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1 Share Your Solo-Success Stories

Are you the only handy person in your household? You're not alone! Many DIYers have developed strategies for successful solo projects, and we want to hear yours. From now until September 30, go to www.Handy10.com and share your best working-alone techniques with fellow Club members. We'll select the top tip and reward the winner with a prize that's sure to lend a helping hand during his or her individual endeavors.



2 Explore the Content Corral
Locate yesteryear's WEB EXTRAS and exclusive WEB FEATURES (from *HANDY*'s May/June 2007 issue to the one you're reading now) at www.Handy10.com.

3 Peruse Product Reviews
Read ratings and write-ups about the latest power tools and other home-improvement products tested by Club members.

4 Enter the Cub Cadet GREAT GIVEAWAY
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Check out this issue's
GREAT GIVEAWAY! on p. 74.



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To enter the free Club membership
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Entries must be submitted by September 30, 2010.
Winners will be announced in December 2010.

QUIZ WINNERS APRIL/MAY 2010

**Ronald Cohen
Gary Fleener
Gordon Hales
Debbie Henderson
Virginia Lian
Timothy Marciniak
Connie McMillan
Pam Noirot
Michael Rivera
Wesley Sage**

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



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Reality Show

Nothing beats a face-to-face meeting

Our Club is all about connecting with people who share a passion for DIY projects. We connect via an Internet forum where members can request and offer help, through e-mail newsletters that deliver cutting-edge news, and with this magazine, which provides project plans and showcases your accomplishments. Although we can't really meet as a group (after all, our membership is equivalent to the population of a medium-size metropolitan area) it is possible for small numbers of us to gather, and that's what we did on May 4 to 6 at the National Hardware Show in Las Vegas. Six HCOA members joined the *HANDY* editors at one of the event's most dynamic, attention-getting displays: the *HANDY* Test Shop (see "Hardwired for Innovation," p. 24). In a show filled with two-dimensional static booths, ours was a 360-degree beehive of activity that attracted scores of passersby. As the word spread, many people made a special stop to see what the buzz was about.

The purpose was creating connections — between our Club members and representatives of the companies that create the tools and products you use to pursue your projects. The six winners of the Vegas trip offered their opinions about the products they were testing as well as about the manufacturers' marketing, customer service, product lineup and brand perception. I witnessed several exchanges that left me greatly impressed with our members' knowledge and



Club members and *HANDY* staff at the National Hardware Show, from left to right: Mark Schmitt, Kenneth Fox, Mike Turner, Jordan Keyes, Vern Grassel, Vivian Burnett, Jeff Carter, Larry Okrend, Charles Pherson and Mike Berger.

experience — and with the willingness of the sponsors' representatives to hear both the good and the bad news. The world would be a better place if everyone exercised this degree of honesty and openness.

Besides being a dream-come-true for the members who participated, this get-together provided priceless benefits for the sponsoring companies as well as for interested observers. (And it doesn't hurt that it put our Club in a high-profile position at one of the most important trade shows in our category.) Though many of us enjoy taking a solitary approach to our DIY projects (see "Tackling Projects Alone," p. 46), staying connected is important to our own success as well as to the success of the industries that serve our interests. So keep reading, writing and visiting the Club Web site — we need you, and you need each other. ♦

LARRY

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Mobile Workbench

Simple, solid, loaded with features

BY BRUCE KIEFFER



This easy-to-build bench is inexpensive, sturdy and mobile and features many of the same accessories you'd expect to find on a more expensive woodworking bench, including a woodworking vise, bench-dog holes and a bench slave (inset).



No shop is complete without a good workbench.

This one is very easy to build and rolls out of the way when it's not needed, and it offers many features that you'll find indispensable.

For starters, the bench boasts a high-quality woodworking vise that uses a round bench dog to hold flat workpieces securely on the work surface. The Bench Pup (see SOURCES ONLINE) fits in one of many 3/4-in.-dia. holes drilled in the top of the workbench in line with the permanently mounted dog on the vise. An integrated stand called a bench slave supports long workpieces, and a large shelf will accommodate most portable benchtop tools. Large, smooth-rolling casters lock with the press of a foot lever to ensure that the bench remains completely stable during use.

Building this bench takes a day or two and requires only basic woodworking tools: a table saw, a jigsaw, a

drill, a router and a few clamps. You'll also need a drill guide, 3/4- and 1-1/4-in.-dia. Forstner bits, a flush-trim router bit (see SOURCES ONLINE) and a pattern flush-trim router bit. Although I assembled some of the parts using a pneumatic stapler or nail gun, you could substitute screws or hand-driven nails or just glue and clamp those joints.

Construction notes

To build the bench, I chose fir plywood for its strength and light weight and medium-density fiberboard (MDF) to create a smooth, flat work surface. I also used MDF for some of the parts where my choice of material made no difference so that I could get the most use out of the sheets and save money. All of the materials cost roughly \$150 and are available at most home centers.

Most of the parts are glued together, an approach that

PHOTOGRAPHY BY MARK MACEMON AND DAN CARY

MOBILE WORKBENCH

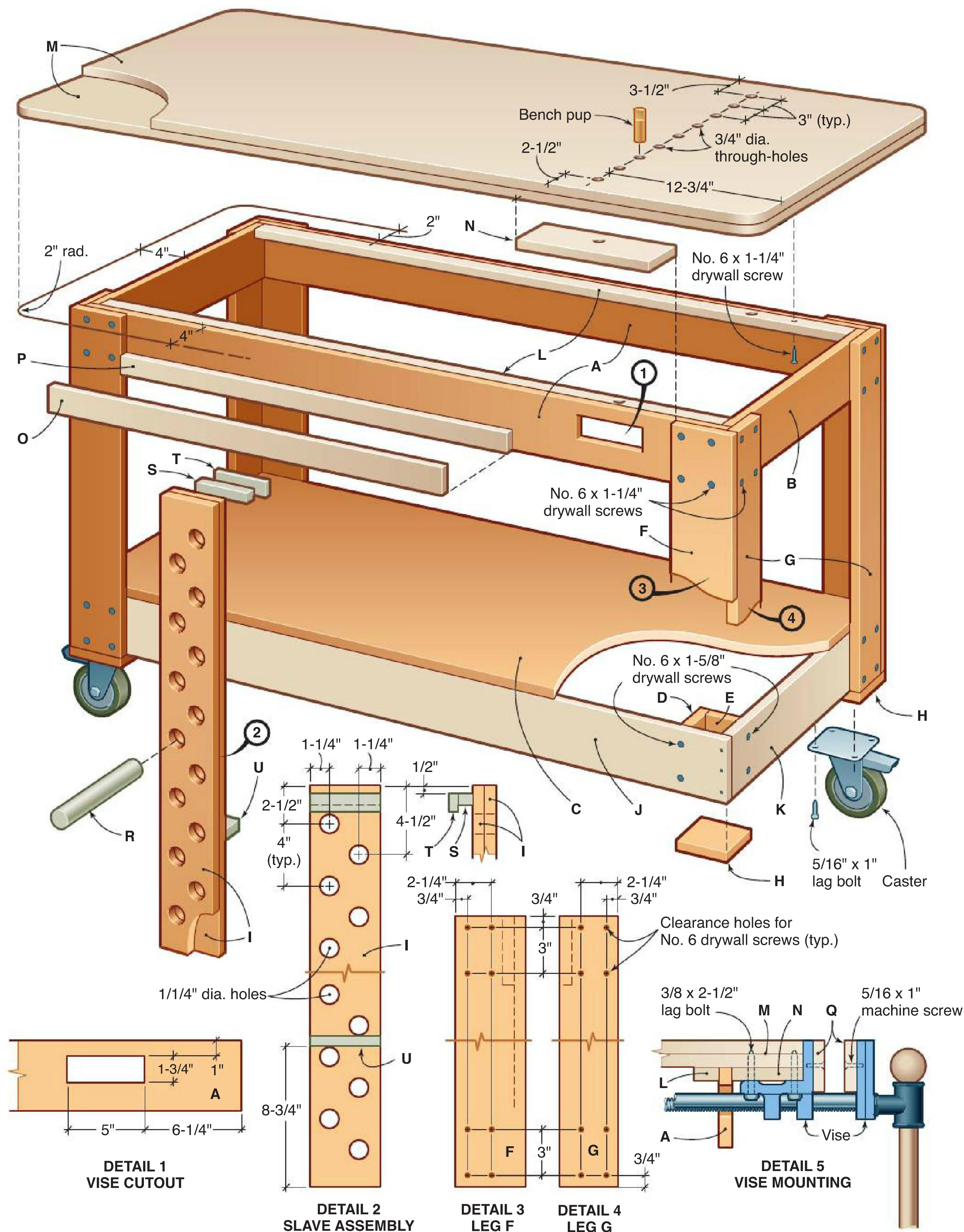
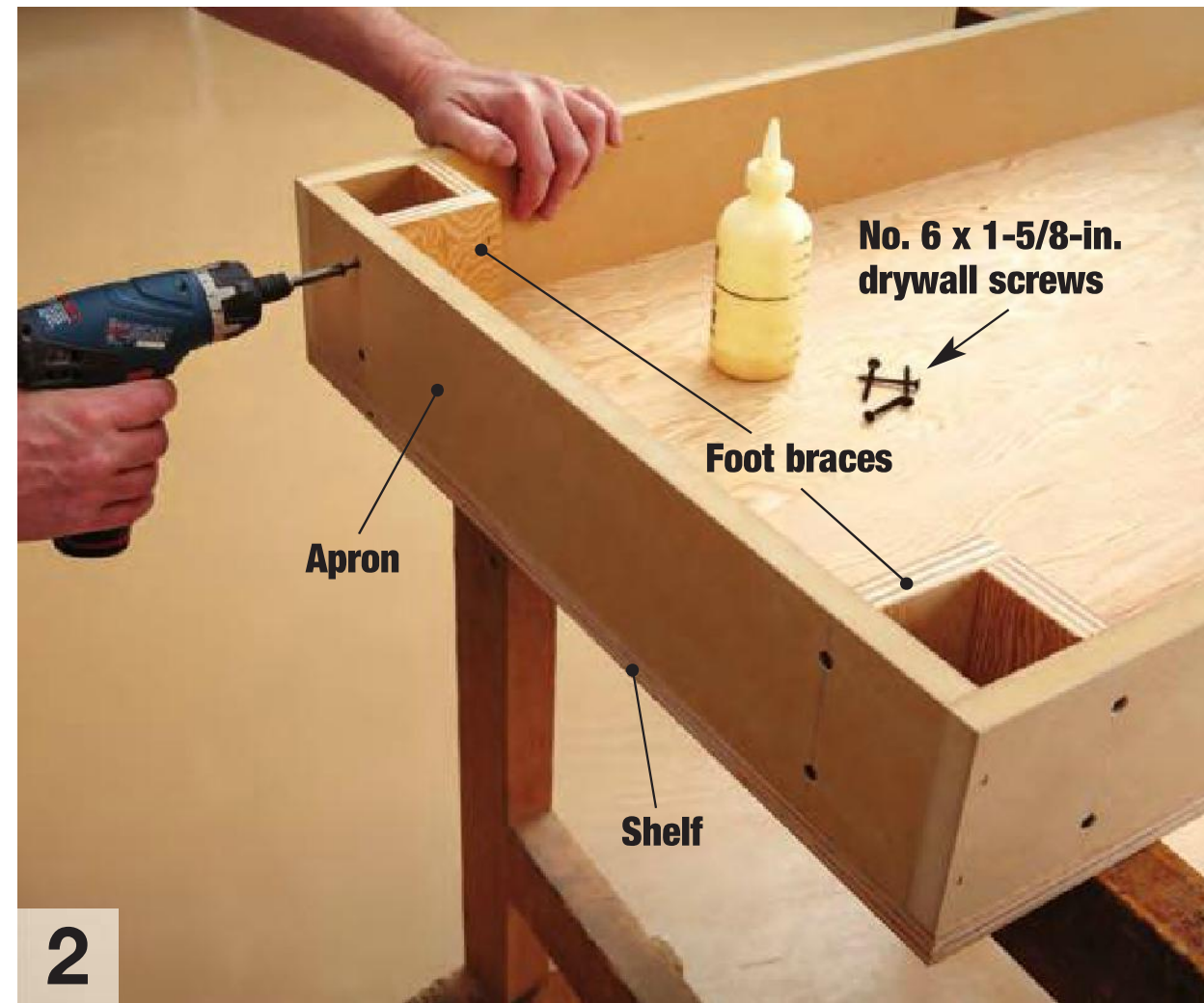


ILLUSTRATION BY GABRIEL GRAPHICS



1 Use a jigsaw to cut the hole for the vise in the upper front apron piece. Drill a 3/8-in.-dia. starter hole so you can insert the jigsaw blade.



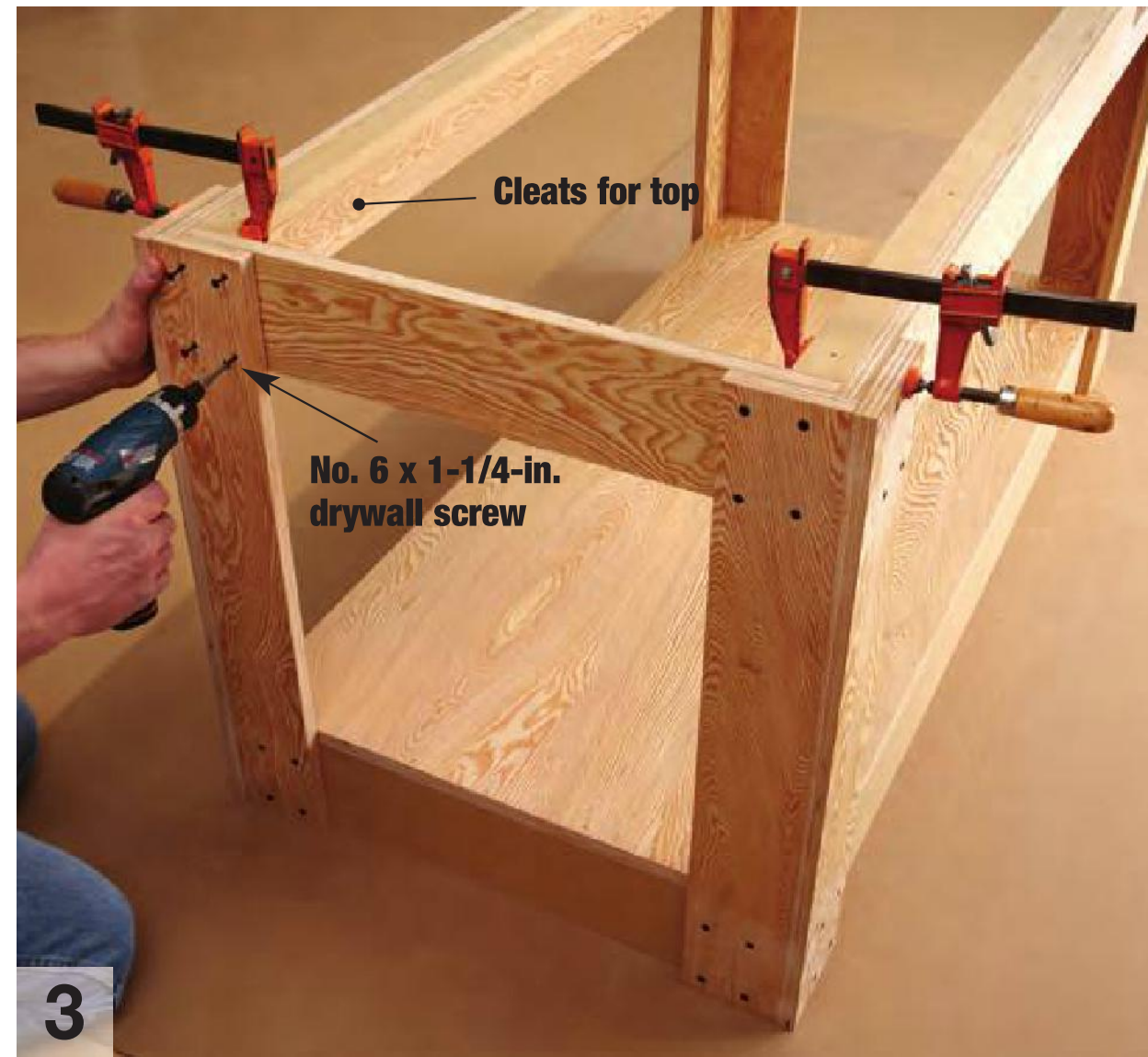
2 Glue and screw the foot braces in the corners of the lower apron. Drill clearance and countersink holes through the apron, and drill pilot holes in the ends of the braces.

CUTTING LIST

KEY NO.	DESCRIPTION	SIZE
3/4-in. fir plywood		
A	2 Apron front/back	3/4 x 4-1/2 x 52 in.
B	2 Apron sides	3/4 x 4-1/2 x 22-1/2 in.
C	1 Shelf	3/4 x 24 x 52 in.
D	4 Foot braces	3/4 x 4-1/2 x 3 in.
E	4 Foot braces	3/4 x 4-1/2 x 2-1/4 in.
F	4 Legs	3/4 x 4-1/2 x 26-1/2 in.
G	4 Legs	3/4 x 3-3/4 x 26-1/2 in.
H	4 Feet	3/4 x 4-1/2 x 4-1/2 in.
I	2 Bench-slave pieces	3/4 x 4 x 31 in.
3/4-in. MDF		
J	2 Apron front/back	3/4 x 4-1/2 x 52 in.
K	2 Apron sides	3/4 x 4-1/2 x 22 in.
L	2 Cleats	3/4 x 1-1/2 x 50-1/2 in.
M	2 Top pieces	3/4 x 30 x 60 in.
N	1 Vise mount	3/4 x 4 x 10 in.
O	1 Rail	3/4 x 2 x 32 in.
P	1 Spacer	3/4 x 1-1/2 x 32 in.
Q	2 Jaws	3/4 x 2-7/8 x 7 in.
Hardwood		
R	1 Support dowel	1-1/4 in. dia. x 8 in.
S	1 Spacer	3/4 x 7/8 x 4 in.
T	1 Hook	1/2 x 1-1/8 x 4 in.
U	1 Spacer	3/4 x 1-5/8 x 4 in.

SHOPPING LIST

- 3/4-in. x 4x8-ft. fir AC plywood (1)
- 3/4-in. x 4x8-ft. MDF (2)
- 1-1/4-in.-dia. x 36-in. birch dowel rod (1)
- No. 6 x 1-1/4-in. drywall screws (74)
- No. 6 x 1-5/8-in. drywall screws (16)
- 3/8-in.-dia. x 2-1/2-in. lag bolts (4)
- 5/16-in.-dia. x 1-in. lag bolts (16)
- 5/16-in.-dia. x 1-in. flathead machine screws (4)



3 Screw (don't glue) the legs to the aprons. Attach the legs to the lower aprons first; then slide the upper apron between the legs and screw it in place.

adds tremendous rigidity to the workbench. However, I didn't glue the legs to the aprons or the top to the base so that in the future I could easily repair a component or change the height of the workbench if necessary.

The double-thickness MDF top is shaped in stages: First you shape one piece and glue it to the second piece, which is cut slightly oversize. Then you use a router with a flush-trim bit to cut the oversize piece to match the

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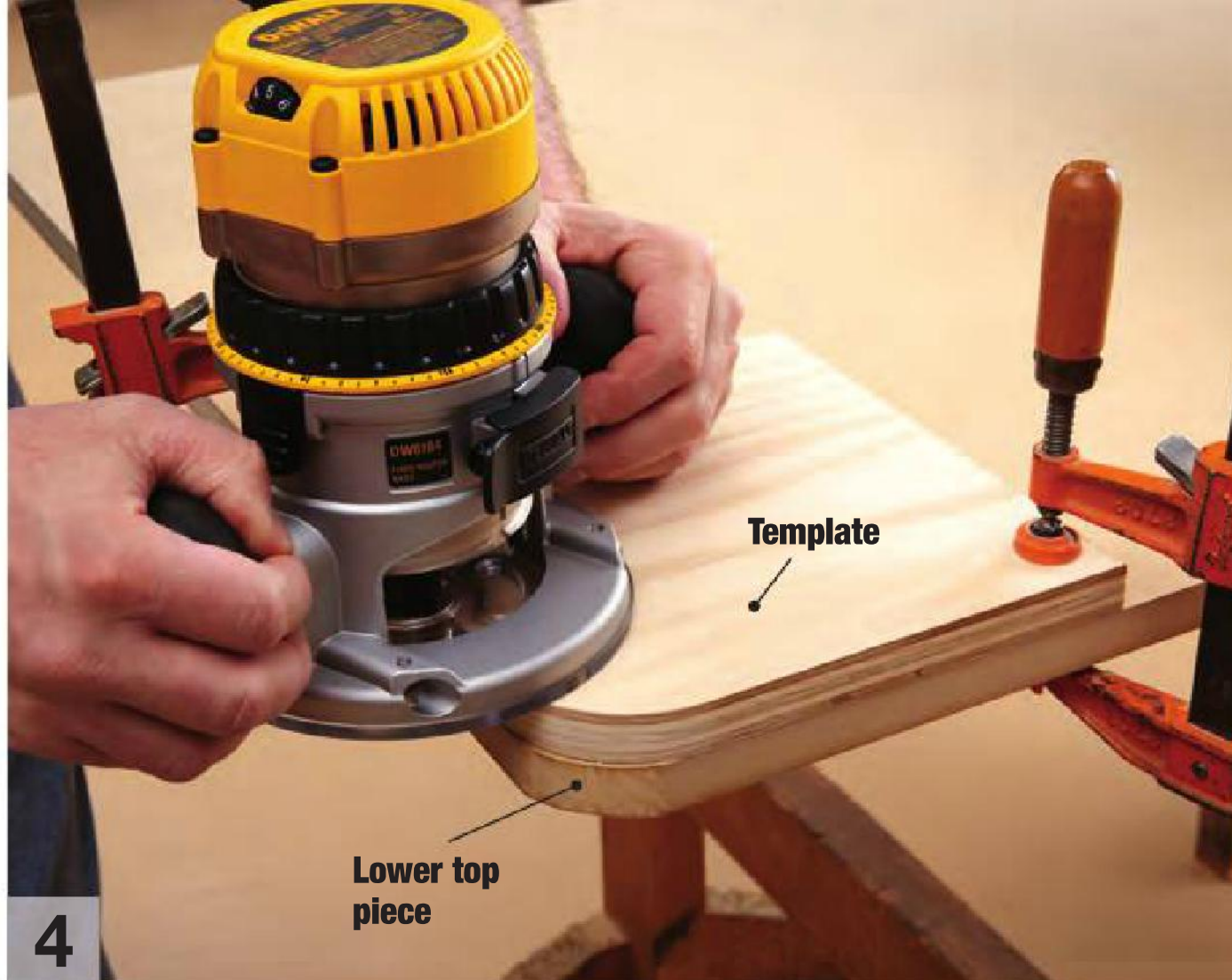
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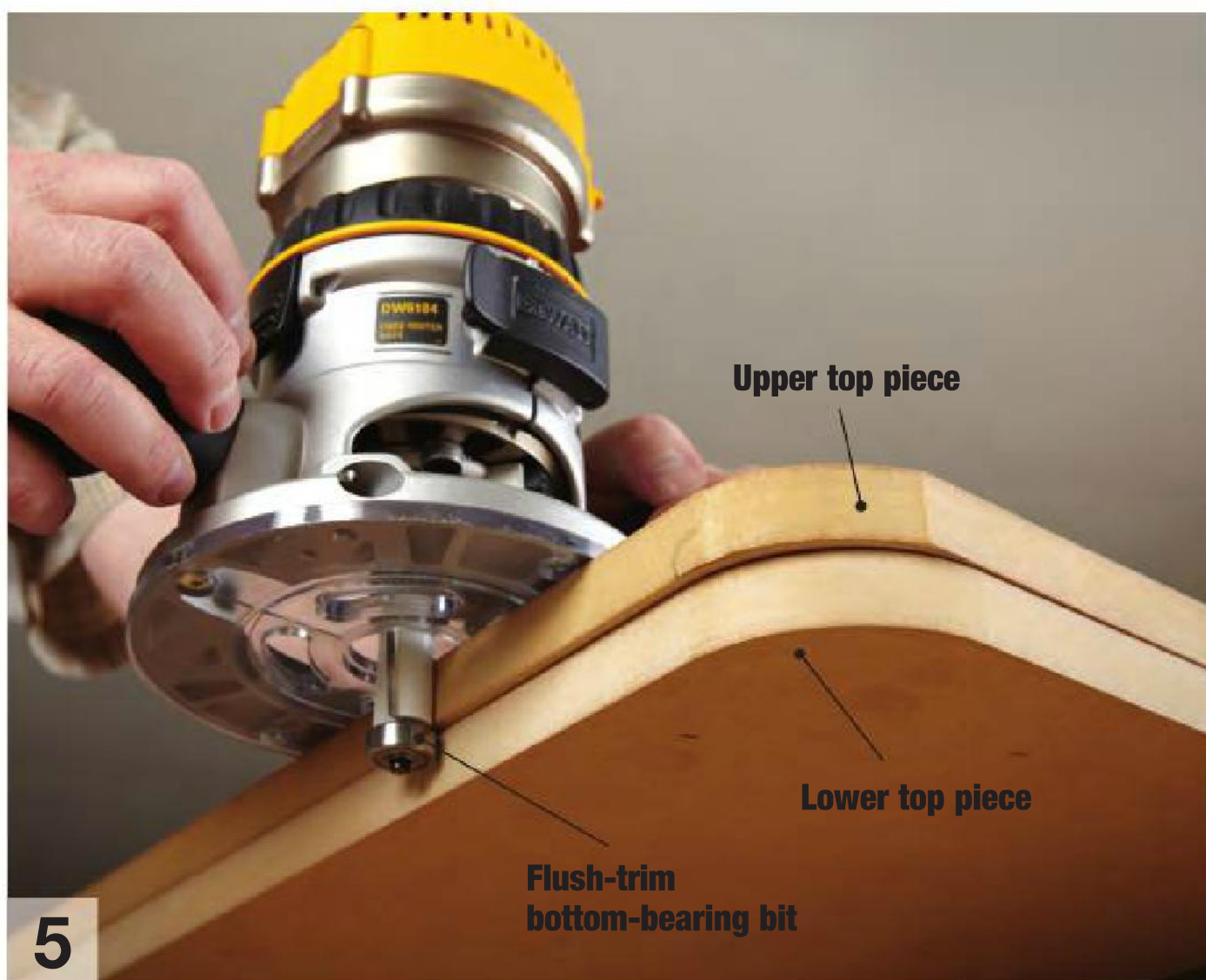
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4

Rout the corners of the lower top piece using a flush-trim top-bearing router bit. Guide the bit against the 2-in.-radius corner template.

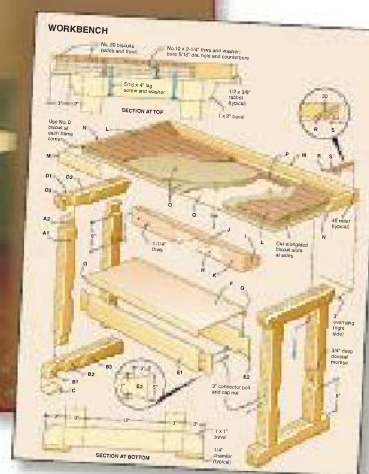


5

Glue and staple the two top pieces together. Rout away the overhang of the upper top piece so it matches the shape of the lower top piece. This time use a flush-trim bottom-bearing router bit.

WEB EXTRAS

To see plans for this stationary woodworking bench, go to www.HandymanClub.com and click on WEB EXTRAS.



shaped piece. This is much easier than trying to shape the top after the two pieces are glued together. It's a cool technique that you'll find useful on other projects.

Forstner bits are excellent for drilling flat-bottom holes but leave nasty exit wounds when drilling through-holes. To reduce tear-out, place scrap boards behind the workpiece when you drill the bench-dog and bench-slave holes.

Assemble the base

When cutting parts A-Q to size (see cutting list, p. 13), cut the largest pieces first; then you can use the cut-offs that remain for the smaller pieces. Cut both bench-slave pieces (I) and one top piece (M) slightly oversize (add roughly 1/4 in. to the length and width).

Lay out and cut the vise opening in the upper front apron (A; see illustration, p. 12, and photo 1, p. 13). Assemble the upper and lower aprons with glue and staples or nails. Glue and staple the shelf (C) to the lower apron, and glue and clamp the cleats (L) to the upper apron. Glue and staple the foot braces (D and E) together. Glue and screw the braces to the lower apron (photo 2).

Mark and drill the screw-clearance holes in the legs (F and G); then glue and staple the legs together. Screw the legs to the aprons (photo 3). Flip the base over. Glue and staple the feet (H) to the bottoms of the legs and braces. Center the casters on the feet, drill pilot holes for the lag bolts and then attach the casters.

Make and attach the top

Make a template for the top-corner radius from a 3/4 x 10 x 10-in. piece of plywood. Lay out, cut and shape one corner with a 2-in. radius. Make the template precise: Your workbench corners will be shaped only as well as your template.

Trace the template corner shape on all of the corners of both top pieces (M); then rough-cut the corners using a jigsaw. Set the oversize top piece aside for now; it will become the workbench surface. Align and clamp the template to a corner of the finished-size lower top piece and rout the shape (photo 4, opposite); then rout the other three corners of that piece.

Glue and staple the top pieces together. Make sure there's a slight overhang on all sides. Staple through the lower top piece into the upper top piece so the staple heads are on

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Service Center



6 Drill the bench-dog holes in the top using a Forstner bit and drill guide. You'll only be able to drill partway through with this setup. Finish drilling the holes without the drill guide.

the underside of the top. Do not drive staples where the bench-dog holes will be drilled or where the vise will be mounted. Use a router to shape the upper top piece (photo 5).

Lay out and drill the bench-dog holes (photo 6, above). Align the top with the assembled base and screw it in place. The top overhangs 4 in. at the front. Glue and clamp the vise mount (N) in place. Use a 3/4-in.-dia. Forstner bit to drill the bench-dog holes through the vise mount and front cleat.

Final touches

Align and clamp the vise jaws (Q) in the vise and mark the locations of the mounting-bolt holes. Remove the jaws, and then drill countersink and clearance holes. Flip the bench over and position the vise on the vise-mount piece. Attach the vise to the vise mount and bench top with lag bolts (photo 7).

Glue and clamp the bench-slave pieces (I) together. Then cut the bench slave to its finished size and drill the support-dowel holes (photo 8). Next, cut the slave spacers (S and U) and hook (T) to size and attach them to the bench slave with glue. Assemble the rail parts (O) and (P) and attach them to the upper front apron. The rail should be positioned against the left leg and flush with the bottom edge of the apron. Finally, cut the support dowel (R) to length.

Ease all sharp exposed edges. When you sand the fir plywood edges, be very careful — they're notorious for splintering along the grain and can impale you with giant splinters.

There's no need to apply finish; in fact, it's probably



7 Drill pilot holes for the lag bolts. (Be careful not to drill through the top.) Mount the vise using a ratchet wrench to drive in the bolts.



8 Drill the support-dowel holes in the bench slave. These holes are drilled at a slight angle so the support dowel tilts up a bit. A paint-stirring stick under the edge of the drill guide sets the angle.

better not to. That way the top will be less slippery and make a better work surface. Simply screw on the vise jaws and mount the bench slave and your workbench is ready for your next project. ♦

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

SOURCES ONLINE

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

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(No. 12-0412-SPX-S-P01-T, 4- x 1-1/4-in. Non-Marking Wheel Precision Ball Bearing Swivel Caster With Total Lock Brake) 888-722-7837

Lee Valley Tools Ltd.

(No. 05G04.03, Veritas Round Bench Pup), 800-871-8158

Rockler Woodworking and Hardware

(No. 37375, 7-in. Quick Release Workbench Vise; No. 20800, 1-1/4-in.-dia. x 36-in. birch dowel rod; No. 91981, Jig It Drill Guide; No. 91855, 3/4-in. Long-shank Carbide Forstner Bit; No. 91876, 1-1/4-in. Long-shank Carbide Forstner Bit; No. 21060, Pattern Flush Trim Router Bit, 1-1/8-in.-dia. x 1-1/2-in. cutter x 1/2-in. shank; No. 24740, Flush Trim Router Bit, 3/4-in.-dia. x 1-1/2-in. cutter x 1/2-in. shank), 800-279-4441



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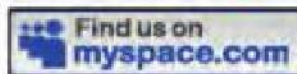
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FIRE *escape*

NESTLED into a hillside, this backyard
FIRE RING offers a **COZY** getaway — even
when there is no **FLAME** by **CONNIE BASTYR**



A backyard fire ring provides a place for family and friends to gather, and it's an attractive landscape feature you can enjoy from other vantage points in your yard.

IF YOU'RE BURNING TO ADD

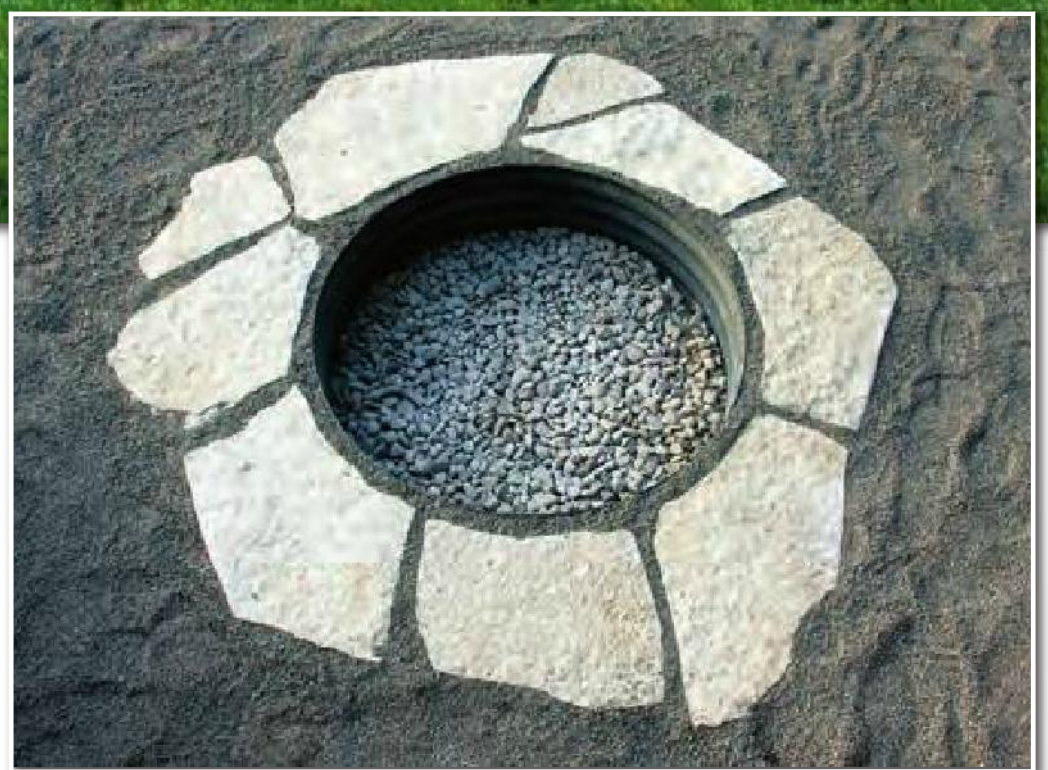
a backyard fire feature but your landscape lacks level terrain, this design offers a cool solution. By terracing the space, you can enjoy a convenient retreat just outside your door — a camping experience without the travel or the hassle of packing. Seating is included; tent and outhouse are unnecessary.

HANDY's assistant art director, Tracy Walsh, and her husband, Ryan, are avid campers who wanted a campfire ambience at home. They worked with landscape designer Scott Reynolds of Minnetonka, Minnesota, to create an attractive fire pit on their sloping suburban lot. We documented the process so we could share Scott's plan and expertise with other Club members who live where the world is not flat.

Preparation

Tracy and Ryan's finished site is 20 ft. dia. Because all sites have unique sizes, shapes and obstacles, you'll need to adapt the design to your yard. Before you settle on a plan, check local code requirements, which may affect the scale and spacing of your fire pit. (Most recreational fires, for example, can be no more than 36 in. dia.) Then follow these steps:

Know your dirt. Your soil type will affect the design and scale of your project — and the time and energy needed to complete it. The Walshs' dry clay called for heavy equip-



ment, whereas sandy soil would be much easier to sculpt.

Choose a site. If you like the terraced design but do not have a slope, you can create a two-tiered area by "plowing" some dirt to one side of the ring. Find a clear, open space that has no overhanging branches, and follow your municipality's requirements for minimum clearances from any structures. Consider the direction of prevailing winds to predict where smoke is likely to travel (preferably away from houses). As always, call 8-1-1 to have utilities marked before you dig.

Order supplies. Using the materials list (p. 21) and the layout plan (adjusted to fit your site), shop ahead of time so the gravel, rock and boulders will be delivered before you begin construction. You can use a galvanized-steel fire ring as we did (available from a farm store or culvert supplier) or a steel fire ring from a landscape retailer. To help mask the inevitable charring, we sprayed heat-resistant flat-black paint on the interior surface of the ring before installation.



1

Renting (or borrowing) a sod kicker makes skimming off a consistent layer of grass and dirt easier and faster. It also yields usable sod for patching other parts of the yard or donating to a neighbor.



2

Use a sharp spade or flat-blade shovel to cut a wedge along the perimeter of the 20-ft. circle to sharply outline the border. This step also prepares the space for metal landscape edging to be installed later (photo 12, p. 22).



3

Along the higher side of the area and about 1 ft. beyond the inner 7-ft. radius, scoop out enough soil to allow for a row of boulders. Set the boulders deeper than the target level so they will rest in position.



4

A transit offers an accurate and convenient way to establish a target level (or benchmark) for the flat area of the fire ring. For more information about using a transit, see “Surveyor’s Levels” in Web Extras.

Drive a stake. Determine the center of the space (which in this design is on the edge of the fire ring; see illustration, opposite). Measure a 10-ft. radius and mark it with landscape paint. The stake remains the key reference point until the end of the project; be sure to drive it deep so it doesn’t loosen or shift. Use a transit (or a string and line level) to establish a target height for the “plateau” and to measure grade differences.

Frame it in. Using a sod kicker, remove grass and an inch or two of



5

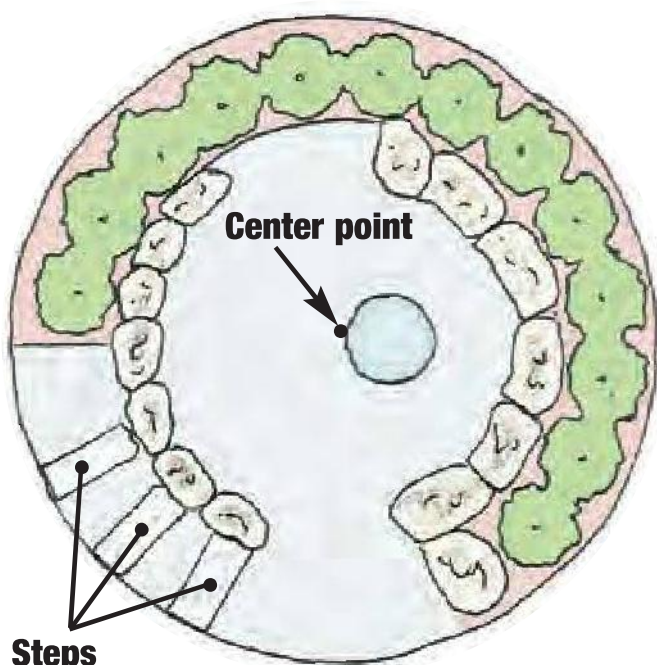
Check that the distances from the center to the boulder fronts are consistent. (Because they vary in size, the boulders’ back sides will not follow a perfect arc. Don’t worry; they’ll blend nicely into the planting area above.)



6

Before backfilling behind the boulder wall, cover the gaps between the rocks with landscape fabric and smaller boulders. This prevents dirt from washing out and weeds from growing between the boulders.

topsoil (photo 1, opposite), creating a clear area within the 20-ft. circle. Further define the border by digging a 4- to 6-in.-deep wedge along the perimeter of the circle (photo 2). With the marking paint or a sharp tool — and using the center stake for reference — mark a 7-ft.-radius inner



CONCEPT DRAWING: The outline of this landscape feature is a 20-ft.-dia. circle; the fire pit is positioned off-center.

ring. To begin the excavation phase, use the illustration as a guide.

The upper wall

If your project site consists of compacted clay soil like ours, you may need to rent heavy excavation equipment (and/or a strong crew) for this phase. Along the high side of the circle, carve out the soil to within about 2 ft. of the edge of the sod (photo 3). Dig deep enough to allow the boulders to rest about 6 in. lower than the intended finished level of the fire ring. (Use a transit to verify your target grade; photo 4).

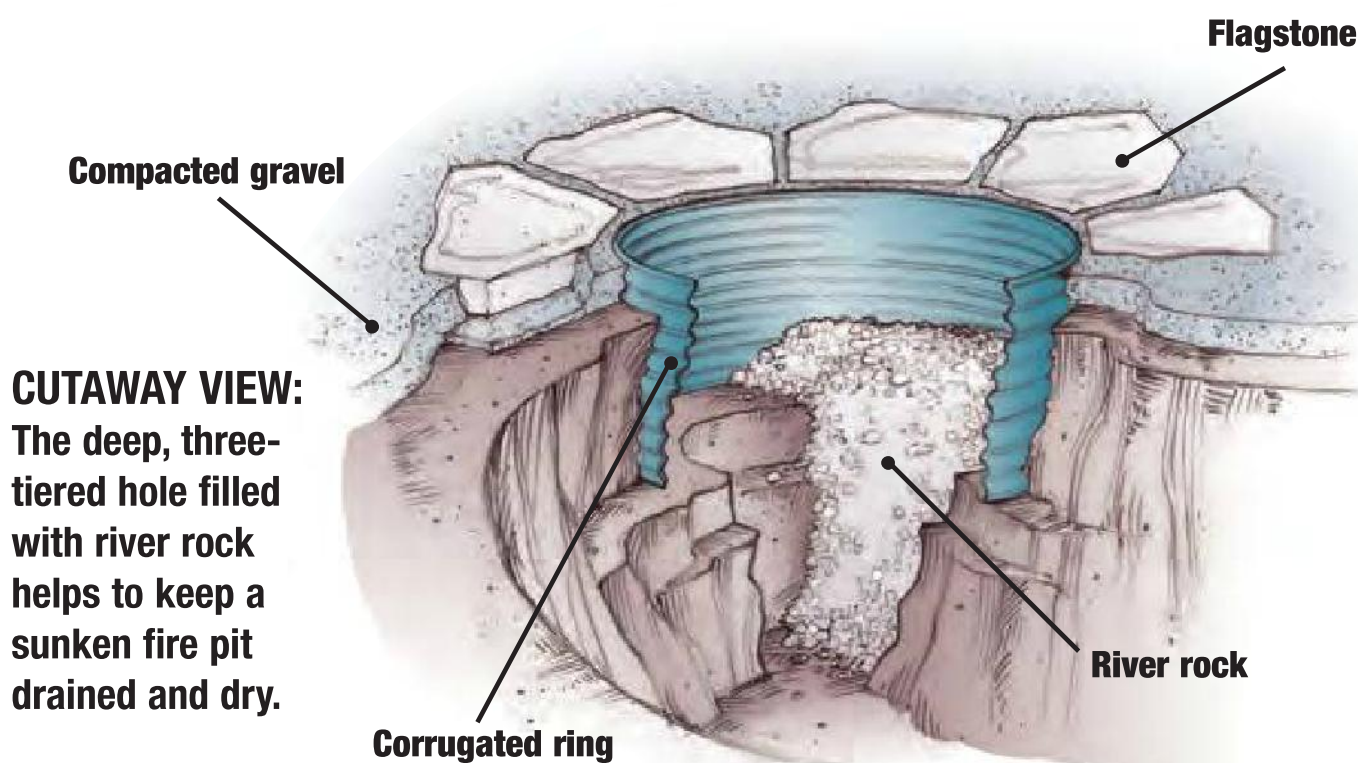
These jumbo boulders could be maneuvered only by heavy machinery (available from a rental center). If you plan to get by with brute strength, order smaller boulders (and don't work alone; find at least one strong friend). To modify the plan, you would stack about three courses of 12- to 16-in. rocks to build a retaining

wall. (See Web Extras for tips on managing heavy rocks.)

The top of the wall should follow the grade of the ground behind it but at a slightly higher level. Periodically check the distances from the center stake to the front faces of the rocks and adjust as needed to ensure that the wall follows an even curve (photo 5). Our project also included a

TOOLS

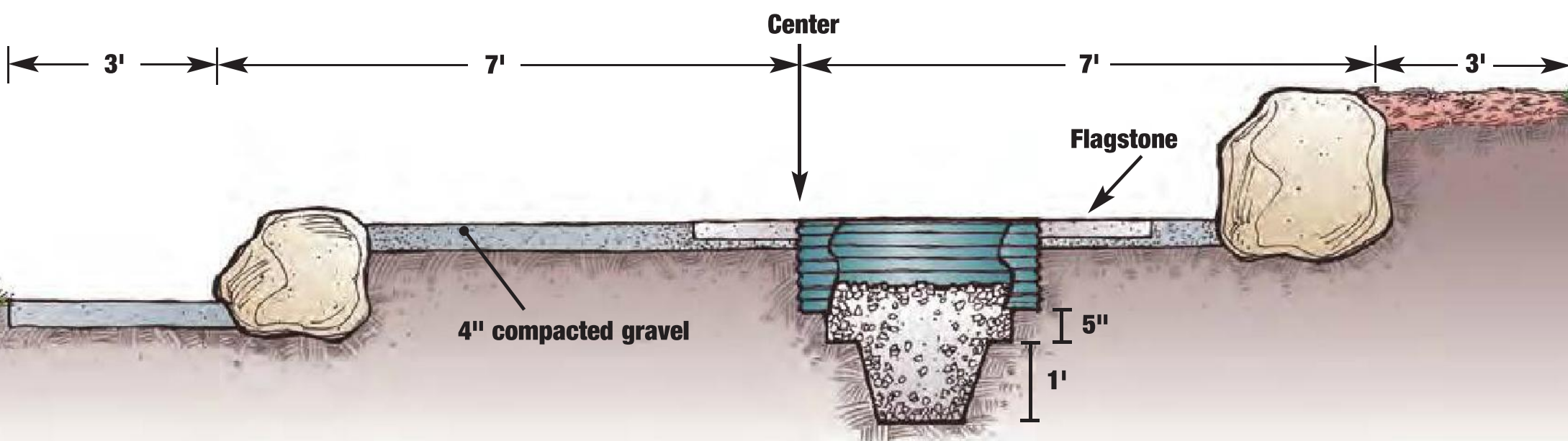
- Shovels (flat-blade and spade)
- Large rubber mallet
- Sledgehammer or ax
- Pickax (if soil is clay)
- Tamper
- Crowbars
- Sod kicker
- Wheelbarrow
- Level and measuring tape
- Laser level (David White Instruments)
- Nontoxic marking paint
- Metal grinder to cut the steel edging
- Stone-cutting tools
- Excavation equipment (optional)
- Power compactor (optional)



CUTAWAY VIEW: The deep, three-tiered hole filled with river rock helps to keep a sunken fire pit drained and dry.

MATERIALS

- 36-in. galvanized-steel fire pit liner (13 in. depth)
- 70 ft. of steel edging
- Gravel (river rock, for drainage)
- Crushed granite or limestone (Class III or 3/4-minus)
- Boulders and three Chiltern limestone slabs (6 x 18 x 36 in.)
- Flagstone for optional border
- Landscape fabric and marking paint
- Black heat-resistant paint
- Mulch and plants
- Marshmallows, graham crackers and chocolate bars



ELEVATION VIEW: The higher wall of boulders (right) provides seating a few feet from the fire, and the lower wall (left) allows for a level surface that is wide enough to accommodate a bench or lawn chairs.



Pack the soil all around the fire ring with a tamper or the head of a long-handle sledgehammer, adding soil until it's about 4 in. below the top rim. Gravel and flagstone will make up the difference in height.



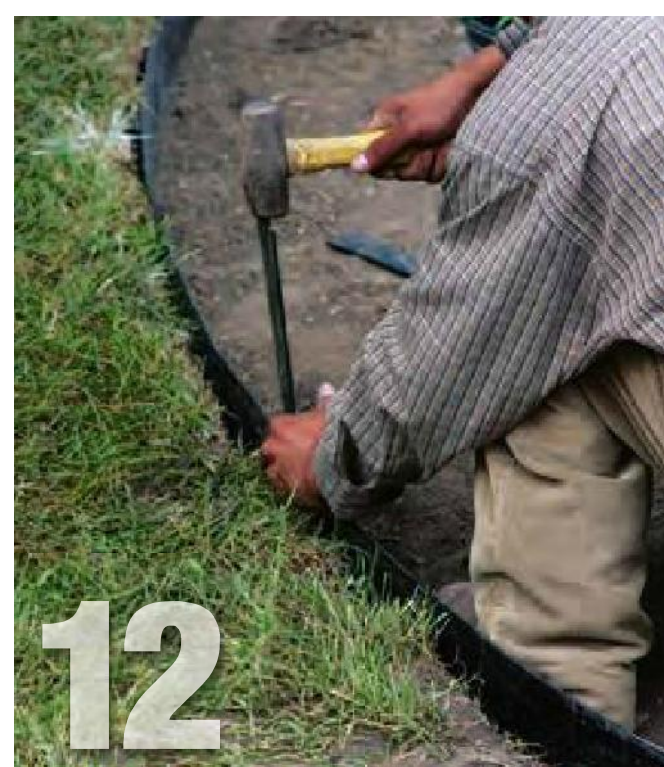
The tops of the lower-wall boulders should be just above the height of the finished level of the pit area, and the outer faces of the boulders are 7 ft. from the center stake. Drop a small stone to check the 7-ft. radius.



The spacing and heights of the steps are important to the comfort and safety of the design. They should be butted against the outer edge of the 20-ft.-dia. circle. Be sure the rise is consistent from step to step. Mark with paint.



When setting the steps, check that the slabs are level in all directions, and measure the horizontal spacing between the steps.



Stakes help to secure the edging in place. To fit the edging across grade changes, cut notches along the lower edge using a metal-cutting wheel.



13

A power compactor (from a rental center) does a faster, better job of packing the gravel smooth. Add gravel in layers, and pack it as you go.

boulder along the end of the curve (see top illustration, p. 21) to help differentiate the planting area from the entrance side.

Use landscape fabric and smaller boulders behind the wall to prevent dirt from washing out (photo 6, p. 20); then backfill using the excavated dirt. If additional dirt is needed, you'll dig it up when you form the fire pit.

The pit

Grade the center of the project area. Set the 36-in. metal liner next to the reference stake and centered between the ends of the boulder wall (photo 7, opposite). Trace around the ring with marking paint, remove the ring and scoop dirt out within the marked area. (Use the soil to backfill the wall if needed). Dig until the ring fits in the hole with a 4-in. reveal above the graded soil. Check that the top of the ring is level; then backfill and tamp the soil around the outside of the ring (photo 8).

To allow for drainage, remove about 5 in. of soil from the middle 2 ft. of the pit; then scoop out a narrower, 1-ft.-deep hole from the center of that area. (See the cutaway view, p. 21, for shape and dimensions.) If you have fast-draining (sandy) soil, you won't need to dig quite as deep as we did. Rocks can be added now or later.

The lower wall

A second, lower wall of boulders supports the outer edge of the fire ring



14

The flagstone border is an optional addition. To custom-fit the pieces around the fire ring, make multiple shallow passes with a masonry-cutting wheel, or score a line with a stone chisel and break the slab. Add fill under the stones (as needed) to create a level surface. Add more compactable gravel between and around the slabs.

area. Note that it's designed to be farther from the pit to allow room to add seating. Scoop out a 2-ft.-wide trough, following the curve of the project's perimeter, but 3 ft. inside the edge of the sod. Dig 15 to 18 in. below the target grade and set in the boulders, checking that the outside edges are 7 ft. from the reference stake (photo 9). Lay landscape fabric behind the boulders and backfill with soil, tamping as you go.

The steps

Mark the locations of the three entrance steps (photo 10), and starting at the lowest end, grade and tamp the soil for the first slab. Set the slab in place, checking and adjusting so it is level in all directions. Backfill with compactable gravel to the next step location, tamping in layers. To form a solid surface, use a power compactor for all of the gravel installation. As you add the next two slabs, be sure to keep the step risers within 3/8 in. in height from one to the next (photo 11).

Finish details

Before finishing the pit's surround, we filled the hole with river rock up to about 10 in. from the rim (see illustrations, p. 21). For the outer perimeter we used heavy steel edging, which Scott recommends because it's not visible, it lasts, and it stays in place better than plastic. To install it, dig out a wedge shape with a spade and set the

edging, starting at one end. If needed, pound the edging down flush with the grade; then secure with metal stakes (photo 12).

Next, spread about 2 in. of compactable gravel (we used crushed granite) across the plateau surface and compact it (photo 13, above). At this point, we added an optional flagstone border around the ring, primarily for embellishment. Once the pieces were cut, positioned and level (photo 14), we filled between and around them with a second layer of compactable gravel and then power packed it, adding material as needed to create a level surface across the entire 7-ft.-dia. plateau.

The band of ground outside of the boulder walls and gravel provides a gardening area. Choose plants that suit your climate and soil, and include landscape fabric and mulch for lower maintenance. (This is supposed to be a recreational fire pit, after all). Add a few chairs and a bench or a log, and you'll have a local destination point for family, friends and a few marshmallows. ♦



WEB EXTRAS

To read about using a transit or maneuvering large rocks, and to see more fire pit designs, go to www.HandymanClub.com and click on WEB EXTRAS.



“It was like being a grown-up kid in a grown-up toy box.”

— Top tool tester Kenneth Fox of Tacoma, Washington

From left: tool tester Mike Turner, Ryobi marketing manager Brian Stearns, tool tester Ken Fox.

HARDWIRED FOR Innovation

Exceptional exhibitors and *HANDY*'s top tool testers zapped this year's National Hardware Show with exciting new energy BY JENNY STANLEY

In the first-ever *HANDY* Test Shop at the National Hardware Show in Las Vegas May 4-6, members of the Handyman Club of America showed exhibitors and attendees what true tool testing is all about: honest feedback. Our six handpicked DIYers put products to the test in front of thousands and offered their opinions — good and bad — to the manufacturers who were brave enough to participate in the unprecedented event. The result? Better tools for everyone!

Though it will take time for our testers' comments and suggestions to be implemented, plenty of innovative new products are available now to make your DIY projects and home-improvement efforts quicker, easier and more satisfying. Here are a few of our favorites.



Tap into water savings

The One2tap faucet-flow controller (\$18 to \$40) from One2products replaces the aerator on most standard kitchen and bath faucets with a lever that helps to conserve water. Lifting the lever allows only the necessary amount of water to flow during everyday tasks such as rinsing a razor or toothbrush. When the lever is released, the flow stops immediately.



PHOTOGRAPHY BY LARRY OKREND AND COURTESY MANUFACTURERS

“Toolmakers asked for input and listened to what we all had to say. The whole experience was priceless.”

— Top tool tester Charles Pherson of Brighton, Michigan



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Fourwarning

A first of its kind, the loPhic Universal Sensing Technology alarm from Universal Security Instruments (\$69) provides four types of protection in a single unit, detecting both fast-flaring and slow-smoldering fires as well as carbon monoxide and natural gas. Its microprocessor automatically calibrates to prevent nuisance alarms, adjusts according to changes in temperature and humidity and even features an end-of-service notification.



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Thrice as nice

Whether you need a spiral jigsaw, an edge sander or a detail router, the Dremel Trio (\$100) oscillating multitool can do the job. Made to tackle a variety of home-improvement tasks involving wood, plastic, drywall, metal and wall tile, the tool features a 90-degree-pivoting handle so you can transition from horizontal to vertical work surfaces with ease.



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DIY deck jig

Creating a strong wood-to-wood bond using hardened-steel drill guides and specialized self-tapping deck screws, the Kreg Deck Jig (\$100) enables DIYers of all skill levels to construct professional-looking deck surfaces free of unsightly exposed fasteners. The jig's depth collar precisely controls fastener depth in each joist.



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Tough tape minus the mess

Perfect for temporary jobs such as hanging outdoor decorations, bundling cords, labeling storage bins and more, Scotch Tough Duct Tape — No Residue (\$6 to \$10 a roll) from 3M not only is water- and UV-resistant but also remains easy to remove for up to six months without leaving residue, so there's no messy cleanup once the tape has served its purpose.

“It was great to test-drive some new tools before they hit the market.”

— Top tool tester Vern Grassel of Otsego, Minnesota



Moisture minimizer

The DewStop Fan Switch (\$59 to \$69) from GTR Technologies allows DIYers to retrofit an existing vent fan with an automatic condensation detector. When DewStop senses high condensation levels in a room, it activates the fan until the level returns to normal. The switch is easy to install and can be operated manually.



Marsupial-style storage

Designed with the pro in mind, Pro-Fit Modular Tool Carry Platforms (\$10 to \$40) from Pro-Fit Carry Systems feature interchangeable storage pouches, holsters and magnetic pockets that attach to heavy-duty vest and belt straps. The system keeps tools, fasteners and more within easy reach and can be customized to suit the user's needs.



Clever cutter

The TurboPro utility knife (\$13) from Olympia Tools boasts an automatic blade-feed mechanism with push-button blade release for added safety and convenience. The handle holds five fresh blades and features an anti-slip grip and a thumb indent for comfort.



Striking a cord

The Cord Warden Pro from Cord Warden (\$20 to \$30) organizes and stores cords in a specially designed bag for easy transportation and access. Its high-strength nylon fabric is durable enough to protect extension cords, air hoses and more at home or on the job site, and integrated carabiners keep cords tangle-free (and the ends easy to find).

TESTED BY THE BEST

Highlights from the *HANDY* Test Shop

Yard workhorse

No need to mess with adjusting tubes or hoses: Converting from a blower to a vacuum is as simple as flipping a switch on the Worx TriVac All-in-One Compact Blower/Mulcher/Vac (\$100). The tool's 12-amp motor features an airspeed of 210 mph, vacuum capacity of 350 cfm and enough mulching power to shred leaf piles at a rate of 14 gpm.



Cut-it-yourself flooring saw

The Skil Flooring Saw (\$159) enables both DIYers and pros to cut through hardwood, laminate and engineered flooring up to 8 in. wide and 3/4 in. thick. It makes miter cuts up to 47 degrees and even transitions into a fixed saw for rip cuts. The 40-tooth carbide-tip blade prevents laminate from shredding and oak from splintering.



Compact impacts

Ridgid is blazing the trail for compact impact drivers with its 18-volt Compact Lithium-Ion Impact Driver Kit (\$169) and 12-volt JobMax Kit with right-angle impact head (\$149 to \$180, depending on kit selection). The 18-volt driver features 1,400 in.-lbs. of torque and a 1/4-in. Hex Quick Coupler, and the 12-volt JobMax right-angle impact head packs 650 in.-lbs. of power into a small package for use in tight spaces.



More Test Shop participants and products:

- Bosch: 18-volt Lithium-Ion Impact Drill/Driver, 18-volt Lithion Compact Tough Drill/Driver, 12-volt Max Lithium-Ion 3/8-in. Drill/Driver and 2-Speed Pocket Driver Kit, Power Box jobsite radio
- Craftsman: Nextec Multi-Tool, C3 One-Hand Reciprocating Saw
- DeWalt: Protective Eyewear and Gloves by Radians
- Dremel: 8200 and MultiMax
- Fein: MultiMaster
- Gorilla Glue: full product line
- Kreg: Jig K4, Deck Jig, Klamp Table
- Milwaukee: M12 Cordless 3/8-in. Drill Driver, Hackzall M12 Cordless Reciprocating Saw, M12 Cordless PVC Shear
- Porter-Cable: 2-1/4-hp Fixed Base Router Kit, 5-in. Low Profile Random Orbital Sander, 18-volt Lithium-Ion Compact Drill/Driver, Compact Impact Driver and Flashlight 3-Tool Combo Kit
- Ridgid: Fuego Cordless Recip Saw, JobMax System, Superclamp portable clamping work station, 16-Gallon High Performance Wet/Dry Vac with Cart
- Rockwell: 18-volt LithiumTech Impact Driver and 1/2-in. Drill/Driver Combo Kit
- Ryobi: Laminate/Flooring Saw, 2-hp Router, P815 18-volt Compact Drill/Driver Kit, 18-volt Lithium-Ion String Trimmer/Edger, 18-volt Lithium-Ion Hard Surface Blower
- Skil: Power Cutter, 5-in. Random Orbit Sander with Pressure Sensor



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Pleasant plunger

Revolutionizing the process of unclogging a toilet, the PlungeMax (\$18) from PF WaterWorks removes blockages using a high-volume bellows that never touches water. Made of vinyl and flexible steel rings, the contraption rests on top of a toilet seat and frees clogs with a blast of air approximately 25 times more powerful than a standard plunger. ♦



WEB EXTRAS

To read about more innovations introduced at this year's National Hardware Show, go to www.HandymanClub.com and click on WEB EXTRAS.

SOURCES ONLINE

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3M, 888-364-3577

Cord Warden LLC, (585) 739-4755

Dremel, 800-437-3635

GTR Technologies Inc., (360) 876-2974

Kreg Tool Co., 800-447-8638

Olympia Tools International Inc.
866-461-8665

One2products LLC

PF WaterWorks, 877-265-9777

Pro-Fit Carry Systems

Ridgid, 800-474-3443

Skil, 877-754-5999

Universal Security Instruments Inc.
(410) 363-3000

Worx Yard Tools USA, 866-354-9679

Ground-Floor Opportunity

Choose the right materials to create a low-maintenance deck

BY MIKE BERGER



A ground-level deck can be a great space for entertaining, provided it's built to withstand ground contact and the accompanying environmental hardships.

PHOTOGRAPHY BY MIKE BERGER, MIKE ANDERSON AND PHIL LEISENHEIMER



When it comes to creating the perfect outdoor space

for entertaining guests or relaxing with family, a ground-level deck is pretty hard to beat. Its flat, stable surface is ideal for furniture or a grill, and you can make it as large or small as your yard and budget allow.

Ground-level decks are safer and simpler to build than elevated decks. A railing is typically not required by code as long as the deck is no more than 30 in. from the ground (24 in. in Canada). You can forgo attaching a ground-level deck to the house and instead simply secure it to the ground with permanent footings. And because a ground-level deck is closer to the surrounding yard, it's often easier to integrate adjoining gardens, walkways and landscape features into the design.

Of course, with these benefits come important construction considerations. Because ground-level decks are often in direct contact with the soil and are exposed to insects and blowing and splashing debris, it's vital that you make the correct design and material choices. Here's what you need to know to build a ground-level deck that will add lasting beauty and practicality to your backyard.

To dig, or not to dig?

A ground-level deck requires stable footings, but you'll have more options for them than you would with an elevated deck. If you're building on firm, stable, undisturbed soil, footings can consist of cast-concrete pier blocks placed directly on the ground. Pier blocks weigh about 45 pounds and have molded channels that accept 2x joists and 4x4 posts (see middle photo, p. 30). Although cast piers are typically code-approved for ground-level decks nationwide — even in cold-weather regions that experience frost heave — it's best to check with your local code authorities before you finalize your plans.

Of course, you can always dig traditional footing holes that extend below your local frost line and fill them with concrete, just as you would for an elevated deck (which is what we did for this project). Footing holes should be wider at the bottom than at the top, creating a bell-shape profile for greater stability.

If you choose to use poured-concrete footings, you have three good options for securing the deck posts to the concrete (see bottom photos, p. 30). The first approach is to insert a metal J-bolt in the center of each wet footing and fasten a metal post base to it after the concrete cures. The second option is to insert post anchors that have corrugated fins directly into the wet concrete. The third method is to use a hammer drill outfitted with a masonry bit to bore a hole in the cured concrete and then insert an expansion bolt that secures the metal post base.



Proper framing makes all the difference

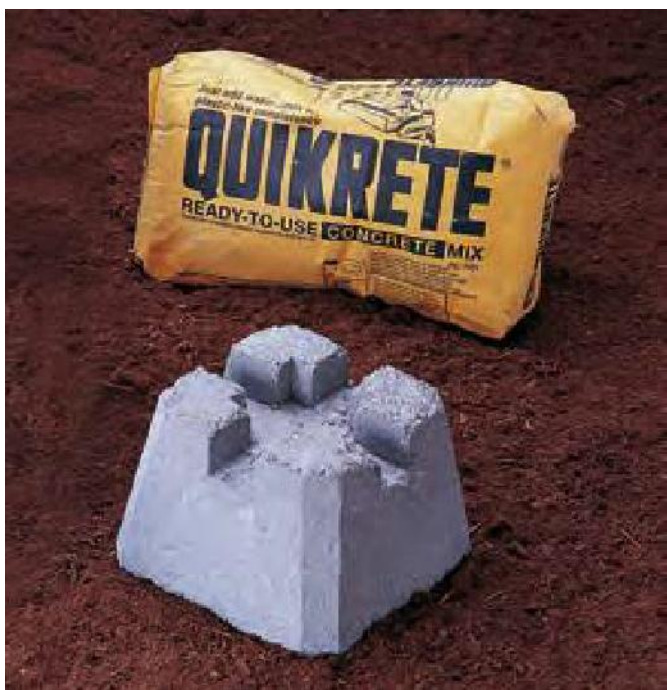
Unlike a raised deck that sits well above the soil, a ground-level deck is subjected to much harsher environmental conditions, and the framing needs to be up to the challenge. Ground-level decks require pressure-treated lumber that's rated for ground contact. Although 4x4s and larger dimensional pressure-treated lumber are commonly rated for ground contact, typical 2x pressure-treated material is not. Some lumber suppliers stock ground-contact-rated 2x material (check the plastic tag that's stapled to the board); if yours doesn't, you may need to place a special order. (See SOURCES ONLINE for more information about pressure-treated lumber and deck-building techniques.)

Besides being able to withstand harsh conditions, the framework of a ground-level deck may need to incorporate additional reinforcement, depending on the type of decking you choose. Some decking materials may require you to space the joists no farther apart than 12 in. OC for the main deck surface and even closer together for stairs and other specific structures. For exam-

ple, because I planned to use Trex Brasilia boards (a composite decking product made from a combination of wood and plastic fibers) for the main deck and the stairs that would connect to the existing deck above, I had to space the stair stringers no farther apart than 9 in. OC (see bottom left photo, opposite).

Low-maintenance solutions

Although you can choose traditional materials such as cedar or pressure-treated decking, redwood, cypress or even hardwood such as ipe or ironwood, I chose Trex Brasilia boards because they are low-maintenance. Engineered materials such as Trex have a variety of properties that make them well-suited for ground-level deck applications. First, they are extremely rot- and insect-resistant. Second, the boards' color is created during the manufacturing process, so there's never a need to apply stain. (Because Trex does contain actual wood fibers, the color will weather slightly during the first four months of exposure.) Third, the boards can be bent to create interesting curved decking patterns (see "Bending Trex," p. 32).



If you live in an area with stable, compacted soil, you may opt to use cast-concrete piers instead of poured-concrete footings. Cast pier blocks feature channels that accept 4x4 posts and 2x framing members.



When pouring concrete footings, you have two choices while the concrete is wet: J-bolts inserted into the wet concrete, onto which you'll bolt post bases, or post anchors with corrugated fins that are inserted into the wet concrete.



RECOMMENDED SPANS AND SPACING

Though you should always check with the manufacturer of the decking material you choose and your local code authority, in general you can use the chart below to determine the maximum allowable joist length, depending on your choice of joist material. Simply pick your joist size and planned spacing to find the maximum allowable length.

Joist size	Joist spacing (OC)		
	12 in.	16 in.	24 in.
2x6	11' 7"	9' 9"	7' 11"
2x8	15'	12' 10"	10' 6"
2x10	19' 6"	16' 5"	13' 4"

Another feature that we found appealing for this project was that Trex boards are milled to accept hidden fasteners. These 1/4-in. self-gapping clips are installed from above the deck's framework rather than below — the perfect approach for a structure where you don't have access to the space beneath the decking (see photos, bottom right).

If you'd rather face-screw the decking to the framework than use hidden fasteners, you'll need to allow for the correct amount of space between deck boards. The minimum required gap is 1/4 in. (unless it's colder than 40 degrees when you're building; if so, increase the gap between boards to 3/8 in.).

Another low-maintenance choice we made was to use cellular PVC trim boards — in this case, Trex Trim — for the stair risers (see photo, p. 32). Cellular PVC has a uniform cell structure that allows you to cut it, rout it, fasten it and paint it just as if you were working with wood. But unlike wood, it has superior resistance to rot and insects, and if you decide not to paint it, it retains its brilliant-white appearance.

To create a finished, unified look, we decided to clad exposed pressure-treated framing members with Trex's matching fascia boards. Manufactured to match both the grain and color of the deck boards, these fascia boards



Standard framing practices apply when you're building a ground-level deck. Use galvanized joist hangers and joist nails to make all connections.



To form stair stringers, make the bulk of the cuts with a circular saw, stopping just short of the corners (left); then use a reciprocating saw to finish the cuts (right).



This Trex installation required six stringers spaced 9 in. OC for the stairs.



Unlike many hidden fasteners, Trex fasteners are installed from above, and they automatically set the proper gap between boards.

GROUND-LEVEL DECK ANATOMY

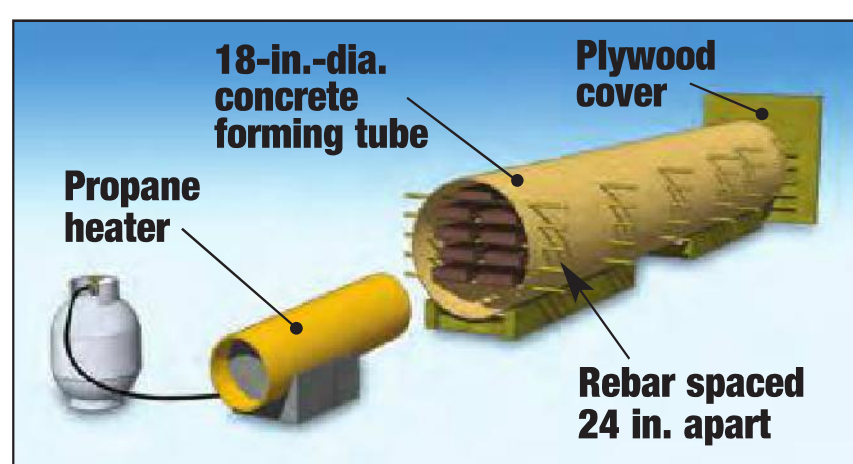


ILLUSTRATION BY TECH ART & DESIGN

BENDING TREX

One of the interesting aspects of working with Trex is that you can bend the boards to create curved decking patterns. The process involves first taping together multiple 16-in.-dia. concrete forms to create one long tube. Sections of rebar are inserted through the tubes to create “racks” onto which the Trex boards are placed. A forced-air propane heater (140,000-Btu minimum) is then positioned at one end of the tube so that it blows hot air through the tube and around the boards that are sitting on the rebar racks (see illustration). As the boards get hot, they become pliable.

Once a board reaches a temperature between 185 and 200 degrees, it's removed from the tube and slowly bent to fit into a jobsite-built jig that mimics the curve required for that specific installation. The jig holds the board at the required radius, and as the board cools, it will permanently harden into that shape. Special framing requirements are necessary when installing curved Trex boards, so it's best to consult with the manufacturer if you plan to incorporate curves into your deck design. — MB



White cellular PVC trim accents the mahogany-look Brasilia boards and never needs to be painted.

come in 12-in. widths and easily screw to the face of the perimeter framing members. When attaching fascia boards to the framing, use three screws every 12 in. Drive the top screw 1 in. from the top of the rim joist, a second screw in the middle of the rim joist and the third screw 1 in. from the bottom of the rim joist.

Although this ground-level deck was built to tie in with an existing elevated deck, you can build your deck almost anywhere: tucked in amongst the trees as a private hideaway, floating in the middle of your lawn as a prominent gathering spot or abutting your house or another existing structure. With proper planning, the right materials and a little sweat equity, you can build a ground-level deck that offers years of enjoyment with no maintenance headaches. ♦

SOURCES ONLINE

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

Southern Pine Council
(Deck-building techniques and information on pressure-treated lumber)
www.prowooddecks.com

Trex
(Brasilia boards)
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Slick Surface Solutions

Application-specific lubricants provide better results

BY TIM SULLIVAN



There are many choices of job-specific lubricants that are formulated to provide the best performance for the desired application.

I appreciate the convenience and versatility of my spray can of multipurpose oil (such as WD-40 and Royal Purple Maxfilm) as much as the next handyman. But specialty lubricants and dispensers offer top performance for many applications. In addition, petroleum-free products now provide environmentally conscious alternatives that work fine for many uses.

Face it: You wouldn't think of relying on a single size of wrench or one type of saw to tackle all of your projects. Similarly, every serious DIYer should keep a variety of lubricants on hand and understand how to choose the appropriate one for the job.

Lubricants' main task is to reduce friction, heat and wear on moving parts. Some also prevent or dissolve rust, displace water or clean surfaces. To choose the best type, consider the surface materials, environmental conditions and performance requirements. Avoid the "nuclear" option — products that provide unnecessary functions for the application at hand. Chemical overkill is wasteful and ecologically uncool. For instance, why use a rust inhibitor on interior hinges that are never exposed to moisture?

Base oil is the heart of any lubricant. It can be mineral

oil, vegetable oil such as soy, synthetic polymer, lanolin (wool grease) or even water. Lubricants also can be classified by type: oil, dry, silicone, white lithium or penetrating. Each lubricant has specific properties that make it suitable for some purposes and not for others. Additives such as polytetrafluoroethylene (PTFE) and graphite are used to modify base oils and enhance specific lubricating traits.

Because of government regulations that limit volatile organic compounds (VOCs), manufacturers have had to modify some lubricant formulas. As a result of their efforts to protect the air while maintaining performance, they've come up with state-of-the-art formulas and dispensers for specific applications. Here's a look at what's available and how to make the best choice in a given situation.

Job-specific products

Manufacturers make some lubricant choices easy by simply naming products for their intended purposes or applications. Others display the lubricant type and provide examples of common uses in smaller print.

Chain lube is specifically engineered for bicycle, motorcycle and garage door opener chains and cables, and

PHOTOGRAPHY BY MIKE ANDERSON AND LARRY OKREND

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Garage door lubricant (which contains white lithium grease) can be used on rollers, tracks and cables for smoother operation and to reduce noise.



Silicone spray can be applied to almost any surface, and it's particularly useful for keeping dirt from building up on shovels and other gardening implements.

garage door lube is for garage door rollers and tracks. These products are designed to stay put throughout numerous cycles and to prevent rust and friction by shedding moisture. To remove grit that can collect on links, be sure to clean chains and sprockets with a degreaser or mineral spirits and dry the surfaces before applying lubricant.

Penetrating oil is another product that declares its intended use. The thin, rust-dissolving formula seeps into the tiniest openings. Need to loosen a stuck bolt or frozen spark plug? This is the product of choice to soften hidden rust or to free heat-seized threads.

Radiator Specialty Co. recently put a new twist on its nearly 70-year-old Liquid Wrench penetrating-oil formula. It replaced the anti-seize graphite particles with Cerflon, a solid microscopic synthetic lubricant. Unlike graphite, Cerflon is colorless, so it won't stain surrounding surfaces. High solvency and low surface tension produce capillary action for rapid penetration without attacking painted surfaces.

Dry lubricant goes on wet but creates a powdery white film rather than an oily residue. It's preferred for applications where a sticky, wet coating would attract dirt or stain surrounding surfaces. Dry lubricant also is odorless. Use this product on interior-door and cabinet hinges, drawer

glides, folding knives and locks. Some formulas, such as B'laster dry lubricant and 3-In-One Professional High Performance Dry Lube, contain PTFE synthetic fluoropolymers. They can be used on metal, vinyl, wood or rubber. The complete line of B'laster products is available at The Home Depot.

White lithium grease creates a thick, long-lasting coating that clings to surfaces in hot, freezing or wet conditions. Thickeners allow the coating to build up without sagging. Use it on

garage door rollers, hinges and tracks, trailer hitches, vehicle hinges, tractors and marine fittings.

Clear silicone lubricants not only make large surfaces ultraslippery but also repel water and are safe to use on painted surfaces, rubber, plastic, wood and metal. Reach for this type of lubricant to prevent soil and snow from sticking to shovels, snowthrowers, wheelbarrows, mowers and outdoor equipment. (Note: Don't confuse silicone lubricants

LUBRICANT APPLICATIONS AND PRODUCTS

USE	PRODUCT
Bike chains and cables	Chain lubricant
Digging tools, snowthrower chutes, mower decks	Silicone spray
Electric motors	Motor oil
Exterior hinges	White lithium grease
Faucet O-rings	Food-grade silicone grease
Garage door chains	Chain lubricant
Garage door rollers/tracks/cables	White lithium grease
Interior hinges	Multipurpose lubricant
Locks	Dry lubricant
Metal drilling bits	Cutting oil
Sliding-door or window tracks	Silicone spray or dry lubricant
Stuck threads (bolts, spark plugs, marine fittings)	Penetrating oil
Trailer receiver hitches	White lithium grease
Window sashes	Silicone spray or dry lubricant

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Dry lubricant reduces friction without oily or greasy buildup. It's a good choice for interior hardware and in applications where you want to minimize dust accumulation.

with silicone-base waterproofers that help tents, boots and raincoats to repel water. They are different products intended for different purposes.)

Motor oil such as 3-In-One (blue can) is formulated to lubricate bearings in electric motors. It has characteristics of 20-weight motor oil and is perfect for central air conditioner

and furnace-fan motors. Caution: Always follow manufacturers' recommendations and avoid over-lubricating motors. If the lubricant gets on windings it may attack them, and you will smell burning oil. Apply only enough lubricant to coat the bearings, usually two or three drops maximum.



Chain lubricant is designed to penetrate links and provide protection against moisture and dirt. It can also be used on most other metal surfaces that are exposed to the elements.

Spouts, sprays and straws

Once you decide on the best type of lubricant for the job, consider which type of dispenser will enable you to efficiently coat the surface that needs lubrication while keeping it off of surrounding surfaces.

Aerosol cans are good for coating large surfaces. In fact, WD-40 Big

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Blast can dispense lubricant at almost four times the rate of a standard WD-40 can. When equipped with straws, aerosol lubricants also can concentrate material deep into hard-to-reach recesses. However, it takes a light touch and a keen eye to avoid overspray. (Note: Many aerosol lubricants are highly flammable. They should not be used around electrical current, battery terminals, sparks or flames. To avoid a fire or explosion, always read warnings on the can before using a product.)

Manual pump sprays, such as WD-40 Trigger Pro, avoid potentially flammable propellants. So do **dropper bottles**, which dispense lubricants one drop at a time. Dropper bottles are a good choice when only limited lubrication is necessary and you can count on gravity to carry the coating to where it is needed. 3-In-One Multi-Purpose Oil boasts a 5-in. telescoping spout that provides

additional control in tight spaces.

Eco-friendly alternatives

Soy-base lubricants (such as LubeFix from Nutek) and **lanolin-base products** (such as Fluid Film from Eureka Chemicals) offer environmentally sensitive alternatives to petroleum-base lubricants. Nutek boasts that it uses nitrogen (instead of carbon) propellant, recyclable aluminum containers, and less plastic compared with other manufacturers' dispensers.

Natural alternatives do have a downside. They can be less stable in harsh conditions and require more frequent application. They also can develop an oxidized varnish layer and turn brown over time, even in the can. But petroleum-base lubricants have drawbacks as well. Some formulas can damage plastics, painted surfaces and O-rings in plumbing fixtures. (Silicone grease is

the correct choice for faucet O-rings.) So make sure you consider all of the factors before choosing the best product for the job. ♦

Club Member Tim Sullivan is an occasional contributor to HANDY.

SOURCES ONLINE

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

3-In-One, www.3inone.com

B'laster Chemical Co.
www.blastercorporation.com

Fluid Film lanolin-base lubricant
(Eureka Chemical Co.), www.fluid-film.com

Liquid Wrench (Radiator Specialty Co.)
www.liquidwrench.com

Nutek soy-base lubricants
www.nutekformulations.com

Royal Purple
www.royalpurple.com/protect-parts-mc.html

WD-40, www.wd40.com

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Symbols in Steel

Cut intricate designs to create eye-catching art

BY MIKE BERGER



With a design inspired by the movie *Serenity*, this hanging piece of metal art features intricately cut outlines of Chinese symbols that add visual interest to its surroundings.

Although metalworking is often relegated

to making utilitarian objects, you can just as easily create beautiful artistic pieces for your home or landscape, provided you have the right tools for the job. This piece, inspired by artwork from the movie *Serenity*, is a great example. Suitable for hanging on a wall in your study or family room or suspended in a garden as shown here, its intricately cut Chinese symbols add beauty and visual interest to its surroundings.

Creating artwork that incorporates cut designs requires a steady hand and the proper tools. Because of its ability to handle tight curves and to make plunge cuts, one of the best tools for such a job is a spiral saw outfitted with a spe-

cial bit that can cut thicker metal — in this case, 18-gauge steel. I used RotoZip's RZ2000 spiral saw outfitted with an XB-MC1 Xbit metal-cutting bit (see SOURCES ONLINE). Here's an overview of my process; you can follow the same steps to create your own unique piece.

Make the disc

Start by purchasing a 4-ft.-square piece of 18-gauge steel for the gong. Spread a tarp on the floor of your workspace. Place two unopened 50-pound bags of play sand on the tarp to form a rough mound. Lay the metal sheet on the mound and randomly hammer it with a heavy mallet or maul to create a dimpled surface (photo 1, p. 42).

PHOTOGRAPHY BY MIKE ANDERSON

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Lay a 4 x 4-ft. sheet of 18-gauge steel over two bags of play sand and hammer dimples into the surface. Keep your hammering random to avoid creating a repeating visual pattern.



To make a trammel stick, first drill a hole in one end of a scrap of flat trim; then drill a second hole 18 in. from the first. Insert a nail into the first hole to act as the center point; then insert a sharp-tip marker into the second hole and draw the circle.

Once you're done hammering, clamp the metal to a sacrificial sheet of 1/2-in. plywood that will provide stability during the cutting process. Use a trammel stick to draw a 3-ft.-dia. circle on the metal sheet (photo 2, above); then cut along the outline (photo 3, opposite). Work slowly and keep a firm grip on the spiral saw, as it can wander if you're not careful. Make sure to set the depth so that the bit just penetrates the metal and barely cuts the plywood — otherwise

you'll generate a lot of smoke that can obscure the cut line.

Cut the design

Begin by drawing your design on the metal disc. Because my project involved intricate Chinese characters, I first created a computer-generated paper pattern. I liberally rubbed the back of the pattern with charcoal; then I placed the pattern on the metal and firmly traced the characters, letting the pressure of the pencil transfer



After drawing the circle, use a spiral saw outfitted with a metal-cutting bit to cut it out. Set the bit depth so that you're cutting only the metal, not the wood backing, and hold the saw firmly to prevent it from wandering.



After rubbing charcoal on the back of your paper pattern, tape it to the steel and use a pencil to transfer the design to the metal surface. Press firmly to ensure a good transfer.

the charcoal from the back of the pattern onto the metal surface (photo 4, above). To ensure that I wouldn't accidentally erase the design during the cutting process, I traced over the pencil lines with a permanent marker.

When you are ready to cut the design, once again clamp the metal disc to a sacrificial sheet of plywood. Use a spiral saw outfitted with a metal-cutting bit and plunge into the metal. Carefully follow the lines as you slowly make your cuts (photo 5, p. 44).

Be aware of any areas in your design that would be trapped by your cuts and fall away. For example, the right lower character in my piece has two sections that needed to remain intact, but if I had followed the pattern exactly, they would have been cut away (photo 6). To avoid this, modify your design to accommodate these areas as best you can.

After you've completed all of the cuts, use a rotary tool outfitted with a small grinding wheel to smooth the

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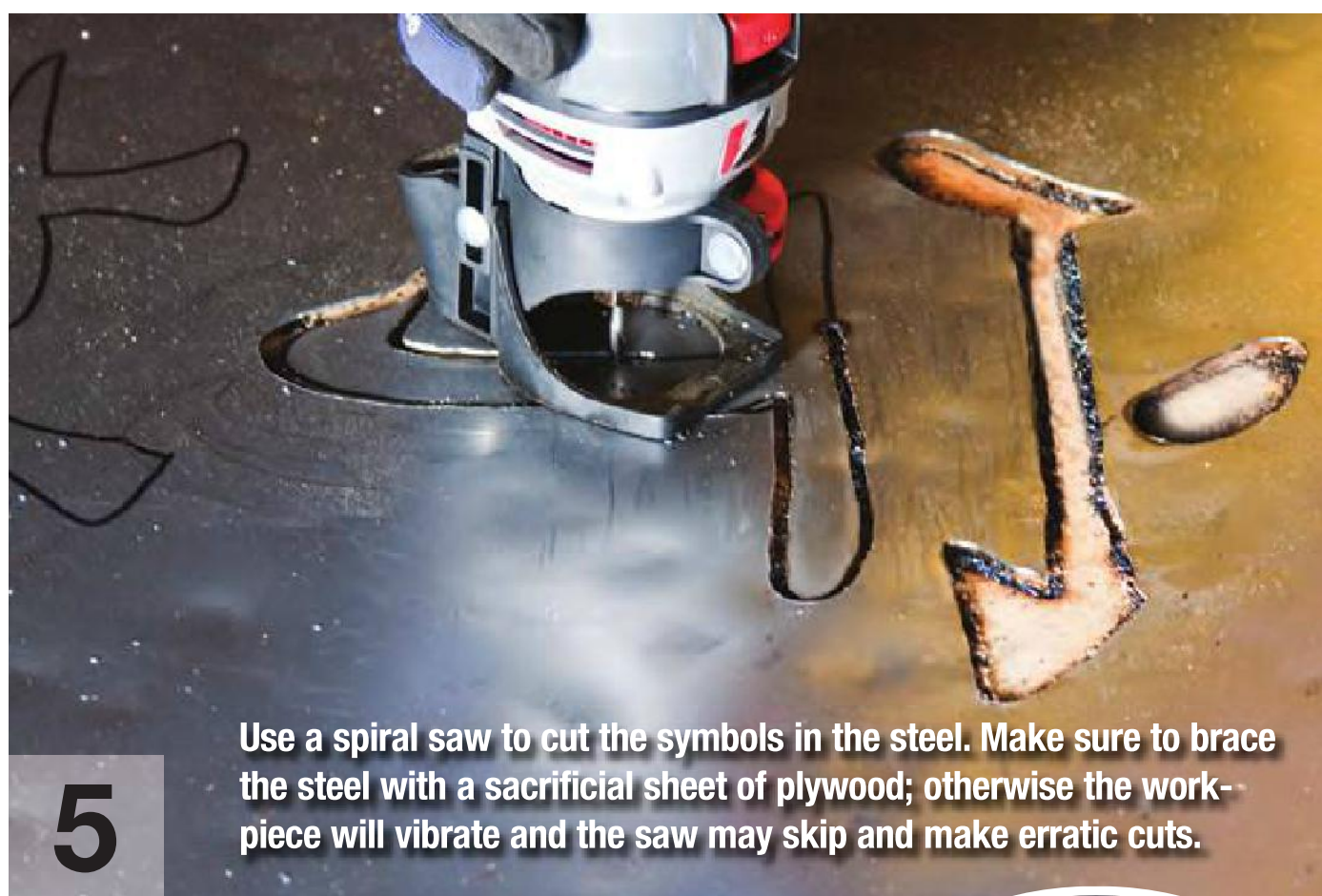
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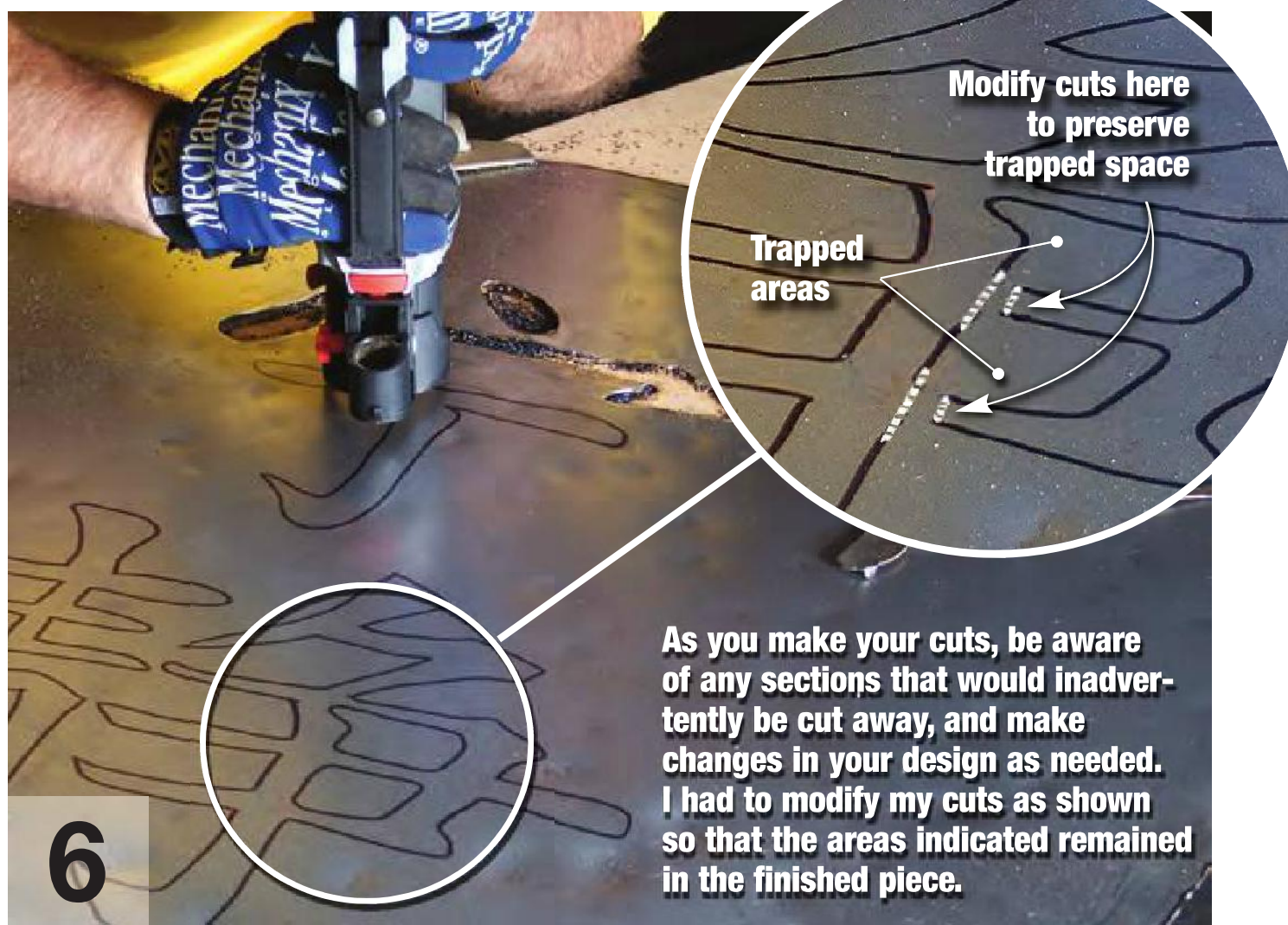


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Use a spiral saw to cut the symbols in the steel. Make sure to brace the steel with a sacrificial sheet of plywood; otherwise the work-piece will vibrate and the saw may skip and make erratic cuts.



As you make your cuts, be aware of any sections that would inadvertently be cut away, and make changes in your design as needed. I had to modify my cuts as shown so that the areas indicated remained in the finished piece.

WEB EXTRAS

BUILDING THE STRUCTURE

To see how to build an Asian-inspired structure from which to hang your artwork, log onto the Club Web site: www.HandymanClub.com and click on Web Extras.



rough edges; then wipe the disc with mineral spirits to remove any oil or residue before painting it. I used exterior-rated yellow spray enamel for the main color and brick-red stone-texture spray paint for the outer ring of color. Once the paint has cured, all that's left is to mount your artwork on a wall in your home or in a prominent location in your garden. ♦

SOURCES ONLINE

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Tackling Projects Alone

Nine jobsite-proven tips from a pro

BY MIKE CONNER



Many DIYers like to work alone.

You head for your garage or shop on a Saturday morning long before the family is awake, and you have the whole day to yourself. For me, working alone is a way to unwind, collect my thoughts and quiet my mind after a stressful week. I control the planning and flow of work, I decide how something is to be built, and I choose when to take a break. It's very satisfying to know that the success of the day depends on me and no one else.

Of course, attempting projects without help has its downside — after all, the average person has only two hands. But you can overcome some physical limitations of working alone with a few tricks and tools. Here are nine handy helpers I have found invaluable during my years as a building contractor. Some of these tips might seem too obvious to bother writing about, but sometimes the simple solution is the most useful.

1. Extra hand

This is a little support rig you can make with scrap lumber. I call it the “extra hand” because it can be used to hold up one end of a long workpiece such as a skirt board, a joist, siding or a shelf while I attach the other end. Cut one 12-in. and one 4-in.-long piece from a 2x4; then fasten the two pieces together to form an L-shape (inset photo). If I need to fasten a long board to a wall, I turn the support on its side, with the smaller leg protruding out from the wall.

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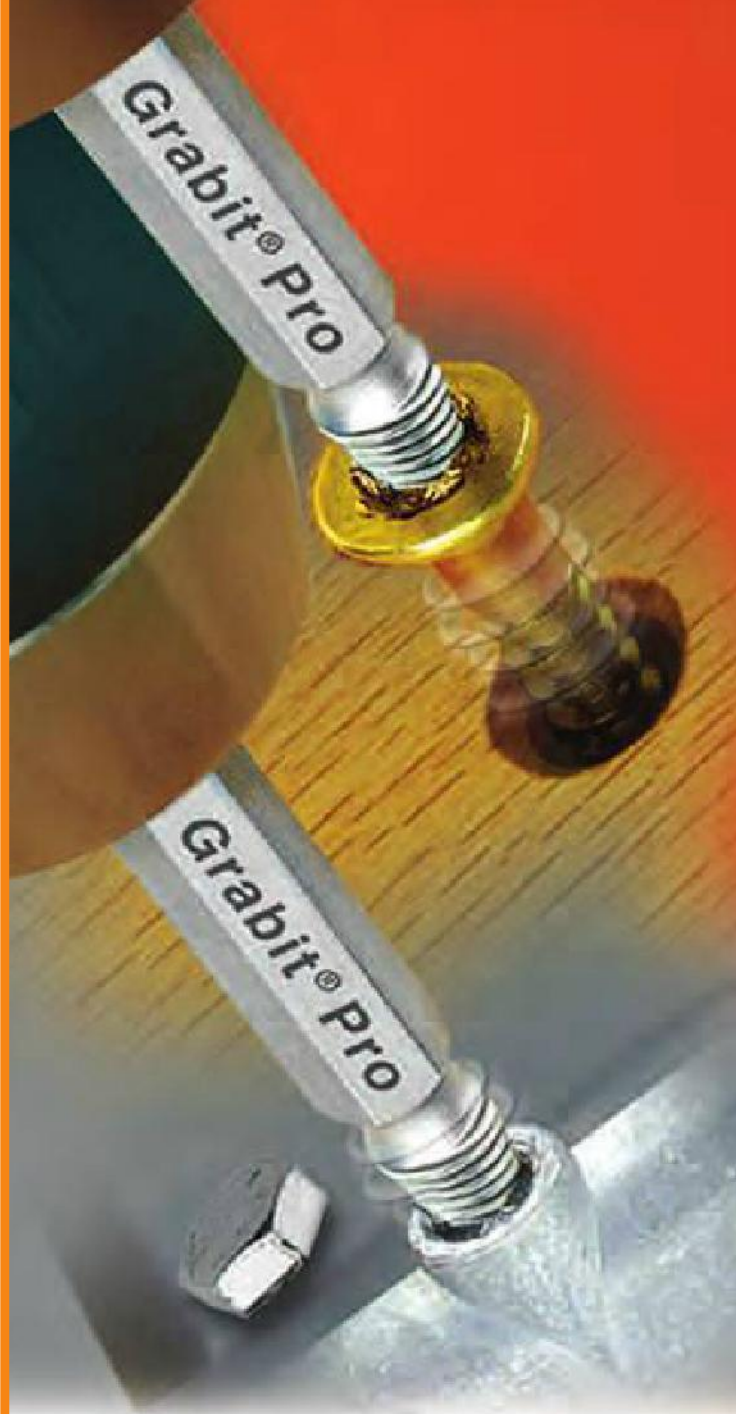
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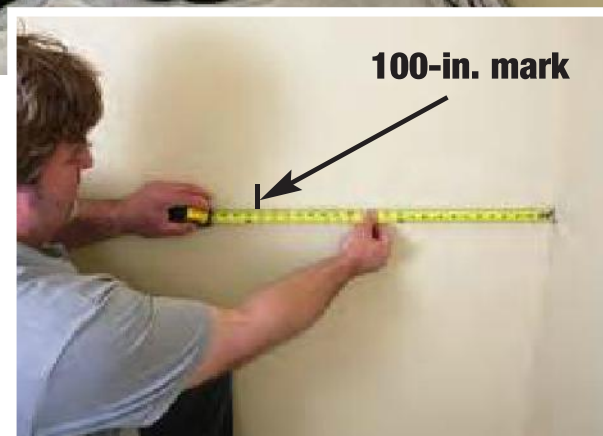


100-in.-long measuring stick

2. Measuring stick

Have you ever tried to measure something longer or taller than 8 ft.? You try to extend your tape measure to catch an edge and the tape folds in half. Even the new stiffer tapes will buckle when extended more than 10 ft. An easy way to conquer this problem

is to create measuring sticks. All you need are straight 1-in.-wide strips of wood (3/4-in. plywood or clear pine work well). Cut one piece exactly 100 in. long and another piece 50 in. long. When you measure something above the ground or floor (such as a 12-ft. wall, for example), hold the 100-in. measuring stick against the wall and mark at the end of it. Then use your tape to measure from the opposite wall to the mark. That measurement plus 100 in. equals the total measurement. You can make measuring sticks any length you want; I use 50 and 100 in. because it's easy math to add those numbers to my tape measurement.



100-in. mark



3. Block and shims

If you've ever tried to install a door by yourself, you know how difficult it can be to hold the door in place when it is open. I use blocks and shims to support the door during installation. Each block is usually a 6-in.-long 1x6 laid flat. On top of the 1x6 I tape two rows of shims side by side to achieve the desired bottom height of the door (usually about 1 in. off of the floor).



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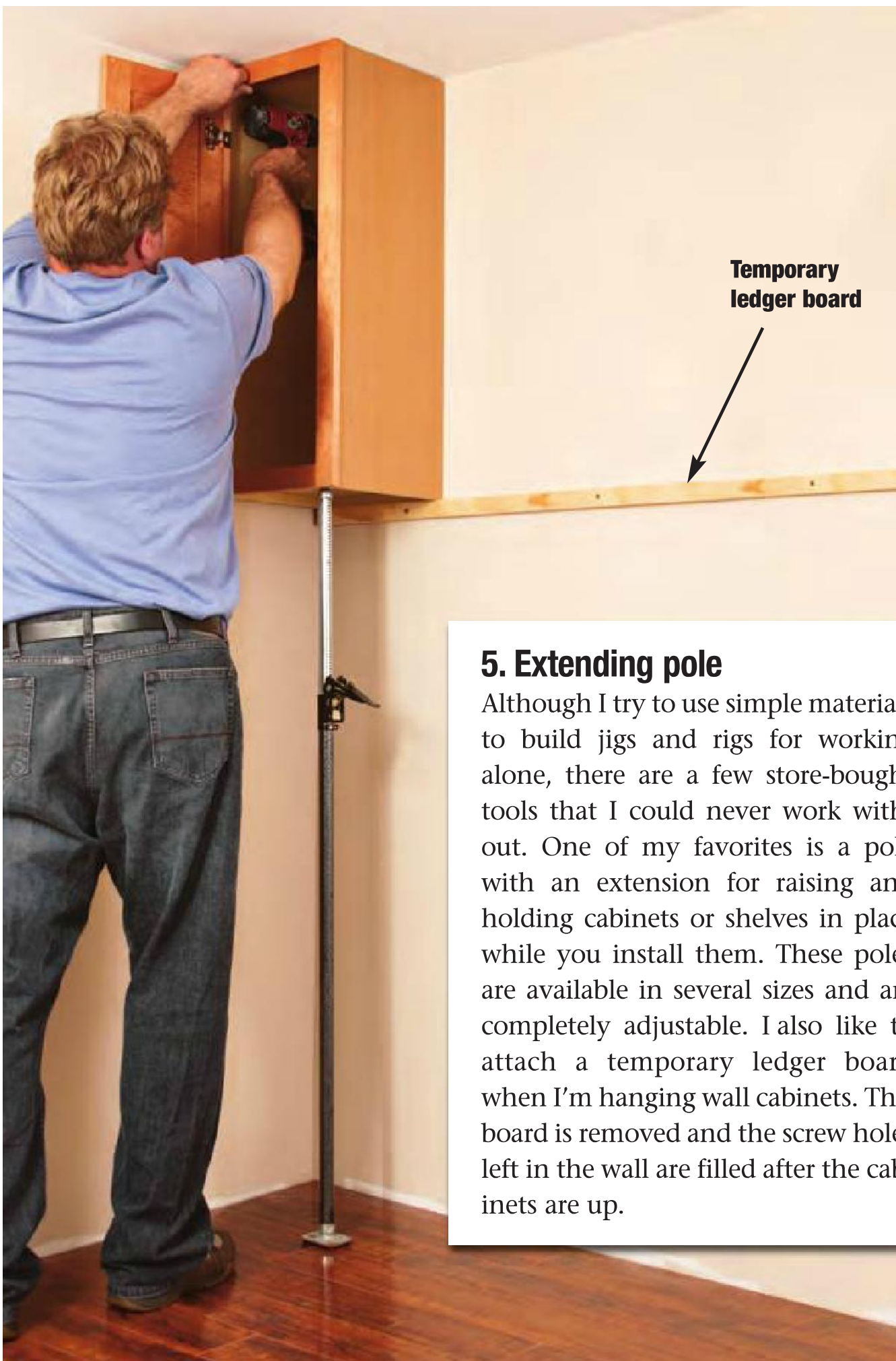


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4. Panel lift

If you ever decide to install dry-wall or paneling by yourself, I would highly recommend renting a panel lift. It costs about \$30 a day and breaks down into five pieces for easy transport. The lift will hold drywall in place against the ceiling joists so you can fasten it with ease.



Temporary ledger board

5. Extending pole

Although I try to use simple materials to build jigs and rigs for working alone, there are a few store-bought tools that I could never work without. One of my favorites is a pole with an extension for raising and holding cabinets or shelves in place while you install them. These poles are available in several sizes and are completely adjustable. I also like to attach a temporary ledger board when I'm hanging wall cabinets. This board is removed and the screw holes left in the wall are filled after the cabinets are up.



6. Window brace

You can install an average-size or smaller window yourself with the help of a homemade window brace. After preparing the rough opening, attach a scrap 2x4 along each side of the window opening. Cut a 1x4 or 2x4 to span the distance between the 2x4s; then attach the cross-brace to one side of the window opening. Place the window in the opening (photo, right), pivot the cross-brace across the window and attach it to the opposite 2x4 (above). This brace allows you to easily move the window up or down and side to side within the opening while you install the window.



7. Wall roll lifter

Here's another neat little gadget that's designed to help lift and hold a workpiece without using your hands, and it costs only about \$10 at most hardware stores. It's simply a small foot-operated lever that lifts a sheet of drywall just enough to snug it against the sheet above it, keeping your hands free to attach it to the wall studs.

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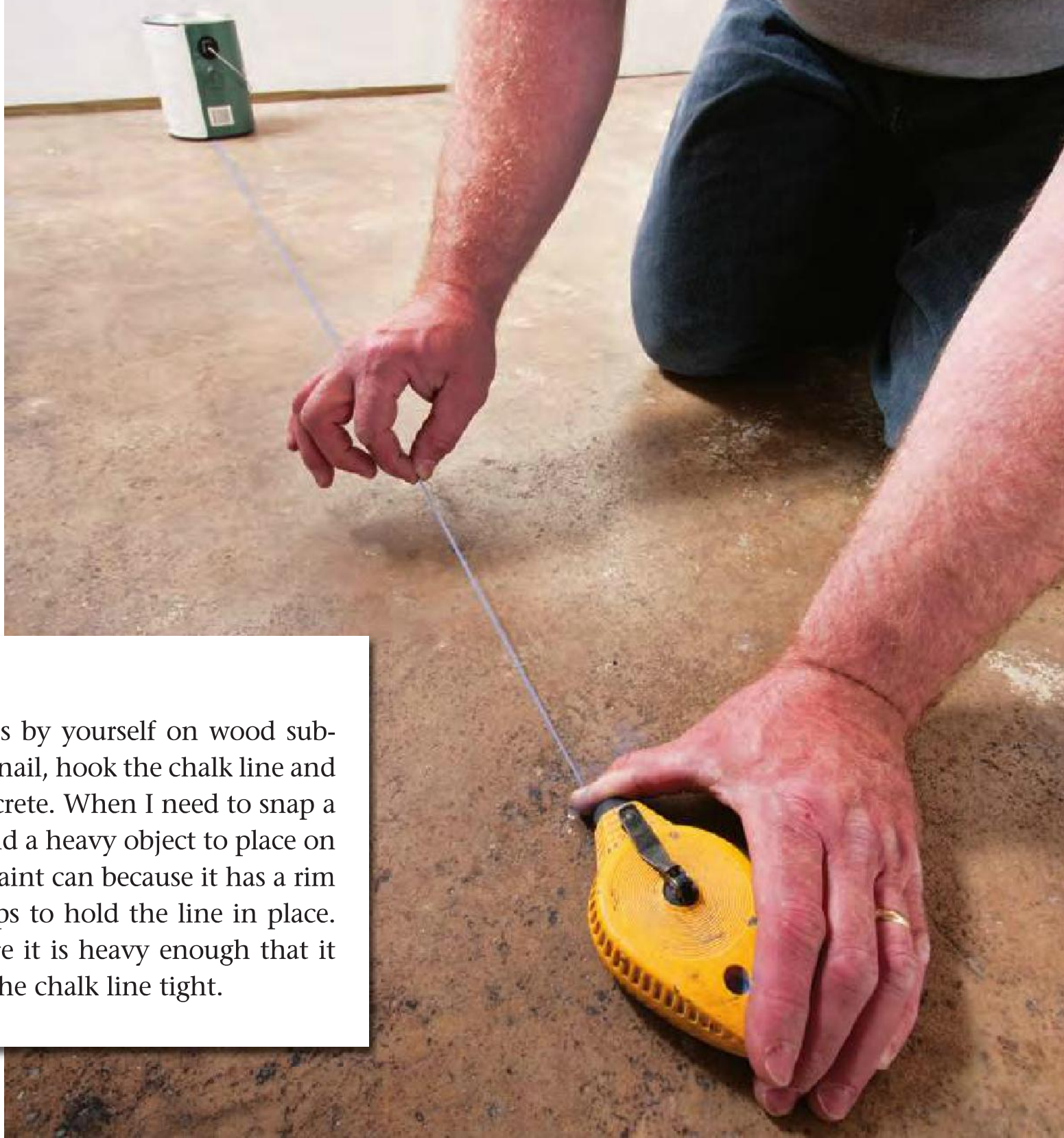


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8. Weighted line holder

It's easy snapping chalk lines by yourself on wood sub-floors or sheathing — tack a nail, hook the chalk line and snap. It's not so easy on concrete. When I need to snap a chalk line over concrete, I find a heavy object to place on the line — preferably a full paint can because it has a rim around the bottom that helps to hold the line in place. Whatever you use, make sure it is heavy enough that it won't move when you pull the chalk line tight.

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9. Belt clip

One of my biggest frustrations when working alone is when I've held up a workpiece to be fastened, only to realize that I left my screw gun on the floor just beyond arm's reach. I avoid this by wearing a tool belt with a belt clip that holds my screw gun. There are many cool belt, vest and apron accessories designed to keep tools within easy reach. They're not just for the pros. Get yourself a basic tool belt, vest or shop apron and use it for one project — it'll be the first thing you grab when you start your next project.

These nine tips and devices have helped to save my back, my arms and my sanity when working by myself. I hope they'll help you to stay safe, be productive and enjoy the peace and challenge of your solo endeavors. ♦

Handyman Club life member Mike Conner is a professional contractor and builder who lives and works in the Twin Cities.

SOURCES ONLINE

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Porch Appeal

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BY MIKE TAVIS



If an old porch fails,

and nobody hears it, does it still need to be replaced? In the case of the aging structure that served as the back entry for my house, the answer was a resounding “yes.” Rather than build a new porch, at the time I opted for a more spacious and functional paver patio that offered easier access to the yard. However, I failed to incorporate access from my home’s rear door to the patio.

A set of steps quickly constructed from scrap materials served as a temporary fix until I came up with a more elegant permanent solution: a mini porch with simple steps that provides easy access to the house and a convenient spot to set groceries while we unlock the door. The construction techniques are simple—if you have basic carpentry skills, you can pull off this project—and with the right choice of materials, you can keep the costs quite modest.



Before

PHOTOGRAPHY BY MICHAEL ANDERSON
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1

Lag bolts and building straps secure a secondary ledger board to the original so that there is only one step from the ground to the completed deck.



2

After checking that the end joists are level, use angled joist brackets and joist nails to attach the end joists to the corner posts (in this case, the 4x4s that support the roof of the old porch).



3

Attach the rim joist as you did the two end joists to create the basic perimeter of the porch.



4

Mark the locations of the joists; then use joist nails to fasten joist hangers to the rim joist and the ledger board.

Building the perimeter

After removing the old structure or rotted wood, you'll begin construction with a ledger board. If the ledger board from your old porch or stairs is solid, you may be able to reuse it, but if there's any rot or sponginess, you must replace it. Because I wanted a single step to lead from the porch to the patio surface, I made the porch 7 in. lower by using lag screws and building straps to secure a secondary 2x8 pressure-treated ledger board to the old porch's original ledger (photo 1, left). If you prefer, you could simply frame the porch so that it sits on the same level as the existing doorjamb, but you'll need to incorporate additional steps from the porch to the patio.

Attach the end joists to the ledger board using the joist brackets and joist nails. To support the end joists, I used the 4x4s that supported the roof of my old porch (photo 2). However, you may need to install new 4x4 corner posts to support the opposite ends of the end joists. Attach the rim joist to the corner posts, and the basic perimeter of your new porch will be established (photo 3).

Installing joists and supports

Mark the locations for the joists — in this case every 16 in. OC — on both the rim joist and the ledger board, and install joist hangers at those marks (photo 4). Drop the 2x8 joists into the hangers and fasten them using joist nails (photo 5, p. 58).

To add stability to the porch structure, I fastened two additional 2x8 pressure-treated supports to each of the end joists (photo 6). They are equally spaced and fitted tightly against the patio to prevent bowing.

To frame the steps, start by building a simple box from pressure-

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5

Drop 2x8 pressure-treated joists into the hangers and attach them using joist nails.



6

Equally spaced pressure-treated “legs” fastened to the end joists and fitted tightly against the patio add strength and stability to the porch framework.



7

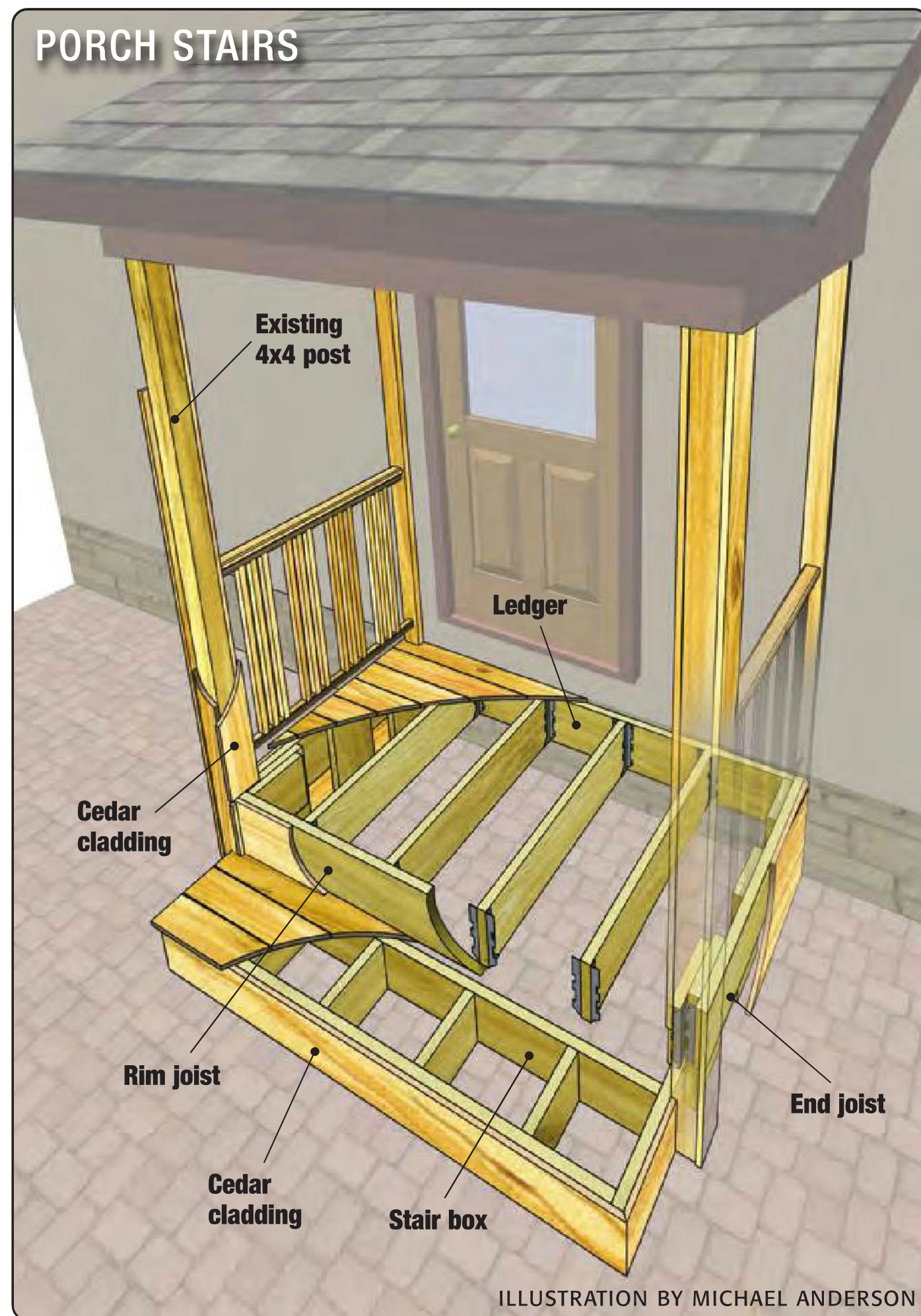


ILLUSTRATION BY MICHAEL ANDERSON

treated 2x8s (photo 7). Cut the two boards that will form the ends of the stair box approximately 6 in. longer than the tread depth — as you slide the stair box in place, you’ll nail through those longer ends to secure the stair box to the rest of the porch framing (photo 8, opposite).

Build a box that will serve as the framework for the stairs from pressure treated 2x8s. The end boards are longer than the others — you’ll fasten through those longer boards to secure the stair box to the porch’s framework.

Cladding and decking

I clad the 4x4 posts with clear 1x cedar (photo 9, p. 60) to enhance their appearance. I also attached cedar cladding to the rim joist, end joists and exterior surfaces of the stair box (photo 10).

Fasten cedar decking to the stair box and the porch structure (photo 11), being careful to space the deck boards so that none will have to be ripped to fit against the wall. All that’s left is to install the side railings and coat the cedar with a clear preservative or the finish of your choice.

Although this project was built to suit the needs of my house, it can be



8

Slide the completed stair box into place at the foot of the porch; then fasten the stair box to the porch framing by nailing through the longer ends and into the 4x4 posts.

BUILDING RAILINGS



Because I was incorporating the roof from my old porch into this project, building the side railings was fairly easy. I started by attaching cedar 2x4 rail posts to the surface of the stucco using outdoor construction adhesive. (If you have siding, scribe the posts to the profile before nailing and gluing them in place.) If your stucco or brick surface is in poor condition or too rough to make good contact with the adhesive, you may need to grind the surface or make other repairs before adhering the rail posts to the house.

To simplify construction, I purchased cedar rails and caps that incorporated milled grooves for the balusters. I fastened them to the rail posts and the 4x4 posts; then I screwed the balusters in position between the rail and the cap, following the spacing dictated by my local building code authority. — MT

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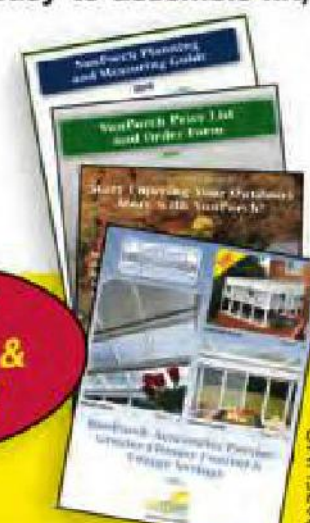
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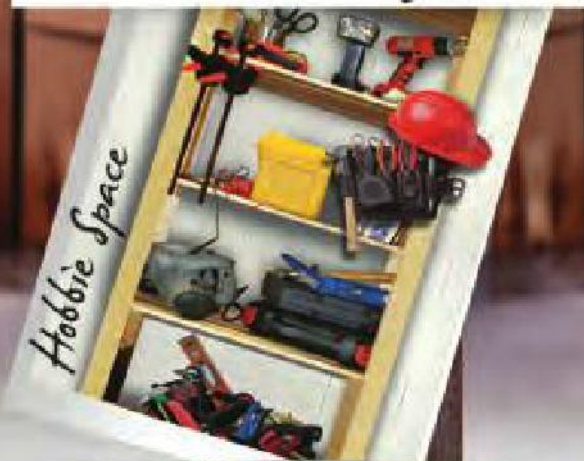
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9

Cover any old post surfaces with fresh cedar. In this installation, the side cladding pieces stand proud and capture the front and back cladding pieces.



10

Clad the surfaces of the porch and stair framing with 1x clear cedar. A putty knife helps to hold the cladding at the proper height as it is fastened in place.

easily modified to fit any structure. You can extend or shorten the porch, build more stair boxes, remove the roof or incorporate other structural elements from your home to create a similar addition to your backyard living space that is more than merely functional — one that makes the back entrance of your home as attractive as the front.



11

Fasten cedar decking to the porch joists and to the stair box. Space the deck boards so that you don't need to rip one to width to fit against the wall.

After all, curb appeal shouldn't be limited to what can be seen from the street. ♦

*Club Member
Mike Tavis works
and writes from
Minneapolis,
Minnesota.*



Tip Trader

Home and workshop
hints from Club members

Keep Your Cool

Club member **Kirk Cossairt** of Debary, Florida, is used to working in the heat. Though he can handle the Sunshine State's high temperatures, the batteries for his cordless tools don't fare so well. To extend their lives, he stores them in an insulated lunch bag while on the job site. The bag keeps the batteries 20 degrees cooler to prevent damage from excessive heat.



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

Perfect Paintbrush Performance

Dry paintbrush bristles are thirsty and will soak up liquid at the first opportunity. If that liquid is paint, stain or varnish, it'll really stick. To help brushes resist crustiness and stains, try this tip recommended by Club member **Donnie Conroy** of Minneapolis, Minnesota. Before you begin, use water (or mineral spirits if you're working with an oil-base finish) to moisten the bristles so they're less permeable. Work out any excess moisture with a clean rag; then you're ready to paint. ♦



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HandyWorks

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

BY JENNY STANLEY

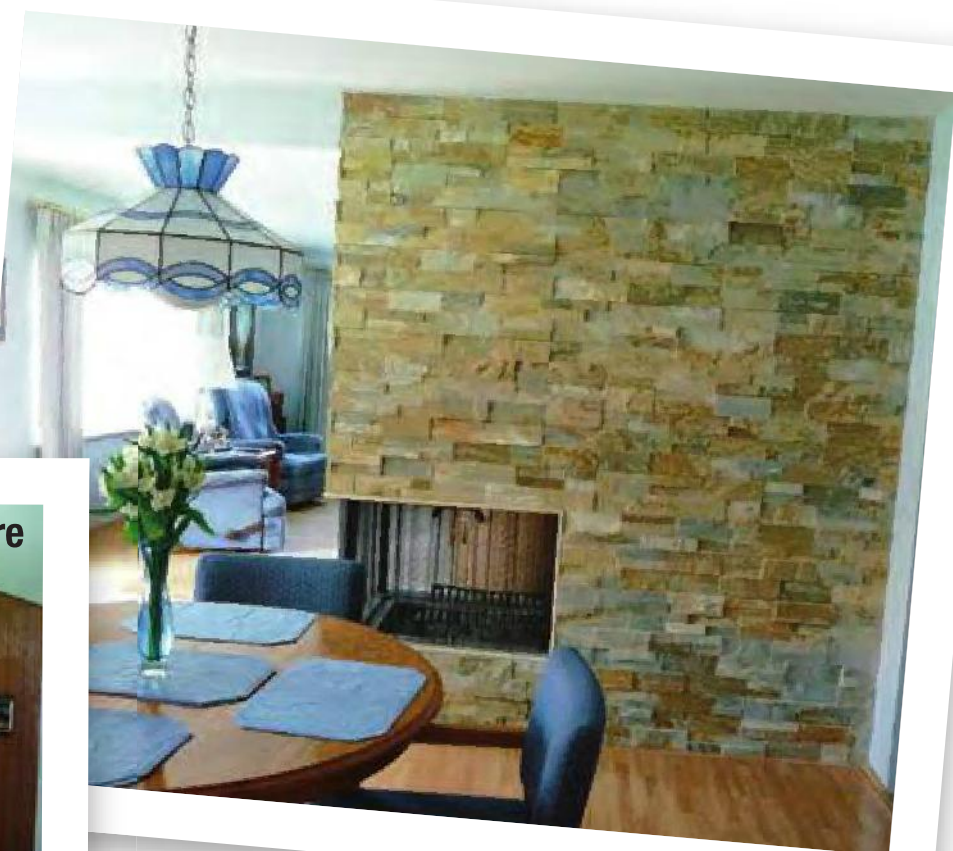
Metal marvel

For his wife who likes grapes, Club member **Jerry Northrip** of Fresno, California, crafted these decorative metal details to embellish the light fixtures in their kitchen. Jerry used 1/4-in. round stock and welding rod for the vines, 1/2-in. steel ball bearings for the fruit and prefabricated leaves from an ornamental iron supplier. He welded everything together and added a few curly tendrils made with binding wire for a realistic touch.



All-around accent

To give their three-sided fireplace a new face, Club member **Bob Weidlich** of Cincinnati, Ohio, and his wife first removed the dated wood paneling (see “before” photo). Then they applied 1,200 pounds of stone by hand, giving the room divider an eye-catching rustic look. Bob added bullnose trim around the fireplace opening and filled in the floor with a few sections of ceramic tile for a seamless transformation.



Backcountry basement

It took Club member **Dan Cater** of Cadott, Wisconsin, about two months to transform his basement into this cabin-style retreat. He added a full bath, a bar for entertaining and a Murphy bed for overnight guests. He finished the walls with horizontal wood panels, installed new laminate flooring and added a drop ceiling. To complete his man cave, Dan also mounted a 55-in. television along one wall.



PHOTOGRAPHY COURTESY MEMBERS



Homegrown gate

Club member **Clyde Sauernheimer** of Seven Hills, Ohio, replaced an old, rusty enclosure around his prized vegetable garden with this 8-ft.-tall metal fence and charming wood gate. The fence is tall enough to deter the hungry deer that roam Clyde's neighborhood. The gate features a latch and subtle decorative details, and it is wide enough to accommodate the golf cart that Clyde uses to haul compost to and from the garden. ♦

SHOW OFF YOUR PROJECT

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Metal marvel
All-around accent
Backcountry basement
Homegrown gate

Voting for this issue will end September 30, 2010. The winner will be announced in the December 2010/January 2011 issue.

QUIZ ANSWERS 1) p. 11, 2) p. 22, 3) p. 26, 4) p. 43, 5) p. 58



CRITICS' CHOICE AWARD

Winner: Larry Lykens of Port Matilda, Pennsylvania

Project: "Handcrafted Cabinet," April/May 2010

Prize: Larry will receive an official certificate and an EZ-Twist PaintStick, a Pro 5.5 Power Paint Sprayer, a QuickPainter and a StainStick from HomeRight. Congratulations, Larry!

EZ-Twist
PaintStick



Pro 5.5 Power
Paint Sprayer



MEMBER FORUM

GoodWorks

HANDY applauds those who extend a helping hand BY JENNY STANLEY

Salvaging school spirit

When the school where his wife works underwent an extensive remodel, Club member Fred Hagan of Bardstown, Kentucky, built this academically inspired table for the new lobby. All parts were salvaged from the facility: The oak was cut from old gym bleachers, and the chalkboard inlay was reclaimed when classrooms were upgraded with interactive whiteboards. In addition, Fred, his wife and a few other teachers rescued pieces of a mural from a cafeteria wall before it was removed, and Fred framed the pieces for display around the renovated building. ♦



From top left: Fred Hagan and his wife, Pat, and Principal Michael Bickett and his daughter, Olivia, stand next to the chalkboard table in St. Joseph Elementary School's lobby. Framed mural sections (inset) adorn the renovated walls.



PHOTOGRAPHY COURTESY MEMBER

Share your stories of DIY goodwill by sending a description and photos to GoodWorks c/o Jenny Stanley, HANDY, 12301 Whitewater Drive, Minnetonka, MN 55343, or e-mail to GoodWorks@HandymanClub.com.

Truly Unique



Time travel at the speed of a 1935 Speedster?

The 1930s brought unprecedented innovation in machine-age technology and materials. Industrial designers from the auto industry translated the principles of aerodynamics and streamlining into everyday objects like radios and toasters. It was also a decade when an unequaled variety of watch cases and movements came into being. In lieu of hands to tell time, one such complication, called a jumping mechanism, utilized numerals on a disc viewed through a window. With its striking resemblance to the dashboard gauges and radio dials of the decade, the jump hour watch was indeed "in tune" with the times!

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True to Machine Art esthetics, the sleek brushed stainless steel case is clear on the back, allowing a peek at the inner workings.

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Near perfect Scratch-N-Dent Armored Safes that sell new for up to \$872 are now being given away free to the first 2,080 readers who call to beat the order deadline to get the safes valuable contents

By Shawn Oyler
Universal Media Syndicate

UMS --- Today, for the first time ever Scratch-N-Dent Armored Safes, loaded with U.S. coins and currency are actually being given away free to the general public.

The only thing today's readers need to do to get their free safe is to beat the order deadline to get the hoard of 221 brilliant, never-circulated U.S. Gov't coins and currency loaded inside the free safes.

It all begins at precisely 8:00am today. But only the first 2,080 readers who beat the 7 day order deadline will instantly be awarded the Armored Safes for free.

"This is all happening because thousands of near perfect Scratch-N-Dent Armored Safes have been RED-TAGGED. That's why we are able to just give them away," said Jefferson Marshall, Director, of the private World Reserve Monetary Exchange.

"Home safe sales have smashed 60 year sales records. People everywhere have been demanding heavy-duty Armored Safes, but right now we only have 2,080 left, no more, no less," Marshall said.

"Call them whatever you want, nearly new, refurbished, reconditioned, but chances are you will be hard pressed to find any flaws. These are the World Reserve's newest Armored Safe models, they simply have minor dings or blem-



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ishes. Once they get RED-TAGGED as Scratch-N-Dent, we can give them away for free," Marshall said.

"Having an Armored Safe at home is one of the best ways to prepare everyone for what could be lurking down the road. So if you thought you could never afford your very own personal Armored Safe, there's no excuse now. You can actually get one for free

when you beat the deadline to buy up your very own hoard of U.S. Coins and currency," Marshall said.

"Having valuable U.S. Gov't coins and currency serves as an economic life raft during tough times," said Thomas C. Harris, Retired Deputy Director of a U.S. Treasury branch and advisor to the World Reserve.

"Remember, the hoard of U.S. coins and currency

contained in the free safes will never, never, never lose their face value. You will always have something worth a lot of money," Harris said.

But, here's the best part. Among the U.S. Gov't issued coins and currency contained in each safe is the highly sought after American Eagle 1-ounce silver bullion coin made from solid .999 fine silver, 80 of the first-issued new State

Quarters, a Half-Dollar never released for circulation, a sealed roll of 25 first-issued Jefferson Nickels, 2 sealed rolls of the newly designed first-issued Pennies, a stack of historic \$2 Bills and a vault tube of the Presidential Golden Dollars.

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Today's readers just need to call the Special Surplus Freight Hotline shown in this box beginning at 8:00am today. If lines are busy keep trying, all calls will be answered. There is a strict limit of 2 free Armored Safes per household.

Terms & Conditions: The first 2,080 readers who beat the 7 day order deadline to get the hoard of U.S. Gov't issued coins and currency loaded in each will be awarded the Armored Safes free. To

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Member Tested

955 Club members tested \$72,221 in products

BY ROSS TANNER, PRODUCT TEST EDITOR

Oscillating Multitool

MEMBER RATING: 9.3

BEST FEATURE: QUALITY

ROCKWELL POWER TOOLS,

866-514-ROCK, WWW.ROCKWELLTOOLS.COM

Rockwell's SoniCrafter 73-piece Professional Kit (\$179.99) includes everything a DIYer needs to cut, sand, polish, scrape, shape and remove many types of material. The tool features a slim design with a soft grip, microsonic oscillation for smooth, efficient performance, and a variable-speed function that turns tough jobs into simple tasks.



Robert Marshall, De Soto, MO: "I used the Rockwell SoniCrafter to replace a broken bathroom tile and to cut drywall for outlets. I even cut some bricks in half just because I could."

Bryan Lichty, Gladstone, MO: "The ability to hook up a dust collector is great. My favorite applications were grinding, sanding and making plunge cuts in drywall and wood."



String Trimmer

MEMBER RATING: 9.4 BEST FEATURE: DURABILITY

CUB CADET, 877-CUB-TOUGH, WWW.CUBCADET.COM

The Cub Cadet ST 426S string trimmer with electric-start kit (\$239 for the string trimmer, \$64.83 for the electric-start kit) has a fuel-efficient 25cc four-cycle engine and can handle a variety of landscaping tasks. It features a straight shaft, a split boom with an 18-in. cutting swath and a Speed-Spool Pro bump head that uses .095-in.-dia. dual line. The trimmer has a contoured handle, accepts various attachments and comes with a three-year warranty.

Brett Siepert, Rexburg, ID: "The Cub Cadet ST 426S starts with virtually no effort. It runs smoothly and quietly, has plenty of power and is well-balanced."

Burdette Peterson, Colbert, WA: "The four-cycle engine is convenient because you don't have to mix oil with gas, yet it still provides plenty of power."

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, roll over the Products tab and click on Member Tested. Scroll down to find the link where you can fill out a form online.



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



PHOTOGRAPHY COURTESY MANUFACTURERS

Chain Saw

MEMBER RATING: 9.2 BEST FEATURE: QUALITY

ECHO INC., 800-432-ECHO, WWW.ECHO-USA.COM

The Echo CS-400 chain saw (\$299.99) provides plenty of cutting power with its 40.2cc Power Boost Vortex engine. The tool's computerized i-30 starting system reduces starting effort by 30 percent, and the G-Force Engine Air Pre-Cleaner prolongs engine life by spinning out dirt before it reaches the filter. Other features include a removable bumper spike, an adjustable automatic oiler, a side-access chain tensioner, a rear-access automotive-style air filter and a dual-post chain-brake handle.

Kelly Knight, Ridgeway, VA: "I tested the Echo CS-400 against three other brand-name chain saws, and it out-performed all of them. It doesn't lose much power under a load and is fuel-efficient."

Dallas Durre, Flora, IL: "It's the easiest chain saw to start that I've ever used, and the power is quite impressive."



Ceiling Tiles

MEMBER RATING: 8.5 BEST FEATURE: FINISHED LOOK

ARMSTRONG WORLD INDUSTRIES INC., 877-ARMSTRONG, WWW.ARMSTRONG.COM

Armstrong's HomeStyle 1205 Raised Panel ceiling tiles (\$2.10 to \$2.50 a square foot) easily fit into existing 2 x 2-ft. or 2 x 4-ft. (with metal cross-tees) ceiling profiles. The raised-panel design blends seamlessly with a grid suspension system, making it seem as though the grid does not exist and improving the appearance of suspended or dropped ceilings. The 1205 panels are made with 53 percent recycled material and enhanced with an antimicrobial treatment.

Doug Sickler, Orland Park, IL: "The HomeStyle 1205 Raised Panel ceiling tiles install quickly and add dimension and elegance to a room."

Steven Sawyer, Christiana, PA: "The raised-panel design has a classy look with appealing shadow lines."

Electric Pressure Washer

MEMBER RATING: 9.1 BEST FEATURE: PERFORMANCE

HOMELITE CONSUMER PRODUCTS, 800-242-4672, WWW.HOMELITE.COM

The 1700 PSI Homelite HydroSurge Electric Pressure Washer (\$199 for model HL80220) features a patented wand design that delivers two streams of water — high-pressure and high-flow — so you can loosen and sweep away debris in one motion. The unit's G-Clean detergent injector delivers detergent while conditioning and lubricating the pump. Other features include a steel roll-cage frame for added stability, two wheels for mobility, onboard storage for accessories and a two-year warranty, and the wand accepts any 1/4-in. quick-connect attachments.

Emmitt Johnston, Spokane, MO: "The HydroSurge pressure washer performed way beyond my expectations. It's portable and easy to use, and it did a wonderful job cleaning with and without detergents."

Robert Winecki, San Antonio, TX: "It is very powerful and easy to operate, has a sturdy base and offers several options for cleaning concrete, asphalt, siding, garden tools, lawn mowers, cars and more."



Multisurface Cleaner

MEMBER RATING: 8.2 BEST FEATURE: PERFORMANCE

THOMPSON'S WATERSEAL, 800-367-6297, WWW.THOMPSONSWATERSEAL.COM

Thompson's WaterSeal Oxy Foaming Action Exterior Multi-Surface Cleaner (\$12) is an oxygen-powered cleaner concentrate that is biodegradable and gentler than chlorine-bleach-base formulas. It removes dirt, mildew, algae and fungus stains on outdoor surfaces such as wood, concrete, masonry, brick, stucco, roofing, siding, outdoor furniture and more.

Kevin Murphey, Streetsboro, OH: "I used Thompson's multisurface cleaner to clean my concrete driveway and patio, and it did an amazing job."

Maitland Cudney, Lansing, MI: "I used it on my deck, and it removed stains, dirt and mildew."



Rain Jacket and Pants

MEMBER RATING: 9.1 BEST FEATURE: PERFORMANCE

GAMEHIDE, 888-267-3591, WWW.GAMEHIDE.COM

Thunderstorm Series jackets and pants combine tape-sealed seams and a breathable Tech Plus laminate to keep you dry and comfortable. They are lightweight and won't absorb or hold water. The Thunderstorm Jacket (\$69.95) has a three-piece adjustable hood, two large, zippered pockets, two inside security pockets and a drawstring waist. The Thunderstorm Pants (\$49.99) have an elastic waist with a drawstring, two large cargo pockets and an adjustable cuff for shorter inseams.

Rick Westerfield, Georgetown, KY: "The material of the Thunderstorm Series jacket and pants is breathable and comfortable. It kept me completely dry in the rain."

Joseph Fonk, Kenosha, WI: "The fabric doesn't restrict movement and it breathes nicely, and the contents of the pockets remain dry."

Submersible Sump Pump

MEMBER RATING: 9.4 BEST FEATURE: DURABILITY

WAYNE PUMPS, 800-237-0987, WWW.WAYNEPUMPS.COM

The Wayne 3/4-hp Submersible Stainless Steel/Cast Iron Sump Pump (\$260) will replace most submersible sump pumps without any plumbing changes and uses less energy than other sump pumps. It features new, completely sealed iSwitch technology with a microprocessor-controlled sensor that detects water levels and will not wear out or corrode over time. It lasts five times longer than traditional mechanical switches and can endure more than a million on/off cycles.

Larry Lowe, Mansfield, SD: "The Wayne 3/4-hp submersible sump pump installed in about 10 minutes and pumps water very quickly."

Robert Jackson, Oak Creek, WI: "We had heavy rains right after I installed the sump pump, and it worked flawlessly. It's very reliable, which is what you want in a sump pump."



Saw Guide

MEMBER RATING: 8.4 BEST FEATURE: PERFORMANCE

MILESCRAFT INC., (847) 683-9200, WWW.MILESCRAFT.COM

The SawGuide (\$9.99) simplifies fence-guided cutting by combining four bars and two sets of specially designed clamps into one kit that will fit on most jigsaws and circular saws. It includes an incremental trim feature that allows you to adjust the cut by 1/8 in. without any tools, it can guide cuts up to 10 in. from the edge with left- or right-hand operation, and it comes with a circle compass for jigsaws.

Donald McClintock, Schuylkill Haven, PA: "The SawGuide's ability to fit so many different types and brands of tools is outstanding."

David Callaway, Altoona, WI: "Cutting circles and semicircles with a jigsaw was a snap, and I didn't even have to change fences."

Serrated Knife

MEMBER RATING: 8.6

BEST FEATURE: CUTTING POWER

**SCHRADE KNIVES/TAYLOR BRANDS LLC,
800-251-0254, WWW.TAYLORBRANDSLLC.COM**

The Smith & Wesson Executive Serrated Knife (\$29.99 for model CK110BS) features a 2.8-in. serrated stainless steel blade with a black titanium finish. Other features include a thumb knob, a Linerlock, a pocket clip, ridges along the top and bottom for a secure grip, and a stainless steel handle with a black titanium finish.

Weston Pullen, Holyoke, MA: "This Smith & Wesson fits nicely in my hand. The serrated portion is very useful."

Todd Walker, Troy, MI: "The knife's slim profile makes it easy to carry, and the serrated blade is great for cutting rope and other fibrous materials."



Pool-Gate Latch and Self-Closing Gate Hinges

MEMBER RATING: 8.9 BEST FEATURE: PROTECTION OF CHILDREN

D&D TECHNOLOGIES, 800-716-0888, WWW.DDTECHGLOBAL.COM

Designed specifically for securing gates around swimming pools, the MagnaLatch pool-gate latch (\$69.97) uses strong permanent magnets to eliminate the possibility of mechanical jamming while closing. It meets all pool-safety codes and has been tested to 400,000 open-and-close cycles. TruClose self-closing gate hinges (\$25.97 to \$32.95) are tension-adjustable and can close gates weighing as much as 132 pounds. Both products are rust-resistant and backed by a limited lifetime warranty.

Bob Walter, Gilbert, AZ: “With the MagnaLatch and TruClose hinges, my wife and I finally have peace of mind knowing that our pool gate is securely closed and locked.”

John Velilla, Tarpon Springs, FL: “After installing the latch and hinges, I invited the neighbors’ kids over to my pool and asked them to try to get past the gate. Needless to say, none of them could get in!”



Vinyl Floor Tiles

MEMBER RATING: 9.4 BEST FEATURE: PERFORMANCE

BETTER LIFE TECHNOLOGY LLC, (913) 894-0403, WWW.BLTLLC.COM

Easy-to-clean RaceDay Peel & Stick Vinyl Floor Tiles (up to \$3.60 a square foot) are durable vinyl squares that hide imperfections such as cracks and stains and help to protect floors. They are easy to install and improve the appearance and functionality of a garage, shop or work area. The tiles act as both a floor cushion and a vapor barrier, will adhere to uneven areas and come with a five-year warranty.

Kenneth Kessler, Haslet, TX: “The RaceDay Peel & Stick Vinyl Floor Tiles were very easy to install and instantly transformed my garage from a ‘car barn’ to a great-looking room.”

Warren Lempicki, Toney, AL: “The tiles feel soft underfoot and are extremely durable.”

LED Flashlight

MEMBER RATING: 8.9 BEST FEATURE: AMOUNT OF LIGHT

STREAMLIGHT INC., 800-523-7488, WWW.STREAMLIGHT.COM

Streamlight’s ProPolymer 4AA LED Flashlight (\$43) uses seven ultra-bright LEDs to deliver 67 lumens for up to 155 hours. Its water-resistant polymer construction is lightweight, compact and shock-resistant. Other features include a rubber face cap, an unbreakable polycarbonate lens with scratch-resistant coating and an ergonomic handle for comfort.

Larry Withers, Derwood, MD: “I’m a flashlight nut, and the ProPolymer 4AA LED Flashlight’s durability, light output and sealed construction far surpass any other flashlight that can fit in a pocket.”

David Callahan, Avon, IN: “This flashlight outshines others in brightness, durability, shape, size and battery life.”



Handheld Showerhead

MEMBER RATING: 8.5 BEST FEATURE: EASE OF USE

ETL, (775) 398-7680, WWW.OXYGENICS.COM/HANDY

Available in five finishes, the handheld Oxygenics Evolution Series showerhead (\$64.95, available at Do-It-Best) has a push-button spray selector that offers four powerful spray options. Its oval head rotates 360 degrees and infuses oxygen into the water stream, increasing the velocity of the flow and helping to conserve water. It also comes with a lifetime performance warranty against clogging.

Jeff Wise, Circleville, OH: “Oxygenics’ Evolution Series showerhead offers a good selection of spray options that immediately increased my water pressure.”

Nathan DiDonato, North Wales, PA: “The rotating head combined with the push-button spray selector provides an unprecedented showering experience while conserving water.” ♦

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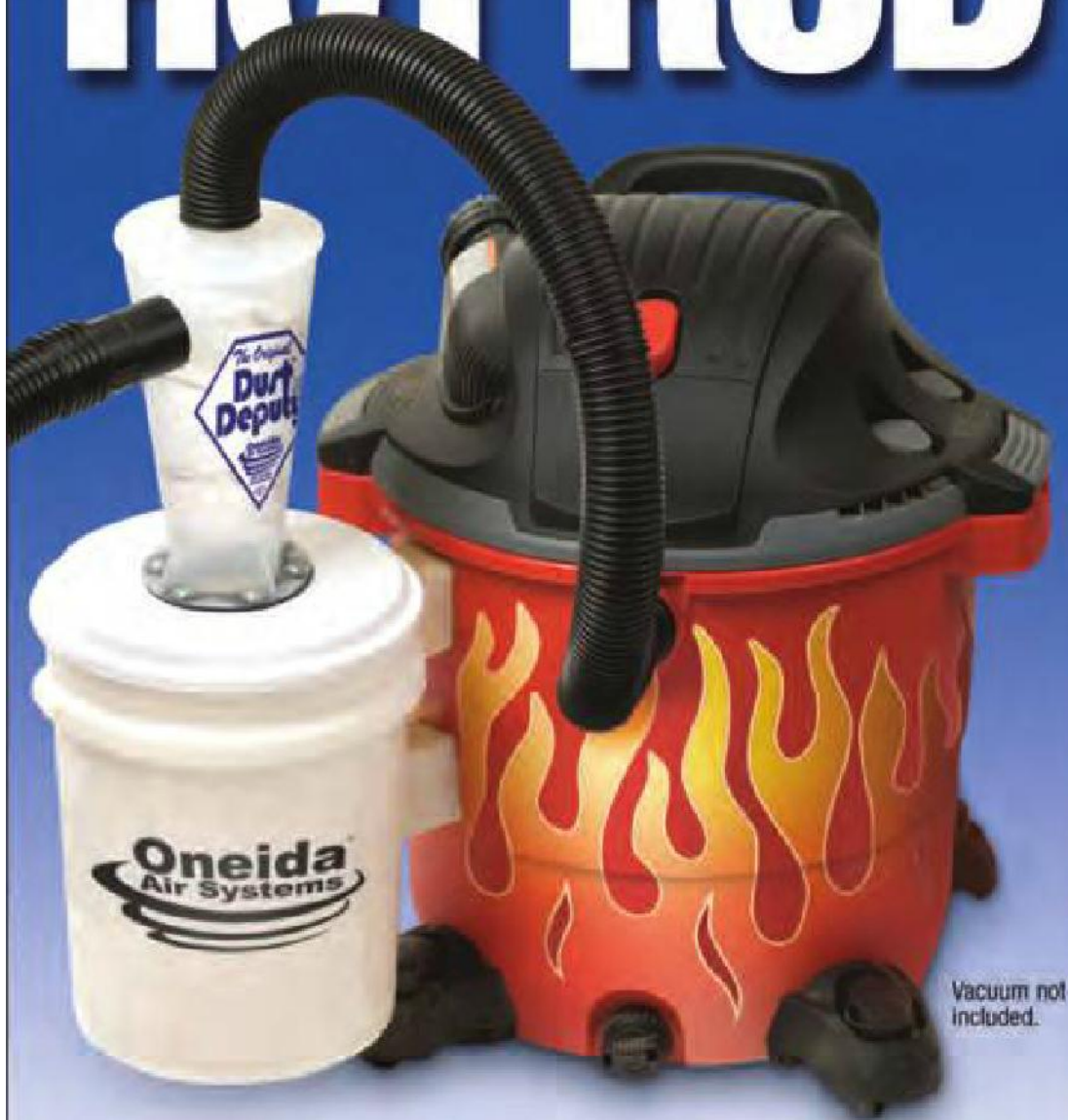
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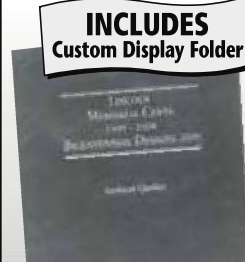
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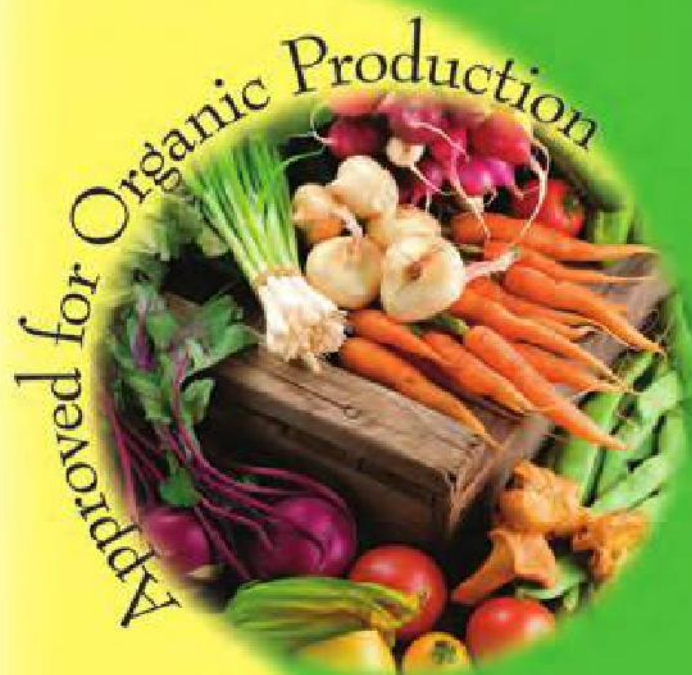
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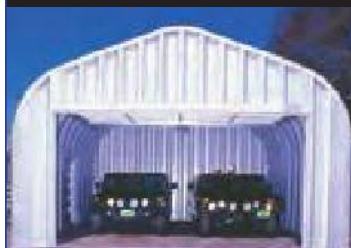


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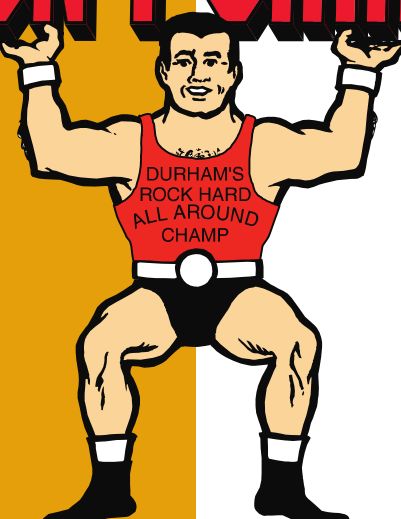
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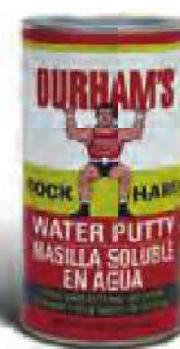


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Pencil Points

The story of the everyday writing instrument — a toolbox essential — is anything but dull

BY CONNIE BASTYR



Objects that we have in abundance

— such as toilet paper, writing paper and pencils — garner respect only if they're scarce. That's when we seem to recognize their indispensability. Take for example the pencil: easy to come by, hard to go without. Although you may not consider it to be a handyman's tool, it is essential, and probably the first toolbox item you learned to use.

Think of the last time you misplaced your pencil and needed to mark a cutline, record a measurement, draw a design or write a shopping list. A missing pencil can bring shop operations to a halt. So let's give due attention to the tool that's vital for every school box and toolbox: the pencil.

Point number one: The "lead" is a blend of graphite and clay, not lead. That misnomer can be traced to the ancient writing instrument the stylus, a stick of actual lead used to mark papyrus. (Today, the word *lead* is considered an acceptable term to describe the graphite-based cores of modern pencils.)

It was the discovery of a large deposit of pure graphite near Cumbria, England, in the early 1500s that ultimately spurred modern pencil design and production. The solid substance was sliced into thin sticks and wrapped in string or sheepskin to prevent it from breaking and from soiling users' hands.

England remained the primary source of pencils until 1662, when German manufacturers discovered a way to form a solid strand of the marking medium by combining the more readily available graphite powder with clay. The French, unable to import graphite from England or Germany during the Napoleonic wars, formulated a superior recipe for a granite-composite core in 1795.

Point number two: Pencils are not made by inserting graphite into hollowed wooden sticks; they're assembled sandwich-style. Although the Italians were first to successfully encase graphite in wood by hollowing a juniper stick and inserting a strip of graphite, by the mid-1600s



The oldest known pencil (found in a timber-frame house built in 1630) reveals its graphite-sandwich construction. The shape resembles today's carpenter-pencil design, which woodworkers and carpenters appreciate because the flat sides prevent it from rolling off of roofs and workbenches.

HANDY FACTS

Before French scientists discovered during the 1770s that rubber worked as an eraser, people used bread crumbs to delete pencil markings from paper. The practice of attaching erasers to pencils didn't catch on until 1858. Apparently, teachers resisted the idea at first because they thought it would foster writing errors.

all pencil makers used a more efficient method: cutting channels in slats of wood, inserting strips of graphite (or compressed graphite powder) and then adhering the slats together. This technique allowed for the first mechanized production of pencils.

As during the Napoleonic wars, politics and pencils again intertwined when American colonists could not import the writing instruments from England during the War of 1812. This prompted Boston cabinetmaker

William Monroe to become the first U.S. pencil producer (in 1812). A pencil industry later flourished in New England: Eberhard Faber opened a large factory in Jersey City in 1861, and Joseph Dixon expanded pencil production with

the purchase of a graphite company in Ticonderoga, New York, during the 1870s. Eventually the industry was drawn to Tennessee, a source of Eastern red cedar, the preferred pencil casing at the time.

Point number three: Despite early predictions, neither the ink pen nor the computer has diminished the pencil's prevalence. According to the Early Office Museum, during the 1870s Americans used 20 million pencils each year; since then annual pencil consumption has increased to approximately 2.8 billion. Worldwide, more than 14 billion pencils are made annually to ensure that artists, students, teachers, architects, builders, woodworkers and handy people can keep drawing, learning, teaching, designing, building and working. ♦



WEB EXTRAS

For a video about how pencils are made today, go to www.HandymanClub.com and click on WEB EXTRAS.



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