

HANDY

HANDYMAN CLUB OF AMERICA MAGAZINE



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Lincoln Electric! p.76



Backyard Beauties

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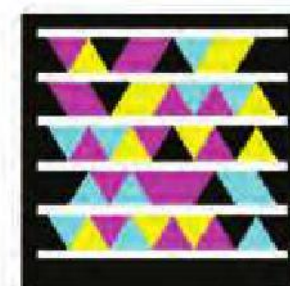
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People get fired up over outdoor cooking



WEB EXCLUSIVES

Download the TagReader app at: www.gettag.mobi; then scan with your smartphone. See p. 2 for more information.



COVER PHOTO BY MICHAEL ANDERSON

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CLUBHOUSE

Wanna Play Tag?

New technology delivers instant information
when you're on the go

For smartphone users, playing tag is much more interesting than chasing classmates around a playground (and way more productive than the endless back-and-forth missed calls known as "phone tag"). In fact, Microsoft Tag technology is expanding so quickly that if you don't have a smartphone, it may offer compelling reasons for you to get one.

Here's how to play: Use a smartphone (iPhone, Android, Blackberry, etc.) to take a picture of the patterned box on the right. That little box is called an MS Tag (or a 2D barcode), and it and other similar coded tags allow you to directly connect to a wide variety of Web content. By scanning a tag in this magazine, for example, you can quickly access videos and other multimedia from the Club, get timely information about new products, compare items while you're shopping at a brick-and-mortar store and much more.

To get started you'll need to download the free *TagReader* application: Use your smartphone's Web browser and go to <http://www.gettag.mobi/>. Then select the appropriate app to download for your phone. Next, open the app and center the video image crosshairs on the MS Tag. The app will automatically read the tag and take you directly to the linked Web content. It's that simple.

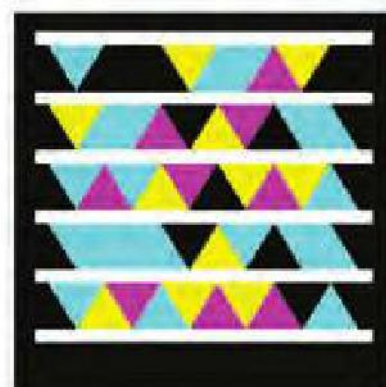
If you scan the tag on this page, you'll be treated to a short video on "how to play tag." (If you've already made it to that point, you probably don't need instructions, but the video is still fun to watch.) Once you know how to play, turn to p. 55 and scan the tag; you'll discover an extraordinary opportunity to travel to Iceland with fellow Club members this fall and explore this island nation's culture, building practices and architecture — and of course, enjoy its spectacular natural settings.

You'll find WEB EXTRAS tags within some of the articles in this issue; they'll take you to expanded content related to the article. (Even if you don't have a smartphone, you can access these links on www.Handyman-Club.com.) And in future issues of *HANDY*, you'll see our advertising partners tagging their ads to provide additional information, helpful tips and even special deals and discounts.

Just like real-life tag, digital tag can be exhilarating and entertaining. We hope you'll jump into the game and play with us soon.

LARRY

Larry Okrend
Executive Director
Handyman Club of America



Playing tag is easy as 1, 2, 3:

1. Download *TagReader* app.
2. Scan tag using the app.
3. Enjoy content.

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Outdoor Dining Table

BY DAN CARY

A built-in planter box makes this piece unique, versatile and fun



This table's built-in planter box allows you to create interesting centerpieces for any occasion. You can install a 36-in.-long planter insert or fill the box with buckets of cold beverages, a selection of your favorite condiments or a decorative row of candles. When you need more tabletop space, install the optional insert to cover the opening.

As far as I'm concerned, every meal is better when it's enjoyed alfresco. This large outdoor dining table's unique built-in planter box lets you turn even an ordinary dinner into a special event. It's designed to house a standard 36-in. plastic planter insert, but you could also fill it with a variety of decorative objects or meal accompaniments.

The table is made from standard dimensional lumber and requires only a few hand tools and basic portable power tools to build. It comfortably seats six people, but it could easily accommodate eight. If you prefer to forgo the planter opening, you can simply replace the short narrow top boards with full-length boards — or keep your options open and build an insert

to cover the box when you want to have more tabletop space.

Make templates

I prefer to make a template for any part that features a special shape or profile. Templates are obviously useful for creating multiple matching parts, but I often make them for single parts as well because laying out the profile on a template allows



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me the freedom to make modifications (or a mistake) without worrying about wrecking an actual part. I typically use inexpensive plywood for templates; in this case I used some leftover 1x pine. I always label and save my templates in case I decide to build the same project again in the future.

To create the templates for this project, lay out the profiles for the ends of the cross-supports, feet and trestle (see photo 1, right, and illustration details, opposite). Cut out the profiles and sand the edges smooth.

Make the base parts

Once the templates are complete, trace their profiles on the actual workpieces. Use a jigsaw or band saw to cut out each part (photo 2).

The table cross-supports and rails fit together with cross-halved joints. A cross-halved joint is created by cutting interlocking notches in each mating part. The width of the notch equals the width of the mating part. The depth of the notch equals half the depth of the mating parts. In this case the notches are 1-3/4 in. deep (half of the 3-1/2-in. depth of the 2x4s). The trestle fits inside a pair of 4-in.-wide x 1/4-in.-deep notches cut in the inside faces of the legs.

Mark the location of the notches on the legs, cross-supports and rails. It's easiest to clamp together the parts that have the same notch dimensions and cut them at the same time — a technique called *gang cutting* (photo 3, p. 10). Make several crosscuts, spaced about 1/8 in. apart, to remove half of the wood. Then break out the remaining wood and smooth the bottom of the notch with a chisel (photo 4, p. 11).

SHOPPING LIST

- 1x6 x 8-ft. pine board (1; for template)
- 2x4 x 10-ft. cedar boards (3)
- 2x6 x 8-ft. cedar boards (5)
- 5/4x6 x 10-ft. cedar deck boards (3)
- 3/8-in.-dia. x 4-1/2-in. hex bolts (12)
- 3/8-in. nuts (12)
- 3/8-in. washers (24)
- 2-in. deck screws
- 2-1/2-in. deck screws
- Exterior-rated finish



Make templates for the cross-support ends, feet and trestle. Flex a thin piece of scrap wood to lay out the arc profiles on the top and bottom of the trestle.



Trace the templates on the actual stock and then cut the parts with a jigsaw. Use a file and sandpaper to remove the saw marks and ease the edges.

CUTTING LIST

KEY	NO.	DESCRIPTION	SIZE
A	4	Legs	1-1/2 x 5-1/2 x 27 in.
B	4	Feet	1-1/2 x 5-1/2 x 30 in.
C	1	Trestle	1-1/2 x 5-1/2 x 51 in.
D	4	Cross-supports	1-1/2 x 3-1/2 x 36-3/4 in.
E	2	Middle cross-supports	1-1/2 x 3-1/2 x 13 in.
F	2	Side rails	1-1/2 x 3-1/2 x 59 in.
G	2	Planter-box sides	1-1/2 x 5-1/2 x 43 in.
H	2	Planter-box ends	1-1/2 x 5-1/2 x 7-3/4 in.*
I	1	Planter-box bottom	1 x 5-1/2 x 41 in.
J	6	Wide top boards	1 x 5-1/2 x 72 in.
K	4	Narrow top boards	1 x 3-1/2 x 17 in.
Optional tabletop insert parts			
L	3	Insert cleats	1-1/2 x 5-1/2 x 7-1/4 in.*
M	2	Insert boards	1 x 3-1/2 x 37-1/2 in.

*APPROXIMATE WIDTH



3

Set your circular saw blade depth to 1-3/4 in. and then make a series of cuts between the notch layout lines. Space the cuts roughly 1/8 in. apart.

Assemble the base

Assemble the table base upside down on a large, flat work surface or on the floor. First attach the cross-supports, side rails and planter-box sides with 2-1/2-in. deck screws (photo 5, p. 12). Drill a 1/8-in.-dia. pilot hole for each screw.

Next, attach one leg to each end of the table frame. The inside edge of each leg should be located 1/2 in. from the center of the cross-supports. The legs must be attached perpendicular to the cross-supports. Attach the legs with a couple of 2-1/2-in. deck screws.

Secure each leg with a 3/8-in.-dia. x 4-1/2-in. hex bolt. Each end of the bolt is recessed in the cross-supports. Use a spade bit or Forstner bit to bore a 1/4-in.-deep x 1-1/8-in.-dia. counterbore in the

Where there's smoke, there's fire.



TUNE IT WAY UP



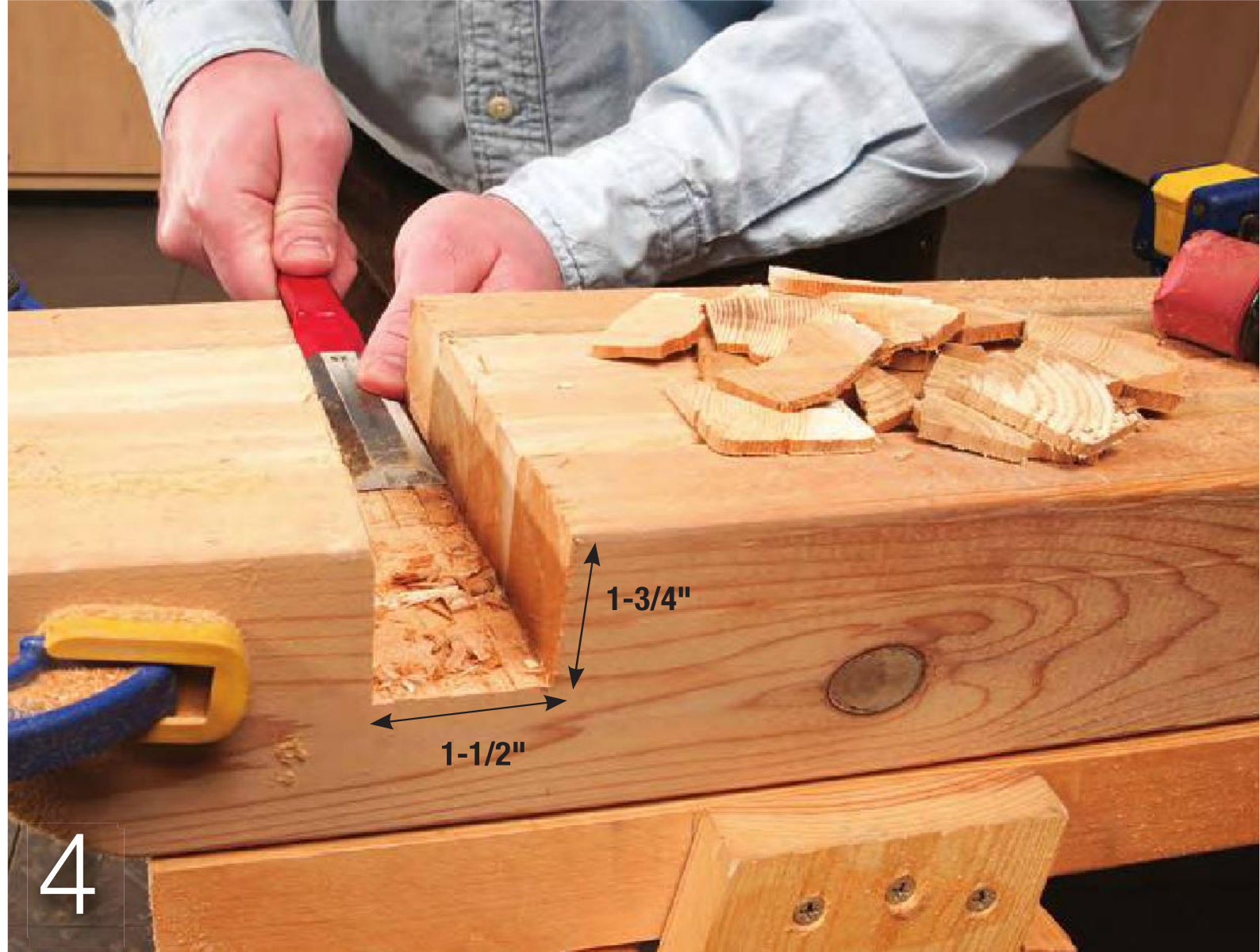
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cross-support. Then use a spade bit or an auger bit to bore a 3/8-in.-dia. hole through both cross-supports and the leg. Stop boring when the bit begins to break out through the other cross-support. Then bore another 1/4-in.-deep x 1-1/8-in.-dia. counterbore centered over the bit's exit hole.

Attach the trestle to the first set of legs (photo 6). Then attach a second leg to each side of the table and trestle.

Measure the distance between the planter box's sides and cut the planter-box ends to fit. Attach the planter-box ends to the sides with 2-1/2-in. deck screws. Then attach the planter-box bottom to the ends with 2-in. deck screws.

Finally, attach the feet to the legs (photo 7). Make sure the feet



Use a screwdriver to break off the wood that is left between the crosscuts. Then use a chisel to smooth the bottom of each notch.

are perpendicular to the legs. Install two bolts through each leg.

Attach the top boards

I made the tabletop from 5/4x6 (1 x 5-1/2-in. actual size) cedar deck boards. You could also use 1x4 and

1x6 boards, or for a beefier, more rustic look, you could choose 2x4s and 2x6s.

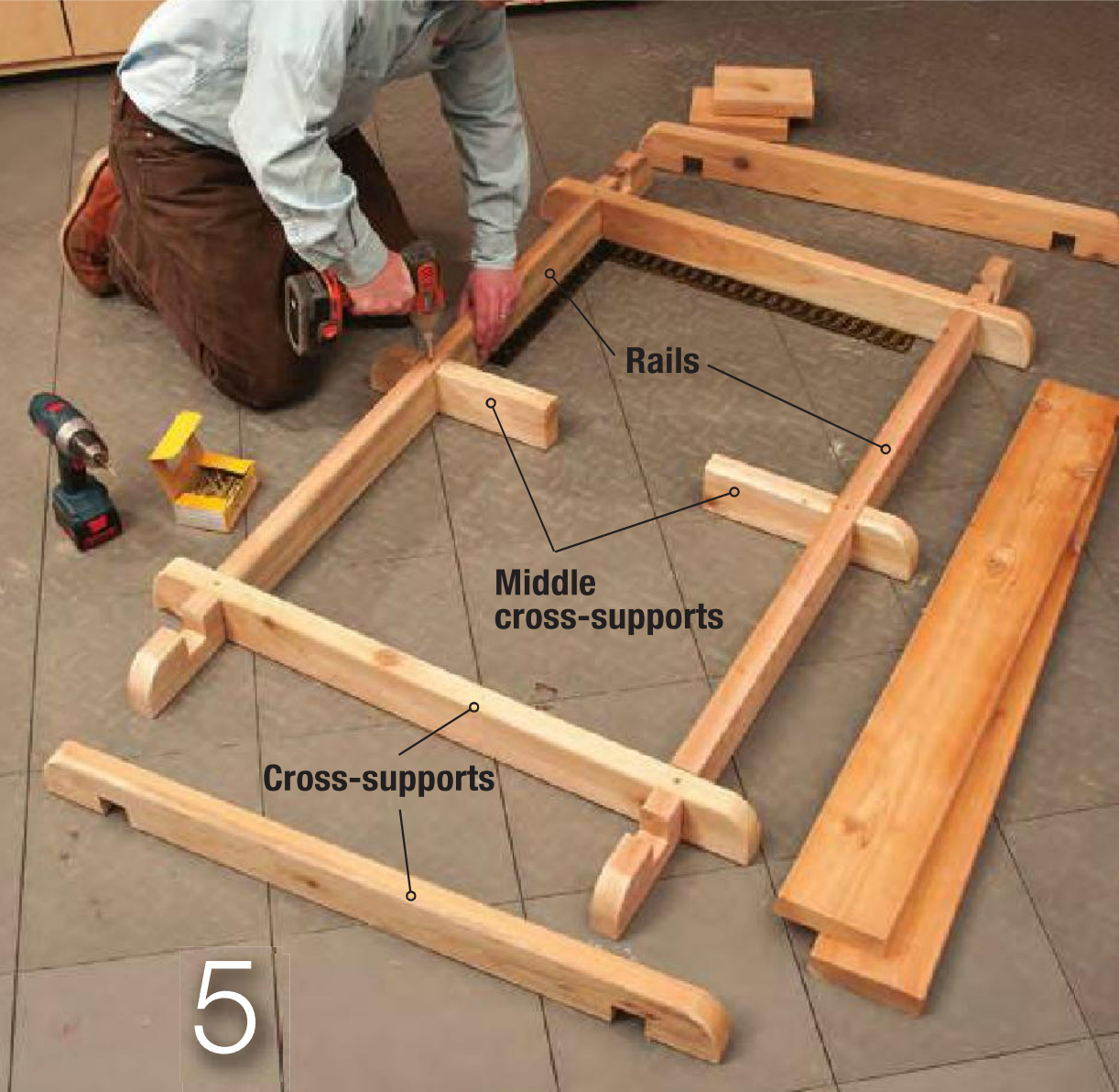
To minimize waste, purchase 10-ft.-long boards. If you choose to use deck boards, you'll have to rip them down to 3-1/2 in. to make the

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Assemble the parts upside down on a large work surface or the floor. Attach the side rails to the cross-supports with 2-1/2-in. deck screws. Drill a 1/8-in.-dia. pilot hole for each screw.



Attach one leg to each end of the table, making sure the leg is perpendicular to the cross-supports. Attach the trestle to the leg; then attach the second leg to each end of the table.



Bore a 3/8-in.-dia. pilot hole with 1-1/8-in.-dia. x 1/4-in.-deep counterbore holes in each end. Attach the feet to the legs with 3/8 x 4-1/2-in. hex bolts.



Use a string as a compass to draw a 56-in. radius across the ends of the top boards. Drive a screw temporarily into the top of one planter-box end (between the narrow top boards) and attach the string to the screw and to a pencil. Roll the string around the pencil until it is 56 in. long. Move the screw to the other end and repeat.

narrow top boards. Use a file, rasp, plane or router to round over the cut edges to match the deck boards' factory edges.

Cut the top boards to length; then flip over the table base and attach the boards with 2-in. deck screws. At the same time, if you choose to build the insert, attach the insert boards to the insert cleats. Bore pilot holes and countersinks for each screw to prevent splitting the boards.

Using a pencil and string, create a compass (photo 8, above) to draw a 56-in. radius on each end of the tabletop; then cut the radius with a jigsaw. Use a rasp, file and power sander to smooth the surfaces, ends and edges. Finally, apply an exterior-rated finish to all surfaces. You can extend the life of the finish and the wood by covering the table with a tarp or storing it in a protected area such as a shed or garage during the winter. ◇

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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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IMPORTANT FACTS

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(vi-AG-rah)

IMPORTANT SAFETY INFORMATION ABOUT VIAGRA

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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YEEHAW!

METALSHOP

Cookin' Like Cowboys

Build a simple grill that serves up campfire flavor

BY MIKE BERGER

When you think about the iconic cowboys of the open range, it's easy to get lost in Hollywood images of saloon fights, gun slingers and ten-gallon hats. In reality, the cowboys were a hard-working, hard-living, individualistic group of men who appreciated a good day in the saddle and a good meal cooked over an open fire at the sun's setting.

This project is a tribute to that spirit. Easy to weld and install over an existing fire pit, our "cowboy grill" will have you cookin' up steaks and singin' "Home on the Range" in no time. It has space for grub for your whole posse and a handy condiment shelf for your spices. A natural tree-branch handle and a decorative rock at the top add rustic flavor (and help to minimize any chances of impalement in case you've got little cowpokes runnin' around).

Fabrication

Building the grill is a pretty straightforward process. Start by cutting all of the parts to length as indicated in the cutting list and illustration (p. 16). Weld together the four pieces (**A, B**) that make up the cooking-grate frame (photo 1, p. 18); then weld the rods (**C**) to the ends of the frame to complete the grate (photo 2).

To create the grate support arm, first align the sleeve (**D**) and the grate support rod (**F**), making sure that they're perpendicular and that the support rod is centered on the sleeve's width. Weld the handle rod (**H**) to the sleeve, making sure that both the support rod and the handle rod are aligned with each other; then weld a support gusset (**E**) to both the grate support rod and the sleeve (photo 3). Repeat the process (using parts **D, E** and **F**) to create the shelf support arm.

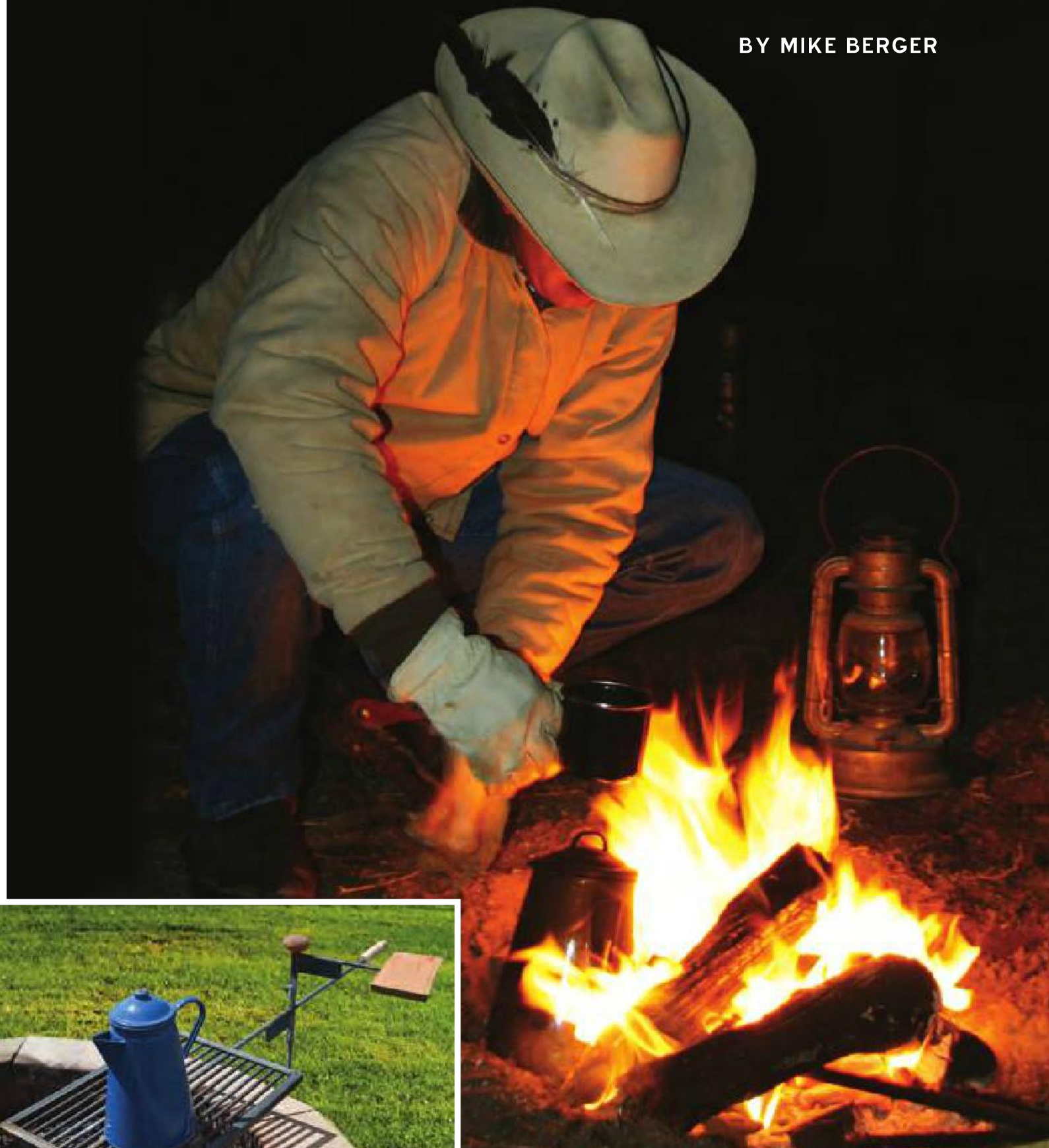


The heights of the cooking grate and the condiment shelf are adjustable, so you'll need to create a threaded hole in each of their sleeves to accept a 5/16-in. 18 x 1-in. winged screw. Start by drilling a 17/64-in.-dia. hole through one wall of the sleeves (photo 4). Then use a 5/16-in. 18 tap to cut threads in the holes (photo 5, p. 20).

Use an angle grinder outfitted with a cutting wheel to create notches in the ends of the grate to

accept the grate support rod. Set the support rod into the notches; then weld it to the ends of the grate (photo 6).

To give the grill a rustic look, use a 10-in.-long x 2-in.-thick section of a branch to make the grip (**L**) for the handle rod and a 3/4-in.-thick piece of cedar for the condiment shelf (**K**). Drill a 1/2-in.-dia. x 3-in.-deep hole in the center of the branch and a 3/8-in.-dia. x 2-in.-deep hole in the cen-



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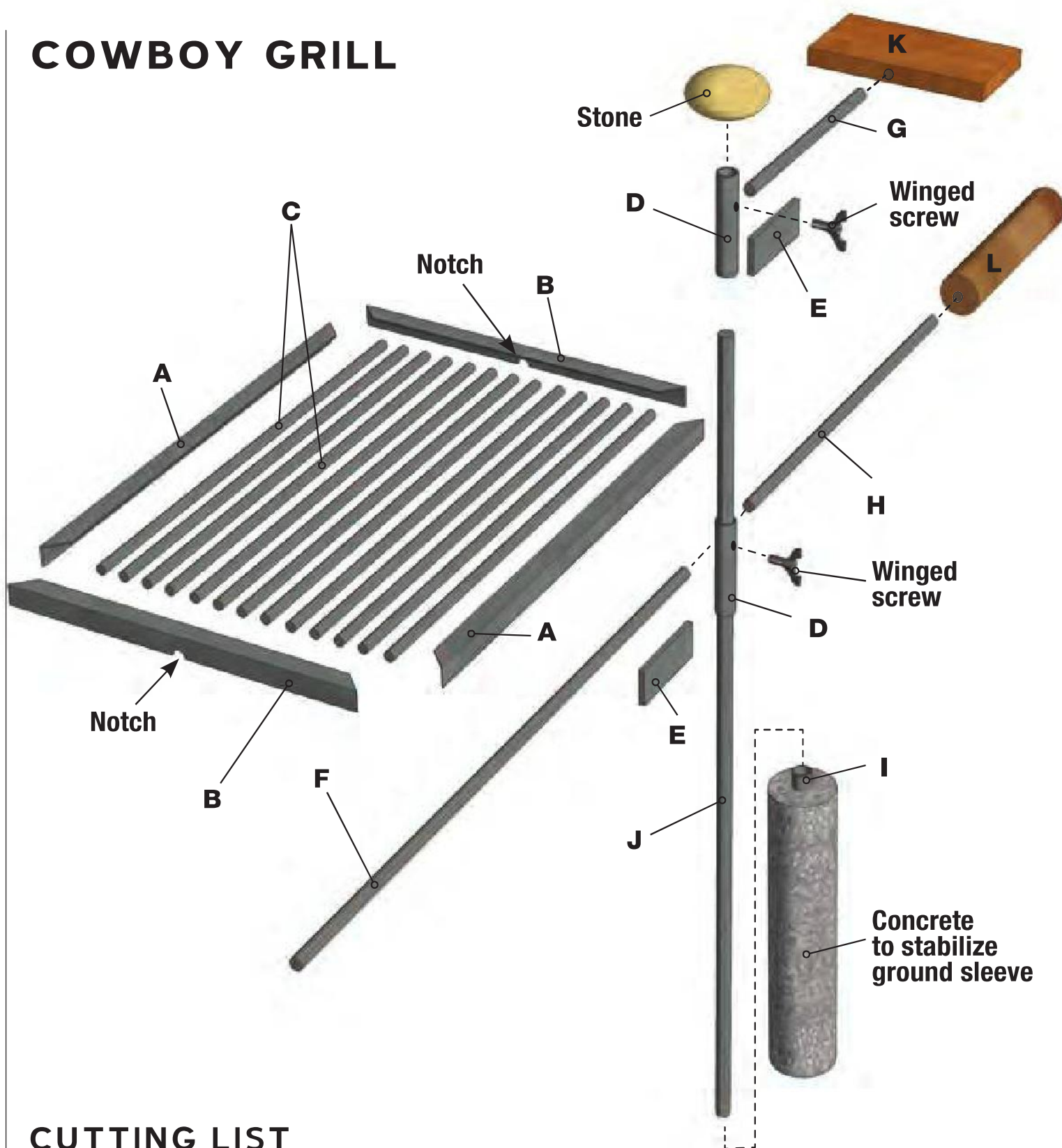
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COWBOY GRILL



CUTTING LIST

KEY	NO.	DESCRIPTION	SIZE/MATERIAL
A	2	Grate sides	3/4 x 3/4 x 13-3/4-in. steel angle
B	2	Grate ends	3/4 x 3/4 x 18-1/4-in. steel angle
C	13	Grate rods	3/8-in. dia. x 18-in. solid steel rod
D	2	Sleeves	3/4-in. i.d. x 4-in. hollow steel tube
E	2	Gussets	1/2 x 1-1/2 x 4-in. flat steel stock
F	1	Grate support rod	1/2-in. dia. x 28-in. solid steel rod
G	1	Shelf support rod	3/8-in. dia. x 10-in. solid steel rod
H	1	Handle rod	1/2-in. dia. x 18-in. solid steel rod
I	1	Ground sleeve	3/4-in. i.d. x 36-in. galvanized hollow tube
J	1	Main support rod	5/8-in. dia. x 36-in. solid steel rod
K	1	Shelf	3/4 x 4 x 8-in. cedar
L	1	Grip	2-in. dia. x 10-in. tree branch

SHOPPING LIST

3/8-in.-dia. x 3-ft. solid steel rod (7)
3/4 x 3/4 x 1/8-in. x 3-ft. steel angle (2)
1/2-in.-dia. x 4-ft. solid steel rod (1)
5/8-in.-dia. x 3-ft. solid steel rod (1)
1-1/2 x 1/2-in. x 3-ft. flat steel stock (1)
3/4-in.-i.d. x 2-ft. hollow steel tube (1)
3/4-in.-i.d. x 3-ft. galvanized hollow tube (1)
5/16-in. 18 x 1-in. winged screws (2)
Scrap 1x4 cedar for shelf
2-in.-dia. x 10-in. tree branch
Exterior-rated two-part epoxy
Decorative stone

ter of the shelf; then use exterior-rated two-part epoxy to glue them in place. Finally, use epoxy to fasten a decorative rock to the top of the condiment-shelf sleeve (photo 7).

Installation

Because the weight of the grate will tend to pull the grill toward the fire, you'll need to create a secure ground sleeve into which you'll insert the main support rod. Start by digging a 2-ft.-deep x 4-in.-dia. hole in the ground where you want to

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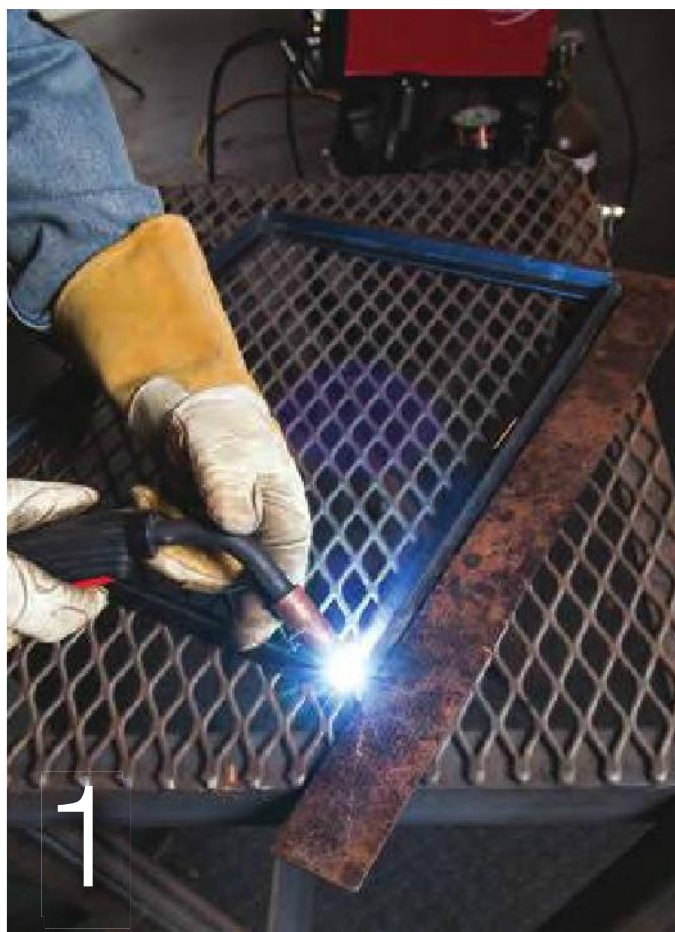
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COWBOY GRILL



Weld the four pieces of the cooking grate's frame together. Check for square and make sure that the miter joints are tight before beginning the welds.



Space the individual rods that make up the grilling surface 1/2 in. apart, and weld them to the ends to complete the grate.



To provide adequate support for the cooking grate's arm, weld a 1/2-in.-thick gusset between the grate support rod and the sleeve.



Drill a 17/64-in.-dia. hole through one wall of the hollow sleeve. Keep the drilling speed slow, and use cutting oil to cool the drill bit.

install the grill. Insert a 3-ft. length of 3/4-in.-i.d. galvanized pipe, which will serve as an outer sleeve (I), into the hole. Use a torpedo level to check for plumb; then drive the outer sleeve into the ground,

checking for plumb as you work, until its top end is flush with the surrounding soil.

Insert the main support rod (J) into the sleeve, and make one final check for plumb. Pour dry



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5
Use a 5/16-in. 18 tap to cut threads in the hole in the sleeve.



7
Use exterior-rated two-part epoxy to glue the grip, shelf and decorative rock in place.



9
Slide the grate assembly over the main support rod and tighten the wing bolt so that the grate remains at the desired height.



6
After cutting notches in the ends of the grate, set the support-arm assembly into the notches and weld it to the grate.



8
Pour dry fast-setting concrete into the hole and around the ground sleeve; then thoroughly soak the concrete and allow it to set.

fast-setting concrete into the hole around the sleeve; then spray water into the concrete, allowing the water to thoroughly penetrate the dry mix (photo 8).

Once the concrete has set, slide the cooking grate onto the main support rod and tighten the wing bolt (photo 9); then slide the condiment shelf onto the main support rod and tighten the wing bolt. All that's left is to light the fire, build a good bed of coals and grill up some victuals. ◇

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TOO-COOL Cabana

Construct a storage shed that doubles as an enchanting backyard getaway

BY MIKE BERGER

PHOTOGRAPHY BY PHIL LEISENHEIMER AND MICHAEL ANDERSON
PROJECT DESIGN AND ILLUSTRATION BY MICHAEL ANDERSON



A shed can be a useful addition to your yard, especially if you need to store outdoor-living gear (such as patio furniture) during the winter. But the structure doesn't have to be strictly utilitarian — a well-built shed can also make a great summertime entertaining spot or an inviting private retreat.

Take for example this storage structure, which I nicknamed "Willow House" because it sits close to a large, shady willow tree in my backyard. With 120 sq. ft. of space, it provides plenty of storage. But open up its French doors, light a few candles and turn on some relaxing music and it becomes the ideal place to throw a summer get-together or enjoy a cool drink on a balmy evening. Its cedar-shake exterior looks great in almost any neighborhood, and its warm pine car-siding interior beckons you to escape for a few hours with a good book.

If you have the basic skills required to build a ground-level deck and frame a few walls, you can create your own double-duty shed/getaway. Here's an overview of the process.



BUILD THE WALLS

The walls of this structure are built with 2x4s using standard framing practices. Although building codes often do not apply to sheds, check with your local code authorities to see what's required. For this project, we spaced the studs 24 in. apart. Start by cutting the base and top plates to length. (For the front wall, don't worry about cutting away the base plate to allow for the door opening yet — just let the plate span the entire width of the front wall.) Mark the locations of the studs on the base plates and top plates; then nail the studs in position, first attaching them to the base plate (**photo 1**) and then attaching the top plate to the end of the studs.

Recruit a helper to assist in lifting the framed walls into position. Brace the walls, check for plumb and then use lag screws to fasten the walls to the base (**photo 2**). To lock the walls together and to further increase overall stability and strength, install a second set of top plates that overlap the first set (**photo 3**). Finally, use a handsaw to remove the base plate from the door opening (**photo 4**).



CUT THE RAFTERS



The curved roof of the shed is made up of seven 2x12 pine rafters; the front and back rafters' exterior faces are clad in cedar 1x material. To build a roof like this, first create a hardboard template of the rafters' shape. Clamp the template to a 2x12 and trace its outline (**photo 1**). Remove the template and use a jigsaw to cut the rough shape of the rafter, keeping your cut just outside of the pencil line (**photo 2**); then clamp the template to the

underside of the rafter and use a router outfitted with a bottom-bearing straight-cut bit to make the final cut. Be sure to set the router depth properly so that the bit's bearing rides against the template (**photo 3**).

Because the roof needs to not only curve to the sides but also slope toward the rear of the structure (for proper water runoff), you'll need to shorten the height of each rafter. Start with the rafter that

will be second from the front of the shed, and use a power hand planer to remove 1/16 in. of material from its bottom edge; then continue the process for the remaining rafters, working toward the rear and increasing the amount of material you remove by 1/16 in. for each rafter. (By the time you get to the last rafter, you'll be cutting off 3/8 in.)

BUILD THE ROOF



The next step is to properly space the rafters and fasten them to the top of the walls. Begin with the rearmost rafter. Position it flush with the outer edge of the rear wall's top plate; then toescrew through the outer face of the rafter and into the framing below (**photo 1**).

To position the remaining rafters, first measure the distance from the inside face of the installed rafter to the rear face of the next stud in the wall and cut two 2x4 spacers to that length. Position the spacers on edge against the installed rafter and toenail them to the side wall top plates; then set the next rafter in place on top of the walls tight against the spacers, and toenail it to the top plate and the spacer (**photo 2**). Continue installing rafters in this way — measuring the distance to the next stud, cutting and installing spacers and toenailing — until you get to the last rafter that will overhang the door.

To build the overhang, first cut seven 30-in.-long 2x4 spacers and nail them to the inside face of the remaining rafter

(**photo 3**). Position two spacers flush with the bottom of the rafter so that they line up with the side wall top plates just like the other spacers you've already installed. Position two more spacers flush with the bottom of the rafter and equally dividing the space between the first two spacers. Position the remaining three spacers so that they are flush with the top of the rafter and equally divide the distance between the rafter tails (see illustration, p. 24).

Lift the overhang assembly onto the top of the walls. Use long pipe clamps to hold the assembly in place; then toenail the assembly to the top plates and drive nails through the previously installed rafter and into the ends of the rafter-assembly spacers (**photo 4**).

At this point you could use traditional roof-construction techniques and install decking, ice-and-water membrane and asphalt shingles, but we opted to use corrugated roofing material that comes in large sheets. This material offers several advantages: It conforms easily



to the curved rafters, it's lightweight and easy to lift and it has few seams, so when properly pitched, it has very little chance of leaking. Special nails are used to attach the panels to the rafters (**photo 5**), but different types of corrugated roofing have varying installation methods — be sure to follow your roofing manufacturer's instructions.

SHEATHE AND WRAP THE STRUCTURE



Use exterior plywood to sheathe the walls. For the soffit panels, cut strips of exterior-rated bead board paneling and nail them to the underside of the exposed rafters. For the fascia, nail lengths of 1x6 cedar (smooth

side out) to the rafter tails (**photo 1**).

To sheathe the exposed pine faces of the front and rear rafters, cut fascia from 1x12 cedar just as you did to create the rafters. Apply liberal amounts of



exterior-rated construction adhesive to the exposed rafter faces (**photo 2**); then nail the cedar fascia to the rafter. Finally, cover all exposed walls with house wrap.

INSTALL THE WINDOWS AND DOOR



To save money, we opted to forgo custom-made insulated windows and instead built our own window units out of cedar 1x4s and clear acrylic panes — after all, this shed is not intended for year-round occupancy. If you'd like to do the same, start by cutting cedar 1x4 strips that will frame the window openings — the top and bottom frame pieces go in first, followed by the side pieces. Fit the frame pieces so that they protrude 2 in.

past the outer edges of the window openings; then nail them in place (**photo 1**).

Use a table saw to cut sections of clear acrylic (**photo 2**) to fit into the rough openings and against the inside edges of the cedar window frames. Apply a generous bead of clear silicone caulk to the window-frame edges; then press the acrylic tight against the caulk. Once the caulk is dry, nail additional strips of cedar to the insides of the



windows to hold the acrylic against the frames.

The shed is designed with a standard-size door opening, so installing the inward-opening French door is a pretty straightforward process. Lift the door in place into the opening (**photo 3**), check for level and plumb and then follow the door manufacturer's instructions for securing the door to the framing.

ADD TRIM AND SIDING



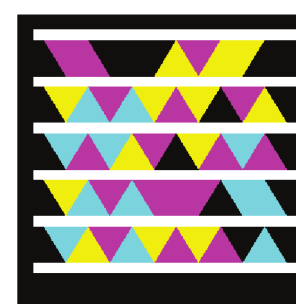
The last steps in construction are to install the cedar trim and siding. For the trim, simply nail and glue lengths of 1x4 cedar to the shed's corners (**photo 1**), along the bottom and top edges of all four walls and around the door and all of the windows.

To simplify construction but still create a high-end look, we chose Shakertown cedar-shake panels for the siding; their overlapping end joints and ability to conceal nails make for a very straightforward installation. Start by carefully nailing the bottom run in place (**photo 2**), constantly checking that the panel remains perfectly level. Once the first run is installed, work your way up the wall, using the panels' built-in placement edge to create the proper overlay (**photo 3**).

FINISH THE INTERIOR



Video: Yard Smarts Garden Shed



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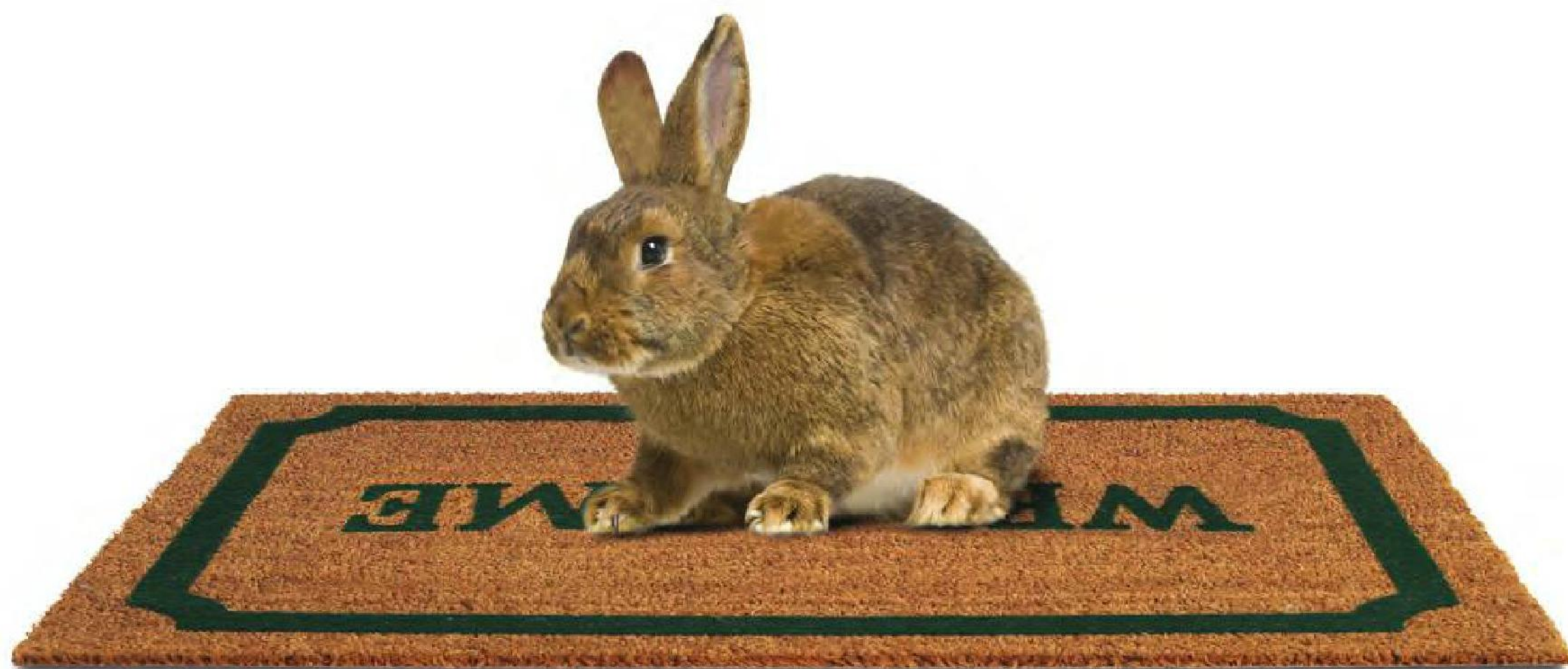
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The original idea for this project was to simply create storage for seasonal outdoor-living gear, but as the structure progressed, we decided to dress up the interior so the shed could be used for entertaining as well. We hired a licensed electrician to run power to the shed and install a couple of outlets and an outdoor-rated switch-operated ceiling fan and light (**photo 1**). We also insulated the structure with Roxul rock-wool insulation (**photo 2**, see SOURCES ONLINE). Made from volcanic rock that's superheated and then spun into fibers, Roxul cannot rot, mold or hold moisture — perfect characteristics for installation in a structure such as this. After installing the insulation, we added pine car siding on the walls and ceiling to create a storage space that looks more like a cabin than a shed. ◇

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Vinyl Siding

Modern components create a stunning exterior that's durable, economical and environmentally friendly

BY FERNANDO PAGÉS RUIZ



This Italianate-style home offers an example of excellent vinyl siding design and craftsmanship. The window trim and brackets are vinyl, and the columns are painted cellular PVC. Note the wide frieze board scribing the roof and the 6-in.-wide outside corners. The wide inside corners were created by vertically installing a 4-in. band board.

Although it's still the most cost-effective exterior cladding, vinyl no longer stands for thrift alone. Today's vinyl siding comes in a wide spectrum of low-sheen, fade-resistant colors and a variety of configurations, including accessories that are reproductions of historical millwork, making it an attractive as well as economical choice for any style of home.

Unfortunately, many designers still eschew vinyl siding because of its low-budget image, and many builders still use it without a cultivated sense of aesthetics. However, with a little creativity, you can combine various styles, colors and trim pieces to develop a stunning exterior that's durable, low-maintenance, energy-efficient and environmentally friendly.

Three basic profiles

Vinyl siding comes in three dominant profiles: clapboard, Dutch lap and beaded. These, along with shingles and shakes, are suitable for most traditional house styles from Cape Cod to Queen Anne.

- **Clapboard** was originally used by Native Americans and in some British and northern-European architecture. Vinyl manufacturers offer panels with

single, double and triple courses, depending on lap width, which ranges from 3 to 7 in. I like to use a wider lap, such as a "single-seven," on the lower portion of a house to add visual weight and then switch to a narrower plank, such as a "triple-three," and sometimes even a lighter shade, on the second story.

Extra-wide planks (up to 12 in.) have become available with insulated siding. The laminated foam backing adds structure, allowing manufacturers greater leeway in developing new profiles.

- **Dutch lap** can be traced back to northern Europe. The full chamfer at the top of the plank provides a strong shadow line that works especially well with dark colors. The chamfer reflects light, in effect creating a line that stands out when using dark reds, greens and browns. Like clapboard, Dutch lap comes in a variety of multiple courses with typical reveals of 3 to 5 in.

- **Beaded siding** provides even more dramatic shadow lines; it features a rounded bead at the bottom of a single clapboard course. Popular in the South, this siding has an elegant, understated look. Reveals are typically 6- to 7-in. single courses. I like this profile because it's less com-

mon and therefore produces a distinctive look.

Specialty shapes, shingles and shakes

Vinyl and polypropylene (a thicker plastic used primarily for shakes) siding are the only materials that comprehensively recreate the specialty profiles associated with Cape Cod, Queen Anne and Folk Victorian, Craftsman, Shingle and other derivatives of traditional architecture. These specialty profiles come in three categories: vertical siding, shingles/shapes and shakes.

- **Vertical siding** has been used on many different architectural styles dating back to medieval times. Some modern examples include Stick, Folk Victorian, Tudor and Craftsman. Because of its contoured structure, vinyl accurately replicates the depth and dimension of board-and-batten siding, which consists of alternating wide and narrow panels, or beaded profiles such as those found on porch ceilings.

Vertical siding is often used as an accent, but it can also be used in whole-house applications, especially with contemporary styles. You specify vertical vinyl siding by profile and reveal, and panels come in lengths of 16 ft., which can help



This Folk Victorian illustrates the use of scalloped and straight vinyl shingles in three colors.



This home's Craftsman style flaunts the skill of the carpenter, who used traditional shake cladding on the walls and roof. Vinyl shakes were combined with dimensional composition shingles for a credible re-creation. Note the wide cellular-PVC tapered columns. The white preprimed material requires no maintenance, though you can paint it if you prefer.



Some shakes are available in polypropylene, a thicker plastic that allows for deeper grooves and reliefs.

to eliminate seams. Because this style's depth, stiffness and absence of seams work best up close and personal, I like to use vertical siding at the entryway of a home.

- **Shingle siding** gained popularity in the late 19th century, mainly in the northeastern United States. Now widely used in popular architectural styles such as Cape Cod, Queen Anne and Craftsman, shingle shapes come in a wide assortment of styles, from square to half-cove. Consider using interesting shapes such as hexagons, mitered corners and half-coves for a distinctive look.

- **Shakes** are similar to shingles

VINYL CARPENTRY

Vinyl siding is relatively easy to install, requiring only a handful of tools and no heavy lifting. But that doesn't mean you can install it without care and skill. Most of vinyl's common maladies (such as buckling, waviness and blowing off of the building) result from installation errors. The Vinyl Siding Institute, a trade association, has developed a training and certification program to help ensure that installers know the craft before they start hanging panels on your house. The key elements of good installation include:

1. **Room to move** — Vinyl siding expands and contracts with changes in temperature. Panel ends and trim must have a 1/8-in. gap at both ends (1/4 in. overall) to allow for expansion. Panels must overlap rather than abut.

2. **Proper fastening** — Siding must hang from nails driven firmly, but not too tightly, through the center of the siding's nail-flange slots. A 1/32-in. clearance (the thickness of a dime) between the nail head and the siding allows the siding to move the length of the nail slot and prevents the panels from buckling and twisting.

3. **Good drainage** — Water flows downhill, and vinyl siding and accessories are designed to accommodate this drainage pattern. It's best to use accessories (such as window trim) that are designed to work with vinyl siding rather than mixing materials. Combining vinyl siding with wood-wrapped windows or wood belly bands can cause water to dam, resulting in infiltration and rot. When installed with respect to the drainage plane, vinyl siding provides a breathable cladding over weather-resistant barriers such as house wrap. — FPR

but mimic the look of hand-split cedar. They're typically manufactured as a single or double course with reveals of 6 to 10 in. in straight-edge or staggered courses. In addition to vinyl, injection-molded polypropylene shakes are available; this material offers deeper grooves that closely mimic wood without the maintenance.

Colors and texture

In the past, vinyl siding was limited to light colors that would sometimes deform or fade when exposed to the sun's heat and UV rays.



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Brackets come in an array of styles, from rustic post-and-beam corbels to delicate Victorian filigree.



Wide corners come with fluted carvings and three-piece assemblies that add another layer of color.

Today's cap-stock manufacturing, which applies a thin layer of richly formulated PVC and other products that provide UV protection like acrylics over the base siding, has eliminated these problems, and manufacturers have gone wild with new colors, including deep hues popular in Craftsman and Victorian styles.

To make sure your color selec-

SIDING CERTIFICATIONS

Labels can mean the difference between good and bad vinyl siding. Look for these certifications:

Certified Vinyl Siding, with the check-mark logo, means the product meets ASTM standard D3679. This siding will withstand the impacts of recommended installation procedures, stay on the house in heavy winds of at least 110 mph, lay straight on a flat wall without buckling under normal conditions and withstand the effects of normal seasonal temperature fluctuations.

Certified Vinyl Siding with Color Retention, with the check-mark logo on a color wheel, means the siding meets the standards of ASTM D3679 plus the color-retention requirements of ASTM D6864 or D7251. This certification requires an outdoor weathering study for each color. The color must demonstrate the ability to resist major changes over time in a variety of climates.

Insulated siding does not have a certification process, but the vinyl siding component of the insulated siding can be certified. To make sure the R-value claimed by the manufacturer is accurate, ask the supplier or check the manufacturer's Web site to see whether the material was evaluated under ASTM C1363, the industry-recognized standard to test insulated siding's R-value. Many manufacturers will provide this information on the box.

Nearly 1,000 products are certified for quality through the Vinyl Siding Institute's program. More than 325 colors are certified for color retention, and approximately 97 percent of all vinyl siding manufactured in the U.S. is certified through the program. — FPR



tions have undergone rigorous testing and comply with the highest industry standards, verify that any dark-color siding you choose has been certified to meet or exceed the color retention requirements of ASTM D6864 or D7251. (Look for the ASTM label on the box; see "Siding Certifications," above.)

Vinyl siding products are available in textured or smooth finishes. In the early days of vinyl, high spots would reflect light and look like plastic from afar (a problem known as *flashing*). Wood-grain-textured siding mitigated this problem and became the most popular choice. Today, improved manufacturing has eliminated the flashing problem with smooth siding; I prefer the smooth look.

Accessories and trim

When you think of vinyl, you probably imagine J-channel, the thin molding that surrounded windows and doors in houses clad with old-style vinyl siding. But new accessories and trim have virtually eliminated the need for the old J-channel. These products

include J-channel-integrated lineals, mantels, wide inside corners, band boards and basically any of the traditional millwork used with real wood siding — minus the maintenance.

One way to elevate the look of your cladding is to use vinyl lineals and sills around windows and doors. The lineal is designed to receive vinyl siding, allowing room for vinyl's natural expansion, but lineals come in widths up to 6 in. that replicate traditional window casing. Likewise, sills are made to replicate traditional wood models. Though often overlooked, these subtle elements greatly refine a home's appearance.

You can also upgrade openings with mantels, pilasters, crowns and keystones. Window and door mantels — wider planks that clearly demark headers — are appropriate for classical styles derived from Greek Revival. Similarly, door pilasters and crown moldings create strong accents. The moldings come as a set or can be combined as mix-and-match parts that snap together.

Wide friezes and dentil moldings provide accent lines along ga-



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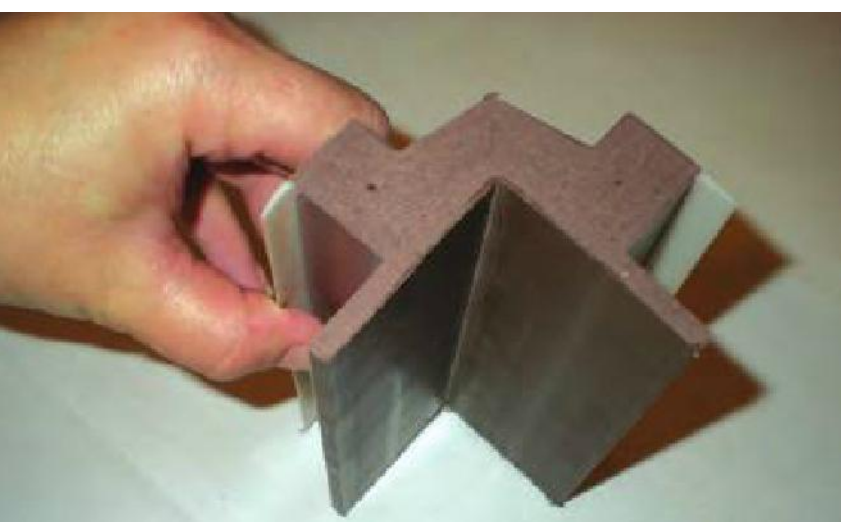
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This modern beach cottage combines vertical vinyl siding, straight shakes and window lineals to enhance architectural interest.



When choosing cellular PVC trim, make sure the material you use comes with an integrated J-channel to accommodate the natural expansion of vinyl siding and maintain the critical drainage plane.



Insulated siding features a straight plank that's more attractive than the cupped appearance of traditional vinyl.

ble ends and eaves in styles derived from Greek Revival, such as the Georgian style popular in the East and Midwest.

A variety of PVC brackets reproduce the delicate decorative styles of Victorian filigree and the rugged post-and-beam corbels used in Craftsman homes. Manufactured by many third-party suppliers as well as the mainline vinyl brands,

brackets come in a surprising variety of styles. Columns also come from an assortment of suppliers and range from classical Greek rounds with elegant capitals and bases to the blocky square and tapered columns popular in Craftsman-style homes.

Other options include extra-wide, three-piece and fluted corners, horizontal band-boards and wide inside corners. Virtually any type of trim or accessory produced in wood is now available in vinyl and other low-maintenance materials such as cellular PVC. These accessories' integrated hues allow you to create elaborate color schemes without the extra expense of delicate brushwork or the maintenance headaches of swelling, cracking, warping or insect damage.

Green building

One of the newest product innovations on the market is insulated (foam-backed) siding. On average, it increases the exterior wall's insulation by a respectable R-2 to R-3. To make sure you have an accurate insulation rating, check that the siding bears the stamp of ASTM International. To earn ASTM certification, every insulated profile has to undergo individual R-value testing. In addition to its energy shield, insulated siding offers a more realistic profile without the telltale concave look of traditional siding, along with improved impact resistance and noise attenuation.

All of the nationally recognized



Lineals and sills are an inexpensive way to dress up vinyl siding.

green-building certification programs, from LEED to NAHB Green, offer more points for insulated vinyl siding (based on durability, recycled content and the Energy-Star advantage of insulated backing) than for any other popular siding alternatives. In a life-cycle environmental impact analysis based on the Federal Government's National Institute of Standards and Technology's Building for Environmental and Economic Sustainability life cycle assesment tool, vinyl was second only to aluminum siding as having the lowest environmental impact — scoring much better than products such as fiber cement, brick and stucco.

In terms of durability, it's obvious that vinyl performs without rotting, and now without fading, but it also provides another advantage: Because it hangs on the house, vinyl siding offers a natural drainage plane to help buildings stay dry, preventing moisture problems.

If you choose high-quality vinyl, install it following industry guidelines and select colors and trim using good taste, this affordable cladding does a great job of balancing aesthetics, environmental performance and smart economics. ◇

HCOA life member Fernando Pagés Ruiz is a homebuilder and remodeler and the author of Affordable Remodel: How to Get Custom Results on Any Budget (The Taunton Press, 2007).

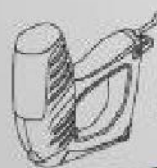
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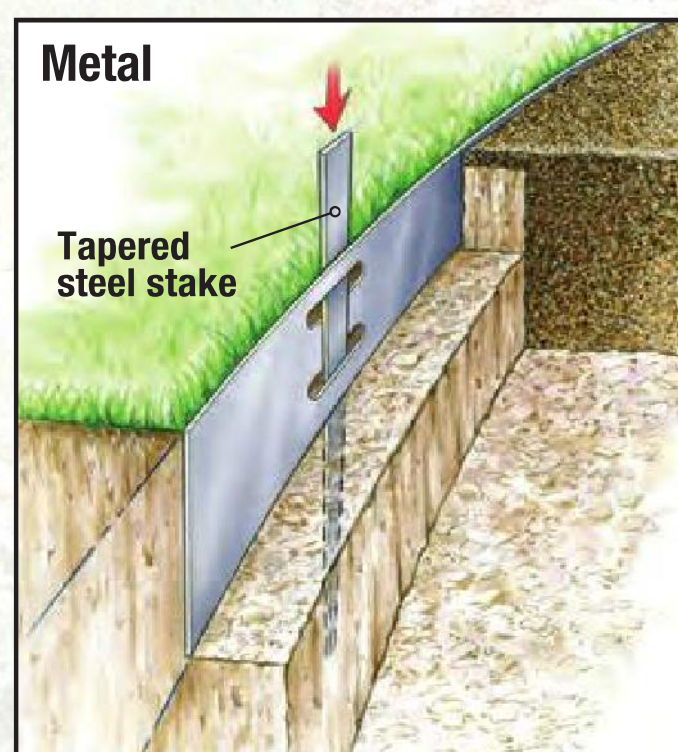
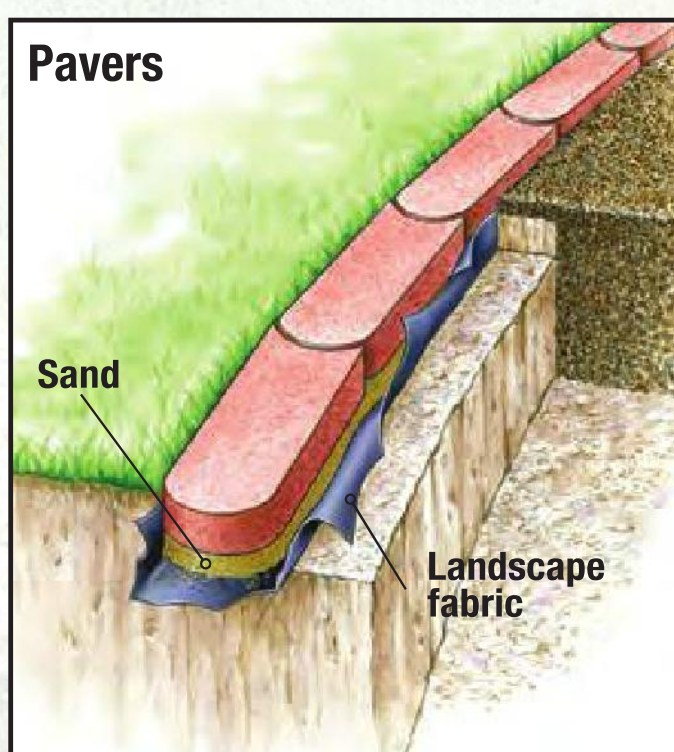
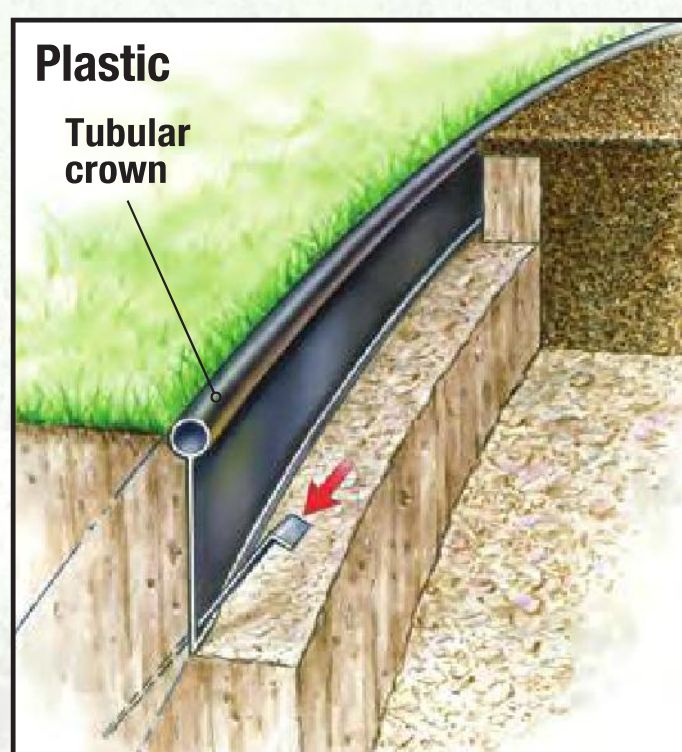
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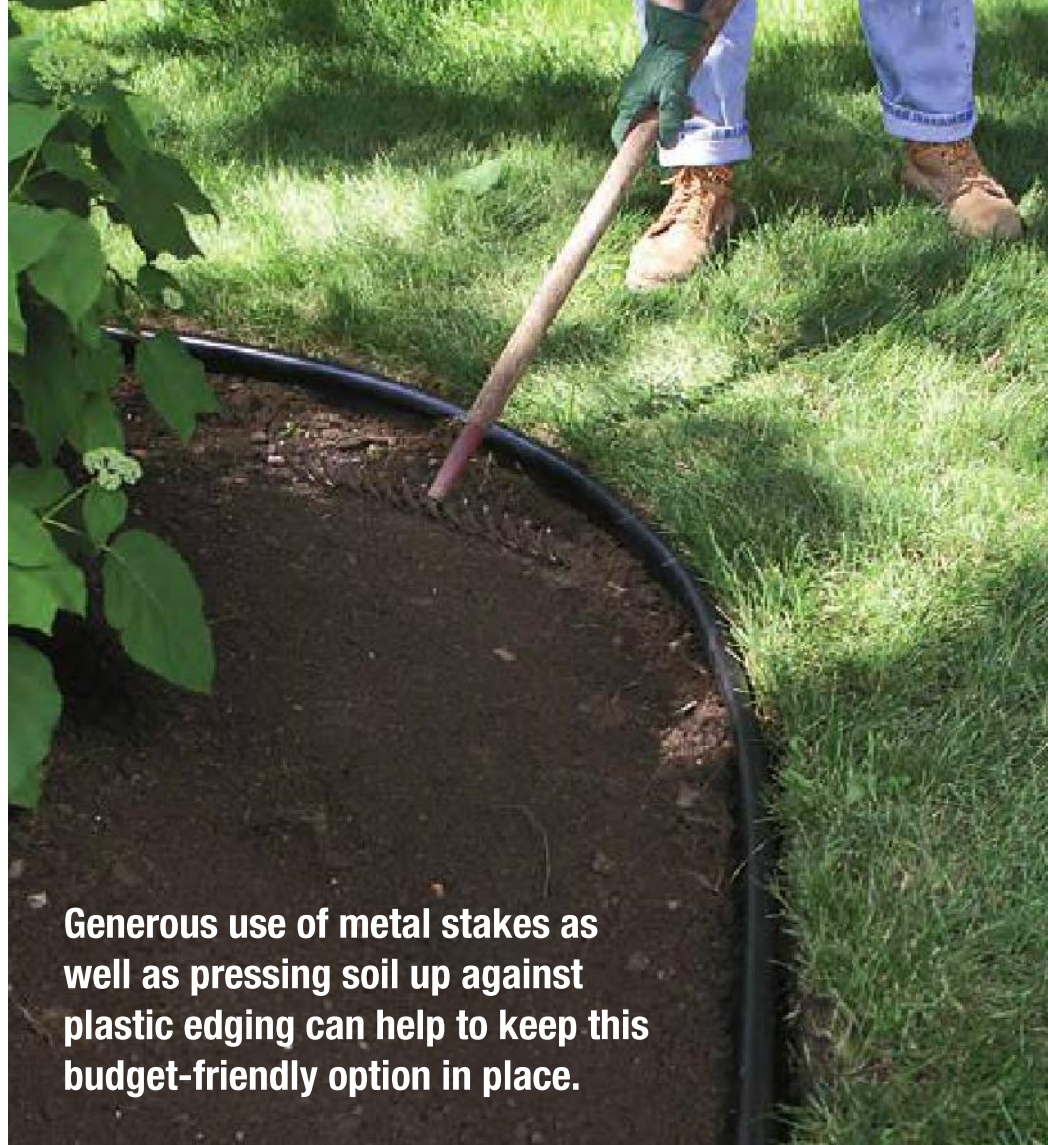
Dress up your landscape with a sleek planting bed

BY JENNY STANLEY

EDGING OPTIONS

Though they serve the same purpose, these three edging options are installed differently.





Generous use of metal stakes as well as pressing soil up against plastic edging can help to keep this budget-friendly option in place.



Paver edging is exceptionally durable, but it requires a level base of landscape fabric and sand.

Whether you want to add visual interest to a boring lawn or you simply long for less to mow, you'll get your wish by incorporating a planting bed into your outdoor space. This simple project requires only a few tools and a little elbow grease. But before you start pulling up sod, you need to consider the location, size and shape of the bed; the type of plants you want to include; and one often-overlooked but important element: edging.

When used effectively, landscape edging not only helps to visually define a planting bed but also keeps new plants within a designated area while preventing grass and weeds from migrating in. Many edging options are available: Some are installed flush with the ground and remain hidden from view; others rest aboveground and become part of the bed's design. To help you plan and execute a planting bed that will enhance your landscape, we've provided an overview of some common edging options, step-by-step instructions for installing steel edging and a few notes for successful planting.

Design decisions

You may already have a location in mind for your planting bed, perhaps along a fence or against the garage, but you need to make sure that it will accommodate the plants you plan to grow. Consider sunlight, shade, moisture and the amount of space needed for the plants to reach their mature sizes. Be mindful of overhangs on nearby structures, which can create inconsistencies in these factors.

Use graph paper to create a scale drawing of your planting bed design; then experiment with different types of plants to see what will work best in your space. Too many different species of plants can look busy and disorganized. Narrow your selection to a few complementary species and then repeat those plants throughout the bed in groups of three, five, seven or more. (When it comes to design, odd numbers are more aesthetically pleasing.)

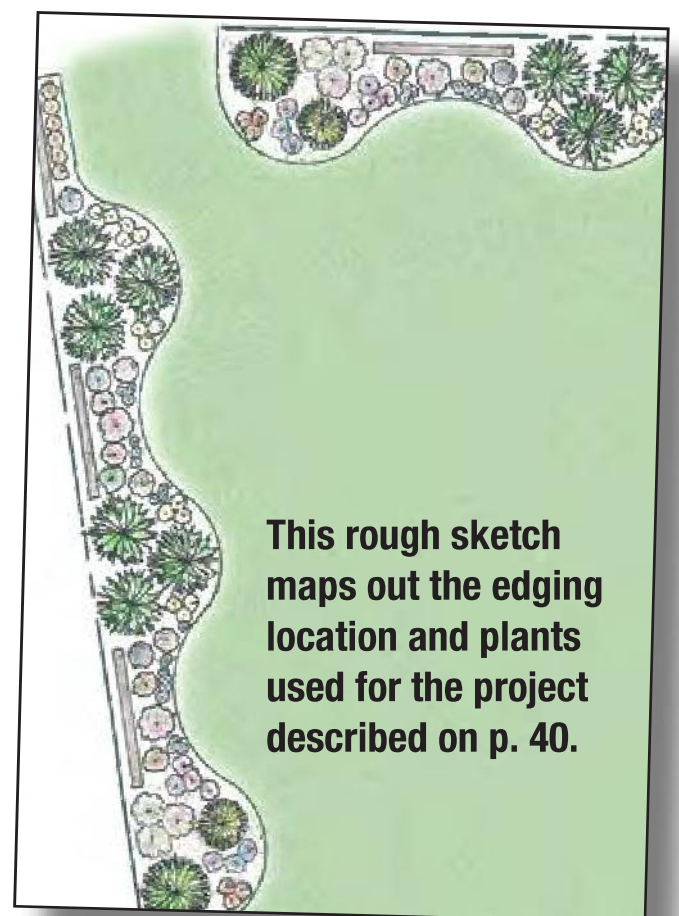
In addition to choosing plants, you'll need to decide which type of edging you want to use. Con-

sider these options:

- **Plastic edging** (photo, top left) is a popular choice for many homeowners, mainly because it's inexpensive, flexible and easy to install, but it does have some drawbacks. The tubular crown, for example, rests partially aboveground and can become damaged by a lawn mower or string trimmer. In northern regions, plastic edging is also susceptible to frost heave and usually requires readjustment after cold seasons.

- **Brick, concrete pavers or natural stone** (photo, top right) can add eye-catching appeal to a planting bed. Many colors and shapes are available, and this type of edging requires little maintenance after installation. Brick and paver edging can also function as a mowing strip, which simplifies cutting grass along the edge. However, these materials require more space and more work to install: You'll have to first put down landscape fabric and about an inch of coarse sand to create a level surface.

- **Steel edging** (photo, p. 40) is proving to be a durable, low-maintenance, attractive choice. It is flexible and is installed in the same way as plastic edging, though it is more expensive. It also holds up well in cold weather. If it does work its way out of the ground during the winter, steel edging is easier to pound back in place than plastic edging is, as it won't crack or break under a hammer. The following section provides step-by-step instructions for installing steel edging.



This rough sketch maps out the edging location and plants used for the project described on p. 40.



Steel edging provides an unobtrusive yet clearly defined and sturdy line between the yard and the planting bed.

Elegant edging how-to

For this project (photo, above), the planting bed was designed to abut the edge of the yard. In cases like this, you must first mark the property line. (Many residential neighborhoods identify property lines with underground stakes that can be pulled up temporarily.) Mark the location of the edging using spray landscape chalk (photo 1, opposite). **Tip:** For a curved planting bed, use a hose or rope to map out the edge

before you mark it.

The next step is to remove the sod within the marks using a sod kicker (photo 1 inset). **Tip:** If you carefully pull up the sod, you can reuse it in another area of the yard. Once you've removed the sod, dig a trench along the edge of the bed that is as deep as the edging is wide (photo 2), making sure that the outer wall is straight and smooth so it can support the edging during installation. We used 4-in.-wide x 1/8-in.-thick black steel edging for this project.

It's helpful to lay the edging in tricky spots first. To form a corner, simply cut halfway through the material using a metal-cutting tool (photo 3) and then bend it into a right angle. Stabilize the first section of edging with stakes, but don't pound them in completely yet; you may need to make adjustments as you go. Use your feet to press the edging against the outer wall of the trench. Backfill or dig out dirt between the edging and the outer wall to even out any gaps or bumps (photo 4). Once the edging is in place, drive the stakes all the way into the ground.

After the edging is installed, you can work on the rest of the bed. For this project, we dug out 12 in. of soil, leaving a 6-in. buffer along the edging, trees and fence panels, and replaced it with a mixture of equal parts topsoil, peat moss and sand (photo 5). Depending on your soil and climate and the types of plants you'll be working with, you may need to use a different combination of ingredients. Consult a local nursery for recommendations.

Perfect planting

Before removing the plants from their containers, position them throughout the planting bed, making adjustments to the layout as needed. Remember to allow enough space for each plant to reach its mature size. When you're satisfied with the layout, start planting

MULLING OVER MULCH

Mulch helps to protect plants and limit weeds in a landscape bed. Here's what you need to know about various types:

- **Chipped mulch**, such as bark or wood chips, decomposes slowly and tends to last longer than shredded products. However, it doesn't hold together well on slopes.
- **Shredded mulch** decomposes quicker than chipped products and holds together on slopes, but it can be more expensive and must be replenished frequently.
- **Shredder/chipper waste** has a higher nutrient content than most commercial mulches, and it's often free.
- **Cocoa mulch** is darker and more refined than most commercial products; it's also more expensive.
- **Stone mulch** is low-maintenance, but it can become very hot and even burn plants during warm seasons.
- **Winter mulch**, such as straw or hay, works well for insulating plants during cold seasons. It prevents thawing and refreezing and winter drying. — JS



Chipped mulch



Shredded mulch



Chipper waste



Cocoa mulch



Stone mulch

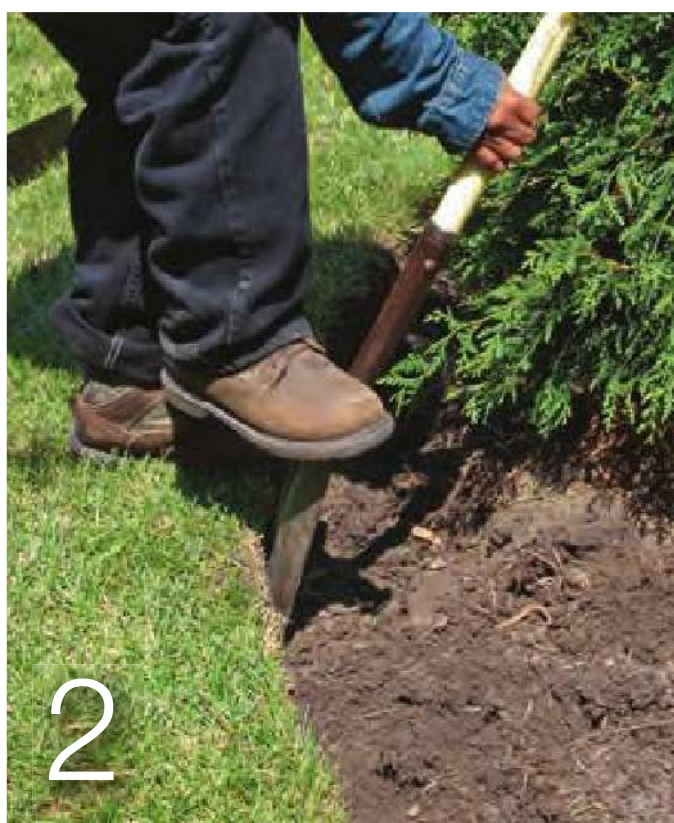


Winter mulch

ELEGANT EDGING HOW-TO



1 Mark the property line and the location of the edging; then remove the grass using a sod kicker.



2 For 4-in.-wide steel edging, dig a 4-in.-deep trench that will support the edging during installation.



3 Corners can be tricky, so complete them first. Steel edging can be bent easily after a partial cut through the surface.



4 Make adjustments during installation by removing or replacing soil along the edge.



5 Beds require nutrient-rich soil for plants to survive. In this project we replaced 12 in. of dirt with an equal mix of topsoil, peat moss and sand.

PLANTING



For each plant, dig a hole that measures only as deep as the height of the root ball. When backfilling, do not bury any part of the stem.



Top-dressing with compost and fertilizer helps to replenish nutrients in a planting bed. Apply a fresh layer of mulch over the surface each year.

taller items in the back and then work toward the front.

Remove each plant from its pot and gently loosen the roots if needed. Place the plant into a depression that measures no deeper than the height of the root ball (photo, bottom left). As you backfill soil, be sure that the stem remains uncovered. Add about 2 in. of mulch across the surface of the planting bed to help hold moisture and keep weeds out (photo, bottom right). To learn about various mulch options, see “Mulling Over Mulch,” opposite.

Top-dressing your planting bed annually will help to keep the soil healthy. Each year add compost and fertilizer over the old mulch and then apply a new layer of mulch on top. With a little maintenance, your planting bed will continue to grow more beautiful and enhance your landscape for years. ♦



Download the TagReader app at: www.gettag.mobi; then scan with your smartphone. See p. 2 for more information.

Power to the People

BY JOE PROVEY

Compact, quiet and efficient inverter generators serve a wide variety of needs



Because of their efficiency and relatively small size, inverter generators are a logical choice for remote job sites.

So you think you aren't "generator people." You're not preparing for the apocalypse, and you care about waking the neighbors. But what if you could own a small, quiet, efficient machine that could run tools at a remote job site or keep the lights, microwave and TV on during a power outage?

Old-fashioned generators earned their reputation for being big, heavy and loud. But about eight years ago, Honda introduced a new type of machine known as an inverter generator that was smaller, lighter, quieter and more efficient than conventional models. Doz-

ens of these units have since hit the shelves (including many "no-name" brands), sparking interest in inverter generators, spurring competition among manufacturers and raising questions in the minds of consumers. Here's a look at what these machines can do and which features to consider if you decide to shop for one.

The inverter advantage

Inverter generators have some real advantages over conventional generators. First and foremost, they're quiet. In the past, many homeowners and recreational enthusiasts ruled

out the use of generators simply because they didn't want to subject their neighbors, whether at home or on vacation, to the thunderous noise of a conventional machine.

In addition, these new units are a lot lighter and smaller: 1,000-watt inverter generators weigh about 30 pounds and are about the size of a small cooler (see "How Inverter Generators Work," p. 44).

Inverter generators are also about 20 percent more fuel efficient than regular generators. A typical 2,000-watt unit can run at its rated load for nearly four hours on a gallon of fuel.



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HOW INVERTER GENERATORS WORK

Generators convert mechanical energy to electricity thanks to a phenomenon called *electromagnetic induction*. Voltage is induced by the movement of a conductor, typically coils of wire, inside a magnetic casing. The mechanical energy used by home generators typically comes from an internal combustion engine that runs on gasoline.

In a conventional generator, each engine rotation produces one sine wave of AC power. For the electricity to produce the standard 120-volt, 60-Hz electricity we commonly use, the engine must run at a constant speed of 3,600 rpm, regardless of the load. An inverter generator is designed to produce more AC electrical energy per engine rotation but not in a form that can be used directly; the raw electricity must first be transformed into DC power. An electronic inverter module then turns the DC power back into standard 120-volt, 60-Hz AC power. The advantage to this approach is that the engine only needs to run at speeds to match the required load and is therefore quieter and more fuel-efficient. — JP

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And finally, inverter generators produce electricity that's somewhat safer for sensitive electronic equipment, such as laptops. (Conventional generators can run computers, too, so this last advantage is debatable. But if you want to run sound equipment and lights without flickering, inverter generators are probably the better choice.)

Typical uses

From the outset, inverter generators were marketed to the thousands of campers, hunters and fishermen who wanted to bring the comforts of home into the great outdoors. **Larger models** can start up 15,000-Btu air conditioners and still have enough juice to power the various appliances found in a large motor home. **Midsized units** are well-suited to mini motor homes and travel trailers, and they can power most 13,500-Btu air conditioners and

miscellaneous appliances. **Smaller units** are perfect for pop-up trailers and tents. They are designed for powering coffee pots, blenders, microwave ovens, TVs and lights.

Marketers didn't predict the many other uses people would find for inverter generators. Today these machines are popular in the construction industry because workers can power up at 7 a.m. or in a quiet zone without disturbing the peace. Inverter generators produce about the same level of noise as a normal conversation (50 to 60 dBA when measured 9 ft. away) — that's quieter than a household vacuum cleaner. Conventional generators, on the other hand, produce 65 to 75 dBA and range from being as loud as a rotary lawn mower or a chainsaw to a jet plane at 50 ft. (When you compare noise levels, keep in mind that decibels increase exponentially from one level to the next. A measure of 90 dBA, for example, is 1,000 times louder than a measure of 60 dBA.)

Tailgaters at races and other sporting events are another huge market for inverter generators. At many venues tailgaters must cart their supplies to a designated area. If you're going to celebrate for a few hours before the game, a small, lightweight portable generator is the ideal companion to power a TV, a satellite receiver, lights and an electric grill.

DIY applications

Inverter generators are also gaining popularity with DIYers who spend their weekends doing projects at home. Want to build a shed or barn beyond the reach of your longest extension cord? Medium-size (2,000- to 3,000-watt) units can power many tools, including heavy-duty 1/2-in. drills, 7-1/4-in. circular saws, electric chain saws and small compressors. Just be sure to select a model that has the surge capacity to start up the tools you need. For a 1-hp compressor that can run big power nailers, you'll need a genera-

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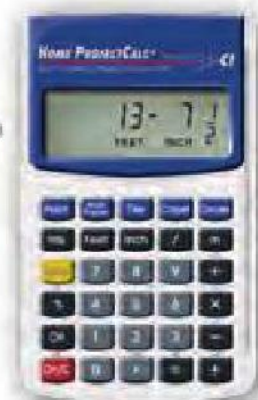


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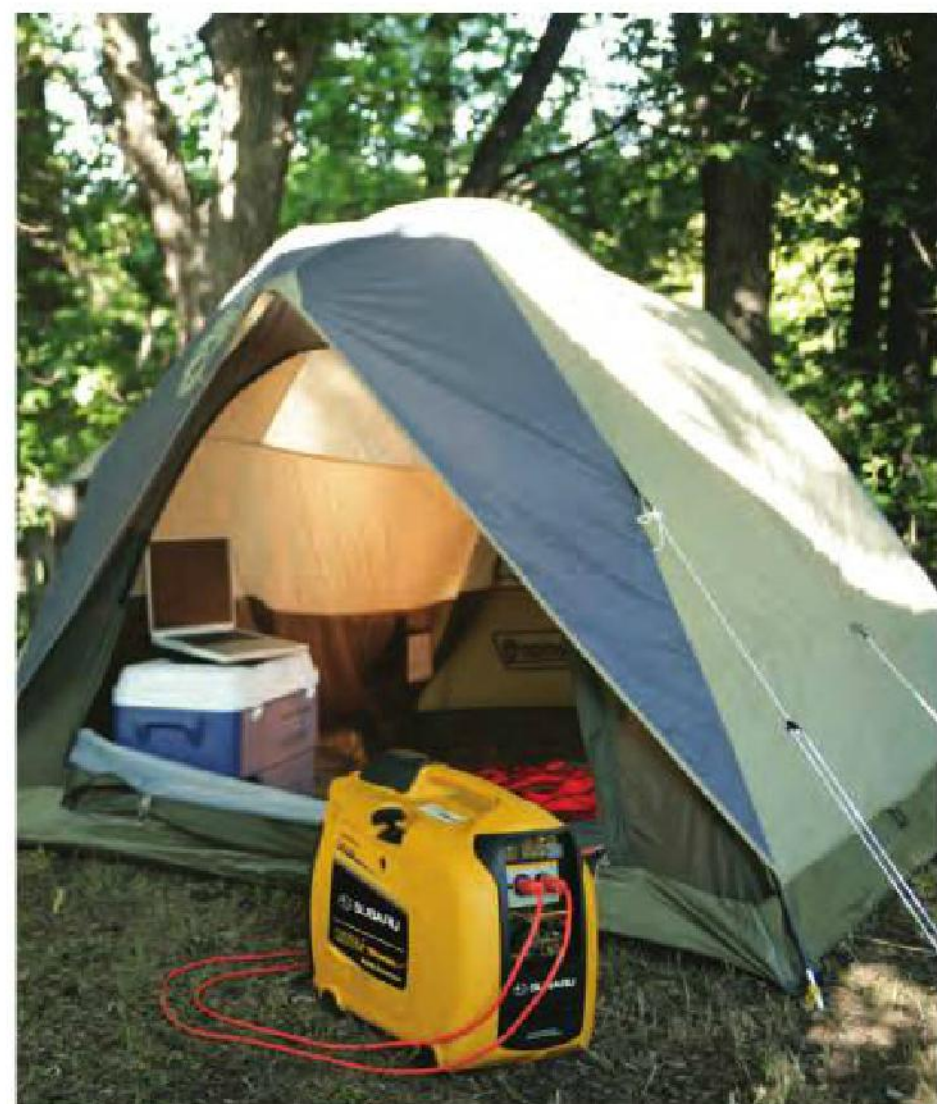
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tor that can supply 4,500 watts of start-up power.

Small and medium-size inverter generators are also handy for homeowners who occasionally experience power outages. There is peace of mind in knowing that even a small portable unit can power a few lights, a TV and a microwave during an emergency. (You just have to run extension cords directly to the receptacles on the generator's control panel.) Larger 3,000- to 6,000-watt inverter generators can power a critical household circuit or circuits. If you have a licensed electrician install a manual transfer system it will enable you to connect a portable generator to a power inlet box mounted on the exterior of your house without any worries about back-feeding into the electric grid and perhaps injuring a utility worker.

Features to consider

Small differences in the design of various inverter generators can make a big difference in how easy they are to use and maintain. Keep these factors in mind:

- Control panels on better units

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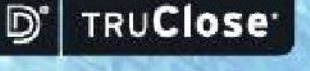
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include a display that allows you to monitor voltage output, frequency (Hz) and hours of operation. They also include LEDs that warn of overload conditions.

- Many units include controls that allow you to switch from automatic power saving to a power-boost mode when short surges of power are required.

- Weight and size depend largely upon watt output. After narrowing your search to units that provide the power you need, be sure to lift each one to see if it's comfortable to carry.

- Noise levels can vary from manufacturer to manufacturer, even for units with the same output. When evaluating noise, be sure you're comparing apples to apples — especially in regard to how far the unit was placed from the sound-level meter and the load at which it was running.

- Look for an easily accessible gas-tank opening that's wide enough to help prevent spills. Also check the ease of access for changing oil and spark plugs and replacing the air filter.

- The shape of the handle and casing make some units more comfortable to carry. Larger units may have two handles so two people can share the load. Other units have wheels and a retractable handle.

- Choose a unit with a sizeable



Larger models can power RV air conditioners, small appliances and lights.

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A larger inverter generator can provide power for many of a home's electrical needs in an emergency.

gas tank for longer run times.

- If you plan to run an air conditioner, opt for a generator that includes a 30-amp receptacle. For two AC units, you'll need a 50-amp receptacle.

- Some units include a battery-charging cable, a spark plug wrench and a generator cover. Units that are designed to connect with another generator (for twice the power) come with parallel cables.

The bottom line

Although inverter generators are less costly to operate than conventional generators, they are more expensive to purchase. A 2,000-watt inverter generator costs \$600 to \$1,200, whereas a conventional unit with similar capacity might cost as little as \$200. Higher-capacity inverter generators get very pricey. If you use your generator



Some models, such as these Honda units, can be connected to double the power output.

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The control panel on this Subaru Robin unit provides information about its output and the hours it has run as well as the engine controls.

frequently, you will recoup some of that in fuel savings. But more important, generator noise will no longer be a nuisance to your neighbors or to you. Whatever unit you decide on, it pays to shop carefully and get the opinions

of others about user experience, reliability and service. ◇

Club member Joe Provey lives in Bridgeport, Connecticut and is a frequent contributor to HANDY.

SOURCES ONLINE

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

All-Power America

www.allpoweramerica.com

Briggs & Stratton

www.briggsandstratton.com

Champion Power Equipment

www.championpowerequipment.com

Cummins Onan

www.cumminsonan.com

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Paint Principles

BY CONNIE BASTYR

Eight mistake-saving measures for your next exterior project



If you've done even a bit of painting or read any articles about it, you know the fundamentals. You already understand the value of investing in high-quality coatings and using the best tools (see "Back to Basics," p. 54). And scanning the label of any paint bucket can teach you about surface prep and drying time. But to ensure excellent results, you must go beyond the basics. Here are some less familiar (but essential) tips that can minimize mistakes.

#1: Detect and diagnose

When you examine the condition of the surface you plan to paint, pay close attention to the signs and the appearance of finish failure. Is loose paint forming blisters, or does it look cracked? Is the finish peeling only as deep as the previous film (a possible adhesion problem) or all the way to the substrate (an indication of a moisture problem)? Is fading a normal loss of color, or is the surface chalking? In the places that appear dirty, is it actually mold? All of these conditions need to be cleaned and/or repaired, but first you should study them for possible clues to an underlying problem, such as leaks, condensation or poor surface preparation.

#2: Mix it up

For any project involving multiple gallons of paint or stain, always combine the entire lot in a large, clean container and then pour the blended material back into the original buckets. Otherwise, slight shading differences from one batch to the next can be especially obvious on exterior surfaces — thanks to abundant lighting and the grand, stand-back-and-look perspective.



#3: Mind the ups and downs

Although it seems backward, when washing vertical surfaces (walls, cladding, window trim, etc.) you should start from the bottom and work up. This approach helps to prevent streaks from drips. Be sure to complete an entire plane in one session, and before the surface dries, rinse from the top down. When it's time to paint (only after the surface is dry) start at the top and work down so you can brush out any drips.

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*Based on tests of similar sprayers operated at a 90 degree angle pointed directly upward or downward with the paint reservoir less than half full.

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#5: Respect the elements

Atmospheric conditions really do matter. Believe the label's instructions, which prescribe limits on humidity and on the surface and air temperatures. There is a science to all of it: For example, when an uncured finish is exposed to frigid temperatures, the liquids may crystallize before the coating dries, which can affect the paint's adhesion as well as its appearance. And painting while the surface is in direct sunlight can cause wrinkles in the finish or premature fading of color and loss of sheen.

Know the outdoor humidity level: 50 percent is ideal. If it's higher, the coating doesn't cure properly; if it's too low, the finish dries too quickly, which can result in blisters. Too much wind can have the same results — and it can deposit debris on the surface.



#6: Be safe

The potential for overheating and the perils of windy weather are hazards you need to consider when planning an exterior painting project. If you must work in high places (anywhere over your head), be sure you're not in over your head. Rent reliable ladders, scaffolding or lifts. For the really risky stuff, hire professionals who are insured and bonded.

Also be aware of the potential dangers involved in removing old paint (see Sources Online). Recently escalated concerns about lead in pre-1978 finishes have resulted in stiff requirements for contractors (of any type) who work on older homes. To protect themselves and their families, homeowners should follow the same precautions.

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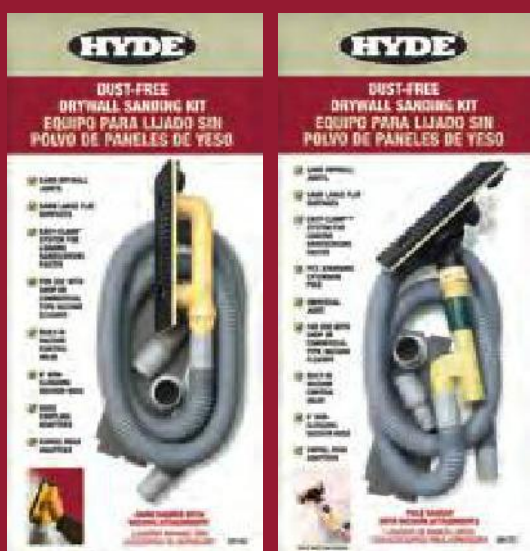
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#7: Get technical

Like the pros, you too can access valuable information from the manufacturer's technical data sheet (TDS) for any product you're using. This is especially helpful if you're working with a finish for the first time. Visit the company's Web site or enter "TDS" and the product name in a search engine. Some of the TDS stats that matter to you are:

- limitations and recommended uses and applications
- the product's drying process (by evaporation, coalescence or oxidation)
- the best drying temperatures and various drying times
- technical assistance resources.

#8: Keep coats light

Nobody likes wrinkles, drips or sagging. To avoid these eyesores on your home's exterior, resist the temptation to get by with one thick layer of paint. Instead, apply two lighter coats, making sure that the first one is completely dry before you add the second. One heavy coat may look smooth initially — it may even seem to hide surface blemishes or cracks. But sags and wrinkles appear over time (not unlike those we see in the mirror). ♦

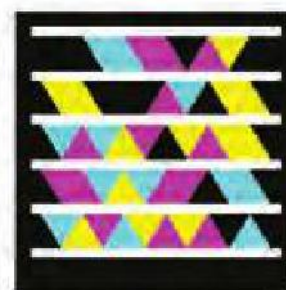


BACK TO BASICS

For review, here are five premises every wise painter follows:

1. Use the right type of finish for the job (interior for interior and exterior for exterior, stain or paint, oil or latex), and always choose high-quality products.
2. Use the right primer: Different formulas serve different purposes, so choose accordingly.
3. Buy a sample of the color you plan to use and paint a significant area so you can view it in various light conditions. (Don't trust a small chip.)
4. Be picky about tools — they make work easier and produce better results. Again, you get what you pay for.
5. Preparation is key. Surfaces must be clean, dry and sound. — CB

Video: How to really clean a brush



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www.gettag.mobi; then scan with your smartphone. See p. 2 for more information.

SOURCES ONLINE

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Consumer Products Safety Commission
(lead paint guidelines)
www.cpsc.gov

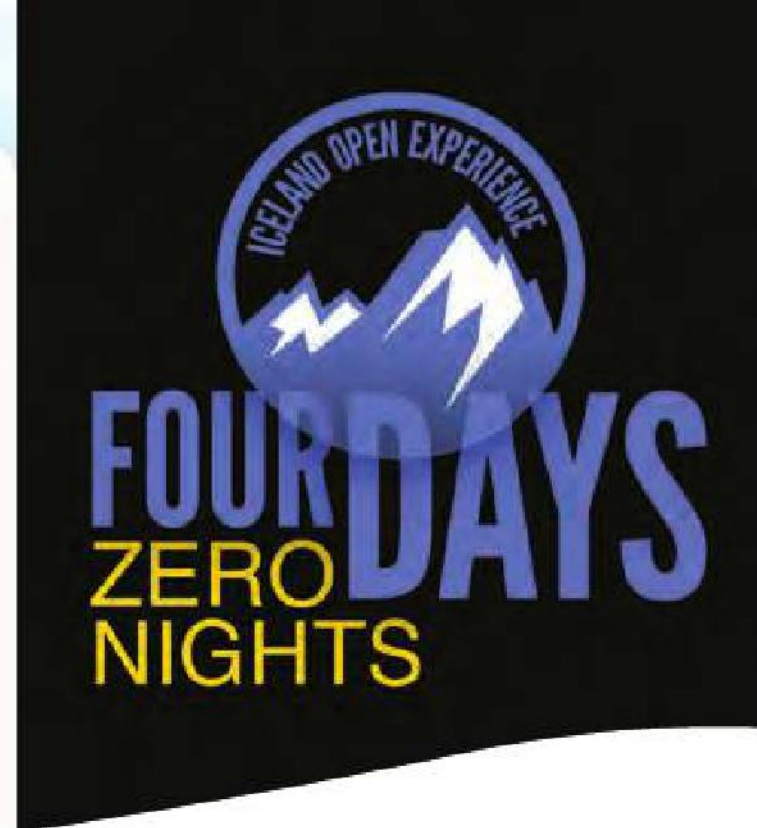
Paint Quality Institute (problem solver)
www.paintquality.com/paint-professionals/paint-tools

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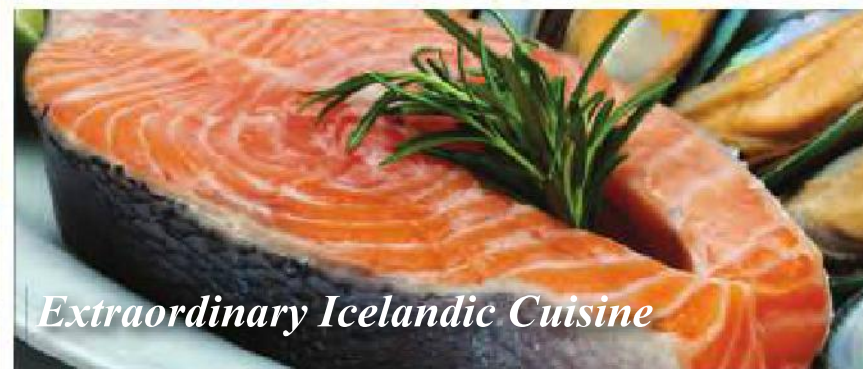
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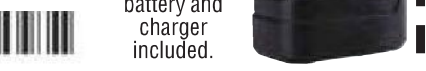
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Gettin' Hitched

BY MIKE TAVIS

Almost any vehicle can tow a trailer if you install the right receiver hitch



As a building maintenance tech, I carry a lot of stuff to and from the job site. After trading my aging pickup for a more fuel-efficient, compact grocery getter, I realized that although my new vehicle could haul all my tools, I would occasionally need to tow a trailer loaded with large materials. And that meant installing a receiver hitch.

A receiver hitch consists of a square or round steel tube that bolts to your vehicle's frame and accepts a draw bar with a towing ball (photo, p. 60). Many trucks and SUVs come with a factory-installed receiver hitch, but most cars, vans and smaller crossover vehicles do not. Luckily, thanks to the large variety of after-market hitches, you should be able to find one that will fit your vehicle, and you'll only need basic mechanics' tools to install it yourself.

The right hitch

Before you buy a receiver hitch, you need to know the towing capacity of your vehicle and how much weight you plan to pull. Trailers are rated by gross trailer weight (GTW — the total weight of the trailer and its load) and tongue weight (the downward force of the trailer on the hitch ball — typically about 10 percent of the GTW).

You can find the towing capacity and tongue-weight limit of your vehicle in the owner's manual, and you should never exceed those limits. (If you've misplaced the owner's manual, check online or consult a local dealership to

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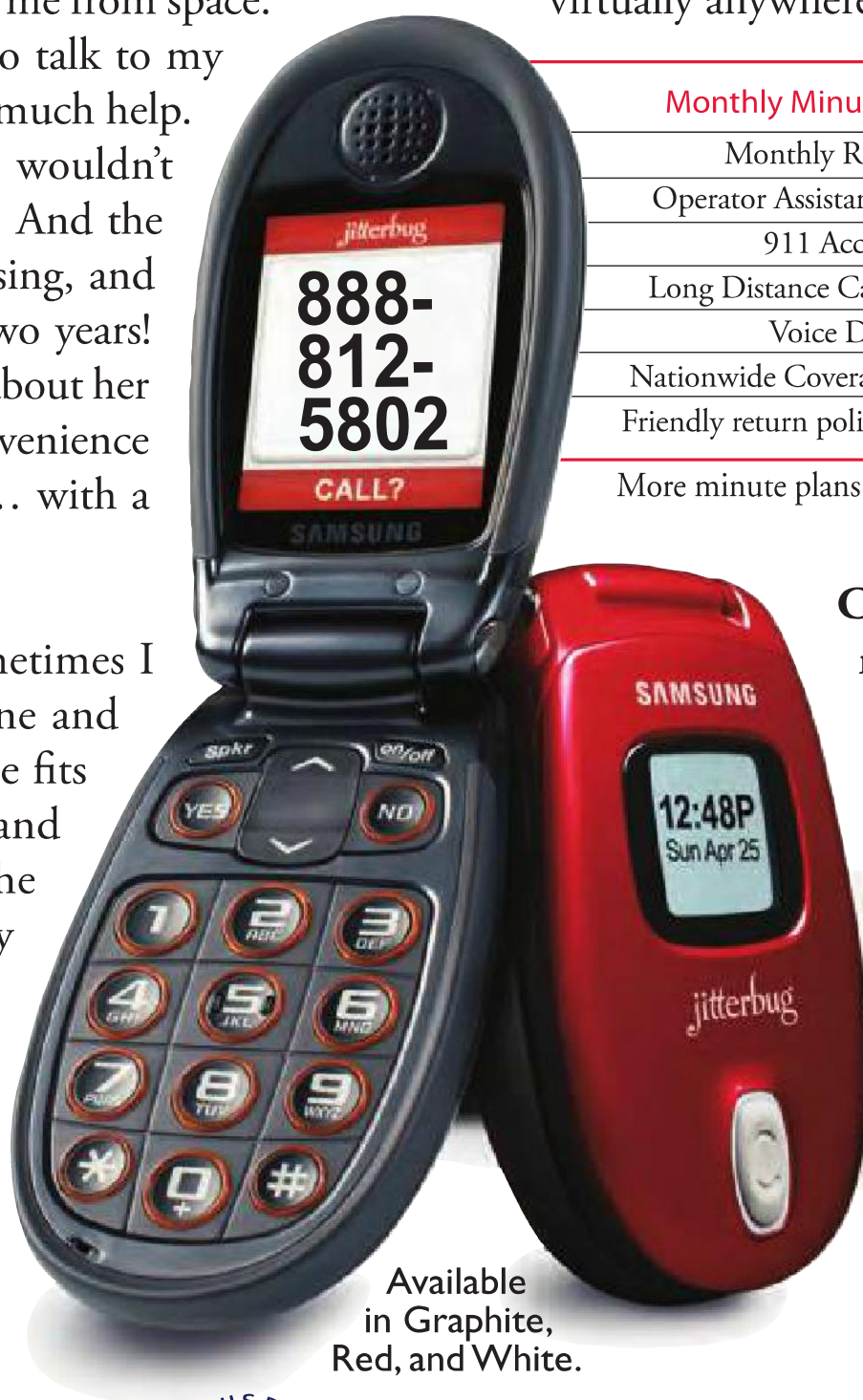
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"Well, I finally did it. I finally decided to enter the digital age and get a cell phone. My kids have been bugging me, my book group made fun of me, and the last straw was when my car broke down, and I was stuck by the highway for an hour before someone stopped to help. But when I went to the cell phone store, I almost changed my mind. The phones are so small I can't see the numbers, much less push the right one. They all have cameras, computers and a "global-positioning" something or other that's supposed to spot me from space.

Goodness, all I want to do is to be able to talk to my grandkids! The people at the store weren't much help. They couldn't understand why someone wouldn't want a phone the size of a postage stamp. And the rate plans! They were complicated, confusing, and expensive... and the contract lasted for two years! I'd almost given up when a friend told me about her new Jitterbug phone. Now, I have the convenience and safety of being able to stay in touch... with a phone I can actually use."

The cell phone that's right for me. Sometimes I think the people who designed this phone and the rate plans had me in mind. The phone fits easily in my pocket, but it flips open and reaches from my mouth to my ear. The display is large and backlit, so I can actually see who is calling. With a push of a button I can amplify the volume, and if I don't know a number, I can simply push "0" for a friendly, helpful operator that will look it up and even dial it for me. The Jitterbug also reduces background noise, making the sound loud and clear. There's even a dial tone, so I know the phone is ready to use.

Affordable plans that I can understand – and no contract to sign! Unlike other cell phones, Jitterbug has plans that make sense. Why should I pay for minutes I'm never going to use? And if I do talk more than I plan, I won't find myself with no minutes like my friend who has a prepaid phone. Best of all, there is no contract to sign – so I'm not locked in for years at a time or subject to termination fees. The U.S.-based customer service is second to none, and the phone gets service virtually anywhere in the country.



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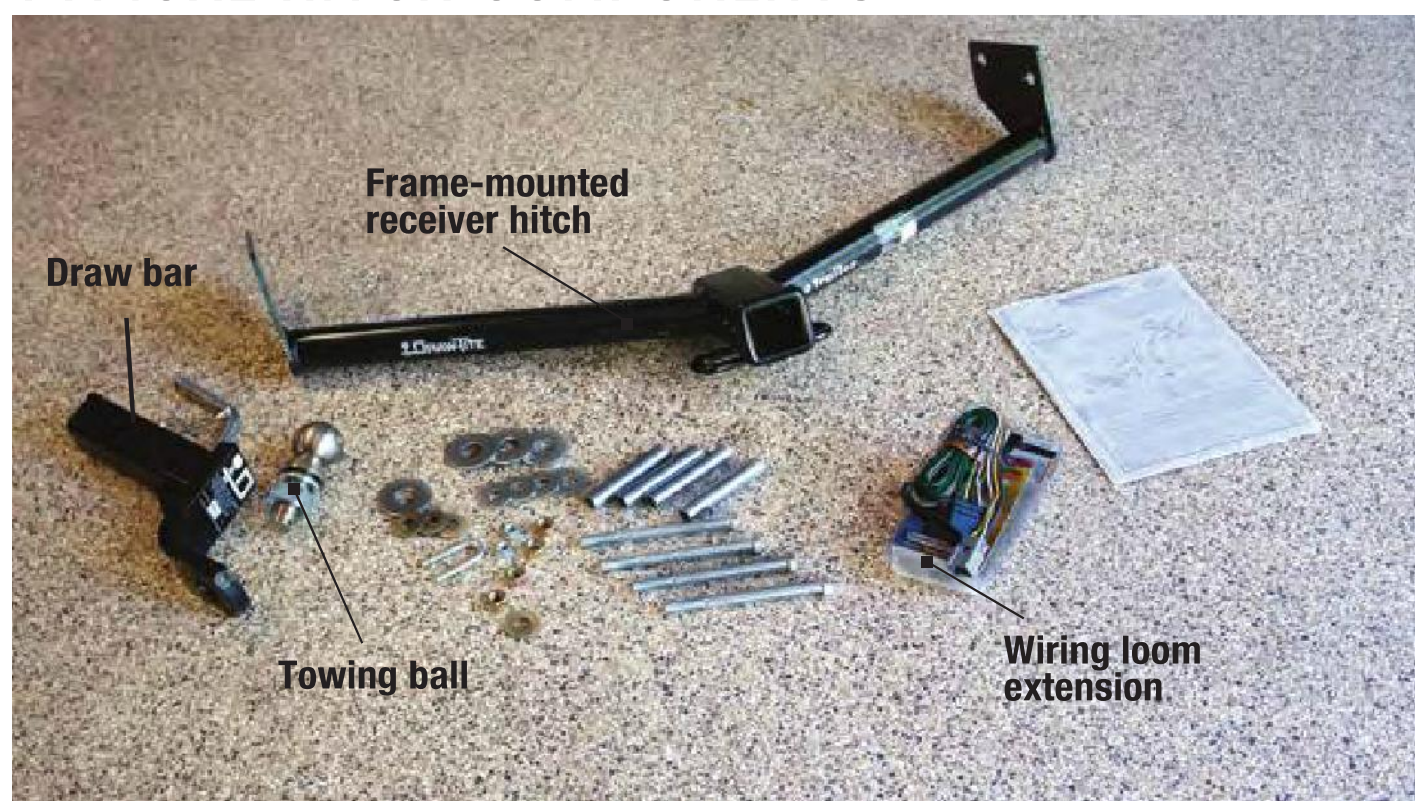
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CHOOSING THE RIGHT HITCH

Always check your vehicle's owner's manual for recommended towing capacity.

CHOOSE THE RIGHT HITCH TO HANDLE THE LOAD						
TRAILER TYPES						
HITCH CLASS	Class I	Class II	Class III	Class IV	5th Wheel	Gooseneck
MAXIMUM LOAD CAPACITY	2,000 lb. GTW and 200 lb. TW	3,500 lb. GTW and 350 lb. TW	5,000 lb. GTW and 500 lb. TW Weight Carrying	12,000 lb. GTW and 1,200 lb. TW Weight Distributing	24,000 lb. GTW and 6,000 lb. Pin Weight	25,000 lb. GTW and 6,250 lb. Pin Weight
TOW VEHICLE						
Subcompact & Compact Cars	✓	NOT RECOMMENDED	NOT RECOMMENDED	NOT RECOMMENDED	NOT APPLICABLE	NOT APPLICABLE
Midsize Cars	✓	✓	NOT RECOMMENDED	NOT RECOMMENDED	NOT APPLICABLE	NOT APPLICABLE
Midsize Pickups & Sport Utility Vehicles & Minivans	✓	✓	✓	NOT RECOMMENDED	✓ PICKUPS ONLY	✓ PICKUPS ONLY
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TYPICAL HITCH COMPONENTS



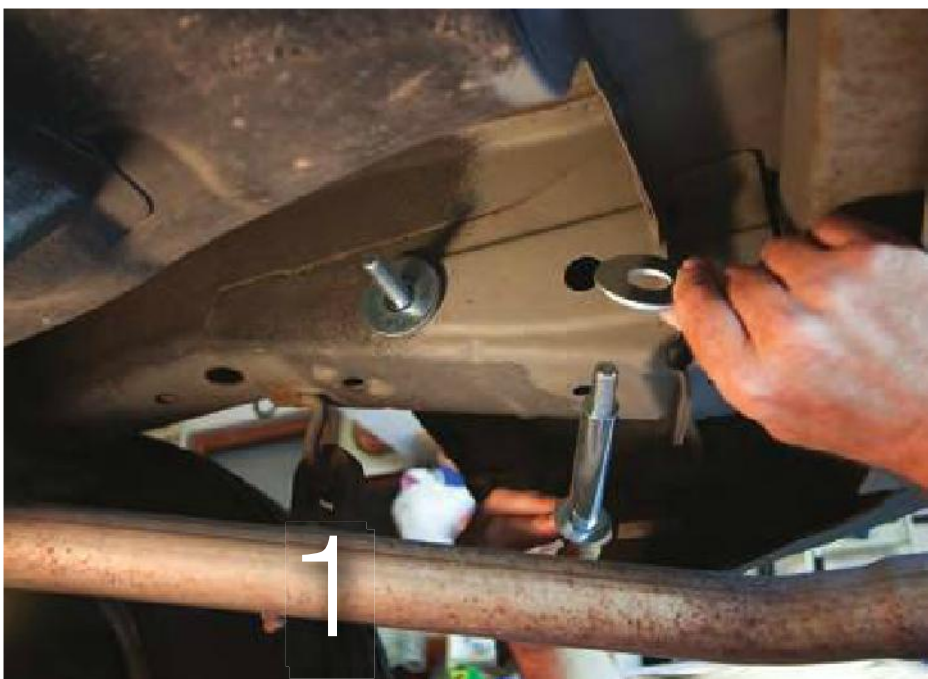
determine your vehicle's towing capacity.) You may find more than one rating, depending on whether you're using a weight-carrying hitch or a weight-distributing hitch and whether you're towing a trailer that's equipped with auxiliary brakes.

Once you've determined how much weight you'll be towing and what your vehicle is rated for, you'll need to choose a receiver hitch that can handle the load (see "Understanding Weight Ratings," p. 62). Hitches are rated in five classes according to GTW, and both the GTW and tongue weight are labeled (see "Choosing the Right Hitch," above). The most common type of receiver hitch is the weight-

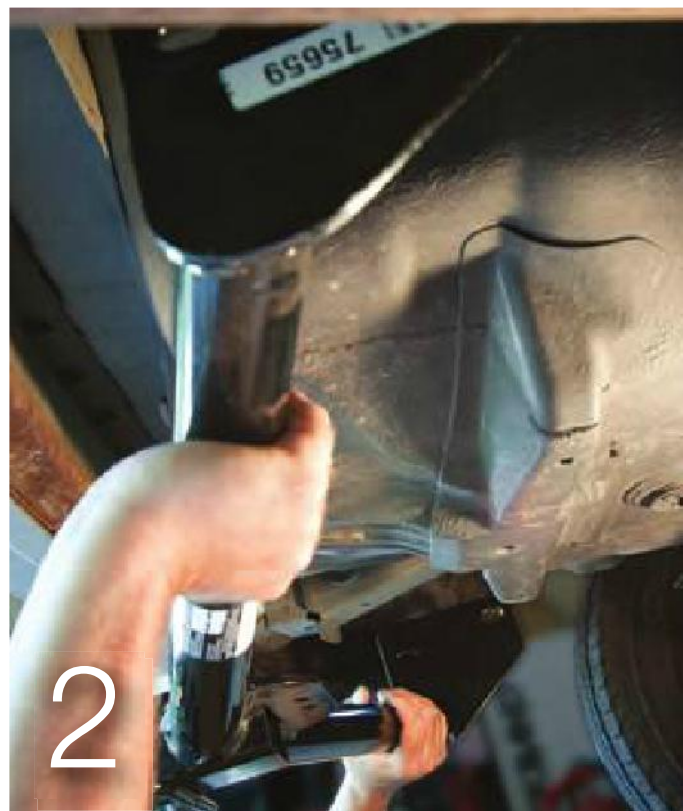
carrying variety, which is designed to support all of the trailer's tongue weight. The less common weight-distributing hitch uses long rods called spring bars to exert leverage on the towing vehicle's frame, spreading the tongue weight to all four wheels instead of just the rear wheels. This allows the vehicle to remain more level and stable when pulling heavy loads. (With a weight-carrying hitch, a heavy load would make the rear of the vehicle lower than the front.)

Typical installation

With most vehicles, installing a hitch simply involves raising the vehicle and bolting the hitch to the frame. (Be sure to carefully fol-



Insert the mounting bolts and related hardware into the frame holes. Although this photo shows the bolts fully inserted for clarity, you'll need to insert them so that they barely protrude through the frame holes.



Carefully lift the receiver hitch into position and then push the mounting bolts fully through the frame holes and the receiver's mounting holes.



Tighten the nuts on the mounting bolts. Ratcheting box-end wrenches make fast work of the initial tightening, but use a torque wrench for the final tightening.

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UNDERSTANDING WEIGHT RATINGS

When you prepare to tow, be aware of five weight ratings:

- **Tongue weight (TW)** is the downward force exerted on the hitch ball by the trailer coupler. In most cases, it is about 10 percent to 15 percent of the trailer's gross weight. You can measure TW of up to 300 pounds by resting the trailer coupler on a household scale positioned so that it sits at normal towing height (such as atop a crate).

For heavier tongue weights, place a household scale and a brick that's as thick as the scale 3 ft. apart. Set a length of pipe on each and rest a length of 2x4 across the pipes. Reset the scale to correct for the weight of the beam and pipe; then block the trailer wheels and rest the trailer jack on the beam. Position the trailer jack so that it rests 1 ft. from the brick and 2 ft. from the scale. Multiply the scale's reading by 3 to figure the trailer's TW.

- **Gross vehicle weight rating (GVWR)** represents the total allowable weight that the tow vehicle and the trailer are individually designed to safely carry.

- **Gross axle weight rating (GAWR)** is the maximum allowable weight that each axle — both for the tow vehicle and for the trailer — can support. In some cases it's possible to be within the GVWR but still dangerously exceed the GAWR. For example, a small truck with a fully loaded cargo bed and a fully loaded trailer in tow could easily exceed the rear truck axle GAWR but still be within the overall GVWR.

- **Trailer weight allowance (TWA)** is the maximum weight the vehicle can safely pull. The TWA rating varies greatly and is directly affected by the size of the engine, the type of transmission and the rear axle ratio, all of which can be found in the vehicle's owner's manual.

- **Gross combined weight rating (GCWR)** represents the combined weight of a fully loaded tow vehicle (fuel, occupants and cargo) and the total weight of the load in tow (trailer, cargo, etc.). Recommendations for maximum GCWR can also be found in the vehicle's owner's manual, but if you're in doubt about the weight of the trailer and its cargo, have the trailer weighed at a local scale and obtain estimates of the cargo's weight before loading it. — MB



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low all of the hitch manufacturer's instructions.)

Start by jacking up the vehicle's rear end and setting it on jack stands — never use only the jack to hold a vehicle while you are working on it. Locate the bolt holes in the vehicle's frame and remove any debris. (You may need to remove the spare tire to access the frame holes.) Place the bolts, washers and spacers (if required) into the frame holes (photo 1, p. 61). One handy trick, especially if your installation requires vertical as well as horizontal bolts, is to lightly tape the bolts in place with duct tape so they stay put when you position the hitch.

Once the hitch is in place, push the bolts through the mounting holes (photo 2). Some hitches are heavy, and lining up all of the holes and bolts can be a bit tricky to do single-handedly, so a helper makes the job easier. If necessary, use a sharp utility knife to trim away any bumper molding or fascia that prohibits the hitch from mounting correctly.

Tighten the nuts on the mounting bolts, making sure to follow any recommended torque requirements (photo 3). For added strength, use thread-locking compound such as Loc-Tite to better secure the nuts to the bolts.

All that's left is to plug in a wiring loom extension (available at most auto parts stores if one didn't come with your hitch) to power the trailer's taillights, brake lights and turn signals. After that, you're all set to tow your load. ♦



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.

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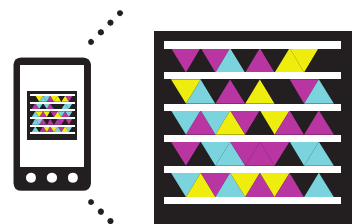
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MASTER CRAFTSMAN CARBIDE ROUTER BITS

**PROFESSIONAL
GRADE**

ROUTING PERFECTION EVERY TIME!

THIS 5-PIECE FLUSH TRIM ROUTER BIT SET TRIMS, SHAPES AND SMOOTHS TO HIGH STANDARDS OF PROFESSIONAL QUALITY.

The Master Craftsman Carbide 5-Piece Flush Trim Router Bit Set features professional grade bits crafted of high-quality carbide. You will appreciate how these bits deliver superior performance for years. Each bit is precision ground to close tolerances to provide

fast, smooth and accurate cuts. The 5-Piece Flush Trim Router Bit Set is from the Handyman Club of America Master Craftsman Carbide Router Bit Collection — a line of professional quality bits for the home do-it-yourselfer and woodworkers.

THIS 5-PIECE FLUSH TRIM ROUTER BIT SET IS EXCELLENT FOR ...

- Trimming Laminate
- Shaping Parts with a Template
- Making Multiple Parts with a Template
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THESE BITS OFFER DELUXE FEATURES:

- Carbide tips for superior edge retention
- High-quality cutter geometry for smooth cuts
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**GUARANTEED TO HOLD
EDGES UP TO 25 TIMES
LONGER THAN STANDARD
HIGH SPEED STEEL BITS!**



Flush Trim Router Bits are excellent for cutting multiple parts to the same size and shape when used with a template on a router table. Flush Trim Router Bits are also a perfect choice when following a template edge while freehand routing.

DON'T MISS THIS OPPORTUNITY

Get professional quality bits direct from the Club. There is no risk involved, because the *5-Piece Flush Trim Router Bit Set* is yours to examine **FREE** for 14 days, without obligation, before you make a decision to buy.

ADDITIONAL OPPORTUNITY

If you like the superior performance of the *5-Piece Flush Trim Router Bit Set*, you will also have the opportunity to examine other sets in the **Master Craftsman Carbide Router Bit Collection** without risk or obligation.

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HANDYMAN CLUB OF AMERICA, P.O. BOX 3407
HOPKINS, MN 55343-2107

Yes! Please send me the *Master Craftsman Carbide 5-Piece Flush Trim Bit Set* as described in this announcement. If I want to keep the set, I will pay \$19.99 (FREE Shipping and Handling). I will then have the opportunity to preview other sets in the **Master Craftsman Carbide Router Bit Collection**, always risk-free. If I don't want to keep the *5-Piece Flush Trim Bit Set*, I will return it without obligation.

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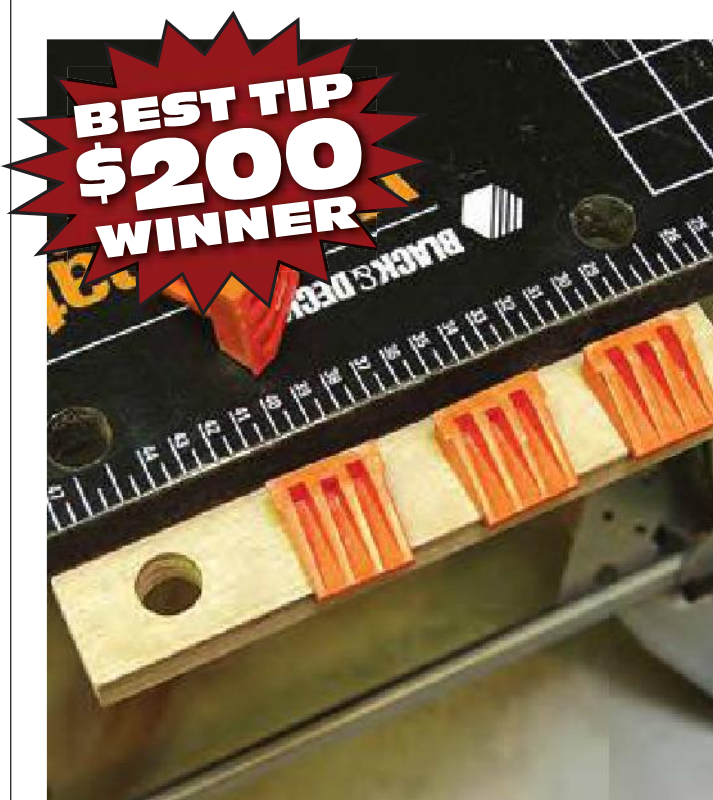
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MEMBER FORUM

Tip Trader

BY MIKE BERGER

Home and workshop hints from Club members



Bench-Dog Holder

To keep from losing the bench dogs for his Black & Decker Workmate, Club member **Chris Quitter** of Lebanon, Ohio, designed this simple storage device. He first drilled four holes in a section of scrap 3/4-in. plywood using a 3/4-in. Forstner bit; then he used a file to enlarge the holes to 25/32 in. (Chris points out that you could achieve the same results with an expansion bit.) Next, he notched the corners of the scrap so that it wouldn't block the factory-bored holes for the bench dog once it was mounted in place. Finally, he screwed the holder to the underside of the bench top using three 1-1/2-in. screws.



Get the Wood Out

When Club member **John Cantrell** of Gobels, Michigan, finds a splinter embedded in his skin, he reaches for wood glue instead of tweezers. He applies the glue to the spot directly above and around the sliver and waits for the glue to dry. Then he peels the glue away at an angle, and the splinter goes with it. After washing his hands, he's ready to go.



Slick Applicator

Keeping track of the small spray tubes for lubricants such as WD-40 can be frustrating. Rather than store the tubes, Club member **James Franklin** of Eureka, California, just makes them as he needs them — from cotton swabs. Once the cotton ends are cut off, a plastic-shafted swab fits perfectly into the WD-40 nozzle. You can also leave one cotton end on to make the tube a precision lubricant applicator. ♦

PHOTOGRAPHY COURTESY CLUB MEMBERS



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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

or mail them to:

**Tip Trader c/o Mike Berger
HANDY, 12301 Whitewater Drive
Minnetonka, MN 55343**

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

Expert Answers

BY MIKE BERGER

Learn from the pros

Board Stretcher?

Q: I'm new to woodworking, and I was excited to test my skills by building a picture frame. I purchased some 1x2 lumber, but when I got home and checked the dimensions with my tape measure, I was surprised that the boards did not actually measure 1 in. x 2 in. Why don't the dimensions of the boards match their stickers, and how does this affect my woodworking projects?

**Ron Winter
Appleton, WI**

A: The lumber you purchased is what's referred to as dimensional lumber. These boards' true measurements never match the nominal dimensions printed on the tag. Nominal dimensions are based on the size of the board when it is green (not dried) and rough (unfinished). When the lumber is dried and planed at the mill, its actual finished size is smaller than the nominal dimensions.

Before the beginning of the 20th century, lumber sizes varied greatly, as boards were sized and planed on-site. As a result, early standards simply called for green rough lumber to be the full nominal dimensions when dry.

In 1961 the Committee on Grade Simplification and Standardization agreed to what is now the current U.S. standard. In part, the dressed size of a 1-in. (nominal) board was fixed at 3/4 in.; the dressed size of 2-in. (nominal) lumber was reduced from 1-5/8 in. to 1-1/2 in. (If you'd like to read the complete history of lumber sizes, you can find a great report by the U.S. Department of Agriculture at www.fpl.fs.fed.us/documnts/misc/miscpub_6409.pdf.)

As for how the size discrepancy



Dimensional lumber never matches the printed measurements. This 1x6 board actually measures 3/4 x 5-1/2 in.

affects your woodworking, simply keep in mind that lumber that has already been surfaced on all four sides (referred to as S4S lumber) will always be slightly smaller than the printed dimensions. ♦

Dimensional Lumber Information



Download the TagReader app at: www.gettag.mobi; then scan with your smartphone. See p. 2 for more information.

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 Mike Berger
HANDY, 12301 Whitewater Drive
Minnetonka, MN 55343

4 NEW COOL TOOLS

Before starting your next big project, make sure you've got the right tool for the job. Look for these incredibly handy new tools from Kreg on the DIY Channel's upcoming season of 'Cool Tools' with Chris Grundy.

Square-Cut



Fast and easy cross cuts. No more 'eye-balling' your pencil mark.

Multi-Mark



Incredibly handy multi-purpose measuring and marking tool.

Crown-Pro



Crown molding – simplified! No more complicated compound cuts.

Deck Jig™



Beautiful concealed decking in 3 easy steps. "Drill. Drive. Done!"

Learn more and watch the videos at kregtool.com/ct1



HandyWorks

BY JENNY STANLEY

Your vote will help decide who wins this month; next time, enter a project of your own



Louvered pergola

This fantastically functional pergola stands over a patio base that cost Club member **Robert Plewa** of East Aurora, New York, only \$250, as he purchased the materials at a “blemish sale.” But the most impressive aspect of the project is the handcrafted louvers that rotate as well as open and close to allow more or less sunlight into the patio space. Robert completed the pergola single-handedly: “I used a lot of ratchet straps and quick clamps as additional hands to keep the posts plumb and to help support the main headers and joists during construction,” he explains. It took him nearly two summers to complete, but he says the reward was well worth his time.



Making a case for grilling

When the wood grilling utensils he had ordered for a friend’s wedding gift arrived in a flimsy plastic package, Club member **Robert Mazzera** of Spokane, Washington, set out to build a custom case to hold them. “I designed the box to have individual compartments for the different grilling tools,” he says. He crafted a decorative herringbone pattern for the lid out of walnut and ash and added chrome hinges and a latch. Robert finished the case and the grilling tools with several coats of teak oil. The project took about four weeks to complete — just in time for the wedding.



Fire engine-style fix-up

Club member **Lee Taylor** of Jeffersonville, Indiana, had the idea for this project in the back of his mind for some time before opportunity knocked. “I am a retired firefighter,” Lee says, “and after 36 years of service to the community, I continue to have an interest and concern for the people that serve to protect us.” When his neighbor offered an old golf cart for sale, Lee scooped it up and began putting his plan into action. The finished project, which reflects Lee’s admiration for firefighters, features a shiny new paint job, a pint-size ladder, a siren, a flashing light, new diamond-plate flooring, a storage area in back and much more.

PHOTOGRAPHY COURTESY CLUB MEMBERS



Modified student desk

Club member **Ricardo Ybarra** of Trenton, Texas, built this project for his granddaughter using the WORKSHOP article "Student's Desk" from the October/November 2010 issue of *HANDY*. However, in true DIY fashion, he made modifications to suit his granddaughter's needs and taste. Ricardo made the desk out of mesquite instead of the poplar and birch that the plans called for. He also used a 3/4-in. routed channel and wood screws rather than floating tenons and glue so that the desk can be disassembled into 10 pieces if his granddaughter decides to take it with her to college. Instead of painting the desk, Ricardo applied rosewood and golden pecan stain for a natural-wood look. ♦

CRITICS' CHOICE AWARD

WINNER: **Marlin Frakes** of Littleton, CO

PROJECT: "Lowrider," February/March 2011

PRIZE: Marlin will receive an official certificate and an Oscillating Multi-Tasker from Skil. Congratulations, Marlin!



Skil Oscillating Multi-Tasker

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.

LOUVERED PERGOLA
MAKING A CASE FOR GRILLING
FIRE ENGINE-STYLE FIX-UP
MODIFIED STUDENT DESK

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

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 (or GoodWorks)
c/o Jenny Stanley
HANDY
12301 Whitewater Drive
Minnetonka, MN 55343

Or e-mail to:

HandyWorks@HandymanClub.com
or
GoodWorks@HandymanClub.com
We regret that we cannot acknowledge or return submissions.

GoodWorks

HANDY applauds those who extend a helping hand



Custom kiosk

Committed to helping small farmers in South America and other countries receive fair wages for their hard work, the church that Club member **Marvin Miller** of Sarasota, Florida, attends began offering Fair Trade goods (such as coffee and chocolate) for sale to the congregation. Recognizing the need for a display case, Marvin volunteered to build a rolling kiosk to house the merchandise. He built three



Club member Marvin Miller built this stunning display/storage unit for Fair Trade goods sold through his church.

sections out of pine and connected them with piano hinges so the entire piece can be folded to save space, and he added two locking doors for secure storage. ♦



■ **7-DAY DISTRIBUTION:** These seldom seen full uncut sheets of never circulated \$2 bills are being moved from the private vaults of the World Reserve Monetary Exchange for immediate distribution to state residents. They are only being released banded together in Vault Stacks containing three protective bankers portfolios each loaded with its own full uncut sheet of never circulated \$2 bills for just forty-eight dollars per bankers portfolio. That's a real steal because only the first 10,537 residents whose zip code appears on the Distribution List are getting the Vault Stacks full of real money just by calling 1-888-823-6603 to beat the 7-day deadline.

State zip codes turn up cash for residents

Valuable uncut sheets of never circulated \$2 bills are actually being released to the first 10,537 callers who find their zip code on the distribution list to the right and beat the 7-day deadline to get Vault Stacks full of real money



■ **VALUABLE:** Pictured above are the Vault Stacks containing three protective bankers portfolios, each loaded with a valuable uncut sheet of never circulated \$2 bills. It's impossible to predict how much the bills will be worth in the future. But, since the Gov't shut down printing in 2006 on all \$2 bills you better believe at just forty-eight dollars and shipping the bankers portfolio is a real steal.

By Keith Berrymore
UNIVERSAL MEDIA SYNDICATE

UMS – State residents who find their zip code on the Distribution List will feel like they just won the lottery.

That's because for the next 7 days, full uncut sheets of never circulated \$2 bills are being released by the World Reserve not to banks, not to dealers and not just to the rich and famous, but directly to state residents who beat the order deadline.

The only thing residents need to do is look for their zip code on the Distribution List printed in this issue of Handy. If their zip code appears on the list, they need to

immediately call the Distribution Hotline before the 7-day deadline to get the Vault Stack containing three protective bankers portfolios each loaded with its own full uncut sheet of never circulated \$2 bills. But only the first 10,537 residents whose zip code appears on the Distribution List can even get the Vault Stacks containing three protective bankers portfolios full of real money.

"The Gov't shut down printing of \$2 bills in September 2006 and likely won't print more next year. So the money is being released until our last remaining \$2 bills are completely gone," said

Jefferson Marshall, Executive Director of the private World Reserve.

"That's why we've set up a Toll Free Distribution Hotline to make sure residents get them now," he said.

"But everything in our vault may soon be gone. So residents who want to get the uncut sheets of never circulated \$2 bills had better hurry and call right now," Marshall said.

Those who get in on this now will be the really smart ones. Just think what they could be worth someday.

"Rare uncut sheets of real Gov't issued currency have sold at prestigious auction houses for thousands

ADVERTISEMENT

of dollars. Currency values always fluctuate, and there are never any guarantees. But at just forty-eight dollars the full uncut sheet and bankers portfolio is a real steal,” Marshall said.

“You would expect to only see uncut money sheets on display in the Oval Office or under guard at the Smithsonian,” he said.

“In fact, they are so seldom seen, banks don’t even have them. That’s

why I’ve issued a directive to release a limited number of never circulated uncut sheets of valuable \$2 bills from our private vault reserve to residents across the United States. Residents whose zip code is not on the Distribution List can’t have our Vault Stacks of these full uncut sheets of \$2 bills,” Marshall said.

“These full uncut sheets of \$2 bills will be highly sought after

and are extremely popular to hand out as gifts for friends and family,” he said.

Most people have never even seen a single \$2 bill featuring President Thomas Jefferson on the front and the signing of the Declaration of Independence on the back let alone one of these full uncut sheets of never circulated bills.

“We’re bracing for all the calls. With just hours left, we’re doing

our best to make sure residents get through. But, it is important that residents find their zip code on the Distribution List and call the Toll Free Hotline right away to beat the deadline. Because when our release is over, it’s over,” he said.

“We’re allowing residents whose zip code appears on the Distribution List to claim as many as 10 Vault Stacks. But, since you can’t get these Vault Stacks containing

three protective bankers portfolios full of uncut sheets of money at banks, credit unions or even the Federal Reserve the limits will be strictly enforced,” Marshall said.

“So, residents who want these full uncut sheets of real money need to call right now. If lines are busy keep trying, we promise to answer all calls,” he said. ■

On the worldwide web:
www.Uncut2Dollar.com



■ **FULL UNCUT SHEETS:** Above is one of the valuable full uncut sheets of never circulated \$2 bills that are actually being released to state residents. These crisp seldom seen uncut sheets of real money are being released on a first come, first served basis. That’s why residents whose zip code appears on the Distribution List need to call 1-888-823-6603 right away with **Dept. Code UC117** to get the Vault Stacks containing three protective bankers portfolios full of real money since they’re only being released by the World Reserve for the next 7 days.

How to get the money

The Toll Free Distribution Hotline opens at 8:30am today for state residents only. The World Reserve has authorized the release of full uncut sheets of never circulated \$2 bills to residents who beat the 7-day deadline. If lines are busy, keep trying all calls will be answered. If you miss the deadline you’ll be turned away from this offer and forced to wait for future announcements in this issue of Handy or others, if any.

The only thing readers need to do is find their zip code on the Distribution List below and be one of the first 10,537 residents who call and beat the order deadline to get the Vault Stack containing three protective bankers portfolios, each loaded with its own full uncut sheet of never circulated \$2 bills for just \$48 per portfolio and shipping. There is a strict limit of 10 Vault Stacks per household. To get yours call the Toll Free Hotline number below.

Zip Code Distribution List:

If the first 2 numbers of your state Zip Code appear below immediately call toll free:
1-888-823-6603 (with Dept. Code UC117)

Alabama 35, 36	Indiana 46, 47	Nebraska 68, 69	South Carolina 29
Alaska 99	Iowa 50, 51, 52	Nevada 88, 89	South Dakota 57
Arizona 85, 86	Kansas 66, 67	New Hampshire 03	Tennessee 37, 38
Arkansas 71, 72	Kentucky 40, 41, 42	New Jersey 07, 08	Texas 75, 76, 77, 78, 79, 88
California Not available	Louisiana 70, 71	New Mexico 87, 88	Utah 84
Colorado 80, 81	Maine 03, 04	New York 00, 10, 11, 12, 13, 14	Vermont Not available
Connecticut 06	Maryland 20, 21	North Carolina 27, 28	Virginia 20, 22, 23, 24
Delaware 19	Massachusetts Not available	North Dakota 58	Washington 98, 99
Florida Not available	Michigan 48, 49	Ohio 41, 43, 44, 45	West Virginia 24, 25, 26
Georgia 30, 31, 39	Minnesota 55, 56	Oklahoma 73, 74	Wisconsin 53, 54
Hawaii 96	Mississippi 38, 39	Oregon 97	Wyoming 82, 83
Idaho 83	Missouri 63, 64, 65	Pennsylvania Not available	Washington DC 20
Illinois 60, 61, 62	Montana 59	Rhode Island 02	

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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

BY ROSS TANNER, PRODUCT TEST EDITOR

2,017 Club members tested more than \$64,300 in products



ROUTER TABLE

MEMBER RATING: 8.8 BEST FEATURE: PERFORMANCE

Skil Power Tools, 877-754-5999, www.skiltools.com

The Skil RAS900 Router Table (\$150) can help woodworkers and DIYers achieve more precise results while saving time and space. Its portable, compact design features a quick-clamp router mount for fast and easy bit changes without leveling, a tall fence with adjustable laminated-MDF faces and dual featherboards to accurately guide workpieces. It also includes a bit-height gauge for easier bit setup, a starter pin and guard for support when routing curved pieces, two integrated accessory-storage boxes and more.

Tom Crigler, Shepherdsville, KY:

"The Skil Router Table has a well-thought-out design, as everything you need is stored right with the table. It also has more surface area than other portable router tables."

Graham Evans, Hague, VA:

"The quick-change mounting plate makes it easy to remove the router to change bits. I love the side storage pockets, folding legs and vacuum attachment."



HYBRID SAW

MEMBER RATING: 8.6 BEST FEATURE: CONVENIENCE

Rockwell Power Tools, 866-514-ROCK, www.rockwelltools.com

The Rockwell BladeRunner (\$179.99) is a benchtop saw that blends the characteristics of a jigsaw, a scroll saw and a band saw. Its powerful 5-amp motor offers variable-speed adjustment, and it accepts any standard T-shank jigsaw blades for cutting wood, tile, PVC pipe, sheet metal and vinyl siding. Other features include quick blade changing, a dust-collection drawer, a miter gauge/rip fence attachment, a stainless steel top, a safety key, a wall-mount accessory and a two-year warranty.

Robert Wrightson, Corinth, TX:

"The Rockwell BladeRunner is versatile, easy to use and a bargain for the price. My favorite features were the variable-speed adjustment, the ease of changing blades and the wall mount."

Harry Jones, San Antonio, TX:

"The BladeRunner can handle a lot of projects without my having to fire up all of the major tools in my workshop."



LANDSCAPING TOOLS

MEMBER RATING: 8.8 BEST FEATURE: CONVENIENCE

Cub Cadet, 877-CUB-TOUGH, www.cubcadet.com

Cub Cadet's new Li-Ion handheld landscaping products are powered by a 20-volt battery that provides three times the number of lifecycle charges and less self-discharge compared with a NiCad battery. The ST59L String Trimmer (\$179) has a straight shaft that easily reaches under shrubs and trees, a 12-in. cutting swath, an auto-release on the .080-in. line and more. The HB59L Blower (\$59) is balanced and light and has a two-speed switch for adjusting the air speed up to 100 mph and volume up to 135 CFM. The HT59L Hedge Trimmer (\$69) features a 22-in. precision-sharpened-steel dual-action blade that offers extended reach and even cutting, and the three-sided comfort handle provides a large gripping area for comfort and control.

Duane Murray, Livingston, TX:

"I was able to finish my hedge trimming, edging and cleanup on one battery charge."

John Yakubinis, Mt. Pleasant, SC:

"The power and exceptional battery life of the Cub Cadet Li-Ion products handled all of my yard chores without the inconvenience of extension cords."

PRESSURE WASHER

MEMBER RATING: 9.2 BEST FEATURE: PERFORMANCE

Homelite Consumer Products, 800-242-4672, www.homelite.com

The Homelite Honda 3,100-psi Pressure Washer (model UT80432, \$399) features a 187cc Honda GCV190 engine and a maintenance-free brass pump that uses 2.5 gpm and delivers 3,100 psi for all DIY cleaning tasks. Its innovative five-in-one changeover nozzle allows you to choose the appropriate spray pattern for each job, and the Powerflex hose prevents kinking. Other features include a durable roll-cage frame, an onboard detergent tank and a two-year warranty.

Arthur Flinn, San Antonio, TX: “The Homelite Honda pressure washer matched a commercial-grade washer in performance with a fraction of the weight. The large wheels made moving it very easy, even over grass and bumps.”

John Keegan, Ormond Beach, FL: “The reliable Honda engine started on the first pull. I liked the five-way spray nozzle that allows for rapid change of spray pattern without the possibility of losing individual nozzle tips.”



CORDLESS OSCILLATING MULTITOOL

MEMBER RATING: 9.0 BEST FEATURE: EASE OF USE

Dremel, 800-437-3635, www.dremel.com

The Cordless Dremel Multi-Max (\$149.99 for the 8300-01 kit) features a 12-volt Li-Ion battery, a variable speed range of 3,000 to 21,000 oscillations per minute, an on-tool battery gauge and an ergonomic soft grip for comfort and control, and it's compatible with all Dremel oscillating accessories and attachments. The kit includes the tool, two 12-volt Li-Ion batteries, a one-hour charger, a deluxe storage case and seven oscillating accessories.

Deborah Marsh, Omaha, NE: “The size and ease of control makes the Multi-Max perfect for restoring wood trim, making precision cuts and removing grout.”

Richard Pokorny, Eugene, OR: “When I installed new flooring, I had to cut some molding. The Cordless Dremel Multi-Max cut nicely without my having to mess with pesky cords.”



COMMERCIAL-GRADE PADDED GLOVES

MEMBER RATING: 9.1 BEST FEATURE: QUALITY

Mechanix Wear Inc., 800-222-4296, www.mechanix.com

Available in a variety of sizes, Mechanix Wear CG4X Padded-Palm Gloves (\$30 a pair) incorporate a combination of synthetic leather and new Material4X to reinforce fingertip and thumb areas for added durability, and their Material4X knuckle padding offers abrasion protection. In addition, the gloves' anatomically patterned dual-layer palm padding is designed to reduce hand fatigue, vibration and abrasions.

Wayne Breach, Salem, OR: “I was especially impressed with the knuckle protection built into the gloves.”

John Boice, Kankakee, IL: “These gloves are very durable and provide an excellent grip. I had good hammer control with very little reverb, and my hands stayed warm while working outside in the winter.”



HCOA RECOMMENDED



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

DEALS AND DISCOUNTS



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.

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.



TAPE MEASURE HOLDER

MEMBER RATING: 8.6 BEST FEATURE: QUALITY

MagnoGrip Inc., 888-751-5975, www.magnogrip.com

The MagnoGrip Quick Snap Magnetic Tape Measure Holder (\$19.99) attaches to any tape measure for quick and easy access. Simply click the Quick Snap magnet into place on a belt holder and then add your tape measure so it's ready whenever you need to make a quick measurement. The MagnoGrip's heavy-duty magnets will also hold a tape measure to steel beams and other metal surfaces, making it a handy aid for measuring in tight or awkward areas.

Raymund Novak, Allison Park, PA: "The MagnoGrip Quick Snap Magnetic Tape Holder is strong and reliable, so I can stick my tape measure to scaffolding and never have to look for it."

Ron Shelton, Great Mills, MD: "It handles my 40-ft. tape measure with no problem. I like the audible click when the magnets find the belt holder, which lets me know that the tool is secure."

FOLDING KNIFE

MEMBER RATING: 7.2 BEST FEATURE: PERFORMANCE

Columbia River Knife & Tool, 800-891-3100, www.crkt.com

The Flux Plain Edge Knife (\$29.99, model 9048C) is a lightweight locking-liner folding knife with a strong central spine designed for multiple cutting tasks with good penetration. The modified clip-point 2.23-in. blade is made from stainless steel with a bead-blast finish, and it opens easily with one hand using the ambidextrous thumb disc. The knife includes a single-chassis carabiner and a removable stainless steel pocket clip.

Manuel Iruegas, San Antonio, TX: "The handy holder on the Flux Plain Edge Knife keeps it from getting lost. I recommend the knife for its size, sharpness and ability to cut."

Rick Heiden, Polo, IL: "This knife has remained sharp after many uses. It is a good size and is lightweight and ergonomic."



MULTIFUNCTION GLOVES

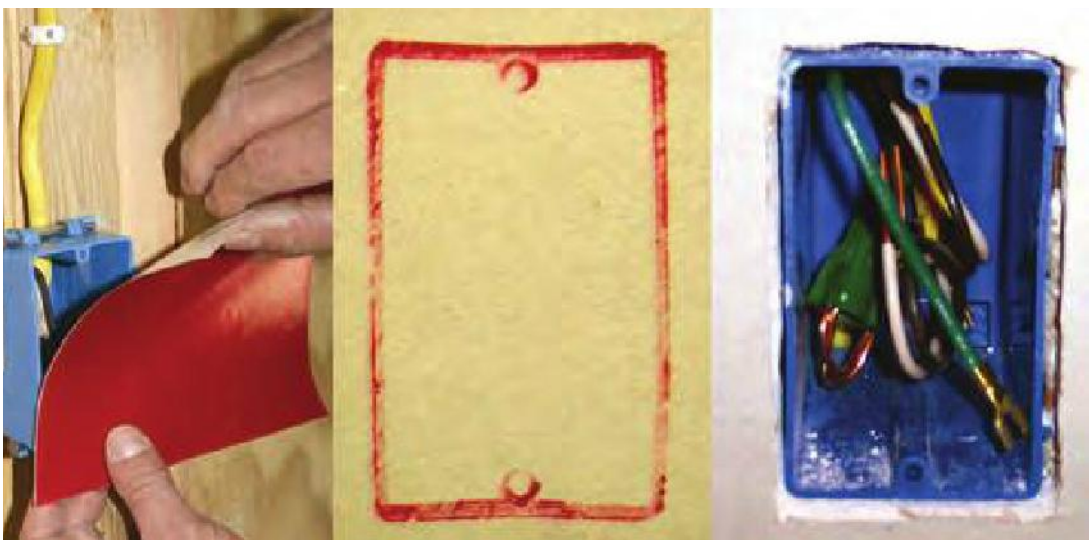
MEMBER RATING: 7.7 BEST FEATURE: EASE OF USE

JT Zip LLC, (586) 468-7555, www.3in1glove.com

The Original 3 in 1 Gloves' (\$9.99 a pair) urethane-coated nylon palms with aggregate are designed to provide all-day comfort and protection in cold and damp conditions, and they can sand materials such as wood, copper and rusted metals. The gloves are available in sizes small and large to fit both men and women.

Wayne Pickle, Westlake, LA: "Being a woodworker, I like the idea of not having to reach for sandpaper after cutting a board; just a quick pass with the Original 3 in 1 Gloves and all of the fine fibers are removed."

Andy Mylniczenko, Downers Grove, IL: "I wore the gloves while working in the yard and the woodshop and while remodeling. They were so comfortable, I forgot I had them on!"



TRANSFER SHEETS

MEMBER RATING: 8.0 BEST FEATURE: FINISHED APPEARANCE

Mark-n-Cut LLC, (862) 209-1531, www.markncut.com

You can transfer an exact image onto your workpiece in seconds using Mark-n-Cut Transfer Sheets (\$7.99 for a pack of five). The patented sheets feature an adhesive label with transferable red pigment that allows you to trace cutouts and helps to eliminate measuring mistakes and wasted materials. The sheets are ideal for marking cutouts for electrical fixtures, pipes, drain flanges and air ducts. Each sheet can make multiple impressions.

Robert Albertini, Franklin, MA: "The Mark-n-Cut Transfer Sheets made marking outlets and light fixtures simple and precise during my renovation project. Friends were impressed with my precision cuts."

Frank Granillo, Hillsboro, OR: "I used the sheets for installing a ceiling fan and switch box. The product was easy to use and reusable, and the bright color provided good visibility."

EMERGENCY LIGHT

MEMBER RATING: 9.0 BEST FEATURE: EASE OF USE

Coast Products Inc., 877-704-4545, www.coastportland.com

The Emergency Area Light (\$49.99) is a durable and reliable LED lantern that has an adjustable white light for general illumination, a red light for night vision and red flashing light to indicate an emergency. It produces 125 lumens using nine LEDs and can operate for 100 hours on four D batteries. The light also includes a built-in battery-life indicator.

Richard Davis, Rexburg, ID:

"The durable, lightweight and versatile Emergency Area Light is perfect for camping or to keep in your vehicle for emergencies."

Rodney McKinster, Louisa, KY:

"I have used the lantern in pouring rain and left it on for more than 12 hours with no fluctuation in lighting. This light is very durable."



WOOD STAIN AND WATERPROOFER

MEMBER RATING: 9.0 BEST FEATURE: CONVENIENCE

Thompson's WaterSeal, 800-367-6297, www.thompsonswaterseal.com

Thompson's WaterSeal Wood Stain (\$7.97 a can) is easy to use on small outdoor wood projects such as chairs, picnic tables, planters, mailboxes, benches and more. It sprays evenly and protects projects from water, fading and UV damage. For a semitransparent look that lets the natural wood show through, spray a light coat or wipe away excess with a rag. Additional coats can be applied for more coverage. The stain dries to the touch in one hour and fully dries in about 48 hours. The finish is available in Traditional Brown, Cedar, Golden Pine and Redwood hues, and each aerosol can covers about 25 sq. ft. of surface area.

Steven Wilson, Pensacola, FL:

"Thompson's WaterSeal Wood Stain has a good color, provided nice coverage and was easy to spray. Unlike other spray products that spit, this went on evenly and smoothly."

August (Gus) Bracewell, Westwego, LA:

"My favorite feature is the superb end-grain coverage, as it doesn't turn end grain darker like other stains do."



PUMP

MEMBER RATING: 7.8 BEST FEATURE: EASE OF USE

K&M of Virginia Inc., (804) 426-4366, www.slide-n-pump.com

At one-third the price of electrical pumps, the Slide-N-Pump (\$19.99) makes short work of pumping liquid while avoiding the dangers associated with combining electricity and water. Simply attach standard garden hoses to both ends, insert one open end into any volume of liquid and start pumping. The pump acts as a siphon initiator to create a continuous flow of water for draining aquariums, hot tubs, children's pools, decorative ponds, fountains, birdbaths, clogged gutters, flooded basements or crawl spaces, and more.

Curtis Nuenke, Franklin, TN: "The Slide-N-Pump quickly sucked out water from a toilet with just a few pumps. I was pleasantly surprised by how powerful it was. It is definitely part of my plumbing kit from now on!"

Clarence Richardson, Hendersonville, NC: "The ability to use a standard garden hose makes it extremely versatile. I drained my large backyard pond in a reasonable amount of time."



CORRECTION

The Kuulair 77 Evaporative Cooling Unit (\$649; www.kuulair.com) does not function as a humidifier as indicated in the April/May 2011 product review. It does have a fan function and provides a significant temperature drop in a 600-sq.-ft. space. ♦



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Enter the June/July Great Giveaway for your chance to bring home a first-rate prize package from Lincoln Electric valued at \$2,536. The metalworking ensemble includes a K2806-1 Tomahawk™ 375 Air plasma cutting system that boasts an internal air compressor, continuous output control, a Lincoln Electric LC25 Torch with 10-ft. cable, rapid arc restrike for fast cutting through gaps and expanded metal, and much more.

A K2471-1 POWER MIG® 140C welder is also part of the deal, featuring Diamond Core Technology™ and a rugged drive system that aids arc performance for MIG welding with thin-gauge

steel, stainless steel and aluminum; it is also capable of gasless flux-cored welding for deep penetration with thicker steel. The K2471-1 features a 30- to 140-amp welding output range.

To round out the package, Lincoln Electric is throwing in a K3035-1 VIKING™ Street Rod™ solar-power auto-darkening helmet. This high-tech safety gear features continuously variable sensitivity and delay and internal variable shade control — not to mention a flashy exterior design. For more information about these and other Lincoln Electric products, visit www.lincolnelectric.com.

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NO PURCHASE NECESSARY TO ENTER OR WIN. Making a purchase will not improve your chances of winning. See the official contest rules at www.HandymanClub.com. Submit your entry at www.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, Hopkins, MN 55343.



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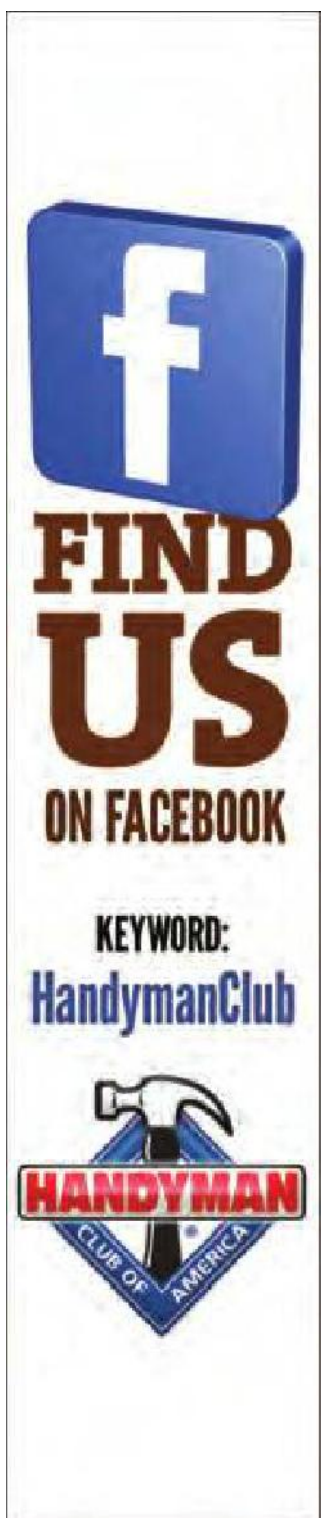
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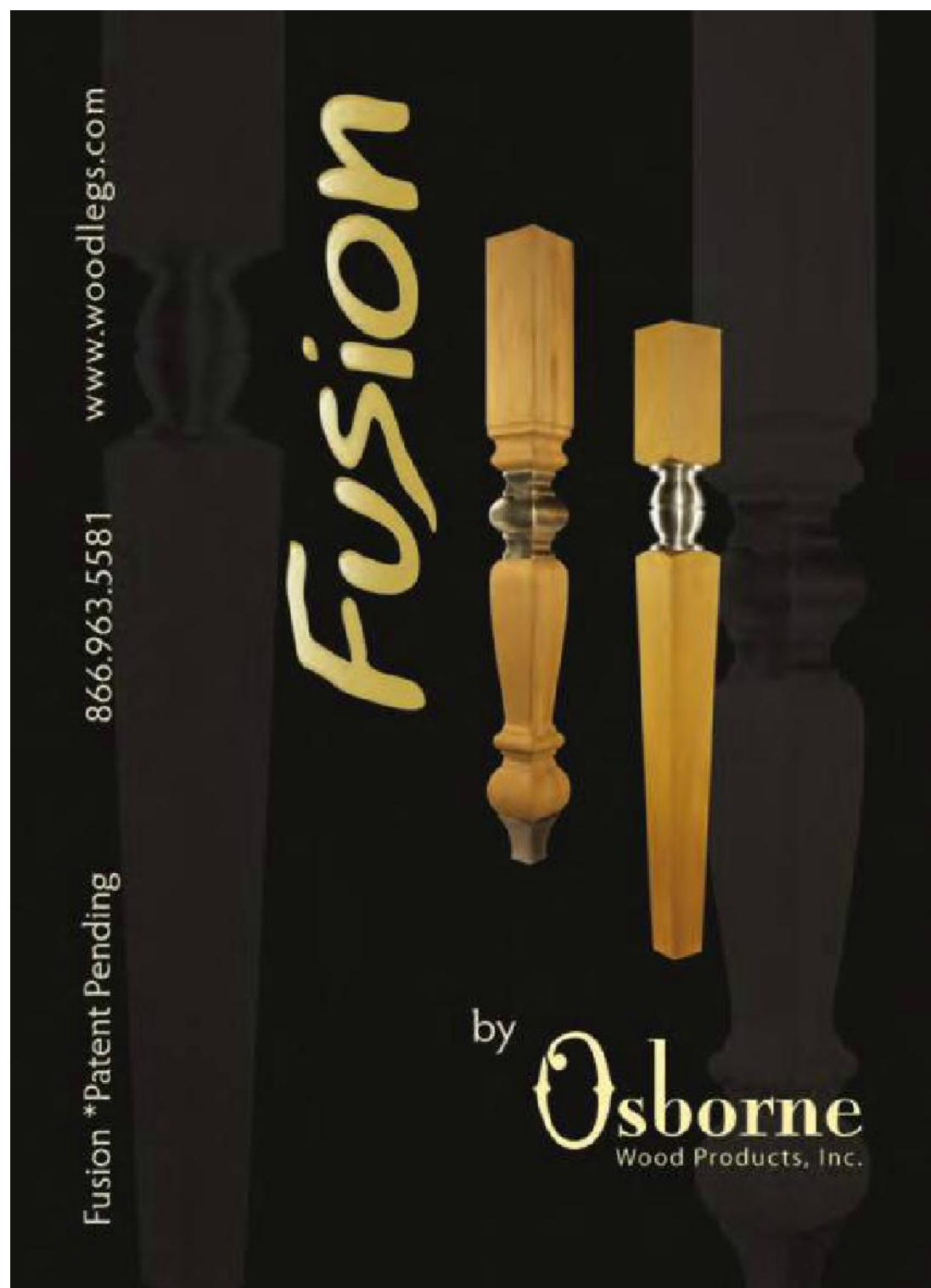


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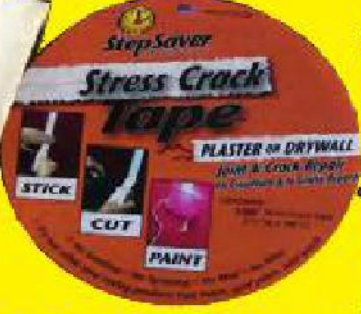
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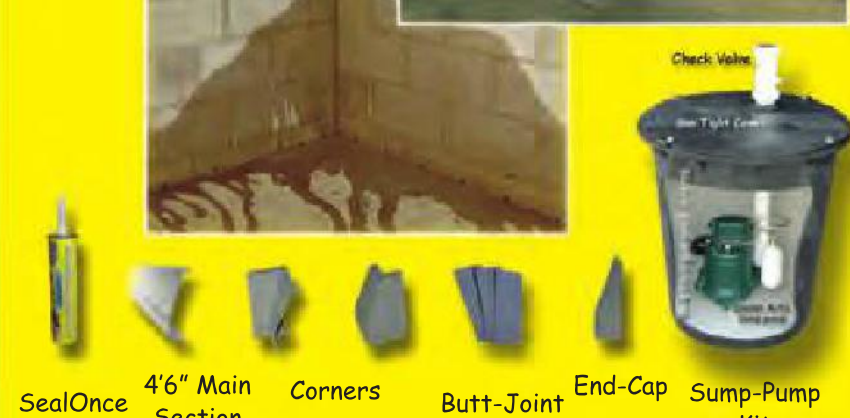


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Member Benefits

Make the most of your HCOA membership

Meet the Vegas Tool-Testers

Four Club members won a free ride to Las Vegas to test the latest and greatest tools at the 2011 National Hardware Show. Here's a bit about this year's Top Tool Testers:

Stay tuned for more coverage of this sawdust-making event in the August/September issue.



Greg Majoros of Medina, Ohio, started taking on projects at a young age — his first job was helping the janitor at his elementary school. Now Greg tackles everything from plumbing to cabinetry in his home.



Robert Phelan of Amherst, Ohio, is a self-taught DIYer. "My passion is woodworking. I like to have something tangible at the end of my effort," he says. Robert is also an active contributor to the HCOA forums and Facebook page.



Ian Plant of Phoenixville, Pennsylvania, learned much about tools during his 32 years as an engineer in the Royal Navy (the British naval force). Since he relocated to the United States, Ian has completed many home-improvement projects.



Tami Love of Midlothian, Virginia, says, "I have a handywoman business, so tools are very important in my everyday life." She also encourages her female clients to participate in completing projects in their homes.

February/March 2011 GREAT GIVEAWAY prizewinners



Ryobi Inverter Generator:

Tony Bare, Randleman, NC
Richard Clinton, Winchester, MA
Charles Ker, Concord VA
Danny Pogue, Utica, KY

Check out this issue's GREAT GIVEAWAY on p. 76.

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Hot Controversy

BY CONNIE BASTYR

How outdoor cooking evolved from a survival skill to a culinary art form — and in many regions, a heated competition

Whether your brand of outdoor cooking is called *barbecue*, *grilling*, *smoking* or *roasting* or your venue is a pit, spit, brazier or grill, you're practicing an ancient survival skill. The basic concept of combining food and flame likely began soon after humans discovered fire. And just as cultures evolved and became diverse, so did culinary methods — reflecting differences in region, tradition and personal taste. In fact, some enthusiasts' opinions on barbecue are seared as deeply as their beliefs in politics or religion. Each camp stands firmly behind its interpretation of how to heat meat.

Despite the simplicity of that act, people find much to disagree about in the details: gas, charcoal (hardwood lumps or briquettes) or wood; pork, beef, poultry or fish; rub, sauce (vinegar or tomato-base) or marinade; low and slow or hot and fast — the list goes on and on.

Even the word *barbecue* is embroiled in controversy: It's used as a noun, a verb and an adjective in variations such as *barbeque*, *BBQ*, *Bar-B-Q*, *Barbie* and *Q*. Although the story of its origin is not certain, it most likely comes from the Spanish word *barbacoa* or the Caribbean *barabicu* — a rack made of green wood used to suspend food above a smoking fire. Initially, smoke was generated to repel insects and critters and to deter decay while meat dried in the sun for preservation. But people soon discovered that the slow-smoke process added flavor and helped to tenderize tougher cuts of meat.

For centuries barbecue fuel was wood or chunks of charred wood



Wind, rain and cold temperatures are obstacles to open-grill cooking. To overcome these challenges and provide adjustable airflow for regulating heat, George Stephen, a shop welder for Weber Brothers Metal Works, fashioned the now-famous kettle grill nearly 60 years ago.

— until 1897, when Pennsylvania chemist Ellsworth Zwoyer filed a patent for manufactured briquettes. The pillow-shape composites were made of charred wood and other dry ingredients that were ground and mixed with a binder and then compressed into small blocks.

During the early 1920s, Henry Ford (seeking a productive use for the mounting pile of wood scraps at his Model-T plant) set up his own briquette factory. The resourceful automaker delegated his new operation to E.G. Kingsford, a name that we associate with charcoal briquettes to this day.

Another stride forward in the background of barbecue is the grill

itself. For home cookouts, the backyard grill (made of brick or stone) became popular during the mid-1900s. With the post-WWII migration to the suburbs, a more compact, portable alternative, the brazier grill, became the next hot item. In 1952 welder George Stephen (a frequent backyard chef) sought to improve the open-style grills. He welded legs to the bottom of a buoy form and shaped a lid to go on top. With the addition of a handle and some adjustable air ports, the Weber Kettle was born.

Outdoor cooking evolved again during the 1960s: In a quest to boost sales of natural gas, the Arkansas Louisiana Gas Co. designed a gas-fueled model, the Arkla grill. Although charcoal aficionados contend that their fuel is best, the speed and convenience of gas cooking has won many fans.

Across the country, custom and culture have determined the meanings of *barbecue* and separated the *Qs* from the *grills*. In Texas, where beef reigns, the menu is brisket or steak. In the Southeast, where wild pigs were once the meat mainstay, pork (ribs and roasts) is king. Memphis and Kansas City both claim to be the barbecue capital of the world. Here in the North, we *grill*; but when we gather to grill, we call the event a *barbecue*. Each outdoor-cooking tradition runs deep, and though differences in the approach may spark disagreements, the result — a tasty meal — ultimately brings us together. ♦



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