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p. 42



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Workbench**

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Mighty metal cutting

Paint-removal maneuvers

Build a bodacious bling board

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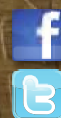
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DECEMBER 2011/JANUARY 2012

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CONTENTS

FEATURES

The "Perfect" Garage Shop 14

Create your ideal workspace using ideas and inspiration from the shops of four *HANDY* staffers

Home-Improvement Heroes 22

This year's *HANDY* Innovation Awards celebrate 10 powerful performers (plus 14 honorable-mention-worthy offerings)



14



38



36

MEMBER FORUM

Great Giveaway.....	42
Member Benefits	46
Quiz.....	47
Expert Answers.....	48
HandyWorks/GoodWorks	50
Tip Trader	52
Member Tested.....	53

Find MEMBER MAIL
at www.HandymanClub.com.



44



22

DEPARTMENTS

Clubhouse: Taking Safety Seriously 2
Who's minding your well-being?

Workshop: Traditional Workbench 4
Build a workshop classic

Garage: A Clean Act 30
Sifting through oil filter options

Metalshop: Cutting Tin 32
Use the right tools and techniques for the job

Projects: Sun-Fed Shed 36
Solar power lights up a storage space

Skills: Paint Stripping 38
How to undo a finish

Skills: Shop Savvy Tips 43
Simple suggestions for super results

Projects: Bling Board 44
Jewelry storage made easy

Histories: Nail Notes 60
The making of metal fasteners

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Traditional Workbench

BY LARRY OKREND

An heirloom project to build on



Building a traditional workbench is a challenge that employs all of your woodworking skills, but the result can last a lifetime and will serve you like no other project can.

A traditional cabinetmaker's bench is much more than a work surface — it's really the biggest tool in your workshop. It clamps, aligns, supports and holds project pieces from start to finish. It's also furniture for your shop. And like any good furniture, it should be sturdy, square and durable — after all, it must withstand great physical demands.

You can build a workbench that will serve all of these purposes. It's a fairly ambitious project that takes about 30 to 60 hours to complete, but the time you invest in making it will pay off in years of service. The bench shown in this article has

definitely stood the test of time: I designed and built it about 16 years ago, and it has been the functional centerpiece of my shop ever since.

Gather tools and materials

Building this workbench requires intermediate to advanced woodworking skills and a good selection of tools. If you're a dedicated woodworker, you may already have what you need: a band saw, a table saw, a jointer, a planer, a plunge router, a biscuit joiner and various hand tools. Depending on your preferred work methods, you may be able to build the bench with fewer tools — the array suggested simply makes

the job more convenient.

You'll need about 80 bf of 12/4 (3-in.) hard maple or a similar hard, heavy and moderately stable wood. (Light-colored wood creates a work surface that's easier on your eyes.) If you can't find thick stock, you can glue thinner pieces together. Another alternative is to buy a manufactured bench top online or from a local lumber dealer. However, the top's size and thickness may differ from these plans, so you may need to modify the size of the base and the way the vise hardware mounts. Be sure to purchase all of the hardware before you start construction to ensure a proper fit.

PHOTOGRAPHY BY MICHAEL ANDERSON



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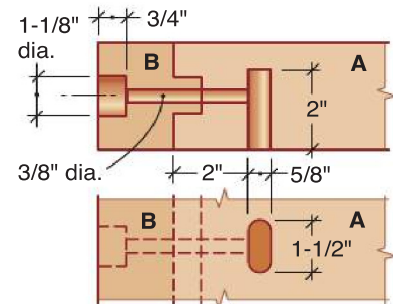
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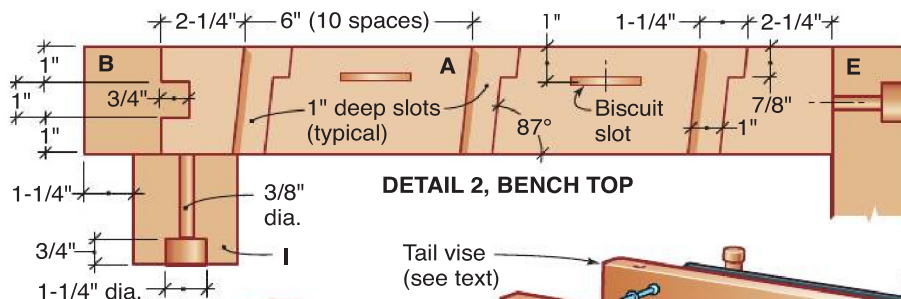


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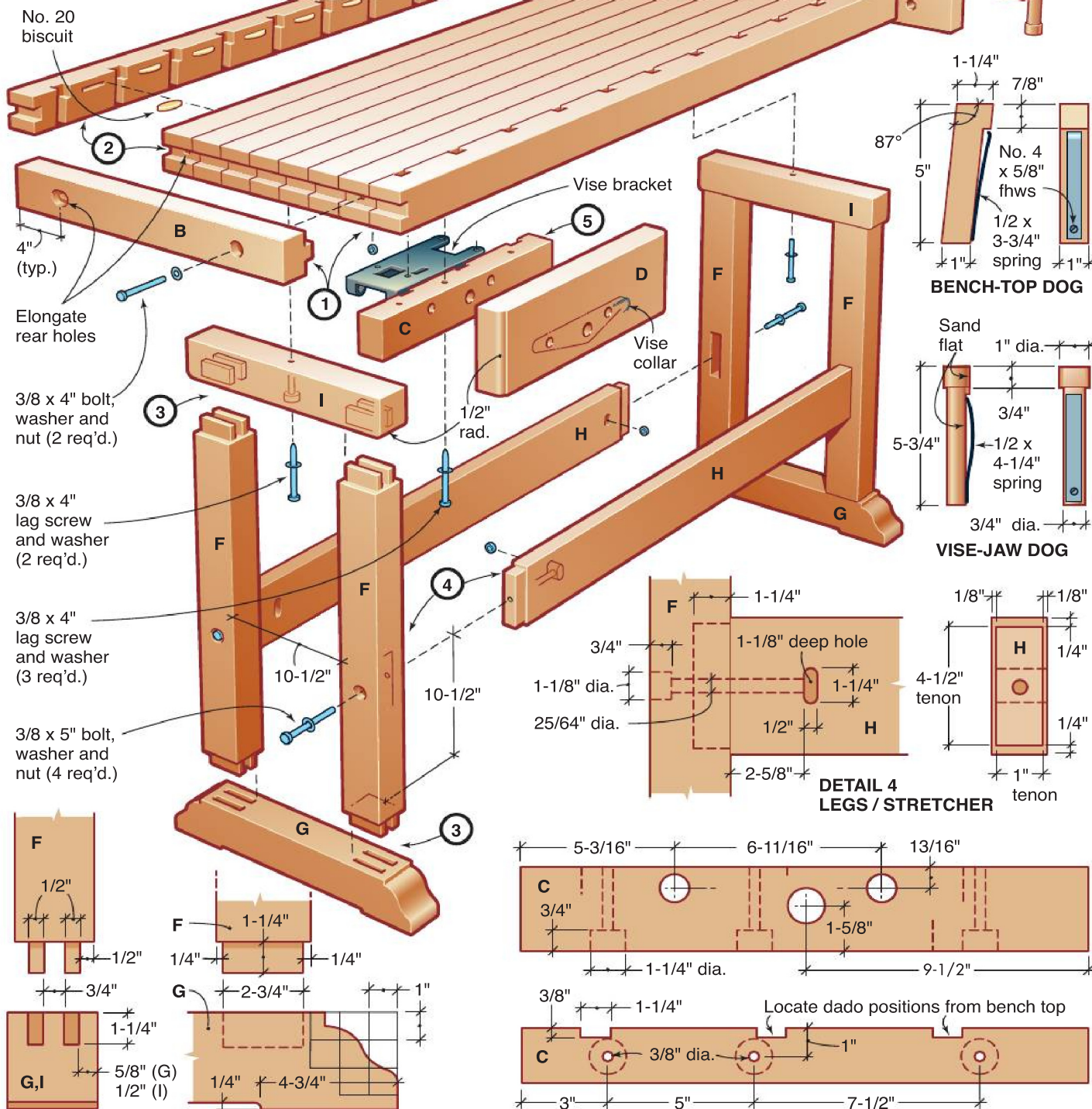
TRADITIONAL WORKBENCH



DETAIL 1, END CAP



DETAIL 2, BENCH TOP



DETAIL 3, FEET / LEGS / RAILS

DETAIL 5, FRONT VISE BENCH SLEEVE

ILLUSTRATION BY GABRIEL GRAPHICS

I used a large, traditional Veritas single-screw front vise and a Veritas twin-screw tail vise (see illustration, opposite, and SOURCES ONLINE). The twin-screw design prevents the vise jaw from racking to maintain even pressure on the workpiece. Although I made my own bench dogs, you can save some time by buying them. If you do, be sure to size the dog holes accordingly.

Rough out the parts

For the parts to fit together properly, it's essential that they be straight, flat and square. If you're starting with rough stock, use a band saw to resaw the lumber to approximate size for the bench parts. The pieces should be oversize to allow for milling waste. Sawing often releases tension in the wood, which can cause the stock to bow or twist. Let the wood sit for at least a few days in your shop to stabilize before milling it to size.

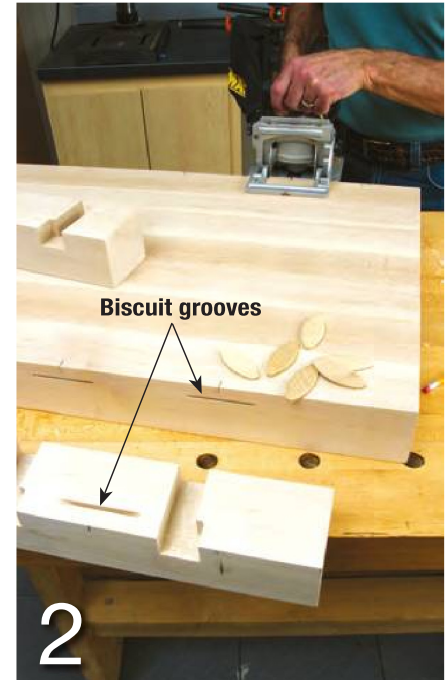
To make a bench top that is strong, wears well and experiences minimal wood movement, you should mill the parts so that the annual rings run vertically (typically referred to as quartersawn wood). This puts the fine, tight grain on the top and bottom of the bench; the wide-grain (plain-sawn) sides are glued together. The same principle holds true for the stand: For stability, orient the quartersawn sides vertically (feet, stretchers and top rails) or toward the front (legs).

Make the top

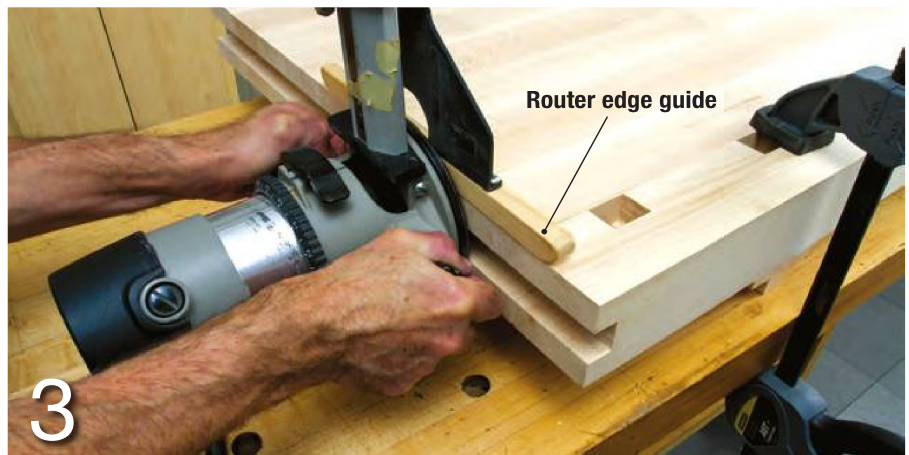
The top is the most important and time-consuming part of the workbench to make. To keep waste to



1 Use a jig (see illustration, p. 10) and a router with a straight bit and a guide bushing to cut the bench-dog holes in the two outside bench-top laminations.



2 Use a plate joiner to cut biscuit grooves in the bench-top laminations. The biscuits don't add strength; they align the pieces to make assembly and milling much easier.



3 After squaring the end of the assembled top, cut the groove for the end cap (B) with a router outfitted with a straight bit and an edge guide. Make multiple passes to achieve the required dimensions.

CUTTING LIST (all parts maple)

KEY NO.	DESCRIPTION	SIZE
Top		
A 9	Bench-top laminations	2-11/16 x 3 x 66 in.*
B 1	Bench end cap	2-3/4 x 3 x 24 in.
C 1	Front-vise bench sleeve	2 x 3 x 19 in.
D 1	Front-vise jaw	2-1/2 x 6 x 19 in.
E 2	Tail-vise jaws	2 x 6-3/4 x 24 in.
Stand		
F 4	Legs	2-3/4 x 3-1/4 x 27 in.
G 2	Feet	3 x 3-1/2 x 23 in.
H 2	Stretchers	1-1/4 x 5 x 51 in.
I 2	Top rails	2-3/4 x 3 x 18 in.

*2-11/16-in. dimension is nominal; total width of stacked bench-top laminations is 24 in.

SHOPPING LIST

Front vise (see SOURCES ONLINE)
Tail vise (see SOURCES ONLINE)
Bench stops (see SOURCES ONLINE)
80 bf of 12/4 maple
No. 20 plate-joining biscuits
3/8 x 4-in. bolts (2)
3/8 x 5-in. bolts (4)
3/8-in. nuts (6)
3/8-in. washers (17)
3/8 x 4-in. lag screws (5)
Bench dogs, including 1/2 x 3-3/4-in. springs.
1/2 x 4-1/4-in. springs
No. 4 x 5/8-in. fhws

TUBO' TOUGH



Don't call them wipes!

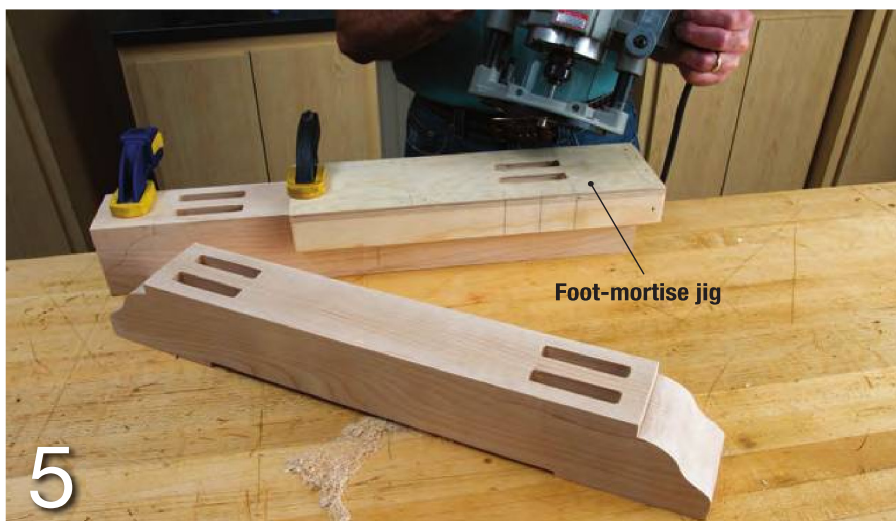
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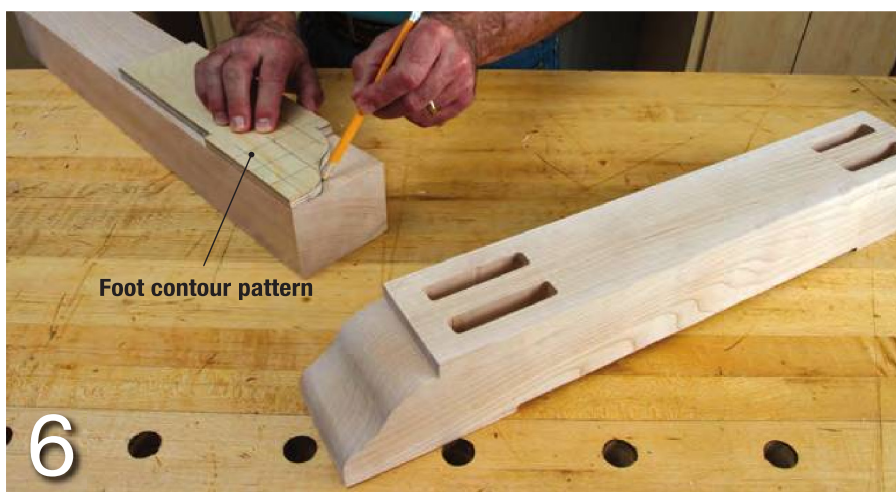


Once you've cut the end-cap groove in the top, cut the mating tongue in the end cap on a table saw. Make the cut on the outside of the blade, not against the fence, to avoid kickback. (The blade guard has been removed for photo clarity.)



Foot-mortise jig

Cut the leg mortises in the feet for the leg tenons with a router outfitted with a straight bit and guide bushing. Use a jig (see illustration, below) to guide the cut. You'll cut the contours in the feet after making the mortises.



Foot contour pattern

Make a hardboard pattern for the foot contours; then trace the shapes onto the workpiece. Mark all sides so you can cut and sand to the line on both sides.

a minimum and produce a flat top that needs little sanding or planing, follow the steps outlined below.

First, joint and plane the bench-top laminations (A) to their exact thickness and width but about 1/16 in. longer than the length

in the cutting list. Mill the bench end cap (B) at the same time.

Next, arrange the pieces in the order that they should be assembled, and mark them so they don't get mixed up. Then mark the positions of the plate-joining biscuits

on all of the pieces, and mark the dog-hole positions on the outside pieces (see illustration, p. 6).

The best way to quickly cut the square dog holes is with a couple of simple router jigs — one for the left side and one for the right side (see illustration, p. 10). These can be nothing more than two pieces of 1/2-in. plywood nailed to scrap-wood blocks that fit snugly against the workpieces. Use a straight bit for the cut and a router template bushing to ride against the plywood. (The space between the plywood pieces depends on the diameter of the bit and the size of the template bushing.) The holes are angled toward the tail vise so the dogs can get a better bite on the workpiece. If this is too much work, you can opt for round dog holes.

Next, cut the kerfs for the plate-joining biscuits in the bench-top laminations. (The biscuits keep the parts perfectly aligned during assembly.) If you don't have a plate joiner, use strips of 1/4-in. plywood and cut the grooves with a router.

Rather than attempting to glue all of the bench-top pieces together at once, I assembled them in three sections and then glued those sections together. This made the procedure less rushed and more accurate.

Sand or scrape off any glue squeeze-out to level the top. Then clamp a straightedge fence to the top and use a straight bit to square the ends of the top. Rout the groove for the bench end cap in the left end of the top using an edge guide and a straight bit. (A spiral-cut end mill works well.) You can do this with the top resting flat (see photo 3, p. 7) or with it standing on end.

Drill the counterbores and holes for the bolts in the end cap; then cut the tongue to match the groove in the top (see photo 4, opposite). Rout the slotted holes that are opposite the bolt holes in the bottom of the bench top (see illustration, detail 1). Position the end cap; then drill holes into the top using the end-cap holes as guides. Elongate the rear (left) hole in the top to allow for wood movement. Install the

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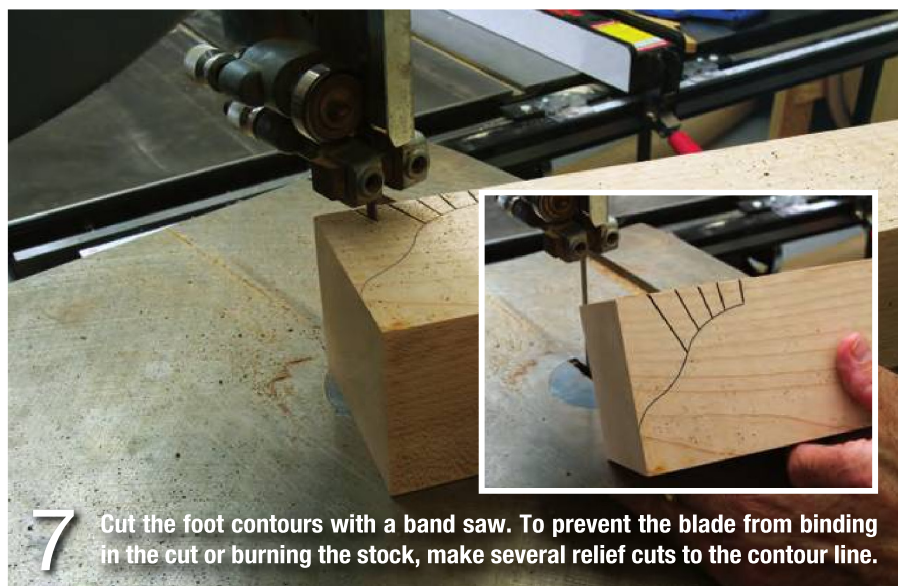
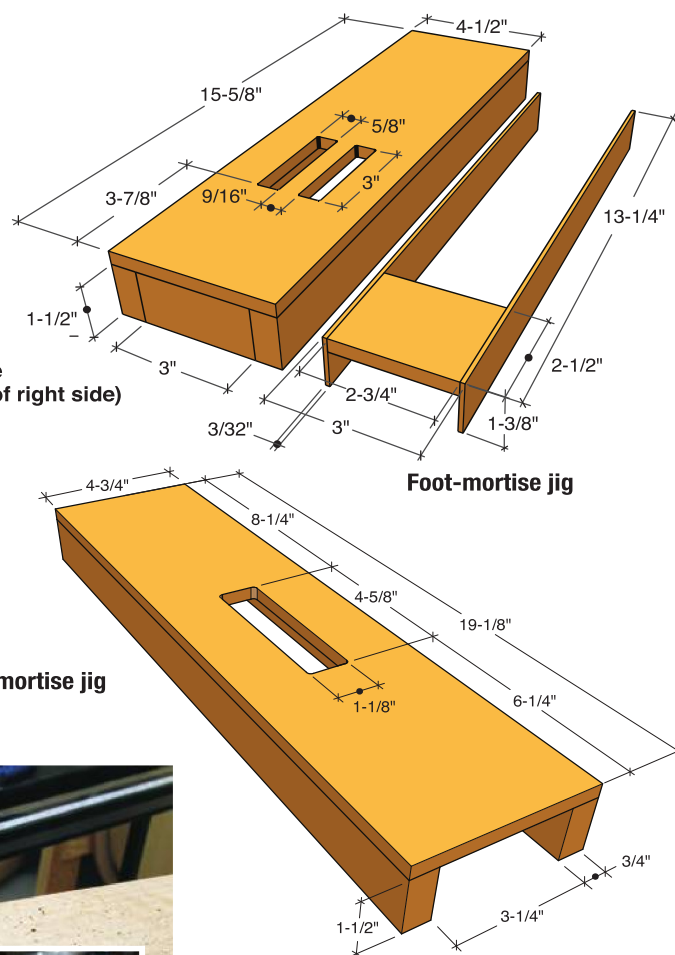
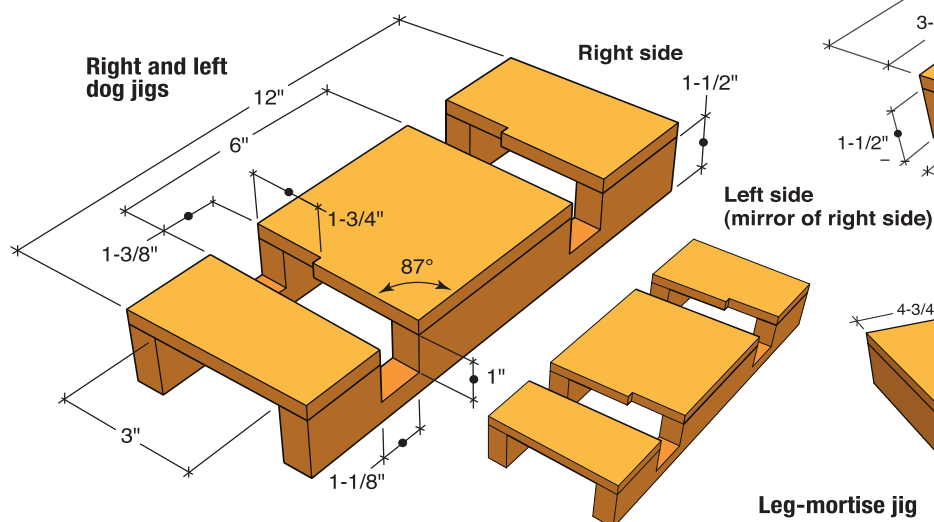
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ROUTER JIGS



7 Cut the foot contours with a band saw. To prevent the blade from binding in the cut or burning the stock, make several relief cuts to the contour line.



8 Before finishing the stand joinery, test fit the legs, feet and top rails to ensure a good fit. Make necessary adjustments with a sharp chisel.

end cap by bolting it to the top. (Do not use glue.)

Installing the vises varies according to the models you purchase. (If you use the same ones that are on this bench, use the illustration as a guide.) The Veritas twin-screw vise I installed necessitated that I use round bench dogs rather than the square ones I used for the top. That's because the required 2-in.-thick jaw isn't quite wide enough to accommodate the angled holes for the square dogs. Although a little quirky, it's only an aesthetic compromise, not a functional one.

Don't rush through installing the vises — they must be mounted and adjusted properly to work effectively. Getting a vise to work smoothly can be tricky and requires patience. Be sure not to cover any dog holes with the front-vise-mounting bracket. To ensure a good grip, use a hand plane to taper the front-vise jaw slightly so it's a little thicker on the top than on the bottom. Once the jaw is mounted and working smoothly, plane the top edge so it's flush with the top of the bench.

ILLUSTRATION BY MICHAEL ANDERSON



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

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

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Take VIAGRA about one hour before you want to have sex. VIAGRA works for 4 hours. VIAGRA only works with stimulation.

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

*Data taken from a study of 228 men with ED who previously had success with VIAGRA. Of the 115 men who took VIAGRA 100mg, 35% had erections hard enough for successful intercourse at 14 minutes, and 51% of men at 20 minutes.

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ABOUT ERECTILE DYSFUNCTION (ED)

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

ABOUT VIAGRA

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

VIAGRA does not cure ED.

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

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Who should take VIAGRA?

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- If you are allergic to anything in the VIAGRA tablet

BEFORE YOU START VIAGRA

Tell your doctor if you have or ever had:

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

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

- Medicines called alpha-blockers to treat high blood pressure or prostate problems. Your blood pressure could suddenly get too low. You could get dizzy or faint. Your doctor may start you on a lower dose of VIAGRA.
- Medicines called protease inhibitors for HIV. Your doctor may prescribe a 25 mg dose. Your doctor may limit VIAGRA to 25 mg in a 48-hour period.
- Other methods to cause erections. These include pills, injections, implants, or pumps.
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- Headache
- Feeling flushed
- Upset stomach

Less common side effects are:

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

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

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

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

HOW TO TAKE VIAGRA

Do:

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

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- Do not take VIAGRA more than once a day.
- Do not take more VIAGRA than your doctor tells you. If you think you need more VIAGRA, talk with your doctor.
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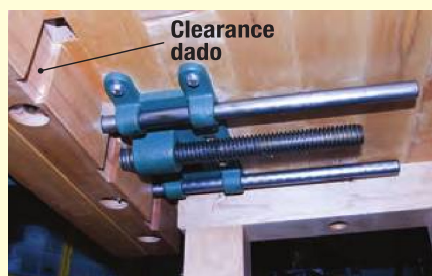
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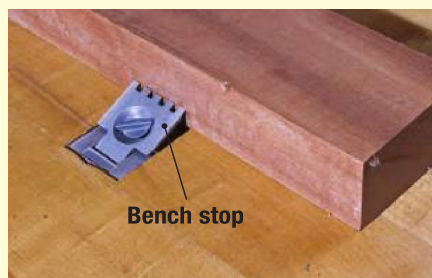
CUSTOM TOUCHES



Although it's not shown in the plan, this simple tray mounted to the workbench top provides ready access to frequently used small tools such as a tape measure, pencils and a utility knife. You can make the tray any size to accommodate your needs.



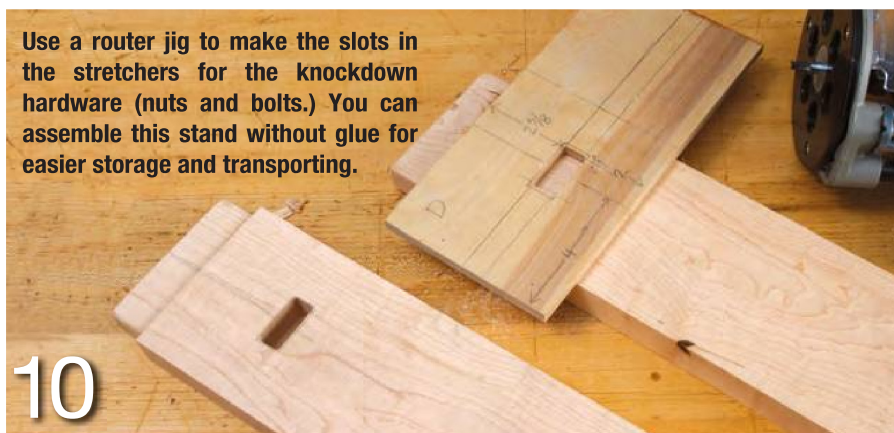
Mounting the front vise takes patience and precision. Be sure to pay attention to details such as the clearance dados for the bench dogs in the front-vise bench sleeve (see illustration). Also take care in tapering the jaws to achieve a secure grip (see text).



A mortised bench stop (see **SOURCES ONLINE**) can be a useful device to brace workpieces perpendicular to the length of the bench top. To mount a stop, simply bore a hole for the screw-down mechanism and cut a shallow mortise with a chisel or router.



The mortises in the legs that accept the stretchers (H) can be cut with a router and jig. The joints should be snug but not too tight.



Use a router jig to make the slots in the stretchers for the knockdown hardware (nuts and bolts.) You can assemble this stand without glue for easier storage and transporting.

Make the stand

A sturdy set of legs for the bench is essential, so build the stand carefully. If you're familiar with making mortise-and-tenon joints, constructing the stand shouldn't be difficult. I used a router to cut the mortises; then I cut the tenons on a table saw.

The procedure for boring the bolt holes in the legs (F) and stretchers (H) is essentially the same one used for boring holes to attach the end cap to the bench top. If you want a stand that can be disassembled, don't glue the stretcher/leg joints. Before you assemble the stand, bore all of the holes, including those in the top rails (I) that are needed to bolt the stand to the bench top.

Once you've completed the stand and attached the top, cut mortises for the optional bench stops (see **SOURCES ONLINE**). These are useful for bracing workpieces perpendicular to the length

of the bench. Place them wherever they'll do the most good.

You can buy bench dogs or you can make your own. It doesn't take long to make them, and it's a relaxing break after building this bench. See the illustration for details.

Finishing is optional, but it will enhance the appearance of the bench and offer some protection. I used a clear water-base finish for the stand and Danish oil on the top because it can be easily renewed. Be sure to apply oil to all surfaces of the top. Don't worry about occasional nicks and dings — after all, this is a workbench, and the resulting patina shows admirers that you're a real woodworker. ♦

SOURCES ONLINE

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

Lee Valley

(Veritas twin-screw vise, Veritas large front vise, mortised bench stops), 800-871-8158
www.leevalley.com

The “Perfect” Garage Shop

Whatever your passion, you can create the ideal work area in less space than you might think

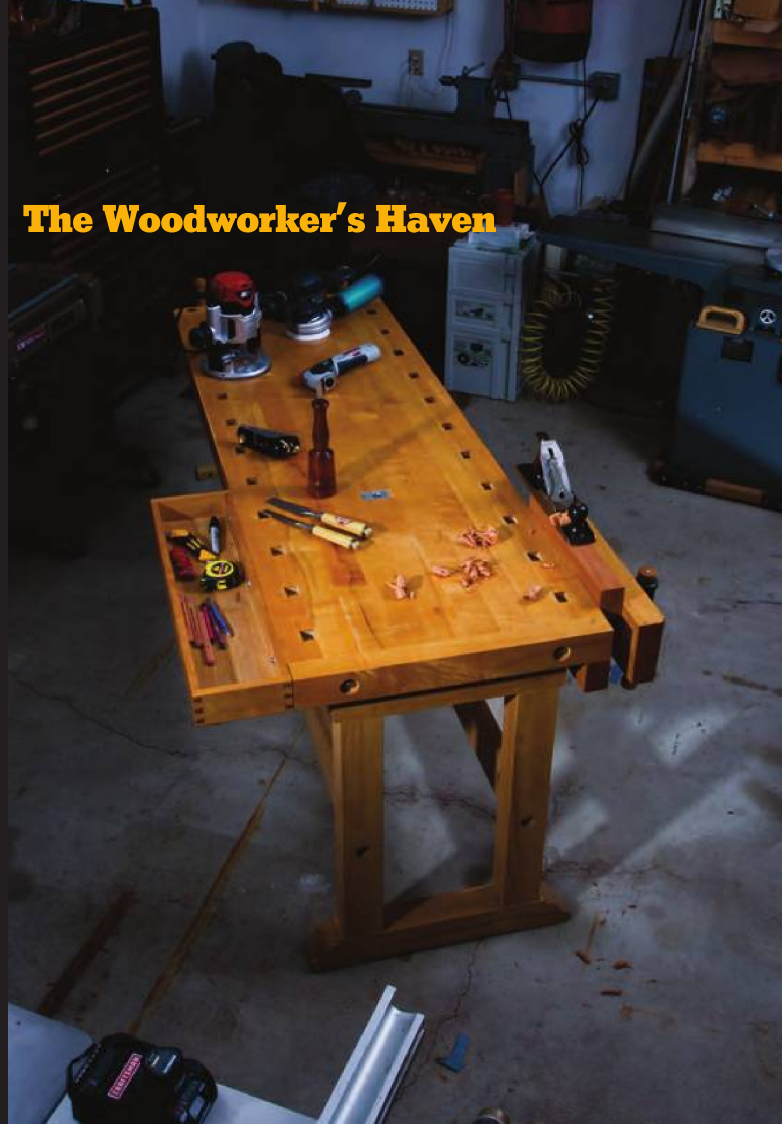
BY MIKE BERGER



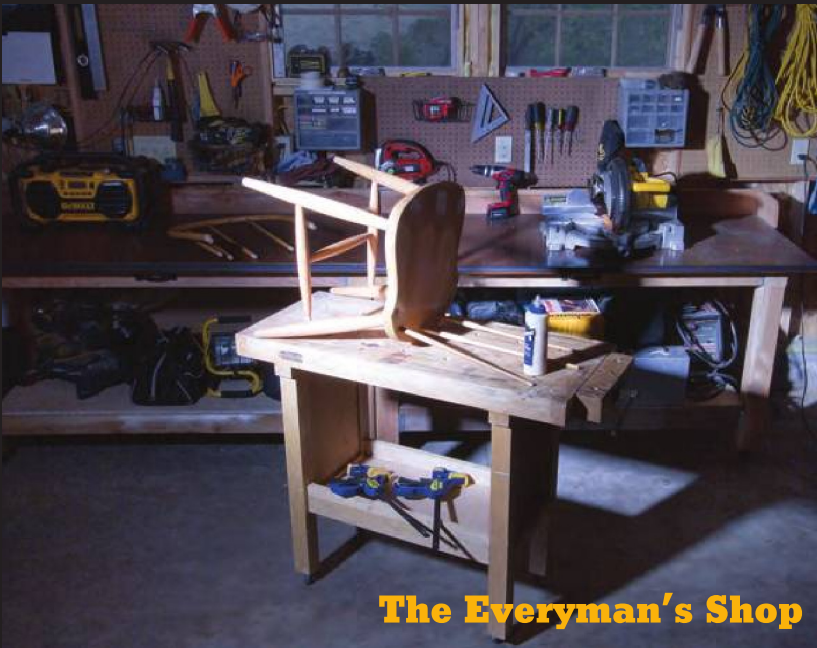
When it comes to setting up a space to indulge our DIY tendencies, very few of us have the excess square footage for a dedicated shop. Instead, most of us are forced to set up a shop space in our garages. And contrary to what many magazine articles and books may claim, there's no such thing as *the* perfect garage shop. Every DIYer has different workspace requirements based on his or her activities. The idea is to set up a shop that perfectly suits *your* needs.

Whether you're a woodworker or a metalsmith, a mechanic or a jack-of-all-trades, you can set up a space that enables you to pursue your interests and is an extension of your personality. Take for example the following four garage workspaces that belong to *HANDY* staffers. They're real shops, not sanitized, glorified sets made to look photogenic. Each one is designed to meet the specific needs of the person who uses it. In reading the tips from these shops' creators, you're bound to find a few great ideas that you can incorporate into your own shop space.

The Woodworker's Haven



The Everyman's Shop



The Man Cave





GEARHEAD'S SHOP ESSENTIALS

- 1 Subpanel with adequate power
- 2 Large-capacity air compressor
- 3 Inline air filter
- 4 Inline air desiccator
- 5 Resilient, chemical-resistant floor
- 6 Plenty of tool storage
- 7 Fire extinguisher

The Gearhead's Grotto

When my wife and I bought our house, the two-car garage was a barren, uninsulated space with open stud bays. Over time, I've transformed it into a great space for working on metal, motorcycles and more.

A dedicated 60-amp subpanel provides plenty of power for a MIG welder, a plasma cutter and an air compressor. G-Floor roll-out polyvinyl flooring (see SOURCES ONLINE) gives the space an attractive look, and it's resilient underfoot, making it more comfortable for me to stand for long periods.

A built-in air system that incorporates a filter, a desiccator and ceiling-mounted pull-down hoses delivers plenty of clean, dry air to my tools and paint guns. Operable acrylic-block windows provide lots of natural light and ventilation while preventing unwanted eyes from seeing all the goodies I keep in the garage. And two banks of high-output fluorescent lights (each with six 32-watt T8 daylight bulbs) effectively illuminate each bay.

Overhead cabinets and rolling tool chests provide plenty of storage for all of my tools and equipment. The funky red lower cabinets and workbench are heirloom pieces: The cabinets were the original base cabinets from my wife's grandfather's kitchen, and the bench is made from 75-year-old scaffolding planks that I sanded, stained and coated with spar urethane.



Scan this code with your smartphone to learn how to install G-Floor's roll-out polyvinyl flooring.



Scan this code with your smartphone to learn how to install a subpanel.

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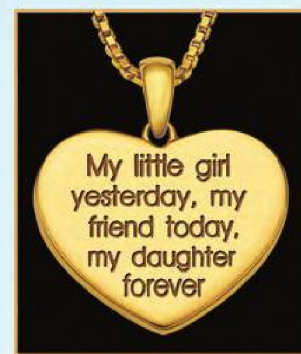
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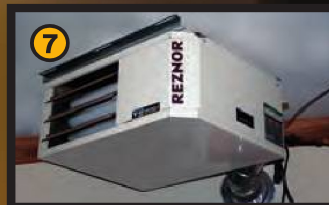
The Man Cave

Art Director Michael Anderson designed his garage shop to be his ideal “man cave.” The space functions nicely as a work area (thanks to its solid-maple bench and scads of storage lockers and cabinets), and it doubles as a place for entertaining.

All of the large tools are mobile so that they can be stored against a wall where they’re out of the way, and smaller benchtop tools can be tucked away in the tall lockers. A refrigerator, a ceiling-mounted natural-gas heater and a wall-mounted flat-screen television create an environment where friends want to hang out. Vintage and reproduction tin signs, a touch of neon and a popcorn maker give the space a funky, fun ambience.

“The key to my garage design was to keep as much as possible off of the floor,” Michael says. “Even the base cabinets and lockers are suspended from the back wall, which helps to make the garage look bigger than it really is.”

A final high-end touch is the polyaspartic floor coating. It’s impervious to road salts and chemical spills, it’s not susceptible to hot-tire failure (a problem for many epoxy floor coatings) and it’s easy to keep clean.



MAN CAVE ESSENTIALS

- ① Lots of storage
- ② Suspended cabinetry
- ③ Easy-to-clean floor
- ④ Television (of course)
- ⑤ Refrigerator (duh!)
- ⑥ Decorative items for style
- ⑦ Heater



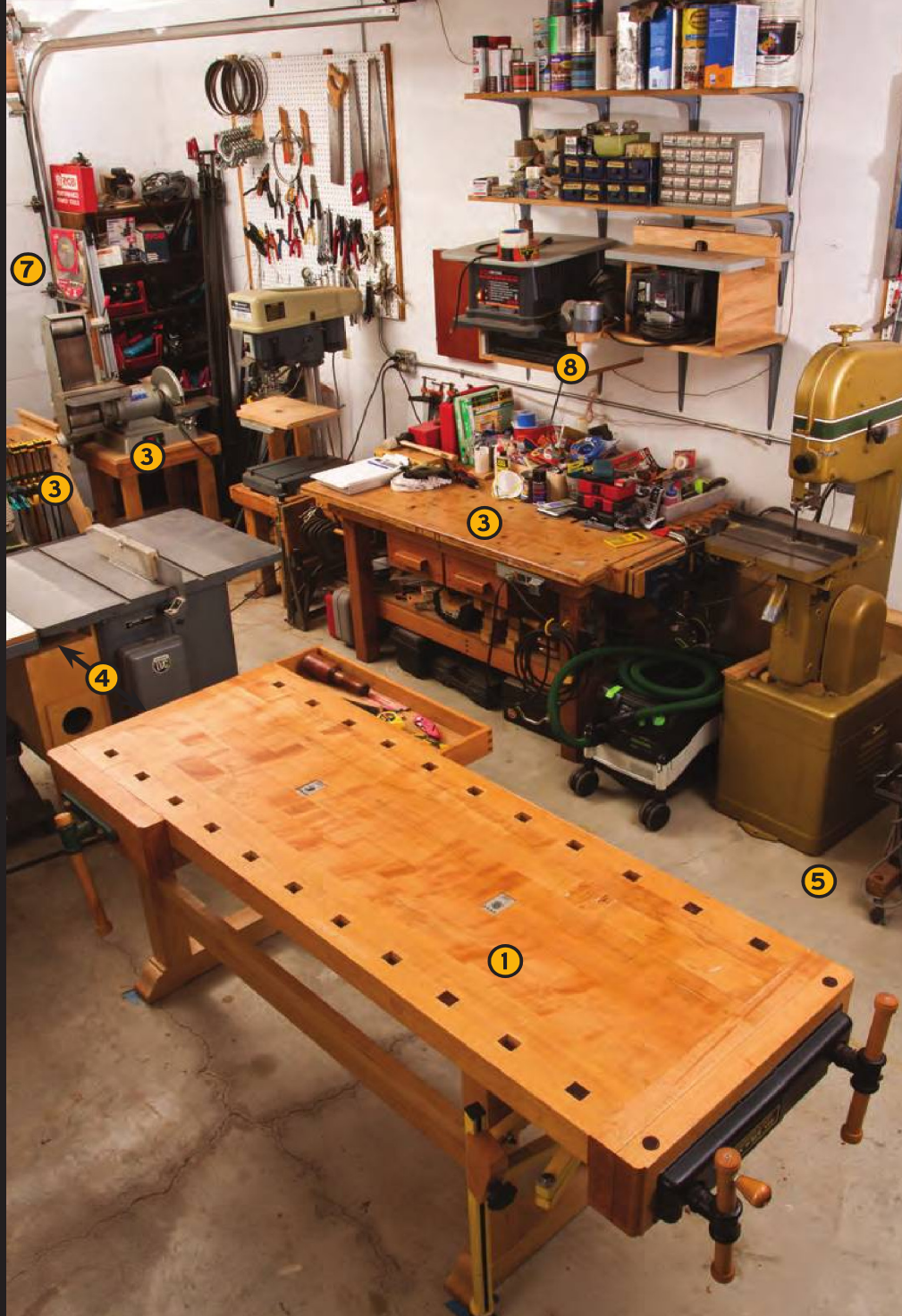
The Woodworker's Haven

Editor in Chief Larry Okrend transformed the unused 15- x 25-ft. end bay of his three-car garage into a fully heated and insulated woodworking shop. He started by building a wall with a doorway to separate the bay from the rest of the garage. He kept the high ceiling, installed a skylight to provide natural light over his woodworking bench, and transformed an existing lumber-storage rack into a vertical shelving unit into a vertical lumber-storage rack. The overhead garage door allows him to easily bring sheet goods and other large items into the shop.

Everything in Larry's shop is arranged for ease of use. His woodworking bench, positioned in the center of the space, is the same height as his table saw and can double as an outfeed table. The other stationery tools and a separate assembly-and-finishing table are positioned around the perimeter of the room, where they're easy to use yet out of the way. In addition to the skylight, four overhead banks of fluorescent lights keep the shop well lit, and a dust-collection system helps to minimize the mess.

"I like the fact that my shop is separate from the rest of the house," says Larry. "It really helps to keep the noise and the mess from disturbing my wife."

Of course, even the most well-thought-out space may leave something to be desired. If there were one thing Larry could change about his shop, it would be the overall size. "I'd love to have more square footage. Even just an extra 5 ft. in width would make it absolutely ideal," he says.



WOODWORKING SHOP ESSENTIALS

- ① Rock-solid bench (see WORKSHOP, p. 4)
- ② Lumber storage
- ③ Dedicated work stations
- ④ Bench positioned for outfeed support
- ⑤ Rolling bases on lesser-used tools
- ⑥ Plenty of light (skylight)
- ⑦ Easy access for bringing in lumber or sheet goods
- ⑧ Hi-Fi



The Everyman's Shop

Online Editor Gary Legwold's garage shop is a true jack-of-all-trades. It has lots of perforated hardboard for hanging items, plenty of storage and a wealth of open space — nothing fancy, just plain useful. But what really sets this shop apart from others is mobility: Absolutely everything is on wheels, including the workbenches. Gary's smaller woodworking bench is mounted

on locking casters and can easily be stored when not in use. The long 10-ft. work table is also on wheels, and it splits into two independent benches that can serve as infeed and outfeed support for his jobsite table saw.

One unique feature of Gary's shop is the motorized Safe Stairway staircase that provides access to the attic. With a push of a button, the aluminum staircase slowly descends, and in

case of a power outage, a backup battery provides the juice to operate it.

"I really like the natural lighting and ventilation that the two operable windows and two motorized skylights provide," says Gary. "They make all the difference in the mood of the shop — or rather of *me* in the shop."

ESSENTIALS FOR EVERYONE

- ① Lots of perforated hardboard for hanging tools
- ② Bench on wheels
- ③ Secondary bench for smaller projects
- ④ Easy access to tool storage
- ⑤ Natural light
- ⑥ Tunes
- ⑦ Attic access



Scan this with your smartphone to see the motorized attic stairs in action.

CREATING COLD-WEATHER COMFORT

To get the most use from your shop, you need to make it as comfortable as possible so that you actually want to spend time there. The first step is to insulate the space. The easiest method is to install insulation batts between the studs (photo, right) followed by a vapor barrier and then drywall.

When it comes to heating, you have lots of options. Portable forced-air heaters are perfect if you want to save money and don't plan to use the shop daily during cold months. (One unit, the propane-powered Hero from Mr. Heater — see photo below — is cordless and provides up to eight hours of continual use.) If you're going to spend significant cold-weather time in your garage, you'll probably want to invest in a permanently installed heater such as a ceiling-mounted unit from Reznor (photo, p. 18). Fueled by your home's natural-gas line, this type of heater is thermostatically controlled and can be left running all winter, keeping your shop ready for comfortable use at any time. — MB



Scan this with your smartphone to see instructions on how to insulate your garage.

Remember: There's no such thing as a universally perfect shop. These four examples illustrate the unlimited possibilities that exist for creating a garage workspace that works for you. (For even more ideas, check out "Welcome

to Your Ultimate Garage," in the August/September 2007 issue of *HANDY*.) Play with various designs, and rearrange items as often as necessary to try out your ideas. Eventually you'll create the perfect space for your pursuits. ♦

SOURCES ONLINE

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

Better Life Technologies (G-Floor)
(913) 894-0403, www.blitlc.com/G-floor

ClosetMaid (cabinets)
800-874-0008, www.closetmaid.com

Convenience Products (concrete paints),
800-323-7357

Gladiator Garageworks (cabinets), 866-342-4089
www.gladiatorgarageworks.com

Harken Hoister, (262) 691-3320
www.hoister.com

Hercke (modular metal cabinets), 866-767-3905
www.hercke.com

HyLoft Inc., 800-990-6003
www.hylift.com

Kott Coatings (garage floor coatings), 800-452-6161
www.kottcoatings.com

Lee Valley Tools Ltd., 800-871-8158
www.leevalley.com

Quikrete (DIY epoxy kits), 800-282-5828
www.quikrete.com

Racor Home Storage Products
800-783-7725, www.racorinc.com
Rubbermaid (cabinets)
877-533-1197, www.rubbermaidpro.com

Rust-Oleum (DIY epoxy kits)
800-323-3584, www.rustoleum.com

Slide-Lok (cabinets and garage floor coatings)
800-835-1759, www.slide-lok.com

Stanley Tools (cabinets)
800-782-6539, www.stanleytools.com

The Thompson Co. (DIY epoxy kits), 800-367-6297
UGL (DIY epoxy kits and concrete paint)

800-845-5227, www.ugl.com

Versatile Building Products (Roll On Rock coatings)
800-535-3325, www.garagecoatings.com

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2011

HANDY

M A G A Z I N E

INNOVATION AWARDS

Home-Improvement Heroes



Boasting powers such as speed, strength, intelligence and more, this year's *HANDY* Innovation Award winners will save DIYers from fatigue and frustration

BY JENNY STANLEY

Most DIYers can remember a time when the perfect product or tool came to the rescue during a difficult project or repair. And lucky for us, manufacturers are constantly updating and inventing handy helpers to make our home-improvement chores and workshop endeavors speedier, easier and more affordable. In honor of the latest products that promise to do all that and more, let's celebrate the winners of the 2011 *HANDY* Innovation Awards.

PHOTOGRAPHY BY MICHAEL ANDERSON AND COURTESY MANUFACTURERS
ILLUSTRATIONS BY MICHAEL ANDERSON

POWER IN A FLASH

Bring a dead battery back to life in three minutes with the Craftsman Nextec QuickBoost Charger. Designed to accommodate the company's Nextec line of 12-volt Li-Ion tools, the unit features a QuickBoost button that prompts the charger to harness all of its energy for a 25 percent charge in three minutes. While the charger is in use, its onboard diagnostics monitor the battery's progress and indicate its power status.



SAFER CHAIN SAW

The JawSaw from Worx is designed to eliminate two common chain saw hazards: the exposed chain and kickback. The protective jaw of this tool encloses almost the entire chain, guarding the operator from potential contact. In addition, its scissorlike cutting action forces the bar and chain through the wood from the safest angle, and its steel teeth hold a branch in place while cutting. Add the optional 12-ft. extension pole and you have the perfect tree-trimming tool.



Awesome!

HYBRID LIGHT BULB

Traditional compact fluorescents take some time to reach full brightness. For consumers who don't like to wait, GE Energy Smart Soft White and Reveal hybrid halogen-CFL bulbs combine instant bright light with energy efficiency. The bulbs feature a halogen capsule nestled inside the swirl of a CFL and surrounded by glass. The halogen element provides instant brightness and turns off to conserve energy once the CFL reaches full illumination.



PORTABLE PROPANE POWER

A first of its kind, Generac's LP3250 propane-fueled portable generator combines the eco-friendly benefits of liquid propane with a compact, easy-to-maneuver design that's perfect for outdoor job sites or even camping. The generator features onboard tank storage designed to hold a standard 20-pound propane tank, a conveniently located fuel line, dolly-style handles and a low grab bar for easy maneuvering, an OHV 212cc engine, low-oil pressure protection and more.

OVERFLOW-FIGHTING TOILET

Designed to eliminate messy overflows, the Penguin Protection Technology toilet from Penguin Toilets features three holes near the top of the bowl — similar to an overflow hole found on a sink — and a secondary drain system that allows water to escape rather than pour onto the floor in the event of a clog. In addition, rinse holes in the rim of the toilet bowl allow water to drain if the three overflow holes become clogged.



THESE ARE TRULY INNOVATIVE PRODUCTS!

TO BE CONTINUED...

2011 HANDY INNOVATION AWARDS

LIGHTING TESTER

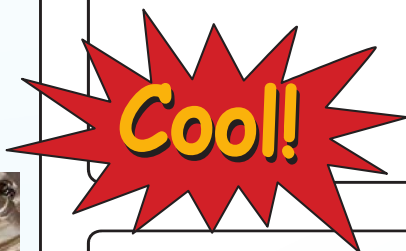
Electricians and building maintenance technicians can save time with the Fluorescent Lighting Tester from Milwaukee Electric Tool Corp. The unit tests fluorescent gas, checks pin connections and tests ballasts with the push of a button. It features a

2-1/2-ft. retractable antenna, audible and visual indicators and an LED light for working in dark conditions.



SUPER SUCTION

The 5-hp Smart Pro Dust Collector provides two to three times more air volume and suction power than a standard dust collector, according to Oneida Air Systems. An infinitely variable fan curve automatically adjusts to maximize air volume and suction to suit a wide range of tools, hose sizes and suction ports, keeping dust and debris under control in any workshop.



ECO-FRIENDLY LAWN BAGS

Made of biodegradable resin mesh that is strong yet breaks down when exposed to microbes, dsolv Compostable Mesh Lawn Bags by PD Worx LLC provide an easy-to-transport, stronger alternative to traditional paper lawn bags. Each 45 gallon-capacity bag can be used with a spring-loaded collapsible sleeve, so users can quickly fill it with leaves, twigs and other yard waste (without the worrying about rips and spills) and then tie a knot to close the bag and attach a reusable handle for easy carrying.



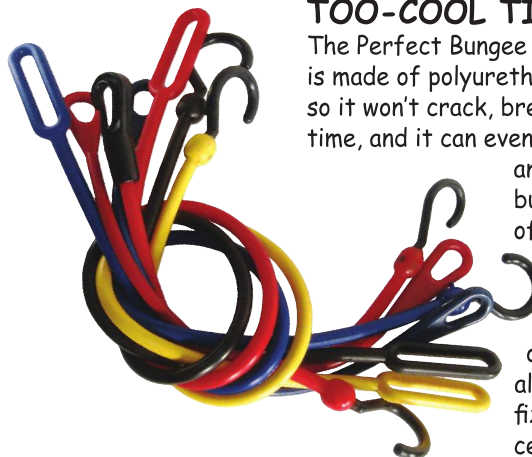
ONE-STEP SPRAY PAINT

Painting jobs are quicker and easier with Krylon's Dual Paint and Primer. Each can combines primer and paint, so users can cover metal, wood, masonry, concrete, wicker, ceramic, glass and plaster in one simple step — and in half the time of the traditional prime-then-paint method — while still achieving a smooth, durable finish. Dual Paint and Primer is available in 24 colors and in gloss, satin and flat finishes.



TOO-COOL TIE-DOWNS

The Perfect Bungee from Just Ducky Products is made of polyurethane rather than rubber, so it won't crack, break or become brittle over time, and it can even withstand salt water, oil and other chemicals. The bungee is available in a variety of configurations and sizes, including a Loop End Cord, which features a hook on one end and a loop on the other, and a Flex Web that allows users to string several fixed-end cords together on a central ring.





THESE PRODUCTS
ARE AWESOME, TOO!
CHECK OUT THE
HONORABLE
MENTIONS...

2011 *HANDY* INNOVATION AWARDS HONORABLE MENTIONS



SHAPE-SHIFTING HACKSAW

DeWalt's 5 in 1 Multifunction Hacksaw enables users to simply move the blade to various locations along the frame or nosepiece to create five different cutting configurations: a 90-degree hacksaw, a 45-degree hacksaw, a low-profile hacksaw, a long-reach hacksaw and a pistol-grip jab saw.



POWERFUL PEACE OF MIND

The Mr. Beams Home Power Outage Lighting System includes wirelessly controlled lights that can be installed anywhere and a detector that plugs into a wall outlet and constantly monitors a home's electricity. In the event of a power outage, the system automatically turns on for up to 40 hours.

PACE-MATCHING MOWER

The Worx IntelliCut 36-Volt Self-Propelled Mower with PaceSetter automatically adjusts to match the user's walking pace. It can mow about 17,000 sq. ft. on a single charge, and the cutting deck mulches, bags or discharges clippings on command.

GREAT!



USER-FRIENDLY ZERO-TURN MOWER

Toro's Time Cutter SS features a Smart Speed Adjustment lever that limits the mower's top speed without affecting the speed of the engine or blade, so novice operators can get used to the feel of the controls at a slower pace.

CLEAN MACHINE

Boasting a rechargeable 48-volt battery, Ryobi's 48V Cordless Mower runs cleanly and smoothly. The machine is emission-free and easy to push, and it features three modes for discharging clippings.



AMAZING!





LET'S SEND
SOME PRODUCTS
TO THE RESCUE!!



LEARN ABOUT THE
2011 *HANDY* INNOVATION
AWARDS SWEEPSTAKES
ON PAGE 28!

2011 *HANDY* INNOVATION AWARDS HONORABLE MENTIONS



COMPACT CORDLESS MOWER

Black & Decker's 36V Variable-Speed Self-Propelled Cordless Rechargeable Mower allows users to adjust the mowing speed to their preferred pace. It also folds to a compact size for storage.



Super!

SMARTER SANDERS

Bosch's R0S65VS-Series Random Orbit Sanders With Vibration Control feature suspended motors and ergonomic grips that significantly reduce user fatigue, making sanding easier.

INDEFATIGABLE OPENER

The Chamberlain Battery Backup Garage Door Opener Enabled with MyQ Technology allows users to remotely control not only their garage doors but also other Chamberlain accessories such as indoor and outdoor lights. As a bonus, the battery back-up keeps the unit operating during power outages.



NEXT-GEN CHAIN SAWS

Two technologies promise to make Husqvarna's XP Chainsaws more efficient, eco-friendly and easy to use. XTorq incorporates two engine intakes, one for air and another for a fuel/air mixture, and Autotune utilizes an electronically controlled carburetor that automatically compensates for different fuels and various ambient conditions such as altitude, humidity and air temperature.



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MEMBERS' CHOICE

EXTRAORDINARY LADDER

Telescoping from both ends and providing full foot support, the Select Step ladder from Little Giant is useful and, most important, safe on stairs and other uneven surfaces.

2011 HANDY INNOVATION AWARDS HONORABLE MENTIONS



NEW SCREW ON THE BLOCK

The Spiral Point Funnel Head Screw from Quick-screws features a tip designed to clean out (rather than blow out) a hole so users can cleanly and accurately screw into particleboard and melamine without having to drill pilot holes.



BANG-FOR-THE-BUCKS ROUTER

Skil's 2-1/4-hp Combo Router Kit (model 1830) features many bells and whistles — such as Soft Start Technology, an LED SiteLight and a dual-position on/off switch — for the affordable price of \$110.



RECIPROCATING SAW ATTACHMENTS

The Spyder Scraper, the Spyder Grout-Out and the Spyder Bore-Blade from SM Products can be used with any reciprocating saw to make a variety of demo jobs and repairs easier and faster.



BATHROOM SAFETY WITH STYLE

Moen Home Care Designer Grab Bars With Integrated Accessories make bathroom safety stylish. The double-duty grab bars can be installed anywhere with SecureMount Anchors that hold tight even without being mounted to studs.



TO BE CONTINUED...

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Black & Decker

(36V Variable-Speed Self-Propelled Cordless Rechargeable Mower), 800-544-6986, www.blackanddecker.com

Bosch (random-orbit sander)

877-267-2499, www.boschtools.com

Chamberlain (Battery Backup Garage Door Opener with MyQ Technology), 800-528-5880, www.chamberlain.com

Craftsman (QuickBoost charger) www.craftsman.com

DeWalt (5 in 1 Multifunction Hacksaw) 800-433-9258, www.dewalt.com

GE (hybrid halogen-CFL bulbs) 800-435-4448, www.gelighting.com

Generac (portable propane generator) 888-436-3722, www.generac.com

Husqvarna (chain saws with XTorq and Autotune), 800-487-5951, www.husqvarna.com

Just Ducky Products (The Perfect Bungee) (570) 366-7316, www.justduckyproducts.com

Krylon (Dual Paint and Primer) 800-457-9566, www.krylon.com

Milwaukee Electric Tool Corp. (Fluorescent Lighting Tester), 800-729-3878, www.milwaukeeetool.com

Moen (grab bars)

800-289-6636, www.moen.com

Mr. Beams (Home Power Outage Lighting System) 877-298-9082, www.mrbeams.com

Oneida Air Systems (Smart Pro Dust Collector) 800-732-4065, www.oneida-air.com

PD Worx (dsolv compostable lawn bags) 877-787-4063, www.dsolvbag.com

Penguin Toilets LLC

(Penguin Protection Technology Toilet) 888-600-0320, www.penguintoilets.com

Quickscrews International Corp.

(Spiral Point Funnel Head Screw) 800-743-6916, www.quickscrews.com

Skil (Combo Router Kit)

877-754-5999, www.skiltools.com

SM Products LLC

(Spyder Scraper, Spyder Grout-Out, Spyder Bore-Blade) 888-471-2239, www.spyderproducts.com

Toro (Time Cutter SS zero-turn mower)

888-384-9939, www.toro.com

TTI (Ryobi 48V cordless mower)

800-525-2579, www.ryobitools.com

Wing Enterprises (Little Giant Select Step Ladder) 800-453-1192, www.littlegiantladder.com

Worx (JawSaw, IntelliCut 36-volt self-propelled mower) 866-354-9679, www.worxtools.com



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A Clean Act

BY MIKE TAVIS

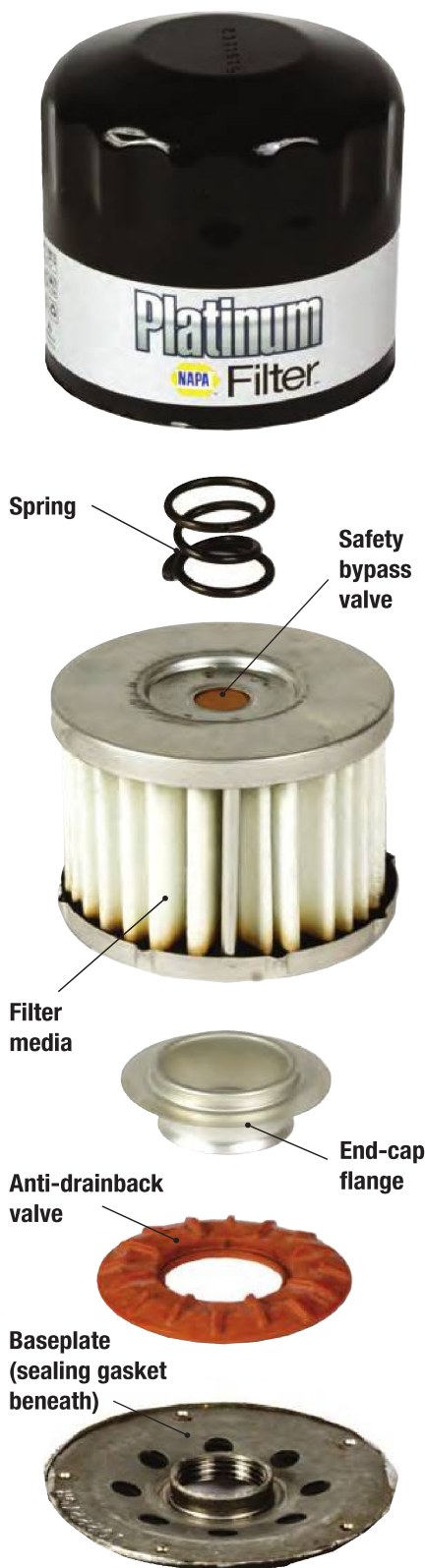
The right oil filter can keep your engine running smoothly and prevent costly damage

Changing your vehicle's oil and oil filter is a ritual for many DIYers — I get giddy just thinking about it. But what do you really know about that oil filter, besides how much it cost and what the ads tell you? To help you choose the best model for your vehicle, here's a look at how filters are built, what we want from them, and what's new on the street.

Oil filter anatomy

In a nutshell, an oil filter is a steel canister containing a filter medium and an anti-drainback valve that keeps the oil in the filter from draining out after the engine is turned off (photo, right). Some manufacturers use rubber, which does not remain flexible under extreme temperatures; others use silicone, which stays flexible and will not break down under extreme heat.

The heart of the oil filter is the filter medium, pleated and wrapped around a center tube through which the oil flows. Some tubes are straight; some are spirals. (According to manufacturers, the spiral helps to decrease drag on the oil as it flows through the filter, especially on cold starts.) The filter media itself can be traditional paper or cellulose (usually found in low-end filters), a combination of cellulose and synthetic material such as fiberglass, or a synthetic medium (usually used in better, high-performance filters). All filter media are designed to hold contaminant particles larger than 20 microns (a human hair has a diameter of about 70 microns); the better the medium, the smaller the



particles captured and the greater the dirt-holding capacity and longevity of the filter.

The filter element itself is held in place within the filter body by end caps, and a coiled metal spring between the top of the filter element and the housing ensures a constant load on the inner element, even during pressure surges.

The last essential element in an oil filter is the safety bypass valve, which allows oil to bypass the filter in cold temperatures, under high pressure or when the filter medium has become too dirty to allow enough oil through to meet the demands of the engine — in situations like that, it's better to have dirty oil flowing through the engine than no oil at all.

What to buy

Many manufacturers and distributors market oil filters based on their performance capabilities. For example, NAPA's Silver Series filters have a cellulose medium, its Gold Series filters are made with a hybrid cellulose-synthetic medium, and its Platinum Series filters have a fully synthetic medium. Prices increase from silver to gold to platinum, as do filtering ability and longevity (top left photo, opposite).

One interesting development in oil filters is the MicroGreen filter by Soms Technologies (top right photo, opposite). Similar to other filters in appearance and in its installation method, the MicroGreen filter utilizes a second filter element that can trap particles as small as 2 microns. According to the manufacturer, using the MicroGreen



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and click on Web Extras.

filter allows you to drive a vehicle under normal conditions up to 10,000 miles before changing the oil filter and up to 30,000 miles before changing the oil.

Besides aiding convenience, this helps the environment because it conserves oil and filters (only about half of which are properly recycled, according to the Environmental Protection Agency). The manufacturer says MicoGreen filters can substantially reduce the use of raw materials and the production of hazardous waste and CO2 emissions (due to decreased oil need, resulting in decreased oil production and filter manufacturing). Though the filters are not cheap (a two-pack costs \$35), the savings to your wallet and the environment may be significant.

Another product worth mentioning is the FilterMag, a magnetic sheet that you wrap around the oil filter. According to the manufacturer, powerful magnets trap steel particles as small as 2 microns



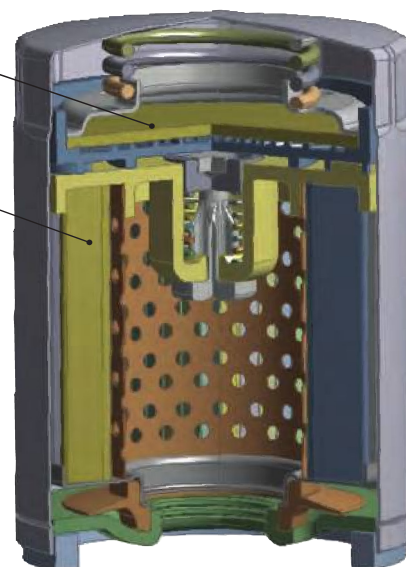
NAPA's oil filters are marketed as Silver, Gold and Platinum series, which escalate in price and performance.

against the inside of the filter's steel can, preventing them from re-entering the engine and causing damage. The oil-analysis test on the manufacturer's Web site shows a huge decrease in iron-particle count in used filters when the FilterMag was installed. Prices range from \$50 to \$115.

No matter what filter you choose, ask about its micron-filtering rating and anticipated service life before you buy. If you're running synthetic oil, choose a filter that's specifically engineered for it. Most important, adhere to your vehicle's service requirements. No

Secondary micro filter

Primary filter



The MicroGreen filter uses a secondary filter element to remove particles as small as 2 microns from the oil.



The FilterMag is installed around the oil filter and captures metallic debris before it has a chance to re-enter the engine via the oil flow.

matter how well the filter performs, it can't do its job if you neglect to change it. ♦

Club Member Mike Tavis writes (and occasionally performs oil changes) in Minneapolis, Minnesota.

CHANGING YOUR OWN OIL

Changing your own oil and oil filter is an easy way to save money, and it gives you a good reason to get under the hood and tinker with vehicles. But we all need to be responsible about the waste involved. One gallon of oil can pollute 1 million gallons of water, so it is essential to dispose of used oil and filters properly. Bring the contaminated oil and filters to a gas station, an auto-parts store or a hazardous-waste collection facility. These places often accept the materials at no charge, but even if you must pay a fee, it's worth the investment to help keep the planet clean. — MT



SOURCES ONLINE

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

FilterMag
(623) 556-4201
www.shopfiltermag.com

NAPA
www.nfvmc.com
Soms Technologies
877-757-7667
www.microgreenfilter.com

Snips have come a long way since these Wiss-brand metal shears were forged 100 years ago. Today's tools are far easier to use.

Cutting Tin

BY MIKE BERGER

Modern snips make fast work of slicing sheet metal

In the not-too-distant past, people relied on the traveling tinsmith — also referred to as a “tinker” — to cut and repair most anything made of metal. But today DIYers have access to numerous tools, including metal snips, that allow us to do the cutting ourselves. Granted, cutting metal by hand with snips can be tricky. Workpieces can be stiff and difficult to maneuver, the edges you create during the cutting process are sharp, and the snips can often get in the way while you're cutting. But take heart: By learning about different types of snips and practicing a few basic cutting techniques, you can quickly master working with sheet metal and duct work.

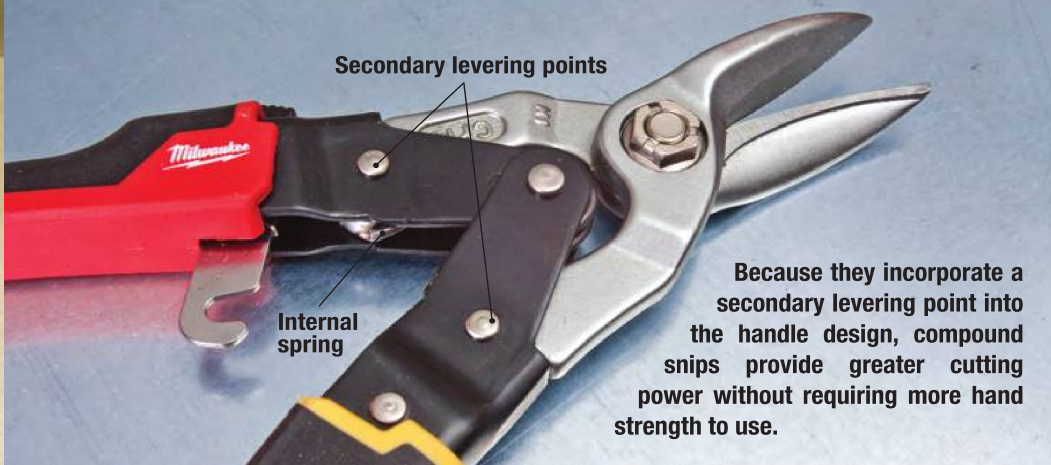
Snips of all sorts

A hundred years ago, snips resembled extremely beefy scissors forged from steel. They got the job done, but it took a lot of brute hand strength to initiate and complete the cut. Thanks to revised handle and blade designs, today's snips make cutting far easier.

Because it can be difficult to create a curved cut in stiff metal, snips are specially designed to make the task easier, and a color-



Snips are designed to make specific cuts. Red snips cut counterclockwise, green snips cut clockwise, and yellow snips make straight cuts.



Offset snips' handles are positioned above and behind the blades, keeping your hands away from the workpiece.



When making straight cuts, bend the waste away from the snips as you work, and always wear gloves — cut metal edges are very sharp.

code system lets you know what type of cut the snip is built for (see photo, opposite):

Green — cuts clockwise curves

Red — cuts counterclockwise curves

Yellow — cuts straight lines

Modern snips incorporate an additional pivot point into the levering action. These cutters (referred to as compound snips) drastically magnify your gripping force and



To cut holes in ductwork, start by punching a starter hole into which you can insert the blades of the snips; then slowly approach and follow your planned cut line.

allow you to cut 16-gauge sheet metal with ease (see top photo).

Compound snips (also known as aviation snips) come in two basic handle types: offset and straight. With offset snips, the cutting blades are positioned below the handle so your hand is above and away from the workpiece (see middle photo, above). Straight-handle snips have blades that are in line with the handles.

Cutting techniques

Now that you know which snips to use based on the direction of your cut, a few basic techniques will help you to conquer almost any sheet-metal-cutting task.

Straight cuts: Long straight cuts are best made with compound offset snips. Open and close the jaws of the snips completely to maximize the cut length. As you cut, one side of the sheet metal will tend to ride up and over the lower jaw. Roll this piece back and to the side as you go to keep it from getting in the way of your hand or from jamming the snips (see bottom left photo).

Curved cuts: Depending on the access you have to the workpiece, you'll often need to use a combination of both left- and right-cutting snips to cut curves. If obstructions in a work area prevent you from completing a cut with one pair of snips, switch to the other and try cutting from the opposite direction.

Cuts in ductwork: When cutting round ductwork, there are a few tricks to keep in mind. If you need to make a cut in the middle of the duct, mark and cut the hole before snapping the ductwork together. Punch a starter hole into which you can insert the snips, and slowly cut along the line (see bottom right photo). If your cut reaches the duct's thick locking seam, position the metal deep into the jaws before applying pressure. If, however, you only need to trim a bit from the end of a round duct that's already snapped together, use curve-cutting snips.

The next time you need to trim some light-gauge metal, grab your trusty snips and go to it. With a little practice and the right tools, you'll be able to cut metal almost as easily as paper. ♦

SOURCES ONLINE

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

Apex Tool Group (Wiss snips)
800-548-8883, www.cooperhandtools.com

Irwin
800-464-7946, www.irwin.com

Milwaukee
800-729-3878, www.milwaukeeetool.com

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Sun-Fed Shed

BY MARK PETERSON

Light up a storage building, shed or playhouse (with no electric bills!)



A solar panel connected to a battery-powered lighting system can provide plenty of light to remote buildings or sheds.

During 20-plus years as a professional contractor, I've acquired more materials than my shop could hold. I solved the storage problem with a 20- x 60-ft. outbuilding, but lighting it presented a challenge. Running electricity to the building would have required digging a 150-ft. trench through very rocky, root-infested soil. Instead, I opted for a solar-powered direct-current (DC) lighting system — a relatively easy-to-install, economical solution.

If you want to light up a storage building, gardening shed, child's

playhouse or any other structure that's not close to a conventional power source, this type of system may be the answer. The individual components are relatively inexpensive, and if you're comfortable with basic wiring, you should be able to install them yourself.

System components

If you've never worked with solar-powered DC electrical components, first consult an electrician and an electrical inspector; then talk with a reputable supplier before making any purchases. (I con-

sulted with and bought my components from Batterystuff.com — see SOURCES ONLINE.) The supplier will ask questions about how you'll use your system and how many lights you want to power and then recommend components that will do the job.

For most solar-powered DC systems, you'll need to purchase a deep-cycle 12-volt battery (available at automotive or marine parts

suppliers) and a battery maintenance charger kit. I chose the Battery-Minder SCC015, which includes a 15-watt solar panel, a maintenance charger and a battery-condition indicator.

In DC lighting systems, the deep-cycle battery provides the working power to the light bulbs. The solar panel recharges the battery, the maintenance charger monitors the condition of the battery and adjusts the incoming power from the solar panel accordingly, and the battery-condition indicator lets you know if the battery is no longer charging properly.

You'll also need to purchase 12-volt DC light bulbs, which are available through a variety of online retailers. (I purchased mine from Buylighting.com.) Although you could use standard household 110-volt AC bulbs, that would require the purchase of a power inverter, and according to the support staff at Batterystuff.com, using an inverter would result in a 20 percent power drop from battery to bulb.

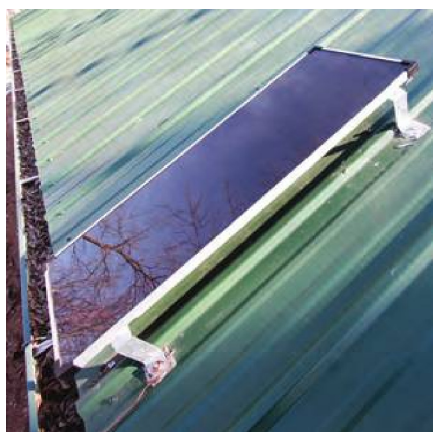
SOLAR – RECHARGED LIGHTING SYSTEM



OHMS LAW

Watts ÷ volts = amps

A typical 12-volt battery-powered, solar-recharged lighting system consists of a solar panel (mounted on the roof of the building), a deep-cycle battery, a battery charger and a battery-condition indicator.



The solar panel should be mounted to an area of the roof that receives as much sunlight as possible, and there must be an air gap between the roof and the panel.



Inline fuses protect each of the lighting zones in the event of a short or an overload.

INSTALLATION COSTS

BatteryMinder 15-watt Solar Kit	\$150
Deep-cycle battery	\$90
Wire, sockets, boxes and switches	\$90
50-watt, 12-volt bulbs	\$25
Inline fuses	\$8
Total	\$363

Installation and wiring

Installing the individual components is a pretty straightforward process. In a spot that gets plenty of sunlight, mount the solar panel black-side-up with an air space between it and the roof. (Panels often come with mounting brackets, but depending on your installation, you may have to fabricate your own brackets from strips of galvanized metal.) Run the supply line from the solar panel to the inside of the building; then install the battery, with the maintenance charger and the battery indicator mounted nearby.

When it comes to running electrical cable for the system, make sure you use cable that's rated for the amperage your system will draw. You can determine the number of amps with a mathematical formula: watts ÷ volts = amps. Standard 14-gauge sheathed electrical cable is rated for 15 amps; 12-gauge is rated for 20 amps. I installed four 50-watt, 12-volt DC bulbs per circuit, which equates to 16.66 amps, so I needed to use 12-gauge sheathed cable. As an additional safety measure, install an inline 12-volt fuse for each circuit you run.

Once you're finished, call your electrical inspector to have him or her sign off on the installation. Then throw the switch and enjoy the free light. ♦

Mark Peterson is a contractor and freelance writer who lives in Shakopee, Minnesota.

SOURCES ONLINE

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

Batterystuff.com (battery and solar-power gear)
800-362-5397, www.batterystuff.com

Buylighting.com (specialty light bulbs)
888-990-9933, www.buylighting.com

SKILLS

Paint Stripping

BY TIM SULLIVAN AND CONNIE BASTYR

There's more than one way to skin a chair, deck, door or house



Coatings of paint or varnish are intended to be tough, long-lasting finishes. So it's no surprise that you need to choose the right strategy for removing them without marring the substrate or endangering yourself and others.

PHOTOGRAPHY AND ILLUSTRATION BY MICHAEL ANDERSON

Paint is a little like body weight: It's a lot easier (and more fun) to put on than to take off — and there are probably just as many approaches to shedding unwanted layers. Removing paint may require chemical strippers, mechanical means or heat; the approach you use will depend on the type and thickness of the coating, the area you have to work in and the orientation, intricacy and composition of the surface to be stripped.

The goal in stripping paint is to remove all of the coatings without damaging the underlying surface or creating personal or environmental hazards. We've used chemical strippers, heat, pressure washers, sandblasters, power sanders, scrapers and plenty of elbow grease to remove paint. Although some newer products are decidedly safer and specialty tools have improved, each paint removal path still has its ups and downs. Here's a brief guide to help you along your way.

Common strategies

No matter how you approach it, paint removal is messy and potentially dangerous. First, there's a 75 percent chance that coatings made before 1978 will contain lead, which can poison your brain and organs or create an environmental hazard if not handled carefully. (Visit the National Lead Information Center Web site — see SOURCES ONLINE — for more information.) Second, old-school solvent-base paint strippers carry warnings about cancer, skin burns, respiratory problems and flash fires. Always follow all of the manufacturer's safety recommendations when using any stripping product.

Softening coatings with chemical strippers and using various tools to scrape off the goo (photo, right) is the most common way to remove paint and finishes from furniture and intricate surfaces. For

large, flat, exterior surfaces such as wood decking or clapboard siding, power sanding and power planing are good options. (High-pressure sandblasting or low-pressure mist/volcanic-glass blasting are best left to professionals.) Pressure washers are OK for removing loose (lead-free) paint, but you should never use one to strip adhered paint. The extra pressure and water required can damage the surface and force moisture into places where it will weaken new finishes and/or cause mold to grow.

A power sander works well to strip old deck boards or flooring down to bare wood for refinishing. The first step in this process is to set fastener heads below the surface. Next, use a walk-behind floor sander (typically used for interior floors) fitted with a dust-collection bag and 80-grit abrasive to remove semitransparent stains. (For a thick-paint film, start with 60-grit.)

If setting the nails isn't possible, use a large belt sander (photo, above) so you can ease off the pressure around the fasteners.



Before using a power sander to remove finish from decking, sink the fasteners so they don't catch and tear the abrasive belts. (Better yet, replace loose nails with decking screws.) When using a portable belt sander, hold the tool at a 45-degree angle to the wood grain as you move it along each deck board. This speeds the process, creates a uniform look and produces enough roughness for the new finish to grab.

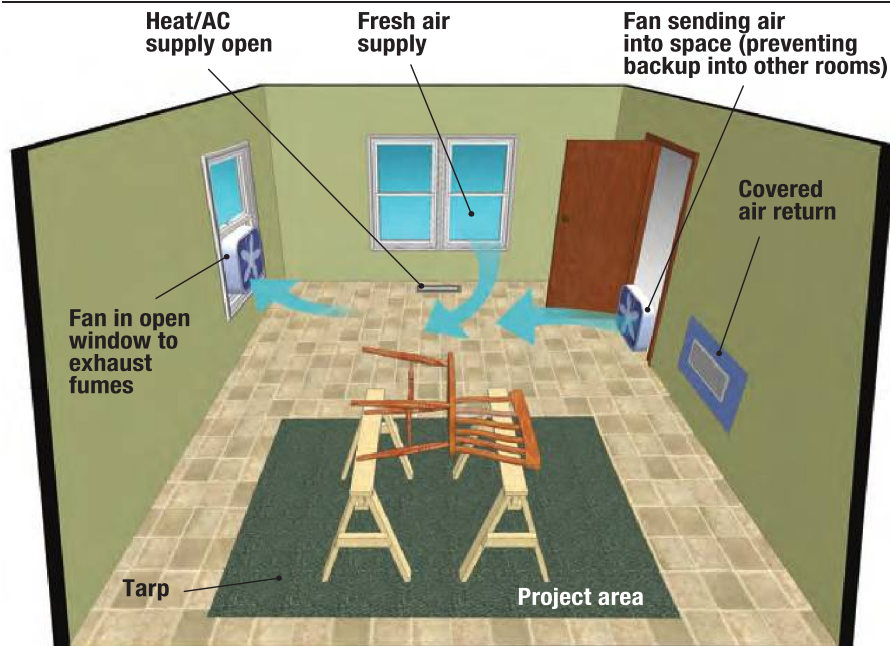
Chemical strippers

Chemical strippers can remove multiple layers of coatings without damaging the underlying surfaces or releasing dust or chips. Liquid, gel and paste formulas are available (top photo, p. 41). Liquid strippers are suited for penetrating intricate horizontal surfaces; paste



Use disposable brushes to apply chemical strippers; then remove softened finishes with scrapers, stiff brushes and abrasive pads. Careful disposal of the residue is important, especially if the paint or varnish contains lead. Check your state's lead-disposal policies before you begin stripping.

SETTING UP SHOP



Use chemical strippers outdoors or in an area where you have an adequate intake of fresh air. To expel fumes, prop an outward-blowing fan in a window on the opposite side of the room from the fresh air supply. (Never draw flammable fumes into a fan.)



Keep gun in motion

To avoid burn marks when stripping paint (only lead-free coatings) with a heat gun, keep the gun in motion while holding it near the surface. As soon as the paint softens and starts to blister, begin lifting the film with a metal scraper or putty knife.

Blisters

or gel strippers are best for flat or vertical surfaces.

Various strippers contain different chemicals, so be sure to read the label on every product and follow its instructions carefully. When working with any type of stripper, always wear chemical-resistant gloves, safety goggles and protective clothing. Strippers containing methylene chloride require plenty of ventilation (preferably outdoors) to avoid sickening fumes. Formulas made with flammable solvents, such as toluene or acetone, should always be applied outdoors because their volatile organic compounds (VOCs) are heavier than air and settle in low areas. If you use these products in a basement workshop, for example, the fumes could collect around a nearby water heater and cause an explosion.

If you must remove a finish indoors, cover the floor with plastic and newspapers and protect yourself with an organic-cartridge respirator (not just a dust mask). Always open windows and doors to allow for cross ventilation (illustration, above).

The safest strippers are made with caustic chemicals such as

N-methyl-pyrrolidone (NMP) or with organic ingredients such as soy. In general, the milder the ingredients, the longer the stripper takes to break down a finish. Sometimes the most effective ingredient isn't in the bottle or can; it's the patience you bring to the project. Safe strippers can take 24 hours to soften thick coatings; they may even take two applications or require the use of different products to remove all of the layers — especially when multiple oil-base layers lurk under water-base layers.

Although the manufacturer provides time guidelines, you should periodically check on the progress but resist the urge to remove the softened coating until the stripper has done its job. Never let strippers dry on the surface; they work only when they are wet. Many products contain wax to retard evaporation; you can extend the working time by applying a generous amount of product, moving the brush in only one direction (so you don't disturb the surface) and covering the freshly applied stripper with wax paper (or for large areas, inexpensive 2-mil painter's plastic). Another approach is to use Peel Away Paint Removing Paper, a mat that embeds in the coating. The mat impedes evaporation while consolidating multiple layers of softened coatings for neater removal and disposal. This is particularly helpful when you're stripping coatings containing lead.

Softened finishes are best removed from flat surfaces with plastic or wood tools or a soft brush — particularly if you plan to stain or varnish the piece after you've stripped it. Avoid using metal scrapers, which can burnish the surface and impede the penetration of oil stains. Keep in mind that sanding of fine antiques after stripping can remove the patina that gives the surface its aged character.

After one or two heavy applications of the stripper, repeat with a lighter coat to soften and remove residue. Because there will be less material to eliminate, you can ex-



To narrow your choice of stripping products, read the label's recommendations regarding appropriate work surfaces and finish coatings. If you are unable to work outdoors, be sure to use a nonflammable product.

pect a shorter working time. With a soft brass brush, a stripping pad or a toothbrush soaked in stripper, remove the last bits of finish. Neutralize and clean the surface using a product recommended by the stripper manufacturer (such as mineral spirits, acetone or vinegar). Again, make sure your workspace has adequate ventilation.

Heat stripping

One summer long ago, I (Tim) worked with a veteran painter to burn layers of lead paint from old tenement buildings. I used an elec-

tric-plate heater and a putty knife; he preferred an open-flame torch and spokeshave. I now know that using heat to soften lead paint can turn the heavy metal into poisonous fumes; because of the health and fire risks, this approach is unthinkable today. Although modern heat guns are safe to use on lead-free finishes, and only with careful handling (bottom photo, opposite), the open-flame method is never a good idea.

Infrared heat plates such as the Silent Paint Remover are generally safer than heat guns but can be

FACEBOOK FEEDBACK

When we asked our Facebook friends to weigh in on this topic, many said they used heat guns (one even suggested a hair dryer!) and a few people recommended hot vinegar to break down old varnish. Those who used chemical strippers typically preferred the safer options, despite longer wait times and what they considered extra messiness. One reader who prefers to use stronger solutions stressed the need to use good gloves. We agree!



tiring to hold in place on large vertical surfaces. If you need to remove paint from a floor, on the other hand, a heat plate is ideal (provided the paint is lead-free).

To find the easiest, cleanest, quickest and safest way to undo a particular finish, think beyond your previous preferences. Consider all of the options and go with the method and the material that suits the object, its location and the coating you plan to eliminate. ♦

Tim Sullivan writes (and strips) in Plymouth, Minnesota.

POWER PAINT REMOVERS

One promising tool for stripping clapboards is the Paint Shaver Pro from American International Tool (see SOURCES ONLINE). It planes paint from the face and the butt of boards, sucking the chips and dust into a HEPA vacuum. (The tool can shear off nail heads, so be sure to set the nails and limit the cut depth to the thickness of the coating.) Once you've finished stripping, you'll need to smooth the surface with a random-orbit sander.

A contractor experienced with the Paint Shaver Pro shared these tips:

- For a smooth horizontal flow and uniform passes, work from a plank rather than a ladder.
- The cutter that shaves the clapboard butts can produce a wavy edge as you work your way along the surface. To touch up uneven butts, dial the face-cut depth to zero and make another pass along the edge.
- The Paint Shaver Pro is available at some rental centers, but if you're stripping an entire house, it may cost less to buy one (\$500 to \$600).

Another product that offers ease of operation and a homeowner-friendly price (\$79) is the Wagner Paint-Eater. It uses a tough fiber disc to safely remove paint without cutting into the substrate. — TS



Scan this to see the Wagner Paint-Eater in action.

SOURCES ONLINE

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

American International Tool (Paint Shaver Pro)
800-932-5872, www.paintshaver.com

Back to Nature Products (Ready-Strip)
www.ibacktonature.com

Dumond Chemical (Peel Away, Smart Strip)
800-245-1191, www.dumondchemicals.com

Formby (Paint & Poly Remover)
800-290-1105, www.formbys.com

Franmar (Soy Gel)
800-538-5069, www.franmar.com

Mötsenböcker Advanced Developments Inc.
(Lift Off), 800-346-1633, www.liftoffinc.com

National Lead Information Center
800-424-5323, www.epa.gov/lead

Viking Sales (Silent Paint Remover)
(585) 924-8070, www.silentpaintremover.com

Wagner (PaintEater)
800-328-8251, www.wagnerspraytech.com

William Barr (KleanStrip, Citristrip)
800-238-2672,
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A 48-volt battery powers the mower without producing the harmful emissions associated with gas-powered machines. The mower boasts a 20-in. deck with adjustable height options and three modes for disposing of clippings: side discharge, rear bagging or mulching. Find out more about this award-winning mower and other Ryobi products by visiting www.ryobitools.com.

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PHOTOGRAPHY COURTESY RYOBI

BY JOHN ENGLISH

Shop Savvy Tips

5 useful ideas for working in your shop

Tip 1: Square pegs in round holes

If you own a hollow chisel mortiser, here's a great way to use dowel construction on casework. Use the mortiser to chop 1/4-in.-sq. holes that are half the depth of the first piece, and then drill 3/16-in. round holes through the rest of that workpiece and into the second part. Cut some hardwood stock into 1/4-in.-sq. strips, crosscut to make pegs, and then use a dowel plate to make part of the square pegs round. You'll need to hammer each peg through the 1/4-in. hole on the dowel plate first, and then through the 3/16-in. hole. When the pegs are driven home in your project and glued in place, their shoulders hold the two parts together. Don't forget to clamp the parts while the glue dries.



Tip 2: Simply scan

Next time you need to purchase a bunch of small parts or cabinet hardware, there's no need to fill your pockets with the items. Just lay the originals on the glass top of your computer scanner and take their picture. The scanner works like a camera except that everything is full size. You can even zoom in on small type, such as part numbers that are hard to see, to make it legible. Print the scanned image, and you have an instant shopping list!



Tip 3: Surface saver

When trimming plugs and dowels with a pull saw, I use one of those aluminum triangles with the circular holes in it to protect the surface of the board from the slight set of the saw teeth. Simply drop the smallest hole over the plug to be trimmed, and cut away. Make sure the side of the triangle without writing on it is facing up, or the saw will erase the text. The very short stub that's left after cutting can be cleaned up with a low-angle plane or a random-orbit sander.



Tip 4: Static screws

Green 4-in. sewer pipe is a lot less expensive than white water pipe for the straight runs in a dust collection system. To ground the pipe, wrap bare wire along the outside (one loop in every 4 ft. of travel), and secure the wire by looping it around the shanks of 3/4-in.-long self-tapping screws, just below the heads. Drive the screws down through the top of the pipe to avoid creating an obstacle on the bottom that might accumulate shavings or chips. The points of the screws penetrate the pipe and lie in the airstream, transferring any static buildup to the wire. Connect the wire to a cold-water pipe or other similar ground.



Tip 5: Saving planes

There's endless discussion about the right way to store hand planes. Should they be laid on their side, should the blade be retracted, or should one end be sitting on a small stick or a pencil to protect the blade? The simplest answer is to store them on a shelf that has a soft surface, and then it doesn't matter how they lie. Carpet pad makes a good cushion, as does a folded towel, rigid foam, cardboard, plastic (shown), or almost any soft, thin covering. The idea is to protect the cutting edge, as the sole will be fine in any orientation. The soles of newer planes that have ductile iron bodies are even tougher than standard cast-iron or steel planes. ♦



PHOTOGRAPHY BY THE AUTHOR

Bling Board

BY JENNY STANLEY

Build a jewelry organizer using affordable materials from a home-improvement store



Hardworking pegboard is perfect for keeping jewelry organized and easily accessible.

Putting on jewelry is usually the last (and often forfeited) step in a woman's morning routine — so many precious minutes are spent corralling kids, scarfing down breakfast, brushing our teeth, etc., that most of us don't have time to disentangle a jumble of necklaces, earrings and bracelets in a traditional jewelry box.

This simple storage project solves that problem by organizing jewelry on hardworking pegboard, an inexpensive workshop staple. You can hang it in your closet or use it to display your jewelry as artwork on a wall in your bedroom. Either way, keeping your accessories visible and handy makes it more likely that you'll actually find time to wear them.

Design details

To begin, take stock of your jewelry collection. Determine how many pieces you need to store, and con-

PHOTOGRAPHY BY MICHAEL ANDERSON

sider their sizes. For this project, we allocated space for both long and medium-size necklaces, several pairs of earrings, bracelets, rings and a couple of cloth pouches. Because you may acquire more jewelry in the future, plan for a little growing room, too.

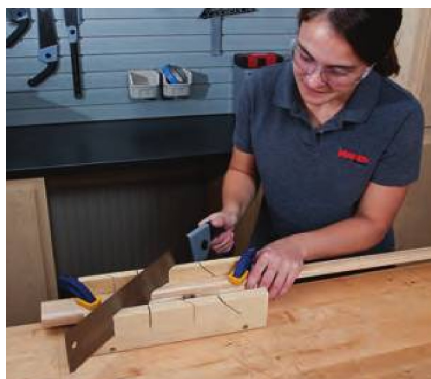
Next, you'll need pegboard. Most home-improvement stores carry 2 x 4-ft. or larger pieces. Choose a decorative wood molding to frame the pegboard. We used a piece of decorative metal mesh for earring storage and a few pieces of



1 Cut the pegboard to 15 x 24 in. using a jigsaw with a fine-tooth blade. (If you start with a 2 x 4-ft. piece, you'll only need to make one cut, as one side of the board is already 24 in. long.)



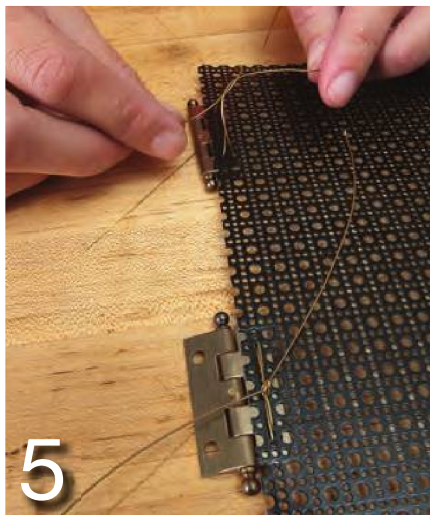
2 Mark and cut the molding so that each side can be glued to the face of the pegboard. We used a miter box and handsaw to create a simple picture-frame look.



3 Coat the molding and pegboard with spray paint or another durable finish. After the paint dries, use glue to attach the molding to the pegboard and secure it with brad nails or other fasteners through the back. Use wood screws to secure two 1x1 pieces along the top and bottom of the back of the pegboard.



4 Cut the mesh for earring storage using tin snips. Then use shop scissors and a small precision knife to cut and notch plastic trim to cover the edges. (We used J-channel trim designed for use with decorative thermoplastic panels.) The size and location of the notches depends on your hinges; mark and cut accordingly.



Attach the hinges to the mesh using flexible wire (we used Accu-Flex color-coated stainless steel beading wire). Then secure the plastic trim around the edges with a bead of glue. Attach the earring-storage mesh to the pegboard using the screws that came with the hinges. All that's left is to arrange the pegboard hooks to accommodate your jewelry.

plastic trim designed for decorative thermoplastic panels to cover the edges. You'll also need hinges and flexible wire to attach the earring mesh to the pegboard. Finally, you'll need a 1x1 board (approx-

mately 28 in. long) that you'll cut in half and attach to the back of the pegboard; it must be mounted slightly away from the wall to allow the storage hooks to anchor securely in the pegboard.

Select pegboard hooks that suit your jewelry-storage needs and paint that matches your décor and you're ready to start assembly. Follow the photos to see how easily this project comes together. ♦

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P.O. Box 3401

Hopkins, MN 55343-2101
Remember to include your membership number on all correspondence and have it ready when you call.

Important Notice: For your safety, use caution and good judgment when following the instructions described in this magazine. Take into consideration your skill level and the safety precautions related to the tools and materials shown. North American Media Group and its affiliates cannot assume responsibility for any damage to property or persons as a result of the misuse of the information provided. Consult your local building department for information on permits, codes, regulations and laws that may apply to your project.

August/September 2011 GREAT GIVEAWAY prizewinner

Truck-storage system from TracRac and
UWS Truck Accessories valued at \$2,115

Grady Mathias of Richmond, VA

Check out this issue's
GREAT GIVEAWAY on p. 42.

Member Directory

Manage your account online
Update your profile, pay membership
dues, purchase products and more:
www.HandymanClub.com

Contact **HANDY** editors for questions and
comments regarding editorial content:
Editors@HandymanClub.com

To submit a letter for **HANDY**'s
Member Mail column:
MemberMail@HandymanClub.com



Handyman Club of America

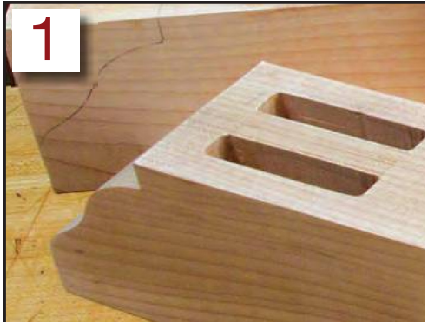
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Quiz/Member Benefits

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



WANT TO PLAY?

To enter the free Club membership drawing, submit your answers online at: www.HandymanClub.com
Entries must be submitted by January 31, 2012. Winners will be announced in April 2012.

The answers to this issue's QUIZ appear at the end of Expert Answers. ◇



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Expert Answers

BY MIKE BERGER

Learn from the pros



A methylene-chloride-base stripper is just the first step in refinishing flea-market furniture finds.

Refinishing Oak

Q: I'm working on restoring an old, black oak coffee table that my wife bought at a garage sale quite a few years ago. I'd like to strip the table's finish and bring out the natural color of the wood. Any suggestions on how I can do this?

Al Judd
Burnet, Texas

A: Entire books have been written about refinishing furniture, and without knowing what type of finish is on the table, it's difficult to tell you the exact process and products you should use. But in general, you'll need to follow these basic steps:

Start by using a chemical stripper to remove the bulk of the protective topcoat and stain. Many types of chemical strippers are available, and as a general rule, the more hazardous they are, the better they tend to work. One com-

mon type is a methylene-chloride-base stripper such as Klean-Strip, which can quickly remove most wood finishes. Be sure to follow the manufacturer's instructions when using it, wear protective gear such as goggles and butyl gloves, and always work in a well-ventilated area, preferably outdoors if possible.

Once you've removed the old stain, you'll likely need to sand the surfaces. Start with 100-grit paper to level the surface. Slowly work your way up to 220-grit, sanding with the grain, until you've achieved a smooth surface.

If discoloration remains, you may need to bleach the wood. Standard household chlorine bleach can remove dye stain; oxalic acid (available through most woodworking-supply outlets) can remove iron stains (such as those that appear around nails). Again, follow the manufacturer's instructions when using any bleaching

agent. (For more information on removing old finishes, see "Paint Stripping," p. 38.) ♦

SOURCES ONLINE

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

Klean-Strip
800-238-2672, www.kleanstrip.com

SUBMIT QUESTIONS TO:

expertanswers@HandymanClub.com

Include your name, member number, address, daytime phone and e-mail address. Sketches and photos are welcome. We regret that we cannot respond personally to all questions. For the fastest answers, post questions on our Club's online forum at

www.HandymanClub.com
or at



Handyman Club of America
on Facebook

Or mail them to:

Expert Answers c/o Mike Berger
HANDY, 12301 Whitewater Drive
Minnetonka, MN 55343

QUIZ Answers: 1) p. 8, 2) p. 22, 3) p. 30, 4) p. 27, 5) p. 37

Charmaster Wood Furnaces Oil and Gas backup, forced air and hot water. Heat up to 5,000 sq.ft. 20-year warranty. Made in the USA. www.charmaster.com, (218) 326-6786. **Check 1**

Create-A-Bed Build your own Murphy bed with the Create-A-Bed® Murphy bed mechanism. Step-by-step instructions and DVD included. 877-966-3852. **Check 2**

Darex Drill Doctor® drill-bit sharpener is built with the sharpening power needed to restore dull or broken drill bits. It's built tough to last and is backed by a three-year warranty. www.drilldoctor.com, 800-597-6170. **Check 3**

Donald Durham Co. Durham's Rock Hard Water Putty fills cracks and holds in wood or plaster and will not shrink. The go-to solution for more than 75 years. www.waterputty.com, (515) 243-0491. **Check 4**

eHeat Super-efficient Envi Heater (4 cents an hour). Safe, cool exterior, fanless technology provides gentle and healthy heat. Slim, silent and easy to use. Made in the USA. www.eheat.com, 800-807-0107. **Check 5**

Federal Process They're bigger, tougher and soaked with knock-your-socks-off cleaning solution. Our towels hold up to vigorous scrubbing inside, outside or on the go. Loaded with lanolin and aloe, they leave your hands clean and soft. www.tubotowels.com, 855-385-9964. **Check 6**

Flame Engineering Red Dragon Propane Torch Kits put the heat on weeds and other tough jobs all year long. Many models to choose from. Made in the USA. www.RedDragonTorch.com, 800-255-2469. **Check 7**

Goldec Great for debarking notching and the general handyman. Also saves your expensive band saw blades. www.logwizard.com, 877-640-2240. **Check 8**

Gorilla Glue is incredibly strong and 100 percent waterproof. It's the ideal solution for indoor/outdoor projects. Bonds wood, stone, metal, ceramic, foam, glass and much more! www.gorillatough.com. **Check 9**

Harbor Freight Quality tools at ridiculously low prices! We buy factory direct and pass the savings on to you! www.HarborFreightUSA.com, 800-657-8001. **Check 10**

Johns Manville is the only manufacturer to offer a complete line of certified formaldehyde-free fiber glass building insulation. www.JMhomeowner.com, 800-654-3103. **Check 11**

Laser US Guide saves you money by updating your power saw. www.laserusinc.com, 888-767-1262. **Check 12**

Mechanix Wear is the leader in high-performance work gloves, engineered to help you work faster, safer and cleaner. Mechanix Gloves. The Tool That Fits Like a Glove.® www.mechanix.com, 800-222-4296. **Check 13**

Monkeyrack is a new, exclusive, safety product from Monkeyrack Products LLC. The mobile Monkeyrack provides ultimate safety, strength and stabilization for extension ladders. www.monkeyrackproductsllc.com, (941) 747-8697. **Check 14**

O'Keeffe's Company O'Keeffe's Working Hands. O'Keeffe's products offer guaranteed relief for dry hands and feet that crack and split. Nothing works faster or more effectively to relieve and protect your skin. O'Keeffe's products are odorless, oil-free, hypoallergenic and non-greasy. www.OKeeffesCompany.com. **Check 15**

Oneida Air Systems American-made, award-winning dust collection and duct work. 1.5 to 30 hp systems for the hobbyist to professional. www.oneida-air.com, 800-732-4065. **Check 16**

PexSupply PexSupply.com offers plumbing and heating supplies from top brands including Honeywell, Taco and Weil McLain. Free Shipping on orders of more than \$300. www.pexsupply.com, 888-757-4774. **Check 17**

Stoner Solution Invisible Glass by Stoner Inc. When compared to ordinary "blue water" glass cleaners, you'll immediately see how quickly Invisible Glass removes even the most difficult grime, making glass virtually disappear! www.invisibleglass.com, 888-STONER3. **Check 18**

The WeatherTech by MacNeil Automotive Products. The WeatherTech® line provides interior and exterior protection for your vehicle. Protect your investment with WeatherTech®. www.WeatherTech.com, 800-441-6287. **Check 19**

Westin Direct Train at home in as little as four months to be an Insurance Claims Adjuster. Nationally Accredited. Get free facts. Call U.S. Career Institute: 866-780-7944, Dept. 2DYB2BC1. www.uscieducation.com/2DYC1. **Check 20**

Cabinet Works Available in DIY, heavy-duty mechanism only or complete all-wood beds. We feature the strongest wood foundations. Complete instructions. www.disappearingwallbeds.com, 888-249-6188.

Central Boiler manufactures outdoor wood, corn and wood pellet furnaces designed to thermostatically heat entire homes, shops, domestic water and more. www.CentralBoiler.com, 800-248-4681.

CF Struck compact crawlers. Sized and priced for homeowners. Landscape your yard, clear brush, plow snow, dig ponds and more! Made in the USA for more than 50 years! Three models. Free info and pricing! www.StruckCorp.com, (262) 377-3300.

Clog Hog Remove tough drain clogs with your pressure washer or your money back. Order online and get free shipping (excludes AK, HI, Int'l). www.ClogHog.com.

Pioneer Steel buildings are economical, versatile, durable, maintenance-free and easy to erect. Providing high-quality steel buildings to suit any budget. A manufacturer since 1980. www.pioneersteel.com, 800-668-5422.

HandyWorks

BY JENNY STANLEY

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



Made in (and of) the USA

As a child, Club member **Wayne Taylor** of Sierra Vista, Arizona, started collecting dirt samples from every state that his family visited, and he continued this tradition into adulthood. To display his unique soil collection, Wayne crafted a table using white oak and maple and then carefully routed out the shape of the states along the top. He filled each state with dirt from that location and then poured a 1/16-in. layer of clear acrylic over the top to create a durable, functional surface.



Old World-style outdoor kitchen

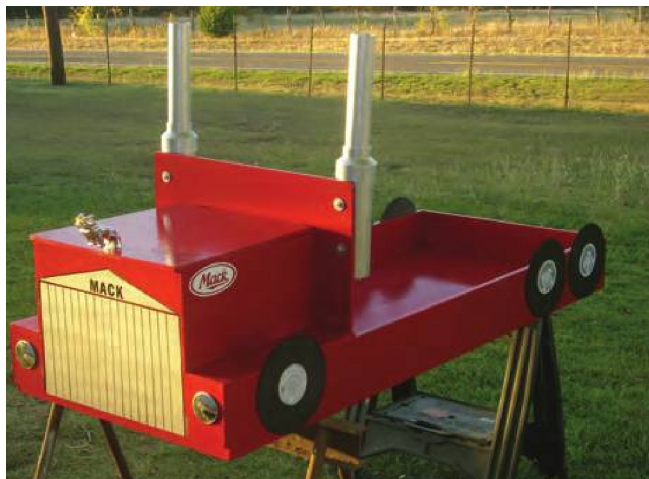
Club member **Allen Heiting** of Menasha, Wisconsin, built this impressive outdoor kitchen with the help of a friend who is a tile layer. The duo dug a 2-ft.-deep channel around an existing slab and buried PVC pipes that house electricity, natural gas and cable lines beneath 14 in. of gravel and 9 in. of concrete. Allen chose Old World-style bricks for the walls, columns and fireplace and integrated an electrical outlet for plugging in a TV and a switch for the lighting inside the columns. The outdoor escape also features concrete countertops, a built-in grill and storage and a dining area.



Lean, green storage machine

Completed in just one weekend, this green monster tool caddy, as creator and Club member **Michel Nadeau** of Miller Place, New York, calls it, is made out of leftover wood from other projects. It features casters for mobility, a lazy Susan for easy access to all sides, arms for holding various power tools and pegboard for storing hand tools. Additional hooks and lipped shelves hold bits, fasteners, paper towels, clamps and even a 5-gallon bucket, and a power strip keeps electricity at the ready.





Big-rig bed

"My grandson just turned 2 years old, and he loves big trucks," says Club member **Michael Bearden** of Greenville, Texas. And considering that he once drove one, Michael knows a thing or two about big rigs. He used his knowledge to construct a bed for his grandson out of 1x8 pine boards and a 4 x 8-ft. sheet of 1/2-in. medium-density fiberboard. He added fun details to create the look of a Mack truck and even incorporated storage space under the hood. Michael finished the bed with implement-equipment enamel for sheen and durability. ♦

CRITICS' CHOICE AWARD

WINNER: James Young of Sterling Heights, Michigan

PROJECT: "On a Mission," August/September 2011

PRIZE: James will receive an official certificate and a Skil 1830 2-1/4 HP Combo Router Kit.

Congratulations, James!



**Skil 1830
2-1/4 HP
Combo
Router Kit**



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BIG-RIG BED

Voting for this issue will end January 31, 2012. The winner will be announced in the April/May 2012 issue.

SHOW OFF YOUR PROJECT

To have your project considered, send:

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

Address to:

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

Or e-mail to:

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

GoodWorks

HANDY applauds those who extend a helping hand



Ramping up volunteerism

Club member **Donald Wertz** of Blue Ridge, Texas, belongs to a church group that started building wheelchair ramps for those in need. After completing several projects, the group caught the attention of The Texas Ramp Project, a nonprofit organization that offered to provide the materials and tools needed for each future ramp if people in the community would chip in half of the cost of materials. The partnership has been a success ever since. Each ramp requires about 1-1/2 days of work and about \$1,000. ♦

Tip Trader

Home and workshop hints from Club members

BY MIKE BERGER



Smart Oil Conservation

Club member **Gordon Goebel** of Schaefferstown, Pennsylvania, used a 21-in. length of 1-1/2-in.-dia. SCH 40 PVC pipe to create this oil-bottle drain manifold. By upending almost-empty oil bottles into the manifold, Gordon not only makes use of every last bit of oil in the bottle but also makes sure that as little oil residue as possible ends up in a landfill or at a recycling station.



Brass-Screw Saver

If you've ever stripped the head while driving a brass screw, you'll appreciate this old trick that Club member **Rich Riman** of Randolph, Massachusetts, reminded us of. Before driving the brass screw, first drill a pilot hole; then drive a steel screw of the same size into the pilot hole. When you remove the steel screw, the hole will be ready to accept the softer brass screw.



Spark-Plug Strategy

When Club member **Michael Gilfilian** of Hamlin, New York, was changing the spark plugs in his son's car, he had a difficult time installing the new plugs without cross-threading them into the hard-to-reach rear cylinders. His

solution: Use a length of old spark-plug cable as an extension to thread the new plugs in place. Once the plugs were loosely installed, he could pull off the length of cable and use a spark-plug socket and an extension to finish the job. ♦

SUBMIT YOUR TIP

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

tiptrader@HandymanClub.com

or mail them to:

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

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



MEMBER-TESTED SEAL

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

MEMBER FORUM

BY ROSS TANNER, PRODUCT TEST EDITOR

Member Tested

2,727 Club members tested \$54,967.45 in products

LI-ION COMBO KIT

MEMBER RATING: 9.8 BEST FEATURE: QUALITY

RIDGID, 866-539-1710, www.ridgid.com

Backed by a lifetime agreement for free batteries, parts and service, the Ridgid X4 5-piece 18V Lithium-Ion Combo Kit (\$499) features a hammer drill/driver, a circular saw, a reciprocating saw, an impact driver and an LED work light as well as an LED grip light that engages whenever you hold the tool and an innovative hex grip that provides maximum comfort. The hammer drill/driver has a 1/2-in. chuck, 565 in.-lbs. of torque and a mode selector for quick transitions between driving, drilling and hammering. The circular saw features a 6-1/2-in. blade, 5,000 RPM and a sight-line blower that directs debris away from the cut line for better visibility. The reciprocating saw boasts on/off orbital action for faster performance when cutting wood and a pivoting shoe that can move freely or be locked in three positions. The impact driver offers 1,400 in.-lbs. of torque, a one-hand quick-load bit holder and a removable belt hook. The LED work light provides 150 lumens and can easily change from spotlight to area light, and its retractable sky hook makes it easy to hang where you need it. The kit also includes two 18-volt Li-Ion batteries.



Walter Morrison, Somerdale, NJ: "The Ridgid Combo Kit exceeded everything I was expecting while building a deck. I had zero downtime because I could go from one tool to another, and I always had a battery ready."

Todd Bennett, Arcadia, LA: "I found it to be very durable after the impact drill accidentally fell off of an 8-ft. ladder and kept on working."



PULLOUT KITCHEN FAUCET

MEMBER RATING: 9.6 BEST FEATURE: EASE OF USE

Moen Inc., 800-289-6636, www.moen.com

Moen's new Benton Pullout Kitchen Faucet with Reflex (\$180) features a unique V-shape design with a convenient multifunction pull-down wand that offers an aerated spray, a stream and a unique pause button. A ball swivel joint between the hose and wand allows great range of motion, and the unit's redesigned hose provides fast, uninterrupted and user-friendly self-docking action. Other features include a lifetime warranty, a stainless finish that eliminates water spots and fingerprints, a Moen 1255 Duralast cartridge and a Hydrolock installation system, which allows the faucet and supply lines to snap together with an audible click for a quick, easy and secure connection.

Den Tucker, San Francisco, CA: "As a property manager, I've replaced many faucets. The hardest part is getting the wrench in to tighten the nuts and water line. The way this faucet is designed saves me time and frustration by providing a quick connection on the first try."

Scott Zorn, Waterbury, CT: "The retraction of the hose was very smooth, and I loved the convenience of the sprayer built right into the faucet."

PHOTOGRAPHY COURTESY MANUFACTURERS



SNOW PLOW

MEMBER RATING: 9.3 BEST FEATURE: QUALITY

The Home Plow, 877-504-7569, www.thehomeplow.com

The Home Plow (\$2,600) is engineered to fit today's light trucks and SUVs using a Class 3, 2-in. front-receiver hitch for quick and easy noncommercial snow removal. The sealed hydraulic power unit allows users to control the up/down motion of the plow; the left/right motion is controlled by Home Plow's patented Auto-Angle system — all operated from the driver's seat. Integrated casters make the plow easy to maneuver, store and attach. The blade is made of 14-gauge steel and coated with Dura Slick Powder Paint that provides better snow-rolling action for increased clearing performance.

Duane Manke, Annandale, MN: "The unit is lightweight but strong enough to plow my 700-ft. driveway. For heavier snowfalls I can use the locking pin, and the auto angler works great for lighter snowfalls."

Jim Reynolds, Newaygo, MI: "The plow is easy to attach to a vehicle. After plowing, I can quickly wheel it to the back of my garage for storage."



ADJUSTABLE SQUARE

MEMBER RATING: 9.2 BEST FEATURE: QUALITY

Affinity Tool Works LLC, 866-588-0395, www.affinitytool.com

The Bora Multi-Angle Adjustable Square (\$47 for the 12-in. model) takes the guesswork out of complex angle layouts. Featuring a durable extruded-aluminum base with an etched stainless steel ruler, the easy-to-open folding square has eight preset locking positions with precise measurements and a collapsible design for easy storage. It's available in three sizes and backed by a lifetime warranty.



Blain Secor, Cheney, WA: "The stainless steel blade and aluminum base make the square lightweight and strong. I like the large numerical indices for inch increments and the positive lock at each position."

Greg Felts, Lorena, TX: "As a mechanical engineer, I tried to find fault with the square, but the set angles are on the money. It is compact and does the work of several tools, and the craftsmanship is excellent."



TOILET GASKET

MEMBER RATING: 9.1 BEST FEATURE: CONVENIENCE

Sani Seal LLC, (317) 353-3640, www.sanisealgasket.com

The wax-free Sani Seal Toilet Gasket (\$10.95) features a unique design for trouble-free installation. Made of polyurethane foam, the antimicrobial gasket is repositionable and provides a water- and gas-tight seal even on floors where the flange is not level. The gaskets can be stacked to accommodate deeper set flanges while remaining flexible and resilient in extreme temperatures.

Delsley Sizemore Jr., Corunna, IN: "I love being able to have more than one try at setting the toilet in place without having to buy a new wax seal each time."

Terry Taylor, Port Clinton, OH: "The ability to hold the bolts upright is a big plus. The gasket allows you to reposition the toilet without ruining the ring, plus it seals better than wax and with less mess."



RECIPROCATING SAW BLADE

MEMBER RATING: 9.0 BEST FEATURE: VERSATILITY

Spyder, 888-471-2239, www.spyderproducts.com

Made of 1.23mm-thick bimetal steel, Bore-Blades (\$5.99 for a 6-in. blade, \$7.99 for an 8-in. blade, \$10.99 for a 10-in. blade) are compatible with all reciprocating saws. Each blade features two bimetal cutting edges and a rounded nose that's perfect for making plunge cuts. The dual-edge blade allows you to cut up and down or left and right without having to turn the blade around. It makes quick cuts in wood, pipe, sheet metal, plastic, nails, metal flashing, shingles, fiberglass or other hard materials without bouncing or jumping.

Keith Matthews, Viroqua, WI: "The rounded tip cuts easily through hardwood floors without drilling starting holes, and the double cutting edge goes forward and backward without a tool change or rotating."

Larry Scott, Martin, GA: "The dual cutting edges make using reciprocating saws in tight areas easier. Obtaining the best angle often requires turning the saw into awkward positions, but these keep you safely in control."

HAND CREAM

MEMBER RATING: 8.7 BEST FEATURE: PERFORMANCE

O'Keeffe's Co., 800-275-2718, www.okeeffescompany.com

Made to relieve dry, cracked hands, O'Keeffe's Working Hands (\$7.99) features an odorless, water-base formula that stimulates skin's natural repair process by hydrating it with glycerin, adjusting the pH balance and removing dead skin cells, allowing for better penetration of moisturizing ingredients. The cream is hypoallergenic and nongreasy and has a money-back guarantee.

David Nudge, Reynoldsburg, OH: "My knuckles tend to get very rough and sore in the winter. After three nights of using the odorless cream, my knuckles are no longer dry."

John Farrell, Poughkeepsie, NY: "The cream left a protective coating on my hands without being greasy, creating a smooth silky feeling. It eliminated cracks in my fingers in a short period of time."



HCOA RECOMMENDED



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

DEALS AND DISCOUNTS



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

YOU CAN BE A TESTER

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



PROJECT SUPPORT SYSTEM

MEMBER RATING: 9.0 BEST FEATURE: EASE OF USE

K & M of Virginia Inc., (804) 426-4366, www.versaspin360.com

VersaSpin 360 (\$34.99 for the 16-in. model) is a versatile and stable support system that securely elevates and rotates projects to save time and effort while painting and gluing. The unit allows you to reach all sides without touching wet surfaces. It includes eight Painter's Pyramids that offer nonstick support and eight Grabbers that provide a secure, nonslip surface for sanding and routing small woodworking projects. The unit can hold up to 200 pounds, and pilot holes allow you to mount it to other surfaces.

Glenn Schwartzberg, Upland, CA: "Painting odd-shape pieces was easy with few points of contact. The unit held wood tight when I was sanding, and being able to turn items saved time and effort."

Erle Carter, Omaha, NE: "I liked having both the pyramids and the grabbers for more versatility. The unit made my project virtually float in front of me."



ALL-PURPOSE SEALANT

MEMBER RATING: 8.4 BEST FEATURE: STRENGTH OF ADHESION

Red Devil Inc., 800-423-3845, www.reddevil.com

Red Devil's RD3000 Advanced All-Purpose Sealant (\$6.97 for a 9-ounce cartridge) is formulated with MaxFlex Technology, offering excellent adhesion without cracking or shrinking. The low-VOC sealant, which comes with a lifetime durability guarantee, adheres to wood, plaster, brick, metal, concrete, glass, stone, vinyl, masonry, tile, EIFS, stucco, aluminum and PVC. It can be exposed to water after only two hours of drying time, and after curing it is paintable and mold- and mildew-resistant.

Adam Myers, Kaneohe, HI: "The sealant set up fast with no bubbles or shrinkage. Drying time was quick with skin-over, allowing for clean, dirt-free sealing."

Chris French, Barling, AR: "I used the sealant around the doors and windows before painting my house and was very impressed. It's smooth and durable, and it painted great!"



UTILITY KNIFE

MEMBER RATING: 9.1

BEST FEATURE: CUTTING POWER

Olympia Tools International Inc., 866-461-8665, www.olympiatools.com

The Olympia Turbo Pro AutoLoad Knife (\$14.99) stores five blades in the handle and automatically loads a new blade when needed. The knife features single-hand operation with an ergonomic nonslip grip and a thumb indent for comfort, a smooth slide mechanism and a cast-aluminum handle. Its compact design and carabineer belt hook make it easy to carry.

Charles Mertes, Cogan Station, PA: "The knife is rugged and fits comfortably in your hand. Also, the storage area for the blades is practical and convenient."

Jacob Lucas, Tavares, FL: "The knife is easy to grip with a thumb indent for great control. It is a nice advantage to quickly change the blade without having to open the knife's handle." ◇

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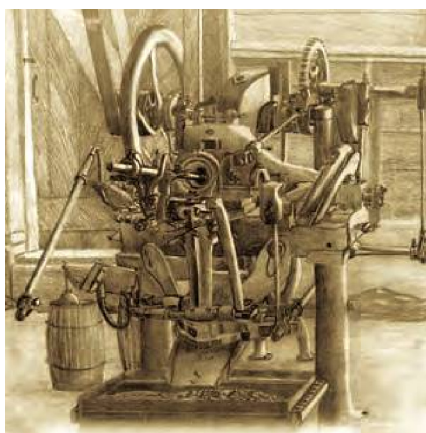
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Nail Notes

BY CONNIE BASTYR

These tough fasteners can outlast the structures they secure and offer evidence about the past

In these days of salvaged wood and treasured timbers, it's difficult to imagine that nails once held more value than the lumber they connected. Yet stories are told of American settlers' torching abandoned buildings so they could sift through the ashes and reclaim the nails for their next homestead. In the pioneers' economy, trees were plentiful; metal fasteners were not. Because of the scarcity of nails, carpenters and woodworkers often employed other joinery methods such as mortises and tenons, pegs or dovetails.



This nail-making machine, invented during the late 1700s, could cut the nail forms and shape the heads of the nails. The Tremont Nail Co. in Mansfield, Massachusetts, continues to make authentic cut nails that are appreciated by hardware purists and restorers of antique buildings and furniture.

Those methods now seem painstakingly slow, but making nails was at least as arduous.

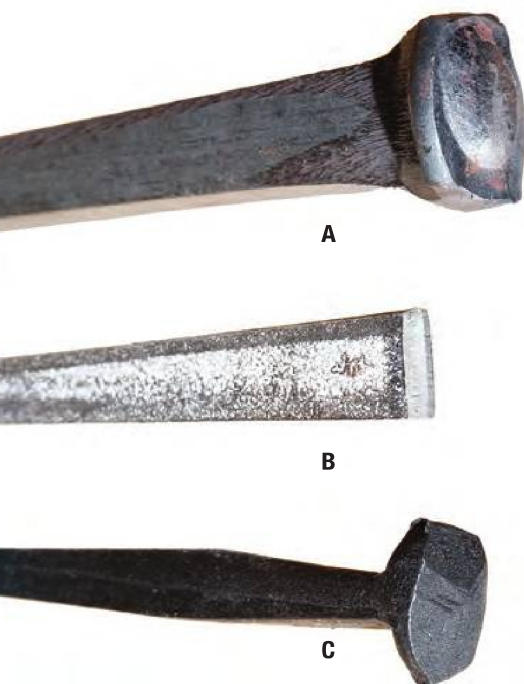
Early-18th-century methods of forming nails had not changed since the first forgings around 3000 B.C. Blacksmithing specialists called nailors heated iron and formed square rods; then they cut them into various lengths and pounded each one to form a point at one end and a domed or bent head at the other.

Helping to shape ancient civilizations, the mighty nail secured shelters, ships and fortresses. During the first century A.D., the Romans built Fort Inchtuthil, near Scotland, in which they forged

(and stored) seven tons of nails. Around 90 A.D., the legion was called to another post, forcing it to abandon the fort. The nails (ranging from 2 to 16 in. long) could not be hauled away or burned, so to keep the precious metal from enemy hands, the soldiers buried their steel stash. It remained hidden until archeologists discovered it in 1961.

The first big change in nail production came with the 1786 invention of a nail-making machine. New England inventor Ezekiel Reed devised a machine that cut steel bands (in varying widths, depending on the intended nail length) into narrow wedges and then bent or flattened the wide end to form the nail's head. One machine could turn out 200,000 pieces in a day, making nails much more affordable and readily available. However, it was the invention of wire nails in 1851 that altered the pace and practice of carpentry and construction. Today's machinery produces more than 1,000 common wire nails in a minute.

Because there are three distinct phases of nail-making methods (hand-wrought, machine-cut and wire) defined by specific time periods, nails give clues to the past. And because they outlast wood and most other building materials, these little artifacts have preserved history. As small and simple as it is, the basic metal nail holds profound significance as a game-changing, world-shaping tool. ♦



The head of a nail indicates how it was shaped: A) a machine-formed rosehead B) no head C) a pounded (wrought) head.

A THOUGHT FOR YOUR PENNIES

Nail sizes have been defined in penny units since the mid-15th century, when the cost (in English pence) for 100 nails was calculated according to the size of the nail. In defiance of inflation, we still refer to a 1-in. nail as a two-penny nail, a 2-in. nail as a six-penny nail, and so on, up to a 4-in., 20-penny nail.



Scan this with your smartphone or go to www.HandymanClub.com and click on Web Extras to see a video about how nails are made.

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