

OCTOBER/NOVEMBER 2013

HANDY

HANDYMAN CLUB OF AMERICA MAGAZINE

PATH TO SUCCESS

FLAGSTONE HOW-TO

PROJECTS

FOLDABLE
HOBBY TABLE

DIY STEEL
UTILITY LIFT

KID-SIZE
STEPSTOOL



SELECT
A SAFE

CABINETS
INSIDE & OUT

REPLACE A
CHIMNEY CHASE

A man wearing a tan cap and jacket is driving a truck. The view is from the driver's perspective, showing the steering wheel, dashboard, and a blurred landscape in the background. The text is overlaid on the upper half of the image.

A MAN.

A MAN AND HIS TRUCK.

A MAN AND HIS TRUCK AND A MISSION AND A MISSION

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Easy-to-install faux stone looks like the real thing (without all the expense and effort)



COVER PHOTO BY TRACY WALSH

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ENTHUSIASM MAKES THE DIFFERENCE

WITH YOUR HELP, HANDY CELEBRATES 20 YEARS OF IMPROVEMENT

This issue marks *HANDY*'s 20th anniversary. We're not expecting you to send presents or even give us a pat on the back (although none would be refused). We really just wanted to thank you for making this success possible.

The magazine has gone through a lot of changes since the November/December 1993 issue (when it was called *American How-To*). Our main focus is still on helping DIYers pursue fulfilling home-improvement and woodworking projects, but now we're able to offer much more information — from archived articles to up-to-the-minute news and reviews — through our Web site (HandymanClub.com), e-mail newsletters, social media and videos. And because *HANDY* is a Club publication, we've benefitted from your participation and feedback to make our content more relevant and accessible for a broader audience of enthusiasts.

What separates you from most people (who fix things because they have to) is that you view the work as an opportunity, not an obligation. Being enthusiastic and engaged makes your work stand out, and it's the reason you're probably viewed as the DIY expert in your neighborhood.

But more to the point, the engagement you provide has been extremely important for keeping *HANDY* vital over the years. For example, submitting photos of your projects to the *HANDYWORKS* and *GOODWORKS* departments inspires others to exercise their own creativity and to use their skills to help people. Your participation in our product-testing program (StuffStuff.com) provides valuable feedback to manufacturers (and you get to keep the products you test). Entering our annual Top Tool Tester Contest gives you the chance to win an expense-paid trip to the National Hardware Show in Las Vegas, where you can help manufacturers fine-tune their latest offerings. When you vote online for the annual Members' Choice *HANDY* Innovation Awards, you let us know what types of products you find appealing and useful. And your involvement in the forums on our Web site allows you to exchange valuable information with other Club members — and make new friends in the process.

We're not fortune tellers, so we can't say with certainty what *HANDY*'s next 20 years will bring. But because this anniversary is really all about you, we'd love to hear what you'd like the future to hold for all of us. ■



Larry Okrend
Editor in Chief



▲ *HANDY* started out as *American How-To*.

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For more information go to viagra.com or call 1-888-484-2472 (1-888-4VIAGRA).

THIS IS THE AGE OF TAKING ACTION. VIAGRA.

VIAGRA is prescription medication to treat erectile dysfunction (ED).

IMPORTANT SAFETY INFORMATION BELOW.

Do not take VIAGRA if you take nitrates, often prescribed for chest pain, as this may cause a sudden, unsafe drop in blood pressure.

Discuss your general health status with your doctor to ensure that you are healthy enough to engage in sexual activity. If you experience chest pain, nausea, or any other discomforts during sex, seek immediate medical help.

In the rare event of an erection lasting more than 4 hours, seek immediate medical help to avoid long-term injury.

If you are older than age 65, or have serious liver or kidney problems, your doctor may start you at the lowest dose (25 mg) of VIAGRA. If you are taking protease inhibitors, such as for the treatment of HIV, your doctor may recommend a 25-mg dose and may limit you to a maximum single dose of 25 mg of VIAGRA in a 48-hour period. If you have prostate problems or high blood pressure for which you take medicines called alpha blockers, your doctor may start you on a lower dose of VIAGRA.

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

VIAGRA should not be used with other ED treatments. VIAGRA should not be used with REVATIO or other products containing sildenafil.

VIAGRA does not protect against sexually transmitted diseases, including HIV.

The most common side effects of VIAGRA are headache, facial flushing, and upset stomach. Less commonly, bluish vision, blurred vision, or sensitivity to light may briefly occur.

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

You are encouraged to report negative side effects of prescription drugs to the FDA. Visit www.FDA.gov/medwatch or call 1-800-FDA-1088.

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IMPORTANT FACTS



VIAGRA
(sildenafil citrate) tablets

(vi-AG-rah)

IMPORTANT SAFETY INFORMATION ABOUT VIAGRA

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

ABOUT ERECTILE DYSFUNCTION (ED)

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

ABOUT VIAGRA

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

VIAGRA does not cure ED.

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

VIAGRA is not a hormone or an aphrodisiac.

WHO IS VIAGRA FOR?

Who should take VIAGRA?

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

Who should NOT take VIAGRA?

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

BEFORE YOU START VIAGRA

Tell your doctor if you have or ever had:

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

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

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

POSSIBLE SIDE EFFECTS OF VIAGRA

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

The most common side effects are:

- Headache
- Feeling flushed
- Upset stomach

Less common side effects are:

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

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

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

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

HOW TO TAKE VIAGRA

Do:

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

Don't:

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

NEED MORE INFORMATION?

- This is only a summary of important information. Ask your doctor or pharmacist for complete product information OR
- Go to www.viagra.com or call (888) 4-VIAGRA (484-2472).



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DROP-LEAF UTILITY TABLE

INEXPENSIVE, STURDY,
FUNCTIONAL AND
ATTRACTIVE



MATT SPROUSE

This jack-of-all-trades table serves up a lot of versatility. Equipped with a pivoting leg on each side to support the hinged drop-down leaves, it offers three possible configurations. Placed against a wall with both leaves down, it's a small entryway table, display table or serving table (photo, p. 8). Lift the front leaf and you have a table for two, an occasional office space or a buffet table. Move it away from the

wall and lift both leaves to make a large (60- x 36-in.) crafting surface or gift-wrapping station; or use it as an extra dining table to seat four. The list of uses goes on: jigsaw puzzles, card games, sewing projects and more.

Because this is a utility table, you can use just about any 3/4-in.-thick panel material for the top, and any species of solid wood will work for the base. I used melamine-coated particleboard for

the top and hard maple for the base. If you plan to use these materials, keep in mind that melamine sheet stock is heavy. The weight gives the table stability, but it also makes moving the table difficult (for one person, anyway).

This is a very easy project suitable for any skill level. You can build the table in one day for about \$150. The lumber and sheet stock are available at a lumberyard or home-improvement

center. You can buy stock that is S4S (surfaced four sides) or S2S straight-line ripped (surfaced two faces and one straight cut edge). I purchased the hinges online (see SOURCES).

CONSTRUCTION NOTES

The tools necessary to build this project are a table saw with a good rip blade, a miter saw, a biscuit joiner, an orbital sander and a router with a top-bearing pattern-cutting bit, a straight bit, a 1/4-in.-radius roundover bit and a 1/8-in.-radius roundover bit. You'll also need a few short bar clamps, four 18-in.-long bar clamps and two 36-in.-long pipe or bar clamps.

Lifting, moving and cutting large, heavy sheet stock on a table saw can be very difficult, especially for one person. And sawing clean edges without chips or tear-out is nearly impossible unless you have a really good table saw setup and a super-sharp plywood-cutting blade. I'll show you an easy way to cut the panels using a router, which eliminates all of those problems.

The success of the table is based on assembling the parts perfectly square to each other. Take your time and use high-quality squares that you know are truly 90 degrees. To check larger assemblies such as the base sides, I used my trusted framing square that I have fine-tuned to exactly 90 degrees (see Web Extras, below, right).



MATT SPROUSE

SHOPPING LIST

- ▶ 8/4 maple (3 board ft. — includes 75 percent waste)
- ▶ 4/4 maple (8 board ft. — includes 75 percent waste)
- ▶ 3/4-in. x 4 x 8-ft. white melamine panel (1)*
- ▶ No. 20 biscuits (24)
- ▶ No. 10 x 1-1/4-in. panhead screws (10)
- ▶ 2-1/2 x 1-3/4-in. brass broad hinges (4 pairs)

*Use CARB 2-compliant particleboard (very low formaldehyde)

CUTTING LIST

▶ KEY	NO.	DESCRIPTION	SIZE
BIRCH OR MAPLE			
▶ A	4	Legs	1-1/2 x 1-1/2 x 28-1/4 in.
▶ B	2	Side aprons	3/4 x 3-1/2 x 31-1/2 in.
▶ C	2	End aprons	3/4 x 3-1/2 x 7-3/4 in.
▶ D	2	Side stretchers	3/4 x 3 x 31-1/2 in.
▶ E	2	End stretchers	3/4 x 3 x 7-3/4 in.
▶ F	6	Table cleats	3/4 x 3/4 x 3 in.
▶ G	2	Shelf cleats (optional)	3/4 x 3/4 x 30 in.
▶ H	2	Gate legs	3/4 x 1-1/2 x 28-1/4 in.
▶ I	2	Upper rails	3/4 x 3-1/4 x 11-7/8 in.
▶ J	2	Lower rails	3/4 x 3 x 11-7/8 in.
▶ K	2	Pivoting legs	3/4 x 1-1/2 x 20 in.
WHITE MELAMINE			
▶ L	1	Tabletop	3/4 x 12 x 36 in.
▶ M	2	Table leaves	3/4 x 24 x 36 in.
▶ N	1	Shelf (optional)	3/4 x 8-1/2 x 32-1/4 in.

The legs, aprons and stretchers (A through E) are joined with offset biscuit joints. This means the faces of those pieces do not align flush with each other. All that's needed to create the joint is a spacer equal in thickness to the desired offset. I'll walk you through that when it's time to cut the biscuit grooves. The rest of the setup is straightforward. It's a good idea to label all of the leg parts when you're cutting the biscuit grooves and assembling the table base. That will eliminate a lot of confusion.

The hinges I used are called broad hinges. You've probably seen them

before but may not have known their technical name. (I didn't.) They look a lot like butt hinges, but their knuckles only protrude on one side of the hinge so they can be mounted flat.

BASE ASSEMBLY

Start by cutting the base pieces A through G to size (see cutting list, above). Keep in mind that the shelf (N) is optional, so don't bother cutting the shelf cleats (G) if you won't use them. Cut the offset biscuit grooves in the ends of the aprons and stretchers and in the legs (A through E; photos 1 and 2, p. 10). Rout

WEB EXTRAS



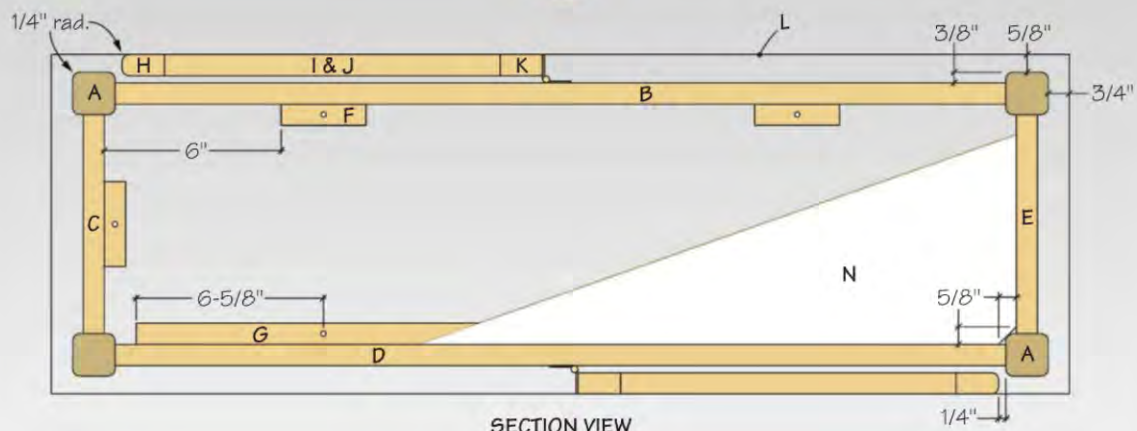
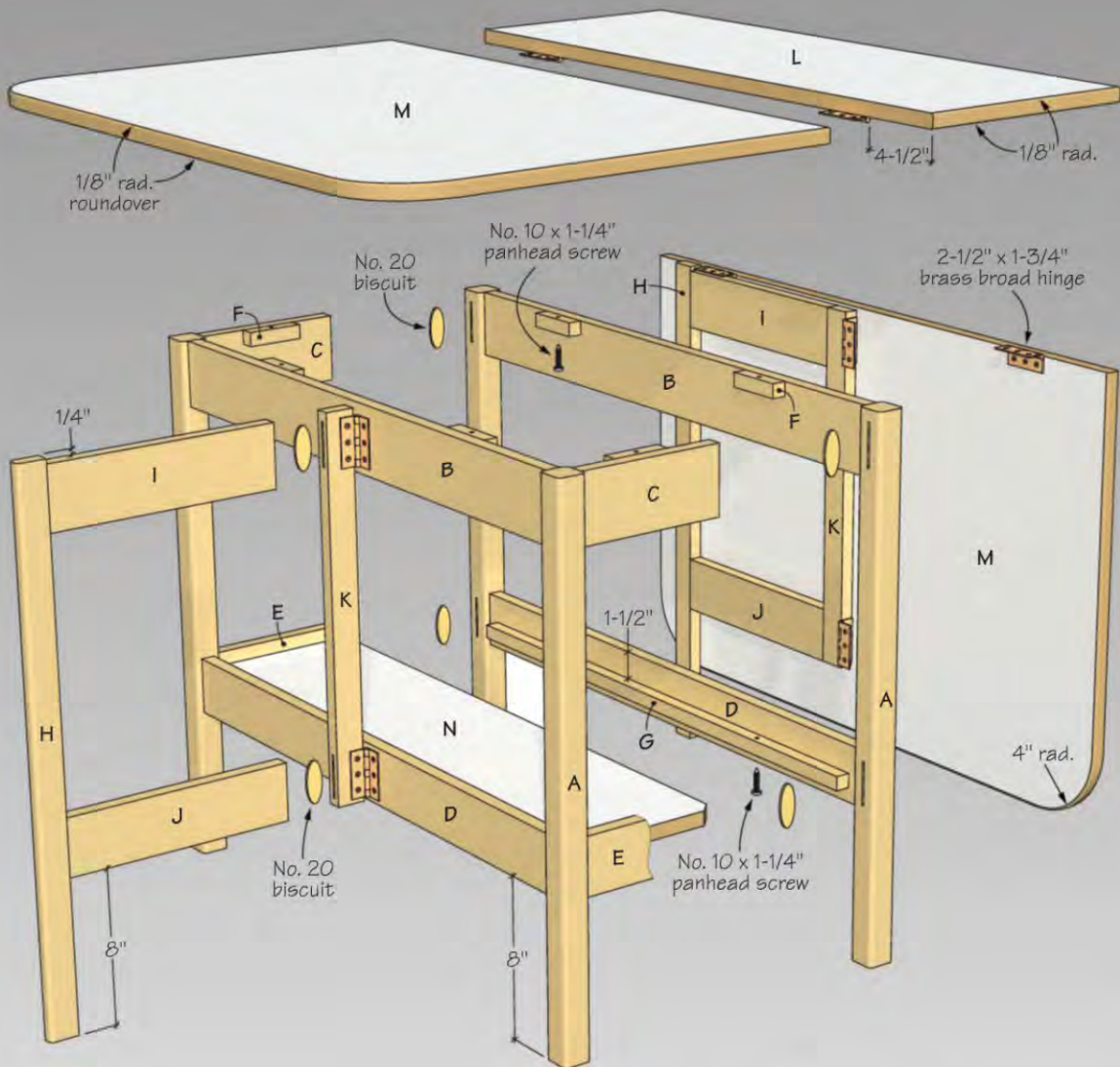
SQUARE NOT SQUARE?

Watch a video about how to check that a framing square is accurate — and how to correct one if it's not. Just scan this tag or visit HandyMagazine.com/on13.



◀ When it's not on duty as a hobby/craft work surface or dining table, this multipurpose piece folds down to a 12- x 36-in. table that can serve as an entryway mail drop, a beverage bar or a display area with a concealed storage shelf below.

DROP-LEAF UTILITY TABLE



SECTION VIEW

ILLUSTRATION BY BRUCE KIEFFER

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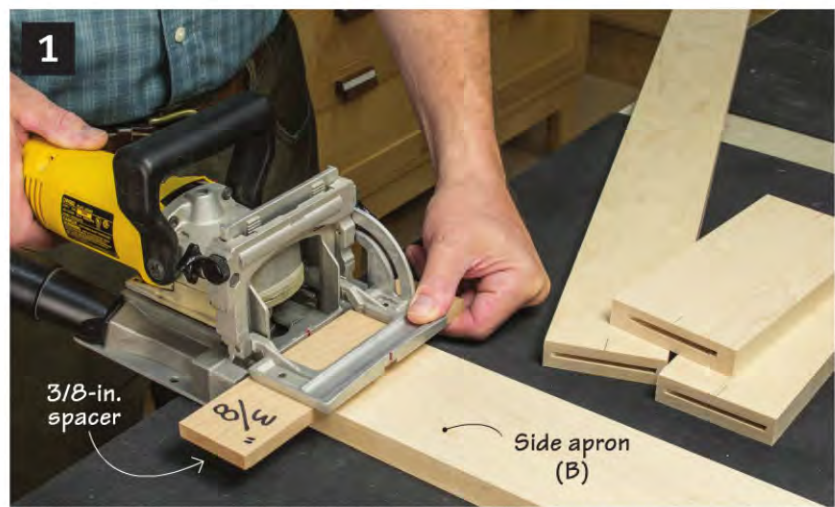
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▲ Cut the offset biscuit grooves in the ends of the aprons and stretchers. The fence height with the 3/8-in. spacer is set to cut the groove in the center of the pieces.



▲ Cut the offset biscuit grooves in the legs (A). Don't change the height of the biscuit joiner's fence, and don't use the spacer. This setup creates the 3/8-in. offset of the parts.



▲ Assemble the base sides. Make sure the frames are perfectly square. This is very important to the success of the table. I use an old framing square that I know is exactly 90 degrees.

WORKSHOP

the 1/4-in.-radius roundover edges on the legs. Finish-sand the legs, aprons and stretchers. Use sandpaper to ease the exposed sharp edges of the aprons and stretchers.

Assemble the base sides with glue and biscuits (photo 3). Complete the base assembly by adding the end aprons and stretchers to one side (photo 4, p. 12); then add the other assembled side. Drill the screw holes in the table cleats (F) and shelf cleats (G); then glue and clamp those pieces to the base.

GATE-LEG FRAMES

Cut the gate-leg frame pieces (H through K) to size. Cut the biscuit grooves that join the frame pieces. **Note:** The tops of the upper rails (I) are set 1/4 in. from the tops of the gate legs (H). This is intentional so that when they are swung out, the gate-leg frames will not interfere with the tabletop hinges (see illustration, p. 9). Finish-sand the inside edges of the frame pieces, but be very careful not to distort or round the edges where the pieces join. I find it best to just avoid sanding those areas.

Assemble the gate-leg frames with glue and biscuits. Rout the 1/4-in.-radius outside roundover edges on the gate legs (H). Finish-sand the outsides of the gate-leg frames. Attach the gate-leg frames to the table base (photo 5).

TOP FABRICATION

Next, cut the melamine pieces (L, M and N) to size. Use a circular saw or jigsaw to rough-cut the panels; then use a router and straightedge guide to square one edge (photo 6). Lay out and cut the other three edges using the same setup. The distance between the guide edge and the cut edge is equal to the distance between the edge of the router base and the cutting circle of the router bit. An alternative approach is to clamp a thicker straightedge guide to the cut line and make the cut with a top-bearing pattern-cutting bit. Each method has its pros and cons.

Make a 1/2-in.-thick medium-density fiberboard routing template with a 4-in.-radius corner and rout the shapes of the table-leaf corners (photo 7, p. 13). Rout



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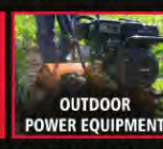
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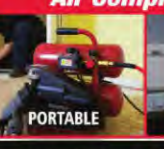
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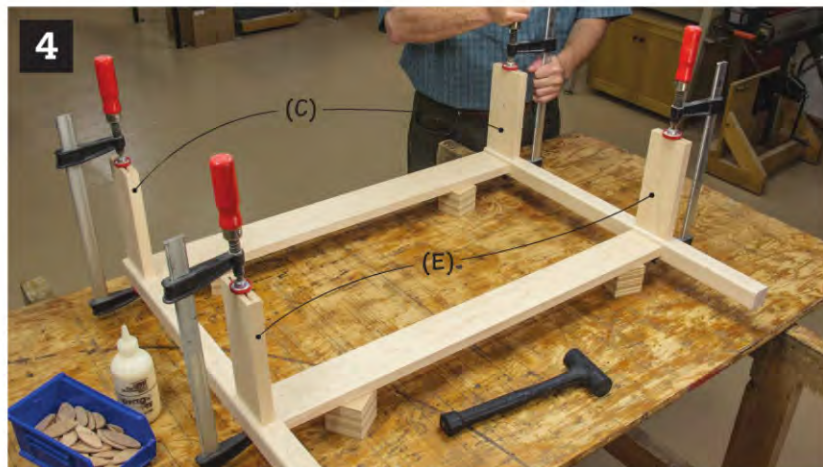
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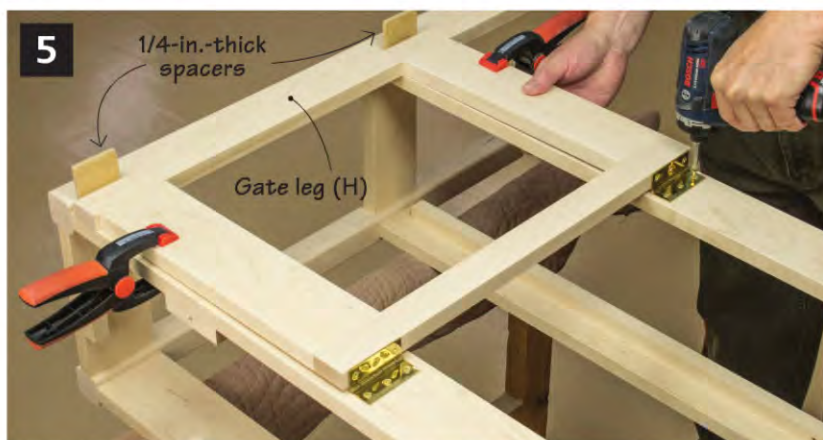
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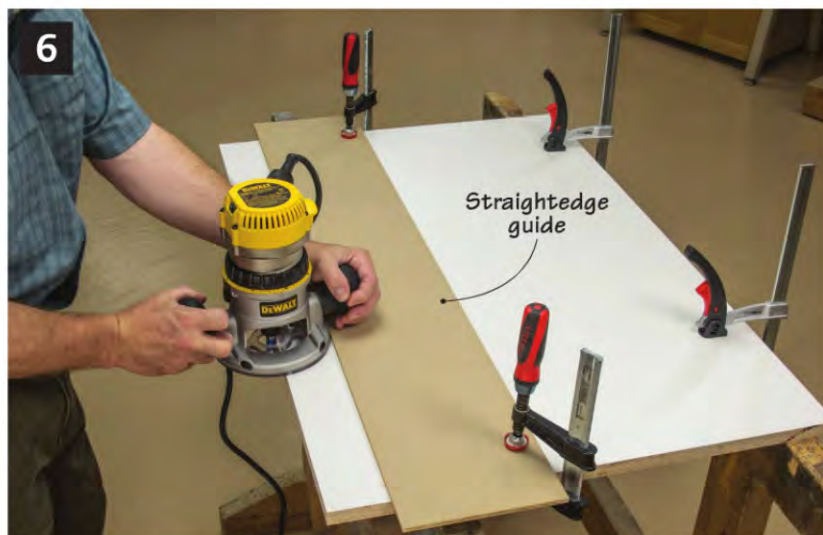
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▲ Add the end aprons (C) and end stretchers (E) to one assembled side. Again check to be sure the parts are square, and then add the other assembled side.



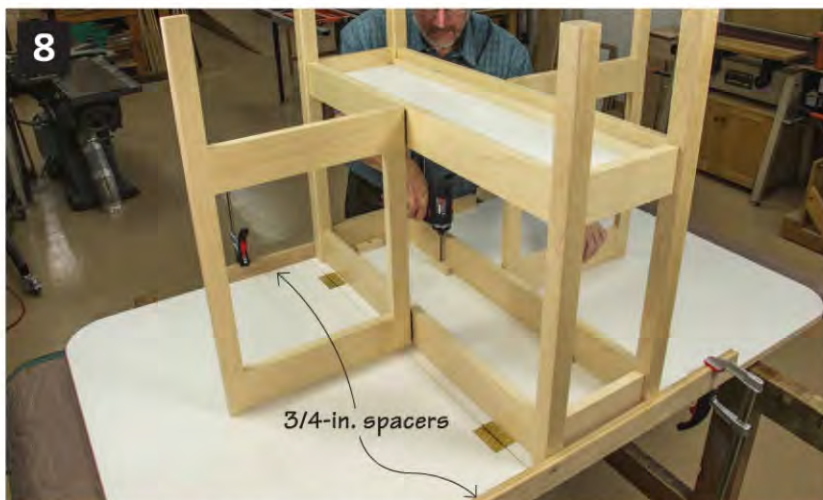
▲ Align and mount the gate-leg frames to the base. Place 1/4-in.-thick spacers between the gate legs (H) and base legs (A), and set the gate-leg tops and bottoms flush with the leg tops and bottoms.



▲ Use a clamped-on straightedge and a router with a straight bit to make chip-free cuts in the melamine panels (L, M and N). This technique works great if your table saw isn't up to the task.



▲ Rough-cut the corners of the table leaves (M). To rout the 4-in. radius, use a template (made from 1/2-in. medium-density fiberboard) and a top-bearing router bit. Template routing is fast and consistent.



▲ Align and screw the base to the tabletop. Use 3/4-in.-thick spacers at the ends to center the base, and visually center the base between the top hinges.

the 1/8-in.-radius roundover on the outside edges on the tabletop and leaves. Be sure to use sandpaper to ease the razor-sharp edges where the panels and hinges join.

FINISHING TOUCHES

Separate the gate-leg frames and base by unscrewing the hinges. Apply your favorite finish to the solid wood. I used Briwax clear paste wax. It's super-fast: applied, done and ready to complete the table assembly in less than two hours. Other good finish choices include water-base polyurethane, wipe-on polyurethane or Danish oil.

Cut the shelf (N) to size and form the 45-degree corners as shown in the illustration; then attach the shelf to the base with screws. Enlist a helper to set

the tabletop assembly upside down on a worktable covered with a soft blanket. Mount the hinges that join the tabletop and leaves. Set the base in place and fasten it to the top (photo 8, above). Finally, fold the table leaves up against the legs to maneuver the table (again with help) to its feet and put it into service — in the entryway, the kitchen, the dining room, the family room or wherever it's needed. ■

Bruce Kieffer is a custom furniture builder, freelance woodworking author and technical illustrator. You can see his work at kcfi.biz.

SOURCES

Amazon (National Mfg. N211391 broad hinge), amazon.com

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MULTIPURPOSE LIFTING WORKSTATION

BUILD A LOW-PROFILE CART/WORKTABLE FOR MOVING ITEMS AND SERVICING EQUIPMENT

Servicing a push-style lawn mower can be challenging, and I wanted to design a workstation that would make the job easier. The idea was to raise the mower so I could access the blade and oil-drain plug beneath the deck and clean out grass clippings. As I weighed this desire against my reluctance to build single-purpose equipment for the shop, I considered what other jobs this type of workstation could help with.

In evaluating my needs, I thought of the backbreaking task of moving heavy objects from the floor to the workbench. My solution: a hydraulically operated lift cart with a removable top to allow a lawn mower or similar equipment to be serviced. With the top in place, the cart could lift 250 pounds or more.

I liked the low-profile design of the hydraulics used for the car dollies I've employed to move cars around my shop, and with a 1,500-pound lifting force, they are more than capable of meeting my needs. I kept the design of this unit low so I could easily load items from the floor, and I made the handle removable so the workstation could be stored beneath a bench or leaned against a wall. The photos on the following pages show how I used the parts from the car dolly to create this project.



▲ Rather than search for the individual parts I needed to build this project, I purchased an OTC Stinger car dolly, which features a small but stout hydraulic pump capable of lifting 1,500 pounds, online for less than \$120.



▲ I started by disassembling the car dolly. Except for the large black rollers and one section of tubing, I repurposed the rest of the parts for this project.



▲ To complete the disassembly, I used a 5-in. grinder and a reciprocating saw to cut the welds connecting the wheel-support bars to the cross tubing.

For people with a higher risk of stroke due to Atrial Fibrillation (AFib) not caused by a heart valve problem

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- 3 Unlike warfarin, there's no routine blood testing.

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Ask your doctor if ELIQUIS is right for you.

ELIQUIS is a prescription medicine used to reduce the risk of stroke and blood clots in people who have atrial fibrillation, a type of irregular heartbeat, not caused by a heart valve problem.

IMPORTANT SAFETY INFORMATION:

- Do not stop taking ELIQUIS without talking to the doctor who prescribed it for you. Stopping ELIQUIS increases your risk of having a stroke. ELIQUIS may need to be stopped, prior to surgery or a medical or dental procedure. Your doctor will tell you when you should stop taking ELIQUIS and when you may start taking it again. If you have to stop taking ELIQUIS, your doctor may prescribe another medicine to help prevent a blood clot from forming.

- ELIQUIS can cause bleeding which can be serious, and rarely may lead to death.

- You may have a higher risk of bleeding if you take ELIQUIS and take other medicines that increase your risk of bleeding, such as aspirin, NSAIDs, warfarin (COUMADIN®), heparin, SSRIs or SNRIs, and other blood thinners. Tell your doctor about all medicines, vitamins and supplements you take. While taking ELIQUIS, you may bruise more easily and it may take longer than usual for any bleeding to stop.

- Get medical help right away if you have any of these signs or symptoms of bleeding:

- unexpected bleeding, or bleeding that lasts a long time, such as unusual bleeding from the gums; nosebleeds that happen often, or menstrual or vaginal bleeding that is heavier than normal
- bleeding that is severe or you cannot control
- red, pink, or brown urine; red or black stools (looks like tar)
- coughing up or vomiting blood or vomit that looks like coffee grounds
- unexpected pain, swelling, or joint pain; headaches, feeling dizzy or weak

- ELIQUIS is not for patients with artificial heart valves.

- Before you take ELIQUIS, tell your doctor if you have: kidney or liver problems, any other medical condition, or ever had bleeding problems.

Tell your doctor if you are pregnant or breastfeeding, or plan to become pregnant or breastfeed.

- Do not take ELIQUIS if you currently have certain types of abnormal bleeding or have had a serious allergic reaction to ELIQUIS. A reaction to ELIQUIS can cause hives, rash, itching, and possibly trouble breathing. Get medical help right away if you have sudden chest pain or chest tightness, have sudden swelling of your face or tongue, have trouble breathing, wheezing, or feeling dizzy or faint.

You are encouraged to report negative side effects of prescription drugs to the FDA. Visit www.fda.gov/medwatch, or call 1-800-FDA-1088.

Please see additional Important Product Information on the adjacent page.

Individual results may vary.

Visit ELIQUIS.COM
or call 1-855-ELIQUIS

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Eliquis®
(apixaban) tablets 5mg

IMPORTANT FACTS

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The information below does not take the place of talking with your healthcare professional. Only your healthcare professional knows the specifics of your condition and how ELIQUIS® may fit into your overall therapy. Talk to your healthcare professional if you have any questions about ELIQUIS (pronounced ELL eh kwiss).

What is the most important information I should know about ELIQUIS (apixaban)?

Do not stop taking ELIQUIS without talking to the doctor who prescribed it for you. Stopping ELIQUIS increases your risk of having a stroke. ELIQUIS may need to be stopped, prior to surgery or a medical or dental procedure. Your doctor will tell you when you should stop taking ELIQUIS and when you may start taking it again. If you have to stop taking ELIQUIS, your doctor may prescribe another medicine to help prevent a blood clot from forming.

ELIQUIS can cause bleeding which can be serious, and rarely may lead to death. This is because ELIQUIS is a blood thinner medicine that reduces blood clotting.

You may have a higher risk of bleeding if you take ELIQUIS and take other medicines that increase your risk of bleeding, such as aspirin, nonsteroidal anti-inflammatory drugs (called NSAIDs), warfarin (COUMADIN®), heparin, selective serotonin reuptake inhibitors (SSRIs) or serotonin norepinephrine reuptake inhibitors (SNRIs), and other medicines to help prevent or treat blood clots.

Tell your doctor if you take any of these medicines. Ask your doctor or pharmacist if you are not sure if your medicine is one listed above.

While taking ELIQUIS:

- you may bruise more easily
- it may take longer than usual for any bleeding to stop

Call your doctor or get medical help right away if you have any of these signs or symptoms of bleeding when taking ELIQUIS:

- unexpected bleeding, or bleeding that lasts a long time, such as:
 - unusual bleeding from the gums
 - nosebleeds that happen often
 - menstrual bleeding or vaginal bleeding that is heavier than normal
- bleeding that is severe or you cannot control
- red, pink, or brown urine
- red or black stools (looks like tar)
- cough up blood or blood clots

- vomit blood or your vomit looks like coffee grounds
- unexpected pain, swelling, or joint pain
- headaches, feeling dizzy or weak

ELIQUIS (apixaban) is not for patients with artificial heart valves.

What is ELIQUIS?

ELIQUIS is a prescription medicine used to reduce the risk of stroke and blood clots in people who have atrial fibrillation.

It is not known if ELIQUIS is safe and effective in children.

Who should not take ELIQUIS?

Do not take ELIQUIS if you:

- currently have certain types of abnormal bleeding
- have had a serious allergic reaction to ELIQUIS. Ask your doctor if you are not sure

What should I tell my doctor before taking ELIQUIS?

Before you take ELIQUIS, tell your doctor if you:

- have kidney or liver problems
- have any other medical condition
- have ever had bleeding problems
- are pregnant or plan to become pregnant. It is not known if ELIQUIS will harm your unborn baby
- are breastfeeding or plan to breastfeed. It is not known if ELIQUIS passes into your breast milk. You and your doctor should decide if you will take ELIQUIS or breastfeed. You should not do both

Tell all of your doctors and dentists that you are taking ELIQUIS. They should talk to the doctor who prescribed ELIQUIS for you, before you have any surgery, medical or dental procedure.

Tell your doctor about all the medicines you take, including prescription and over-the-counter medicines, vitamins, and herbal supplements. Some of your other medicines may affect the way ELIQUIS works. Certain medicines may increase your risk of bleeding or stroke when taken with ELIQUIS.

How should I take ELIQUIS (apixaban)?

Take ELIQUIS exactly as prescribed by your doctor. Take ELIQUIS twice every day with or without food, and do not change your dose or stop taking it unless your doctor tells you to. If you miss a dose of ELIQUIS, take it as soon as you remember, and do not take more than one dose at the same time. **Do not run out of ELIQUIS. Refill your prescription before you run out. Stopping ELIQUIS may increase your risk of having a stroke.**

What are the possible side effects of ELIQUIS?

- See "What is the most important information I should know about ELIQUIS?"
- ELIQUIS can cause a skin rash or severe allergic reaction. Call your doctor or get medical help right away if you have any of the following symptoms:
 - chest pain or tightness
 - swelling of your face or tongue
 - trouble breathing or wheezing
 - feeling dizzy or faint

Tell your doctor if you have any side effect that bothers you or that does not go away.

These are not all of the possible side effects of ELIQUIS. For more information, ask your doctor or pharmacist.

Call your doctor for medical advice about side effects. You may report side effects to FDA at 1-800-FDA-1088.

This is a brief summary of the most important information about ELIQUIS. For more information, talk with your doctor or pharmacist, call 1-855-ELIQUIS (1-855-354-7847), or go to www.ELIQUIS.com.

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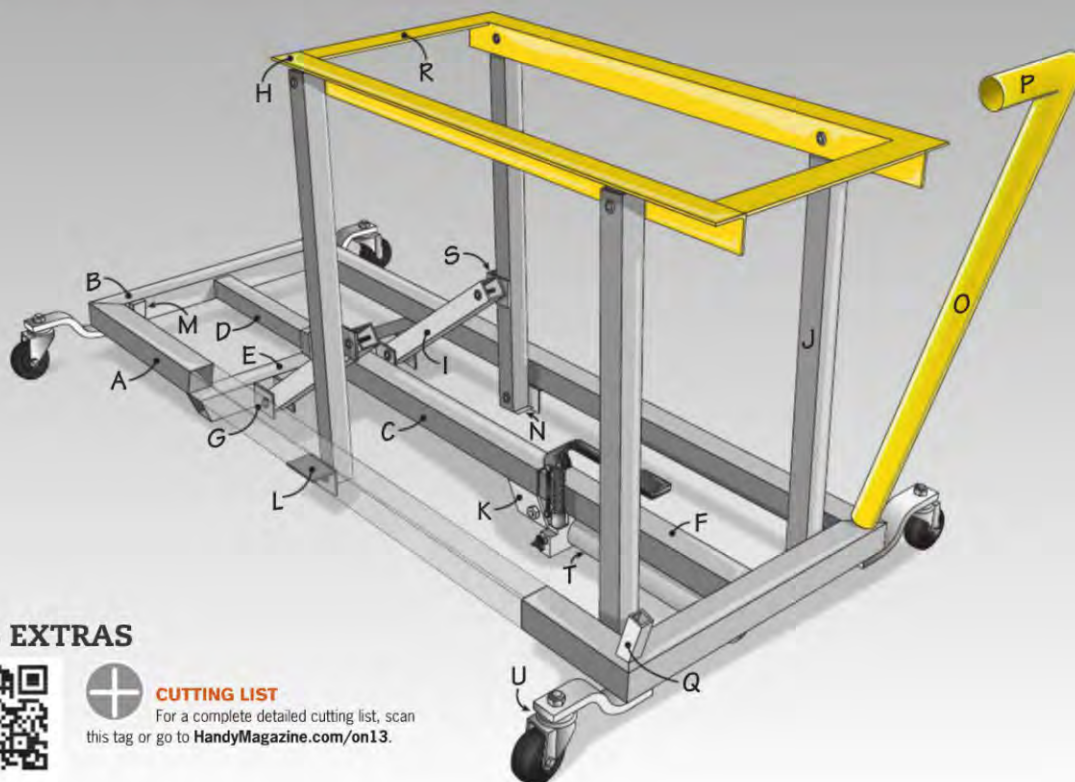
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December 2012
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LIFTING WORKSTATION



WEB EXTRAS



CUTTING LIST

For a complete detailed cutting list, scan this tag or go to HandyMagazine.com/on13.

4



▲ I began by cutting the base perimeter frame out of 1/8-in. x 2-in. square tubing using a horizontal band saw. I mitered the ends 45 degrees.

5

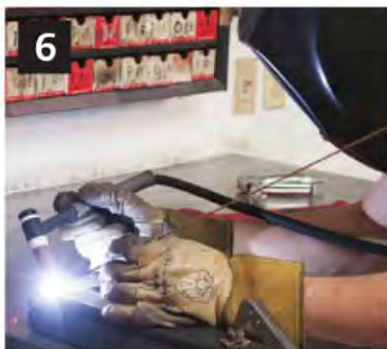


▲ After clamping the base sections to the fabrication table, I checked that the entire assembly was square.

SHOPPING LIST

- | | |
|--|--|
| ▶ Hydraulic car dolly (OTC model 1580) | ▶ 1/2-in. x 3-in. bolts (6) |
| ▶ 1/8-in. x 2-in. x 24-ft. square tubing | ▶ 1/2-in. x 2-1/2-in. bolts (6) |
| ▶ 1/8-in. x 1-1/2-in. x 24-ft. square tubing | ▶ 1/4-in. x 1-in. machine screws (4) |
| ▶ 1/8-in. x 2-in. x 8-ft. angle iron | ▶ 1/4-in. x 1-in. thumb screws (2) |
| ▶ 1/8-in. x 1-1/4-in. x 3-ft. bar stock | ▶ 1/2-in. nyloc nuts (12) |
| ▶ 1/8-in. x 1-1/2-in. x 8-ft. round tubing | ▶ 1/2-in. flat washers (30) |
| ▶ 1/8-in. x 1-in. x 1-ft. square tube | ▶ 3/4-in. x 3-1/2-in. bolt and nut (1) |
| ▶ 3/16-in. x 2-in. x 2-ft. bar stock | ▶ 3/4-in. flat washers (2) |
| ▶ 3/4-in. plywood (1/4 sheet) | |

6

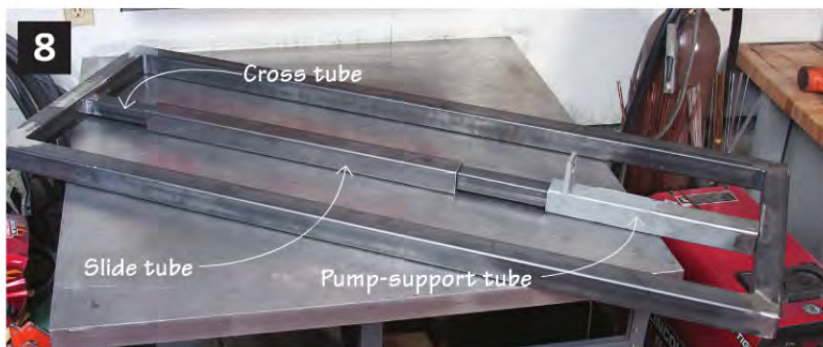


▲ I used a TIG welder on this project for greater weld control, but a MIG welder would also work.

7



▲ After tack welding the corners and re-checking that the assembly was square, I welded the corners solid and dressed them using a 5-in. handheld grinder.



▲ Before sliding the 1/8-in. x 1-1/2-in. square cross tube into position, I inserted one end of it into the pump-support tube salvaged from the car dolly and the other end into the 2-in. square x 27-in.-long slide tube.



▲ I cut the 27-3/4-in. main support arms and the 16-1/2-in. lift arms from 1-1/2-in. tubing and then drilled 1/2-in.-dia. holes for the bolts 3/4 in. from the ends.



▲ The main support arms mount beneath the angle-iron top rails. I radiused the upper corners of the tubing so the completed assembly would fold without binding.



▲ For the top rails I used two pieces of 2-in. x 36-in. angle iron. I drilled two holes 3/4 in. from the bottom edge and 1-1/2 in. from one end and 7-1/4 in. from the other.



▲ I bolted the main support arms to the top rails and positioned the assembly inside the base. After fabricating 2-in. angle-iron brackets to secure the arms to the base, I first tack welded and then solidly welded them in place.



▲ Using a metal-cutting band saw, I cut the 1/2-in.-thick wheel-support straps salvaged from the car dolly and then welded them to the underside of the main base section.



▲ I used the scrap pieces of the wheel-support straps to fabricate stops. Each stop has one angled corner that helps the top to align with the base frame when it's lowered.



▲ To fabricate a stop for the back edge of the lift assembly, I cut a piece of 1/8-in.-thick bar stock and welded it to the bottom of the front post. This stop prevents the top rails from dropping below the main base section.



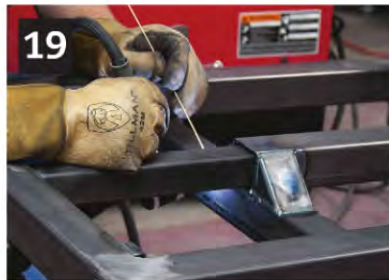
▲ To tie the top rails together, I welded two 1/8 x 1-1/4 x 13-3/4-in.-long piece of bar stock between them.



▲ I fabricated a bracket out of a 4-in. length of 2-in. square tubing to attach the slide tube to the hydraulic pump assembly.



▲ Next, I fabricated a cross tube from 2-in. square tubing and welded it only to the center slide tube.



▲ I fabricated additional gussets for the connection between the cross tube and the center slide tube from 2-in. square tubing and welded them in place.



▲ After fabricating 3/16 x 2 x 2-1/2-in. steel tabs, I bolted them to the lift arms and then tack welded them.



▲ To complete the lift assembly, I fabricated a 3/16 x 2 x 5-1/4-in. bracket, bent it to 90 degrees and then tack welded it in place.

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▲ After testing the operation of the lift mechanism, I welded all of the brackets.



▲ To complete the final welds, I turned the cart over. (This enables you to see the entire lift-arm assembly and how the parts work together.)



▲ To make mounts for the removable handle, I cut two 3-in.-long pieces of 1-in. square tubing and angled one end 15 degrees; then I welded them to the base section.



▲ The handle is made of 1/8-in. x 1-1/2-in.-dia. round tube. I mitered the ends using a horizontal band saw.



▲ I welded the upper corners of the handle and then ground, radiused and sanded them smooth.



▲ To lock the handle in place during use, I drilled and then tapped 1/4-20 threads 1 in. from the end of the tube.



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28



▲ To reuse the safety pin from the car dolly, I drilled a hole through the slide tube and into the cross tube.

29



▲ Before painting, I welded the main lower bolts to the brackets across two faces for added stability.

30



▲ To make the work surface, I cut a 3/4 x 40 x 21-3/4-in. plywood top and then secured it to the top rails by drilling and tapping the rails and using 1/4-20 fasteners.

31



▲ Lubrication is key to the function of the lift mechanism. I applied white lithium grease to the main cross tube and beneath the side rails.

**IN ACTION**

To see this low-profile workhorse in action, scan this tag or go to Handy-Magazine.com/on13.

I've only begun to find uses for this back-saving workhorse. Whether it's lifting concrete blocks into the bed of a pickup, moving heavy projects to the workbench or fulfilling its original purpose — raising outdoor equipment for service — this cart has excelled at every task. And with the handle easily removed, its low-profile design allows the lift to be stored out of the way until I think up another chore for it. ■

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OUTDOOR LIVING

BY CONNIE BASTYR | PHOTOS BY SCOTT JACOBSON

STEPPING STONES



A LANDSCAPER'S APPROACH TO BUILDING A FLAGSTONE PATH THAT LOOKS (AND FEELS) LIKE A NATURE-MADE TRAIL

/// A natural stone walkway is meant to be rugged, rustic and rough in surface and style, yet comfortable to travel. Unlike a formal landscape, which calls for precision and uniformity, casual settings are suited for a flagstone path that looks like it has been there for decades — as if it floated in on a stream of gravel.

Such natural beauty doesn't always happen naturally; it sometimes takes calculated action to achieve a spontaneous-looking result. (Constructing a durable and stable walkway *always* requires calculated action.) That's why we consulted Scott Reynolds of Creative Habitats Inc. in Minnetonka, Minnesota, who shared his tricks and techniques for forming an uncontrived-looking path.

CONNIE BASTYR

PREP STEPS

Before deciding to use natural flagstone, it's important to consider whether this textured surface works for your needs. Scott cautions that flagstone may not be ideal for heavy-traffic areas — especially if they will be used by young children or elderly adults — because it can be a tripping hazard. Comfort and safety are essential concerns. Also keep in mind whether you'll need to clear snow from the path during the winter. If so, a walkway constructed of manufactured pavers or concrete may be a better option.

Flagstone is a category of large sedimentary rocks including sandstone, limestone, bluestone and Chilton (native to Wisconsin). The types you find may depend on the region where you live. Prices are based on weight and are typically lower if you choose a stone that is native to your area. Flagstones range from 1/2 to 3 in. thick (photo, right). They are available in ir-



▼ Setting oddly shaped stones for a path or patio is like fitting a puzzle together. Try to match curves and angles with neighboring stones, and keep the gaps about 4 to 6 in. wide. Having the pathway area marked for utilities will indicate areas where you need to dig with caution and may affect the route of your path.



▲ For a path or patio, 1-1/2- to 2-in.-thick stones are best. Thinner stones are more prone to breaking (during and after installation); thicker ones are heavier to lift and require that you remove more soil when setting them.

regular shapes (the type used in this project) and in cut form (usually rectangular shapes).

On average, the flagstones sold for making a path are about 18 x 18 in., which would cover 2-1/4 sq. ft. Depending on the stones' thickness and density, Scott estimates that each ton will cover about 80 sq. ft. The smaller sizes (9 to 14 in. across) are called *steppers*. Although they are easier to lift and maneuver, steppers are not as stable as the heavier, larger flagstones (which can be 18 to 36 in. across). The optimum-size stepping stone for a comfortable walk is 18 to 24 in. across.

Scott sets the stones on a 2-in.-

WEB EXTRAS



AN ALTERNATE ROUTE

There's more than one good approach to installing a flagstone path. To watch a video with more ideas, tips and information, scan this tag or visit HandyMagazine.com/on13.



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FILLING THE GAPS

A flagstone path offers many options for filling the spaces between stones. For a comfortable and safe walkway, you need to build the infill up to the same elevation as the tops of the stones — like grout between tiles.

You can fill the gaps with planting soil and groundcover plantings or grass. Scott prefers grass or some type of hardy groundcover such as moss or a low-growing native perennial. He packs soil in the gaps and adds seed or plantings, which spread to cover the soil. To set a flagstone path across an established lawn, he simply outlines each stone's shape with a spade; then he removes the sod and 3 to 4 in. of soil (depending on the thickness of the stone), smooths down 2 in. of sand and settles the stone in position until it's solid and level with the ground. Future care is as simple as running the mower right over the path — no trimming required.

Another option is to fill the gaps with loose material such as mulch or pea gravel. However, loose material is less than ideal because the bits never stay in place; they wander onto the surrounding lawn or park on top of the stones, making the path uncomfortable or even dangerous to walk on. Loose materials also settle or decompose and need to be “topped off” once in a while. On the other hand, they do not need to be kept alive. You can choose which type of maintenance you'd rather perform. — CB



▼ Press the tip of a straight-edge spade straight down along the edges of the stone to mark its outline. This “custom-shape” excavation saves work, enables you to remove less soil and allows you to see how the stone fits in the pathway puzzle.



thick base of sand. At that depth, each cubic yard of sand covers about 162 sq. ft. — the space for approximately 72 average-size stones — so Scott orders 1 cu. yd. of sand for each ton of stone. If your soil is all sand (rather than peat or clay), you can use less sand, but you'll need to have some extra for filling low spots.

In any landscaping project you should try not to disturb tree roots (many of which are just below the soil's

surface). But if that is unavoidable, Scott recommends trimming back any affected trees before you dig. And of course, you must always dial 8-1-1 to have utilities marked before excavating — even for shallow digging.

▼ To adjust a stone's position, tip the stone on edge and “walk” (or rock) it side-to-side; then slowly lower it all the way to the ground. Flagstones are rock hard, but they can easily crack and break.



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DESIGN STEPS

Whether you want a pathway to lead from your driveway to a door or to wind through a flower garden, start by mapping the path outlines with a heavy rope or garden hose. This allows you to visualize and easily tweak the shape. For a natural result, let the

▼ A straightedge (not a level) is used to check heights of adjacent stones. The path (and each stone in it) can be set with different slopes and angles; it's only necessary that the top surfaces meet at even heights.

pathway meander: No straight lines, Scott says. He also recommends shaping the entry points to be wider than any other parts of the path and designing the stretch between the ends with varying widths.

Once you've established an outline, lay out the stones for the entire path before installing the first stone. Fit the shapes together "mosaic style" so the gaps between them are somewhat consistent in width (bottom photo, p. 24). "One stone has to have a relationship to the next: in shape, elevation and spacing," says Scott. Then take a walk

◀ Add or remove sand beneath each stone to adjust its height and angle. Pack sand under the edges with your fingers or a mallet to be certain that the entire stone is well supported.

on the path from both directions to see if the stride is comfortable.

Stones do not need to be set level with the horizon; they can flow up and down with gentle slopes. But where there are strong elevation changes, you should form stone steps. Make each tread level (horizontal) and shape the front edge of the step (the nosing) to be somewhat curved (shape with a chisel, if needed); the back edge of the step tread can be straight.

INSTALLATION STEPS

Leaving all of the stones in place, Scott begins by setting the stones at the two ends of the path. He marks the outline of each stone's shape with the tip of a spade (top photo, p. 26) and then lifts the stone back to remove soil and debris and to add a sand bed. The beginning and ending stone heights should match the ground level of the approach edge. From there, Scott works toward the midpoint of the path, adjusting stone angles and heights to eventually meet at a common elevation (bottom photo, p. 26).

It's important that the stones be set on stable (undisturbed) soil, so Scott warns not to dig into the established soil any farther than necessary. Because the stones vary in thickness, you'll need to scrape down the soil for each stone accordingly, allowing for the 2-in. sand base. The overall goal is for the tops of the stones' edges to be flush from one stone to the next (photo, left).

As you prepare the bed for each stone, be sure to remove grass, roots, pinecones, leaves and any other organic matter that could decompose and leave voids. If you encounter a rock poking above the soil's surface, remove it; then fill the hole with soil and firmly compact it before laying the sand base. After setting each stone, step and stomp on each part of it to be sure that it is rock-solid in its new, natural home. ■





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OUTDOOR IMPROVEMENT

BY MIKE CONNER | PHOTOS BY MICHAEL R. ANDERSON



CHIMNEY-CHASE UPGRADE

EASY-TO-INSTALL FAUX STONE LOOKS LIKE THE REAL
THING (WITHOUT ALL THE EXPENSE AND EFFORT)

Stone façades have become increasingly popular during the past few years. The warmth and beauty of stone always turns heads, but the material — and the mason required to install it — can be very expensive. And a DIY masonry project involving costly stone can go awry if you don't know exactly what you're doing.

That's why we were ecstatic to find an easy-to-work-with faux stone called BellaStone. Unlike other faux-stone products, this one not only looks like real stone but also feels like it. That's because the makers of BellaStone thermally infuse real stone aggregate and natural pigments into the polymer during the manufacturing process. Best of all, this is a DIY product that's easier to install than vinyl siding. Read on and I'll walk you through the installation of BellaStone on a chimney chase so you can see how easy it is to enhance your home with the look of stone at a fraction of the cost.

STEP 1: DEMO THE OLD SIDING

For this project, we removed all of the old siding on the chimney chase and checked the sheathing and framing for decay. Unfortunately, we found more than we bargained for. Large sections of sheathing had completely rotted away; some areas of the chase even contained wasps and ant colonies. After two days of demolition and pest removal, we fixed the chase frame and added new sheathing as needed.

This step is very important in any exterior-cladding application. Never try to apply siding over dry rot and decay; the siding will eventually pull away from the subsurface, allowing more water intrusion and further damage to the structure.

▼ Be sure to check for rot and insects before you apply new siding. In this project the existing sheathing had rotted and had to be replaced.



STEP 2: INSTALL HOUSE WRAP AND CORNER FLASHING

This is another step you do not want skip. The house wrap protects the new framing and sheathing from future moisture intrusion and decay. The metal flashing adds an even higher level of protection where the stone corners meet. The manufacturer of BellaStone recommends installing at least 10 in. of flashing on both sides of the corners. We attached the corner flashing with galvanized fasteners every 8 to 12 in. Then we sealed the flashing edges and house-wrap seams with house-wrap tape.

▼ Apply house wrap and corner flashing before installing the BellaStone panels.



STEP 3: LAY OUT THE BELLASTONE AND INSTALL STARTER STRIPS

In this project, we installed BellaStone Quoin Corners along the outside corners of the chimney chase. These stone corners match the BellaStone panels and overlap the panel edges. To accommodate the corners, we snapped chalk lines 7-1/4 in. from the outside edges of the chimney chase. Next, we snapped level lines horizontally at the base of the chase 2-1/8 in. from the bottom edge of the sheathing and installed the BellaStone metal starter strip. Once all vertical and horizontal lines were laid out and the starter strip was in place, we were ready to install the panels.



▲ Place the BellaStone panels stone-side down for measuring, marking and cutting.

STEP 4: MEASURE AND CUT THE BELLASTONE PANELS

BellaStone panels are designed to be installed from left to right; the left side of the stone panel overlaps the right flange. Cut edges are placed toward the ends (or terminations) of a row, never in the middle of a row. The width of this chimney chase required one full panel and two smaller cut panels at either end. Like any siding application, it is best to stagger seams from row to row. BellaStone recommends staggering seams at least 6-1/4 in.

To cut a panel, we placed it stone-side down on saw horses and scribed a mark using a framing square. Then we cut on the mark with a circular saw equipped with a carbide-tip blade.

To stagger joints, we varied the length of the partial panels to the left and right of the full panel. This approach was fairly simple, although a

few times we accidentally measured from the wrong side of the panel and had to use those miscut pieces in future rows. But because the chimney chase was more than two stories high, we had plenty of chances to make up for our mistakes and had very little waste at the end of the project.

STEP 5: FASTEN THE PANELS TO THE SHEATHING

We installed the panels by first fitting them into the starter strips and then fastening them to the sheathing with 2-1/2-in. corrosion-resistant screws inserted through the metal clips and machined slots in the panels. We left a little bit of room between the panels and the sheathing to allow for expansion and contraction in varying temperatures. Fastening the panels too tightly against the sheathing also makes it difficult to install the next row.

We continued to install the panels, staggering each row and leveling every other row until we reached the top of the chimney chase. Then we started up the sides, again running the short panels to the snapped line at 7-1/4 in. from the corner of the chase. We cut the short panels on both ends to fit against the inside corner of the house and to terminate at the outside corners.



▲ Install the BellaStone panels using 2-1/2-in. corrosion-resistant screws and metal clips provided by the manufacturer.

+ TIP

When introducing a new material such as faux stone to your home's exterior, it's best from both a design and budget standpoint to apply it to a small area that makes sense aesthetically rather than the entire surface. For example, with this project, BellaStone was installed only on the chimney chase and along the bottom portion of the landing outside the home's back door (see photo, p. 30). The faux stone on just these two small areas complements the home's existing siding and introduces a new texture without the expense of covering the entire exterior.

STEP 6: INSTALL THE BELLASTONE QUOIN CORNERS

Once all of the panels were installed, we started on the corners. The BellaStone Quoin Corners come in 12-in. and 24-in. lengths. To stagger the corner and panel joints, on the first row we inserted a 12-in. quoin corner into the starter strip and fastened it to the sheathing exactly like the panels; then we installed 24-in. corners at each subsequent row, working up the chimney chase to the top. At the top of the chimney, we cut the top edge of the corners to match the flush top of the chase.



▲ After installing the panels, attach the BellaStone Quoin Corners along the outside corners of the chimney chase.

STEP 7: CAULK THE SEAMS AND APPLY STONE DUST

When the panels and corners were in place, we caulked all joints and seams with a color that matched the stone. Then, before the caulk set up, we used a small brush to embed color-matching stone dust (supplied by the manufacturer) into the caulked joints. This extra step was time-consuming and



▲ Caulk all joints and seams to prevent water intrusion; then apply stone dust to the caulk with a small brush.

monotonous, but the finished effect was well worth the effort. Once the caulk and dust were applied, it was very difficult to distinguish where the individual panels started and stopped. Even from a few feet away, the chase looked like it was made with actual stone. And it was achieved without the high cost and special skills required to install the real thing. ■

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

WEB EXTRAS



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LITTLE HELPER STAND

BUILD THE PERFECT PERCH FOR CURIOUS YOUNGSTERS



◀ This enclosed platform provides a safe, sturdy and stylish place for a child to stand when “helping” at the kitchen counter or table.

MIKE BERGER

This handy work platform is the perfect place for a child to stand while helping in the kitchen. The wide base makes it extremely stable, and the flat front face allows it to sit flush against base cabinets or a worktable. It's adjustable, so as your child grows, you can easily alter the platform's height to meet his or her needs. And its open-back design allows your little

one to easily climb on and off of it.

I used sheets of laminated 3/4-in.-thick alder (available at most home-improvement or building-supply centers) for this project, but you can also use 3/4-in. Baltic birch or other high-grade plywood. The assembly is straightforward, and with less than \$75 and a weekend's worth of work, you can quickly create a stand that will delight any child.

MAKE THE SIDES

Start by tracing the profile for the side panels (A). I used a paper pattern (see Web Extras, p. 36) printed full-size by an office-supply store (photo 1, p. 38); you can also draw the profile using our grid template (see illustration, p. 36). To simplify construction, you can forgo the long curve on the back edge of the side panels and simply cut it straight at 24 in. wide.

To make the infield cuts in the side panels, start by using a spade bit or Forstner bit to bore 1-in.-dia. holes at each radius of the openings for the support rods (photo 2) and along the cutting lines for the square openings. To prevent tear-out on the opposite sides of the panels, do not drill completely through; instead, allow only the tip of the bit to penetrate the opposite side at each hole location and then flip the panels over and complete the holes.

After you've drilled all of the holes, use a jigsaw to make each of the cuts (photo 3). Start at a hole and work slowly, following your cutting lines. Do not force the saw through curved cuts, as the blade may deflect.

Once you've made all of the cuts, rout the outside edges of the side panels using a 3/8-in. roundover bit (photo 4) and then sand the panels smooth. Pay particular attention to the inside faces of the cutouts and to the routed edges.

MILL THE REMAINING PARTS

Cut the rest of the parts to size based on the dimensions in the cutting list. You can choose from a variety of methods for attaching the parts; I opted for pocket screws because of their clean appearance and ease of use (see “How to Use a Pocket-hole Jig,” p. 39).

Drill two pocket holes at each of the ends of the front and back rails (D),

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the step (E) and the step support (F) as shown in the illustration. Drill four equally spaced pocket holes along the edge of the step that mates with the back panel, and drill four pocket holes in the step support along the upper edge that mates with the step.

Drill six pocket holes in pairs along each side of the front panel (B) and the back panel (C) as shown in the illustration. Position one pair of holes close to each of the ends of the panels and one pair in the center, allowing approximately 3 in. between the holes in each pair (photo 5, p. 38). After you've drilled all of the holes, lightly sand the faces to remove splinters.

PUT IT ALL TOGETHER

Begin the final assembly by using 1-1/4-in. coarse-thread pocket-hole screws to attach the front panel (B) and back panel (C) to one of the side panels (A) (photo 6); then flip the assembly over and drive screws to attach the other side panel to the front and back panels.

Attach the front and back rails (D) by inserting them between the side panels, checking for square and then driving the pocket-hole screws through the holes in their ends and into the side panels (photo 7). Attach the step (E) and step support (F) in a similar fashion. (Note: I chose not to use wood glue during assembly nor to plug the pocket holes so I can easily remove the screws if a part needs to be replaced in the future.)

To complete the adjustable platform (G), attach the two 24-in. dowels that serve as support rods (H) to the underside. Use 1-in. conduit straps and No. 8 x 1/2-in. panhead screws to secure the platform, allowing the dowels to extend 7/8 in. on each of the platform's sides (photo 8, p. 39). The ends of the dowels slip into the notches in the side panels to hold the

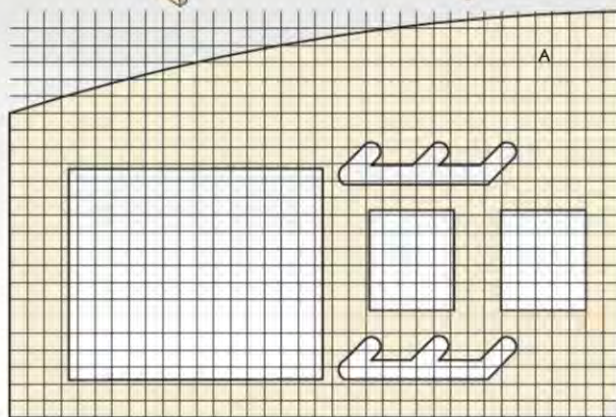
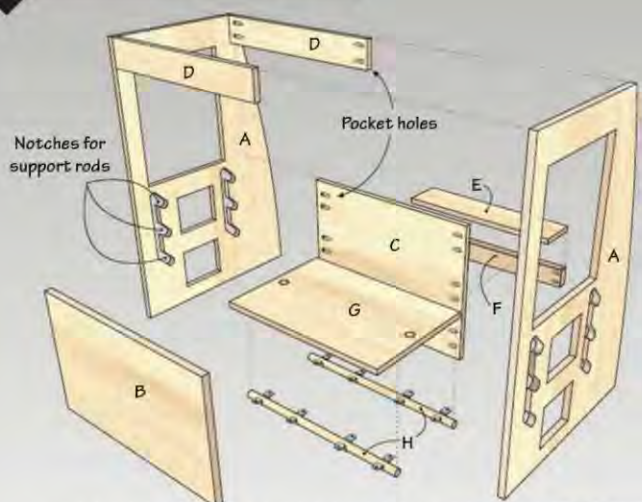
SHOPPING LIST

- ▶ 2 x 6-ft. x 3/4-in. clear alder panels (2)
- ▶ 1-in.-dia. x 24-in. hardwood dowels (2)
- ▶ 1-in. conduit straps (6)
- ▶ No. 8 x 1/2-in. panhead screws (12)
- ▶ 1-1/4-in. coarse-thread pocket-hole screws (48)

CUTTING LIST

▶ KEY	NO.	DESCRIPTION	SIZE
▶ A	2	Side panels	3/4 x 24 x 36 in.
▶ B	1	Front panel	3/4 x 22-1/2 x 13-1/2 in.
▶ C	1	Back panel	3/4 x 22-1/2 x 17-1/2 in.
▶ D	2	Front/back rails	3/4 x 22-1/2 x 3-1/2 in.
▶ E	1	Step	3/4 x 22-1/2 x 5 in.
▶ F	1	Step support	3/4 x 22-1/2 x 3 in.
▶ G	1	Platform	3/4 x 22-1/4 x 15-1/4 in.
▶ H	2	Support rods	1 in. dia. x 24 in.

LITTLE HELPER STAND



SIDE PANEL PATTERN

1" GRID

WEB EXTRAS



FULL-SIZE PATTERN
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1 ▲ Attach the paper template to the side-panel stock and trace around it (or transfer the dimensions based on the drawing). A square will help you draw straight lines.



2 ▲ For the infield cuts, start by drilling 1-in.-dia. holes. To avoid tearing out material on the back of the panels, only allow the point of the drill bit to penetrate the opposite side; then flip the panel over and complete the hole.



3 ▲ When cutting away the waste for the infield openings, don't push too hard on the jigsaw or you'll cause the blade to deflect (especially in curved cuts). Instead, allow the saw to do the work and proceed slowly.



4 ▲ Cut the profile on the outer edges of the side panels using a router outfitted with a 3/8-in. roundover bit. Work from left to right and keep the router's base flush against the surface of the panel.



6 ▲ Use 1-1/4-in. coarse-thread pocket-hole screws to attach the front and back panels to the side panel. Use three sets of paired pocket-hole screws (for a total of six per side) for each of the panels.



5 ▲ To use a pocket-hole jig, clamp it in place so that its hole is aligned with where you want the pocket hole to be. Set the bit's depth collar according to the jig's instructions and then bore the hole.



7 ▲ When attaching the front and back rails to the side panels, first check for square and then use a bar clamp to prevent the rails from slipping while you drive the screws.



▲ Attach the two support rods to the underside of the platform using conduit straps and No. 8 x 1/2-in. panhead screws.

platform at the desired height.

Give everything a final sanding and then apply your choice of finish. I used three coats of clear polyurethane, but you could also stain or paint the stand your child's favorite color or to match your décor. ■

Mike Berger is the former Managing Editor of HANDY.

HOW TO USE A POCKET-HOLE JIG

Pocket screws are a great joinery method for wood, as they are strong and easy to use, thanks to jigs such as those from Kreg Tool (see SOURCES).

First determine the size and depth of hole you'll need to drill. Guides included with the jig show you what size of hole and screw to use based on the thickness of the material you're working with, and the jig comes with a drill bit outfitted with an adjustable depth collar.

After you've set the bit's depth collar and adjusted the jig based on the manufacturer's instructions, clamp the jig to the end of the workpiece, aligning the hole with the intended pocket-hole location. Insert the drill bit into the jig and bore the hole.

Even though the process is quite simple, it's a good idea to practice a few times on a piece of scrap until you have the hang of it. — MB

SOURCES

Kreg Tool (pocket-hole jigs and accessories)
800-447-8638, kregtool.com

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HOME SAFES

A DIYERS' GUIDE TO SECURING VALUABLES



ISTOCK

important electronic data could perish in a fire, or you could inadvertently take your last wishes to your grave.

You don't have to keep stacks of cash on hand or be dripping with precious jewels to need a home safe. Anyone with a Social Security card, a birth certificate, a property title, a will, tax returns, a data-backup device, a firearm or precious photos could benefit from one — provided it has the right features, is properly installed and can be opened by someone you trust. Otherwise, a burglar could steal the box,

Though you might first think of safes to guard against theft, they can also protect property from fire and flooding. Third-party testing is critical to certify how devices perform against each threat. Underwriters Laboratories (UL) is considered the gold standard, but ESL (Intertek) has grown in popularity. Manufacturers' claims alone should not be trusted because they may not follow standard testing protocols. Many of the products marketed as small "safes"

actually are classified as Residential Security Containers (RSCs) by UL and held to lower standards than "tool-tested" safes. But since the term RSC doesn't exactly roll off the tongue, we (like the manufacturers) will refer to these products as safes in this article.

FIRE AND FLOOD PROTECTION

Safes are fire-rated based on how long they can keep contents below a given temperature when subjected to a specified intensity of heat. To protect important papers that would char at 425 degrees, a safe's interior temperature should not exceed 350 degrees. Older safes insulated their contents with concrete; modern fire-resistant boxes use gypsum board and intumescent seals.

It's important to understand what your safe will do in a fire and manage the contents accordingly. UL may rate various models to keep the interior temperature below 350 degrees for 30 minutes when subjected to a 1,550-degree fire, for an hour in a 1,700-degree fire or for two hours in a 1,850-degree fire. Many common consumer safes will only protect contents from 1,200-degree heat for 30 minutes or less. House fires tend to move from room to room relatively fast. The average residential fire reaches 1,500 degrees and lasts 20 minutes.

If protecting data from fire is im-



▲ Home safes aren't just for preventing theft; many provide significant protection against fire and flood. Check the safe's ratings before you buy.



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tant to you, look for a tech-savvy model such as the Sentry QE5541 Fire Safe, which features an external port that lets you back up data to a portable hard drive inside the safe without opening the door.

In flood-prone areas, stationary safes should be certified for water resistance. *Water-resistant* safes can withstand 1,000 gallons of water spray for 15 minutes or stand in 6 in. of water for an hour. *Waterproof* safes can be completely submerged.

BURGLARY PROTECTION

No safes are burglar-proof. Given the right tools and enough time, a motivated thief can penetrate any barrier. A safe's burglar resistance varies widely based on size and weight, locking mechanism, material thickness, hinges and anchoring. Solid-steel construction, multiple large locking bolts, re-lockers, pry-resistant concealed-hinge doors and bolt-down kits are best. A thief can toss a small safe into a backpack or wheel away a midsize unit on a sturdy handcart. For maximum security, stationary safes should be bolted through a concrete floor.

Serious safecrackers may use listening devices, torches and power tools to open a safe. A UL-listed RSC is rated to survive a five-minute attack from drills, chisels and the like. A "UL Inspected Tool Resisting Safe TL 15 Burglary" label

▼ **Large, hardened, hidden locking bolts and concealed hinges make it extremely difficult to break into a modern safe.**



means the safe should resist entry for at least 15 minutes when attacked by hand and power tools. It also must weigh at least 750 pounds or be securely anchored and have at least 1-in.-thick steel walls and a single 1/4-in. or smaller concealed hole for an electrical conductor. Fortunately, home burglaries are most often committed by teenage boys who spend no more than eight minutes in the home. They tend to take things that are easy to carry and sell.

PICKING LOCKS

Safes may lock with keys, old-fashioned mechanical dials, modern electronic keypads or even biometric fingerprint readers. Better-quality locks feature automatic relockers that secure the door if someone tries to drill or punch the lock. Here are the basics about each type of locking mechanism:

Mechanical dials — Three-number, dial-operated combination locks are considered most reliable and don't require batteries, but they are slower to open and, like your high school locker, take a little practice to master.

Electronic keypads — These locks tend to be faster to open, and the larger numbers are easier to read. You can set a custom six- to eight-digit password and change it whenever you want. But keep in mind that all electronics can fail. If the circuit board or connection dies and there is no key backup, it could cost



more than \$350 to have the lock drilled out so you can retrieve the contents.

Keys — This is the simplest way to unlock a safe and often provides backup access to safes with electronic keypads. But keys can be lost or get into the wrong hands. A combination lock is considered safer than a keyed lock when securing firearms in a household with children.



▲ **There are many choices in lock technology, including keypads, biometric locks and key locks — all used on this safe.**

Biometric devices — Some locks come with fingerprint readers that enable you to open the safe by holding a finger or fingers against a sensor panel. They also can be programmed for multiple users, so you know who is accessing the contents.

SECURING FIREARMS

Safes are recommended to keep firearms from being stolen by criminals or accessed by children or mentally unstable family members. Safes specifically designed for weapons often feature quick, one-hand access and quiet locks so the owner can access a



▲ **An internal bolt-down kit will make even a small safe much more secure.**

PHOTOS COURTESY MANUFACTURERS



▲ Sometimes a traditional combination lock is a good choice because it's totally mechanical, so there's no chance of an electrical failure locking you out.

weapon without being overheard by an intruder. A gun safe may or may not be fire-rated. If you plan to safeguard important papers or media along with firearms in a gun safe, fire resistance is critical.

OTHER CONSIDERATIONS

Burglars typically start in the master bedroom, where they expect to find cash, jewelry and firearms that they can easily carry and pawn. Home of-

fices come next, followed by formal rooms where valuables are openly displayed. As such, these rooms arguably are the worst places to "hide" a safe, particularly a small one. A lower-level interior space may be less convenient for you to use, but it is often the safest place in a fire or severe weather.

You might consider hiding a wall safe behind a painting, but not if it is the only art on the wall. In general, placing a big, heavy object in front of the safe is best. Most burglars need to work fast. Though you may think a larger safe is a no-brainer because it is more difficult to steal, keep in mind that it will also be more difficult to conceal.

Size determines how much stuff a safe can protect. To figure out the size you actually need, stack all of the things you want to protect in a pile and measure the area. Safes in the 1.2- to 4.7-cu.-ft. range are common for home use. Wall or floor safes typically are less than 0.6 cu. ft. Gun safes are taller and contain racks and pockets to hold long guns and handguns. However, reviewers warn that the boxes may hold fewer firearms than advertised, particularly if the guns are fitted with scopes.

Safes often come with adjustable shelves. You can also purchase custom-fitted lock boxes and drawers to keep selected items organized and secure even when the safe is open.

Warranties range from one year for the original registered owner to lifetime transferable protection. Pay special attention to whether the store or the manufacturer is responsible for repairs: Safes are heavy, and it would be extremely

◀ In addition to a safe's security against theft, flooding and fire, always consider what sort of storage space you'll require.



SAFE-DEPOSIT BOX VS. HOME SAFE

Bank safe-deposit boxes are more secure than residential safes, but demand for them continues to fall as online banking increases. Safe-deposit boxes are not as accessible as personal safes. For instance, if you need \$3,000 on a Sunday morning to bail your daughter out of jail, you're both out of luck. Also, the contents of a safe-deposit box are not insured like money that is deposited in the bank (though only 18 of the more than 5,000 bank robberies in 2011 involved safe-deposit boxes).

Annual rental fees vary by box size, institution and state. Some banks offer discounts to patrons who maintain a minimum deposit in their checking accounts. If you do use a box, make sure someone else is on the account so he or she can access the contents in an emergency. And take good care of your keys; they can cost hundreds of dollars to replace. — TS

expensive to ship one cross-country to be fixed. Cannon touts the warranty on its larger safes because it provides free repair or replacement and shipping after a natural flood, an attempted or actual break-in or a fire. ■

Frequent HANDY contributor Tim Sullivan writes from a secure location in Plymouth, Minnesota.

SOURCES

Brown Safe Manufacturing Inc., brownsafe.com

Cannon Safe, cannonsafe.com

FireKing Security Group, fireking.com

First Alert, firstalert.com

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CABINET CREATION

UNDERSTANDING THE GOOD, BETTER AND BEST CONSTRUCTION PRACTICES

Choices when buying cabinets for a kitchen or bath remodel can be overwhelming, both in terms of wood species, color, finish and hardware as well as price — which can range from \$100 to \$1,000 per box. This disparity raises the question: Why? What makes one cabinet affordable and another so much more expensive? Do you really get what you pay for, or is it all marketing smoke and mirrors?

Just because a cabinet is called “high-end” doesn’t make it so. A truly top-grade cabinet requires a combination of high-quality workmanship and

materials and great styling. To identify these features, it’s important to understand how cabinets are made.

That’s why we asked Elkay Manufacturing (maker of Yorktowne, MasterCraft, Design-Craft, InnerMost, Schuler and Medallion cabinets) to walk us through the cabinet-construction process. The company gave us access to the Medallion Cabinets facility in Waconia, Minnesota, so we could show you what separates an entry-level unit from a higher-end cabinet.

RAW MATERIALS

All cabinets start out as uncut sheet goods and boards that will be milled by a variety of computer numerical control (CNC) machines. The visible

▲ Beautiful cabinets may be a delight to behold, but before you invest, you need to understand how they are built.

exterior parts of the better-quality cabinets are made primarily of hardwoods such as cherry, oak, walnut, maple, hickory or alder and cabinet-grade hardwood plywood is used to make the floors, backs and interior walls. Less expensive cabinets are made of materials such as veneered softwood plywood, medium-density fiberboard (MDF) and particleboard.

MDF is composed of fine wood fibers combined with wax and resins under great pressure to form solid boards and sheets. It has a very smooth surface that accepts a profile well, and it has more strength and screw-holding power than particleboard, but it does not have the strength or durability of plywood or hardwood. MDF cannot be

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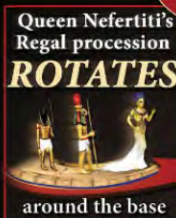
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stained; it must be veneered, painted or coated with a thermofoil finish.

Particleboard is a combination of wood chips, shavings, fibers and adhesives. Its core consists of larger wood chips; finer chips are used on the surface. Particleboard cannot be milled as finely as MDF. It is often used for internal components of lower-grade cabinets.

One distinct disadvantage of cabinets made of particleboard and MDF is the emission of formaldehyde gas from the adhesives used in their construction, says the National Kitchen and Bath Association. Of all of the pressed woods, MDF emits the greatest amount of formaldehyde gas. In studies by the U.S. Environmental Protection Agency, formaldehyde gas was shown to cause respiratory and other physical ailments in some people exposed to elevated levels of it (above 0.1 parts per million).

COMPONENTS

Once the sheet goods have been cut to size and the boards cut to length and milled with profiles, they are fashioned into face frames and end panels. (Doors and drawer fronts may also be built at this stage, but in many cases they are ordered from a supplier to save time.)

Components are made on very large tables using a variety of jigs that ensure accuracy and consistency (upper middle photo below). Components for less expensive cabinets may be assembled with only glue, dowels and a few headless pins to secure the rails and stiles for the panels and face frames; their more expensive counterparts are made with stronger joinery methods such as mortises and tenons to ensure strength and durability.

Once the components have been

created and after the glue has cured (which takes only about an hour thanks to special additives in the adhesive), they are sanded and inspected. Components for some expensive cabinet styles may undergo a distressing process that creates dimples, divots and gouges in the faces of the panels to add visual interest. This random, hand-created effect increases cost but adds a vintage charm that less expensive cabinets can't match.

Depending on the type of cabinet being built, a decorative skin consisting of either a thin sheet of hardwood plywood (if the inside of the cabinet will be stained) or a thin veneered MDF panel is often glued and pinned to the inside face of the side panels. Then the side panels are sent back to the CNC machines to be precision-drilled for shelf-pin holes.

CABINET-MANUFACTURING STEPS



▲ Stacks of plywood and sticks of hardwood will soon become cabinet components once they are cut to size and milled with profiles.



▲ Distressing is done by hand using a variety of old-fashioned implements such as rocks, chisels, files and awls. As a result, each panel is unique.



▲ Face frames are built on large-scale jigs. Spacer blocks ensure accurate placement of components, and pocket screws are used to hold everything together.



▲ A locked miter joint consists of male and female components that, when glued together, prevent slipping.



▲ Once the glue has cured, each face frame is inspected and sanded. Large industrial sanding machines smooth the faces; the edges are sanded by hand.



▲ The assembled door frames and panels are sanded smooth and level with a special belt sander.

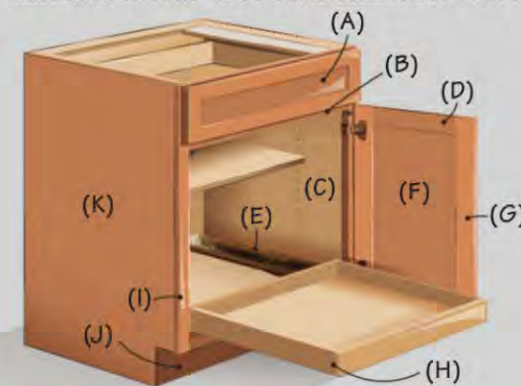
CARCASSES

Cabinet manufacturers use a variety of joinery methods to assemble the completed face frames and panels into carcasses. Higher-end wood cabinets feature locked miter joints where the face frames meet the side panels. Consisting of a male and a female component, this exceptionally strong joint is created by milling interlocking profiles on the edges of the components to be joined.

After the face frames and side panels have been glued together, everything needs to be sanded. The glue used in the building process contains a special phosphorescent component that glows when exposed to ultraviolet (UV) light. Cabinetmakers carefully inspect each component under UV light, sand away any glue residue and fill in any small divots or holes.

UNDERSTANDING CABINET COMPONENTS

Though you have many choices when purchasing cabinets, the individual components used to build them remain relatively universal. Refer to this illustration to better understand common cabinet terminology.



- (A) Drawer front
- (B) Face-frame rail
- (C) Interior skin
- (D) Door rail
- (E) Drawer guide
- (F) Door panel
- (G) Door stile
- (H) Dovetail joint
- (I) Face-frame stile
- (J) Toe kick
- (K) Side panel



▲ Dried phosphorescent glue that needs to be sanded away becomes evident under UV lighting. Downdraft tables remove the dust and help keep the work area clean.



▲ While the base and wall cabinets are being constructed, artisans create custom accessories such as hoods.



▲ Higher-end cabinets use dovetail drawer joints because they're strong and will hold up for years.



▲ After the initial stain has been sprayed onto the cabinet components, glazes are applied by hand to enhance details such as intricate profiles or corners.



▲ In a process called "paneling," all of the doors in one order are compared with a control door to ensure a consistent finish.

CABINET-MANUFACTURING STEPS



▲ Racks of cabinet components await final assembly.

One of the big differences in high-end custom cabinets (compared with less expensive types) is that all of the components for an installation are built at the same time (once the consumer orders them). All of the cabinets are sprayed at the same time, ensuring a consistent appearance. Components that require extra time, skill and care to create — range hoods, appliance surrounds, wine racks, spice cabinets) — are made while the base and wall cabinets are being built.

Likewise, the drawers are also built at the same time. Whereas lower-end cabinets sometimes have nothing more than glue, pins and grooved construction holding pressed-board drawer components together, better cabinets utilize dovetail construction and hardwood components to ensure a durable, lasting drawer.

FINISH

"The finish is the single most important factor that consumers should pay attention to when choosing a cabinet," says Jeff Wolfe, marketing communications manager for Elkay. "Pay close attention to how the finish feels to the touch and how consistently it is applied to the cabinets' surfaces."

Makers of lower-end cabinets often use a thermofoil finishing process: An ultrathin layer of colored vinyl is fused



▲ Two-man teams assemble all of the components into cabinets. Here the doors are being installed on a wall cabinet.

by heat to the exterior surfaces of the cabinets. Better cabinets, however, receive a much more complex treatment. Paint or stain is applied to the cabinets through an automated (and highly advanced — so much so that we weren't allowed to photograph it) spraying process. Glazes are then applied by hand to add color depth and to enhance details such as intricate profiles.

To ensure quality control, some manufacturers such as Elkay perform an additional step called "paneling." In this process, each door for an entire cabinet installation is propped up on a very large easel under controlled lighting. A control panel is then compared to each of the doors, and if any slight variations in color are noticed, the door is rejected.

COMPLETION

Once the doors, carcasses, drawers and all accessories have been finished, it's time to assemble everything into completed cabinets. As the components come down a long assembly line, teams of builders attach everything from hinges to drawer slides to lazy Susans. They mount the doors onto the cabinet bodies, insert wine racks into their openings and, in short, turn a pile of parts into beautiful cabinets. Then it's down to the shipping department, where each cabinet is



▲ Once the cabinets are completed, their final destination within the factory is the shipping department, where they are carefully wrapped and boxed for delivery.

carefully packed, boxed, labeled and loaded onto a truck for delivery.

On average, about 350 people touch each unit that comes out of Elkay's Medallion Cabinets facility, which is not surprising when you consider how much work goes into the creation of a high-end cabinet. Lower-grade units are built much quicker thanks to automation processes, but the high-quality materials that go into more expensive cabinets require attention to detail that an automated assembly line can't duplicate.

From the cutting of raw materials to sanding, hand distressing, hand staining and final assembly, many hours of labor go into the construction of every Medallion cabinet. It's certainly possible to purchase less expensive cabinets that fit your needs, and you should always keep your budget in mind as you shop. But a look at Elkay's manufacturing processes shows why truly high-quality cabinets warrant a higher price. ■

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Mike Berger is the former Managing Editor of HANDY Magazine.
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SOURCES

Elkay Manufacturing Co. (Yorktowne, MasterCraft, Design-Craft, InnerMost, Schuler and Medallion cabinets), elkay.com



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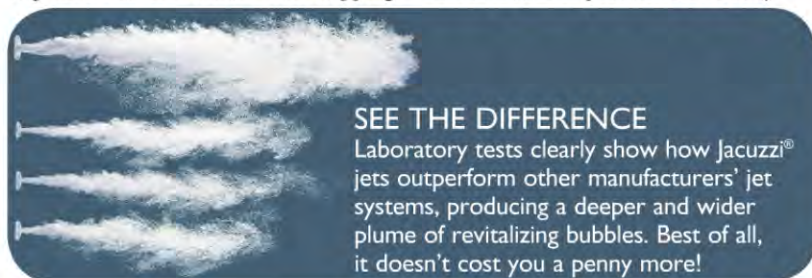
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- ➔ **Pain Relieving Therapy** - Find a tub that has both water and air jet therapy to soak away your aches and pains preferably with a perfectly balanced water to air mix.
- ➔ **Comfort** - Insist on ergonomic design, easy-to-reach controls.
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FRESH FOR FALL

NEW OFFERINGS HELP YOU GET PROJECTS DONE RIGHT

Fall is a bountiful time for DIYers who crave new products that will help you complete projects faster and

easier — and this year's crop is sure to please. Read on to find out what's new this season. You may even find a few

items to add to your holiday wish list or perhaps give to your like-minded friends and family.



▲ BEHR MARQUEE EXTERIOR PAINT AND PRIMER AND BEHR PREMIUM DECKOVER

Besides providing durable, lasting color, Behr Marquee Exterior Paint and Primer is resistant to rain in as little as one hour after application. Another new exterior coating, Behr Premium Deckover, revives weathered wood and concrete surfaces in just a couple of coats. It's made of 100 percent acrylic resin fused with ceramic microspheres for a durable, mildew-resistant finish. behrpro.com

▼ CRAFTSMAN WOODWORKING SAW BLADES AND ROLLING REFUSE SHED CONTAINER

A new line introduced by Craftsman features woodworking blades (such as the 10-in. x 50T Master Combination Full Kerf Blade shown) that boast tips with advanced grinding geometry and hardened carbide, a blade plate that is tensioned to industrial standards and a durable finish that reduces friction and prevents resin buildup. Also from Craftsman, the Rolling Refuse Shed Container provides outdoor storage for two 96-gallon garbage bins (helping to keep odors out of your garage). It features a reinforced roof, floor and ramp for durability. craftsman.com



▲ TITAN FLEXSPRAY

Combining the power of airless with the precision of HVLP, the FlexSpray from Titan is a versatile, easy-to-use tool for professional painters or DIYers with a big paint job to complete. It can be used for both interior and exterior projects and is capable of spraying a variety of finishes. Another nice feature: The unit is triggered by the gun, so it only runs when spraying, minimizing noise and power usage. titantool.com

▼ ROCKLER T-TRACK TABLETOP

This new work surface from Rockler features a grid of five built-in tracks that are compatible with various clamps and jig components. The intersecting tracks make it easy to secure workpieces of different sizes and shapes to a workbench for cutting, routing, painting and more. The tabletop is made of melamine-coated medium-density fiberboard with black edge banding, and the tracks are made of aluminum for durability. rockler.com



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▲ HITACHI DSDL SERIES DRILLS AND DRIVERS

Featuring a newly designed slide-type Li-Ion battery pack, Hitachi's latest 18-volt drills and drivers — including the WH18DSDL 1/4-in. impact driver shown — are more ergonomic for added comfort and control. The new drills and drivers in this platform are built with industrial-grade two-piece motors, feature convenient LED lighting and come with two 3.0Ah batteries. hitachipowertools.com



▲ FIRST ALERT ATOM SMOKE AND FIRE ALARM

A complete redesign of the traditional smoke alarm, the First Alert Atom Smoke and Fire Alarm provides safety with a sense of style. The compact unit weighs less than 2 ounces and is available in standard white as well as interior-design-conscious finishes such as wood grain, stainless steel and bronze. As an added bonus, its advanced smoke-entry system reduces false alarms. firstalert.com

▼ DULUTH TRADING CO. CHISEL UTILITY KNIFE

This heavy-duty demo chisel is designed for prying up flooring, splitting wood, scraping gunk off of various surfaces and other tough jobs that you wouldn't want to use your good woodworking chisels for. The blade can take a beating, as it's made of full tang carbon steel and features a 4-3/4-in. knife edge and a 1-1/2-in. chisel tip. It also has a comfortable contoured handle made of hardwood. duluthtrading.com



▼ INSOFAST INSULATION PANELS

These injection-molded, high-density, closed-cell polystyrene insulation panels feature embedded polypropylene studs for fast, easy installation. The panels are self-aligning and have an air and moisture barrier, drainage planes and electrical chases and are mold-resistant. They work well for creating bonus spaces such as a finished basement, and they are made with 40-percent recycled content. insofast.com



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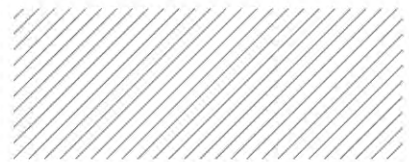
▲ KREG JIG K5

A new version of Kreg's woodworking staple, the K5 combines all of the features that DIYers have come to expect in the company's reliable pocket-hole jig plus some innovative upgrades. The K5 boasts a new clamping mechanism that adjusts to different workpiece thicknesses with a simple handle mounted on the front of the jig. It also has new support wings that function as storage compartments, a swiveling dust-collection port and much more. kregtool.com



▲ KLEER TRIMBOARD

This new PVC trimboard from Kleer Lumber (a division of The Tapco Group) can be easily installed anywhere wood trim is traditionally used. It's a low-maintenance option that resists mold, mildew, swelling and rot as well as insects. thetapcogroup.com



▼ BOSTITCH POWER TOOL LINE

There's a new player in the power tool market, and it has a familiar name. Bostitch, best known for making contractor-grade pneumatic nail guns and compressors, has launched a line of power tools that includes an 18-volt cordless drill/driver, a cordless impact driver, a 1/2-in. hammer drill, a 7-1/4-in. circular saw, an orbital jigsaw, a reciprocating saw, a 4-1/2-in. angle grinder and a 3/8-in. corded drill. Each tool includes all of the key features you'd expect without the extras you might find in premium tools. The line is perfect for active DIYers or light-duty contractors. bostitch.com



▼ ADJUST-A-STRAP 6-IN-1 ADJUSTABLE BUNGEE

Made of high-grade polyurethane, this bungee won't crack or become brittle because it does not contain rubber or latex, and it can withstand exposure to salt water, oil and common household chemicals. The best features, however, are the six openings placed throughout the bungee that allow the cord to be secured at various lengths to meet the needs of the user. The bungee also has two molded nylon hooks at both ends that won't scratch or mar surfaces. justduckyproducts.com



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Choose Life Grow Young with HGH

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

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

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

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

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

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

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



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

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

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

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

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

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

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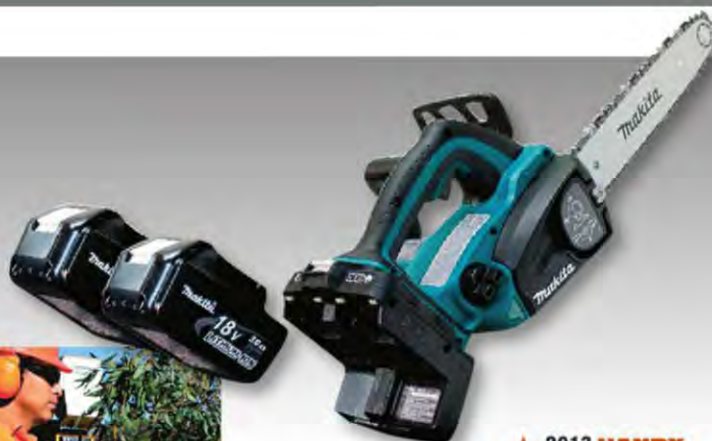
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▲ MAKITA 18-VOLT X2 LXT LITHIUM-ION 12-IN. CHAIN SAW

Powered by two 18-volt LXT Li-Ion batteries, this new Makita chain saw provides 36-volt power and run time while remaining part of an 18-volt-battery platform that includes 65-plus other cordless tools. The chain saw features a front hand guard, adjustable, automatic chain lubrication and LED battery indicators — and it's emission-free. makitatools.com



▼ WELLER SOLDERING IRONS

Designed for DIYers and hobbyists who work in basement shops or garages, the new high-performance soldering irons from Weller (a brand of Apex Tool Group) feature onboard LEDs and soft-grip handles. The lighting allows users see their work better, helping to create good solder connections and better results all around. And the comfortable, strategically shaped grip helps to relax the user's hand during extended use. apexhandtools.com/brands/weller



▼ MILWAUKEE M12 HEATED HOODIE

Equipped with a RedLithium battery for up to six hours of warming power, the new M12 Heated Hoodie is one of the latest additions to Milwaukee's line of extra-warm outerwear. The jacket is machine-washable and -dryable and has a waffle-weave polyester thermal liner that helps to hold in the warmth that it produces through heating zones at the chest and upper back. It also features high, medium and low settings so you can adjust the heat level throughout the day. milwaukeeetool.com





★ 2013 **HANDY**
Innovation Award Nominee

▲ FROGTAPE TEXTURED SURFACE

Now you can create sharp lines on textured wall surfaces without the paint bleeding through, thanks to this new painter's tape from FrogTape. Apply the Liquid PaintBlock Edge Sealer to the edges of the tape that will come into contact with paint; then simply paint over the sealer and remove the tape to create crisp stripes and patterns on textures such as orange peel, knockdown and more. frogtape.com



▲ DAP SMARTBOND ADHESIVES

This dynamic polyurethane adhesive foaming gel from DAP is faster and easier to use than traditional cartridge adhesives. SmartBond also provides eight times the coverage (according to the company), so less of the product goes farther. The SmartBond line includes adhesives suited for landscape projects, heavy-duty use, subfloor projects and more, and it bonds a variety of materials including drywall, plywood, composites, foam, concrete, etc. dap.com

▼ CONCROBIUM MOLD STAIN ERASER

Mix the Concrobium Mold Stain Eraser with one gallon of water to clean away mold and mildew stains on indoor and outdoor surfaces. It's formulated for cleaning decks, fences, walkways, siding, roofs, tile, basement walls, outdoor furniture and more. According to the manufacturer, the solution works without scrubbing or rinsing and leaves no residue. Simply use a pump sprayer to apply a thin, even layer of the solution to the surface and leave it for a minimum of three hours; there's no need to rinse it off. concrobium.com



▼ BIOFORMIX NEXABOND 2500 INSTANT WOOD ADHESIVE

Unlike other instant adhesives, this new cyanoacrylate formula is not moisture-cured, so moisture and humidity won't affect its open and cure times. The predictable open time makes Nexabond 2500 particularly well suited for more complex wood-working projects. It works with most wood species and can even be used to attach other materials such as metal, ceramics, glass and more to wood.

bioformix.com

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1 FOR THE LOVE OF MUSIC

Finding storage space for his extensive CD collection was no easy task, so Club member **Keith Klossing** of Tehachapi, California, decided to build this stellar entertainment center. The piece is made of solid oak, except for the backing, which is oak plywood, and it features pullout drawers and adjustable shelves suited to his storage needs. For a finishing touch, Keith incorporated remote-controlled lighting along the top of the unit.

2 FROM PALLET TO POTTING BENCH

Recycling is important to Club member **Paul Jones** of Puyallup, Washington, as is building outdoor furniture.

PHOTOS COURTESY CLUB MEMBERS

VOTE NOW

So combining these two activities came naturally for him. "I go to the Port of Tacoma and get 8-ft. pallets from a door company that would otherwise be sent to the landfill," Paul says. After taking the pallets apart to repurpose the wood, he recycles the nails and staples, composts the sawdust and uses the end pieces for firewood when camping. Paul's creative recycling projects include potting benches (shown), outdoor chairs, tables and more.

3 COTTAGE-STYLE GARDEN SHED

To please his wife (a New England girl at heart), Club member Ted Martin of Denton, Texas, designed this garden shed to look like a Cape Cod cottage. He built the small structure out of pressure-treated lumber and HardiePlank siding, and since he is a master electrician, he wired the building to incorporate a light and an outlet. Decorative details such as an oar and a life preserver adorn the exterior and bring out the shed's New England charm.

4 SPICED-UP KITCHEN STORAGE

Club member Tom McDonald of Quinlan, Texas, transformed a little in-wall space in his kitchen into an impressive spice-storage center. The unit measures 6 ft. tall x 2 ft. wide x 3-1/2 in. deep and features 15 adjustable shelves. "In a small house, every square inch counts," Tom says. The wood components of the storage unit are made of high-grade pine, and the sliding doors are made of white ABS plastic with 1/4-in. white polystyrene tracks. The unit has more than enough room for all of the spices that would otherwise clutter Tom's kitchen. ■

VOTE ONLINE FOR YOUR FAVORITE PROJECT

Vote online for one of these projects to receive the Critics' Choice Award. Go to HandyMagazine.com/on13.

1. ENTERTAINMENT CENTER
2. POTTING BENCH
3. COTTAGE-STYLE GARDEN SHED
4. SPICE-STORAGE CENTER

Voting will end November 30, 2013.
The winner will be announced in the February/March 2014 issue.

SHOW OFF YOUR PROJECT

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

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Or e-mail to:

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



CRITICS' CHOICE AWARD

WINNER: Nick Fullerton of San Pablo, California

PROJECT: "Statement Gate,"
June/July 2013

PRIZE: Nick will receive an official certificate and a Milwaukee M18 Fuel 6-1/2-in. Circular Saw.
Congratulations, Nick!



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As a way of investing in the future of fine art, each year Krylon gives \$1,000 to five students to use for tuition, books, supplies, etc. The Krylon Clear Choice Art Scholarship is awarded to high school seniors and college freshman and sophomores who have declared a major in a visual arts program such as painting, drawing or sketching. Scholarship recipients also receive a package of Krylon Artist Sprays valued at approximately \$70, and each student's school receives \$500 for its art program and a package of sprays. In addition, the other top 10 applicants and their schools receive free products. If you know someone who should apply for the Krylon Clear Choice Art Scholarship, visit krylon.com to find out more. ■



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For those who don't win a free snow thrower but decide to purchase one, Toro offers a new S'No Risk Guarantee: If you have a mild winter that produces less than 10 percent of your area's average snowfall, Toro will give you your money back! If it snows less than 50 percent of the average, Toro will refund 10 percent of your purchase price. Either way, you get to keep the snow thrower. The S'No Risk Guarantee runs from August 1 through November 15, 2013. For more information about Toro snow throwers, visit toro.com.

ENTER TODAY — YOU CAN WIN!

You can win a prize from the Handyman Club of America. Enter online at HandymanClub.com or by mailing a postcard (see below). Prizes are donated by the manufacturers. Entries must be received between October 1, 2013, and November 30, 2013; the winner's name will be drawn December 5, 2013. For the June/July 2013 prizewinner, see p. 70.

NO PURCHASE NECESSARY TO ENTER OR WIN. Making a purchase will not improve your chances of winning. See the official contest rules at HandymanClub.com. Submit your entry at HandymanClub.com or send your name, member number (if available), address and phone number on a postcard to: Great Giveaway, 12301 Whitewater Drive, Minnetonka, MN 55343.

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TIP TRADER BY JENNY STANLEY

HOME AND SHOP SOLUTIONS



COTTONWOOD FLUFF FIX

When his cottonwood tree released its seeds each summer, Club member **Edward Current** of Des Moines, Iowa, had trouble keeping the debris out of the condensing coils of his central air conditioner. So he wrapped window screening around the unit and secured it on the back with a couple of bungee cords. Now he just blasts the screen with his garden hose and the fluff falls off. Edward warns that it's important to monitor the screen throughout the summer and keep it clean so it doesn't block airflow to the coils.

REDUCING DRYER-FIRE RISK

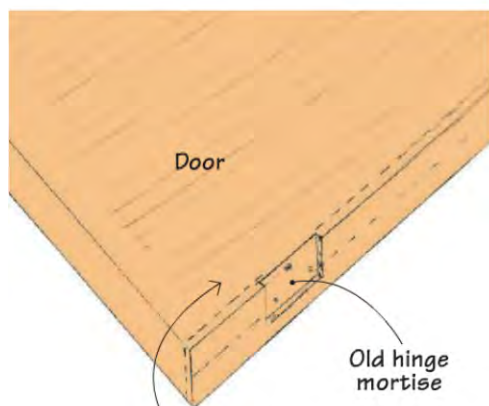
Club member **Samantha Vine** of Tacoma, Washington, uses a small towel secured to a sewer snake to keep her concealed dryer duct clean and to reduce the risk of fire. She feeds the snake into the duct at the dryer connection until it reaches the vent. Then she secures the towel by twisting it onto the snake's spiral end and taping it in place. Carefully, Samantha stuffs the towel into the duct and retracts the towel from the dryer end while rotating the snake handle. Then she directs a leaf blower toward the duct opening to blow out any dislodged lint.



PHOTOS COURTESY CLUB MEMBERS

EMERGENCY OUTDOOR GAS SHUTOFF

In the event of a natural gas leak or fire, it's important to get out of the house quickly. Rather than risk going down into the basement to close the gas valve, Club member **Roger Johns** of Minneapolis, Minnesota, keeps an adjustable wrench near his fire extinguisher. Should he ever need to turn off the gas, he can grab the wrench and close the valve at the gas meter along his home's exterior. (Incidentally, Roger polled his friends and none were even aware that they had a shutoff valve by their outdoor meters.)



Rout from left to right using an edge guide and straight bit.

Remove 1/8 in., flip door and repeat.

INVISIBLE DOOR-SWING SWITCH

When contractor and Club member **John Murphy** of Murphy Bros. in Blaine, Minnesota, needed to reverse the swing of a fine vintage door with a natural finish, he didn't try to patch the old hinge mortises. Instead, he used a router fitted with a straight bit and an edge guide to trim about 1/8 in. from the door, eliminating the old mortises before creating new ones. That way no one can detect the hinge switch.

LIGHTENING THE MOOD

Club member **Trish Broyles** of Tuckahoe, Virginia, created a simple and inexpensive indirect lighting feature in her family room with just a few tools and materials. First, she installed crown molding along the walls several inches below the ceiling; then she ran rope lights behind the wood molding. The soft light bounces off of the white ceiling without creating glare on the TV or overpowering the glow of Trish's gas fireplace. The new feature adds a feeling of warmth and comfort to the home's family room. ■

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 Jenny Stanley
HANDY, 12301 Whitewater Drive
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Include your name, member number, address and daytime phone number. Sketches and photos are encouraged. We regret that we cannot acknowledge or return submissions.

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DREADFUL DECK FINISH

Q: I built a deck of green-treated wood and stained it with a gray-tinted decking stain, which peels and has to be reapplied every year. How can I get a finish to last longer?

HAL MATHESON
SELKIRK, MANITOBA, CANADA

A: Although finishing a deck is considered an elementary DIY project, many factors can lead to failure. A peeling finish is one of the most common disappointments homeowners encounter — despite their sincere efforts to properly preserve and maintain their decks. For a lasting remedy, first identify the cause of your deck's peeling problem. Here are some possible culprits:

Moisture content — New wood naturally contains some moisture, but pressure-treated wood (which has been saturated in a preservative) is often still quite wet when sold. If you apply a finish to the wood before it is dry, the trapped moisture eventually pushes its way through, causing the finish to peel. Recommended wood-drying times vary, ranging from “Stain it immediately” to “Wait until next year.” The correct answer is, “It depends.” What has the weather been doing? Is the deck in the sun or shade most of the day? Has it been pressure-washed? (This can drive water deep into the wood cells, especially if the pressure was too high or the sprayer was too close to the wood.) Check the wood's dryness with a moisture meter, aiming for a reading below 15 percent. Or you can use a less scientific approach: Drizzle water on the wood; if it absorbs quickly, the wood is dry.

“Polished” wood — New wood often has a mill glaze (or sheen) from the machining process, which impairs stain absorption. You can open the pores by rough-sanding the surface with 60-grit sandpaper or by cleaning the wood with a deck cleaner and then applying a deck brightener to neutralize it.



ISTOCKPHOTO

Stain choices — As always, the type of stain and its quality make a big difference to the outcome. Use only decking stain (not siding stain); it's formulated to endure foot traffic, moisture and direct sun exposure. Although pigments aid in UV protection, you should stick with a lower-pigment (transparent or semitransparent) stain, which doesn't create a film on the wood's surface.

Unfortunately, the peeling base that remains will continue to peel. For long-term ease of maintenance, you'll need to remove the peeling finish by

▲ **A peeling finish makes for an unappealing deck, and it leaves the wood exposed to the elements and vulnerable to decay. Find out how a finish can fail even when a deck has been faithfully maintained.**

sanding with coarse-grit sandpaper or by applying a deck-stripping product. Make sure the wood is dry before sealing it with a high-quality deck stain. You'll still have to clean and stain your deck every couple of years, but the process will be easier and the results more satisfying. ■

SUBMIT QUESTIONS TO EXPERT ANSWERS

Send your questions by e-mail 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 HandymanClub.com or at **Handyman Club of America on Facebook**, or mail them to:

Expert Answers c/o Connie Bastyr
HANDY, 12301 Whitewater Drive, Minnetonka, MN 55343

Cell Phone Inspires Chicago Doctor to Design Affordable Hearing Aid

Outperforms Most Higher Priced Hearing Aids

Reported by J. Page

CHICAGO: A local board-certified Ear, Nose, Throat (ENT) physician, Dr. S. Cherukuri, has just shaken up the hearing aid industry with the invention of a medical-grade, affordable hearing aid. **This revolutionary hearing aid is designed to help millions of people with hearing loss who cannot afford—or do not wish to pay—the much higher cost of traditional hearing aids.**

"Perhaps the best quality-to-price ratio in the hearing aid industry"
—Dr. Babu, M.D.
Board-Certified ENT Physician

Dr. Cherukuri knew that untreated hearing loss could lead to depression, social isolation, anxiety, and symptoms consistent with Alzheimer's dementia. **He could not understand why the cost for hearing aids was so high when the prices on so many consumer electronics like TVs, DVD players, cell phones and digital cameras had fallen.**

Since Medicare and most private insurance do not cover the costs of hearing aids, which traditionally run between \$2,000-\$6,000 for a pair, many of the doctor's patients could not afford the expense. Dr. Cherukuri's goal was to find a reasonable solution that would help with the most common types of hearing loss at an affordable price, not unlike the **"one-size-fits-most" reading glasses** available at drug stores.

He evaluated numerous hearing devices and sound amplifiers, including those seen on television. Without fail, almost all of these were found to amplify bass/low frequencies (below 1000 Hz) and not useful in amplifying the frequencies related to the human voice.

Inspiration From a Surprising Source

The doctor's inspiration to defeat the powers-that-be that kept inexpensive hearing aids out of the hands of the public actually came from a new cell phone he had just purchased. **"I felt that if**

- **Designed By A Board-Certified Ear, Nose and Throat (ENT) Doctor**
- **Doctor-Recommended, Audiologist-Tested**
- **★★★★★ Top rated hearing aid online—thousands of satisfied customers**
- **FDA-Registered**
- **Save Up To 90%**
- **Free Shipping Available**
- **Batteries Included! Comes Ready To Use**
- **100% Money Back Guarantee**



someone could devise an affordable device like an iPhone® for about \$200 that could do all sorts of things, I could create a hearing aid at a similar price."

Affordable Hearing Aid With Superb Performance

The high cost of hearing aids is a result of layers of middlemen and expensive unnecessary features. Dr. Cherukuri concluded that it would be possible to develop a medical grade hearing aid without sacrificing the quality of components. The result is the MDHearingAid PRO®, starting well under \$200. **It has been declared to be the best low-cost hearing aid that amplifies the range of sounds associated with the human voice without overly amplifying background noise.**

Tested By Leading Doctors and Audiologists

The MDHearingAid PRO® has been rigorously tested by leading ENT physicians and audiologists who have unanimously agreed that the **sound quality and output in many cases exceeds more expensive hearing aids.**

MDHearingAid PRO® 
THE DOCTOR'S CHOICE FOR AFFORDABLE HEARING AIDS



Proudly assembled in the USA
from Domestic & Imported Components.

45 DAY RISK FREE TRIAL



Doctors and patients agree:
"BEST QUALITY SOUND"
"LOWEST AFFORDABLE PRICE"

*"I have been wearing hearing aids for over 25 years and these are the best behind-the-ear aids I have tried. **Their sound quality rivals that of my \$3,000 custom pair of Phonak Xtra digital ITE.**"*
—Gerald Levy

*"I have a \$2,000 Resound Live hearing aid in my left ear and the MDHearingAid PRO® in the right ear. **I am not able to notice a significant difference in sound quality between the two hearing aids.**"*
—Dr. May, ENT Physician

*"We ordered two hearing aids for my mother on Sunday, and the following Wednesday they were in our mailbox! Unbelievable! Now for the best part—they work so great, my mother says she hasn't heard so good for many years, even with her \$2,000 digital! **It was so great to see the joy on her face.** She is 90 years young again."* —Al Peterson

**For the Lowest Price
Call Today
1-800-873-0680**

Phone Lines Open 24 Hours EVERY DAY

www.MDHearingAid.com/DI35

**Use Offer Code DI35 to get
FREE Batteries for a Full Year!**

FREE Shipping Available



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\$43,256 in products**

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
TESTED AND
RECOMMENDED**

Spray Wand

MEMBER RATING: 7.7 BEST FEATURE: EASE OF USE

Hyde Tools Inc., 800-872-4933, hydetools.com

The Hyde PivotJet (\$35) is a spray wand that attaches to a garden hose to handle virtually any type of outdoor cleaning job. The patented pivoting nozzle produces a spray pattern that can be adjusted from a fine mist to a high-pressure stream, and the free-spinning hose interface keeps the hose from kinking.

Joshua Lagala, Wampum, PA:

"I would recommend the PivotJet to anyone who wants to clean the exterior of a house or vehicle."



Joe McMahon, Hinckley, MN:

"The ability to pivot the head was most helpful in cleaning my ATV and the wheel wells on my truck. I plan on using the wand to wash my house, and I think the pivoting head will be excellent for this task."

**Chain Saw**

MEMBER RATING: 9.8

BEST FEATURE: QUALITY

Echo Inc., 800-432-3246, echo-usa.com

Made for tough jobs ranging from felling trees to cutting firewood, the Echo CS-590 Timber Wolf Chain Saw (\$459.99) is designed to be user-friendly as well as durable. The decompression valve makes starting easy, and the spring-style vibration system provides improved comfort for all-day operation.

Daniel Dutton, Heartland, TX: "This saw runs great and starts easily. I have used it for a full day cutting mesquite and oak and it ran perfectly. Not only does it run great, but it looks great, and the 18-in. bar is really nice."

Eric Fleischman, Yreka, CA: "The saw performed excellently. Honestly, it is one of the best chain saws I've ever used. I was impressed with its power and ease of use. It started easily and cut through logs without bogging down."

Furniture-Moving Aid

MEMBER RATING: 8.0 BEST FEATURE: EASE OF USE

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

Strong, abrasion-resistant, high-density plastic Gliders (\$19.98) by K & M of Virginia Inc. make it easier to move heavy projects, furniture, appliances and equipment. The devices can be used as free-floating units for quick jobs or permanently mounted to often-moved items. You can even screw several Gliders to a work surface to make projects slide easily.

Laura Matula, Sumter, SC: "I already had a similar product at home, but the Gliders outshined the other brand by far! You don't have to worry about the Gliders' slipping out from under the items you are moving. This is definitely an excellent product!"

Bart Ford, Ishpeming, MI: "I used Gliders to move my radial arm saw across my shop floor with ease. Before, I would have had to ask for a friend's help to move the saw."



PHOTOS COURTESY MANUFACTURERS

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Mold Stain Remover

MEMBER RATING: 7.8

BEST FEATURE: PERFORMANCE

Siamons International, 866-811-4148, concrobium.com



Concrobium Mold Stain Eraser (\$19.97) is a powerful cleaning solution that targets mold and mildew stains on outdoor and indoor surfaces. It works on wood, concrete, masonry, drywall, grout, stone, fiberglass, tile, plastic, laminate, aluminum and metal. For best results on outdoor surfaces, use Mold Stain Eraser with Concrobium House & Deck Wash to safely remove even the toughest mold stains without toxic chemicals.

James Bernachi, Cahokia, IL: "This product outperforms any other mold remover I've used in the past. It does as good a job as professionals but is a whole lot cheaper."

Bryce Goings, Beattie, KS: "I used the Stain Eraser on my 7-year-old deck. Now it now looks like I just built it!"

Titanium Hammer

MEMBER

RATING: 9.5

BEST FEATURE:

PERFORMANCE

Stiletto Tools Inc., 800-987-1849, stiletto.com



Stiletto's 15-ounce TB11-15 titanium framing hammer (\$263) has a patented replaceable steel face, a 180-degree side nail puller and a single-cast titanium head and handle, so it hits like a 28-ounce steel hammer, with 10 times greater dampening of recoil vibration and with 45 percent less weight. The replaceable faces offer extended life for the tool.

Cleve Helm, Scotts Mills, OR: "The magnetic nail starter made working overhead easy, and the dampening effect took the vibrations out."

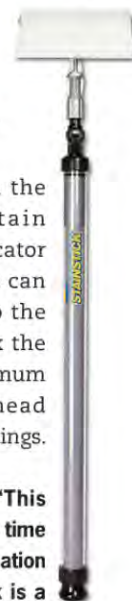
Darrel Chupp, Bonners Ferry, ID: "This Stiletto hammer is lightweight but swings much heavier due to titanium and the balance of the hammer."

Stain Applicator

MEMBER RATING: 7.6

BEST FEATURE: EASE OF USE

HomeRight Inc., 800-264-5442, homeright.com



Deck staining is easier with the HomeRight StainStick Stain Applicator (\$29.99). The applicator draws stain directly from the can with no mess and feeds it to the pad. Bristles on the pad work the stain into the surface for maximum penetration. The pivoting head makes it easy to stain under railings.

Cory Martin, Plymouth, MN: "This product is a very durable. It saves time and allows for a more even application of stain. Overall, the StainStick is a great product."



Sandra Dickey, Clarksville, TN: "After years of staining my porch with a paintbrush, I now have found a new and much easier way to do it."

Lighted Safety Glasses

MEMBER RATING: 8.8 BEST FEATURE: EASE OF USE

Panther Vision LLC, (847) 783-5900, panthervision.com

LightSpecs Vindicator LED Safety Glasses (\$19.99) feature 32 lumens of light built into durable temples. The lights shine exactly where you need illumination without leaving any dark spots.



Travis Brunner, Lafayette, IN: "These glasses are a lifesaver. They made every project I worked on go much quicker. I no longer have to ask someone to hold a flashlight for me while working under the sink or changing a tire in the dark."

Sarah Wells, Hanover, MI: "The built-in lights freed up my hands for my projects. These would also come in handy when the power goes out and you have to work on the fuse box. They are high-quality, comfortable and easy to use."

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MULTIMETER
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800 LB. CAPACITY

HaulMaster
FULL SIZE
TRUCK RACK
LOT NO. 98511/61407

Item 98511
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SAVE \$150

\$199.99 REG. PRICE \$349.99

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**8-IN-1 SOCKET
WRENCHES**
SAE METRIC
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SAVE 53%

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MOVER'S DOLLY
HaulMaster

1000 LB. CAPACITY

SAVE 46%

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US*GENERAL
FIVE DRAWER
TOOL CART
LOT NO. 95272/69397/61427

"Impressed with the Quality Construction and Ease of Use"
- Hot Bike Magazine

SAVE \$135

\$164.99 REG. PRICE \$299.99

700 LB. CAPACITY

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**10/2/50 AMP, 6/12 VOLT
BATTERY CHARGER/
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CENTECH.

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SAVE 57%

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SUPER COUPON!

Item 67227
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**27 LED PORTABLE
WORKLIGHT/FLASHLIGHT**
Requires three AAA batteries (included).

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SAVE 56%

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SUPER COUPON!

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HEAVY DUTY PORTABLE SCAFFOLD
HaulMaster

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SAVE \$80

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**CHICAGO ELECTRIC
POWER TOOLS**
4-1/2" HEAVY DUTY
ANGLE GRINDER
LOT NO. 91223/60372

SAVE 50%

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**6.5 HP OHV HORIZONTAL SHAFT
GAS ENGINES (212 CC)**
PREDATOR
ENGINES

LOT NO. 68120/60363/69730

SAVE \$80

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LOT NO. 69727, CALIFORNIA ONLY

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**10" COMPOUND MITER SAW
WITH LASER GUIDE SYSTEM**
CHICAGO ELECTRIC
POWER TOOLS

LOT NO. 69683/91995

SAVE \$90

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NEW! SAW BLADE INCLUDED

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RECEPTACLE
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NITRIDE COATED
DRILL BIT SET**
drillmaster

LOT NO. 5889

SAVE 60%

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TEMPERATURE
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(572°/1112°)**
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**AUTO-DARKENING
WELDING HELMET WITH
BLUE FLAME DESIGN**
CHICAGO ELECTRIC
WELDING

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SAVE 37%

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7 FT. 4" x 9 FT. 6" ALL PURPOSE WEATHER RESISTANT TARP
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Item 877 shown

SAVE 68%

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SUPER COUPON!

US★GENERAL PRO 830 LB. CAPACITY

26" 8 DRAWER ROLLER CABINET WITH 8 DRAWER TOP CHEST
LOT NO. 67831/61609
Item 67831 shown

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SUPER COUPON!

CENTRALPNEUMATIC 3 GALLON, 100 PSI OILLESS PANCAKE AIR COMPRESSOR
LOT NO. 95275/60637/69486/61615
Item 95275 shown

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SUPER COUPON!

12" COMBINATION SQUARE PITTSBURGH
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SAVE 50%

\$4.99
REG. PRICE \$9.99

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SUPER COUPON!

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SUPER COUPON!

CENTRAL MACHINERY 5 SPEED BENCH DRILL PRESS
LOT NO. 38119/44506/60238
Item 38119 shown

SAVE \$50

\$49.99
REG. PRICE \$99.99

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SUPER COUPON!

2-IN-1 FLOORING NAILER/STAPLER
CENTRAL PNEUMATIC
LOT NO. 97586/69703
Item 97586 shown

WE CARRY A FULL LINE OF FASTENERS

SAVE \$70

\$99.99
REG. PRICE \$169.99

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SUPER COUPON!

"The Undisputed King of the Garage" - Four Wheeler Magazine

PITTSBURGH AUTOMOTIVE RAPID PUMP® 1.5 TON ALUMINUM RACING JACK
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Item 68053 shown

SAVE \$60

\$59.99
REG. PRICE \$119.99

32290950

WEIGHS 27 LBS.
3-1/2 PUMPS LIFTS MOST VEHICLES!

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SUPER COUPON!

60" WORKBENCH WITH FOUR DRAWERS
WINDSOR DESIGN
Item 93454 shown

SAVE \$110

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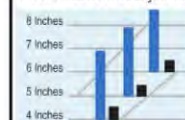
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From combat helmets to cowboy hats, protective head coverings keep evolving

For thousands of years, warriors have shielded their heads with helmets made from leather, brass, bronze, iron and steel. So it's no wonder that the modern hard hat derives from a military helmet. The surprise is that it took until World War I for someone to adapt the helmet for workaday wear.

Inspiration struck when soldier E.W. Bullard returned from service with his steel "doughboy" helmet in 1915. That hat sparked an idea for his father's company, which sold equipment to gold and copper miners in need of better head protection than their leather derby-style caps. In 1919 the E.D. Bullard Co. introduced the Hard Boiled Hat, which was made of steamed canvas and a leather brim and coated in black paint. Soon afterward, the company added an internal suspension device for enhanced effectiveness.

Of course, miners weren't the only workers in need of head protection. For years dockworkers had coated their hats with tar and set them in the sun to harden in an attempt to deflect the blows of objects dropped by coworkers (and pesky sea birds). The U.S. Navy commissioned Bullard to create a protective hat for shipyard workers, launching the widespread use of hard hats. In 1931 Six Companies Inc. mandated the use of Bullard's hats during construction of the Hoover Dam; a 1932 newspaper article report-



PHOTO COURTESY BULLARD

ed that a carpenter on the project survived a blow from a 4x6 timber thanks to his Hard Boiled Hat. No doubt, that was just one of many head injuries thwarted by the harder head covering.

When construction began on San Francisco's Golden Gate Bridge in 1933, chief engineer Joseph Strauss required workers to wear hard hats for protection against falling rivets. At Strauss' request, Bullard designed a sandblasting respirator helmet that covered the worker's face and featured a hose that supplied fresh air.

In 1938 Bullard introduced the aluminum hard hat, which was durable and lightweight but also a dangerous conductor of electricity. Fiberglass became the new hard hat material of choice in the 1940s, but cheaper and easier-to-mold thermoplastics replaced fiberglass in the 1950s and '60s.

Today's hard hats are typically made of high-density polyethylene and feature a suspension system that holds the shell about 1-1/4 in. away from the wearer's head. Enhancements now include face shields, ear protectors, sweat-absorbing linings, rear-view mirrors, headlights, camcorders and more.

Though yellow is the usual hard-hat hue, different colors can signify various roles on a job site (white for supervisors or engineers, blue for technical advisors, green for safety inspec-

▲ A 1931 advertisement claimed that Bullard's Hard Boiled Hat (which weighed 7 ounces and sold for \$3) protected against electric current, water, acid and fire as well as such hazards as a 3-pound wrench dropped from a height of 10 ft.

tors, etc.). The shape of the hat may differ as well: In 1996 machine-tool sales representative Bret Atkins invented the Western Outlaw (photo, left), the first OSHA-approved hard hat that looks like a Stetson.

If you think hard hats are only for professionals, think again. Smart DIYers don head protection for jobs ranging from demolition to under-deck framing. HANDY Editor in Chief Larry Okrend wears a hard hat with hearing protection and a face shield when he operates a chain saw, and years ago Managing Editor Connie Bastyr found that even wallpapering carries the potential for a head injury. "I had forgotten that I left my open razor knife on the top shelf of a ladder, and when I moved the ladder, the knife fell point-down into my scalp," she says. "I learned to never again leave tools on ladders, but on that day, a hard hat would have saved me a trip to urgent care." Considering the countless advances that have made hard hats safer and more comfortable, specialized and stylish, there's really no excuse for not using — and guarding — your head. ■



PHOTO COURTESY KIMBERLY-CLARK INC.

▲ Invented by a machine-tool sales rep who didn't like swapping his Stetson for a hard hat every time he entered a job site, the Western Outlaw is embraced for its sun-shielding brim as well as its cowboy style.

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1) Standard pickup class. EPA est. 17city/25 hwy mpg based on V6 4X2. 2) Based upon ALG 2013 MY forecast effective May-June 2013; sales weighted average of all light duty trims for each model at 36 mos; 15,000 per year. 3) See dealer for a copy of the powertrain limited warranty. Ram is a registered trademark of Chrysler Group LLC.

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