

HANDY

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from Ryobi, p. 64



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1



Enter the Top Tool Tester Contest

You could be one of the four Top Tool Testers who'll win an expense-paid trip to the 2011 National Hardware Show in Las Vegas May 10-12. Winners get to test cutting-edge tools, offer feedback to the companies that make them and meet *HANDY* editors and Club members.

To enter, go to www.Handy10.com and fill out a brief form, explaining your experience, skills and passion for DIY. Then upload up to three photos of your best DIY projects. *HANDY* editors will select this year's Top Tool Testers during the first week of March. Good luck!

2 Become Chain-Saw Savvy
Learn how to safely operate and maintain a chain saw in our exclusive Web article.

3 Create a Workshop in Your Garage
See Club member Tom Klenck's design and adapt it to suit your space.

4 Join our 5,000-Plus Fans
Show us some love by becoming a fan on the Handyman Club of America Facebook page.

5 Take Advantage of Deals & Discounts
Find cash-saving offers available for Club members only.

6 Watch This Issue's Featured Video
See tips on selecting the right outdoor storage shed for your needs.

7 Sign up for the GREAT GIVEAWAY
Put your name in the mix to win outdoor power equipment from Ryobi.

8 Learn How to Replace Your Faucet
Check out *HANDY*'s step-by-step guide for installing a new bathroom fixture.

9 Submit Tips for Cash
Send in your best DIY advice for a chance to win \$200 and publication in *HANDY*'s TIP TRADER department.

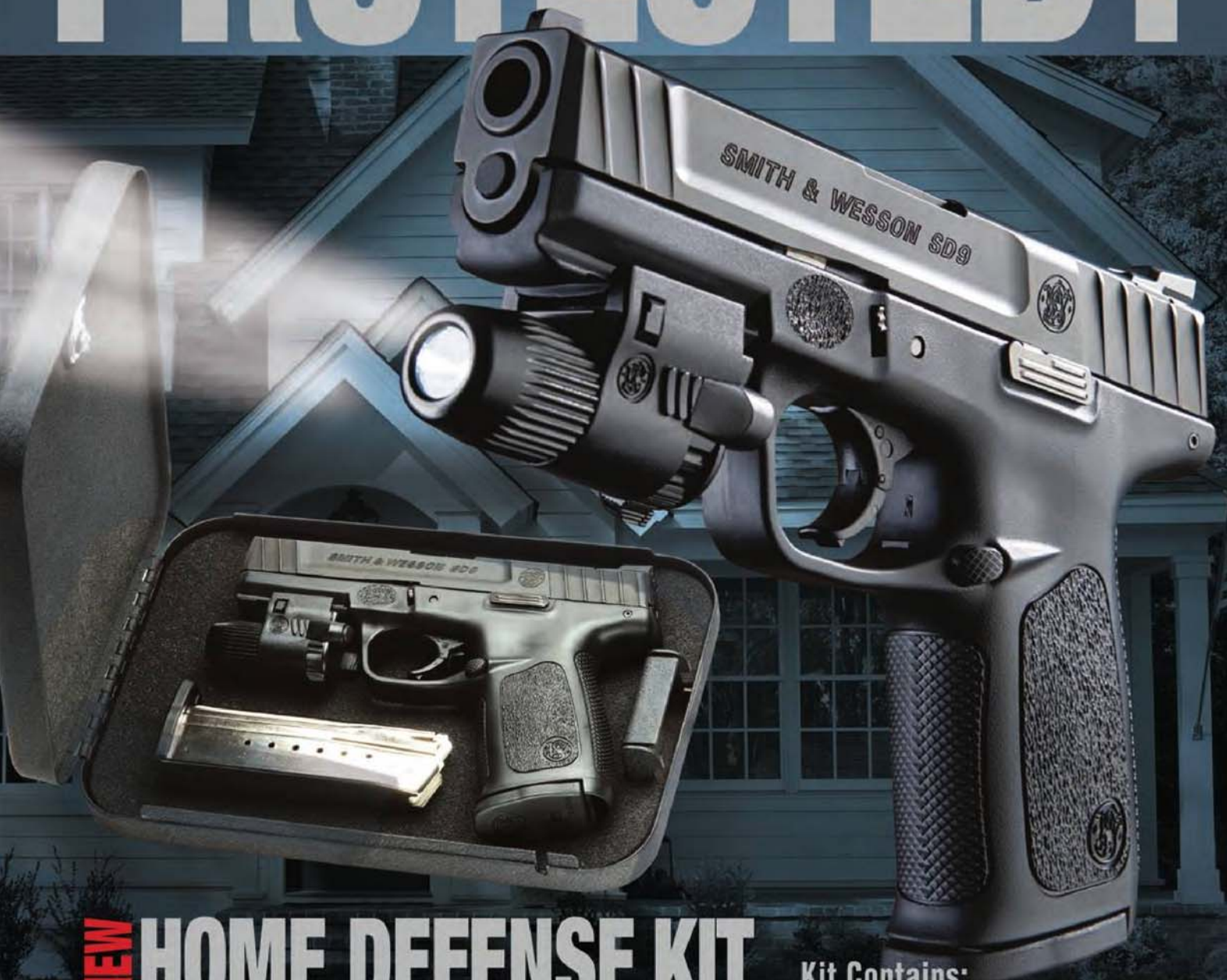
10 Retrieve Past *HANDY* Articles
Want to build a project featured in a previous issue, but can't find your copy? Check out the online archive. ♦

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by Connie Bastyr and Vern Grassel

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COVER PHOTO BY MICHAEL ANDERSON

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CLUBHOUSE

Homo Habilis, Meet Facebook

We've made the journey from stone tools to power tools to social-networking tools

The Latin term for "handy-man," *Homo habilis*, is also the name paleontologists assigned to the first known tool-using humans. In the millennia since these "cavemen" began using stone implements, humans have designed, refined and propagated myriad tools that have built and defined civilizations. These tools may have started with the pounding and cutting variety, but today tools of the cutting-edge variety, such as computers, software and



the Internet, have become just as integral to the process.

That's why our Club has added the popular Internet social-networking site Facebook to its virtual toolbox. The Handyman Club of America's Facebook page (www.facebook.com/HandymanClub) is the 21st-century equivalent of the communal cave, campfire or clubhouse. It's a place where Club members and "friends" of the Club, including companies in the DIY industry, can communicate directly with editors and each other about a wide variety of subjects at a fast, engaging pace.

Visit the page and you'll find the editors offering up how-to tidbits and various topics for discussion, but what we really want is for you to chime in with your ideas, comments and opinions — after all, this is your tool to chat directly with us and other Facebook denizens. Because the atmosphere is informal and conversational, posts don't have to be related to DIY topics — believe it or not, the *HANDY* editors like to talk about other interests, just as real-world friends do.

As I write this, the Handyman Club has more than 5,000 "likes" on our Facebook page. That's a tiny fraction of the HCOA membership, so we invite the rest of you to come and join the party — and we do give out favors. For example, Facebook is the first place we announce the winners of the tool giveaways featured in the *HANDY Toolbox* e-newsletter. (If you're not a *HANDY Toolbox* subscriber, you're missing out on a chance to win free tools. You can sign up now at www.HandymanClub.com.) We've also been selecting projects submitted on the Facebook page to appear in the magazine's *HANDYWORKS* department (see p. 54).

No matter how complex and highly evolved our civilization becomes, we will never outgrow our need for — and fascination with — tools. So even if you relate more closely with *Homo habilis* than Mark Zuckerberg, give our virtual clubhouse a try. We always have room for another "handy-man."

LARRY

Larry Okrend
Executive Director
Handyman Club of America

P.S. Although Facebook is an excellent communication tool, if you have questions about Club benefits or your membership, it is still best to e-mail the Member Services department at memberservices@HandymanClub.com.

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Senior Editor	Connie Bastyr
Senior Editor	Jenny Stanley
Online Editor	Gary Legwold
Copy Editor	Ami Johnson
Contributors	Bruce Kieffer Fernando Pagés Ruiz Mike Tavis

ART AND PRODUCTION

Executive Art Director	Mark Simpson
Art Director	Michael Anderson
Assistant Art Director	Jenny Mahoney
Production Director	Paula Reddy
Production Coordinator	Erin Nielsen

Membership Questions:
memberservices@HandymanClub.com
800-243-7679

NORTH
AMERICAN
Media
GROUP INC.

Group Publisher
Grayle Howlett
Vice President
Advertising
Steve Clow

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Bill Miller
Executive Marketing Director
Bruce Revman

ADVERTISING

Digital Sales

Art Hotz, (646) 862-3905
ahotz@namginc.com

NY and Southeast Sales Director

Tuck Sifers, (646) 862-3911
tsifers@namginc.com

Western Sales Representative

Mike Nelson, Nelson Outdoors Inc.
(503) 968-2304, m.nelsonoutdoors@frontier.com

Southern California Sales Representative

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(310) 791-9818, mascasas@aol.com

New England Sales Representative

Scott Buchmayr, Buchmayr Associates
(978) 462-6335, sbuchmayr@worldnet.att.net

Industrial Midwest Sales Representative

Amos Crowley, Buchmayr Crowley Associates
(440) 564-5255, amos@crowleymedia.us.com

Midwest Sales Representative

Sommer Dockery, (312) 346-8857
sdockery@namginc.com

AR, OK, TX, LA

Mike Austry, MJA Media
(214) 252-9971, maustry@sbcglobal.net

DETROIT

Jay Gagen, RPM Associates
(248) 230-3777, jay@rpmassoc.com

Shop@HANDY

Colleen Hobbs, (301) 482-1778
chobbs@meaghermedia.com

Direct Response Advertising

Smyth Media Group, (914) 693-8700
Stephanie Delia, stephanie@smythmedia.com
Randi Wisner, randi@smythmedia.com

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Check out this issue's **GREAT GIVEAWAY** on p. 64.

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Face Time

HANDY editors are all about using the Handyman Club of America Facebook page to connect with members. Not only does it provide an avenue for us to instantly answer your DIY questions (and to ask some, too), but it also helps us discover what home-improvement topics are important to you, so we can create content in *HANDY* that's relevant and helpful. In addition, the HCOA Facebook page is a great place for us to announce exclusive giveaways for Club members and *HANDY TOOLBOX* e-newsletter readers. During the past two months, we've handed out a Dremel Trio, a Makita 12-volt combo kit and a Porter-Cable circular saw to three lucky winners, and there are plenty more prizes to come. Want to join in the discussions and giveaways? Simply go to www.facebook.com/handymanclub and sign up. If you like what you see, let us know by clicking "like" at the top of the page. We hope to meet up with you there!



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Talk with your doctor first. Make sure your heart is healthy enough to have sex. If you have chest pain, nausea, or other discomforts during sex, seek medical help right away.

In the rare event of an erection lasting more than four hours, seek immediate medical help to avoid long-term injury.

In rare instances, men who take PDE5 inhibitors (oral erectile dysfunction medicines, including VIAGRA) reported a sudden decrease or loss of vision, or sudden decrease or loss of hearing. It is not possible to determine whether these events are related directly to these medicines or to other factors. If you experience any of these symptoms, stop taking PDE5 inhibitors, including VIAGRA, and call a doctor right away.

The most common side effects of VIAGRA are headache, facial flushing, and upset stomach. Less common are bluish or blurred vision, or being sensitive to light. These may occur for a brief time.

VIAGRA does not protect against sexually transmitted diseases including HIV.

Please see Important Facts for VIAGRA on the following page or visit viagra.com for full prescribing information.

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Never take VIAGRA if you take any medicines with nitrates. This includes nitroglycerin. Your blood pressure could drop quickly. It could fall to an unsafe or life-threatening level.

ABOUT ERECTILE DYSFUNCTION (ED)

Erectile dysfunction means a man cannot get or keep an erection. Health problems, injury, or side effects of drugs may cause ED. The cause may not be known.

ABOUT VIAGRA

VIAGRA is used to treat ED in men. When you want to have sex, VIAGRA can help you get and keep an erection when you are sexually excited. You cannot get an erection just by taking the pill. Only your doctor can prescribe VIAGRA.

VIAGRA does not cure ED.

VIAGRA does not protect you or your partner from STDs (sexually transmitted diseases) or HIV. You will need to use a condom.

VIAGRA is not a hormone or an aphrodisiac.

WHO IS VIAGRA FOR?

Who should take VIAGRA?

Men who have ED and whose heart is healthy enough for sex.

Who should NOT take VIAGRA?

- If you ever take medicines with nitrates:
 - Medicines that treat chest pain (angina), such as nitroglycerin or isosorbide mononitrate or dinitrate
- If you use some street drugs, such as “poppers” (amyl nitrate or nitrite)
- If you are allergic to anything in the VIAGRA tablet

BEFORE YOU START VIAGRA

Tell your doctor if you have or ever had:

- Heart attack, abnormal heartbeats, or stroke
- Heart problems, such as heart failure, chest pain, or aortic valve narrowing
- Low or high blood pressure
- Severe vision loss
- An eye condition called retinitis pigmentosa
- Kidney or liver problems
- Blood problems, such as sickle cell anemia or leukemia
- A deformed penis, Peyronie's disease, or an erection that lasted more than 4 hours
- Stomach ulcers or any kind of bleeding problems

Tell your doctor about all your medicines. Include over-the-counter medicines, vitamins, and herbal products. Tell your doctor if you take or use:

- Medicines called alpha-blockers to treat high blood pressure or prostate problems. Your blood pressure could suddenly get too low. You could get dizzy or faint. Your doctor may start you on a lower dose of VIAGRA.
- Medicines called protease inhibitors for HIV. Your doctor may prescribe a 25 mg dose. Your doctor may limit VIAGRA to 25 mg in a 48-hour period.
- Other methods to cause erections. These include pills, injections, implants, or pumps.
- A medicine called REVATIO. VIAGRA should not be used with REVATIO as REVATIO contains sildenafil, the same medicine found in VIAGRA.

POSSIBLE SIDE EFFECTS OF VIAGRA

Side effects are mostly mild to moderate. They usually go away after a few hours. Some of these are more likely to happen with higher doses.

The most common side effects are:

- Headache
- Feeling flushed
- Upset stomach

Less common side effects are:

- Trouble telling blue and green apart or seeing a blue tinge on things
- Eyes being more sensitive to light
- Blurred vision

Rarely, a small number of men taking VIAGRA have reported these serious events:

- Having an erection that lasts more than 4 hours. If the erection is not treated right away, long-term loss of potency could occur.
- Sudden decrease or loss of sight in one or both eyes. We do not know if these events are caused by VIAGRA and medicines like it or caused by other factors. They may be caused by conditions like high blood pressure or diabetes. If you have sudden vision changes, stop using VIAGRA and all medicines like it. Call your doctor right away.
- Sudden decrease or loss of hearing. We do not know if these events are caused by VIAGRA and medicines like it or caused by other factors. If you have sudden hearing changes, stop using VIAGRA and all medicines like it. Call your doctor right away.
- Heart attack, stroke, irregular heartbeats, and death. We do not know whether these events are caused by VIAGRA or caused by other factors. Most of these happened in men who already had heart problems.

If you have any of these problems, stop VIAGRA. Call your doctor right away.

HOW TO TAKE VIAGRA

Do:

- Take VIAGRA only the way your doctor tells you. VIAGRA comes in 25 mg, 50 mg, and 100 mg tablets. Your doctor will tell you how much to take.
- If you are over 65 or have serious liver or kidney problems, your doctor may start you at the lowest dose (25 mg).
- Take VIAGRA about 1 hour before you want to have sex. VIAGRA starts to work in about 30 minutes when you are sexually excited. VIAGRA lasts up to 4 hours.

Don't:

- Do not take VIAGRA more than once a day.
- Do not take more VIAGRA than your doctor tells you. If you think you need more VIAGRA, talk with your doctor.
- Do not start or stop any other medicines before checking with your doctor.

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**Create a great-looking
bathroom focal point**

Classic Medicine Cabinet

BY BRUCE KIEFFER

A bathroom mirror gets a lot of attention, so why not frame yours in with a classic cabinet? The one I built for our home evokes lots of compliments. I used rift-sawn white oak and finished it with natural Danish oil. I really like the color and straight grain of the rift-sawn oak, and the oil finish gives the wood a rich, warm tone.

The cabinet's highlight is the door, which features an arched top rail. The door frame is assembled using "cope-and-stick" joinery that's cut using a router table equipped with "stile and rail" router bits (see [SOURCES ONLINE](#)). One bit cuts the visible edge profile (the "stick"); the other bit cuts the reverse shape (the "cope") on the rail ends. Another distinctive element is the lack of a door handle. The door extends 1 in. below the cabinet bottom, and that's what you grab to open it.

Construction notes

Building the cabinet is straightforward, but the door is complex. Take it slow and all should work out fine.

Routing the profile on the curved edge of the arch rail (C) requires that you make a curved fence for your router table. This is nothing fancy (see photo 6, p. 16); it just helps to guide the router safely along the curved edge.

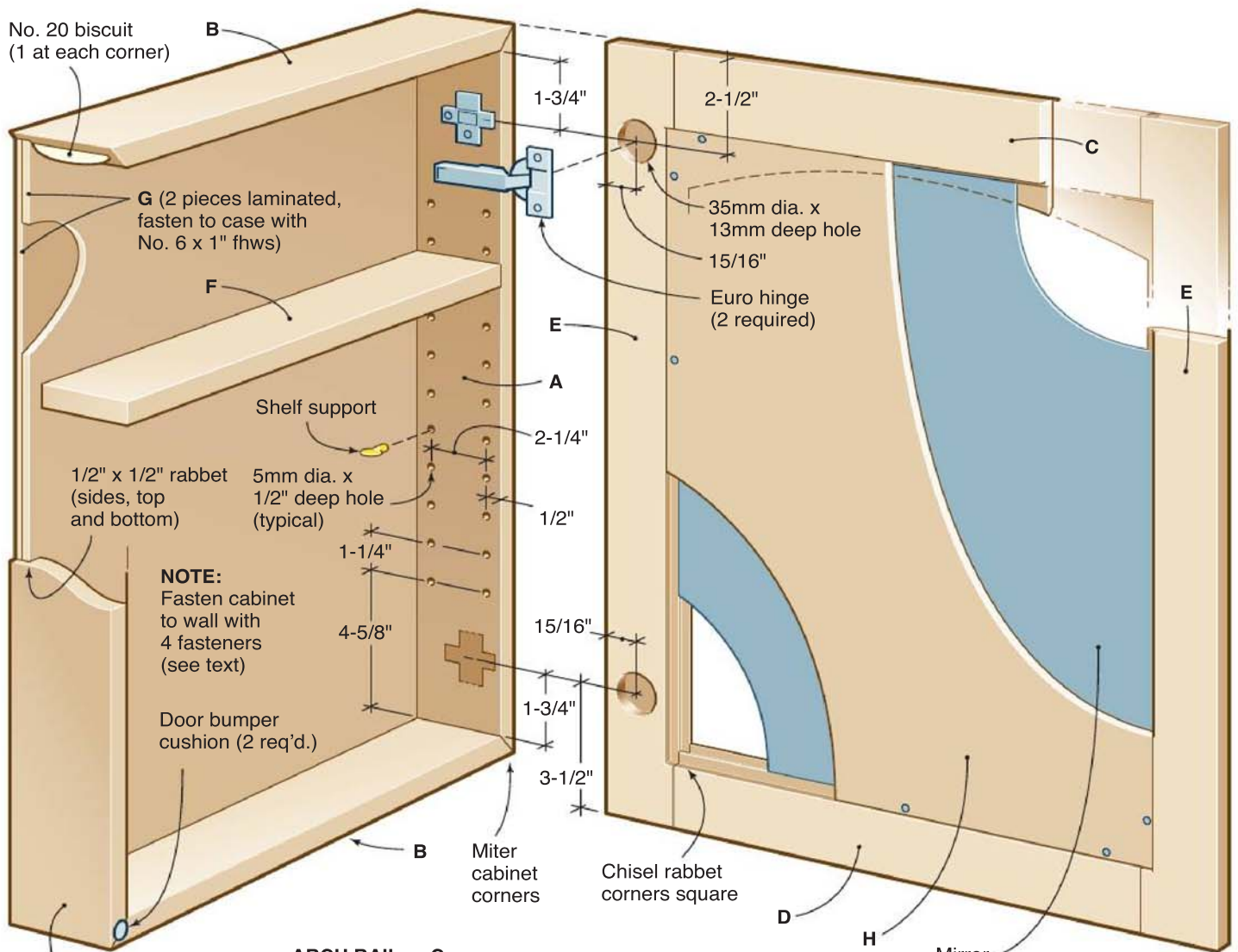
The rear of the door frame above the top-rail curve is routed square, which makes fitting the mirror and door back (H) easier. You'll cut the rabbets in two stages using a 1/2-in.-dia. straight router bit and a 5/8-in.-o.d. router-template bushing. First you'll apply pieces of medium-density fiberboard (MDF) to the rear outer edges of the door frame with double-stick tape,



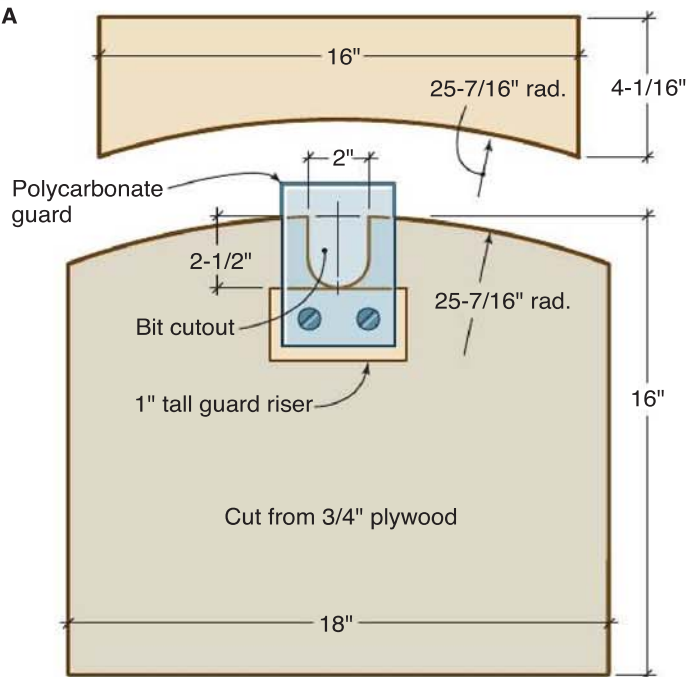
You'll appreciate the solid construction and classic craftsmanship of this medicine cabinet every time you open it.

PHOTOGRAPHY BY SCOTT JACOBSON AND DAN CARY

MEDICINE CABINET



ARCH RAIL — C



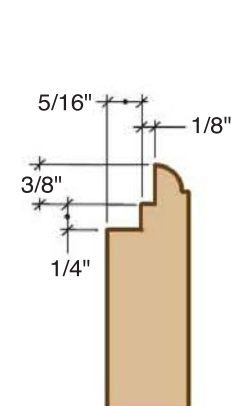
ROUTER TABLE FENCE



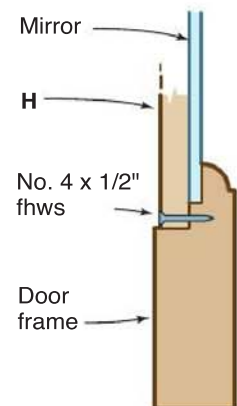
RAIL END PROFILE



STILE PROFILE



DOOR RABBETS



DOOR ASSEMBLY

ILLUSTRATION BY GABRIEL GRAPHICS



1 Cut the biscuit grooves in the ends of the cabinet sides, top and bottom. The grooves must be on the lower part of the mitered surface; otherwise you will cut through the outside face. Space the grooves about 3/16 in. from the inside edge of the miter (inset).

MATERIALS AND CUTTING LIST

3/4-IN.-THICK SOLID RIFT-SAWN WHITE OAK

KEY NO.	DESCRIPTION	SIZE
A 2	Sides	3/4 x 3-3/4 x 24 in.
B 2	Top and bottom	3/4 x 3-3/4 x 20 in.
C 1	Arch rail	3/4 x 4-1/16 x 16 in.*
D 1	Rail	3/4 x 2-5/8 x 16 in.*
E 2	Stiles	3/4 x 2-3/8 x 25 in.
F 2	Shelves	3/4 x 3-1/16 x 18-7/16 in.**

1/4-IN.-THICK RIFT-SAWN WHITE OAK VENEER PLYWOOD WITH MDF CORE

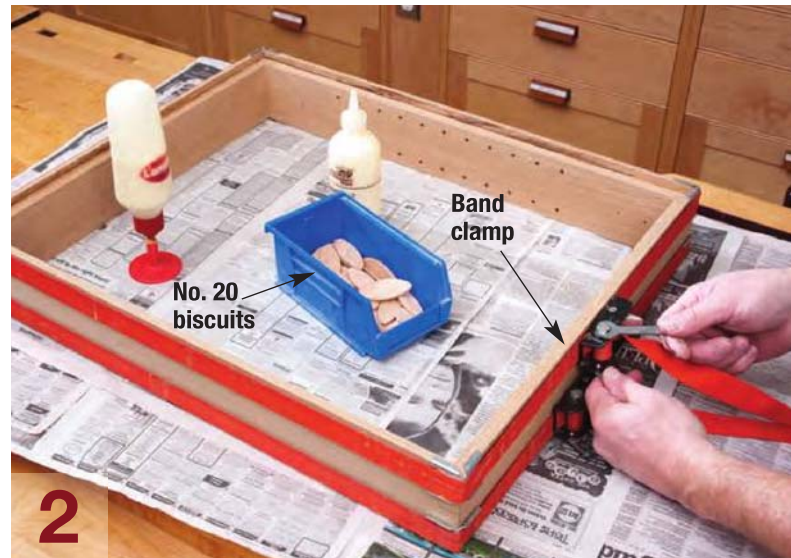
G 2	Back pieces	1/4 x 19-1/2 x 23-1/2 in.
H 1	Door back	1/4 x 16-1/2 x 21 in.

*Make 1/2 in. wider to start; rout ends and then cut to finished width.

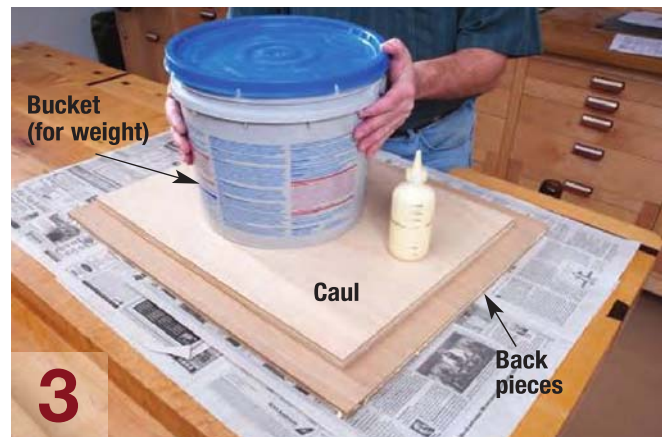
**Cut finished width equal to cabinet depth.

SHOPPING LIST

1/4-in.-thick x 2x8-ft. rift-sawn white oak veneer A1-grade plywood with MDF core (1)
 4/4 white oak (10 board ft.)
 No. 6 x 1-in. flathead wood screws (14)
 No. 4 x 1/2-in. flathead wood screws (14)
 No. 20 biscuits (4)
 1/8 x 16 x 20-1/2-in. mirror with vinyl safety backer (1)
 110-degree concealed hinges (1 pair; see SOURCES ONLINE)
 Door bumper cushions (2)
 5mm brass spoon shelf supports (8)
 Watco Danish Oil, natural (1 pint)
 Wall fasteners



2 Insert biscuits and apply glue to the mitered ends of the cabinet sides, top and bottom. Use slow-set glue to give you more working time, and make sure the assembly is square. Use band clamps to pull it all together.



3 Laminate the two back pieces (G) together. No need for clamps — use a heavy object such as a bucket of drywall compound and a flat panel (also referred to as a caul) to distribute the pressure.

and then you'll tape 1/4-in.-thick strips of hardwood to the inside of the MDF pieces. The first pass of the router cuts the deeper mirror rabbet; then you'll remove the 1/4-in. strips and decrease the bit depth by a measurement that is equal to the thickness of the mirror to rout the door-back rabbet (see illustration, opposite, and photos 7 and 8, p. 20).

The door is attached with self-closing 110-degree full-overlay European-style hinges. I used a new style of hinge that has an integrated soft-close device, and it works nicely. However, installing it in this cabinet requires some deviation from the manufacturer's instructions. There is not enough overlay to cover the cabinet side if you drill the hinge-cup holes using the dimensions specified in the instructions. Instead, you must drill the center of the hinge cup 15/16 in. from the door's edge to make it cover completely.

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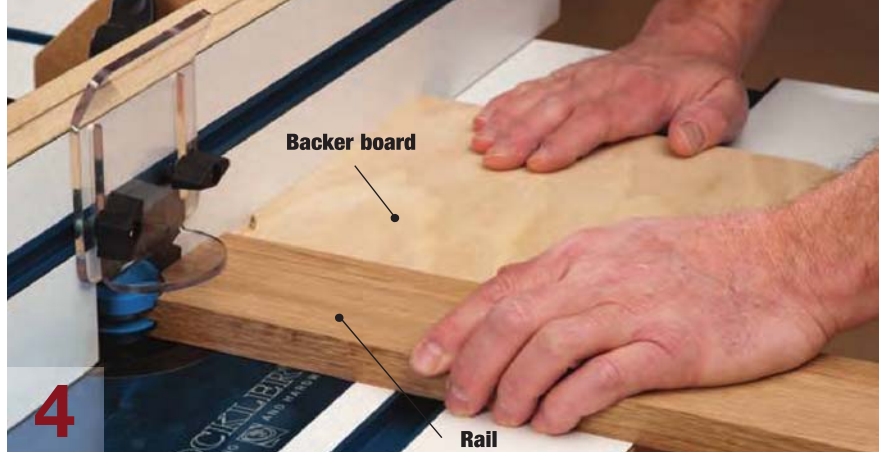
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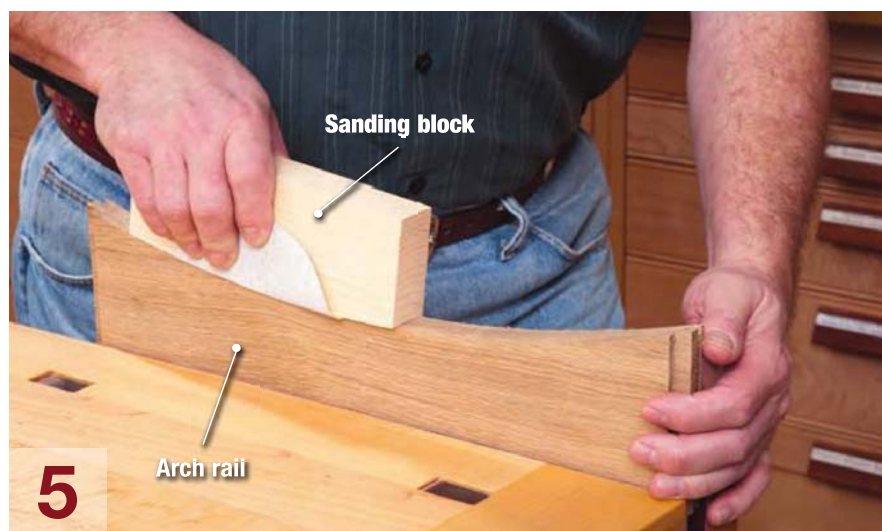


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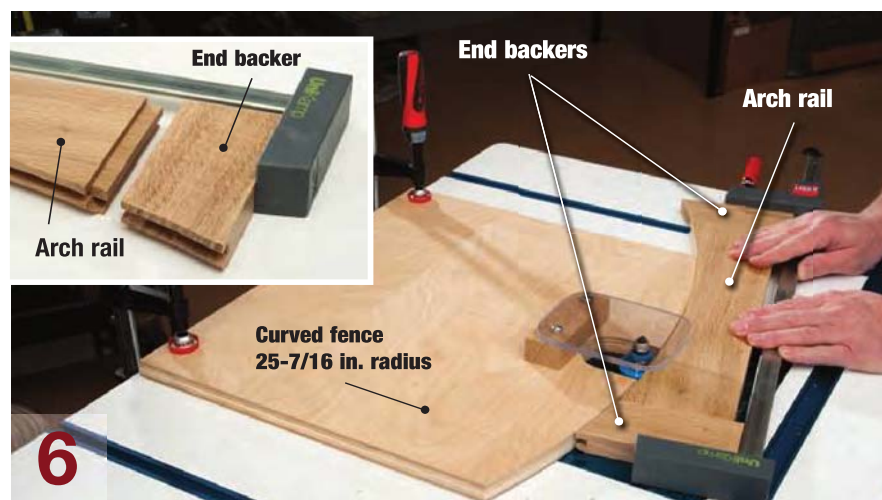
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Rout the cope profile on the ends of the rail (D) and arch rail (C). Use a square backer board to support the rail as you push it past the router bit. The backer board also reduces tear-out on the trailing rail edge.



Sand the curved cut edge of the arch rail. Use a wooden sanding block that is cut to match the same curve radius.



Rout the arch-rail edge profile using the stick-cutting router bit. Make a curved fence that matches the arc of the rail to help guide and support the rail. Cut the stick profile in a couple of backer boards first. Then clamp the backers to the rail ends (inset) to help prevent tear-out.

Build the cabinet

Start building the cabinet by cutting the sides, top and bottom (A and B) to size (see cutting list). Cut the rabbets

for the back (G). Note that the width of the rabbets is two times the thickness of your oak plywood, not necessarily 1/2 in.

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Drill the 5mm shelf-pin holes in both cabinet sides, and bore the hinge mounting-plate holes in the right side (see illustration). Next, cut the biscuit grooves in the mitered ends (photo 1). Finish sand the inside faces of the sides, top and bottom. Test assemble the cabinet (without using glue) to be sure that all of the parts fit together easily; then glue and clamp the parts together (photo 2).

Cut the back pieces (G) 1/2 in. oversize in width and length. Laminate the pieces together (photo 3); then cut the back so it fits. Using a 1/2-in.-thick back eliminates the need for the typical (ugly) internal wall-mounting "hang strips." Drill the holes for the screws that fasten the back to the cabinet; then finish sand the back and screw it to the cabinet. Finally, mount the hinge base plates and make the shelves (F).

Make the door

Cut the door rails and stiles (C, D and E) to size. Make extra pieces for testing your router setups. You'll also need an extra 12-in.-long stile piece with a stick-routed edge for making two 6-in.-long arch-rail end backers (to be used later when you rout the arch-rail edge profile). Note that the width of the rails is oversize at first. Set up the rail-end (cope-cutting) router bit in a router table. Adjust the height and depth by making cuts in scrap wood; then rout the rail ends (photo 4).

Cut the rails to their finished widths. Using plywood or MDF, make a 3/4 x 16 x 18-in. arc template with a 25-7/16-in.-radius curve on one 18-in. edge. Use a trammel point set to "strike" the arc. Trace that radius onto the arch rail, cut the shape and sand the curve smooth (photo 5). Keep the template; it will become your curved fence for the router table.

Routing the stick profile on the edges of the stiles and rails is done in two stages. The first cut is shallow and scores the corners of the groove, which minimizes tear-out. The sec-

ond cut is full depth. Set up your router table with the stick-profile router bit. Set the height to match the rail-end cope cuts. Rout the inside edges of the stiles (E), rail (D) and 12-in. backer piece, making the first cut 1/32 in. deep and then making the full-depth cut.

Remove the router table's straight fence, but don't change the height of the bit. Now make a curved router table fence (see illustration) to help guide the arched rail along the stick-profile bit. Next, cut a notch large enough for the stick-profile router bit in the center of the arc template's curved edge. Attach a riser block and a small piece of polycarbonate plastic to act as a guard over the bit.

Cut the two arch-rail end backers to length, and cut their ends to follow the curve of the arch rail. Align and clamp the backers to the ends of the arch rail. Clamp the curved fence to the router table. Make the first cut in the arch-rail edge 1/32 in. deep; then make the full-depth cut (photo 6). Glue and clamp the door frame together.

The next step is cutting the rabbets for the mirror and door back in the back of the door frame. The routing is done using two rabbit-routing guide strips. Adhere the narrow and wide guide strips to the rear of the door frame with double-stick tape. Make sure all is well-secured before you do the routing. Rout the mirror rabbet (photo 7); then remove the 1/4-in.-thick strips, raise the router bit 1/8 in. (the thickness of the mirror) and rout the door-back rabbet (photo 8).

Take the door frame to a glass shop and have a 1/8-in.-thick mirror cut to fit. Make sure the shop applies a vinyl safety backer to the rear of the mirror — that will hold the mirror together should it ever be broken.

Drill the hinge-cup holes in the door frame. Mount and test the hinges. Cut the door back (H) to fit. Drill the door-back mounting-screw holes close to the edge; you don't want those screws to crowd the mir-

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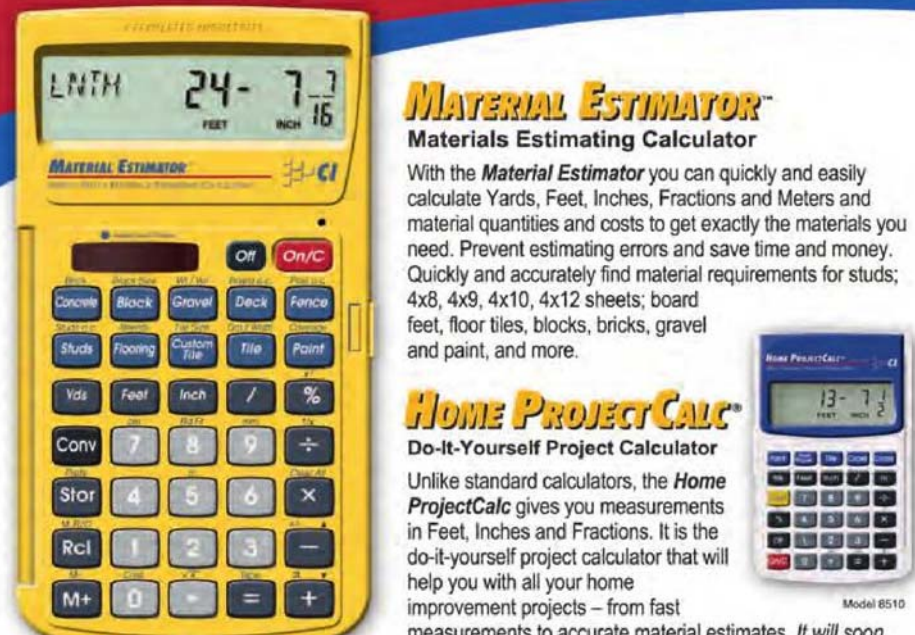
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Adhere the rabbet-routing guides to the door frame with double-stick tape, and tape 1/4-in.-thick spacer strips to the insides of the routing guides. Mount a 1/2-in.-dia. straight bit in a router with a 5/8-in. template bushing. Set the bit to cut 3/8 in. deep to route the rabbet for the mirror..



Remove the 1/4-in. spacer strips, raise the router bit up 1/8 in. and then rout the door-back rabbet. Use a chisel to square the corners of the routed rabbets (inset).

ror because it could break. Screw the door back in place.

Finishing touches

Now it's time to disassemble everything, complete the finish sanding, ease any exposed sharp edges and apply two or three coats of Danish oil. Once that's done, reassemble the cabinet and the door, but don't hang the door yet. Mount the cabinet on your wall by driving two screws into a stud and adding two toggle-style wall fasteners (or you can just use four toggle fasteners). Apply the door bumpers, hang the door, insert the shelves and adjust the hinges, and your cabinet is

ready to dazzle anyone who enters your bathroom. ♦

Handyman Club life member Bruce Kieffer is a custom furniture builder, freelance woodworking author and technical illustrator. A collection of his work can be viewed at www.kcfi.biz.

SOURCES ONLINE

For online information, go to www.HandymanClub.com and click on WEB EXTRAS.

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BY CONNIE BASTYR



For some homeowners, a kitchen remodel can cost more than other people pay for an entire house. This rings especially true as real estate prices have gone down: For example, the first-time homebuyer who owns this kitchen paid less than \$90,000 for her condo — an amount that's easy to exceed when creating a gourmet kitchen.

According to *Remodeling Magazine's* recent cost vs. value report, the 2010 national average price tag for a minor kitchen remodel was \$21,695. That's *minor*, mind you; the planners of *moderate* and *major* projects probably spend more for a sink than the \$2,000 we budgeted for our entire kitchen update (see "Lean and Clean," opposite). If you're a DIYer on a budget, your skills are of great value: You can cook up some wonderful kitchen improvements without paying for labor. Here's how to get started.

PRIORITIES AND RESOURCES

Planning costs you nothing but time and imagination, and it pays big in results. First, list the features you want to change and prioritize how important they are to you. For example, the refrigerator on this

PHOTOGRAPHY BY MICHAEL ANDERSON



LEAN AND CLEAN

How we spent (and saved) on this project

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New faucet.....	\$188
New base cabinet (unfinished).....	\$55
Cabinet to fit above microwave	\$45
Plate rack	\$40
Wood for doors and drawer fronts	\$100
Hinges, knobs and drawer slide.....	\$188
Paint for cabinets, ceiling and walls	\$150
Backsplash tile and supplies.....	\$80
Dishwasher.....	\$320
Vent/microwave.....	\$220
Lighting (ceiling and under-cabinet).....	\$180
TOTAL.....	\$1,996



CHANGES TO CABINETRY

New doors and drawer fronts are made of 3/4-in. medium-density fiberboard covered by birch veneer and are slightly larger than the originals to allow for Euro-style concealed hinges. The edge profiles were formed using a router and a 3/8-in. round-over bit and then sanded. Warm gray paint beautifully blends the new parts with the old. To dress up the cabinets, we chose hardware (photo, above left) that, like jewelry, adds character and visual interest and suits the homeowner's personality.

The custom plate rack that replaced the 18-in. cabinet above the sink is a convenient place to store dishes — and much nicer to look at while you're standing by the kitchen sink. The design of the rack allows it to be installed on any wall or adapted to fit in any space (see **WEB EXTRAS** for detailed plans). For a different look, you can create open shelving by simply removing the doors from an upper cabinet, filling the hardware holes and painting the interior surfaces.

We added a 15-in.-wide base cabinet next to the range (photo, above) to accomplish four goals: It hides the trash container (in a pullout drawer), conceals the side of the stove and provides additional countertop space. The small drawer adds convenient storage for seasonings.

project was in fine shape, but the annoying left-opening door absolutely had to be reversed. To gain the extra inch needed for flipping the door to a left-hand hinge, we simply shrunk the end reveal of the adjacent countertop — a big improvement that was free.

On your list, include a menu of items you're craving. In our case, the purple countertop and soffit wallpaper

print ("before" photo, p. 22) created a hunger for neutral colors and fresh finishes. Although new counters can take a chunk out of the budget, they offer numerous benefits — functional as well as aesthetic (see photos, opposite). At about \$12 a square foot, our custom DIY countertop was a great savings. For step-by-step instructions to build your own, go to www.HandymanClub.com

and click on **WEB EXTRAS**.

We also controlled expenses by using existing materials. Because the most costly component of a typical kitchen remodel is new cabinetry, we replaced only two upper cabinets (one with a plate rack) and added one base unit. New doors and drawer fronts made of birch-veneer panels were impressive (yet inexpensive)



ADVANTAGES OF A NEW COUNTERTOP

By forming our own laminate countertop, we were able to create a fresh, more attractive finish without the typical 1-1/4-in.-thick x 4-in.-tall rolled backsplash, gaining 200 sq. in. of surface area and visually increasing the space between the upper and lower cabinets. We also got rid of the unsightly miter seam in the corner (a tell-tale sign of an “off-the-shelf” post-formed counter).

Tip: We cut leftover pieces of the laminate material to cover the floor of the sink base and the bottoms of the drawers — a nice touch that cost nothing.

Changing the countertop also allowed us to shrink the sink to a single basin, which better fits the scale of the kitchen and allows for additional counter space. We chose a small (13-1/2-in.-tall) single-handle faucet (see SOURCES ONLINE) to avoid overwhelming the sink.

When it comes to backsplashes, tile is beautiful yet practical and requires a fairly small investment. It offers endless design potential and can make quite a statement; just remember that it's not easy to change later. To make the backsplash neutral but not boring, we installed classic white subway tile in an interesting arrangement (photo, right).



changes. Paint was the hero of this renovation, helping to unify the old and new cabinets and to update the room's overall appearance.

We also saved on flooring. The basic white tiles were OK, though the grout needed serious scrubbing — virtually no cost there. In any kitchen, the flooring can make or break the overall effect, so scruti-

nize and scrub or sand and refinish. If the floor is dated or damaged, spring for a new one if possible.

Tip: Adding a layer to the existing floor can save time and money, but be sure the extra thickness doesn't trap the dishwasher (as a former owner did in this kitchen). To solve that problem, we raised the countertop by adding 1x3 blocking to the tops of the



WEB EXTRAS

To learn how to build your own laminate countertop and get plans for our wall-mount plate rack, go to www.HandymanClub.com and click on WEB EXTRAS.



base cabinets and concealed the blocking with paint (see inset photo, above).

PLANS AND REMEDIES

Of course, every home (and homeowner) is an original, so not all of our ideas will apply to your kitchen. Each person has different priorities and resources. Perhaps you



APPLIANCES AND LIGHTING

We scrubbed our original plan to replace only the front panel of the old dishwasher when we found this affordable new model at an appliance surplus store. We also looked for a simple recirculating vent hood (typically starting at \$100) and discovered that we could install a vent/microwave combination unit for about \$220. Decisions about appliances should depend on your budget and the life expectancy of the ones you already have.

Never underestimate the power of light. Fluorescents are a good choice for an ever-lit kitchen-ceiling fixture, but the old four-tube shop-light-style model (photo, p. 22) had to go. A modern track fixture offers a brilliant update with adjustable ambient light. We also installed LED strips above the sink for task lighting and under the cabinets as accent lights (photo, left) to complete the three types of lighting recommended by the American Lighting Association: ambient, task and accent light. **Tip:** Try to choose lights of similar color temperatures within any one room.

really want a designer sink and can save money by not replacing appliances. Or maybe you'll fall in love with high-end hardware and could forgo new cabinet doors to balance the budget. In any case, our featured projects provide some practical yet pleasing solutions to common problems. Let the changes we've made inspire you to plan improvements that suit your taste, your skills, your pocketbook and your kitchen. ♦

SOURCES ONLINE

For online information, go to www.HandymanClub.com and click on WEB EXTRAS.

American Lighting Association
800-274-4484, www.AmericanLightingAssoc.com

Moen (Terrace faucet)
800-289-6636, www.moen.com

Rockler Woodworking and Hardware (hinges; item No. 38012)
800-279-4441, www.rockler.com

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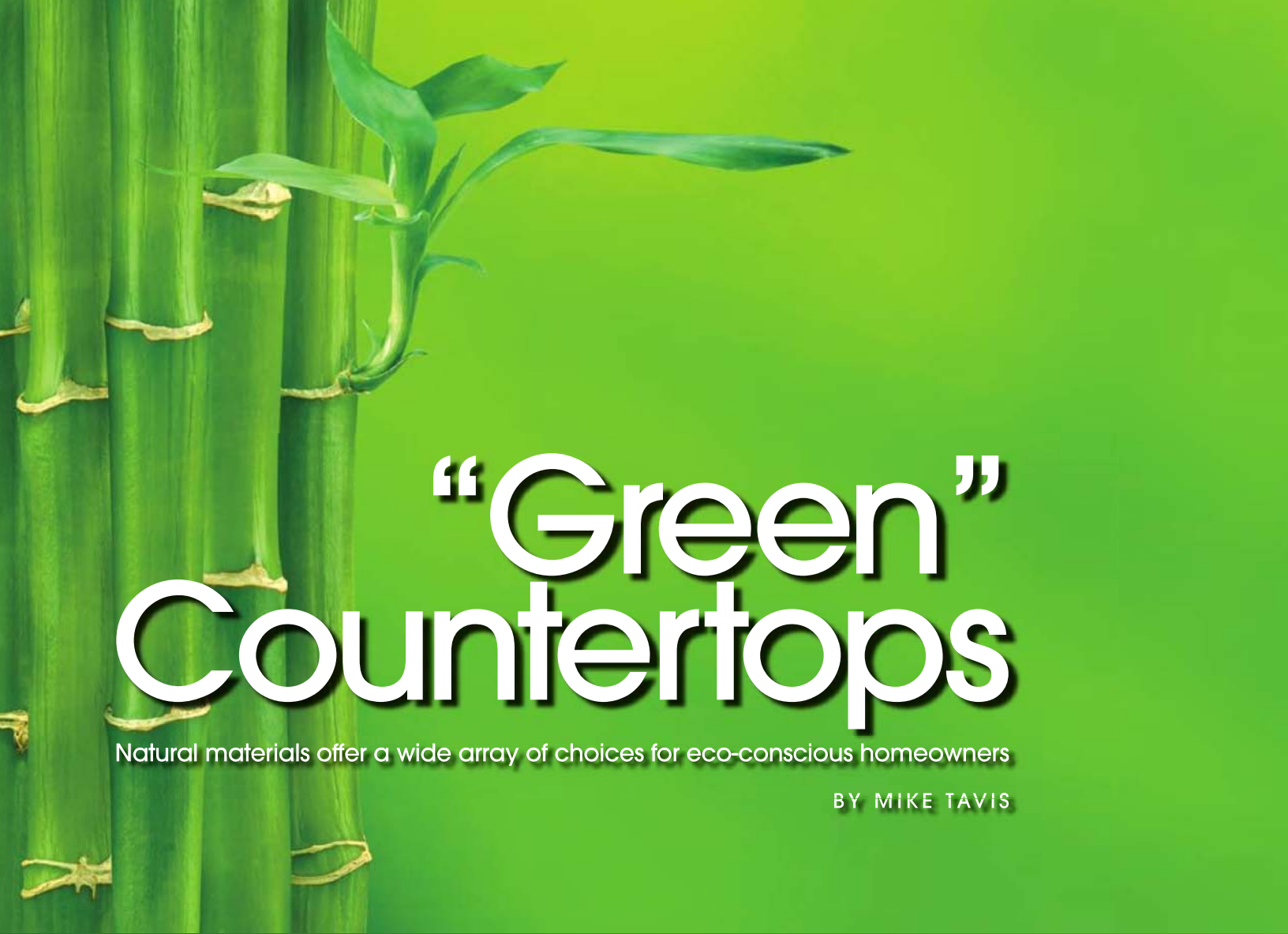
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“Green” Countertops

Natural materials offer a wide array of choices for eco-conscious homeowners

BY MIKE TAVIS

If you are planning a remodel

and are in the market for eco-friendly countertops, you may be surprised at the number and variety of choices available. These days you probably can't swing a cat without hitting an eco-friendly countertop. But since the cat might object to such research methods, we've provided an overview of many current options, including information on costs and relative advantages and disadvantages.

To earn eco-friendly status, a countertop may be made of natural, renewable materials or composites of natural and/or recycled materials. Composites should incorporate only low-VOC resins and adhesives that are not prone to off-gassing. And because transportation adds to the carbon footprint and the cost of materials, proximity of the source of materials and the factory to the end user is an important consideration.

To make sure your choice is truly eco-friendly, you may want to look for various certifications. Scientific Certification Systems (SCS) is a global leader in third-party environmental auditing and testing. Likewise, the Forest Stewardship Council (FSC) maintains a chain of custody between responsible forest-product production

and consumption, helping to ensure that products advertised as “green” are not misrepresented. And the United States Green Building Council (USGBC) provides LEED certification, awarding points or credits for the “greenness” of building materials and products.

As you start your research, you'll notice two broad categories: countertops that are made of natural or renewable materials and those that are made of recycled, post-consumer or post-industrial waste. (There is some overlap between the two.) This article focuses on materials designated natural or renewable. For a more thorough examination of the use of recycled waste materials for countertops, go to www.HandymanClub.com and click on WEB EXTRAS.

WOOD

The material of choice for many DIYers, wood has proven its reliability, sustainability and beauty for thousands of years. The butcher-block top on my portable dishwasher is proof that wood lasts:

WEB EXTRAS

For information on recycled materials for countertops, go to www.HandymanClub.com and click on WEB EXTRAS.



Bamboo, like fine-grain wood, is easy to work and can add warmth to any kitchen.

It has provided a work surface for kneading bread and rolling out piecrusts for almost 20 years.

Wood (about \$30 to \$100 a square foot for butcher block) does get cut and stained fairly easily, but occasional sanding and oiling with a food-grade mineral oil will keep it looking good as it ages. To create a less porous surface you can apply polyurethane; it will become scratched and burned easily, but you can protect it by using cutting boards and hot pads. Some people worry that wood's porosity will make it prone to bacterial contamination, but wood has natural antiseptic qualities and can be kept bacteria-free by simply wiping it with a bleach/water solution.

TILE

What's greener than something made from dirt — or at least clay? Tile is tough and long-lasting, but it can chip and crack when dinged with pots and pans, and glassware dropped on it tends to fare poorly. The grout can be difficult to keep clean, especially if the lines are wide and poorly sealed, but tile itself is easy to clean. It's available in thousands of colors, textures, shapes and sizes, and it's inexpensive (about \$10 to \$30 a square foot). It also

ranks high on the DIY scale: Anyone with appropriate skills and tools can create a professional-looking tile countertop relatively quickly.

STONE

Although granite is one of today's most desired countertop materials, it is more porous than quartzite alternatives such as Silestone, Cambria and CaesarStone (see middle photo, p. 30), which are composites of stone and resin. Granite has a more natural appearance, as it's simply cut and shaped from its raw form, whereas quartzite products come in an almost limitless variety of styles and colors. This is a case where proximity may narrow your choices; for example, CaesarStone is made exclusively in Israel, so shipping detracts from its green score. However, the product has secured all of the aforementioned eco-friendly certifications and is also kosher-certified.

Because of granite's porosity, you have to periodically seal it; quartzite doesn't need sealing. Both are fairly comparable in price (about \$50 to \$100 a square foot, and sometimes more), but they will last practically forever and are resistant to heat and scratching.



Totally Bamboo's countertops consist of layers of thin stranding held together with resin. Different grain patterns are available.



CaesarStone, a composite material made of stone and resin, is available in a countless variety of colors and textures.



Nuxite repurposes discarded walnut shells, transforming them into a unique countertop material that's similar to wood.



Granite countertops are naturally durable and feature one-of-a-kind patterns and color combinations.

BAMBOO

Reaching a harvestable height of 60 ft. in just three to five years, bamboo is one of the fastest-growing green products in the world — both literally and in terms of popularity. It is 100 percent renewable, it doesn't require replanting (it regenerates from an extensive root network), and it can be raised and harvested without the use of pesticides, fertilizers or irrigation.

As a building material, bamboo is 16 percent harder than maple and one-third lighter in weight than oak. Its coloring comes from the natural sugars within the plant, which caramelize when steamed. The longer the material is steamed, the darker the color. Because the color extends throughout the material, it won't fade or alter when sanded.

A bamboo countertop consists of many layers of thin stranding held together with resin. It can be cut, drilled, routed and finished in the same way as fine-grain wood. It's also subject to some of the same problems: staining, burning and showing cuts and scratches.

Costs for bamboo start at about \$25 to \$30 a square foot. Countertop manufacturer Totally Bamboo (which points out that the type of bamboo it harvests, Moso timber, is neither a food source nor habitat for the endangered giant panda) also makes 1-1/2 x 1-1/2 x 96-in. edging for about \$4 a foot. For details about how to finish and install a bamboo countertop, see "DIY Bamboo Countertop," opposite.

OTHER PLANT-BASE MATERIALS

Products such as Durapalm, Kirei Board and Nuxite make use of discarded or unused plant materials suspended in formaldehyde-free, zero-VOC resin. Durapalm (see top left photo, p. 32) employs wood from old nonfruiting palm trees. Though it's not a DIY product (requiring specification through a designer), it's certainly a green option. Costs range from \$240 to \$510 for a 3x6-ft. or 3x8-ft. panel. Kirei Board is made of reclaimed stocks of the sorghum plant, a drought-tolerant species grown worldwide that is the planet's fifth-largest cereal grain — so Kirei Board makes use of an ample supply of what would otherwise be waste. And it's budget-friendly, starting at about \$7 a square foot.

Nuxite is made of discarded walnut shells. Natural Built Home, a Minneapolis-based company that sells the product, states that it can be cut and shaped using woodworking

DIY BAMBOO COUNTERTOP

Installing a bamboo countertop is a project any DIYer with woodworking experience can tackle. To give you an overview of the process, we worked with Tom Sullivan of Totally Bamboo in San Marcos, California, and Dale Berns of Metro Homes in Minneapolis, Minnesota. Here's a step-by-step rundown:

First, we planned where to connect the two large slabs of bamboo required for a 13-ft. run of counter space. To help disguise the seams, we placed one near the sink and the other in the corner at a 45-degree angle.

It's important to make sure the ends of the slabs are square before cutting them to length (photo 1). **Tip:** Apply masking tape to your cutting lines to keep the bamboo from splintering as you cut. Bond the slabs together using epoxy and biscuits, dowels or countertop bolts (photo 2).

After the epoxy has cured, use a template to mark the location of the sink; then use a fine-tooth blade and a jig-saw to cut the hole (photo 3). We built a jig from the sink template for routing the cutout area and used a bottom-bearing flush-trim bit to finish the under-mount sink's final edge (photo 4). You can also rout the front edge of the countertop if you choose. We used a 1/4-in. roundover bit; an ogee or bullnose treatment would also look nice.

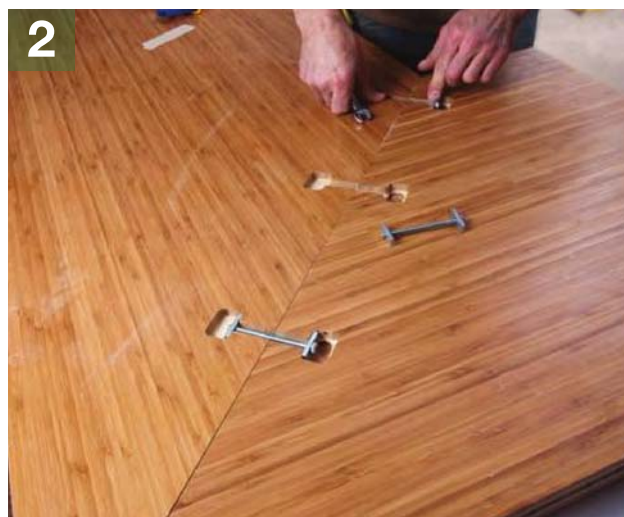
Mount your sink according to the manufacturer's instructions. To keep water out of the seam between the sink and countertop, apply a bead of silicone caulk.

Attach the countertop every 12 in. or so using the appropriate screws for your cabinetry. If needed, use flexible caulk to help stabilize the countertop. Do not use adhesive.

Although it's tempting to do all finishing after cutting, timing was an issue with this project, so we finished the slab before cutting and installation to help keep the bamboo stable. After installation, only minor finishing was required around the sink cutout, at the seams and along the front edge.

Totally Bamboo's instructions recommended that the finish be balanced, which simply means sealing all surfaces. The slabs come sanded to 220 grit, but repeated sanding to 320 and 400 grit and sealing with tung oil help to bring out the grain of the bamboo. A minimum of four coats of oil is recommended; we applied six coats and sanded between the final two with 800-grit wet/dry sandpaper. A light scrubbing with 0000 steel wool, a coat of carnuba/beeswax sealer and a quick polish with an orbital tool gave the countertop an impressive luster.

Caring for bamboo is much like caring for butcher block: Clean it with warm water and mild soap or a mix of white vinegar and water. Do not use ammonia-base cleaning products. Avoid leaving standing water on the countertop for long periods, and use a potholder or trivet under hot cookware. These simple precautions should help you to enjoy your beautiful, eco-friendly countertop for many years. — **MT**





Durapalm, made of wood from nonfruiting palm trees, makes use of a material that would otherwise be waste.



Tile is one of the most DIY-friendly countertop materials available, and it offers custom color and design opportunities.

tools and techniques. It comes sanded to a 150-grit finish on the display side; after fabrication it needs to be further sanded and finished with Bioshield Herbal Oil #2, beeswax, carnuba-base finishes or mineral oil to develop a deep, lustrous tone. The manufacturer also provides a walnut-shell powder and instructions for filling small holes or imperfections in the slab. Nuxite starts at about \$60 a square foot.

LINOLEUM

You might be surprised to learn that linoleum, a common flooring product invented in 1860 and made popular during the 1930s, '40s and '50s, is now being used for countertops. Marmoleum, one of the largest and most recognizable brands, is made of renewable materials such as linseed oil, wood flour, pigments, rosins and jute. It is nontoxic and completely biodegradable and does not off-gas. (Marmoleum is also nonallergenic, having earned Asthma and Allergy Friendly certification, and has no adverse health effects during its manufacture, life or disposal.) Like most natural countertop products, linoleum will show cuts and burns, but because the color extends throughout the product, minor cuts and scratches are barely noticeable.

Linoleum is about 2.5mm thick and available in sheets, glue-down tiles and click-together planks and tiles. It can be purchased in more than 100 colors and with rounded edges (or the countertop can be edged by the installer). Linoleum sheeting starts at about \$35 a square yard.



Linoleum is a tried-and-true natural flooring material that's making its way onto countertop surfaces.

Blog posts of DIYers who have installed linoleum countertops report that wood veneer, wood trim and metal banding make good edging materials. The bloggers said it was a fairly easy material to work with, and they were pleased with the look and feel of the finished product.

INSTALLATION MATERIALS

DIYers interested in green building will want to use less-toxic caulks and epoxies when installing countertops. Eco-Bond's Multi-Purpose MP 25 and HD150 are low-VOC caulks that can be painted. Titebond's Greenchoice Heavy Duty Construction Adhesive is another all-purpose caulk that is VOC-compliant, containing no ozone-depleting chemicals. Two epoxies that are solvent-free and suited for natural stone products are BM70 Glue by Glax and Epoxy Gel G A+B from Tenax USA.

Although the countertop products we've described here are by no means the only ones available, they provide a starting point for research. Visit the sites listed in SOURCES ONLINE, but don't rely solely on a manufacturer's information, as essential as it is. Take time to read blog posts about various materials and see what real people think of them. Once you've done your homework, enjoy your new green countertop, whatever color it may be. ♦

Club Member Mike Tavis is a DIYer who lives in Minneapolis, Minnesota.

SOURCES ONLINE

For online information, go to www.HandymanClub.com and click on WEB EXTRAS.

CaesarStone

877-978-2789
www.caesarstoneus.com

Cambria

866-226-2742
www.cambriausa.com

Eco-Bond

800-326-8102
www.ecobondadhesives.com

Forbo Flooring Systems

(Marmoleum), 800-842-7839
www.forboflooringna.com

Franklin International (Titebond)

800-877-4583, www.titebond.com

Get With Green

www.getwithgreen.com

Green Building Supply

www.greenbuildingsupply.com

Kirei, (619) 236-9924
www.kireiusa.com

Metro Homes

www.metrohomesonline.com

Moen

(sink and faucet, p. 29)
800-289-6636, www.moen.com

Natural Built Home

www.naturalbuilthome.com

Silestone

800-291-1311
www.silestoneusa.com

Smith and Fong

(Plyboo bamboo and Durapalm products)
866-835-9859, www.plyboo.com

Tenax USA

800-341-0432, www.tenax.it

Totally Bamboo

(760) 471-6600,
www.totallybamboo.com

U.S. Green Building Council's Green Home Guide

www.greenhomeguide.com



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Give Your Kitchen a Breather

A primer on proper ventilation

BY FERNANDO PAGÉS RUIZ

A range hood is more than a mechanism

to remove cooking odors; it's an important component in a kitchen's decor. A sleek, well-designed model makes a bold statement: that the resident chef is no slouch. But beyond putting on culinary airs, a range hood is something akin to a life-support system for your kitchen.

In days gone by, ventilating the kitchen meant opening a window. Today, however, houses are being built increasingly airtight, central air is ubiquitous, and windows remain closed most of the year, making mechanical ventilation a necessity. An effective range hood will exhaust excess heat, humidity, cooking odors and fumes from household chemicals. The best models will also trap grease to help keep the kitchen clean. All these features make the range hood an integral part of a home's indoor air-quality system, improving safety and hygiene.

Modern range hoods offer a wide variety of options in terms of style, function and capacity. Here's what you need to know when selecting the right model for your kitchen.

Recirculating vs. outdoor-venting

An effective ventilation system exhausts air outside. Low-end recirculating hoods, which do not have outdoor venting, may filter grease and odors, but they won't remove humidity and chemical pollutants. Many also make a lot of noise and do little to trap odors and grease. "If an outside-ducted range hood is impractical, consider supplementing the range hood with a central ventilator similar to a bath fan that does vent to the outdoors," advises James Lyon, a professional engineer with Newport Partners. Keep in mind that building codes require any fan within a 45-degree angle of the cooktop to have a grease trap.

If you must use a recirculating hood, look for a model with a good aluminum-screen grease trap that you can put in the dishwasher and the largest charcoal-bed filter available for smoke and odors. Some models have a combination of baffle and mesh grease filters. The baffles work well when the fan runs at high speed; the mesh is for low speed.

An outdoor-vented range hood is always the best choice, but for it to be effective, proper installation is essential (see "Kitchen Vent-Hood Installation," opposite). A too-narrow duct will detract from the hood's performance; a duct that is too wide may reduce air velocity, resulting in grease deposits along the

PHOTOGRAPHY COURTESY MANUFACTURERS; ILLUSTRATION BY STEPHEN HUTCHINGS

pipe, says Lyon. The duct should match the hood's port size and follow a direct path to the exterior, avoiding sharp angles. Never use corrugated pipe; grease will build up in the grooves and could catch on fire.

Canopy choices

When choosing a hood, you'll need to select the right size canopy (the visible portion of the hood that captures air). The canopy should be as wide as the cooktop and at least 18 in. deep but preferably 24 to 27 in. Extra depth

FAN BASICS

When shopping for ventilation fans, keep in mind these essential factors:

- **Air movement:** measured in cubic feet per minute (cfm)
- **Energy:** consumed in watts
- **Noise:** measured in sones (one sone is equal to the sound of leaves rustling on a quiet night)
- **Duct size:** the diameter of the exhaust port

First determine the air-movement capacity you need; then compare models' energy consumption, sones and duct size. Here are some tips to consider when evaluating your options:

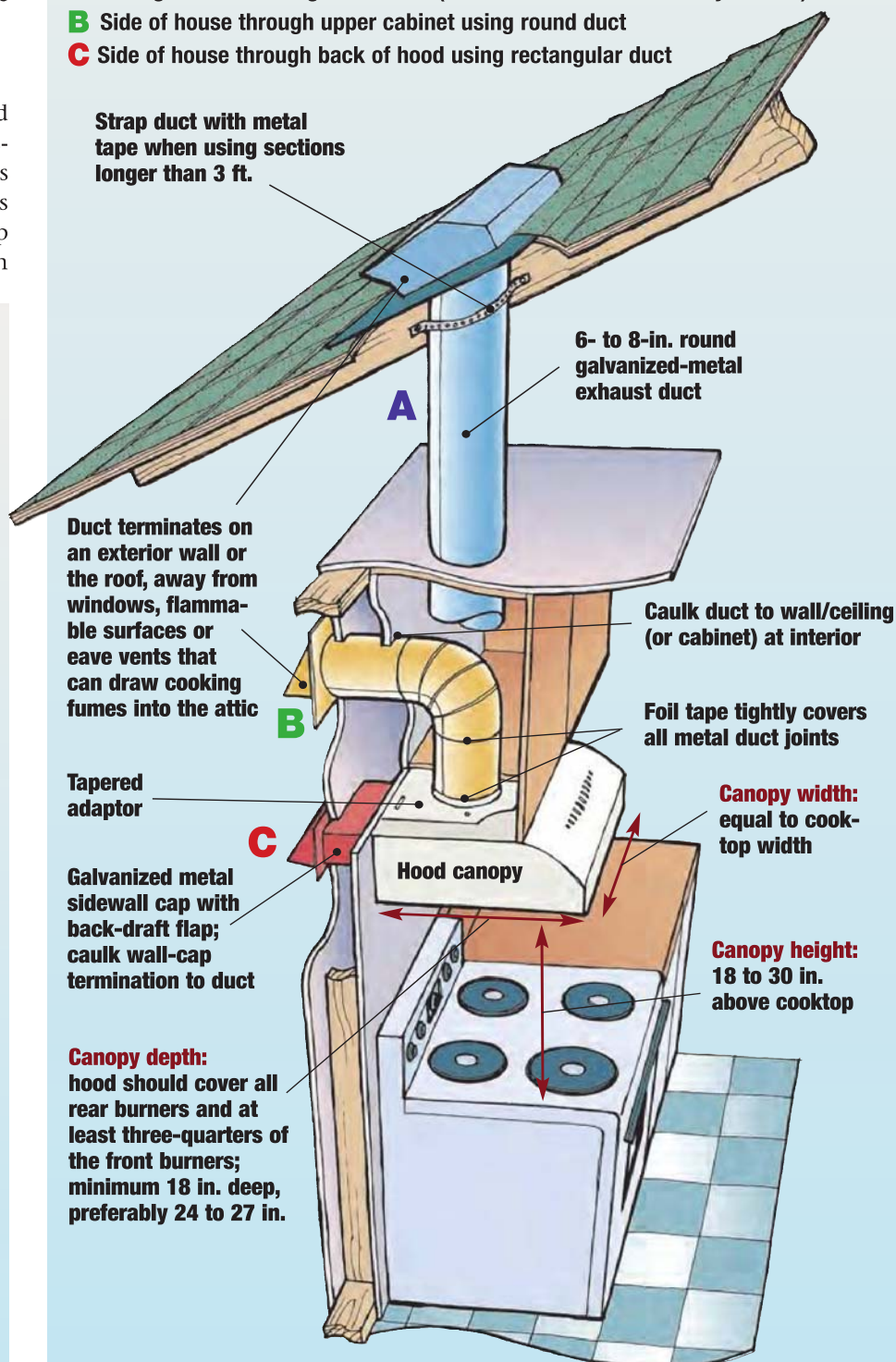
- A more efficient fan may cost more, but it will often pay for itself in a few months of operation.
- A high-quality kitchen fan will operate at .3 sones at 150 cfm and at up to 2 sones at high speed — quiet enough to allow casual conversation even at the highest setting. The quietest and most efficient motors run on DC current.
- Duct size influences efficiency, performance and quiet operation. Air moves through a larger duct at a lower, quieter volume and produces less static pressure that can choke off fan function. Older units often had ducts as narrow as 3 in.; nowadays the minimum size is 4 in. for bathrooms and 6 in. for kitchens — a good reason to replace old ducts when upgrading a fan. — **FPR**

KITCHEN VENT-HOOD INSTALLATION

Duct Options

Choose the one that works best for your house:

- A** Through the roof using round duct (most often used in one-story houses)
- B** Side of house through upper cabinet using round duct
- C** Side of house through back of hood using rectangular duct





RECIRCULATING FANS THAT WORK

If you can't exhaust the kitchen fan through ducts to the outdoors, choose a recirculating fan with the best filters. A nonducted kitchen fan should include an aluminum-screen grease trap that you can put in the dishwasher and a charcoal-bed filter for smoke and odors. Some range hoods, such as the Best UP27 (top), can be connected to an accessory recirculating kit (right) that features additional filters. — **FPR**



Recirculating kit

matters more than width, says Brian Wellnitz, a kitchen ventilation spokesman for Broan. "The hood should cover all the back burners and at least three-quarters of the front burners," he says. The canopy should be 18 to 30 in. above the cooktop. Some kitchen designers like to add a few inches to show off backsplash tile or provide a more comfortable view of the stove for a tall cook, but if you set the hood higher than 30 in., you will need a stronger fan.

Fan sizes

The next consideration is horsepower. In the world of hoods, brawn is measured by how many cubic feet of air per minute (cfm) the hood's fan can exhaust. The Home Ventilation Institute (a manufacturers' trade association) recommends a range hood with a fan capacity of 40 to 50 cfm per linear foot of range (about 120 to 150 cfm for a standard 30-in. unit), but the engineers we spoke to recommend a minimum of 160 cfm. "A fan's functional capacity is often much lower than the manufacturer's rating," explains Steve Easley, a building science consultant at S. Easley & Associates Inc.

For a large, multiburner, commercial-style range, you should always follow the stove manufacturer's recommendations about fan size. The manufacturer bases recommendations on a combination of factors including the stove's

"A fan's functional capacity is often much lower than the manufacturer's rating"

Steve Easley, building science consultant

heat output, the location of the hood and the length of the duct between the hood and the outdoor exhaust outlet.

Keep in mind that bigger isn't always better. "Bigger fans consume more electricity, and they can create a dangerous condition called back drafting," explains Easley. This occurs when the suction of a powerful fan creates negative pres-



WEB EXTRAS

To learn more about installing a bathroom vent fan, go to www.HandymanClub.com and click on **WEB EXTRAS**.

EXHAUST HOOD EXTRAS

Today's hoods offer amenities that go beyond basic ventilation. Look for a model with bright halogen bulbs for good cooktop visibility, easy-to-remove-and-clean soffit grills and matching splash plates to cover the exposed cabinet sides and backsplash. Some hoods come with a removable liner that you can place in the dishwasher along with the grease grill. If a hood draws too much air for the application, most manufacturers provide a reducer you can install. Airflow regulators limit high-airflow hoods to less than 300 cfm so they comply with most local codes without the need for makeup air. Some hoods, such as Broan's QP3 (right), come with an optional remote control. — **FPR**



OVER-THE-RANGE MICROWAVE

You'll get better ventilation from a dedicated vent hood than from an over-the-range (OTR) microwave with a built-in vent fan. But if space is limited, an OTR microwave that is ducted to the outdoors may be the solution, especially if you don't do a lot of high-heat cooking on your stove. Look for a model, such as the GE Profile Advantium 120, that features washable filters and a fan that moves at least 300 cfm to help compensate for the small capture area. — **FPR**

sure in the home and interferes with the exhaust ventilation of combustion devices. (Safety note: When installing a high-capacity exhaust system of 900 cfm or more, hire an energy-audit contractor to verify that the fan is not creating negative pressure. Experts recommend coupling any large range hood with a hard-wired carbon-monoxide detector as a precaution.)

Fan motors may be housed within the fan, on an exte-

rior wall or in line on a duct (see "Fan Basics," p. 35). When the motor is housed in the hood or within earshot, the sound characteristics of the fan become an important consideration because loud fans are irritating and we tend to shut them off. The quietest location for the fan motor is outside, but harsh weather can make this impractical. Look for a fan with a quiet motor — a good indicator of the quality and efficiency of the fan, as quieter motors require better components and run more efficiently.

Overhead or downdraft

Because hot air rises, the standard configuration of an overhead hood placed against a wall typically works best. But sometimes the stove's location (for example, in a kitchen island) requires a downdraft model or a freestanding hood. These hoods draw significantly more air to compensate for cross currents. When choosing a hood that will be located over a kitchen island, you should multiply the cfm requirement of a conventional hood by 1.5, says the Heating and Ventilation Institute.

Given the variety of options available, you can find the perfect range hood for your kitchen. Shop around for a model that will quietly remove moisture and indoor pollutants, light up your work area, operate energy-efficiently and look great. ♦

Handyman Club life member Fernando Pagés Ruiz is a home-builder and remodeler with 30 years' experience and the author of Affordable Remodel: How to How to Get Custom Results on Any Budget (The Taunton Press, 2007).

SOURCES ONLINE

For online information, go to www.HandymanClub.com and click on WEB EXTRAS.

Broan (QP3 range hood), www.broan.com

Best Range Hoods (UP27 range hood)
800-558-1711, www.bestbybroan.com

GE (Profile Advantium 120 microwave)
800-626-2005, www.geappliances.com

Home Ventilating Institute
(847) 416-7257, www.hvi.org



These Boots Were Made for Workin'

Keep your feet fit and functioning with the right footwear for the job

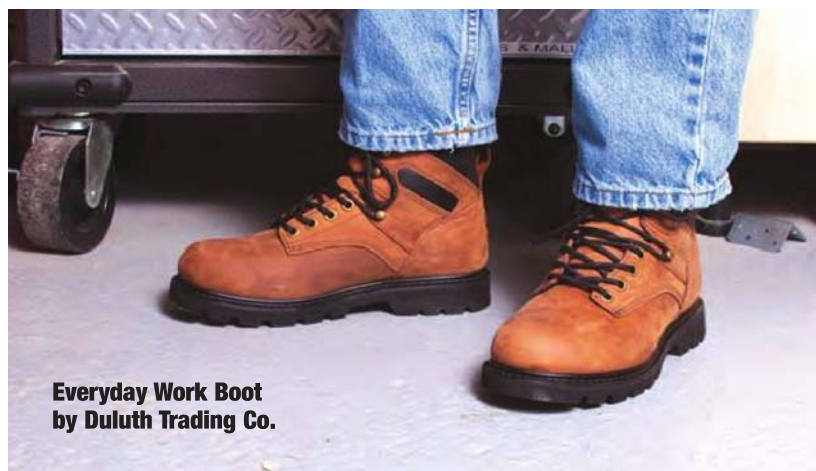
BY MIKE BERGER

Sore, pinched or cold feet

can make a workday absolutely miserable. That's why choosing the right footwear is so important. Your feet's needs vary with the different tasks you tackle. For optimum comfort and performance, you need to select a boot or shoe that's suited for the conditions you'll be working in.

Some footwear is waterproof; some is insulated to protect against the cold. Some types feature steel or composite safety-toe construction; others provide comfort when standing for long hours on concrete floors. The question is, what features do you really need?

To help you examine your options, the *HANDY* editors came up with eight types of footwear needs and cited some examples of what's available for each type. Consider the features described on the following pages to help you find the best way to treat your feet.



Everyday Work Boot
by Duluth Trading Co.

THE JACK-OF-ALL-TRADES

Many DIYers take on a lot of different jobs and therefore need boots that can stand up to a wide variety of conditions. Look for a pair that is both oil- and water-resistant and has a nonslip sole but is not so heavy that it will unnecessarily weigh down your feet. The Everyday Work Boot from Duluth Trading Co. is one example of this type of footwear. It not only has a slip-resistant rubber sole and a gusset tongue to keep out dirt, pebbles and moisture but also features removable and washable insoles and permits the use of orthotic inserts if needed. — **Art Director Michael Anderson**

SAFETY MATTERS

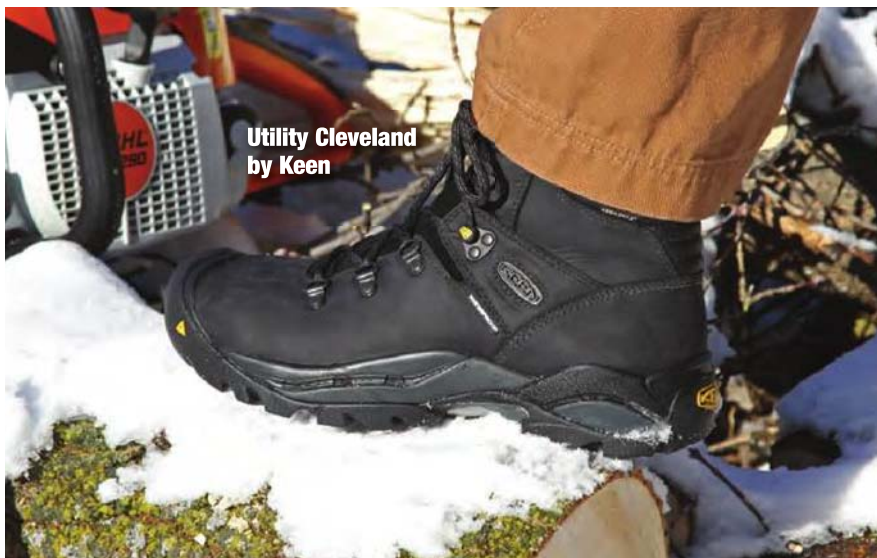
If you work in a hazardous environment and your employer requires you to wear safety boots, make sure that the ones you purchase are certified by the American Society for Testing and Materials (ASTM), an international organization that provides voluntary testing standards. In the United States, relevant

standards for work boots are outlined by ASTM Standards F 2412-05 and ASTM Standards F 2413-05. Although the ASTM does not enforce its standards, most of them have been adopted and enforced by governmental agencies. — **MB**

OUTDOOR SAFETY AND COMFORT

If you spend a significant amount of time working with outdoor power equipment such as a chain saw, you need a boot that is waterproof and provides safety features such as steel toe reinforcement. Long known as a maker of outstanding hiking boots, Keen offers work boots (such as the Utility Cleveland shown above) featuring asymmetrical steel toes that are anatomically designed to fit the unique shape of the left and right foot. Other features include waterproof leather uppers, a waterproof breathable membrane, an oil- and slip-resistant rubber outsole, locking metal lacing hooks and additional impact protection.

— Editor in Chief Larry Okrend



Utility Cleveland
by Keen

PERFECT FOR LANDSCAPERS

When you spend a lot of time working outdoors, you need boots built for comfort as well as protection. The Red Wing model 237 is a great all-around work boot, but its features make it an especially good choice for landscapers. It features Red Wing's highest-grade waterproof full-grain leather to protect against abrasions. The leather surrounds a three-layer waterproof system that's warranted not to leak for one year. The Dynaforce insole provides excellent support and stability. In addition, the boots meet the ASTM F 2413-05 standard for electrical-hazard protection, meaning added shock protection in case you hit a buried line. If you work with heavy materials such as boulders, consider the model 4437, which has similar styling and features plus a steel toe. — Executive Editor Dan Cary

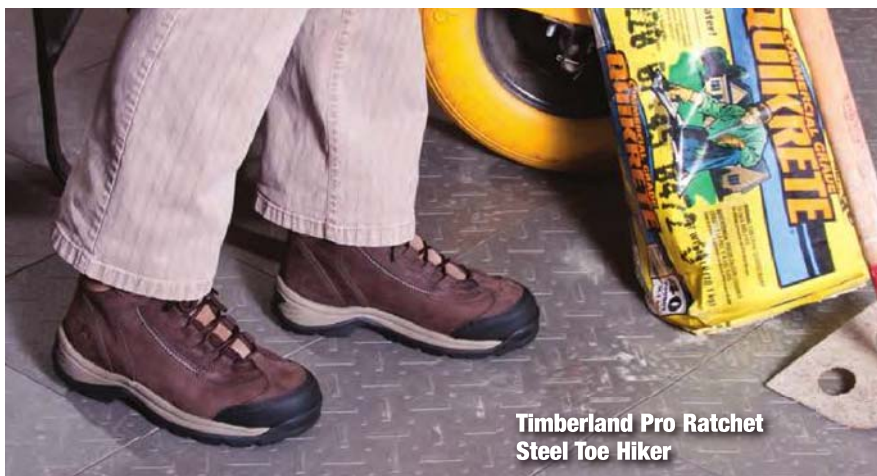


Red Wing
model 237

WOMEN'S WEAR

Walk into any department store and you'll find aisles and aisles of women's shoes, but when it comes to work boots, there aren't many choices. One attractive alternative is the Timberland Pro Ratchet Steel Toe Hiker. Though it's designed and labeled for hiking, this boot's steel toe, oil-resistant high-traction rubber outsole, OrthoLite footbed and super-durable leather upper make it perfect for indoor and outdoor home-improvement tasks. The best part is that despite their sturdy design, the boots are flexible and ready to wear right out of the box.

— Senior Editor Jenny Stanley



Timberland Pro Ratchet
Steel Toe Hiker



Yeti II 600i
by Hi-Tec

BOOT FOR HAZARDOUS ENVIRONMENTS

If you work around chemicals or biohazards, it's important to have footwear that protects your feet from contamination and does not track hazardous agents into another environment. Boots made specifically for such conditions, such as the Yeti II 600i from Hi-Tec shown here, are waterproof and have chemical-resistant soles, and they're impervious to penetration by blood-borne pathogens — a potential lifesaver if you work in the medical or emergency-response fields. The boots are made with a patented “lon-mask” process, during which each pair is loaded individually into a hypobaric chamber, where a pressurized vacuum is formed. A current of plasma then transfers a fluorocarbon monomer that molecularly bonds to every surface of the boot, providing repellent qualities.

— **Managing Editor Mike Berger**



Wolverine Red Tooth

THE WORK SHOE

Work boots are often a bit heavy, and their protective features may be unnecessary for everyday chores. If you're simply working in the shop or yard, a pair of lightweight, comfortable shoes that provide great support, such as the Wolverine Red Tooth shown here, might be just right. This one is a low-cut hiker with a composite toe, which offers great protection for those times when you have a slippery grip on something heavy. You won't slip, however, because the flared-heel Vibram-rubber outsole sports some pretty grippy lugs. Best of all, the compression-molded EVA midsole is comfy and will put a nice spring in your step. — **Web Editor Gary Legwold**



Timberland Pro Titan
Wellington Boot

WITHSTANDING WATER AND MUD

Few boots are as good for working in wet, mucky environments as the Wellington, a style that has a long and distinguished history. Originally based on 19th-century Hessian leather military boots and made popular by Arthur Wellesley, the first Duke of Wellington, this style resembles a cowboy boot but offers more protection. Often made of leather (for example, the Timberland Pro Titan Wellington Boot shown here), Wellington boots are also available in a variety of materials including rubber and PVC, and you can find insulated versions for cold climates. Choose a steel-toe model if you'll be working in hazardous conditions or with power equipment such as a chain saw; you can opt for a lighter-weight variety without the safety toe if you just want protection from mud and water. — **Managing Editor Mike Berger**

SLIP-ON EASE

When you want to quickly don or doff work shoes, nothing beats a pair of slip-ons. But as a name, Slip-On is a funny fit for these cloglike shoes that are made to prevent wearers from slipping on anything. The rubber soles of Keen's PTC Slip-On II shoes even meet ASTM nonslip testing standards. And if *slip-on* conjures the idea of *slippers* in your mind, all the better: These shoes are made for comfort, even when you're on your feet all day. The soles are cushy on the inside but rigid on the outside, protecting your soles from jarring jobs such as digging with a shovel. And with a leather lining and water-resistant leather on the outside, they help keep your feet dry while letting your toes breathe. ♦

— Senior Editor Connie Bastyr



PTC Slip-On II
by Keen

COMMON WORK-BOOT TERMS

Lasts: forms that are made in the shape of the human foot and tailored for a specific use. For example, a boot last would be designed to hug the instep for a close fit.

Footbed: the inside part of the shoe, often removable, that runs under the bottom of the foot. A footbed is also referred to as the insole or inner sole.

Vibram sole: a rubber-base sole (originally developed by Vitale Bramani and first used in mountaineering boots) that provides increased traction and is the model on which other soft-lug soles are based.

Lug sole: a type of outer sole, typically found on heavy-duty and utility shoes, consisting of deep indentations that improve stability and traction.

Safety toe: an internal box of steel or crush-proof composites at the end of a boot that protects the toes from injury.

Welt: a strip of leather, rubber or plastic that is stitched to the upper and insole of a shoe as an attachment point for the sole. The space enclosed by the welt is filled with cork or some other filler material, and the outsole is both cemented and stitched to the welt. This type of shoe construction (referred to as Goodyear Welt construction because the machinery used for the process was invented by the son of Charles Goodyear) allows you to replace the sole when it wears out.

Cement construction: a manufacturing method in which the outsole of the boot is glued to the upper part of the boot. Cement construction is less expensive but also less reliable than other methods, even though improvements have been made in recent years.

Molded construction: a manufacturing method in which the outsole is molded directly to the leather or fabric of the boot's upper, creating a strong bond that typically lasts longer than cement construction. — MB

SOURCES ONLINE

For online information, go to www.HandymanClub.com and click on WEB EXTRAS.

Cabelas
800-237-4444, www.cabelas.com

Carhartt
800-833-3118, www.carhartt.com

Carolina Shoe Co.
800-441-4319, www.carolinashoe.com

Cat Footwear
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Duluth Trading Co.
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Hi-Tec Boots
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Magnum Boots
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Red Wing Shoes
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Rocky Boots
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Timberland Pro
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Wolverine Boots
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Cut, Mow, Grind and Trim

New outdoor power gear promises to make yard work easier

BY MIKE BERGER

With spring just around the corner, it's time to anticipate (not dread) sprucing up your yard. And you can make short work of outdoor chores with this year's bountiful crop of power equipment. You'll find mowers that are easier to operate, saws that cut quicker, trimmers that do way more than cut grass, and a harvest of other new products that can make your time outdoors more productive — maybe even fun.



USER-FRIENDLY ZERO-TURN MOWER

Because of their increased speed and maneuverability, zero-turn mowers can be daunting to newbies. Toro's Time Cutter SS aims to flatten the learning curve, thanks in part to its innovative Smart Speed Adjustment lever (seen at right) that limits the mower's top speed. The "high" setting allows the mower to travel as fast as 7 mph; "low" drops the maximum speed to a more modest pace without affecting the speed of the engine or the blade, so novice operators can get used to the feel of the controls and to maneuvering around trees and other landscaping obstacles at a slower pace.





CORDLESS, SELF-PROPELLED CUTTING

Though cordless battery-operated mowers have been on the market for a while, the Worx WG789 19-in. mower (\$499) is the first one that's self-propelled. It matches the mower's drive speed to your walking pace, and it can mow approximately 17,000 sq. ft. of lawn on a single charge of its 36-volt battery. The cutting deck lets you mulch, bag or discharge the clippings, and quick-release handles allow for easy storage.



Optional extension pole



SAFER TREE TRIMMING

Worx's new electric JawSaw (\$120) is designed to eliminate two common chain saw hazards: the exposed chain and kick-back. The jaw of this tool almost completely encloses the chain, guarding the operator from potential contact. In addition, its scissor-cutting action forces the bar and chain through the wood from the safest angle, and its steel teeth hold the branch and lock it in place for cutting. Add the optional 12-ft. extension pole and you have the perfect tree-trimming tool.

COOL CROSSOVER CONCEPT

If you dream of a utility vehicle that can get the job done under any circumstances, check out Cub Cadet's VTX Volunteer Cross-Over. This concept vehicle shows the future of four-wheeler technology: It can manage a wide variety of terrain at speeds up to 45 mph and features unique jump seats that can carry five riders or fold down to provide room for cargo or work space. The bed sides fold down to transform the VTX into a mobile work station complete with 12-volt power outlets, hookups for air-powered tools and multifunctional high-intensity lighting. The dashboard displays a digital instrument pod above the steering wheel, including in-dash GPS and radio capabilities. And for those adventurous jobs that demand even more than four-wheel drive, the VTX comes with a front, rear and portable winch.





GAS-SAVING CHAIN SAWS

Compared with previous models, Stihl's new MS 261 and MS 261 C-Q chain saws (\$550 and \$650, respectively) use 20 percent less fuel and reduce emissions by 50 percent. The saws come equipped with a decompression valve for easier starting and an advanced anti-vibration system that helps to reduce user fatigue, and the compact design of the split-barrel carburetor and the stainless steel muffler reduce the tools' weight. Both models feature operator-friendly components, including a side-access chain tensioner, tool-free fuel and oil caps with retainers, and a translucent fuel tank. Captive bar nuts are retained in the sprocket cover to prevent their loss and are designed for self-guided mounting, the air filters are more efficient and require less maintenance, and an improved braking system stops the chain less than one second after the rear handle is released.



ULTRAFAST SHARPENING

You'll never have to make do with a dull chain saw chain, thanks to Oregon's PowerSharp system (\$80). Consisting of a sharpening stone that clamps to a proprietary chain bar that runs a specialized 3/8-in.-pitch, low-profile chain, the PowerSharp can revive a dull chain in as little as 3 seconds. Simply attach the sharpener to the chain saw's bar and press its actuator against a solid object for three to five seconds; as the chain moves through the sharpener, the cutters contact the sharpening stone, which hones them to knife-edge sharpness.

AFFORDABLE MANEUVERABILITY

If you're not in the market for a zero-turn mower but want a machine that can easily follow your yard's landscaping, then one of Craftsman's new Turn Tight tractors may be just what you're looking for. According to Craftsman, these tractors (ranging from \$1,399 to \$2,799 and available in early March) allow you to manicure tight areas around trees, shrubs and small landscape beds more closely than ever before, in some instances eliminating the need to finish with a string trimmer. In open areas, the Turn Tight system also allows you to turn the tractor around more quickly, without the need to reverse, for parallel-path mowing.



Tight-turning wheels



TRULY FLEXIBLE HEDGE TRIMMER

Ryobi's new RY24601 cordless hedge trimmer (\$159 and available in April) gives you the flexibility to trim almost any hedge of any shape or size — without an extension cord. A 24-volt lithium-ion battery supplies power to the 20-in. dual-action blade, and according to Ryobi, the trimmer's extended-reach handle provides up to 40 percent greater reach than standard hedge trimmers. Adding to the trimmer's flexibility is its three-position pivoting head that allows you to make controlled cuts at just about any angle.



A SOLUTION FOR STUMPS

Ideal for small stumps in tight spots, Toro's new SGR-6 walk-behind stump grinder features a 12-tooth wheel that cuts from 6 in. below grade to 10.4 in. above grade. The machine comes with a Honda GX200 engine and a heavy-duty centrifugal clutch, and its tooth design cuts like a router without pulling the machine into the stump. Rubber gaskets between components dampen vibration to reduce operator fatigue.



MULTITASKING TRIMMER

Husqvarna offers ultimate flexibility in tackling outdoor chores with its 128DJx gas-powered string trimmer (\$230). Outfitted with a 28cc two-stroke engine, the trimmer comes with both a string head and a brush-cutter blade, and the detachable lower unit lets you outfit the engine and drive shaft with a variety of implements such as an edger, a hedge trimmer, a tiller, a pole saw and a sweeper. ♦

SOURCES ONLINE

For online information, go to **www.HandymanClub.com** and click on WEB EXTRAS.

Cub Cadet

(VTX Volunteer Cross-Over utility vehicle)
www.cubcadetuv.com

Husqvarna

(128DJx gas-powered string trimmer)
www.husqvarna.com/us

Oregon Chain

(PowerSharp chain sharpener)
www.powersharp.com

Stihl

(MS 261 and MS 261 C-Q chain saws)
800-467-8445, www.stihlusa.com

Toro

(Time Cutter SS zero-turn mower;
SGR-6 stump grinder)
888-384-9939, www.toro.com

Worx

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The Magic Wand of Metalworking

Plasma cutters can easily slice through a variety of metal types and thicknesses

BY MIKE BERGER

If you routinely work with metal and need to make numerous cuts, want to cut intricate patterns in sheet metal or crave a fast, easy and precise way to size metal stock before welding, a plasma cutter may be the tool of your dreams. This simple-to-operate electric cutting torch enables you to make long, straight precision cuts in all kinds and thicknesses of metal, slice expanded metal mesh and create curving or complex designs. Having one of these tools at your disposal can help you save time and radically expand your metalworking repertoire.

How plasma cutters work

A plasma cutter uses a high-velocity jet of ionized gas to cut metal. The gas is fed through a constricting orifice, where it conducts electricity from the



PHOTOGRAPHY BY MICHAEL ANDERSON AND CRAIG COZART

A small plasma cutter, such as this Lincoln Electric Tomahawk 375, is ideal for cutting sheet and thin plate metal. This unit has a built-in air compressor; some models require an external compressor.



torch of the cutter to the workpiece. The resulting plasma heats the workpiece so the material melts, and the high-velocity stream of ionized gas blows the molten metal away, severing the material. Though several different gases can be used with plasma cutters, the most common is compressed air, delivered either by an external compressor or by a small compressor that's built into the tool.

Because typical plasma cutting does not rely on the oxidation process, it can be performed on any type of conductive metal such as carbon steel, aluminum and stainless steel. Oxyfuel cutters such as an oxyacetylene torch, however, rely on oxidation to burn through metal, and as a result they can only be used to cut steel and other ferrous metals.

A plasma cutter's efficiency depends on the torch's nozzle design and how it handles the airflow to the workpiece. Design improvements (as in Lincoln Electric's Tomahawk line of plasma cutters) cause the high-velocity air to swirl, divide and recombine within the torch, resulting in a more concentrated arc, faster cutting, a thinner kerf and greater thickness-cutting capacity than older models offered.

Is plasma cutting right for you?

Compared with other methods of cutting metal (such as oxyfuel systems), plasma cutting is typically not only easier for the first-timer to master but also more accurate. This is not to say that the tools don't have drawbacks. Heavy steel (1 in. thick and greater) usually isn't cut well by them because they would require a very high-capacity power supply to do the job. They are typically more expensive than oxyfuel torches, and unless you have a unit with a built-in air compressor, you'll need to have an external compressor to run it.

Nevertheless, a plasma cutter is a great

investment if you plan to regularly work with conductive metals that are less than 1 in. thick. When shopping for a plasma cutter, consider these guidelines:

- Choose a machine that can handle cutting metal that is approximately twice as thick as your typical workpieces. Most plasma-cutting power sources are rated by amperage, which can range from light-duty (about 25 amps, suitable for cutting 1/4-in.-thick material) to heavy-duty (80 amps, capable of cutting 1-in.-thick metal). If you most often cut very thin metal, you may be OK with a lower-amperage 1/4- or 1/2-in.-class tool. If you frequently cut metal that is thicker, look for a higher-amperage 1-in.-class machine.

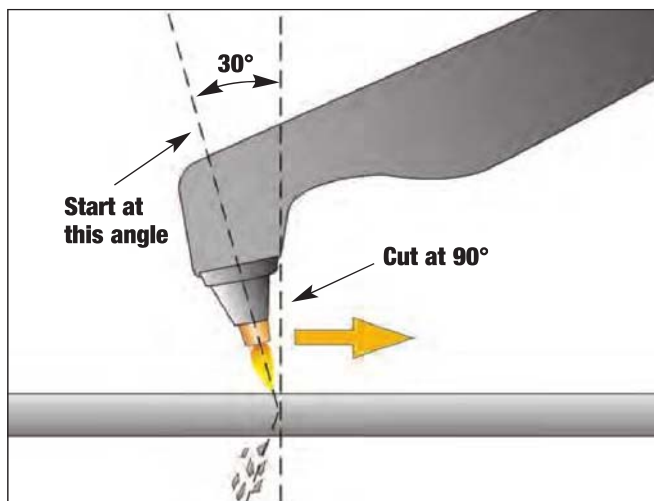
- Check the unit's duty cycle, which is the amount of time you can continuously cut before the machine or torch will require cooling. Duty cycle is rated as a percentage of a 10-minute period. For example, a 60 percent duty cycle at 50 amps means you can cut with 50 amps of output power continuously for six minutes in a 10-minute period.

- Look for a cutter with the fewest consumable parts, and compare how long those parts will last. Some manufacturers rate consumables by number of cuts; others use the number of starts as the measurement.

- Check how visible your workpiece will be when you're cutting. Visibility is especially important when cutting an intricate pattern. A smaller, less bulky torch will enable you to better see where you are cutting, as will an extended nozzle.

- If you plan to transport the cutter to various job sites, make sure to purchase one that has a built-in air compressor.

- For optimum safety, look for a machine that offers a pre-use warning so you can ensure that all body parts are clear of the nozzle



Hold the torch at a slight angle when making or ending cuts. Once the cut is underway, hold the torch perpendicular to the workpiece for the best results.

before the arc initiates. Other safety systems (such as Lincoln Electric's Nozzle-in-Place safety sensor) ensure that the cutter will not start an arc unless the nozzle is attached. (Warning: Some safety systems can be fooled into thinking the nozzle is in place even when it is not. If the cutter is then activated, you could be exposed to as much as 300 volts of direct current.)

Operation technique and tips

Before you start cutting, make sure you have a clean compressed-air supply that's not contaminated by water or oil, as either substance will prematurely wear out the consumables. Check that the air pressure is set to the level required by the tool, and ensure that the nozzle and the electrode of the cutter are correctly installed. Wear proper safety gear (long sleeves, gloves, dark goggles or a welding shield or helmet). To get the best results when cutting, follow these tips:

- Pierce the workpiece by approaching the metal with your torch at an angle (60 degrees from horizontal, 30 degrees from vertical); then rotate the torch to the vertical position. This way, the molten metal is blown away from the torch.

- Maintain a constant work distance, somewhere from 3/16 to 1/8 in. between the nozzle of the torch and the workpiece. Until you're used to working with the tool, consider using an insulated drag cup that snaps over the nozzle and allows you to rest the torch directly on the workpiece.

- Do not touch the nozzle to the workpiece when using current levels of 45 amps or more. Doing so will drastically reduce the nozzle life, as the cutting will double arc through the nozzle.

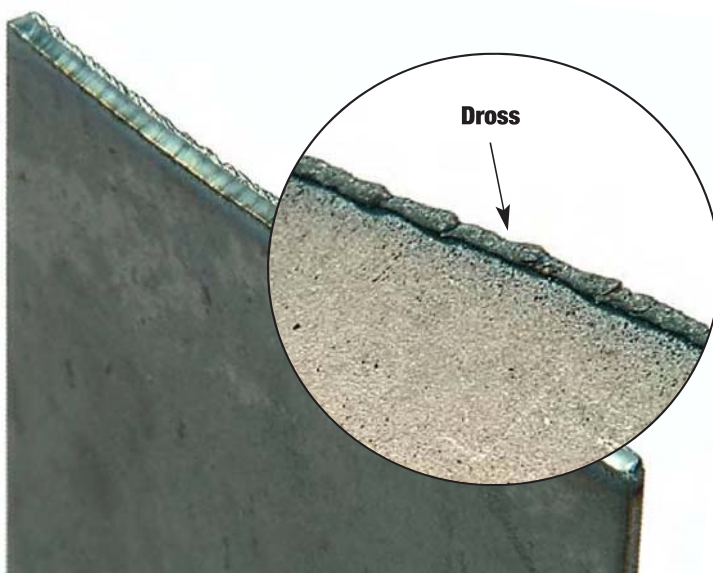
- When the tool is moving at the right cutting speed, the molten metal spray will blow out the bottom of the workpiece at a 15- to 20-degree angle. Moving too slowly will create slow-speed dross, an accumulation of

molten metal on the bottom edge of the cut. Moving too fast will cause high-speed dross to accumulate on the top surface.

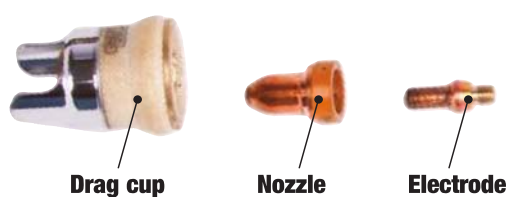
- Set the current to maximum as you begin; then turn it down as needed. More power is usually better, except when you're doing precision cutting or when you need a small kerf.

- Travel in the direction that will produce the best finished work. As you push the torch away from you, the right-hand side of the workpiece will tend to have a better, squarer edge. If you are making a circular cut and plan to keep the round piece as your finished work, move in a clockwise direction. If you plan to keep the piece from which the circle was cut, move in a counterclockwise direction.

After finding the right machine and learning some tricks of the trade, you'll be ready to put your new tool to use. With experience, you'll work faster, make better cuts and be able to accomplish more than you might have imagined possible. ♦



This photo of a 1/16-in.-thick steel workpiece shows how smooth a plasma cut can be. The dross (see inset photo) on the back of this cut was caused by the torch moving too slowly.



A plasma cutter's torch is simple, but the consumables (electrode and nozzle) are subject to wear and occasionally need to be replaced.



Lincoln Electric provided assistance with this article.

SOURCES ONLINE

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BY DAN CARY



Used in conjunction with a bench vise, a bench dog is a simple and effective tool for securing a workpiece.

Properly securing a piece

before you work on it is one of the keys to successful woodworking. You can use portable clamps along the edge of a workbench, but sometimes they get in the way or don't reach far enough to hold wide, flat workpieces. In those cases, a bench dog may be the solution.

Used in workshops for hundreds of years, bench dogs are pegs that fit in holes bored through the workbench

top. They are aligned with the clamping direction of a bench vise and act as a stop against the clamping force. Manufactured woodworking workbenches typically come drilled with a line of holes for bench dogs. (You didn't think they were simply there for dust to fall through, did you?)

If your bench doesn't have holes, you can bore your own. The holes can be round or square; 3/4-in. round holes are typical and are easier to bore

than square holes. Space the holes roughly 3 to 4 in. apart (no farther apart than the maximum opening on your bench vise).

Once your bench is set up with a vise and a row of holes, you can take advantage of the variety of clamping devices (see SOURCES ONLINE) designed to fit into 3/4-in.-dia. bench dog holes. If you're facing a benchtop-clamping challenge, a bench dog may be your new best friend. ♦

PHOTOGRAPHY BY DAN CARY AND COURTESY MANUFACTURERS

BENCH DOGS: A FEW OF THE MORE COMMON BREEDS



Hold-downs (often called hold-fasts) hold the workpiece down against the workbench. A simple tap on the top of the Rockler hold-down clamp (left) wedges it tight against the workpiece, and a tap on the side releases it. The Veritas Surface Clamp (right) is a threaded clamp that increases the downward force.



A bench dog with a built-in threaded clamp, such as the Veritas Wonder Dog, can be used in place of a bench vise to hold work against a traditional bench dog.



The Veritas Bench Stud holds a workpiece and is completely out of the way (and out of sight). It features an expanding bolt that fits into a hole bored in the base of the workpiece.



You can secure a guide board or jig to a bench using one or more Veritas Bench Anchors. They feature an expanding bolt (left) that fits in a bench dog hole.



SOURCES ONLINE

For online information, go to www.HandymanClub.com and click on WEB EXTRAS.

Lee Valley Tools

(bench dogs, Wonder Dog, Surface Clamp, Bench Anchor and Bench Stud), 800-871-8158
www.leevalley.com and www.veritastools.com

Rockler Woodworking and Hardware

(bench dogs and hold-downs)
800-279-4441, www.rockler.com

Expert Answers

Learn from the pros

BY DAN CARY

Blotchy-Finish Fix

Q: I tried to wipe oil stain on a test piece of hard maple and it did not turn out well. How can I avoid blotchy results when I stain this wood?

Loren Tomlinson
Chillicothe, IL

A: First, I commend you for applying the finish to a test piece rather than to the actual project. The best way to ensure a good-looking finish is to test the product on cutoffs from the same stock that was used to make your project. Take detailed notes about each step so that you can repeat the exact same process when you apply the finish to your project. Making test boards may seem like extra work, but it's cheap insurance against the heartache of a ruined project.

The problem you encountered is common. Hard maple is one of many woods that are tough to stain evenly. The grain of these woods is often open or the density is uneven, leading to unpredictable stain absorption. I'm assuming that you used a penetrating oil stain containing pigment (the most common liquid stains sold at home centers), which is particularly difficult to apply evenly to these types of woods.

There are several methods that can help you achieve more even color on difficult-to-stain woods. The steps below outline a basic approach using products that are typically available at most hardware stores and home centers. Remember: Practice these steps on test pieces to perfect your techniques before applying the finish to your project.

1. Prep. Sand thoroughly, removing rough marks with 100-grit and working up to 220-grit sandpaper. Don't skip grits when moving up to a finer grade. Finally, dampen the work-



Making test boards from a scrap piece of the same stock that was used to make your project is the only way to ensure that your finish will turn out the way you intend. Take notes and follow the exact same finishing process on the final project.

APPLYING A SEAL COAT IMPROVES RESULTS



On the left-hand sample, a liquid stain was applied over untreated pine. The color is blotchy. On the right-hand sample, a thinned coat of sanding sealer was applied first. Then the dried sealer was lightly sanded, and a coat of gel stain was applied. The color is much more even.

piece with distilled water to raise the grain and then sand the dry raised grain smooth with 220-grit sandpaper.

2. Seal. You can apply a thinned coat of sanding sealer, such as Bulls Eye Seal Coat mixed 1:1 with denatured alcohol. (Thin other sealers with the appropriate solvent.) Lightly sand the dried sealer smooth with 320-grit sandpaper. Or you can apply a product such as Minwax Pre-stain Wood Conditioner.

3. Color. Use a gel stain to color the wood. Follow the manufacturer's instructions for application.

4. Top coat. Apply polyurethane finish over the dry stain. Wipe-on oil-base polyurethane works well,

but you'll need to apply at least six coats for protection if the piece will be handled a lot. ♦

SUBMIT QUESTIONS TO:

expertanswers@HandymanClub.com

Include your name, member number, address, daytime phone and e-mail address. Sketches and photos are welcome. We regret that we cannot respond personally to all questions.

For the fastest answers, post questions on our Club's online forum at www.HandymanClub.com



or at
Handyman Club of America
on Facebook

Or mail to:
Expert Answers c/o Dan Cary
HANDY, 12301 Whitewater Drive
Minnetonka, MN 55343

PHOTOGRAPHY BY MICHAEL ANDERSON AND DAN CARY

Choose Life Grow Young with HGH

From the landmark book *Grow Young with HGH* comes the most powerful, over-the-counter health supplement in the history of man. Human growth hormone was first discovered in 1920 and has long been thought by the medical community to be necessary only to stimulate the body to full adult size and therefore unnecessary past the age of 20. Recent studies, however, have overturned this notion completely, discovering instead that the natural decline of Human Growth Hormone (HGH), from ages 21 to 61 (the average age at which there is only a trace left in the body) and is the main reason why the the body ages and fails to regenerate itself to its 25 year-old biological age.

Like a picked flower cut from the source, we gradually wilt physically and mentally and become vulnerable to a host of degenerative diseases, that we simply weren't susceptible to in our early adult years.

Modern medical science now regards aging as a disease that is treatable and preventable and that "aging", the disease, is actually a compilation of various diseases and pathologies, from everything, like a rise in blood glucose and pressure to diabetes, skin wrinkling and so on. All of these aging symptoms can be stopped and rolled back by maintaining Growth Hormone levels in

the blood at the same levels HGH existed in the blood when we were 25 years old.

There is a receptor site in almost every cell in the human body for HGH, so its regenerative and healing effects are very comprehensive.

Growth Hormone first synthesized in 1985 under the Reagan Orphan drug act, to treat dwarfism, was quickly recognized to stop aging in its tracks and reverse it to a remarkable degree. Since then, only the lucky and the rich have had access to it at the cost of \$10,000 US per year.

The next big breakthrough was to come in 1997 when a group of doctors and scientists, developed an all-natural source product which would cause your own natural HGH to be released again and do all the remarkable things it did for you in your 20's. Now available to every adult for about the price of a coffee and donut a day.



GHR now available in America, just in time for the aging Baby Boomers and everyone else from age 30 to 90 who doesn't want to age rapidly but would rather stay young, beautiful and healthy all of the time.

The new HGH releasers are winning converts from the synthetic HGH users as well, since GHR is just as effective, is oral instead of self-injectable and is very affordable.

GHR is a natural releaser, has no known side effects, unlike the synthetic version and has no known drug interactions. Progressive doctors admit that this is the direction medicine is seeking to go, to get the body to heal itself instead of employing drugs. GHR is truly a revolutionary paradigm shift in medicine and, like any modern leap frog advance, many others will be left in the dust holding their limited, or useless drugs and remedies.

It is now thought that HGH is so comprehensive in its healing and regenerative powers that it is today, where the computer industry was twenty years ago, that it will displace so many prescription and non-prescription drugs and health remedies that it is staggering to think of.

The president of BIE Health Products stated in a recent interview, I've been waiting for these products since the 70's. We knew they would come, if only we could stay healthy and live long enough to see them! If you want to stay on top of your game, physically and mentally as you age, this product is a boon, especially for the highly skilled professionals who have made large investments in their education, and experience. Also with the failure of Congress to honor our seniors with pharmaceutical coverage policy, it's more important than ever to take pro-active steps to safeguard your health. Continued use of GHR will make a radical difference in your health, HGH is particularly helpful to the elderly who, given a choice, would rather stay independent in their own home, strong, healthy and alert enough to manage their own affairs, exercise and stay involved in their communities. Frank, age 85, walks two miles a day, plays golf, belongs to a dance club for seniors, had a girl friend again and doesn't need Viagra, passed his drivers test and is hardly ever home when we call - GHR delivers.

HGH is known to relieve symptoms of Asthma, Angina, Chronic Fatigue, Constipation, Lower back pain and Sciatica, Cataracts and Macular Degeneration, Menopause, Fibromyalgia, Regular and Diabetic Neuropathy, Hepatitis, helps Kidney Dialysis and Heart and Stroke recovery.

For more information or to order call 877-849-4777
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Your vote will help decide who wins this month; next time, enter a project of your own

BY JENNY STANLEY

Lowrider

To say that Club member **Marlin Frakes** of Littleton, Colorado, cruises the neighborhood in style would be an understatement. He transformed a beat-up pink golf cart into a flashy new ride. "I spent two years on this project," Marlin says. "It's my retirement gift to myself." He modified the engine to reach a top speed of 30 mph and added new lights with turning signals and emergency flashers and a radio with a built-in DVD player. The cruiser seats four people — perfect for Marlin and his three grandkids.



Cabinet revival

Inspired by Carlyle Lynch's plans for an 18th-century James Gheen cabinet that resides at the Museum of Early Southern Decorative Arts, Club member **Richard Dolbow** of King of Prussia, Pennsylvania, crafted his own version of an American classic. "Unlike the original, which was made of black walnut, I used cherry as the primary wood," Richard says. The cabinet features hand-dovetailed drawers and custom moldings. He finished the piece with walnut dye, burgundy shellac, custom-blended stain and a water-base lacquer, which he rubbed out by hand using pumice and rottenstone.



Portable table

This pint-size table crafted by Club member **Bill Oehler** of Kuna, Idaho, was discovered on the Handyman Club of America Facebook page (www.facebook.com/handymanclub). Bill designed and built the durable piece for camping: It's only 22 in. tall, and the top, which measures 22 x 23-1/2 in., slides apart so the table can fold for storage. Bill used pine from his local lumberyard to make the table, which provides a great surface for meals or holding drinks and snacks while he's lounging in a lawn chair by a campfire.



Mini Harleys

Club member **Norm Luker** of Mason City, Iowa, created these Harley Davidson-style rockers for his 2-year-old twin grandsons. (The boys' father, a Harley mechanic, inspired the project.) The frames are made of 1/2-in. and 3/4-in. copper tubing and fittings, which Norm assembled with J-B Weld and then buffed and finished with three coats of spray lacquer. He made the wood parts out of pine, walnut and oak, which he stained and coated with polyurethane. For an authentic touch, Norm covered the seats with leather from a pair of chaps that he purchased at a garage sale. ♦





CRITICS' CHOICE AWARD

Winner: Ken Zitzka of

Vancouver, Washington

Project: "Rockin' Cradle,"
October/November 2010

Prize: Ken will receive an
official certificate and an M12
Multi-Tool from Milwaukee.
Congratulations, Ken!



SHOW OFF YOUR PROJECT

To have your project considered, send:

1. A photo of your project
2. A detailed description of your project

Address to:

HandyWorks c/o Jenny Stanley
HANDY, 12301 Whitewater Drive
Minnetonka, MN 55343

Or e-mail to:

HandyWorks@HandymanClub.com

We regret we cannot acknowledge
or return submissions.

VOTE ONLINE FOR YOUR FAVORITE PROJECT

Vote online for one of these projects
to receive the Critics' Choice Award.
Go to www.HandymanClub.com
and click on WEB EXTRAS.

**Lowrider
Cabinet Revival
Portable Table
Mini Harleys**

Voting for this issue will end March 31, 2011. The winner
will be announced in the June/July 2011 issue.

QUIZ ANSWERS: 1) p. 15, 2) p. 26,
3) p. 31, 4) p. 39, 5) p. 71

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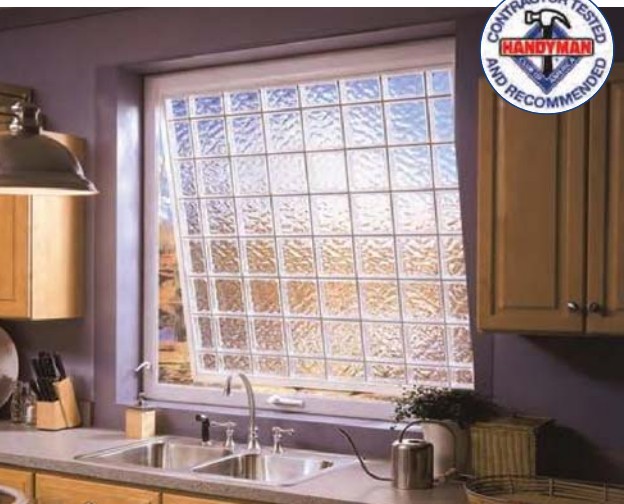
This seal is awarded to products that at least two out of three testers recommend to fellow Club members. The test scores are compiled from all test reports. Ratings are based on a scale of 1 to 10, with 10 being the highest.



Member Tested

1,924 Club members tested \$67,918 in products

BY ROSS TANNER, PRODUCT TEST EDITOR



Operable Acrylic-Block Window

MEMBER RATING: 9.1 BEST FEATURE: FINISHED APPEARANCE

HY-LITE, A U.S. BLOCK WINDOWS COMPANY, 888-256-2599, WWW.HY-LITE.COM

Hy-Lite's Acrylic Block Operable Windows (starting at \$275) combine energy efficiency, privacy and functionality. Primarily used in kitchens and bathrooms, the awning and casement windows open outward, offering air-flow without jeopardizing privacy. Each window is custom built with caulk that is resistant to mold and mildew and comes with a limited lifetime warranty. Five block styles and three colors of vinyl frames are available.

William Wiese, Baraboo, WI: "The Hy-Lite Acrylic Block Operable Window comes as a compact complete unit, which makes installation quick and easy. My family liked that it could be opened for ventilation."

Vince Corvino, Souderton, PA: "The look and design of the window are great. The locking levers pull the window in tight for a good seal when closed."

Drill/Driver and Impact Driver

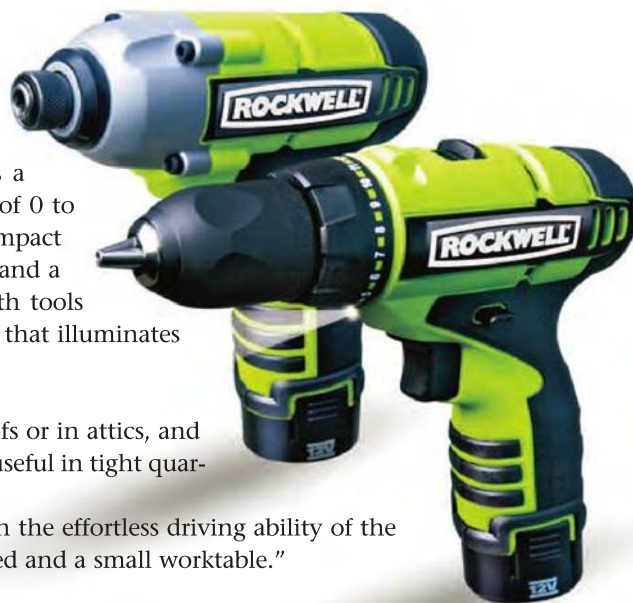
MEMBER RATING: 9.3 BEST FEATURE: PERFORMANCE

ROCKWELL POWER TOOLS, 866-514-ROCK, WWW.ROCKWELLTOOLS.COM

Rockwell's 12V LithiumTech Drill/Driver and Impact Driver (\$169.99 for the package) are powerful tools that won't wear you out. The drill/driver has a 3/8-in. keyless chuck and features a two-speed gearbox for no-load speeds of 0 to 350 rpm and 0 to 1,300 rpm while packing 210 in.-lbs. of torque. The impact driver offers 800 in.-lbs. of torque, a variable-speed 1/4-in. reversible driver and a hammer and anvil action that can drive and remove stubborn screws. Both tools weigh slightly more than 2 pounds with the battery and have an LED light that illuminates work areas and flashes when the battery charge is low.

Joe Baca, Las Vegas, NV: "As an HVAC QC inspector, I am constantly on roofs or in attics, and the compact size of the Rockwell drill/driver and impact driver makes them useful in tight quarters. My wife is comfortable using them as well."

Mark Chludzinski, Erie, PA: "The look and feel of the drill/driver coupled with the effortless driving ability of the impact driver was great for hanging shelves and assembling a bookcase, a bed and a small worktable."



YOU CAN BE A TESTER

To be a product tester, you must fill out a Product Test Profile form. To request a form, call Member Services at 800-243-7679 or go to www.HandymanClub.com and click on Product Testing Program in the left-hand column of the home page. From there, you can fill out the form online.



This icon appears next to select tested and recommended products to signify a special members-only offer. For details about the offer, go to www.HandymanClub.com, roll over the Member Benefits tab and click on Deals & Discounts.

Products earn these additional seals of approval when favorable ratings are also received from members who are trades contractors, automotive mechanics or avid woodworkers.



PHOTOGRAPHY COURTESY MANUFACTURERS

Steel-Toe Work Boots

MEMBER RATING: 9.6 BEST FEATURE: PROTECTION

KEEN INC., 866-676-5336, WWW.KEENFOOTWEAR.COM

Keen Utility Pittsburgh Work Boots (\$170) are designed for all-day protection and comfort. Each boot has an asymmetrical steel toe that is anatomically correct for the left or right foot, providing a roomier toe box that is comfortable and meets all ASTM safety standards. Other features include a water-resistant nubuck leather upper and an interior water-resistant membrane, locking metal hook and lacing eyelets, contoured heel locks, removable footbeds, oil- and slip-resistant nonmarking rubber outsoles and reflective webbing for additional safety and visibility.



Chad Johnson, Royal Oak, MI: "These boots are sturdy, breathe well and have a connected tongue that seals out debris."

Wayne Rinker, Locust Grove, VA: "I have owned more than 30 pairs of boots as a heavy-equipment mechanic, and the Keen boots are the most comfortable boots that I've ever worn!"

Cutting, Sanding and Routing Tool

MEMBER RATING: 9.1

BEST FEATURE: CONVENIENCE

DREMEL, 800-437-3635, WWW.DREMEL.COM

The compact and lightweight Dremel Trio (\$99.99) combines a spiral jigsaw, an edge sander and a detail router into one versatile tool. It features a 90-degree pivoting handle that allows users to adjust between horizontal and vertical surfaces without switching tools; multiple grip zones for comfort; and a variable-speed dial that operates the tool at 10,000 to 20,000 rpm. Other features include a nonmarring base that protects workpieces, a telescoping foot for accurate depth control and an onboard dust-extraction attachment to maintain a clean work space.

Charles Taylor, Poland, IN: "Whether cutting, routing or sanding, the tool always had plenty of power. My favorite features are the adjustable handle and the easy-glide base."

Bill Serre, Lynn Center, IL: "The Dremel Trio is ergonomically designed and easy to use with drywall, wood and plastic. I used it as a minirouter for making wood signs."



Spray Adhesive for Wall Tile

MEMBER RATING: 8.4

BEST FEATURE: FINISHED APPEARANCE

HOMAX PRODUCTS INC., 877-235-9733, WWW.SPRAYANDSET.COM

Nontoxic, nonflammable, VOC-free Spray & Set Wall Tile Adhesive (\$24.99) is a professional-grade adhesive for applying wall tiles to create backsplashes and other decorative elements. Just 30 minutes after applying the adhesive to a clean, dry wall, you can set ceramic and porcelain tiles; grout can be added one hour later, so your project can be completed in one day. Each can covers 40 square feet. The translucent adhesive allows you to see layout and caulk lines as you work, and cleanup is easy.

Barbara Wheeler, Fort Worth, TX: "Spray & Set Wall Tile Adhesive applies easily and evenly with no smell or running. It holds tiles just 30 minutes after application, and cleanup is minimal."

Chris Lucas, Albany, OH: "I used it to put in a glass-tile backsplash and was delighted with the results. It cut the project time from two days to four hours!"



Twist- and Spade-Bit Sharpener

MEMBER RATING: 8.4 BEST FEATURE: COMPARED TO SIMILAR PRODUCTS

DAREX LLC, 800-597-6170, WWW.DRILLDOCTOR.COM

The Drill Doctor SB (\$119) can sharpen spade and twist drill bits to increase their life and enhance their performance. The spade-bit module uses an industrial-grade profiled, vitreous wheel to sharpen bits from 1/4 in. to 1-1/2 in. The twist-bit module uses a diamond grinding wheel that sharpens high-speed steel, cobalt, titanium-nitride-coated and masonry bits from 3/32 to 1/2 in.

Michael Ladeas, Knoxville, IA: "The Drill Doctor sharpens all kinds of bits, which saves me a lot of money compared with buying new ones."

William Harant, Helena, MT: "With the bit holder, I don't have to keep checking the angles."



Touchless Paper Towel Dispenser

MEMBER RATING: 9.0 BEST FEATURE: PERFORMANCE

CLEAN CUT INTERNATIONAL, 866-599-7066, WWW.CLEANCUTDISPENSER.COM

The CleanCut Touchless Paper Towel Dispenser (\$139.95) mounts under cabinets and works with any store-bought paper towels, including blue shop towels. Its patented technology uses LED Breaking Beam Sensors and a self-sharpening blade to cut paper towels to length regardless of their perforations. The dispenser is available in black, white or stainless steel and plugs into a standard 120-volt outlet so it can be used in a workshop, garage, kitchen, laundry room, etc.



Paul Selander, Littleton, CO: "This is a clean and efficient tool for the kitchen. The hands-free cut worked perfectly on cheap and expensive paper towels. I may just have to buy one for my shop!"

David Collise Jr., Claremont, NH: "The CleanCut Touchless Paper Towel Dispenser was installed and running in less than 20 minutes, which includes reading the manual. The infrared sensor can cut towel lengths between 4 in. and 2 ft., saving on paper towel waste."

Absorbent Work Pad

MEMBER RATING: 8.9 BEST FEATURE: EASE OF USE

NEW PIG CORP., 800-468-4647, WWW.NEWPIG.COM

Designed to keep work areas clean and safe, the Pig Mat (\$5 for a pack of three) is made of eight-layer fine polypropylene fibers that quickly absorb oil, water, gasoline, grease, solvents, auto fluids, paint, battery acid and other fluids. The 15 x 20-in. mat also acts as a cushion and resists tearing and fraying, and the exclusive dimple pattern holds liquid for quick and easy cleanup.

Terry Caston Jr., Russellville, AR: "The Pig Mat is a long-lasting absorbent mat that helps prevent slips, trips and falls. The durable mat kept all grease, grime and residue off my work surface."

Matthew Davis, Brookfield, IL: "The mats are disposable and easy to cut to size, and they soak up oil and other chemicals. I recommend them for oil spills or toolbox lining."



Multiwrench

MEMBER RATING: 7.0 BEST FEATURE: QUALITY

ABSOLUTELYNEW INC., 888-946-8368, WWW.ABSOLUTELYNEW.COM

Made from forged alloy with a chrome vanadium finish, the Select-a-Socket Multi-Wrench (\$24.95) contains 10 socket sizes that range from 5/16 to 7/8 in. The socket-head adapter fits on either side of the ratcheting handle, and the socket-head selector allows you to quickly find the appropriate size. The wrench's ergonomic Sure-Grip TPE handle provides comfort during use.

Robert Dietz, Orion, IL: "The Select-a-Socket Multi-Wrench was easy to use. While working in hard-to-access areas, I only needed to flip the lever to change sizes without removing the socket."

Robert Bryant, Rochester, NY: "Changing the socket head was difficult at first, but it became easier the more I used it. It even helped me organize my toolbox."



Knife

MEMBER RATING: 8.5 BEST FEATURE: QUALITY

COLUMBIA RIVER KNIFE & TOOL, 800-891-3100, WWW.CRKT.COM

The small and lightweight Minimalist Tanto Knife (\$29.99, model 2386) provides comfort and control thanks to the unique geometry of the full-tang blade along with three finger choils, thumb-friction grooves and hand-contoured Micarta scales. The 2.125-in. blade has a central spine of metal extending to the tip with a razor-sharp front edge for push cutting and a concave main edge for fast cutting.

Shaun Wellington, Medford, OR: "The Minimalist Tanto Knife provides a firm grip, which allows for good push cuts and cuts with a concave shape. The size and quality are second to none."

Thomas Habig, Batavia, OH: "The sharp blade is very thick and sturdy, allowing you to apply force with accuracy."



Sump Pump

MEMBER RATING: 9.3 BEST FEATURE: EASE OF INSTALLATION

FLOTEC, 800-365-6832, WWW.EASYSUMP.COM

The Flotec Easy Sump (\$179) is a sump pump that contains everything you need for installation in one convenient kit. It comes plumbed with 24 in. of PVC pipe and a fully assembled vertical float switch that operates in 10-in. or larger basins. It offers two discharge options: using the hard plumbing or a flexible hose kit to redirect water from the sump basin. The pump is corrosion-resistant and includes a universal check valve that will connect to 1-1/2- or 1-1/4-in. PVC pipe.

Bill DeSimone, Spotswood, NJ: "The Flotec Easy Sump replaced my existing sump pump in 10 minutes. It was great to have everything in one box, even a flexible hose for emergency use."

Richard Kromka, Glenshaw, PA: "I love the compactness and ease of installation. Using the straightforward instructions, even a weekend handyman could ace this one."



Outdoor Security Spotlight

MEMBER RATING: 8.3 BEST FEATURE: EASE OF INSTALLATION

WIRELESS ENVIRONMENT LLC, 877-298-9082, WWW.MRBEAMS.COM

Powered by three D batteries that should last for more than a year, the Outdoor Security Spotlight (\$39.99) is a motion-sensor LED spotlight that shines 140 lumens of bright, white light over more than 350 sq. ft. It easily mounts onto two screws on any outdoor apparatus without the need for electrical wiring, and it detects movement up to 30 ft. away. The fixture pivots and rotates so you can select exactly where the light will shine, and you can also adjust the brightness and the automatic shutoff setting time (from 30 seconds to two minutes).

Tom Hooker, Taylor, MI: "Absolutely no wiring is needed for the Outdoor Security Spotlight! Just mount it, aim it and walk away [in a lighted path]. The low brightness setting is more light than I need."

Mike Bowgren, Batavia, IL: "The ease of installation and sturdy construction of the security light are awesome. With the Handyman Club discount, I'll be buying a few more lights!"



Utility Knife

MEMBER RATING: 9.1 BEST FEATURE: CUTTING ABILITY

ACME UNITED CORP., 800-835-2263, WWW.CLAUSSCO.COM

The Clauss SpeedPak Utility Knife (\$9.99) is a cartridge-base tool that allows for quick, easy and safe blade changes. It has a lightweight aluminum body with a nonslip grip, and the titanium-bonded blades (10 in a cartridge) are three times harder and stay sharper longer than standard blades. Other available cartridges contain hook, dubbed or serrated blades.

Peter Dripps, Moodus, CT: "The Clauss SpeedPak Utility Knife did not hurt my knuckles when cutting drywall like other utility knives, and the long-lasting blades were easy to change."

William Lyons, Warren, OH: "The cartridge system is versatile, allowing for different types of blades to be used, and it's safe."



Skin Barrier Gel

MEMBER RATING: 7.8 BEST FEATURE: EASE OF USE

SKIN ARMOR TECHNOLOGIES INC., (513) 956-4303, WWW.MECHANICSARMOR.COM

Mechanic's Armor Skin Barrier Gel (\$9.95 for a 4-ounce bottle) uses natural ingredients to form a protective barrier that blocks grease, grime, chemicals, paint, glue and more while preventing cracked skin, rashes and sores caused by exposure to harsh environments. Each application dries within 10 to 15 seconds and continues working until it is removed with soap and water.

Thomas Thompson, Rolling Meadows, IL: "Mechanic's Armor Skin Barrier Gel applies easily and dries fast. After working with greasy car parts, my hands washed clean with just soap and water."

Gene Allen, Alva, FL: "I paint a lot, and after using this product, paint slides off my hands." ♦





■ FREE MIRACLE HEATERS ARE ON THE WAY: Everyone wants to stay warm and save money on their heat bills this winter. These trucks are being loaded full of new Heat Surge Roll-n-Glow® Convecta-red Heat™ fireplaces and will soon be ready to go. The oak mantle is a real steal at just two hundred ninety-eight dollars and shipping because the first 17,247 readers who beat the order deadline by calling 1-866-884-2539 to order the fireplace mantles are actually getting the Heat Surge miracle heaters with new Convecta-red Heat technology absolutely free.

Public has just 7 days to get free heaters

New Miracle Convecta-red heaters are being given away free to the first 17,247 readers who beat the order deadline for real Amish fireplace mantles handmade for the breakthrough invention that drastically slashes heat bills

Save money: uses about the same electric as a coffee maker, so turn your thermostat way down and never be cold again

By R.K. BERRY
Universal Media Syndicate

UMS – Have you heard about the free heater giveaway that's sweeping across the nation?

Well listen up because here it is and we'll even give you the number to call.

Starting at precisely 8:30am this morning, brand new Convecta-red miracle heaters are actually being given away free to the general public for the next 7 days.

The only thing today's readers need to do is call the Toll Free Hotline before the

7-day deadline with their order for the handmade Amish Fireplace Mantle. The first 17,247 readers who do will instantly be awarded the Heat Surge miracle heater with new Convecta-red Heat technology absolutely free.

This is all happening to announce the new Heat Surge Roll-n-Glow Convecta-red fireplace which actually rolls from room-to-room so you can turn your thermostat way down and never be cold again. That way, everyone who gets them first can

immediately start saving on their heat bills.

Now that the bitter cold winter weather is here, portable Amish encased fireplaces are being delivered directly to the doors of all those who beat the deadline.

These remarkable new Convecta-red heaters are being called a miracle because they have the patent-pending *Fireless Flame®* technology that gives you the peaceful flicker of a real fire but without any flames, fumes, ashes or mess. Everyone is

getting them because all you do is plug them in.

And here's the best part. Readers who beat the 7-day order deadline are getting their new Convecta-red miracle heaters free when encased in the Amish built real wood fireplace mantles. The mantles are being handmade in Ohio, right in the heart of Amish country where they are beautifully hand-rubbed, stained and varnished.

You just can't find custom made Amish mantles like this in the national chain stores. That makes the oak

ADVERTISEMENT

mantle a real steal for just two hundred ninety-eight dollars since the entire cost of the new Convecta-red miracle heater is free.

The Amish handmade mantle actually lets the new Convecta-red miracle heater roll from room-to-room. These fireplaces are so compact they go anywhere, yet they throw off an instant heat wave in any room. And they only use about the same electric as a coffee maker, so it's easy to stay warm in any room of the house for just pennies a day.

"You see, with your furnace you are paying to heat areas of your home that you're not using. And since

the new Convecta-red miracle heater only uses about 9¢ an hour of electricity on the standard setting, the potential energy savings are absolutely incredible," said Laura Rich, Operations Director.

"We're trying to make sure no one gets left out, but you better hurry because we only have 17,247 new Convecta-red miracle heaters to hand out to today's readers for free. For now, readers can have two free per household just as long as they call before the deadline," confirms Rich.

Getting the Heat Surge Roll-n-Glow fireplace is the smart way to slash winter heat bills and still stay

warm all winter long. And getting the new Convecta-red miracle heater free is like putting three hundred bucks in your pocket and you can save even more on your monthly heat bills.

"We're bracing ourselves for all the calls because everyone wants to save on their heat bills and stay warm this winter. But those that really want to save a ton will be telling our operators they want two Amish fireplace mantles and they'll get two miracle heat-

ers free," said Rich.

"So when the lines are busy keep trying. We promise to get every call. Then we'll have a delivery truck out to you in no time at all so you can stay warm and start saving on your heat bills right away," Rich said.

"You'll instantly feel the bone soothing heat in any room. You will never have to be cold and miserable again," she said. ■

On the worldwide web:
www.amishfireplaces.com

How to get your free heater

Readers need to call the Toll Free Hotlines beginning at 8:30am this morning. If lines are busy keep trying, all calls will be answered. However, if you miss the deadline you will be turned away from this free offer and forced to wait for future announcements in this or other U.S. publications, if any.

The first 17,247 readers who beat the 7-day deadline to order the Amish made fireplace mantle and shipping get the new Heat Surge Convecta-red miracle heater absolutely free.

They have imposed a strict limit of 2 free new Convecta-red heaters per household. So, readers need to hurry and call now because there are only 17,247 Heat Surge miracle heaters

to be given away free, when they're gone, they're gone.

Use the map below to find the weather zone you live in and call the number for your zone.

If you live in one of these Zones



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■ **AMISH QUALITY:** Amish craftsmen take great pride in their workmanship. Each Amish fireplace mantle is hand crafted to the highest standards and is built to last a lifetime. With four finishes to choose from they are sure to make any room look like a million bucks.



■ **SAFE:** The new Heat Surge Convecta-red heater looks so real it fools everyone but there is no real fire. So you don't have to worry because the flame window is safe to the touch. It's where the kids will play and the cat and dog will sleep.



■ **SAVES ON BILLS:** Everyone gets lower heat bills and still stays warm. The new Heat Surge Convecta-red heater only uses 9¢ an hour of electricity on the standard setting, yet blasts out an instant heat wave in any room to keep you warm all day long for just pennies.



■ **DELIVERED FULLY ASSEMBLED:** Every Heat Surge Roll-n-Glow fireplace comes fully assembled by Amish craftsmen and is delivered right to your door. All you do is roll it out of the box, plug it in and relax in front of the *Fireless Flame*.

Tip Trader

Home and workshop hints from Club members



Rot-Spot Patch

If you need to repair rot damage on your home's decorative exterior woodwork or moldings, try this trick from Club member **Joe Provey** of Bridgeport, Connecticut. Mix two-part liquid epoxy according to the manufacturer's directions. Brush



some of the epoxy onto the surfaces to be patched; then mix wood flour or sawdust into the remaining epoxy solution until it reaches the consistency of peanut butter. Apply the paste to the area that has rotted away with a putty knife, shaping the patch as well as you can. After a couple of hours, it will have cured enough for you to continue shaping. Once dry, the patch can be routed, chiseled, sanded, sawn or drilled as necessary.



Homemade Painting Stand

If you're in a jam and can't make it to the hardware store to pick up a set of Painter's Pyramids, use this trick from Club member **Jim Willis** of Germantown, Tennessee, to create your own emergency versions. Drive a screw through a 2-in. square scrap of wood to create the support — just make sure to countersink the screwhead so the block sits level.



Small-Batch Mortar Mixing

When Club member **Chris Umbel** of Friendsville, Maryland, had a small tiling repair to make, he didn't want to mix up a large batch of thin-set mortar only to see most of it go to waste. His solution was to use a small bucket and a whisk. He cut the loop off of the handle and chucked the whisk into his cordless drill so he could use it to mix the dry mortar powder and water. ♦

TIP US OFF — AND WIN \$\$\$

The member who submits the best tip wins \$200. Other published tips are awarded \$50. Submit your tips by e-mail to:

tiptrader@HandymanClub.com

Include your name, member number, address and daytime phone number. Sketches and photos are welcome. We regret we cannot acknowledge or return submissions.

or mail them to:
Tip Trader c/o Mike Berger
HANDY, 12301 Whitewater Drive
Minnetonka, MN 55343

PHOTOGRAPHY COURTESY CLUB MEMBERS

The Quiz

Can you find the following photos in this issue of *HANDY*?



WANT TO PLAY?

To enter the free Club membership drawing, submit your answers online at www.HandymanClub.com

Entries must be submitted by March 31, 2011.
Winners will be announced in June 2011.

QUIZ WINNERS OCTOBER/NOVEMBER 2010

Robin Ellzey, Denver, CO
Winston Hill, Maryville, TN
Ellis Hudson, Portland, IN
Brian Kindy, Smithville, OH
Thomas Pitarra, Spring, TX
Paul Puhaida, Harrison, AR
James Shaefer, Poughkeepsie, NY
Tom Tilson, Olympia, WA
D. Fred Wascher, Williamsport, PA
Matt Wilhelms, Monroe, WI

The answers to this issue's QUIZ appear at the end of HANDYWORKS. ♦



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Contact Member Services

If you need help with any aspect of your Club membership, please contact us.

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CALL Member Services
800-243-7679

Monday – Friday, 7:30 a.m. to 8 p.m.
Saturday, 8 a.m. to 4:30 p.m. Central Time

WRITE to the Club
HCOA Member Services
P.O. Box 3401
Hopkins, MN 55343-2101

Remember to include your membership number on all correspondence and have it ready when you call.

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ENTER TODAY — YOU CAN WIN!

You can win a prize from the Handyman Club of America. Enter online at www.HandymanClub.com or by mailing a postcard (see below). Prizes are donated by the manufacturers. Entries must be received between February 1, 2011, and March 31, 2011; the winners' names will be drawn April 6, 2011.

For October/November prizewinners, see p. 10.

NO PURCHASE NECESSARY TO ENTER OR WIN. Making a purchase will not improve your chances of winning. See official rules at HandymanClub.com. Submit your entry at HandymanClub.com or send your name, member number (if available), address and phone number on a postcard to: Great Giveaway, CRID #3932, P.O. Box 3428, Minnetonka, MN 55343.

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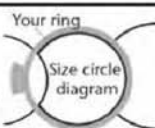
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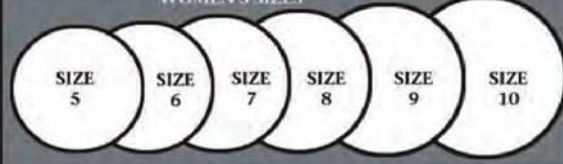
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WOMEN'S SIZES



Current's Past

The path to power: how we became wired

BY CONNIE BASTYR

If you think about all the centuries that people lived without electricity (or at least without a *working knowledge* of electricity), our history with this energy source is relatively brief. Yet during the past hundred years or so, we've built vast systems for generating and distributing electric power and created an astounding array of ways to use it. At warp speed, our world and technology have exploded in innovation, developing electrical (and electronic) devices that might have shocked even great visionary inventors such as Thomas Edison and Nikola Tesla.

Although we typically associate Edison with refinements to the incandescent light bulb, his main obsession was the quest to bring electric power to the public. His direct-current (DC) system had a head start in providing electricity for outdoor lighting, but it also had a major shortcoming: the short range of its delivery.

Edison's rival, Tesla (and Tesla's supporter, George Westinghouse), promoted a more practical alternating-current (AC) system, which they introduced in 1887. The immediate advantage was that AC could be distributed several miles from its source. The farther-reaching AC was great for delivering electricity to cities and towns, though initially not so promising for rural dwellers. It would take a couple of decades for small towns and farmsteads to convert from gas lighting to the incandescent bulb — and to other modern conveniences such as the motorized sewing machine and electric iron.

The final battleground in the AC/DC power struggle was the 1893 Chicago World's Fair: Westinghouse (and Tesla) won the bid for supplying light and power to the exhibition. After esteemed electrician William Merrill inspected the lighting displays and declared them to be safe and insurable, AC power lit the fair — and eventually, the world. (Merrill was subsequently called upon to inspect electrical equipment for other commercial entities, which led him to form a new business called Underwriters Laboratories.)

Early electric appliances were designed to connect to light sockets, the only power connections installed in the first "electrified" homes.



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The 1936 Rural Electrification Act (a post-Depression stimulus package) provided loans to build infrastructure and supply power to America's distressed farming communities.

Edison opted out of allowing his patented screw-base bulbs and sockets to be used for the fair's light show, so Westinghouse engineers designed a different style of connection between power and bulb. In this rivalry, however, Edison ultimately prevailed: By 1908 his screw-base sockets and bulbs became the common standard — and remain so today. In fact, early appliances such as hair dryers and irons initially connected to adapters that were screwed into Edison bulb sockets (below left). The first prong-type outlets and plug-ins were patented in 1904 and by about 1915 became the typical source for powering household appliances.

With the widespread use of electricity came the need for universal safety standards. The National Electric Code (NEC) was created in 1897 to unify the five sets of electrical codes that had formed by that time. Since then, the NEC has established new rules and recommendations every three years, responding to improvements in technology (for example, the change from fuses to circuit breakers, increases in minimum numbers of outlets required, etc.) Thanks to established standards, you can confidently purchase a corded power tool, a household appliance or electronics equipment without worrying about its compatibility with your home's electrical service. So the next time you plug in, think of Edison, Tesla and others who gave us powerful reasons to feel a spark of gratitude. ♦

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