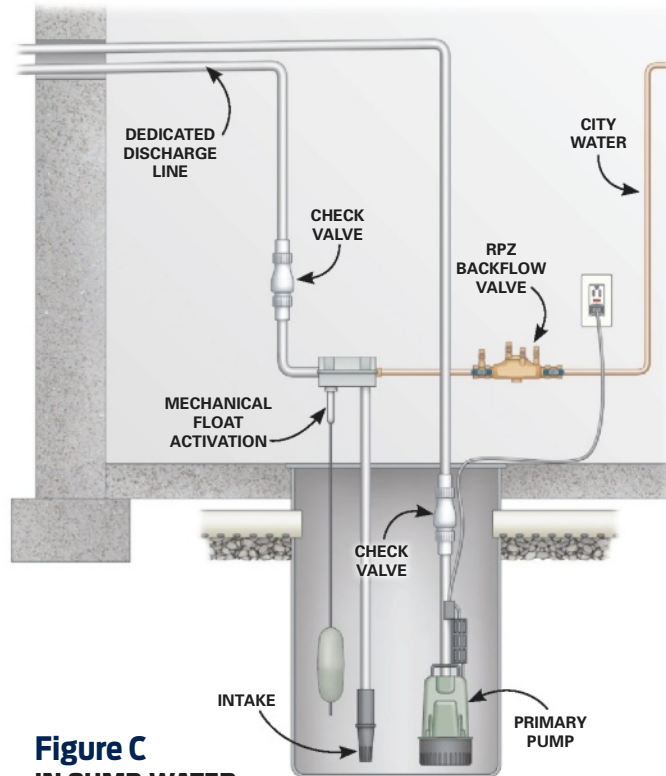


Figure C
IN-SUMP WATER-
POWERED BACKUP

When the primary pump fails, a water-powered pump uses city water pressure to siphon water out of the sump. With an in-sump version, your local inspector may require an RPZ valve to prevent contamination of drinking water.

GENERATOR-POWERED SUMP PUMP

During a power outage, a generator can pay for itself in a dozen ways. One of those ways is powering a sump pump. A typical sump pump draws about 9 amps, so it won't add much load to the generator. But a generator isn't a perfect substitute for a backup system. A battery- or water-powered system kicks in automatically, whether you're home or not and no matter what the failure. A portable generator works only if you're around to connect it. And a generator (standby or portable) won't help if your primary sump pump is kaput.

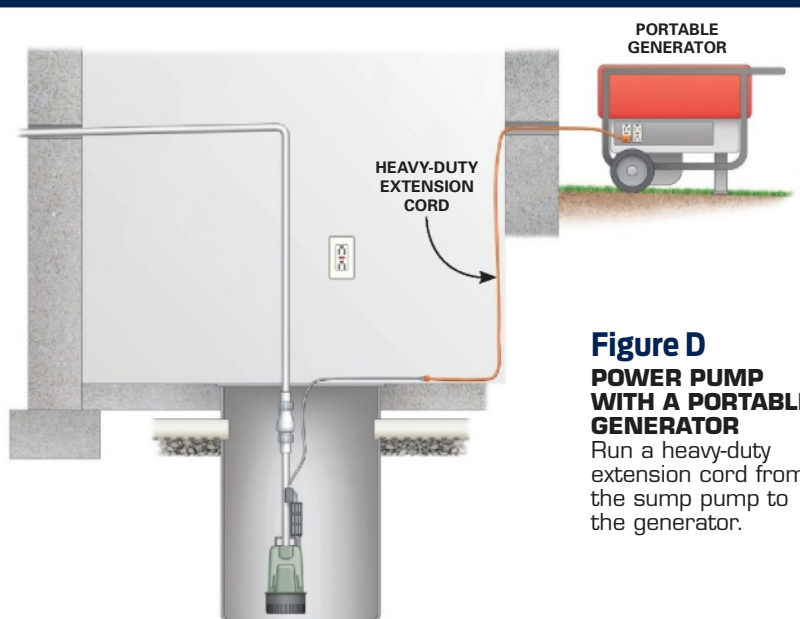


Figure D
POWER PUMP WITH A PORTABLE GENERATOR
Run a heavy-duty extension cord from the sump pump to the generator.



How to buy a primary sump pump

Home centers sell a confusing array of sump pumps that range from \$50 to \$250. But don't despair. We've reviewed all the specs, talked to the engineers and boiled it down to five simple buying tips:

1. Horsepower means nothing. It's the pumping volume in gallons per hour (GPH) that counts. Check the capacity of your current pump. If your current pump keeps up with the flow during the heaviest rainstorms, buy that

capacity again. If not, buy a pump with a higher GPH rating. To find your current pump's rating, locate its make and model number on the label and find the specs on the manufacturer's Web site.

2. Check the "head" on the manufacturer's GPH rating. Head is the height that water has to be lifted from the pump to the horizontal discharge pipe. More height means harder work for the pump. The GPH rating on most good-quality pumps includes the head (typically 10 ft.). But some manufacturers rate pump capacity without head ("3200 GPH at 0 head" for example). That gives an unrealistic—and misleading—estimate of pump capacity.

3. Spend at least \$125 to get a quality sump pump. Look for a caged or vertical float switch, a motor with a UL and a CSA rating, and a pump made with a stainless steel, cast aluminum or cast iron impeller and pump body. Avoid pumps made from epoxy-coated parts.

4. Buy an energy-efficient pump. Once you find a pump with the correct GPH rating, look for a model that consumes the fewest amps. This isn't about saving electricity; high-amp pumps run hotter and burn out the float switch faster.

5. If your sump accumulates gravel or sand, buy a "top suction" pump that's "solid passing" to prevent a stall/burnout caused by trapped gravel. Or raise a "bottom suction"-style pump on a few bricks to keep it off the bottom of the sump.

While you're at the home center, buy a new male fitting to fit the pump outlet; pipe primer and cement; a new check valve and rubber couplers.

Know when your pump is dead

Too often, homeowners don't discover a sump pump failure until they see the damage. But there are ways to avoid that:

If you buy a new AC sump pump run by a controller, it'll have some type of alarm to let you know if the pump fails or the power goes out. The same holds true for most new battery-powered systems.

■ **LOCAL ALARM.** Detects water at the top of the sump basket using either a probe or a float and sounds an audible alarm (such as the BWD-HWA Basement Watchdog Water Sensor and Alarm; \$15 at home centers). Local alarms are great if someone is home at the time of the failure.

■ **VERBAL MESSAGE VIA LANDLINE.** Detects water at the sump and dials a preprogrammed phone number and plays a recorded message (one choice is the Control Products WA-700 Water Alarm; \$55 at homesecuritystore.com). Also sounds an audible alarm. Must have a landline.

■ **TEXT MESSAGING.** Detects water at the sump and sends a text to three different cell phones (one choice is the Blue Angel BCPA1; \$189). Requires an adequate Verizon signal at the sump pump and a \$4 monthly fee. Find a dealer at blueangelpumps.com.

Our iPad edition includes tips on working with PVC and information about silent check valves. It's available at the App Store.



HOME CARE + repair

BY RICK MUSCOPLAT

editors@thefamilyhandyman.com

Restore a wood deck

Keeping a wood deck in good shape takes a lot of work. Even if you stain or seal it, the boards can still crack and splinter, making the deck look old and worn. Switching over to composite decking is one option, though the cost may be prohibitive. But there's another, far more affordable solution. You can save your existing deck by applying a deck restoration product.

Deck restoration coatings are thick enough to fill all cracks, knot-holes and splinters, and they provide a completely new textured surface that can last as long as 13 years without additional applications. You can do the prep work in one day, then apply the product over a two-day period the following weekend. You'll need a power washer (rent it if you don't own one), a jug of deck cleaner, a special roller, masking materials and a roller extension. The cost varies, but figure roughly \$1 per sq. ft. Here's how to buy the product, prepare the surface and apply it.



ART DIRECTION: MARCIA ROEPKE • PHOTOGRAPHY: TOM FENENGA

I Hate Annuities...and So Should You!

The Soothing Sound of Guaranteed Income

Many investors currently own or are considering annuities. After all, they are sold as safe investments, offering dependable and predictable returns, no matter what the market does. And that sounds very appealing, especially after suffering through the worst bear market since the Great Depression. So what's the problem with annuities?

What You Might Not Know about Annuities Could Come Back to Haunt You

Before you put your hard-earned money into an annuity, or if you already own one, please call 1-800-695-5929 for a special report, *Annuity Insights: Your Guide to Better Understanding Annuities*. It could help save you hundreds of thousands of dollars and untold financial heartache.

The vast majority of annuities are really complicated insurance policies that make it very difficult to fully understand the implications and unintended consequences. And once you buy into an annuity, it can be a very difficult and potentially very costly investment decision to reverse. That's why it is vital you "look before you leap" and ensure that you have "your eyes wide open" before you purchase an annuity. And if you already own an annuity, this free report is just as valuable as it can help you sort out the good, the bad and the ugly aspects of annuities.

What You'll Learn from this Free Report

- The different types of annuities and the advantages and disadvantages of each
- Why annuities can be complex to understand
- What you need to ask an annuity salesman when evaluating his product
- The inflation risk, tax implications, estate planning considerations and typical annuity fees

Stuck in an Annuity?

Because people often regret their annuity decision, Fisher Investments has helped many investors extract themselves from annuities. In fact, if you have a portfolio of \$500,000 or more, we may rebate some or all of your annuity surrender penalties. Rebates average over \$13,000.* Please call for details and to see if you might qualify.

About Fisher Investments

Fisher Investments is a specialized money management firm serving successful individuals as well as large institutional investors. With over \$53 billion** in assets under management and with an over 25-year track record in bull and bear markets, Fisher Investments uses its proprietary research to manage money for prudent investors.



If you own an annuity or if someone is trying to sell you one, I urge you to call for your free report. Annuities can lock you into low returns, complicate your tax situation, tie up your wealth and hit you with high fees. If you have an annuity, my team can help you decide if it is right for you. And if it isn't, we might be able to help you get out of it and even help you offset some of the annuity surrender fees.*

This free report could save you from making one of the biggest investment mistakes of your life. And for owners of annuities, the free analysis could be a life saver.

Ken Fisher

Ken Fisher

- CEO and Co-Chief Investment Officer, Fisher Investments
- *Forbes* "Portfolio Strategy" columnist for 29 years
- Author of 10 financial books, including four *New York Times* bestsellers

Please hurry! This offer contains time-sensitive information.

Call today for your **FREE** report!

1-800-695-5929 Ext. A418

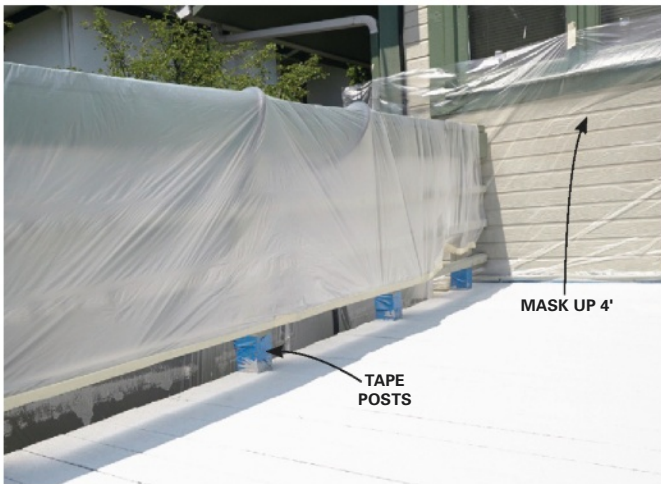
©2014 Fisher Investments. 5525 NW Fisher Creek Drive, Camas, WA 98607. Investments in securities involve the risk of loss.

*Rebates are for investors who liquidate an annuity with surrender penalties and fund a Private Client Group account. Average rebates from August 2011 to September 2013 were \$13,227. Terms and conditions apply.

See www.AnnuityAssist.com/Terms-and-Conditions for further information.

**As of 12/31/2013.

FISHER INVESTMENTS®
INVEST ASSURED



What is a deck restoration coating?

Deck restoration coatings are made from a long-lasting tintable acrylic base material with UV inhibitors and added solids (aluminum oxide or sand). The solids provide texture and hold the product together (like aggregate in concrete). Some brands allow the wood to breathe yet repel water, while others form an impermeable barrier. The coverage ranges from 20 sq. ft. to as much as 75 sq. ft. per gallon. All brands require rigorous surface preparation. The procedures vary by manufacturer; read the product label. Apply two coats for the best performance.

Pick the brand and get it tinted

Shop for deck restoration products at home centers and paint stores. Some retail brands are Restore 10X and 4X by Rust-Oleum, Deckover by Behr, Rescue IT! by Olympic, and RockSolid Deck Restoration by Citadel Floor Systems. Discuss the surface preparation requirements for each brand with the store clerks—each brand is different.

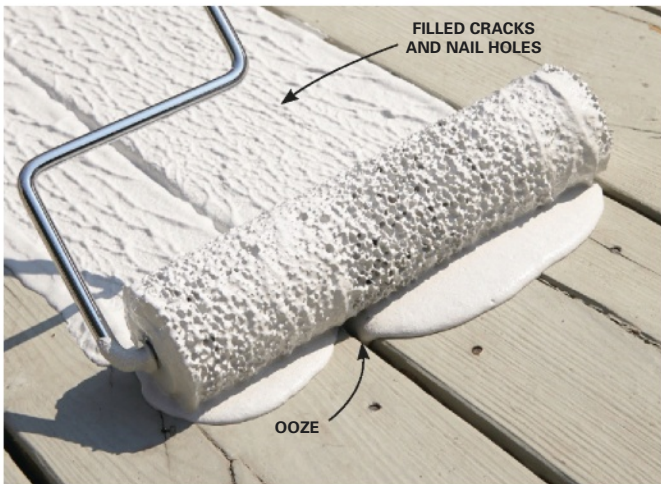
Rust-Oleum's Restore 10X, the type we used, is 10 times the thickness of paint. Restore 4X, as well as the other products, are about four times the thickness of paint. The extra thickness of 10X makes it more durable and better at covering cracks, knots and surface flaws. However, that thickness also means less coverage per gallon. If your deck is in decent shape and you'd like to save money, choose a thinner-viscosity product.

Next, choose the color carefully because deck coatings absorb a lot of heat and retain it longer than plain wood. If you pick a dark color and your deck gets direct sunlight, it may be too hot to walk on with bare feet.

Some deck restoration products (such as Restore 10X) can be used only on horizontal surfaces, so you'll need a matching or complementary product designed for the deck's vertical surfaces. And, if you're buying 4 or more gallons, buy it in pails instead of individual gallons. You won't have to refill your roller tray constantly (the product goes fast!). Before you leave the store, buy the manufacturer's recommended deck wash to ensure compatibility with the deck coating. And buy enough application rollers (one roller for every 4 gallons of material). Ask the store for extra stir sticks—you'll need them to clean the product from the gaps between boards.

1 PROTECT THE HOUSE AND RAILS

To avoid splattering the post rails, wrap them with masking tape and apply poly sheeting to the rails and siding. Spread poly sheeting under the deck to catch the product that oozes between the board gaps.



2 ROLL ON THE DECK COATING

Dunk the entire roller in the pail, place it on the deck boards and press down to form a puddle. Then roll the puddle forward to force the product into the cracks. Then lift, reload and do the next section. Don't back-roll.



3 COAT THE ENTIRE LENGTH OF THE BOARDS

Start at one end of a few boards and apply the entire length of the boards, to maintain a uniform texture. Clean the gaps as you go with a stir stick or a 5-in-1 style paint tool.



4 FILL IN MISSED SPOTS

Dunk a brush into the pail and dribble it into missed spots or depressions to build them up.



5 SMOOTH WITH A BRUSH

Start at one end of the board and walk the brush down the entire length in one continuous motion. If you lift the brush, you'll leave marks.

Prepare the surface

Start by breaking off any large splinters. Then reset any protruding nail heads or remove them and secure the boards with deck screws instead. If you've applied a solid stain or clear sealer and then covered areas of the deck with planters or furniture, those sun-shielded areas must be sanded. Use 80-grit sandpaper to remove the gloss and rough up the surface in those areas.

Next, dilute the deck cleaning product, apply it, and let it soak in for the recommended time. Then scrub the entire deck using a stiff scrub brush and extension handle. Pay extra attention to any greasy areas; get all the grease off. Then power wash the entire deck to remove ground-in dirt and loose stain. Aim the nozzle into the board gaps to clean them out too. Let the wood dry for a week before applying the restoration product.

Before applying the restoration product, let the wood dry for a week and mask off all vertical surfaces (**Photo 1**).

Apply the first coat

Start by filling knotholes, splinters and cracks with latex caulk or the restoration product. Let it set until it's stiff. Then apply the deck coating with the special roller (**Photo 2**). You'll have to reload the roller every few feet to get the proper coating thickness. Don't try to make the product go further by working it back and forth—that'll thin it and load it with air bubbles. Coat several boards at a time (**Photo 3**). Some product will fill the gaps and some will fall through and be wasted (get over it; it's part of the cost of the job). Refill holes along the way (**Photo 4**). If you prefer a smooth finish, level the coating right away with a brush (**Photo 5**).

Clean up with soap and water and let the first coat dry for three to six hours (or until dry to the touch). You probably won't like the look of the first coat. Don't worry; it's just the primer coat. The second coat is the "magic coat" that fills in all the gaps and provides the smooth texture you saw at the store. Apply the second coat using the same method. Then let the deck dry for two full days before walking on it.

For the longest-lasting results, clean the coating in the spring and fall using the manufacturer's cleaner.



Touch 'n Foam sealant products actually pay you back by keeping heat and A/C in the house where it belongs.



Fill Gaps.
Stop Drafts.
Save Energy.

Learn how!
Scan code
or visit



www.touch-n-foam.com

**Touch
'n Foam**
Insulating Sealants



Do it the hard way, or the HYDE® way.

Wash the surface, not yourself,
with the HYDE® Pivot Nozzle Wand.
No more bending, stooping or reaching.
Add a Pivot Nozzle Wand to your
pressure washer!



For a better finish,
start with HYDE®.

hydertools.com • 800-872-4933

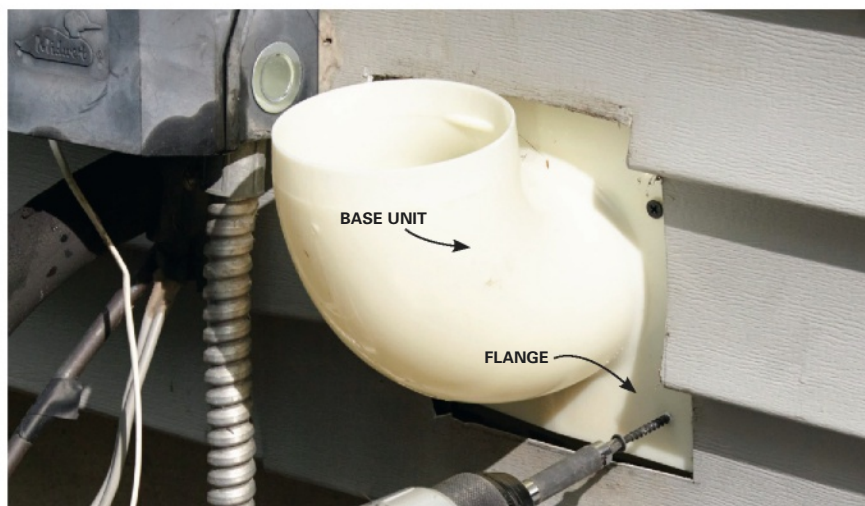
©2014 Hyde Tools, Inc. All rights reserved.

INSTALL A NONCLOGGING DRYER VENT HOOD

Our appliance expert, Costas Stavrou, gets lots of service calls for dryers that take too long to dry a load of clothes. He always starts his diagnosis by checking for a clogged vent hood. If it's a flapper style, the lint builds up on the critter guard screen under the flap. On the louver style, lint builds up on the inside edge of the flaps. And, once airflow falls off, the lint settles in the dryer vent pipe. The restricted airflow dramatically increases drying time.

Costas cleans the screens and louvers and then the vent pipe. But he recommends replacing a flapper- or louver-style vent with a hood that doesn't capture lint (one choice is the Heartland Dryer Vent Closure, about \$20 at walmart.com and home centers). Here's how to replace your existing vent hood with that style.

Start by disconnecting the dryer vent from the vent hood stub pipe. Then go outside and remove any siding trim pieces from around the vent hood. Next, remove the vent hood retaining screws and pull the vent hood and stub pipe out of the wall. Disconnect the hood from the stub pipe and toss the hood. Insert the old stub pipe into the new vent hood base and seal the connection with caulk. Then install the new vent hood base (**Photo 1**).



1 CONNECT THE BASE TO THE VENT

Lay a bead of outdoor caulk around the perimeter of the base flange. Slide the stub pipe through the hole in the wall until the base is flush with the house. Level and secure the base flange loosely with screws.

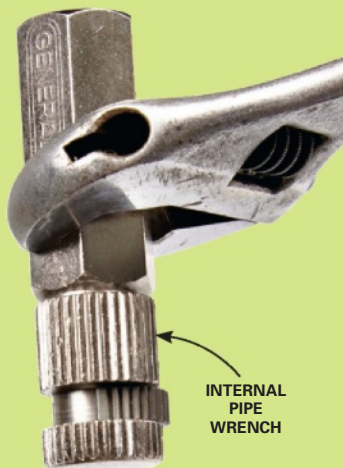


2 ADD THE DIVERTER

Slide the diverter onto the base and secure to the house with screws. Then tighten the base screws and secure the trim.

Problem solver: Internal pipe wrenches

Replacing old galvanized fittings and nipples can be a real challenge if you don't have the right tools. DIYers usually just slap a standard pipe wrench over the body of the fitting or nipple and crank away. Big mistake! The pipe wrench can break off the body and leave the rusted threads stuck in the fitting. That's why plumbers always use internal pipe wrenches to remove old rusted fittings and nipples. If you own an older home with galvanized pipe, your toolbox should include standard and internal pipe wrenches. You can buy internal pipe wrenches individually and in sets for \$12 and up at home centers and online.



INTERNAL PIPE WRENCH IN ACTION

Slide the internal pipe wrench into the nipple or fitting so the cam rests in the threaded area. Then turn the wrench. The wrench applies torque to the threads, not the body of the nipple.

THE FAMILY Handyman Editors' Favorites

The Family Handyman editors attended the largest trade show in the home building industry—the International Builders' Show, co-joined with The Kitchen and Bath Industry Show in Las Vegas. They spent three days checking out the newest tools and products from more than 1,000 industry suppliers. Here are some of their favorites!



Moisture? Bring it On!

CertainTeed's new SMARTBATT™ Insulation with MoistureSense™ Technology features an integrated smart vapor retarder that blocks moisture in wall cavities when humidity is low and provides enhanced drying, allowing moisture to escape when humidity is high. SMARTBATT can help reduce the risk of mold and mildew within the wall cavity, contributing to healthier homes and happier occupants.

certainteed.com/smartbatt



TimberTech's Earthwood Evolutions Legacy Collection Brings the Look of Hand-Scraped Indoor Flooring to the Outdoors

TimberTech's new Legacy Collection, in three earthy hardwood looks, brings the beauty of indoor flooring to the outdoor deck. Legacy's timeless style takes your deck from rustic and relaxed to elegant and modern.

www.timbertech.com

Top Ten TIPS

BY JEFF GORTON

editors@thefamilyhandyman.com



ART DIRECTION ELLEN THOMSON • PHOTOGRAPHY TOM FENENGA

Masking a room for paint

With all the new types of masking tape available today, it's easier than ever to prepare a room for painting. You can buy low-adhesion tape to protect delicate surfaces; edge-sealing tape to create crisp, bleed-free lines; and special tape kits to mask textured walls.

But there's more to successful masking than having the best tape for the task at hand, and there are ways you can speed up the job. We collected these 10 tips to help you make the most of whatever modern tape you choose.



I JUST PUT UP
NEW WALLS

WITHOUT TEARING THE
OLD ONES DOWN.

Some of the ugliest walls imaginable can be given a new lease on life with a little prep and a fresh coat of KILZ® primer. By blocking stains and unwanted colors, KILZ primer lays the foundation for a successful room transformation. It's like a fresh start for your walls.



Find your priming solution at solutions.kilz.com or scan here





1 Clean moldings before you apply tape

Even the stickiest masking tape won't stay put if you apply it to a dusty, dirty surface. You'll save yourself a lot of time and frustration if you start every masking job by cleaning the moldings or the wall you're applying the tape to. Usually a thorough dusting with a damp rag is all that's required. But if the surface is greasy, you'll have to wash it with a detergent solution. TSP-PF (phosphate free), available at home centers and paint stores, is the go-to detergent for most painters. Wait for the surface to dry completely before masking.



2 Speed up masking with a tape applicator

If you really want to speed up and simplify your masking job, buy a tape applicator. Shown is the ScotchBlue Painter's Tape Applicator from 3M. It's available at home centers and paint stores for about \$8 with a roll of tape, and it's designed to help you precisely mask using the adjacent surface as a guide. You simply roll it along the molding, wall or ceiling to apply the tape. Then use the built-in cutter to slice the tape at the end of the run. With this tool, even a novice can get great results with only a few minutes' practice.

3 Press the tape to ensure a good bond

This may be old news to you seasoned painters. But if you're just starting out, it's probably the most important masking tip you can learn. After you apply the tape, make sure to press down the edge to seal it. Otherwise paint is sure to seep under the edge of the tape. A flexible putty knife works great. Start at one end of your tape run and pull the blade along the tape while applying downward pressure. Tilt the putty knife blade slightly so you're applying pressure right along the edge of the tape.



For more tips & goofs, download our FREE mobile app!



DIY TIP GENIUS



proferred.

Jason Cameron
Licensed Contractor and DIY Network TV Host

True professionals prefer ProWood Dura Color® to the competition for lasting color treatment that stands up to the elements. Learn about ProWood Dura Color® and get your free sample.

ProWoodLumber.com/sample

pro'wood
PROFESSIONAL GRADE™

FIX WHAT OTHER GLUES SIMPLY CAN'T.™

If you take the time to fix something, you want it to last. **Amazing Goop** is perfect for repairs because it holds just about anything – wood, metal, ceramic, glass and more.

Amazing Strength you can count on that is impact and vibration resistant, and waterproof.



Stay Connected With Us



www.eclecticproducts.com

MADE in USA
by Eclectic Products

4 Quick and easy wall protection

If you're spray texturing or painting a ceiling, draping lightweight plastic sheeting is the best way to cover your walls. The photos below show a quick and easy way to hang the plastic. Use 1-1/2-in.-wide tape with medium to high holding strength. But test first in an inconspicuous area to make sure the tape doesn't pull paint from the wall. Super-thin "painter's plastic" is a good choice for this type of masking because it's inexpensive and lightweight, and it produces less waste. Overlap the plastic at doorways to create an opening.



1 APPLY TAPE ALONG THE CEILING

Press the top edge down, but leave the bottom loose. It should curl up slightly to expose the sticky underside.



2 HANG THE THIN PLASTIC

Stick the edge of the lightweight plastic sheeting to the tape and let it hang to the floor. You don't need to tuck the plastic underneath the tape. Just curl the tape back onto itself and stick the plastic to the exposed adhesive.

5 Simple corner masking

It's easy to get a perfect fit on inside corners with this simple technique. Start by running the first piece of tape up the wall, making it a little long. Press the tape down into the corner with a putty knife. Then cut along the crease with a sharp utility knife (Photo 1) and remove the cutoff piece. Now you don't have to be so careful with the next piece (Photo 2).



1 CUT OFF THE EXCESS TAPE

Make a crease with a putty knife. Then cut off the extra tape with a utility knife for a perfect corner.



2 TAPE THE OPPOSITE SIDE

Overlap a piece of tape onto the first piece to finish the corner. Just make sure the tape doesn't extend up the wall.



America's No. 1 selling multi-purpose cleaner for auto carpet & upholstery

Super foaming power lifts ground-in dirt off tough-to-clean surfaces. Messes, you've messed with the wrong can.

GET TOUGH
tuff-stuff.com



By the time you finish reading this magazine, this crack could be patched, primed, painted

and a distant memory.



No priming, shrinking or cracking and it dries in 30 minutes. So you can get results so professional, you'll forget the repair is there.

★★★★★ See our reviews at 3MDIY.com/patch.



©2014 3M. All rights reserved. 3M is a trademark of 3M.



6 Apply a kraft paper perimeter for drop cloths

Here's a tip to save you time when you're moving drop cloths. Start out by applying a kraft paper border around the room, making sure to carefully mask the edge closest to the base trim. You can buy rolls of 6-in.-wide masking paper at home centers and paint stores. We're using a hand-masking tool to speed up the job. You can buy one for about \$20 at home centers and paint stores.

With the border in place, you can move the tarps along as you paint, and you won't have to waste time keeping them perfectly tight to the baseboard. As long as the edge of the tarp is covering the paper, you're good to go. And this tip works equally well on hard surfaces and carpet.



7 Speedy taping without a special tool

Here's a technique to help you apply tape quickly and precisely, without any special tools. Stick a few inches of tape to the molding and unroll about 6 more inches of tape. Then while you hold the roll of tape tight against the wall, rotate it down to stick this section of tape and repeat the process. It takes a bit of practice, but mastering this technique will dramatically increase your masking speed and accuracy.



8 Score tape before pulling it off

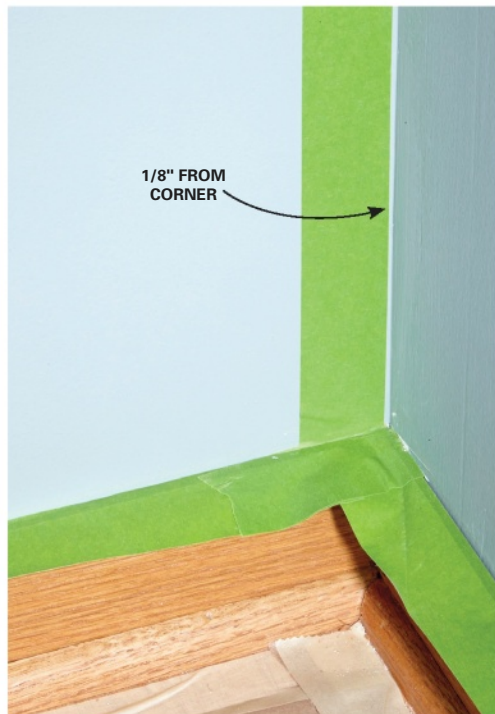
Ideally you would remove masking tape right away, while the paint is still wet. But in reality this isn't very practical. In the first place, modern water-based paint dries pretty fast. By the time you're through painting a room, the paint where you started is already starting to dry. And if you have to apply a second coat of paint, you certainly don't want to remove the tape and then have to reapply it.

The solution is to let the paint dry completely. Then score the edge of the tape with a putty knife before you pull it off. This will break any bond that has formed with the paint and ensure that the masking tape will come off cleanly without damaging your paint job.

9 Inside corner painting tips

When you're changing wall colors at an inside corner, it can be tricky to get a nice straight line, especially if the corner is rounded or has built-up layers of paint. The tip is to paint around the corner with the first color. Then when the paint dries, mask off the painted side using a top-quality edge-sealing tape (FrogTape Multi-Surface is one example).

But don't try to tape right down the corner. Instead, move the tape about 1/8 in. from the corner where it'll be easier to get a perfectly straight line. Nobody will ever notice that one paint color extends slightly past the corner, and you'll end up with a straight, crisp color change.



YOUR DECK DESERVES FAIRWAY®

VINYL • COMPOSITE • ALUMINUM
PORCH • DECK • BALCONY RAILING



CODE APPROVED
LIMITED LIFETIME WARRANTY*
EASY INSTALLATION

USE WHAT THE PROS KNOW:



www.FairwayBP.com

1-800-598-5245

GET YOURSELF
FREE FAIRWAY® GEAR

FILL OUT A SHORT SURVEY -
www.FairwayBP.com/Survey
& WE'LL SEND YOU A GIFT!

*Some Products Not Covered by Lifetime Warranty

Add a Motorbike to Your F-150

15 est. hp



Scooter

15 Estimated Horsepower

or

15 est. hp?



K&N Intake System #57-2556

on a 2005 Ford F150 5.4L

15 More Estimated Horsepower*

Just kidding. A K&N® intake system will add about as much estimated horsepower to your 2005 Ford F-150, and even sounds better than a scooter.

The point is, a little extra horsepower is a bigger deal than you might think ... and can be added to your truck in about 90 minutes.

MAKE YOUR MOVE® to K&N®!



Systems available for most vehicles.

INTAKE SYSTEM FOR VEHICLE LISTED IS 50
STATE LEGAL. SEE KNFILTERS.COM FOR CARB
STATUS ON EACH PART FOR A SPECIFIC VEHICLE.



800-437-1304 ext. 2040
KNFILTERS.COM/FHM

© 2014 K&N Engineering, Inc.

* Estimated horsepower gains based on specific or similar vehicle dynamometer tests. Results will vary. For more information, look up vehicle and/or testing protocols at knfilters.com.

10 Foolproof window masking

Unless you have a super-steady hand for painting windows, it's faster and easier to simply mask off window glass—especially if you use this super-quick method we learned from a pro painter. The photos below show how. If you're spray painting instead of brushing, start by cutting a piece of paper about an inch smaller than the glass and putting it under the first piece of tape you apply.



1 MASK THE SIDES

Apply strips of tape to the sides, leaving the ends long. Then press the ends of the tape into the corner with a flexible putty knife.



2 CUT THE TAPE

Use a razor knife to cut off the excess tape. A sharp utility knife would work well too.



3 FILL IN THE TOP AND BOTTOM

Now it's easy to fill in between the side pieces. You don't have to worry about getting the tape the perfect length.

WORK FASTER, SAFER AND CLEANER.



UTILITY



PADDED PALM



IMPACT PRO



THE TOOL THAT FITS LIKE A GLOVE.®

800.222.4296 | www.mechanix.com



#mechanix

CAR + garage

BY RICK MUSCOPLAT

editors@thefamilyhandyman.com



ART DIRECTION VERN JOHNSON • PHOTOGRAPHY TOM FENENGA • CONSULTANT JOEY KASPER

Don't just polish—rejuvenate!

You can rejuvenate your car's finish yourself and get it pretty darn close to the factory shine. But it takes more than a simple wax job. The process starts with a good wash, followed by scratch repair, polishing and a protective wax finish. A pro would charge upward of \$200 for this. But after a one-time \$200 investment for a polisher and supplies, you'll be able to make your whole fleet look like new. Our expert, Joey Kasper, can do the job in four hours. Your first attempt will take a whole day.

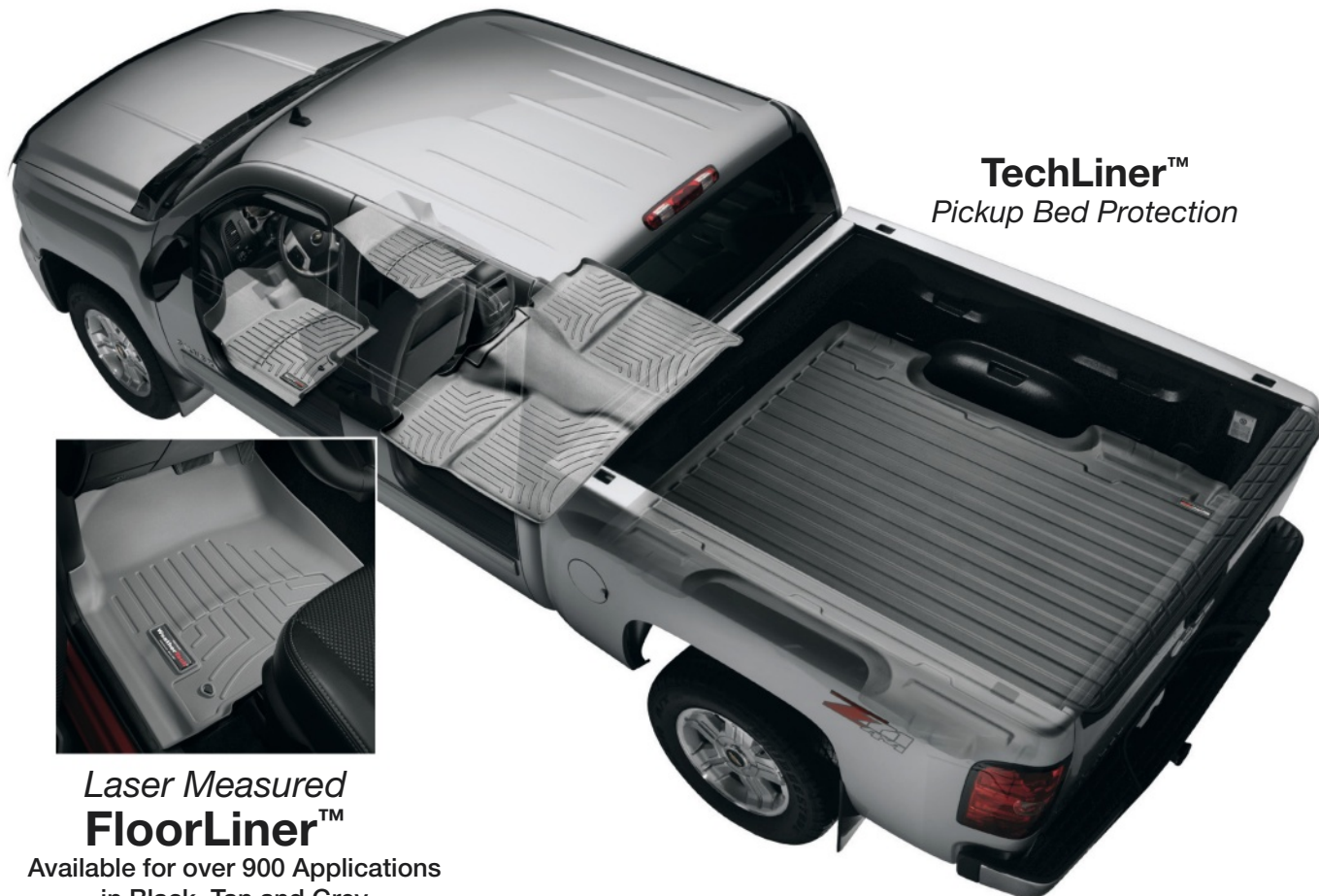


MEET THE EXPERT

Joey Kasper has been an auto detailer for more than 20 years. He specializes in luxury and collector cars as well as cars used for corporate events and advertising. His van is fully equipped with water tanks, a power washer and a generator so he can perform a complete detail job on-site.

WeatherTech®

Automotive Accessories



TechLiner™
Pickup Bed Protection

Laser Measured
FloorLiner™

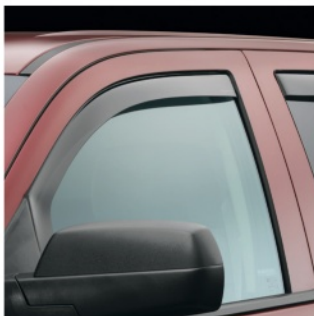
Available for over 900 Applications
in Black, Tan and Grey

COMPLETE COVERAGE FOR YOUR VEHICLE

See our full line of Automotive Accessories at WeatherTech.com



All-Weather Floor Mat



In-Channel
Side Window Deflectors



No-Drill MudFlaps



BumpStep™
*Hitch Mounted
Bumper Protection*

Accessories Available for

Acura · Audi · BMW · Buick · Cadillac · Chevrolet · Chrysler · Dodge · Ferrari · Ford · GMC · Honda · Hummer · Hyundai · Infiniti · Isuzu · Jeep · Kia · Land Rover · Lexus · Lincoln · Maserati · Mazda · Mercedes-Benz · Mercury · Mini · Mitsubishi · Nissan · Oldsmobile · Plymouth · Pontiac · Porsche · Saab · Saturn · Scion · Subaru · Suzuki · Toyota · Volkswagen · Volvo · and more!

Order Now: **800-441-6287**



American Customers
WeatherTech.com



Canadian Customers
WeatherTech.ca



European Customers
WeatherTechEurope.com

How Can I get Better Gas Mileage?



BlueDevil Fuel System Cleaner will remove fuel deposits while increasing vehicle performance. FUEL MD improves gas mileage, fuel efficiency, vehicle start up, & will restore a consistent engine idle while lowering fuel octane requirements – Guaranteed!

- Safe for any engine
- Dissolves fuel system deposits
- Maximizes engine efficiency
- Reduces emissions

To learn more about engine cleaners or other great DIY auto tips, please visit: gobluedevil.com/fuelmd or scan this QR code to checkout our blog!



BlueDevil
PRODUCTS
STOP LEAKS PERMANENTLY. MAXIMIZE PERFORMANCE.

www.gobluedevil.com • follow us: [f](#) [t](#) [v](#)



1 PREPARE THE WASH BUCKET
Drop a dirt trap into each 5-gallon bucket and fill with water. Then pour the car wash soap into the wash bucket and stir with your wash mitt.



2 SCRUB THE WHEELS
Spray the wheels with an aluminum-safe alloy wheel cleaner and scrub with a wheel-cleaning brush. Rinse the wheels and clean any areas you missed. Then do a final wheel rinse.



3 REMOVE BUG SPLATTER
Put soap on the dried bugs and let it soak. Then scrub lightly with a nylon bug sponge. Rinse with water.



4 START WITH THE ROOF
Apply suds to the roof and wipe small sections. Rinse the mitt frequently and grab fresh suds for each new section.



5 DRY THE VEHICLE
Swipe the water off with a water blade squeegee. It will dry the surface faster than a chamois.



6 FEATHER A DEEP SCRATCH
Apply rubbing compound on a sponge and wipe it into the scratch. Use a circular motion to feather the edges. Wipe with a microfiber cloth to check your progress.

All about polishers, pads and compounds

You can't polish a car with a \$25 wax applicator/buffer, so don't waste your money on one. And avoid professional high-speed rotary polishers. In unskilled hands, those babies can burn the paint off your car in three seconds flat. Instead, buy a dual action (DA) polisher with changeable foam polishing pads. (Two choices are the Porter-Cable No. 7424XP, \$130, and Meguiar's No. G110v2, \$180, from autogeek.net.) Or, if you want to try your hand at polishing smaller areas but don't want to spend big bucks, try a drill-mounted DA unit (such as Meguiar's G3500, \$49 at walmart.com).

When it comes to foam pads, each manufacturer has its own color code to denote foam density and pore size. So check the seller's application chart to get the right pad for each type of job. To remove oxidized lacquer or enamel paint from older vehicles, use a "cutting pad" made from stiffer foam with larger pores. To remove fine scratches and polish the clear coat on newer cars, use a medium-density foam pad with smaller pores. Then use a soft foam pad with fine pores to apply wax and paint sealant.

Rubbing and polishing compounds are two very different products, and DIYers often confuse the two. Rubbing compound removes heavy oxidation and deep scratches. Think of it as coarse sandpaper. Because this compound is designed to remove more material, never apply it with a polisher. Apply it only by hand with just enough pressure to remove the scratch.

If you have an old container of rubbing compound lying around your garage, toss it. Those older compounds aren't compatible with the clear coats used on late-model vehicles. If you need to remove a scratch from the clear coat, find a rubbing compound that's clear-coat-safe and contains a "diminishing abrasive." It'll have smaller particles to remove scratches without adding more.

Polishing compound, on the other hand, is like fine-grit sandpaper you'd use to get the smoothest finish on wood. Use it with your DA polisher to remove light scratches and swirls and to bring the finish to a uniform gloss.



RAINHANDLER

USE RAINHANDLER GET RID OF YOUR GUTTERS

Rainhandler

Prevents Erosion
Runoff is changed to a 3 foot wide band of soft rain-sized droplets.

Self-Cleans
Unique louver design allows leaves and debris to blow or wash away.

Protects Property
The Rainhandler self-cleaning system eliminates clogged, overflowing gutters and downspouts. No ground erosion. No more destructive ice dams from frozen gutters.

Installs Easily
Each 5-foot section comes with 3 brackets & 6 screws. Do an entire home in 3 or 4 hours.

Maintenance-Free
All-aluminum Rainhandler louvers make messy, leaking gutters history.

Protects You
The Rainhandler system protects you from climbing ladders.

Guarantees
Money-back satisfaction guaranteed for one full year, 25-year warranty.

For FREE information call or fax
Ph: 800-942-3004, Fax: 800-606-2028
SPECIAL OFFER! 30% OFF + FREE SHIPPING. Mention Code FH0514
when you call or online enter at checkout
www.rainhandler.com
OFFER EXPIRES 05/31/2014



READY. AIM. MOW!

The **DR® FIELD and BRUSH MOWER** isn't complicated. It's overbuilt, so you don't need to second-guess where you take it. When you're behind a rugged steel deck propelled by all-terrain tires, with a six-pound blade swinging at 195mph, you're calling the shots.

Try it out on your place with our **6 MONTH HANDS-ON TRIAL**. We've got you covered.

- **FLATTEN 3" THICK SAPLINGS**
- **DEVOUR 8' HIGH WEEDS AND BRUSH**
- **CUT A SWATH UP TO 30" WIDE**
- **GO ANYWHERE**

44" Cut TOW-BEHIND models also available!



83103X © 2013

FREE SHIPPING!
FOR A LIMITED TIME.

Call for **FREE DVD and Catalog!**
TOLL FREE **888-200-3210**
DRfieldbrush.com





7 ACCENT THE WHEELS

Spray the tires and the wheel wells with tire dressing to give them a dark, factory-fresh look. If you skip the wheel wells, their gray look will detract from the dark tires and shiny paint.



8 APPLY THE POLISH

Swirl the polish onto a small section of the car using a sponge. Don't coat the polishing pad with polish and then hit the trigger. The polish will just fling off and make a mess.



9 WORK IN THE POLISH

Run the DA polisher front to back, then from top to bottom, overlapping each row. Then reverse, going back to front and bottom to top, again overlapping each row.



10 POLISH UNTIL SHINY

Run the polisher until the haze disappears and the paint glistens. Then wipe off the excess polish with a clean, dry microfiber towel.

Start with a thorough wash

Mix up a bucket of sudsy water (**Photo 1**). Our expert prefers Meguiar's Gold Class Car Wash Shampoo & Conditioner. He uses a wash mitt with two buckets—one for soapy water and one with clear rinse water. Both buckets have dirt traps to prevent dirt and grit from getting back onto the mitt. (Grit Guard, \$9 at auto parts stores, is one choice.)

Start with a clear water rinse (**Photo 2**). Scrub the bugs and tar off the grille, hood, bumper and side mirrors (**Photo 3**). Wash the roof and windows (**Photo 4**). Then rinse the entire car again so you're not wiping gritty roof and window suds over the hood, doors and trunk. Finish washing the rest of the car and then do a final rinse. Dry the car with a silicone water blade (**Photo 5**). Wipe off any remaining wet spots with a microfiber towel. To get the finish even smoother, consider clay-barring the entire car (to learn how to use a clay bar, search "car cleaning tips and tricks" at familyhandyman.com).

Assess and treat any scratches

To determine whether you can remove a deep scratch, rub your fingernail across it. If it doesn't catch your fingernail, you can usually remove it with polishing compound and your polisher. If it catches your nail but doesn't go all the way through to the metal, you can try feathering it with rubbing compound (**Photo 6**). However, if the scratch goes all the way down to the metal, forget about rubbing compound—you'll have to fill it with touch-up paint. After you fix the scratches, spray the wheel wells and tires with tire dressing (**Photo 7**).

Polish the finish

Apply the polish to a small section of the car using a soft sponge and a circular motion (**Photo 8**). Then attach a polishing pad to your DA polisher and work in the polish (**Photo 9**). Polish until the haze disappears (**Photo 10**). Move on to the next section and repeat the procedure until the entire car is polished.

Protect with wax or paint sealant

Remove the polishing pad and attach a waxing pad. Apply the wax or paint sealant to the car with a sponge or the manufacturer's applicator. Then buff the wax using the DA polisher and the same procedure you used with the polish. Finish the job by cleaning the windows with a spray cleaner.

THE FAMILY
Handyman

We Have A Gift For You!



Cut clutter and save space with our
Get Organized! E-book. For a limited time
you can download it **absolutely FREE**
at www.familyhandyman.com/free

Offer good only:
April 10 –
May 8, 2014

**Thank you
for being a part
of our family.**



PRO tips

BY MARK PETERSEN

editors@thefamilyhandyman.com



Taping drywall

Drywall taping is one of the most important jobs on any construction project. A skilled taper can hide a lot of mistakes left behind by framers and drywall hangers. But a poor taping job can frustrate trim carpenters and make the painters seem like a bunch of hacks. A quality outcome requires the proper tools and materials (a steady hand doesn't hurt either). We asked pro taper Scott Pauly to show us his three-day, step-by-step taping routine. He gave us some great tips that will help you end up with smooth walls and crisp corners.



MEET THE PRO

Scott Pauly started his drywall career as a teenager when his mother said he could have his own bedroom in the basement if he hung and taped the drywall himself. Since then he's slung more mud than an aging politician.

ART DIRECTION ELLEN THOMSON • PHOTOGRAPHY TOM FENENGA

Saving People Money On More Than Just Car Insurance.®

See how much you could save on insurance for
your truck, motorcycle, RV, boat and more.



geico.com | 1-800-442-9253 | local office

GEICO®

Some discounts, coverages, payment plans and features are not available in all states or all GEICO companies. Boat and PWC coverages are written through non-affiliated insurance companies and are secured through the GEICO Insurance Agency, Inc. Motorcycle coverage is underwritten by GEICO Indemnity Company. GEICO is a registered service mark of Government Employees Insurance Company, Washington, D.C. 20076; a Berkshire Hathaway Inc. subsidiary. © 2014 GEICO

DAY 1



Tack on corner bead

Scott installs the outside corner beads with a staple gun that shoots 1-in., 18-gauge staples with a 1/4-in. crown. Drywall nails will also do the job, but using a staple gun frees up one hand to get the bead exactly where you want it before tacking it into place. Outside corners take a lot of abuse, so make sure the corner beads are securely fastened to the framing. Nail or staple each side of the bead every 10 to 12 in. A staple gun like this one costs about \$100.



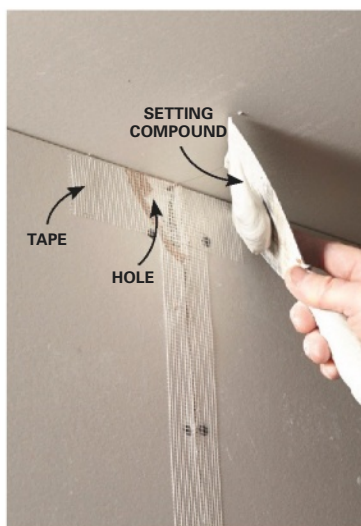
ROLL OUT THE FIBER MESH

Installing fiber mesh saves time because it's self-adhering. And unlike paper tape, fiber mesh allows mud to pass right through it, so you don't need to fill cracks and gaps in the drywall before you install the tape. All you need to do is roll it onto the wall and trim it off with a 6-in. taping knife. Tape over all the joints, large gaps, holes larger than 1/8 in., and both sides of the outside corner beads. On inside corners, only areas with a gap larger than 1/8 in. need mesh. The rest of the inside corners will get covered on Day 2 with paper tape.



MIX UP THE SETTING COMPOUND

Setting compound shrinks less than regular joint compound, and it dries rock hard. This makes it ideal for Day 1, which is all about filling the big holes and gaps. But setting compound doesn't sand nearly as easily as joint compound, so thinner coats are better. It comes in powder form, and the number on the bag indicates how many minutes it takes to set up. The bigger the job, the longer the working time you'll want. Scott mixes his with a mixing paddle bit in a 1/2-in. drill. He keeps a bucket of water standing by so he can clean the paddle right away. Setting compound sets up like concrete—even under water!



Cover the tape and fill the gaps

Cover all the tape with setting compound using a 6-in. taping knife. Apply enough mud to fill the gaps under the tape, but remember, setting compound is much harder than the two coats of joint compound you're going to apply the next two days, so you want to end up with just a thin coat covering the tape. If you sand through the joint compound into the setting compound, the result could be noticeably different textures on the two surfaces.

DAY 1 TOOLS



Easy to choose.



Easy to use.

With stain and sealer in one, and five beautiful colors, the new line of waterproofing stains from Thompson's® WaterSeal® is everything you need for exceptional deck protection, all in one can.

Maple Brown

Woodland Cedar

Harvest Gold

Sequoia Red

Acorn Brown

Thompson's
WaterSeal
Waterproofing Stain

EXCLUSIVELY AT



Follow us on:



DAY 2



Coat the butt joints with a knife

Use a lightweight joint compound on Day 2. Knock off any crumbs or ridges left over from the day before with a clean 6-in. tapping knife—Scott always has one in his back pocket. Spread a thin coat of joint compound on the butt joints with a 14-in. tapping knife.



COAT THE TAPERED JOINTS WITH A TROWEL

Each of the long sides of drywall is tapered to allow room for the mud. The goal is to fill this recessed area with mud so the wall ends up smooth. Taping knives are flat but flexible. If you press one too hard against a tapered joint in the wall, it could bend into the recess, and you could squeeze too much mud out, creating a trough. Taping trowels have a little bend in them, so when you press them against the wall, they flatten out to form a straight bridge across the tapered joint. Scott uses a 10-in. trowel on Day 2. Be careful when you buy one: A taping trowel might look like a concrete trowel but it's not—a concrete trowel is bent in the opposite direction.

Tape the inside corners

Paper tape is more flexible than fiber mesh and has a crease in it, which makes it easier to push into the corners. Scott uses a banjo to install paper tape on all the inside corners. He holds the tape secure with one hand as he moves the banjo along the corner. Once a long section of tape is pulled out, he pushes it into the corner with a corner trowel.

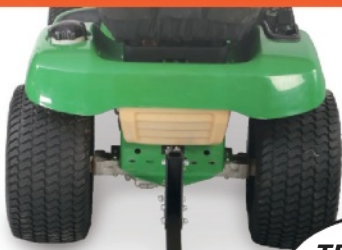
If you don't own a banjo, lay down a thin coat of mud and push the tape into the mud. Make sure there's mud under every square inch of the tape or you'll end up with bubbles. Banjos do a great job of applying the proper amount of mud to the tape, but regular joint compound will have to be watered down when you're using one. This will require about 1 cup of water for every gallon of mud, but it depends on the moisture content of the mud you're working with, so just keep adding a little water until it's roughly the consistency of yogurt. You can buy a mid-quality banjo for about \$100.



World's *FIRST* Trimmer for Riding Mowers!

NEW FOR 2014!

The **DR® TOW-BEHIND TRIMMER/ MOWER** is the perfect time- and back-saving solution for anyone who mows with a riding mower, then spends just as long (or longer!) going around their property a second time on foot to do the trimming.



Tightly trims around fence posts, trees, and other obstacles with spring-loaded action!

**TRIM FASTER,
MOW WIDER!**



TRIMS PRECISELY by automatically deflecting around obstacles!

MOWS WIDER by extending the reach of your riding mower, saving you time.

5X FASTER and more powerful than any handheld trimmer!

HEAVY-DUTY DR® TRIMMER CORD (green and blue) out-trims and out-lasts ordinary trimmer line.

FREE SHIPPING!

FOR A LIMITED TIME.

Call for a FREE DVD and Catalog!

Includes models, product specifications, and special factory-direct offers.

TOLL
FREE

888-200-3210

**Try a DR®
at Home for
6 Months!**

Call for details.



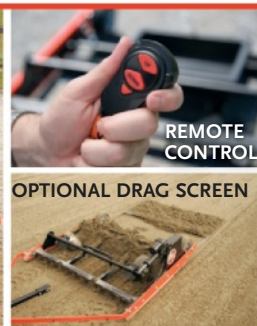
DRtrimmer.com/tow

83102X © 2014



**Turn a rough driveway
into a SMOOTH RIDE.**

The **DR® POWER GRADER** tows behind your ATV or lawn tractor.



• **RESURFACE YOUR DRIVEWAY** without bringing in new material.

• **MINING GRADE CARBIDE-TIPPED TEETH** shave down bumps, washboard and other high spots.

• **REAR LEVELING BLADE** with patented geometry, fills in potholes, ruts, and washouts with loosened material.

• **POWERED ACTUATOR** raises and lowers the scarifying teeth to suit the conditions at hand.



*Finally an easy way
to do it yourself.*

DRpowergrader.com

83105X © 2014

STUMP REMOVAL FAST & EASY!

**ELIMINATE Landscape
Eyesores with a
DR® STUMP GRINDER.**

- **EXPAND** lawn areas.
- **OPEN UP** fields and meadows.
- **BLAZE** new trails.
- **REMOVE** mowing hazards.

The **DR® STUMP GRINDER** uses carbide-tipped cutting teeth that take over 360 "bites" per second, pulverizing stumps into a pile of woodchips. Quickly and easily, you can grind any size tree stump below ground level. Gone forever!



DRstumpgrinder.com

83106X © 2014

**Try a DR® at Home
for 6 Months!**

**FREE
SHIPPING!**
FOR A LIMITED TIME.

Call for a FREE DVD and Catalog!

Includes product specifications and factory-direct offers.

TOLL
FREE

888-200-3210



work+shop

FREE INFORMATION

Circle the numbers for each advertiser or category on the attached card, stamp and mail or visit

FamilyHandyman.com/FreeInfo

AUTO

100

1.  **BlueDevil PRODUCTS**
STOP LEAKS PERMANENTLY. MAXIMIZE PERFORMANCE.
BlueDevil Products engineers proven automobile chemicals that are GUARANTEED to satisfy or your money back. www.gobluedevil.com
1.888.863.0426
2.  **geico.com**
You could save 15% or more. Get a FREE rate quote today.
1-800-947-AUTO Geico.com
3.  **PROGRESSIVE**
With over 40 years of experience, you can trust Progressive for all your commercial vehicle insurance needs.
1-888-806-9598 progressivecommercial.com
4.  **ROCKAUTO.COM**
Buy everything from one lug nut to a new fender at reliably low prices. Get your auto parts at **RockAuto.com**

BUILDING & CONSTRUCTION

101

5.  **DRYLOK**
by UGL
Waterproofing Masonry Made Easy. See how easy it is to protect basement walls and other masonry surfaces from the damaging effects of water penetration Fast Plug and DRYLOK Etch. United Gilsonite Laboratories. 1.800.272.3235
ugl.com
6.  **Genovations**
Deck Flooring & Railing
Genovations® Deck Flooring & Railing is manufactured to last a lifetime. Genovations® is easy to install, easy to maintain, and easy to enjoy. Lifetime Warranty provided. Contact us for samples or more information.
1-800-521-7488 GenovationsDeck.com
7.  **LUMBER LIQUIDATORS**
 **BellaWOOD**
REFINISHED HARDWOOD FLOORS
Certified 50 Year Warranty
Lumber Liquidators sells brand-name, hardwood flooring, including Bellawood Pre-Finished Hardwood. No one beats Lumber Liquidators for price or quality. Call today for a free catalog.
1-800-HARDWOOD
8.  **proWood**
PROFESSIONAL GRADE™
ProWood® professional grade treated lumber offers a wide selection including color-infused ProWood Dura Color®.
ProWoodLumber.com



9.

SafeRacks is the premier provider of overhead garage storage. Can hold up to 600lbs. Finally, Take Back Your Garage!
SafeRacks.com

HEATING & COOLING

103

10.  **Radiantec**
Radiantec Company is the leader in providing highly efficient radiant and solar heating systems. **Radiantec.com**

KITCHEN & BATH

104

11.  **American Standard**
Buy a Champion, Be a Champion! Every Champion toilet sold will help improve sanitation in a developing country.
flushforgood.com (800) 442-1902
12.  **Johnson**
HARDWARE
Engineered Excellence
For Pocket Door Hardware, visit www.johnsonhardware.com, call 800-387-5664, or follow on Twitter @JohnsonHrdware.
13.  **MARK E**
INDUSTRIES
Goof Proof Showers: Shower installations made easier with our own unique products.
1-866-771-9470 Markeindustries.com
14.  **MOEN**
Moen is dedicated to designing and delivering beautiful products that last a lifetime. By blending innovation and style, our collections can help you create the bathroom or kitchen of your dreams.
1-800-BUY-MOEN moen.com
15.  **MORTON**
EXPERTS IN THE SCIENCE OF SALT
Morton water softening products save you time and money while providing quality water for the home.
mortonsalt.com
16.  **NEOPERL**
flow, stop and go™
NEOPERL, Inc. designs and manufactures water-saving products that enhance the stream quality and control the flow rate of faucets and shower products. **Neoperl.com**
17.  **waterpik**
powered by **OptiFlow**
Be prepared. Even at low water pressure, Waterpik® showerheads with OptiFLOW® can improve water force up to 30%. waterpik.com/shower-head

OUTDOOR/LAWN & GARDEN

105



18.

FAIRWAY® Vinyl • Composite • Aluminum Porch Deck and Balcony Guard Railing. For more information visit FairwayBP.com or speak to a railing expert at 1-800-598-5245



19.

Hardest working. Smoothest riding. The most powerful, fully featured vehicles for work, hunt and trail. Get the proof at Polaris.com



20.

The 21st Century gutter. Patented maintenance-free. Millions in use. Converts runoff to tiny drops and disperses them gently away from your home. No clogging, no cleaning, no ground erosion. Invisible. Rugged aluminum, 25-year warranty. Satisfaction guaranteed. 1-800-942-3004 Rainhandler.com



21.

Want a great lawn? Start with a better grass - Amazoy Zoysia Grass! 1-410-756-2311 Zoysiafarms.com

PAINT & STAIN

106



22.

FrogTape® is the only painter's tape treated with PaintBlock® Technology. PaintBlock® forms a micro-barrier that seals the edges of the tape, preventing paint bleed. FrogTape.com



23.

KILZ Premium is a high-quality, water-based stain blocking primer that dries quickly and delivers professional results on interior and exterior surfaces. Kilz.com

TOOLS

107



24.

Save money. Save time. Sharpen those dull and broken drill bits with The Drill Doctor—The Drill Bit Sharpener. Backed by a three year warranty. 1-800-597-6170 Drilldoctor.com



25.

Franklin Sensors ProSensor 710 Professional Stud Finder. FranklinSensors.com

HARBOR FREIGHT TOOLS

QUALITY TOOLS AT THE LOWEST PRICES
100% Satisfaction Guarantee • Lifetime Warranty on All Hand Tools

26.

Factory Direct To You! 330 stores nationwide with over 7,000 products in-stock. Your one-stop shop for woodworking tools, shop equipment, hand and power tools, storage and much more! Nobody beats our quality, service and price!

1-800-657-8001 Harborfreight.com



27.

Super Strength cleaner & degreaser; proven to work better on tough grease & grime, for all of your projects inside & out. MeanGreenDegreaser.com
866-447-3369



28.

Innovative manufacturer of high performance hand protection with superior fit, feel and function above and beyond conventional glove makers so you can work faster, work safer and work cleaner. 1-800-222-4296 Mechanix.com



29.

Do it the HYDE® Way, not the Hard Way. Visit our digital catalog at Hydetools.com/catalog to see our full line of surface preparation and finishing hand tools!

MISCELLANEOUS

108



30.

Watch the IKEA® Home Tour Squad as they hit the road helping American with simple design solutions. www.IKEA-USA.com/hometour

Energizer

31. that's positivenergy

When you want the world's longest-lasting AA battery in high-tech devices, look to Energizer® Ultimate Lithium. It lasts up to 9x longer*, which means up to 9x less waste**. With superior performance like that, it's all the power you need. that'spositivenergy.com
energizer.com/ultimate

*In digital cameras vs. Energizer® MAX®. Results vary by camera. **Use less batteries, create less waste. © 2013 Energizer

32. Intuit. Payroll

Intuit® Payroll lets small businesses pay employees & file tax forms in minutes. Get 30 days FREE at IntuitPayroll.com.

33. ROCKLER

Rockler Woodworking and Hardware is the nation's premier supplier of specialty hardware, tools, lumber and other high quality DIY and woodworking products. Rockler.com

34. SAKRETE® SAKRETE® U.S. Cold Patch is an easy-to-use, environmentally friendly pothole repair product for long-lasting repairs. sakrete.com 866-725-7383

35. TUB O' TOWELS

Tub O'Towels® – the "World's Toughest Wipes" – include nine powerful ingredients, durable fiber-weave technology and twice the surface of comparable wipes. www.tubotowels.com

ENTER FOR A CHANCE TO WIN A

\$100

AMERICAN EXPRESS GIFT CARD

WHEN YOU REQUEST ANY OF THIS
FREE INFORMATION ONLINE OR WITH
THE CARD ATTACHED

No purchase necessary to enter or win. Sweepstakes begins January 10, 2014 and closes January 22, 2015.
Open to residents of the U.S., its territories and possessions, age 21 and over. Void where prohibited.
For entry and other details including official rules visit FamilyHandyman.com/FreeInfo.

ATHENA PHEROMONE 10xtm



Created by Dr. Winnifred Cutler,
co-discoverer of human pheromones in 1986

INCREASES AFFECTION



Unscented Formulas for Men and Women.

Vial of 1/6 oz. added to 2-4 oz.
of your favorite fragrance, worn
daily lasts 4 to 6 months.

Will work for most, but not all. 10:13 for
women \$98.50, 10X for men \$99.50.

♥ Joseph (MI) "You hear all kinds of things about
pheromones and don't know what to believe. But
you guys were very well respected, you did the
double blind studies. You did the research! I was
shocked at how well 10X works. You have a fabu-
lous product. I am married and
am with my wife only. Well within
5 days it was amazing. The affec-
tion level went up 20 fold. I am so
grateful to you. Thanks for your
research!"



Not in stores  610-827-2200

Athena Institute, 1211 Braefield Rd., Chester Spgs, PA 19425

or view the science and order online at

Athenainstitute.com

FHD

INCINOLET[®]

electric incinerating toilets

PROBLEM SOLVED!

Need a toilet conveniently located?
Home, cabin, shop, boat or dock –
INCINOLET is your best solution!

SIMPLE to
install, maintain.
Only electricity
needed: 120
or 240 volts



ULTRA CLEAN:
waste reduced
to sterile ash,
as little as a
cupful weekly.
Dump in garbage.

TOP QUALITY: stainless steel,
platinum odor control, quality
construction for a lifetime of satisfaction.

www.incinolet.com

**Call 1-800-527-5551 for info,
prices and personal attention.**

RESEARCH PRODUCTS/Blankenship
2639 Andjon • Dallas, Texas 75220



SHELVES THAT SLIDE

- Custom Made for Your Cabinets
- Kitchens • Pantry • Bathrooms
- Limited Lifetime Warranty
- Baltic Birch Construction
- 100 Pound Capacity

1-800-598-7390
www.shelvesthatslide.com
Order On-Line  

**Custom pull out shelves
and Kitchen cabinet accessories**



Call or email for a free catalog

WeatherTech[®]

Automotive Accessories



CARGO TECH[™]

CARGO CONTAINMENT SYSTEM

CargoTech[™] is the newest innovative product
released by WeatherTech[®]. This clever accessory
couples a durable plastic fence with a super-grippy
underside that stays stable on cargo liners,
carpeting and flooring.

It is designed to help secure cargo from sliding
throughout the cargo area including coolers,
groceries, gym bags, sporting equipment
and more.

Sold as a set of 4.

Accessories Available for

Acura • Audi • BMW • Buick • Cadillac • Chevrolet • Chrysler • Dodge • Ferrari • Ford • GMC • Honda • Hummer • Hyundai • Infiniti
Isuzu • Jeep • Kia • Land Rover • Lexus • Lincoln • Maserati • Mazda • Mercedes-Benz • Mercury • Mini • Mitsubishi • Nissan
Oldsmobile • Plymouth • Pontiac • Porsche • Saab • Saturn • Scion • Subaru • Suzuki • Toyota • Volkswagen • Volvo • and more!

Order Now: **800-441-6287**



American Customers
WeatherTech.com



Canadian Customers
WeatherTech.ca



European Customers
WeatherTechEurope.com

BEST BARN'S Large Selection of DIY Building Kits
Now You Can Afford the Best



● Buy Direct ● Free Shipping



online catalog available at
www.mysshedkit.com
email: info@barnkits.com

Build Memories!
with **DETAILED** Backyard Playground Equipment
Play Systems

FREE CATALOG!

Just Add Lumber!



FREE SMILES!

Do it Yourself and Save!
The Build @ Home™
Playground Equipment Store
ON THE WEB
www.detailedplay.com
1-800-398-7565

TAKING YOUR GOLF GAME



TO THE NEXT LEVEL
We manufacturer Do-It-Yourself synthetic golf green kits that have the realistic look, feel, and true ball roll as a real golf green.
IT'S NOT JUST A SYNTHETIC GOLF GREEN
IT'S A PUTTING & CHIPPING PRACTICE FACILITY

GOLF SMARTER NOT HARDER

FREE DVD
1-800-334-9005
www.allprogreens.com



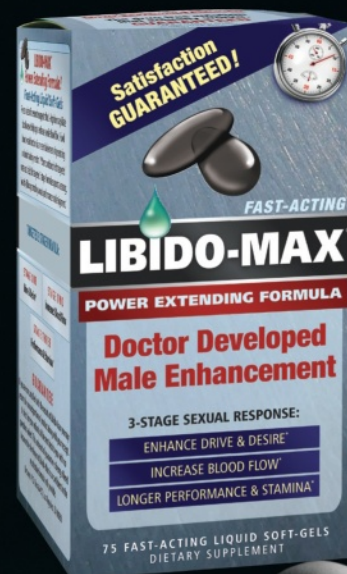
5-Minute Fence Stain



- Stain 100 ft of fence in just 5 minutes!
- Sprayer attaches directly to garden hose.
- No masking, simply hose off over-spray.
- One quart covers 600 square ft.
- Select from three natural wood tones; Natural Cedar, Dark Cedar or Redwood.

FiveMinuteFence.com

**WORKS FOR YOU...
OR YOUR MONEY BACK!**



Available for purchase with coupon in fine stores everywhere or online at:

www.appliednutrition.com
Enter Coupon Code: 011464

K Walgreens **RITE AID** **TARGET**
Kmart. SUPER CENTERS With us, it's personal. CVS/pharmacy

LIBIDO-MAX for MEN
75 Count ONLY
SAVE \$3
EXPIRES 07/31/14 MANUFACTURERS COUPON

Consumer: Redeemable at retail locations only. Not valid for online or mail-order purchases. Retailer: Irwin Naturals will reimburse you for the face value plus 8 (cents) handling provided it is redeemed by a consumer at the time of purchase on the brand specified. Coupons not properly redeemed will be void and held. Reproduction by any party by any means is expressly prohibited. Any other use constitutes fraud. Irwin Naturals reserves the right to deny reimbursement (due to misredemption activity) and/or request proof of purchase for coupons submitted. Mail to: CMS Dept. 10363, Irwin Naturals, 1 Fawcett Drive, Del Rio, TX 78840. Cash value: .001 (cents). Void where taxed or restricted. ONE COUPON PER PURCHASE. Not valid for mail order/websites. Retail only.



These statements have not been evaluated by the Food & Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.



15
Snow
Guard
Models

SNOBLOX.com Snow Guards For Metal Roofs



Metal
Roof
Accessory
Attachment

ROOFCLAMP.com Attach Roof Accessories



COLOR
Matched
Aluminum
Snow Rail

SNOBARCOLORBAR.com Year Round Solution



EASY
Gutter
Leaf
Protection

LEAFBLOX.com Keep Leaves Out Of Gutters



STOP
Chimney &
Vent Pipe
Damage

VENTSAVER.com Chimney & Vent Protection



Toll Free: 800-766-5291
Phone: 717-737-4398

www.SNOJAX.com

Stop Dangerous Snow Slides On Metal Roofs

SnoBlox-Snojax 671 Willow Street Lemoyne, PA 17043

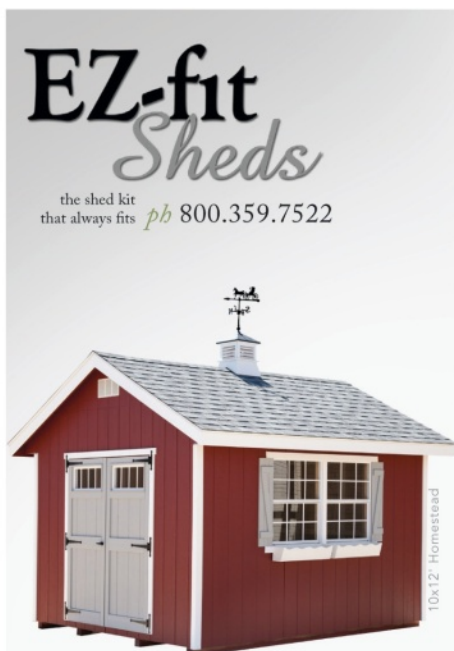


DIY & SAVE UP TO 50%
Garages
Workshops
Commercial
Industrial

MADE IN THE USA

25-YEAR
STEEL MILL BACKED
WARRANTY

800-891-6733
www.steelspan.com ext 032



EZ-fit
Sheds

the shed kit
that always fits *ph* 800.359.7522

10x12' Homestead



10x14' Riverside

Looking for a weekend challenge and avoiding the expense of an assembled shed? Choose an EZ-Fit Shed Kit and do your own assembly. Featuring panelized walls, pre-assembled doors and top quality building materials, assembly is a breeze. See it all online at

ezfitsheds.com

Classifieds

Help Wanted

\$400 WEEKLY ASSEMBLING

Electronic Circuit Boards / Products.

SASE: Home Assembly - FH,

Box 450

New Britain, CT 06050-0450



10x12 Heritage

MADE IN USA



NEW!!

Dog Kennel



Classic Playhouse



4x6 Chicken Coop

For more information or to advertise,
please contact Eric Genova,
212-779-7172 x232

UNCLOG DRAINS

with your
Pressure Washer

100 Ft.
Sewer Jetter
ONLY
\$129

\$10 OFF
GIFT CODE: FH39
LIMITED TIME

ClogHog.com
877.992.5644



Need more space?
Build your own
murphy bed.



Piston-lift
mechanism kit
includes
step-by-step
construction plans
and instructional
DVD

Create-A-Bed®

Toll Free **1-877-966-3852**
www.wallbed.com

Tell her she's a
SUPER MOM

Send your mom
or wife a
PajamaGram

Mother's Day
is May 11th

Overnight
Delivery
Guaranteed!

FREE with
every order:

- Fabric gift bag
- Personalized gift card

Shown: Super Mom Pajamas



PajamaGram.com • 1-800-GIVE-PJS



First-Class Premium Cigar Sampler

If you like handmade cigars, you're gonna love Cigars International! To prove it, I've compiled a sampler with 8 of the finest cigars in the world for one super-low introductory price: instead of the normal retail of \$50⁹⁹, my offer to you is just \$10.* *Limited time offer.*

*At Cigars International, we only sell our products to adults who meet the legal age requirement to purchase tobacco products. If you are not of the legal age to purchase tobacco products, please do not enter our site. For more information on how we age verify, please see www.cigarsinternational.com/ageverify.

Includes 1 each of: 5 Vegas • Felipe Gregorio Torano Noventa • Nestor Miranda • J. Fuego Cuba Libre • Alec Bradley • Rocky Patel (From time to time substitutions may occur due to inventory)

8 TOP CIGARS ONLY \$10*



ONLY \$10*

Send me: ☐ 8 Top Cigars *10" + 1/4" S/H
☐ 8 Top Cigars & Herf-a-Dor *15" + 1/4" S/H

Item# SP-CA49
Item# SP-CA49-T

Payment: ☐ Check ☐ Master Card
☐ Amex ☐ Discover ☐ Visa
Card # _____
Exp Date _____

* Code SA454

* Pennsylvania residents add 6% tax — remittance of any taxes on orders shipped outside of PA is the responsibility of the purchaser. Offer expires 6-15-14.

CIGARS INTERNATIONAL
1911 Spillman Drive, Bethlehem, PA 18015



ADD A RUGGED HERF-A-DOR only \$5

Perfect for:

- Golf — fits in or attaches to your golf bag
- Fishing — airtight and it floats
- Hunting — lightweight and durable



1-888-244-2790
mention code SA454
www.CigarsIntl.com/SA454
You must enter complete web address for special offer

Name _____
Address _____
City/State/Zip _____
Daytime Phone () _____
Email _____
Signature _____ Birth Date _____

Save
up to

50% or more on
heating costs*

envi[™]
wall-mounted room heater

economical. safe. simple.

- energy saving** heats room for as little as 4 cents per hour*
- ultra-safe** leave unattended 24/7; cool to the touch
- healthy** fanless - doesn't blow dust & allergens or dry the air
- effective** 100% Pure Stack Convection; gentle whole room warmth!
- silent** fanless design, auto dimming power light
- easy install** installs in minutes, no drill; hardwired & plug-in models
- stylish** slim space saving design, 19" wide x 2" thin!



eheat.com 1-800-807-0107

(*visit website for details) | 10% OFF Coupon: FHM514 | 2 or more 15% OFF Coupon: FHM51415 | Free Shipping*



"The Way of the SEAL is The Book of Five Rings for the twenty-first century. Mark Divine is a true master."

—DON MANN, FORMER U.S. NAVY SEAL AND AUTHOR OF
NEW YORK TIMES BESTSELLER *INSIDE SEAL TEAM SIX*

"There's a lot [Navy SEALs] can teach us about setting and meeting goals—even if we're more likely to fight rush-hour traffic or navigate squabbles than enemy warfare."

—USA WEEKEND

"The Way of the SEAL...teaches key principles...I recommend for every entrepreneur."

—FORBES.COM

"Whether you are a Fortune 500 CEO, an entrepreneur building your own empire, a student, or an athlete, what you'll find in Commander Divine's book *The Way of the SEAL* is the complete roadmap for creating the next highest version of yourself. It's a must read!"

—JOE STUMPF, MASTER REAL ESTATE COACH
AND FOUNDER OF BY REFERRAL ONLY

ADVERTISEMENT

TOUGH MENTAL TRAINING FOR AN **UNBEATABLE MIND**

**8 POWERFUL SUCCESS
PRINCIPLES TO TRAIN
YOUR BRAIN
LIKE A NAVY SEAL
REVEALED
BY MARK DIVINE**

Retired Navy SEAL Commander
and Founder of SEALFIT, U.S.
CrossFit, Unbeatable Mind
Academy, and NavySeals.com

Visit wayoftheseal.com for more information.
Available now wherever books are sold.



**Reader's
digest**

Also featured
on Fox & Friends, USA Weekend
and KTLA-TV Morning News

Save time & money on your next DIY project!

▶ **BRAND-NEW** DIY companion shows you how

85 Handy Repair Guides for
common household problems.

100+ DIY Projects complete
with clear directions.

**150+ Time- and Money-Saving
Tips** from the pros.

**100s of Step-By-Step
Photos**—that SHOW you
how to finish the job.

Bonus Sections on storage,
painting, bathrooms and more.

288 pages filled with
full-color inspiration.

**Tackle DIY Home
Improvement
with Confidence!**



**THE FAMILY
Handyman**

8-3/8" x 11-1/8" hardcover book made to last.



Order online at familyhandyman.com/FH14SA
or call **1-800/344-2560** mention Suite FHE13VH04M

**GET
YOURS
TODAY!**



Top-coat the corner tape

A banjo applies mud only on the bottom of the tape, so once the tape is laid down, it will need to be top-coated. Scott uses a corner trowel. Corner trowels can be tricky to work with—the secret (as with much of taping) is to not lay down too much mud. This is especially true where inside corners meet the ceiling and floor. Too much mud will round out the corners, making it difficult to install trim and moldings. Start at the top of an inside corner an inch or so down from the ceiling because a lot of mud will ooze out the top side of the trowel when you first press it to the walls. Then go back for another pass and smooth out the excess left behind.

Once the tape has been covered, Scott goes back with his 6-in. knife and cleans up each side of the tape. This step takes skill and practice. An easier (but more time-consuming) method is to top-coat one side of the tape, and do the other side after the first side has dried.



FILL THE SCREW HOLES

Make two passes over every screw hole with a 6-in. taping knife. Hit all the screws that line up vertically in the field of each panel of drywall at the same time. To eliminate voids, each pass should come from a different direction. One efficient method is to lay out a thick coat in an upward motion, and then come back down, scraping off the excess as you go. Don't forget about the screws on the ceiling. Save yourself a lot of walking around by covering all the joints, corners and screw holes in one area of a room at a time. It's time to set up some fans and call it a day.

MUD MANAGEMENT

Scott's tools are caked with mud, but he works mostly on new homes where water is usually unavailable. He also burns through most of his tools in months, not years, so he focuses only on keeping the edges clean—a must for smooth mud lines. Here are some tips for managing your mud.

- Scrape and wipe out the bucket sides to remove mud before it dries and crumbles into the good mud.
- Clean lids after opening new buckets for the same reason.
- Never return unused mud to the bucket. Throw it away.
- Keep a wet rag or sponge on hand to clean tools and buckets with.
- Add a little water to the top of your mud between jobs to keep a crust from forming.



DAY 2 TOOLS



Big Green Egg

The Ultimate Cooking Experience®



Make the Neighbors Green with Envy!

No other outdoor cooker can match the quality and versatility of a Big Green Egg. Grilling, Roasting, Baking or Smoking – it truly is **The Ultimate Cooking Experience!**



LEARN MORE

BigGreenEgg.com

©COPYRIGHT BIG GREEN EGG

Big Green Egg® and The Ultimate Cooking Experience® are Registered Trademarks of Big Green Egg Inc.

DAY 3



MAKE YOUR OWN TOPPING COMPOUND

The same lightweight joint compound you used on Day 2 will also work for your final coat on Day 3, but topping compound works better. Topping compound is easier to sand and doesn't leave behind as many tiny air pockets. You could buy a bucket of topping compound or you could make your own. Scott pours in about 1/2 cup of dish soap (any brand will do) into a 4-1/2 gallon pail of lightweight joint compound. He's found that this concoction works every bit as well and is cheaper and a lot more convenient.

DAY 3 TOOLS



Cover everything one more time

Scott applies the final coat on the inside corners the same way he did on Day 2, laying down the mud with a corner trowel and smoothing each side with a 6-in. knife. He covers all the recessed joints with a 12-in. trowel (2 in. larger than the one used on Day 2). The farther the mud is feathered out, the less noticeable the joint will be, especially on butt joints. That's why after Scott lays down a layer of mud on the butt joints with his 14-in. knife, he immediately follows with a monster 2-ft. knife—no need to add more mud on the second pass. That's it. You're done. Now set up some fans so you can move on to sanding.

For more tips & goofs, download our FREE mobile app!

DIY TIP GENIUS





GENUINE LEATHER Comfort LOAFERS

**FREE
SHIPPING!**

And Your **LAST CHANCE** at Only **29⁹⁹** per pair

Our shoe buyer got a little frisky, knowing that next month prices would go up. So he bought plenty, & the rafters are bursting!

To make room, we are offering this Last Chance Low Price **plus FREE Shipping!** You still get the full Dr. Scholl's® treatment:

- Tri-Level Comfort® insoles with 3 layers of cushioning
- Soft Genuine Leather uppers & smooth manmade trim with breathable mesh details.
- Padded ankle collars
- Hand-stitched mocc toe
- Twin elastic insets
- Updated TPR outsole with excellent traction

Copper Brown

Twin Insets for Security & Ease!



Tri-Level Comfort® INSOLES

EVA contributes to energy return

Fabric aids in moisture control

Latex padding helps with shock reduction

Perfs at the forepart promote better air circulation

EVA inserts in heel and forepart for added shock absorption

Heel cup enhances foot positioning

TPR outsole for lightweight, flexible comfort

D & EEE Widths!

Black

Pewter Grey

Tan



GENUINE LEATHER LOAFERS **29^{99*}** per pair

BUY MORE & SAVE! 2 pairs for 56.97 3 pairs for 81.95

Haband #1 Bargain Place, Jessup, PA 18434-1834

☐ **Haband!** Card # _____ Exp.: ____/____/____

☐ **BLAIR CLASSIC** Mr. Mrs. Ms. _____

☐ Visa Address _____ Apt. # _____

☐ MC City & State _____ Zip _____

☐ AmEx Phone/Email _____

☐ Discover® I enclose \$_____ purchase price, and only ~~\$5.99~~ shipping & handling.

☐ Check In GA add tax. **FREE SHIPPING!** Imported

When you pay by check, you authorize us to use information from your check to clear it electronically. Funds may be withdrawn from your account as soon as the same day we receive your payment, and you will not receive your check back from your financial institution.

On-Line Quick Order

	WHAT SIZE?	WHAT WIDTH?	HOW MANY?
	76T-42J99		
D6 COPPER BROWN			
01 BLACK			
6B PEWTER GREY			
02 TAN			

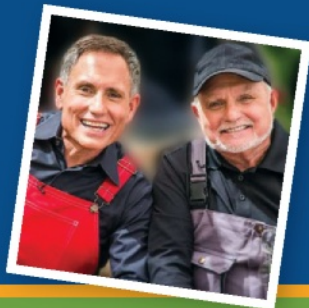
Men's D Widths:					
7	7½	8	8½	9	9½
10	10½	11	12	13	
Men's *EEE Widths (\$4 more per pair):					
8	8½	9	9½	10	10½
11	12	13			

Dr. Scholl's is a registered trademark of MSD Consumer Care, Inc. © 2014 MSD Consumer Care, Inc. All rights reserved.

For Faster Service Call: 1-800-543-4810 or visit www.Haband.com/bestdeals

On the House

With the Carey Brothers
Tips of the Month



NEW PRODUCTS FOR YOUR HOME

We recently made our annual trek to the International Builders Show (IBS) for a look at the latest and greatest in building products and technology. This year's event was especially exciting as it was paired with another major building industry event – the Kitchen and Bath Industry Show (KBIS). Over 1,700 exhibitors showcased exciting products in more than 650,000 square feet of combined convention floor space.

LESS IS MORE WITH NEW CHOICES IN HOME VENTILATION

Panasonic Ventilation released the new WhisperGreen Select™ ventilation fans. Two base fan models employ plug-and-play technology, to customize a fan to your specific needs. The fans' integral 'pick-a-flow' switch selects the airflow strength. Both models have three levels of flow, ranging from 50 cubic feet per minute (CFM) to 110 CFM on one model – the other offering 110 to 150 CFM. So, if you have teenagers that take long, hot showers or you have a bigger than average bathroom, you'll want greater CFM capacity. For a small powder room, the smallest setting should be adequate. These fans can be equipped with energy efficient LED lighting, a condensation sensor that keeps the fan running until moisture has been removed, and a motion sensor that will turn the fan (and optional night light) on and off when the space is occupied or vacant.



panasonic.com/ventilation

GREAT LOOKING GARAGE DOORS THAT LAST A LONG TIME



Garage doors can account for up to 40 percent of the curb appeal of your home. Clopay showed off its Canyon Ridge® Collection made of durable, low-maintenance faux wood composite that mimics the look of natural wood. If you live in a part of the country where temperatures are extreme, Clopay's new 2" Intellicore® insulation with a thermal break offers an R-value of 20.4. That will keep your garage more comfortable

and help manage your overall heating and cooling costs. Carriage-House style doors with decorative black wrought iron hardware are the rage. Optional windows add a decorative element and provide natural light to an otherwise dark garage. clopaydoor.com

MAKING YOUR CONCRETE BEAUTIFUL

Quikrete® showcased their hot, new line of concrete and masonry stains and sealers. The product line consists of etching, translucent and penetrating stains that can transform tired, worn concrete into a decorative finish with warm earthtones and rich colors that can highlight natural variations in concrete. Quikrete® concrete and masonry sealers are water-based products that repels water and protects against staining. They can be used on concrete, masonry, brick, pavers and stucco. Quikrete® also rolled out its new and improved 2-Part Epoxy Kit Garage Floor Coating, with everything you need to beautify your garage floor with a durable and easy-to-clean finish. Available in gray and tan. quikrete.com



Ask the Carey Brothers a home improvement or remodeling question on their live radio broadcast every Saturday from 9:00 a.m. to 1:00 p.m. Eastern Time. Call toll-free at 1-800-737-2474 to ask your question.

Visit their website at OnTheHouse.com for recaps of the show & other helpful info.

DOWNLOAD OUR APP



LIKE US ON



FOLLOW US ON



CHECK OUT OUR VIDEOS ON



THE FAMILY Handyman

#1 in DIY Home Improvement since 1951

QUESTIONS ABOUT SUBSCRIPTIONS?
Call (800) 285-4961 or e-mail us at FHMservice@rd.com

EDITORIAL

Editor in Chief	Ken Collier
Senior Editors	Travis Larson, Gary Wentz
Associate Editor	Jeff Gorton
Senior Copy Editor	Donna Bierbach
Art Directors	Vern Johnson, Marcia Roepke
Production Artist	Mary Schwender
Photographer	Tom Fenenga
Contributing Editors	Spike Carlsen, Rick Muscoplat, Mark Petersen, David Radtke Alice Garrett
Office Administrative Manager	

VP Digital Experience & Ecommerce	Jennifer Smith
Senior Manager, Digital	Joseph Ghali
Senior Web Analyst	Ashley Keefe
Project Manager	Becky Behrendt
User Experience Analyst	Cathy Zoulek
Digital Editor	Tim Davis

EDITORIAL OFFICE

The Family Handyman, 2915 Commers Drive, Suite 700
Eagan, MN 55121; 651-454-9200

ADVERTISING

VP, Group Publisher	Russell S. Ellis
New York	Greg Messina, John Dyckman, Kyle Amick, Eric Fitzig, Ray Rienecker, Michael Ring, Alexis Aliquo
Midwest, 312-540-4824	Matt Avery, Kelly Elbert, Marissa Wenk
Southwest Digital	Jennifer Bove
813-891-1411	
West Coast, 312-540-4824	Catherine Marcussen
Canada	York Media
416-598-0101, ext. 220	D. John Wagner
Classified and Small Display	Eric Genova
Ads: 212-779-7172, ext. 221	
Marketing Director	Christina Masterson
Digital Marketing Manager	Ashley Schmitt
Digital Publisher	Allie Beaty
Relationship Manager	
Associate Marketing Manager	Amanda Gottlieb
Art Director	Ed Jackson
Advertising Coordinator	Barbara Berezowski
Production Manager	Amy Tuller
VP, Circulation Marketing	Dave Fiegel
VP, Digital Sales	Steve Sottile
VP, Business Development & Marketing	Alain Begun

THE READER'S DIGEST ASSOCIATION, INC.

President and Chief Executive Officer	Robert E. Guth
VP, Chief Operating Officer	Howard Halligan
VP, Chief Sales Officer	Mark Josephson
President and Publisher, Books	Harold Clarke
VP, North American Operations	Philippe Cloutier
VP, Chief Marketing Officer	Leslie Doty
VP, North American Human Resources	Phyllis E. Gebhardt, SPHR
VP, Chief Technology Officer	Rob Hilliard
VP, Consumer Marketing Planning	Jim Woods

PUBLISHED BY HOME SERVICE PUBLICATIONS, INC.,
a subsidiary of THE READER'S DIGEST ASSOCIATION, INC.

The Family Handyman® (ISSN: 0014-7230) (USPS: 515-930). Volume 64, No. 5, 548th Edition. Published monthly (except bimonthly in July/August, December/January) by Home Service Publications, Inc., 5400 S. 60th St., Greendale, WI 53129. We may also occasionally publish extra issues and special issues (which count as two in a subscription). Periodicals postage paid at Greendale, WI, and at additional mailing offices. **POSTMASTER:** Send address changes to The Family Handyman Subscriber Service Dept., Box 6099, Harlan, IA 51593-1599; 800-285-4961. Subscriptions: In the U.S.A., its territories and possessions, \$24 for one year (10 issues). For countries outside the U.S.A., subscriptions are \$28.97 per year in American currency. Canadian GST registration number R123771891. CPM agreement number 40065693. Printed in the U.S.A. Copyright ©2014 Home Service Publications, Inc. All rights reserved. Unauthorized reproduction, in any manner, is prohibited. The Family Handyman, Handy Hints and Great Goofs are registered trademarks of RD Publications, Inc. Wordless Workshop, Workshop Tips and are trademarks of RD Publications, Inc. Subscribers: If the U.S. Postal Service alerts us that your magazine is undeliverable, we have no further obligation unless we receive a new address within one year.

Chicago Doctor Invents Affordable Hearing Aid Outperforms Many Higher Priced Hearing Aids

Reported by J. Page

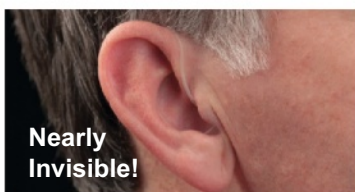
Chicago: Board-certified physician Dr. S. Cherukuri has done it once again with his newest invention of a medical grade **ALL DIGITAL affordable hearing aid**.

This new digital hearing aid is packed with all the features of \$3,000 competitors at a mere fraction of the cost. **Now, most people with hearing loss are able to enjoy crystal clear, natural sound—in a crowd, on the phone, in the wind — without suffering through “whistling” and annoying background noise.**

New Digital Hearing Aid Outperforms Expensive Competitors

This sleek, lightweight, fully programmed hearing aid is the outgrowth of the digital revolution that is changing our world. While demand for “all things digital” caused most prices to plunge (consider DVD players and computers, which originally sold for thousands of dollars and today can be purchased for less than \$100), yet the cost of a digital medical hearing aid remained out of reach.

Dr. Cherukuri knew that many of his patients would benefit but couldn't afford the expense of these new digital hearing aids. Generally they are *not* covered by Medicare and most private health insurance.



Nearly Invisible!

SAME FEATURES AS EXPENSIVE HEARING AID COMPETITORS

- ✓ Mini Behind-The-Ear hearing aid with thin tubing for a nearly invisible profile
- ✓ Advanced noise reduction to make speech clearer
- ✓ Feedback Cancellation eliminates whistling
- ✓ Wide dynamic range compression makes soft sounds audible and loud sounds comfortable
- ✓ Telecoil setting for use with compatible phones, and looped environments like churches
- ✓ 3 programs and volume dial to accommodate most common types of hearing loss even in challenging listening environments

The doctor evaluated all the high priced digital hearing aids on the market, broke **them down to their base components**, and then created **his own affordable version—called the MDHearingAid® AIR** for its **virtually invisible, lightweight appearance.**

Affordable Digital Technology

Using advanced digital technology, the MDHearingAid® AIR automatically adjusts to your listening environment—prioritizing speech and de-emphasizing background noise. Experience all of the sounds you've been missing at a price you can afford. **This doctor designed and approved hearing aid comes with a full year's supply of long-life batteries.** It delivers crisp, clear sound all day long and the soft flexible ear buds are **so comfortable you won't realize you're wearing them.**

Try It Yourself At Home With Our 45 Day Risk-Free Trial

Of course, hearing is believing and we invite you to try it for yourself with our RISK-FREE 45-day home trial. If you are not completely satisfied, simply return it within that time period for a full refund of your purchase price.

Can a hearing aid delay or prevent dementia?

A study by Johns Hopkins and National Institute on Aging researchers suggests older individuals with hearing loss are significantly more likely to develop dementia over time than those who retain their hearing. They suggest that an intervention—such as a hearing aid—could delay or prevent dementia by improving hearing!

“Satisfied Buyers Agree AIR Is Best Digital Value!”

“I am hearing things I didn't know I was missing. Really amazing. I'm wearing them all the time” —Linda Irving, Indiana

“Almost work too well. I am a teacher and hearing much better now” —Lillian Barden, California

“I have used many expensive hearing aids, some over \$5,000. The Airls have greatly improved my enjoyment of life” —Som Y., Michigan

“I would definitely recommend them to my patients with hearing loss” —Amy S., Audiologist, Munster, Indiana



MDHearingAid® >>> AIR

For the Lowest Price plus
FREE Shipping Call Today

800-873-0541

Phone Lines Open
24 Hours EVERY DAY

Use Offer Code YH55 to get
FREE Batteries for a Full Year!

www.MDHearingAid.com/YH55



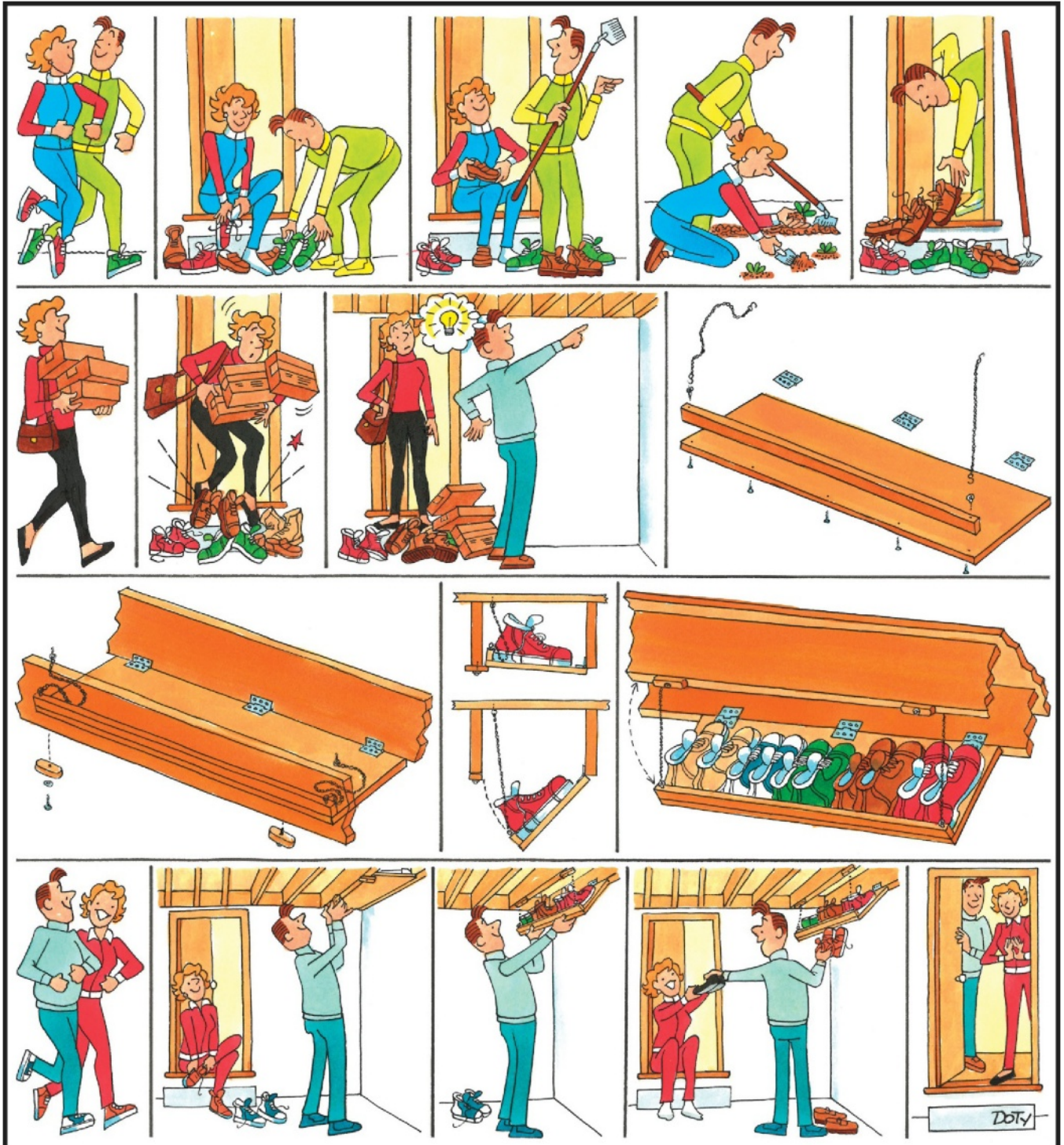
45 DAY
RISK FREE
TRIAL



Proudly assembled in the USA
from Domestic & Imported Components.



Drop-down shoe shelf



Our thanks go to Michael G. Kerby, Livonia, MI, for this idea.

GET \$100 FOR YOUR WORDLESS WORKSHOP IDEA!

See p. 6 for details.

500 Stores Nationwide

HARBOR FREIGHT

QUALITY TOOLS AT RIDICULOUSLY LOW PRICES

LIFETIME WARRANTY
ON ALL HAND TOOLS!

FACTORY DIRECT SAVINGS

How does Harbor Freight sell great quality tools at the lowest prices? We buy direct from the same factories who supply the expensive brands and pass the savings on to you. It's just that simple! Come in and see for yourself why over 25 million satisfied customers and leading automotive and consumer magazines keep talking about our great quality and unbeatable prices. Visit one of our 500 Stores Nationwide and use this 20% Off Coupon on one of over 7,000 products*, plus pick up any one of the Free Gifts, up to a \$9.99 value.

- We Will Beat Any Competitor's Price Within 1 Year Of Purchase
- No Hassle Return Policy
- 100% Satisfaction Guaranteed

NOBODY BEATS OUR QUALITY, SERVICE AND PRICE!

SUPER COUPON!

20% OFF

ANY SINGLE ITEM!

LIMIT 1 - Save 20% on any one item purchased at our stores or HarborFreight.com or by calling 800-423-2567. *Cannot be used with other discount, coupon, gift cards, Inside Track Club membership, extended service plans or on any of the following: compressors, generators, tool storage or carts, welders, floor jacks, Towable Ride-On Trencher (Item 65162), open box items, in-store event or parking lot sale items. Not valid on prior purchases after 30 days from original purchase date with original receipt. Non-transferable. Original coupon must be presented. Valid through 8/15/14. Limit one coupon per customer per day.



63407683

SUPER COUPON!

\$6.99
VALUE

Item
65020
shown



FREE

WITH ANY PURCHASE
**3-1/2" SUPER BRIGHT
NINE LED ALUMINUM
FLASHLIGHT**

ITEM 65020/69111/69052

LIMIT 1 - Cannot be used with other discount, coupon or prior purchase. Coupon good at our stores, HarborFreight.com or by calling 800-423-2567. Offer good while supplies last. Shipping & Handling charges may apply if not picked up in-store. Non-transferable. Original coupon must be presented. Valid through 8/15/14. Limit one coupon per customer per day.



73680995

SUPER COUPON!

\$9.99
VALUE

Item
90899
shown



FREE

WITH ANY PURCHASE
**CENTECH
7 FUNCTION
DIGITAL
MULTIMETER**

LIMIT 1 - Cannot be used with other discount, coupon or prior purchase. Coupon good at our stores, HarborFreight.com or by calling 800-423-2567. Offer good while supplies last. Shipping & Handling charges may apply if not picked up in-store. Non-transferable. Original coupon must be presented. Valid through 8/15/14. Limit one coupon per customer per day.



59708562

SUPER COUPON!

\$6.99
VALUE



FREE

WITH ANY PURCHASE
**PITTSBURGH
6" MAGNETIC
PARTS HOLDER**

Item 97825

LOT NO. 61428/97825

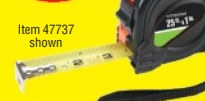
LIMIT 1 - Cannot be used with other discount, coupon or prior purchase. Coupon good at our stores, HarborFreight.com or by calling 800-423-2567. Offer good while supplies last. Shipping & Handling charges may apply if not picked up in-store. Non-transferable. Original coupon must be presented. Valid through 8/15/14. Limit one coupon per customer per day.



73283775

SUPER COUPON!

\$6.99
VALUE



FREE

WITH ANY PURCHASE
**PITTSBURGH
1" x 25 FT.
TAPE MEASURE**

LOT NO. 47737/69080/69030/69031

LIMIT 1 - Cannot be used with other discount, coupon or prior purchase. Coupon good at our stores, HarborFreight.com or by calling 800-423-2567. Offer good while supplies last. Shipping & Handling charges may apply if not picked up in-store. Non-transferable. Original coupon must be presented. Valid through 8/15/14. Limit one coupon per customer per day.



39376760

SUPER COUPON!

\$6.99
VALUE



FREE

WITH ANY PURCHASE
**THUNDERBOLT
24 PIECE AA
HEAVY DUTY
BATTERIES**

LOT NO. 68382/61323/61675

LIMIT 1 - Cannot be used with other discount, coupon or prior purchase. Coupon good at our stores, HarborFreight.com or by calling 800-423-2567. Offer good while supplies last. Shipping & Handling charges may apply if not picked up in-store. Non-transferable. Original coupon must be presented. Valid through 8/15/14. Limit one coupon per customer per day.



16208275

SUPER COUPON!

US GENERAL PRO

FIVE DRAWER TOOL CART

★WINNER★
Best Mechanic's
Tool Cart
Truckin' Magazine

LOT NO.
95272
69397
61427



SAVE
\$130

\$169.99

REG. PRICE
\$299.99

Item
95272
shown

• 704 lb. Capacity

LIMIT 3 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Offer good while supplies last. Non-transferable. Original coupon must be presented. Valid through 8/15/14. Limit one coupon per customer per day.



23586351

SUPER COUPON!

3 GALLON, 100 PSI OILLESS PANCAKE AIR COMPRESSOR

LOT NO. 95275
60637/69466/61615



Item
95275
shown

SAVE
50%

\$39.99

REG. PRICE
\$79.99

54286518

LIMIT 5 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Offer good while supplies last. Non-transferable. Original coupon must be presented. Valid through 8/15/14. Limit one coupon per customer per day.



54286518

SUPER COUPON!

90 AMP FLUX WIRE WELDER

• No Gas Required!



LOT NO.
68887/61849

WE CARRY
A FULL LINE OF
WELDING WIRE

\$99.99

REG. PRICE
\$149.99

Item
68887
shown

SAVE
\$50

27539626

LIMIT 5 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Offer good while supplies last. Non-transferable. Original coupon must be presented. Valid through 8/15/14. Limit one coupon per customer per day.

SUPER COUPON!



LOT NO.
98199
61307

10" SLIDING COMPOUND MITER SAW

Item
98199
shown

SAVE
\$120

\$79.99

REG. PRICE
\$199.99

70821584

LIMIT 4 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Offer good while supplies last. Non-transferable. Original coupon must be presented. Valid through 8/15/14. Limit one coupon per customer per day.

SUPER COUPON!

PITTSBURGH RAPID PUMP® 3 TON HEAVY DUTY STEEL FLOOR JACK



SAVE
\$90

\$69.99

REG. PRICE
\$159.99

Item
68048
shown

• Weighs 74 lbs.

LIMIT 5 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Offer good while supplies last. Non-transferable. Original coupon must be presented. Valid through 8/15/14. Limit one coupon per customer per day.



9829391

SUPER COUPON!

PACIFIC HYDROSTAR. 1500 PSI PRESSURE WASHER



SAVE
\$50

\$79.99

REG. PRICE
\$129.99

LOT NO. 68333/69488

LIMIT 3 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Offer good while supplies last. Non-transferable. Original coupon must be presented. Valid through 8/15/14. Limit one coupon per customer per day.



63570745

SUPER COUPON!

PREDATOR GENERATOR 4000 PEAK/ 3200 RUNNING WATTS 6.5 HP (212 CC) GAS GENERATORS



SAVE
\$200

\$299.99

REG. PRICE
\$499.99

Item
68528
shown

LOT NO. 68528/69676/69729

LOT NO. 69675/69728
CALIFORNIA ONLY
Item 68528 shown

LIMIT 4 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Offer good while supplies last. Non-transferable. Original coupon must be presented. Valid through 8/15/14. Limit one coupon per customer per day.



56159632

SUPER COUPON!

2-IN-1 FLOORING NAILER/STAPLER



SAVE
\$70

\$99.99

REG. PRICE
\$169.99

LOT NO. 97586

LIMIT 5 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Offer good while supplies last. Non-transferable. Original coupon must be presented. Valid through 8/15/14. Limit one coupon per customer per day.



64173837

Order at HarborFreight.com or 800-423-2567
We FedEx Most Orders in 24 Hours for \$6.99

If You Buy Tools Anywhere Else,
You're Throwing Your Money Away

Great GOOFS®

FROM OUR READERS

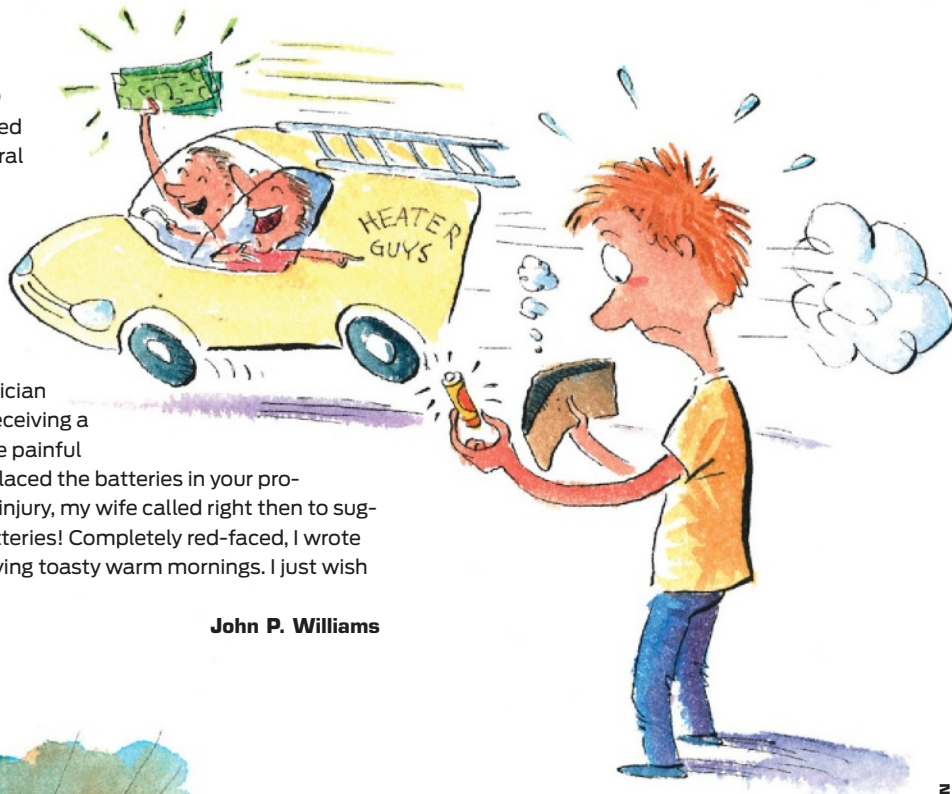
greatgoofs@thefamilyhandyman.com

Missing the signals

It was chilly in the house, so my wife decided to turn up the thermostat. We waited several hours, but it still felt like an icebox, so I announced that I would fix the problem while she ran a few errands. I jacked up the temperature, but there was still no heat.

I ventured into the attic to check our gas heater. Not seeing any obvious problem, I called for a furnace repair. The technician quickly noticed that the attic unit wasn't receiving a signal from the thermostat. Then came the painful question: "When was the last time you replaced the batteries in your programmable thermostat?" To add insult to injury, my wife called right then to suggest that I try changing the thermostat batteries! Completely red-faced, I wrote the "repair" check. On the upside, I'm enjoying toasty warm mornings. I just wish there were a quick fix for humiliation!

John P. Williams



DRILL BABY DRILL

While installing tubing for our automatic ice cube maker, I had to climb into the crawl space below the house to drill holes. I proceeded to cut through some insulation, and came to some 2x4 framing that had to be drilled through in order to feed the tubing up through the floor and into the kitchen above. I started drilling but somehow couldn't get through the wood.

After several minutes, a blister on my thumb, and a very sore shoulder from lying on my back on the gravel, I decided I had better consult my husband. He came to my rescue only to find that I had accidentally knocked the drill lever into reverse before drilling. After I swallowed my pride, the job went smoothly. Believe me, I earned that first glass of ice water!



Beth Dreher



Sprinkler surprise

Recently, I built a plant stand for my wife to display her outdoor plants. We decided to use a new waterproof paint. I set the stand outside to paint and was just finishing spraying the first coat when the nearby automatic sprinkler head came on and completely drenched the stand. Needless to say, we had to let the project dry out, sand it and start all over. This time, I'll shut off the sprinkler system until the paint has had time to dry!

Aric Turlington



Our iPad edition has twice as many Great Goofs! It's available in the App Store.

Got your own do-it-yourself mistake? **GET \$100 FOR YOUR GREAT GOOF!** See p. 6 for details.



Transform the ordinary
into the *extraordinary.*

Genovations® PVC Decking means you'll never have to worry about stains, fading, slipping, or mold. Just some of the many ways Genovations decking is distinctly different. Learn more at www.genovationsdeck.com

Genovations®
Deck Flooring
& Railing

www.genovationsdeck.com
800-521-7488

UN-WRECK YOUR DECK

WINTER TAKES A TOLL ON DECKS AND PATIOS

And bleach-based cleaners are not the answer – they damage and discolor surfaces.

This Spring, restore your moldy, weathered deck or patio to its original look with new Concrobium Mold Stain Eraser™.

Concrobium Mold Stain Eraser removes tough mold staining from any outdoor surface with no bleach or harmful chemicals. And there's no scrubbing – just spray and watch mold stains disappear!

Available at your local home improvement or hardware store.

www.concrobium.com | Connect with us:   



Watch the video

To learn more about Concrobium Mold Solutions, visit us at booth 5519 at the National Hardware Show
Concrobium Mold Solutions | Concrobium Mold Stain Eraser | Concrobium House & Deck Wash

concrobium
mold solutions

Fight Mold Like a Pro