

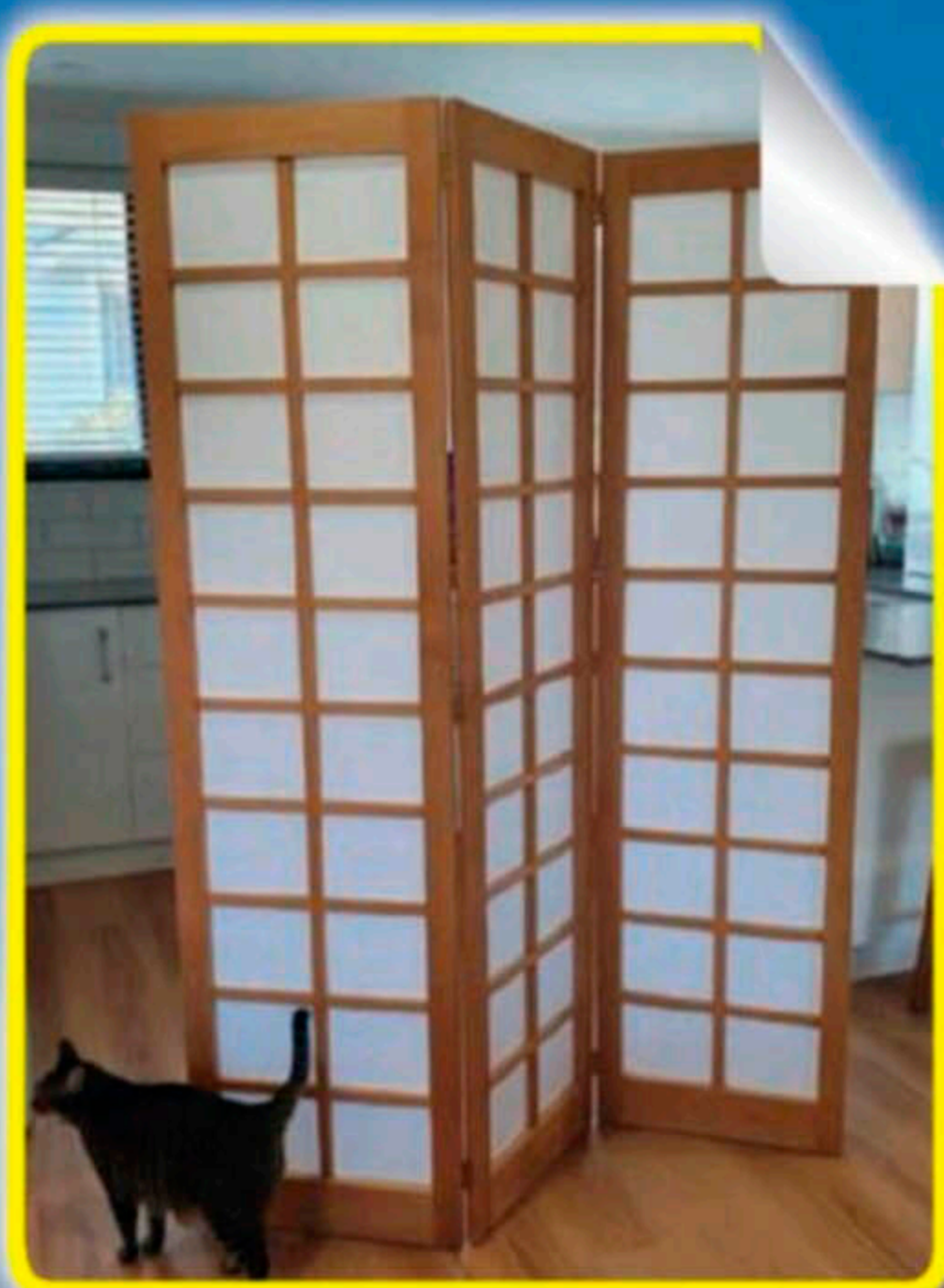
The Home HANDYMAN

January/February 2023 • Vol 33 No 01



SA'S
ORIGINAL
DIY
MAGAZINE

Going off the grid: tips and ideas



MAKE A ROOM DIVIDER



TURN A WINGED BOWL

+plus

- Know your heat gun
- Fix a mouldy bathroom
- Make a tea candleholder
- Tips for working with cement
- Assembly aids for woodworking



RSA: R44.50 (VAT incl)
Other Countries:
R38.70 (Excl. tax)

The original magazine for the DIY'er and homeowner

Bring them all together

The Woodoc Way

Enjoy the outdoors knowing that your exterior wood is protected against the elements. Woodoc's extensive range of quality sealers ensures a solution for every challenge.

- Deck sealed with **Woodoc DECK DRESSING Golden Brown**.
- Patio furniture sealed with **Woodoc 50 Marine (Matt)**, tinted with **Woodoc Stain Concentrate Teak**.



Our website has full details and "How-to-do"-advice.

Use our new **Woodoc Wizard** to help find your perfect sealer. www.woodoc.help



Woodoc Customer Care: For friendly, personal assistance and advice, phone Toll-Free 0800 411 200, during office hours. Visit www.woodoc.com Woodoc WhatsApp +27 66 302 4702

FROM THE WORKBENCH

The secret to keeping momentum going during a project

There's a secret step hidden in every big DIY project: not quitting. The beginning and end are a blast, with their fresh energy and job-well-done satisfaction. It's the middle – where your room is still a mess or the project isn't shaping out how you envisioned – and you start wondering why you ever started this project anyway?



Years ago, while photographing a step-by-step project, the cabinet maker who I was photographing said a statement that I disagreed with at the time. He said, "You can tell a great woodworker not by the mistakes they make, but how well they fix them." I was young, naive and thought no, no... that just cannot possibly be true. I thought, "You can only tell a good woodworker by the mistakes they don't make and how well they do things the first time".

After so many years around woodworking and DIY, I trust his words and understand I was the one that was wrong and not him. Everyone makes mistakes, even highly skilled craftsmen with years of experience. It is the nature of the beast that we work with. Learn how to fix mistakes. Learn how to repair damage and how to move past mistakes, making the project you are working on absorb them so that you don't waste material or time. After making a mistake during a project, do you ever feel like just throwing in the towel?

Some of mistakes can be in cutting. Of course, when you cut something too short you might have to get another board and the old adage of "measure twice cut once" really is true. So, measure twice then cut once trying to avoid an error as much as possible. Understand that mistakes are part of the job. Obviously, if you cut too long you can cut it shorter or maybe use the piece of wood you cut too short in a different position in your project.

Sometimes your cuts can be repaired by gluing in a spline or making a joint that works to absorb the cut that you made incorrectly. Sometimes damage can happen... so, learn how to repair and how to putty. Sometimes you have to patch. All these things you can do to fix the mistakes.

Lots of mistakes also come when you get right down to almost having your project all done and you are putting the finish on. When you make a mistake in your finish, learn how to repair, to touch up, to putty and blend. Sometimes mistakes can be hidden or reduced by being able to blend your stain or stain in a way that hides your mistake.

Remember, "You can tell a great woodworker not by the mistakes they make, but how well they fix them."

Gregg

The Home HANDYMAN



www.homehandyman.co.za

2023

DIGITAL SUBSCRIPTION FORM

Subscription Fees:

South Africa	Digital
Back Copy:	R29.90 each
6 months:	R181.00
12 months:	R359.00

Subscription fees are valid until 31 December 2023

Subscriber's details:

I would like to receive a digital copy.

Start subscription with the issue?

Name:

Email:

Postal Address:

.....

Postal Code: Tel:

Gift subscription from:

Tel: Email:

Direct Deposit / EFT Payments:

EFT - (Electronic Fund Transfer) directly to our account:

ABSA Bank

Branch Code: 632 005

Cheque account: **BB Print** 404 881 8651

Reference: "THH + surname + initials"
(Example: THH-Lindeque, G)

Fax/Email proof of payment plus this completed subscription form to 086 234 5052.

Please Note: There is an additional deposit fee of R65 if payment is made in CASH.

Contact us:

Email: subs@homehandyman.co.za

BB Print | PO Box 24938 | Gezina | 0031 | Fax: 086 234 5052



CONTENTS

FEATURES

The Home Handyman is published bi-monthly (6 issues per annum) by WJ Lindeque cc t/a BB Print (CK99/23366/23)

Address: PO Box 24938 | Gezina | 0031 | RSA

Office: 065 849 3264

Fax: 086 234 5026

Email: editorial@homehandyman.co.za

Publisher Hannes Lindeque

Associate publisher Allan Swart: allan@homehandyman.co.za

Editor Gregg Cocking - editorial@homehandyman.co.za

Technical consultant Denis Lock

ADVERTISING REPRESENTATIVES

Wilma Lindeque 065 849 3264

Email: advertise@homehandyman.co.za

Ruth Schultz 083 583 5243

Email: ruth@homehandyman.co.za

HOW TO SUBSCRIBE

Email: subs@homehandyman.co.za

Fax: 086 234 5052

Online www.homehandyman.co.za

Layout & design dee@stormdeezigns.co.za

Printing D & S Press

Distribution On The Dot | 011 713 9322

About *The Home Handyman* magazine:

The Home Handyman magazine is a specialized D.I.Y. publication and caters for a well-defined niche market since November 1993. The magazine equips its ever-growing readership with relevant D.I.Y. information, knowledge and skills.

The views expressed in this publication are not necessarily those of the publisher or its agents. While every effort is made to ensure the accuracy of the contents of this magazine, neither the editor nor the publisher can be held responsible for any omissions or errors. Images used are for illustration purposes and are not endorsed by *The Home Handyman*. Every care has been taken to ensure that all the information and projects presented in this publication are accurate, reliable and safe. It should be noted, however, that the ideas for design and product use are presented as suggestions only! The editor strongly advises that the reader check local by-laws and consult a qualified professional before undertaking any project and cannot be held responsible for any loss, damage, injury or death resulting from any information contained here.

Copyright: The Home Handyman, 1994. Copyright is expressly reserved and no part of this magazine may be reproduced or transmitted, in part or whole, in any form or by any means, electronic or mechanical, including photocopying, recording or any information storage or retrieval system without prior permission of the publisher. All enquiries regarding editorial correspondence, manuscripts and photographs should be directed to the editor.

10 Advice

Find out how to get off the grid

14 Woodworking

Make your own modern coasters and coaster holder

16 Bathrooms

Fixing mouldy silicone in the bathroom

20 Adhesives

10 tips for using adhesives properly

22 Woodworking

Discover how to build a room divider for your home

27 Tools

Know your heat gun

30 Lighting

10 things to consider when choosing new lighting

32 Woodturning

Learn how to turn a winged bowl

36 Safety

Workshop hazards and how to avoid them

38 Concrete

All you need to know about working with cement and concrete

42 Woodworking

Make a Desk Buddy: a work from home accessory

46 Advice

How to choose a front door

48 Metalworking

Make a metalwork tea light candle holder

52 Young DIY'er

Make a project with the children



www.facebook.com/TheHomeHandymanmagazine



@TheHomeHandymanmag



https://za.pinterest.com/homehandyman/



14

REGULARS

4 Off the shelf

All the latest products for the DIY'er

6 Voice your views

Your chance to air an opinion

8 DIY matters

News, views and reviews from around the globe

51 Bright ideas

Readers share their innovative time-and-space saving DIY ideas

54 Ask our experts

Your DIY queries answered by our panel of experts

56 A woodworker's diary

Denis Lock provides some help for what can be one of woodworking's most frustrating tasks: assembling projects

60 Woodworker's corner

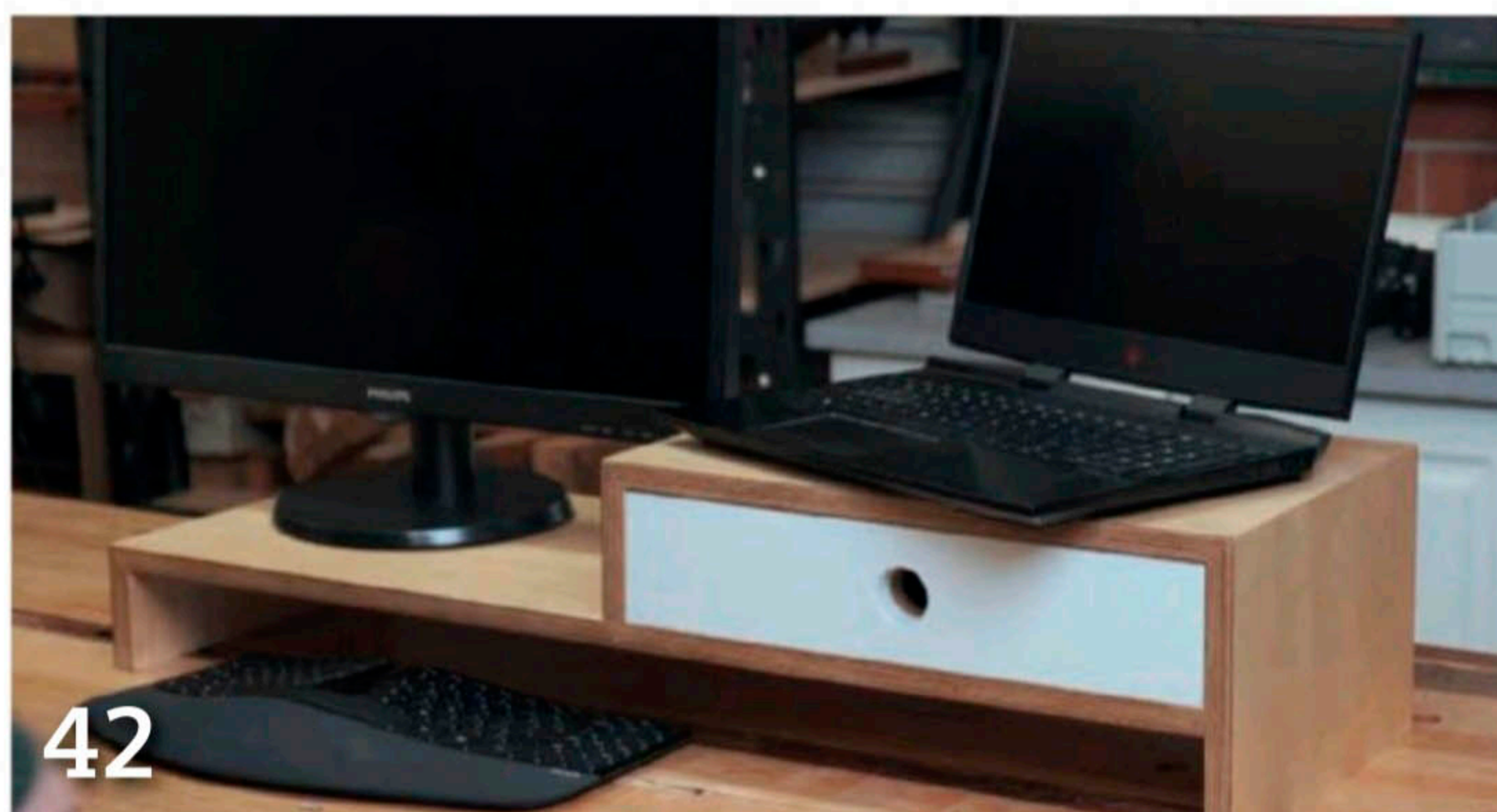
Sharing techniques, ideas and a love of wood

64 Tailpiece

8 tips for DIY newbies



38



42

Competitions & giveaways

6 **Win** a state-of-the-art power tool from Makita

51 **Win** a Tork Craft Saw Horse set from Vermont Sales

54 **Win** a digital subscription to *The Home Handyman*

OFF THE SHELF

Your guide to the latest products in the world of DIY

Hot Tank Summer for JoJo

South Africans prepare for what will be another sweltering summer

Present and future JoJo Tanks owners can be rest assured that their tank has been engineered to resist the ravages of the African sun and the toughest of weather conditions.

JoJo Tanks are protected from ultraviolet radiation through a UV-stabilised outer layer that can withstand the harsh African climate. The colour pigments used in the production of the tanks have the best weather- and light-fastness properties, allowing for them to be used outdoors for many years without any fading and bleaching of the colour.

The best-quality, quality virgin LLDPE (linear-low density polyethylene) which is 100% recyclable is used, while a black inner layer prevents algae growth to keep the water fresher for longer and a BPA-free, food-grade layer prevents leaching of harmful chemicals and protects the quality of the water.

The design of the JoJo tank is iconic and much replicated, but JoJo's durability comes from an attention to detail in the manufacture, with a greater thickness at the bottom of the tank to provide required strength to withstand the pressure from the liquid stored. Closely spaced ribs at the bottom provides added strength and there are no vertical joints or weak points in the layers for added strength.

The tanks are built to the SANS 1731:2017 standard, which was developed in conjunction with the South African Bureau of Standards (SABS) to offer a warranty that ensures tank manufacturers conform to "world-best practise".

"Our advice when choosing a tank is to consider what application you will need it for, and the space you have. We offer a wide range of tanks, from vertical to horizontal, with capacities ranging from 260-litres to 20 000-litres," said Sebastien Badenhorst, Executive of sales, marketing and distribution.

For more information, visit www.jojo.co.za



International Worx power tools forges ahead in the South African market

One of the most successful brands ever to be introduced into South Africa

Worx, with its huge range of unique and technically advanced power and garden tools, continues to grow in the esteem of customers for the quality, innovation and value presented by Worx tools.

Worx continues to build up a reputation for quality and unique tools never seen before in South Africa. Worx has demonstrated itself to be favoured by the trade, retailers, and end user due to its range and support service that have established Worx as a leading brand.

"Brand loyalty to power tools is very high and although Worx has been well accepted by the trade, retail customers and the end users, we are under no illusion that there is still lots of hard work ahead," says Greg de Villiers, Regional Director for Positec Group SA. "Positec will continue to look for the opportunities in the market to change the status quo. We are here to listen to our customers; if you or your business needs our support or are looking at a new and fresh way of looking at your power tool business, get in touch," he says.

For more information, email greg.devilliers@positecgroup.com



Beautiful and budget-friendly kitchen worktops

While granite and engineered stone kitchen countertops are perceived as opulent and nearly indestructible, they also come with a hefty price tag

Thankfully, high-pressure laminates (HPL) and melamine-faced boards (MFB) have come a long way since they were first popularised in the 1950s and the 1960s. Today's offerings are far more durable and the designs more realistic and luxurious than the products available previously.

"Kitchen countertops tend to take a beating and can often show age more quickly than other surfaces around the home," says Jason Wells, Brand & Marketing at PG Bison. "People are understandably cautious when choosing their worktops as these surfaces need to stand the test of time and be moisture, scuff- and germ-resistant. But many people aren't aware of the innovations and technologies that have been developed in recent years in wood-based panel products."

With improvements in digital scanning and printing, as well as in manufacturing, the designs and colours available in HPL and MFB boards have become ultra-realistic, with options that capture the look of marble, granite, stone and timber, as well as solid colours, in a diverse range to suit every taste.

However, Wells says that often, the biggest concern that people have is moisture resistance. "Many of us have seen chipped and swollen worktops in older kitchens," he says. "But, with products like PG Bison's Formica LifeSeal Worktops, it all comes down to correct installation to ensure minimal risk of swelling caused by water penetration. Plus, our proprietary LifeSeal strip, supplied on all Formica LifeSeal Worktops products, stops water that has trickled down the front edge of the counter, from penetrating the worktop core from the underside. This gives you an extra layer of protection where it's needed most."

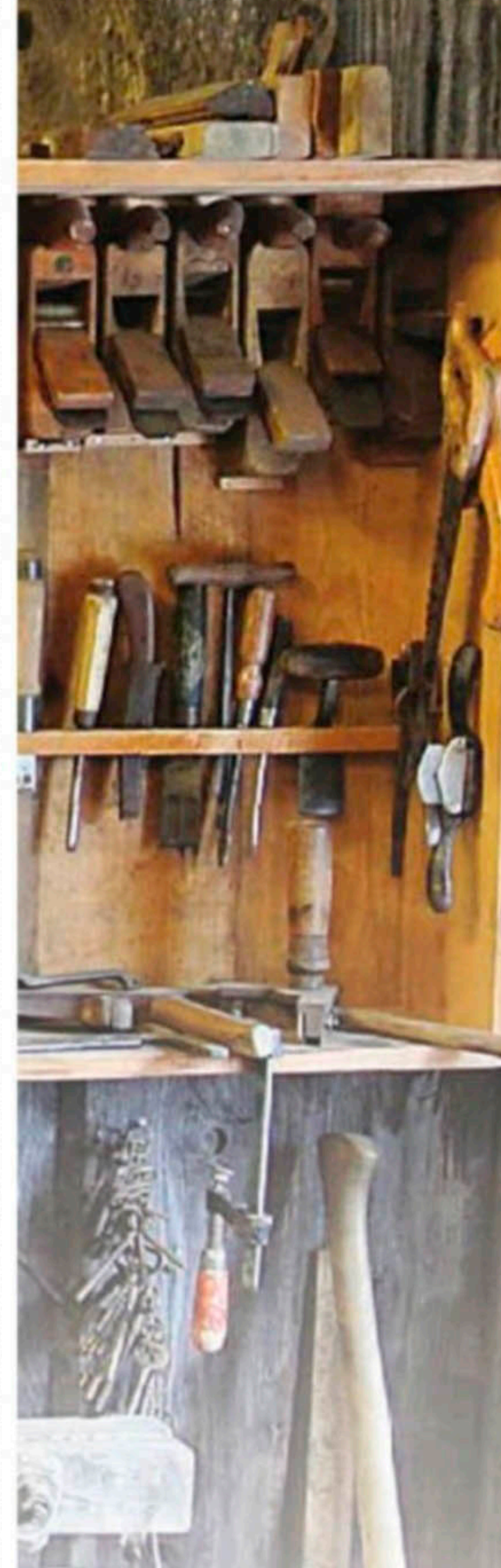
To ensure that no water seeps through any gaps (like where the worktop meets the wall; or between butt joints and inside the cut-outs for sinks and stove tops), Wells says a water sealant (such as marine varnish or enamel paint) should be applied in a dabbing motion to the exposed core material of the worktop to create a proper seal.

"Formica LifeSeal Worktops are also locally manufactured and therefore positively contribute to the South African economy. In addition, local production helps to manage the price point and ensure the product is readily available from all leading board retailers," Wells concludes. "You get a stylish, international look without needing to pay heavy import duties and long-distance transport costs."

For more information, visit www.pgbison.co.za



See your
product
in this
space!



**The Home
HANDYMAN**
www.homehandyman.co.za

To advertise in
The Home Handyman's
Off the Shelf,
please contact Wilma
on 065 849 3264 or
e-mail:
advertise@homehandyman.co.za

VOICE YOUR VIEWS

Do you have any thoughts or comments on DIY issues?



Share your opinion

The Home HANDYMAN

www.homehandyman.co.za

Send us your views, ideas and opinions and you could win a power tool from Makita.

editorial@homehandyman.co.za
or P.O. Box 24938,
Gezina, 0031

Please include your name, physical address and contact number (office hours)



Penny De Villiers

Wins a Makita
M9507B Angle Grinder



Prizes are not exchangeable

A recent convert to DIY'ing



I just started subscribing to your magazine; I am a woman trying to do it myself.

One thing that beats me, however, is, drilling. How do you remember/organise your drill bits to know which drill bit is for which application? And which is the best overall drill for all types of surfaces.

Penny De Villiers, Kimberley

Ed replies: Welcome to the DIY family Penny! We hope that your angle grinder comes in handy. We'll start with your second question first. For a general around-the-house drill, we'd recommend a 12-Volt drill kit that comes with one or a pair of lithium-ion batteries. These drills offer the best combination of power, manoeuvrability, run time, and cost. You'll be able to tackle most of the jobs you'd likely do around the home with one of these.

As for the drill bits, the variety of bits can be a little intimidating.

Most DIYers recognise the importance of using the right tool for the job. But while they may spend hours researching what drill to purchase, they often fail to give enough consideration to what will actually be in contact with their work material: the drill bit.

Choosing the right drill bit is about saving your single most important resource - your time. So, for peak efficiency, it pays to understand the different types of drill bits, and which one is right for your project. Here's a quick guide to help you:

- * Wood drill bits: These can be identified by a small, pointed tip at the very end. If you look closely, you can see spurs on each side.
- * Masonry drill bits: These bits have a gently sloping tip.
- * Metal drill bits: These have a wide-angled point at the end, and they may also be painted black.



Home and kitchen projects

I would like to share a few of my projects. I'm a very simple hobby woodworker, with some small tools, but I just like to make things myself. Mostly kitchen stuff and small furniture. I hope you like it as much as I liked to make it.

Glenn Wouters, by email

Ed replies: *Fantastic work Glenn! Please feel free to submit any of your future work as a Reader's Project to editorial@homehandyman.co.za*



Turn a hammer into a rubber mallet for pocket change

Here's a trick I've used for more than a decade to turn a claw hammer into my version of a rubber mallet. Just fit a white rubber chair leg protector over the hammerhead. You can find them in four-packs at any hardware or discount store for just a few dollars. The rubber

cap pushes on snugly so it won't fall off. It works great, and the hammer won't mark your workpieces.

Paul Postuma, by email

Ed replies: *Sometimes the greatest ideas are the most simple ones!*

Reader's projects



The Home HANDYMAN

www.homehandyman.co.za

Willing to share your latest project with our readers? Send a step-by-step write up of how to make the project, along with step-by-step photographs (at least 300kb) and a picture of the finished product.

Email projects and photographs to:

editorial@homehandyman.co.za



Our competitions – the fine print

Prizes may not be exchanged for cash. The closing date is stipulated by the competition box. If not stipulated, it closes on the last day of the issue. For example: Jan/Feb edition. All competitions close on the last day of February. To enter simply e-mail your answer to: editorial@homehandyman.co.za and include your name, surname, address and a day time contact telephone number with your entry. Unless otherwise stipulated, competitions are lucky draws and the correct entry drawn on the closing date will be the winner. The prize may differ from the picture shown. By entering this competition you agree to all rules and accept that the decision of the publisher is final and that no correspondence thereto will be entertained. This competition is open to all readers of *The Home Handyman* except employees of THH, BB Print and employees who work for the company that sponsors the prizes and their immediate families. Prizes not claimed within 60 days will be forfeited.

Protective gear: Not just essential for the workplace, but for home improvements too!

Personal protective equipment is mandatory when working with dangerous power tools in the workplace, however, when we're doing 'odd jobs' at home or on the farm, many of us fail to ensure that we are adequately protected. Unfortunately, though, accidents happen. "Somehow, when we're at home, doing maintenance or odd jobs or even pursuing a hobby that involves power tools, safety considerations tend to go out the window," says Charles Henderson, Business Development Manager for Husqvarna South Africa. "Yet that's when it's the most necessary, which is why Husqvarna has focused on making comfortable, affordable protective equipment that is easily available so that there is no need for regret afterwards, should an incident occur."

The difference between a minor scrape and a major injury or even worse, death, is protective gear. So, what kind of PPE should be sitting in your workshop alongside your tools? Henderson gives his expert advice:

1. Eye-wear

What should you have: Visors, goggles or glasses to ensure effective visibility and complete eye safety.

Why do you need it: Eyes are probably the most commonly injured part of our body and also the most difficult to repair.

When do you need it: Whenever there is a risk of anything becoming airborne like chippings, grass or grindings.

2. Hearing protection

What should you have: Ergonomic earphones designed for optimal comfort, protection and prolonged use and available as individual hearing protectors or visor/hearing protector combo.

Why do you need it: Hearing damage often manifests later in life as tinnitus or even deafness and can be debilitating.

When do you need it: When exposed to noise that equals or exceeds 85dBA as an 8-hour TWA (time-weighted average)

3. Hand protection

What should you have: Comfortable gloves designed for hand protection, comfort, safety and functionality.

Why do you need them: Your hands are closest to the 'action' as well as being your permanent onboard 'tools' so they need adequate protection.

When do you need them: Along with eye protection, gloves should be your primary safety accessory, to be worn whenever handling power tools.

4. Footwear

What should you have: A pair of high-quality, comfortable boots (either in leather or rubber), that protect your feet and stand up to the many challenges of outdoor work. Steel toe-cap boots (preferably with saw protection) are recommended for chainsaw use.

Why do you need them: Gravity ensures that everything dropped is a potential foot hazard.

When do you need them: Whenever handling particularly heavy items or when operating foot-height blades such as lawnmowers and brush-cutters.

5. Head protection

What should you have: A high-quality helmet, equipped with hearing protection and visor is ideal but you can settle for a good old-fashioned helmet too.

Why do you need one: Life-changing head injuries are to be avoided at all costs.

When do you need it: When working under over-head activity (especially when chopping down a tree) and where there's a risk of heavy, airborne materials.

6. Chainsaw Protective Pants

What should you have: Chainsaw pants with sprocket clogging material that protect you whilst using a chainsaw.

Why do you need them: To prevent leg injuries.

When do you need it: Whenever one is operating a chainsaw.

7. Workwear clothing

What should you have: Depending on the job at hand, you will need protective clothing that allows you to be agile, without compromising on safety.

Why do you need it: To prevent injuries to torsos, arms and legs.

When do you need it: Regardless of whether you are mowing the lawn, trimming hedges or using a brush-cutter, you should always have protective workwear on.

For more information, visit www.husqvarna.com/za/personal-protective-equipment/



Worx brand – a new hot property for Brandroid



Brandroid directors, Errol Martin, Sales Director and Dean Lotter, Managing Director

Brandroid has recently been awarded the Worx distribution for South Africa, said to be the hottest, most innovative and popular power and garden tool brand to be introduced in the country in the last decade.

Worx has a highly impressive and unique range of power tools and outdoor power equipment. Many of these tools are highly innovative and bring users value no other power tool brand can match. The Worx Powershare battery platform is unrivalled in technology and ease of use; one battery fits the full range of 20V, 40V and 80V garden and power tools.

“The Worx brand will fit perfectly into Brandroid’s stable of high-quality brands as they exist for innovation and the very best tool brands,” said Greg de Villiers, General Manager of Positec SA who manufactures the Worx brand. “We searched diligently for the right partner and Brandroid ticked all the boxes. We look forward to a long and successful partnership,” said de Villiers.

The Brandroid directors, Dean Lotter and Errol Martin have vast experience and expertise in the power tool and general industry, working with leading international brands. “It was a no brainer for us to partner with the Worx brand,” said Lotter. “Worx live to innovate and create tools that bring exceptional value

to their users, which aligns perfectly to who we are; we always want to do things in innovative ways that bring value to our partners and end-users. Worx is not just another power tool brand. It showcases an incredible quality to cost ratio, meaningful tool creation, a long pipeline of R&D and ownership that isn’t here to be another ‘me-too’ brand. The rate at which the global market is enjoying the Worx proposition gets us super excited.”

“We are set to bring Worx to the market aggressively through a well-equipped and excited retail network. Today, retailers and end users are spoilt for choice with new and established power tool brands. They need something special, and we believe we’ve got the perfect proposition. We have no doubt that Worx as a product is going to blow the industry’s socks off with its innovation and quality – it is already doing so, scooping up a variety of awards internationally,” Lotter said.

About Brandroid

Brandroid focuses on great brands, some in-house and others where Brandroid has been selected as a specialised distribution partner based on its history of giving premium tool brands the justice they deserve. Being an exceptional business is not just about selling products – like all remarkable businesses it is about always having its customers’ best interests

at heart. With more than 100 years combined team experience in premium tool marketing and distribution, Brandroid exist to turn its experience and passion for brands into exceptional value for its customers. The company thinks differently and works differently so that it can do better and be better.

For more information, call 081-030-8944, email Greg.deVilliers@positecgroup.com or visit www.worx.com



With news that load shedding will be with us to stay for at least another year, *The Home Handyman* explores your options to save money on electricity and get off the grid.

GET OFF THE GRID

The increase of just under 10% in Eskom tariffs came into effect at the beginning of April 2022. Along with the year-on-year electricity price increases that have been shouldered by the South African public, various campaigns continue to raise awareness around climate change and the need for greater energy-efficiency in the country. For South Africans, saving energy is both a short- and long-term imperative – the former serving as a way to relieve financial pressure and the latter serving as a means by which to contribute to the global 2030 target of net-zero.

This is according to a Defy South Africa spokesperson, who says that against the backdrop of the recent observance

of World Earth Day, solving the energy crisis in South Africa is as much about the 'bigger picture' as it is about the microeconomics of our country. "The need for energy-efficiency has never been more urgent and is something that all South Africans can work towards in their individual capacities."

According to a 2021 University of Cape Town study, the appliances that most South African households own are fridges, geysers, washing machines and televisions. The study concluded that the residential sector, which consumes a fifth of the world's energy, stands to benefit from the national move towards energy-efficiency as stipulated in the government's post-2015 National Energy Efficiency Strategy. This Strategy

aims for a 20% improvement in the average energy performance of the residential sector by 2030, relative to the 2015 baseline.

"The goal of becoming a more energy efficient country can be reached in two significant ways. Firstly, South African households need to employ measures to use energy more efficiently by understanding how appliances work. Secondly, South Africans can make a difference by making more conscious purchasing decisions when it comes to the appliances they use every day. Much of this 'conscious consumerism' is rooted in understanding how appliances are rated and the amount of money they can save by making better purchasing decisions."

In helping South Africans to work towards these goals, here are some tips to save electricity in relation to the most commonly used household appliances:

1. Maintenance checks can go a long way in conserving energy for refrigeration

For the 98% of South Africans who own fridges and use them daily, there are a few ways to optimise the energy usage of these important appliances. On a monthly basis, the suction of the seals on the doors of fridges and freezers should be checked to ensure that they are working properly. Broken or compromised seals can cause warm air leakage, which increases the amount of electricity that the appliances need to use to keep the contents cool. Consumers should also allow food to cool properly before placing them inside a fridge, to keep the appliance's internal temperature as low as possible.

2. Learn how to calculate the energy cost of an appliance before buying it

When it comes to buying a new fridge, a handy hack is to calculate its energy usage beforehand in order to determine its affordability in the long term. To do this, multiply the kWh figure provided on the label by the cost of electricity in your municipality. For example, a fridge that uses 254 kWh per year at a rate of R2 per kWh, will cost R508 annually.

3. Make smarter choices around washing clothing

On average, washing machines consume about 60% of their power to heat up water. Therefore, for daily washes, the best way to save energy when using a washing machine is to use cold water. Another lifestyle tip for washing clothes is to pre-soak stained clothing in stain remover before loading these into the washing machine. This could help to reduce the number of washing cycles needed for a full clean, and save energy in the long term. Consumers can also reduce the energy usage of their washing machines by scheduling the washing of clothes to certain days of the week and waiting until full loads are available before using the machine.

4. Use ratings as guidelines when buying a new appliance

For consumers buying new washing machines, it's useful to understand the way that these appliances are rated. Ratings stem from the European standard which rates appliances in classes from A to G, with A being the most energy-efficient and G being the least. An A grade appliance is divided into three further categories: A+, A++ and A+++, the latter of which is rated the most energy-efficient.

Reading the label on a new washing machine can help consumers understand how efficient the product is. Generally, high rated products use less energy, which leads to a reduction in electricity spend as well as a decrease in CO₂ emissions – for consumers, higher rated appliances are therefore a win-win buying decision. This same principle applies to other appliances like stoves, ovens, kettles and dishwashers.

Weighing up your alternative-energy options

Preparation is key for South African households and small businesses that hope to evade the darkness. "When faced with challenging circumstances, South Africans have two options to combat loadshedding: you can stock up on candles, LED lights and power banks, or you can invest in long-term solutions to power your home," says Jeanne du Plessis, Head of Communications at Kandua.com, an online platform that connects those in need of home services with affordable, vetted home service providers.

"While going completely off-grid or investing in a generator isn't a realistic option for every household, there are alternative power solutions available that can be installed quickly to help your household retain some semblance of normality during ongoing bouts of loadshedding," she adds.

Depending on your budget, du Plessis highlights three options that can be installed (and scaled) over time:

Be prepared: Three ways to beat the blackout blues

1. Inverter and battery backup system

This system consists of an inverter and a battery pack, which recharges when there is electricity and uses this stored power once load shedding begins. "The system is designed to switch on automatically when the power goes out and can be installed in a number of locations in a home or office to keep smaller appliances such as lamps, WiFi routers and computers running. This is especially useful for those needing to work from home," says du Plessis.

A standalone and Uninterrupted Power Supply (UPS) device has an inverter and some power storage built in and is often used to power electronics during an outage. "The key factor that affects the cost is the type and storage capacity of your batteries, which affects how much you can connect to the system and for how long, as well as the lifetime of the equipment," she adds

The cost of a UPS ranges between R2999 and R6100 (not including an electrician's call-out fee for installation) depending on the voltage needed.



2. Solar power

Solar power enables homeowners to reduce their dependence on the power grid. “Depending on your energy needs and whether you want a system that is completely off grid (or one that’s still grid-tied), you can install a full or partial solar system to power your lights, Wi-Fi and appliances,” du Plessis explains. “This may require a significant financial investment upfront and will need to be installed by a pro, but will benefit your household immensely in the long run.”

More advanced solar solutions also have battery storage integrated so that you still have power when your load shedding slot is at night. Solutions start at R83 000 for an 80-210m² home and go up to R200 000 + depending on the size of the home.



3. Gas solutions

If budget doesn’t allow for solar, consider gas options instead. “Switch out your electric stove, geyser or fireplace for gas-powered alternatives, so you can cook, have a hot shower and your morning ‘cuppa’. Your local hardware store stocks a wide range of gas lighting solutions, too,” du Plessis adds.

You can get a simple gas cooker for under R300, whereas the prices for gas geysers, stoves or fireplaces vary widely, depending both on the appliance and the nuances of the installation.

“Some gas appliances need electricity for the spark to get them going, so make sure you choose wisely,” cautions du Plessis.



What homeowners should know before investing in solar panels

The rise of solar power means individuals, communities, our society, and the earth can reap the benefits of renewable energy. This is such an exciting time for us as we embrace personal responsibility, lower energy bills, and just the plain satisfaction found in being resourceful enough to harness the free and reliable power of the sun. But before you jump in headfirst, make sure you are well-versed on the initial investment, the type of system you specifically need, and how to get the most out of solar power.

It takes some time to benefit from the savings

Your monthly bill savings begin as soon as your system is up and running. The first electric bill you receive after going solar will put a pep in your step. But many would-be solar users are scared off by the initial investment. Until solar power can be more affordable to people of various incomes, the upfront cost will continue to be a roadblock. But the savings are imminent, and you could even have a payback time of less than a decade.

Different homes need different considerations

There’s no system, provider, or setup that works for every house. The weather in your area can affect what types of panels you need, as can the size of your house and whether or not your house is shaded. You should find an installer who is experienced in working with the type of roofing you have. Do your research and compare several providers so that you can feel out which one may be best for your particular situation.

Above all, the capacity of the system you buy will depend on the amount of energy generation you’ll require to adequately power your home. Consequently, this will depend on the purpose for choosing such a system in the first place. To illustrate, if you just want backup power, you’ll need a relatively smaller system with some power storage. On the other hand, if you’re looking to become independent of the grid, definitely go for the highest capacity system you can afford. Perhaps you’re just itching to dive into the latest tech to modernise your home? If so, limit your key considerations to an entry-level options to see whether investing in a serious system is worth it.

Leasing a system may make it hard to sell your home

While solar system leasing is a great compromise for people who can’t afford the cost upfront or don’t want to deal with maintenance and repairs, they can have their downsides. Even though prospective buyers are often drawn to solar panels, many will scare off at the mention of a lease that they have to take over upon buying the house. Think carefully before you lease a solar system, especially if you’re not sure how long you want to be in your current house.

Don't skimp on the inverter

Because inverters are the most expensive component of the system, many people try to find more affordable inverter options but end up making the mistake of buying one that won't last. Research, take recommendations from trusted sources, and invest in a solid inverter—you will thank yourself down the road. Consider buying fewer PV cells at the outset if you need to cut back on some of the costs.

Batteries

Solar power storage is another key consideration if you want the most versatility from your system. This is especially true if your system provides surplus generation. Batteries allow you to store that extra production for use at a more opportune time.

Then again, not everyone has the budget to spare for energy storage. After all, it's not yet at the level where opting for some storage is a no-brainer. Your decision on this matter depends on your willingness to spend and what you want out of your solar unit.

Your warranty will last 20 to 25 years

Your solar system will most likely be covered for 20 to 25

years, but most of them last 30 or more. That's many years of reaping the benefits of solar and being a good steward of the environment.

To DIY or not to DIY

Some people say it's fairly doable to mount your own solar power system at home. For others, it can be tricky and complex. If you're confident enough in your knowledge of electrical systems and installation, you can DIY it.

For most people, however, the likelihood is that they will want a complete professional installation. You can also consult with the installers to determine the best system for your home and the optimal location to mount it. With experts on the job, you'll know that the solar modules will be fully secure and working to maximum efficiently.

Maintain your panels

Solar panels are simple and durable, which helps them maintain their output level for the life of the warranty. They are pretty low maintenance but it never hurts to hose them off every now and then and make sure to get leaves and other debris out of the way.

The advertisement features a large, detailed image of the Victron Energy Blue Smart IP65 Charger on the right. The charger is black with a blue label that includes the Victron logo, 'IP65 waterproof', voltage selection buttons (12V, 6V, and a reverse polarity button), and the model 'blue smart charger 6V/12V/1.1A'. To the left of the charger, there is a smartphone displaying the Victron Charge app interface and an open blue carrying case containing various cables and connectors. The background is dark blue with glowing blue energy lines and faint icons of a bicycle, a car, and a boat. At the top left is the Victron Energy logo with the tagline 'BLUE POWER'. Below the logo, the text 'BLUE SMART IP65 CHARGER!' is prominently displayed in white and orange, followed by the model specifications: 'MODELS: 6V/12V 1.1A, 12V 4/5/7/10/15/25A, 24V 5/8/13A'. At the bottom, a red banner contains the website 'www.victronenergy.co.za/where-to-buy'. In the bottom left corner, the slogan 'Energy. Anywhere. Anytime' is written. In the bottom center, there is a circular '5 YEAR WARRANTY' seal. The Victron Energy logo appears again in the bottom right corner.

victron energy
BLUE POWER

BLUE SMART IP65 CHARGER!
MODELS: 6V/12V 1.1A, 12V 4/5/7/10/15/25A, 24V 5/8/13A

www.victronenergy.co.za/where-to-buy

5 YEAR WARRANTY

Energy. Anywhere. Anytime

victron energy
BLUE POWER

Make your own modern coasters and coaster holder.

COASTING IT



What you will need

- Your favourite wood (I used figured walnut)
- Table saw
- Wood glue
- Blue tape
- Clamps
- Sandpaper
- Scotchbrite Pad
- Buffer pad
- Finish of your choice

>> Shane Mitchell

After building a couple table pieces, I needed something to protect the furniture. So, I decided to make some black walnut coasters with a coaster holder.

These modern coasters are great not only for saving your furniture, but they look fun too. I wanted to build a coaster set that drew from modern design and complemented some of my other work. These coasters are made from figured walnut hardwood, which gives them a

beautiful finish. Speaking of finishes, I used a suitable finish to ensure that they are able hold up under wet conditions.

My coaster holder was made from wood 6,35mm thick, while each coaster was 20mm.

Step-by-step guide

Step 1: Cutting out the coasters

Set up a crosscut sled with a stop block to 100mm. Square off the edge of the board, then cut out four 100 x 100mm squares.

Step 2: Cutting out the coaster holder

Cut the holder sides board down to a height of 82.5mm. At the crosscut sled, cut the board down to 115mm wide sections. You should have five pieces.

With the saw blade tilted to 45 degrees, cut the mitres for three of the four corners.

Tilt the blade to 67.5 degrees and cut the final piece to 25mm. Mark out the angles for the mitres, leaving 6mm at the base. Set the mitre gauge to 41 degrees and carefully make the cuts. It is important to make sure these pieces are mirrored. Then set the mitre gauge to 45 degrees and cut the end of the base.

Step 3: Assembling the coaster holder

Using the blue tape method, glue and clamp the six pieces together.

Step 4: Adding chamfered edges to the coasters

Using some glue, glue in a stop block to make sure all the coasters stay in the same place when making the cuts. Set the table saw blade to 45 degrees. Cut a mitre into one corner of each coaster,

then put a 45 degree chamfer around all four sides of the coaster. Set up a new stop and cut a chamfer into the mitred corner.

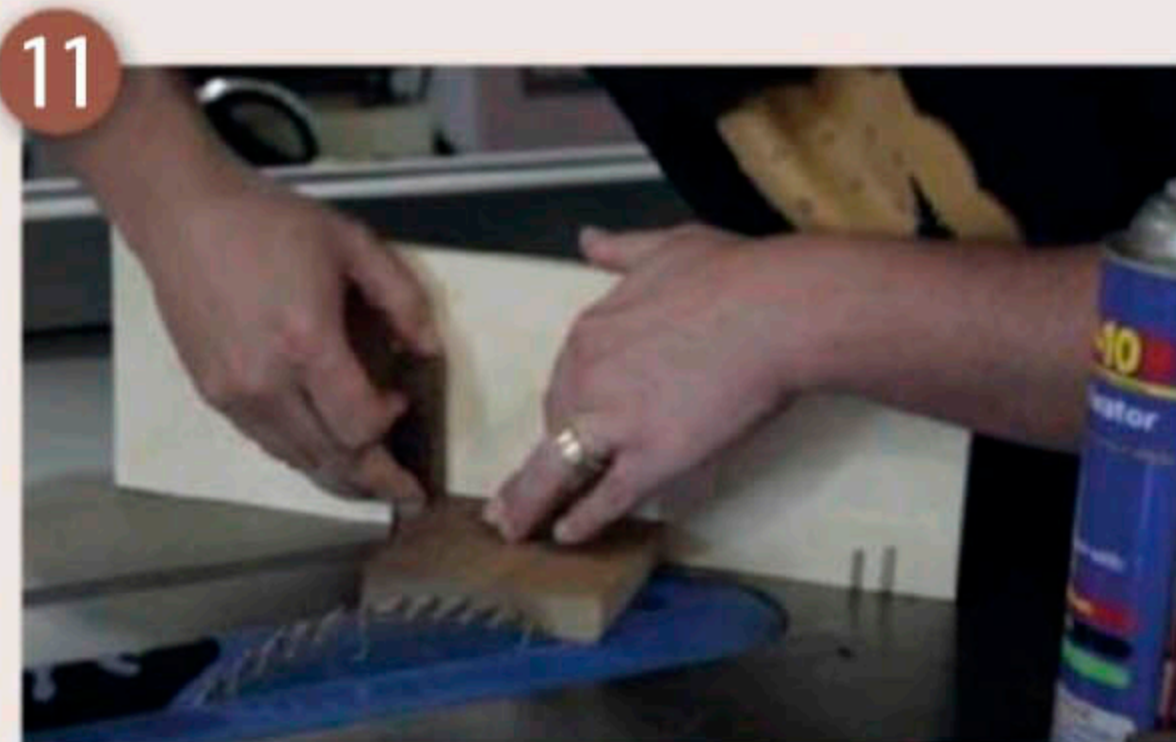
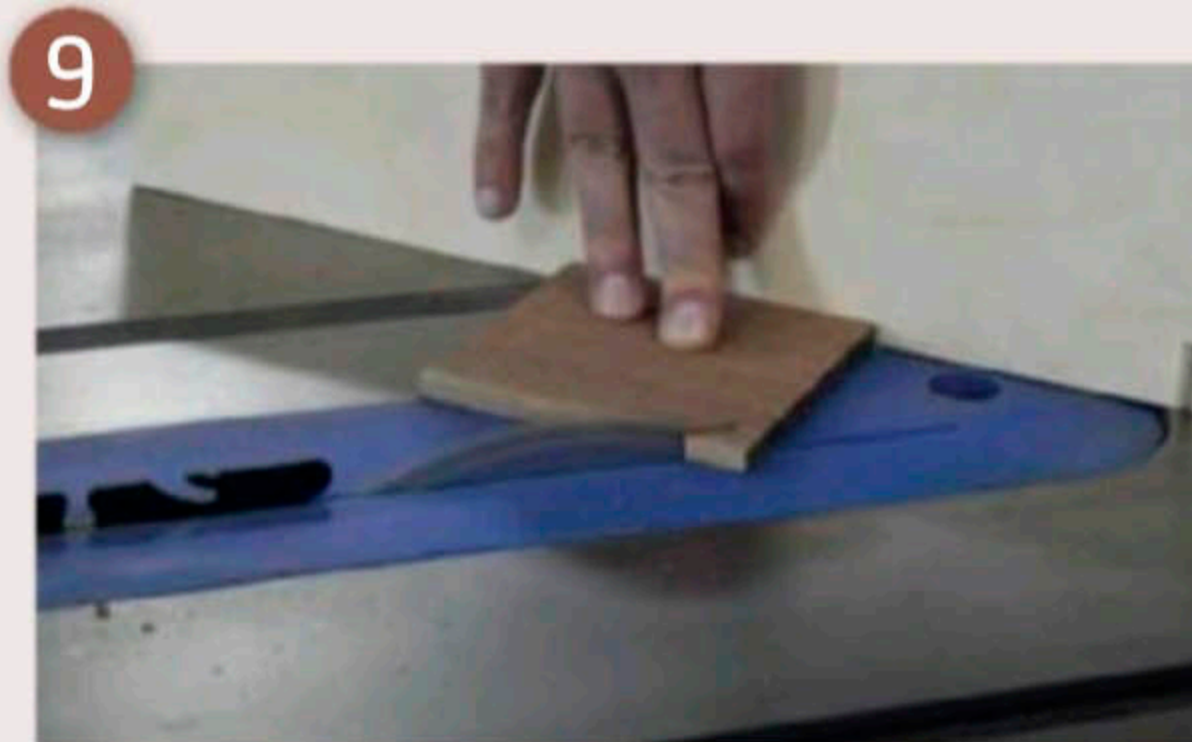
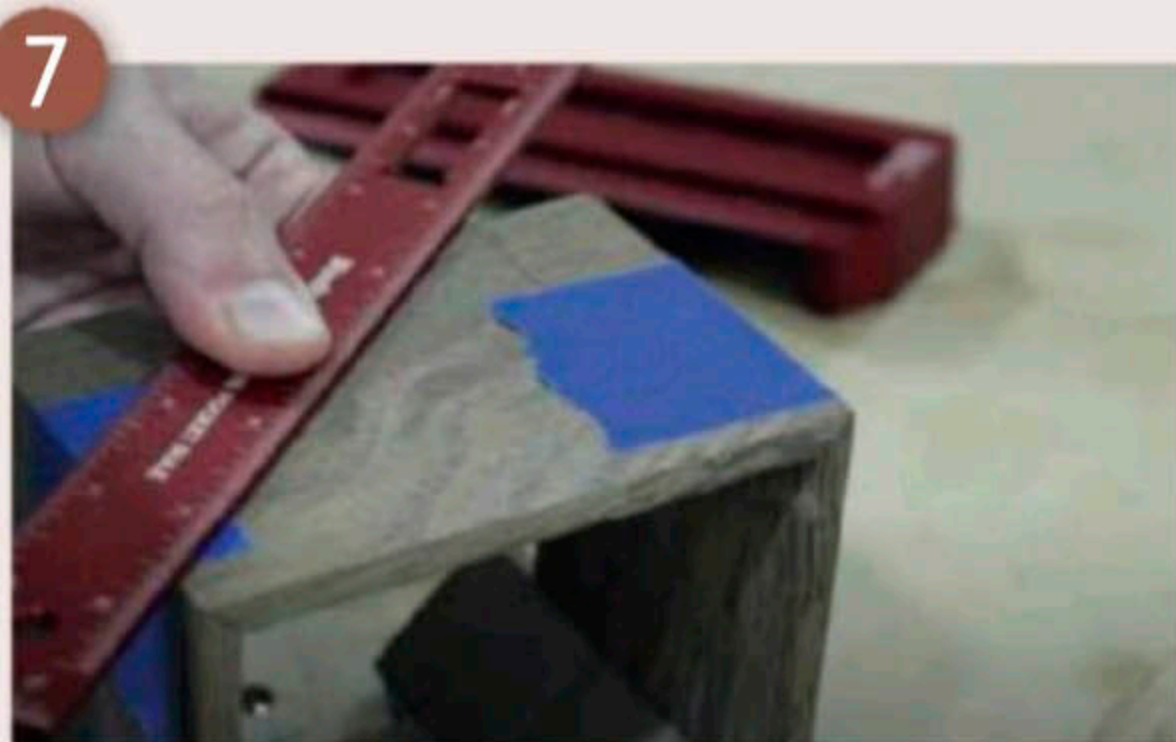
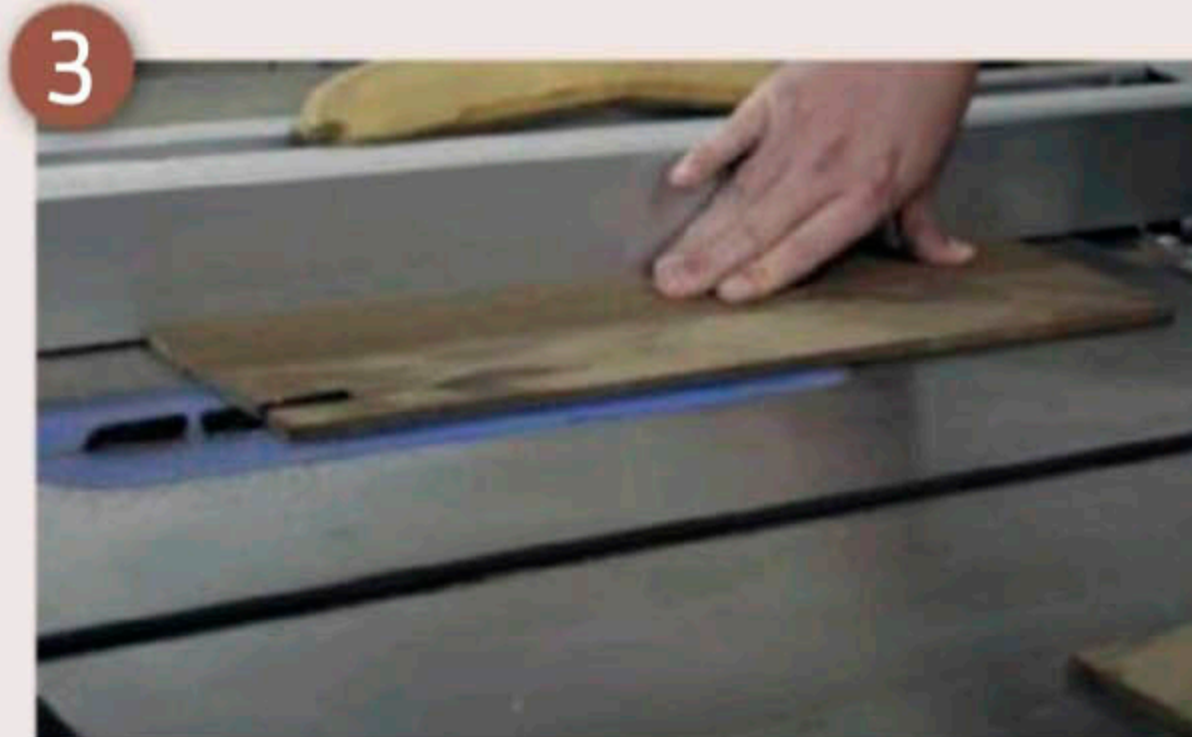
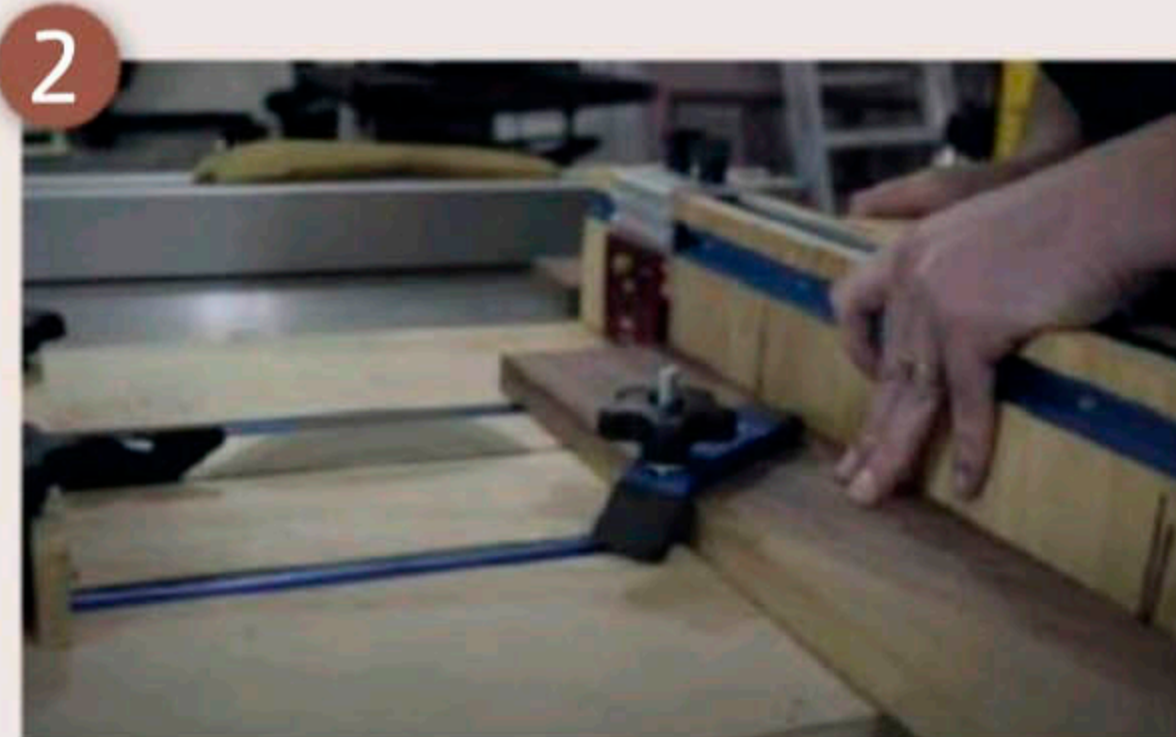
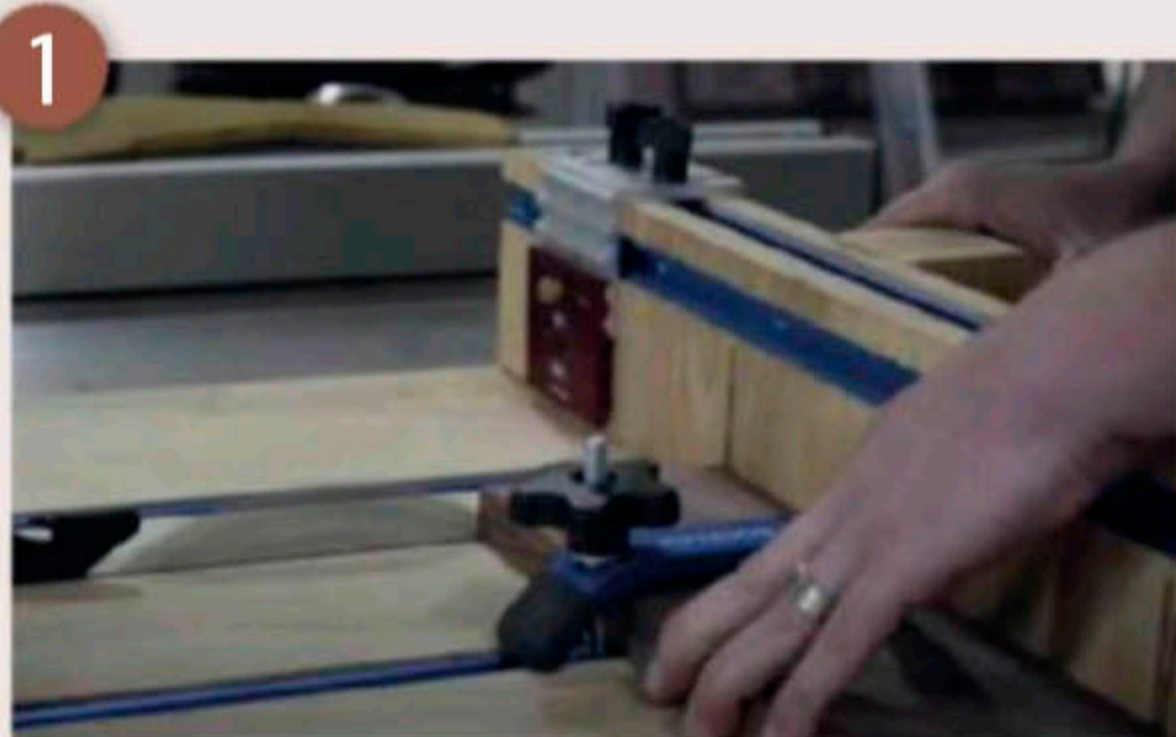
Step 5: Finishing your coasters and holder

Sand everything down with 120 grit sandpaper and work your way up to 220. Water pop the grain and lightly sand everything down one more time with 180 grit sandpaper. Vacuum the

pieces down before applying mineral spirits

I chose to finish this piece with an imported product called Rubio Monocoat. So, I mixed together two parts pure with one part accelerator and applied the finish with a Scotchbrite pad and wiped off the excess finish with a buffing pad.

With that these coasters are ready to save some furniture!



1. Set up a crosscut sled with a stop block to 100mm 2. Square off the edge of the board, then cut out four 100 x 100mm squares 3. Cut the holder sides board down to a height of 82.5mm 4. With the saw blade tilted to 45 degrees... 5. Cut the mitres for three of the four corners 6. Tilt the blade to 67.5 degrees and cut the final piece to 25mm 7. Mark out the angles for the mitres, leaving 6mm at the base 8. Set the mitre gauge to 41 degrees and carefully make the cuts 9. Cut the end of the base 10. Apply the finish 11. I used 'stops' to assist with my cutting 12. Set up a new stop and cut a chamfer into the mitred corner

Close your eyes, try to visualise what the corners in your shower and around your bath look like. Are they pristine and spotless? If so, then this article probably isn't for you. However, if they're anything like mine you might want to keep reading.

Fixing mouldy silicone IN THE BATHROOM



Supplies

It's a short list of supplies for this project. You'll need:

- A tube of clear kitchen and bath silicone (try to avoid the cheap stuff!)
- A silicone gun
- A roll of painters tape
- A flat blade knife like a boxcutter or a razor blade

As a contractor, I see two very common problems in a lot of bathrooms (including my own!) and in this article, I'm going to show you how to fix them.

The first is sloppily applied silicone. Amateur builders love to lay on heaps of silicone in the bathroom. It covers a lot of sins and at first, it doesn't look that bad. The problem is that over time those big thick silicone lines are the perfect place for mould to grow. Yip, those black spots accumulating in the corner, those are mould, unfortunately. The more silicone you use, the faster the mould will grow and spread.

The second is that many people use white silicone in bathrooms. I get what they are thinking, there's lots of white stuff in the bathroom. The toilet, the bath, the sink, etc, it's all white. Here's the thing though, there are a million different

shades of white. So, there's a 99% chance that the white silicone isn't going to match anything in the bathroom. It's almost certainly at least a little bit off.

Let's fix both of them at the same time!

Step-by-step guide

Step 1: Prep

The first step is going to be an easy one. Just remove everything you can so that you have room to work. All of those shampoo bottles in the corner? Yes. They are going to have to go. Shower curtain? If you can, pull it down. The more room to work you the easier this job is going to be.

Next, give the whole shower a quick wipe down. You're trying to remove any loose dirt or water left over from the last time you used it.

It's probably a good idea to wait until after it been a while since your last shower or bath before attempting this project. The dryer, the better.

Step 2: Remove the old silicone

Here's where things get fun. You're going to have to cut out all of the old silicone. As far as I know, there's not easy, sure-fire way, to remove silicone. It's just a matter of patience and dedication.

You'll need a thin blade, preferably a razor or a box cutter. I use a razor blade in a little holder because it makes it easy to hold and helps keep my fingers away from the blade. Please be safe when you're using any blade.

Then you're going to try to slide the blade between the deck of the bath and the silicone and slice all the way around the perimeter of the bath. You'll then do the same thing except you'll be sliding the blade between the tile or wall of the shower and the silicone. Likely you won't get it all at first, there will be some residue, try to be as diligent as you can, and remove it all.

Sometimes you'll get lucky and once you get a good chunk of silicone pulled off you can use it to pull the rest off. This doesn't always happen though, mine just kept snapping on me. Once you've removed it all, give the whole area another good clean and vacuum.

Step 3: Apply painter's tape

This step basically ensures that you're going to get a perfect application of silicone. It's also the step that most people skip or just don't know about.

You're going to take some painters tape and apply it around the perimeter of your bath and shower, masking off the area where you don't want the silicone to go. On the deck of the bath, you're going to apply it and leave it back of the wall by about a millimetre or so to 3mm.

On the wall, you're going to apply it about a millimetre or so to 3mm above the deck of the bath. If done correctly you should have a thin, straight, unmasked line in the corner of the perimeter around your shower/ bath.

While not strictly necessary I took the time to redo my entire bath surround as well. This meant doing the sides of the bath and where the bath meets the floor. I wanted to get rid of all of that nasty white silicone.

If you're going to be a perfectionist like me and do a lot of lines, consider breaking the process up into a couple of phases because this is a relatively time-sensitive job. Sometimes I'll do all of the vertical surfaces in one pass, and then all of the horizontal surfaces in another pass.

Step 4: Prep your silicone tube

You're almost ready to start with the silicone, but let me give you a few tips first. First, use clear silicone. It's much nicer than white silicone, and, if you apply it in a thin, clean line it takes on the colour of whatever surface you apply it to, which ensures an exact colour match. If done correctly it's basically invisible.

Second, make sure you buy a proper kitchen and bath silicone. They have anti-fungal agents that keep mould from growing on them. In my experience, it's usually worth it to pay the extra few dollars and get a high-quality silicone too.

Finally, third, try to cut the tip on the silicone tube to the same width as the line you're trying to apply it too. It will make the application a lot smoother, and you'll waste less silicone.

Step 5: Apply the silicone

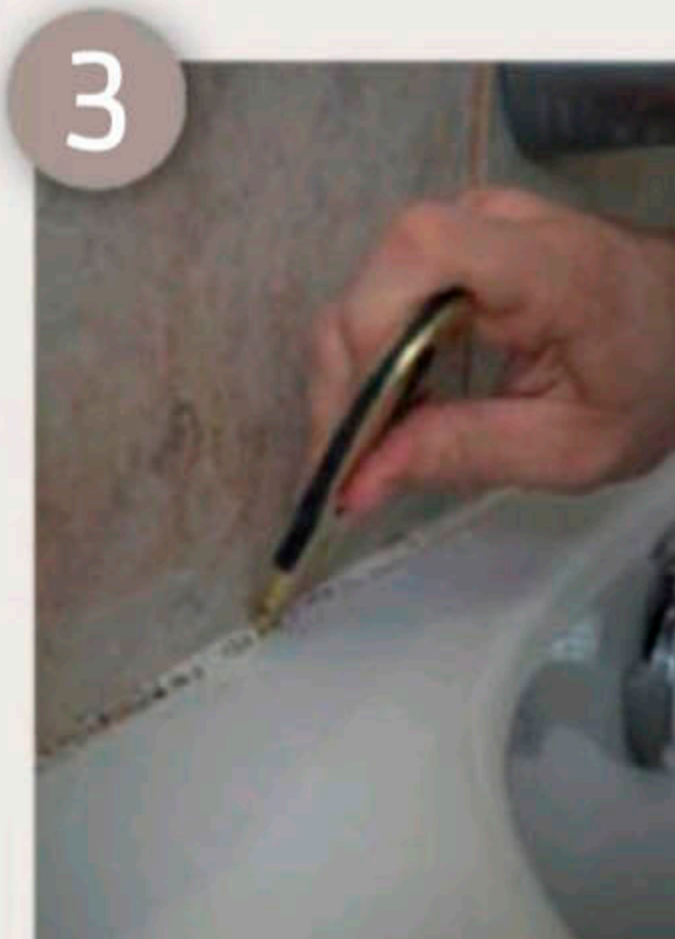
Okay, time to load up that silicone into your silicone gun and start applying. Pick one corner, pull the trigger until silicone starts to come out of the end of the tube, and slowly work your way around the bath. A light touch is best here, no need to lay down a ton of silicone, that's what you're trying to avoid here remember!



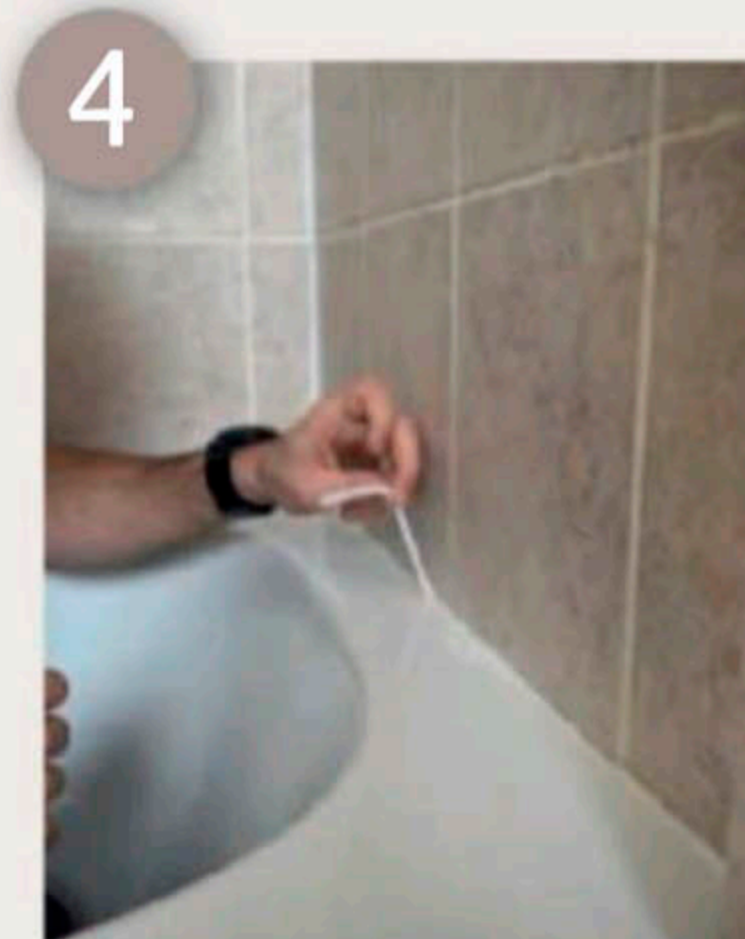
1 Remove everything you can so that you have room to work



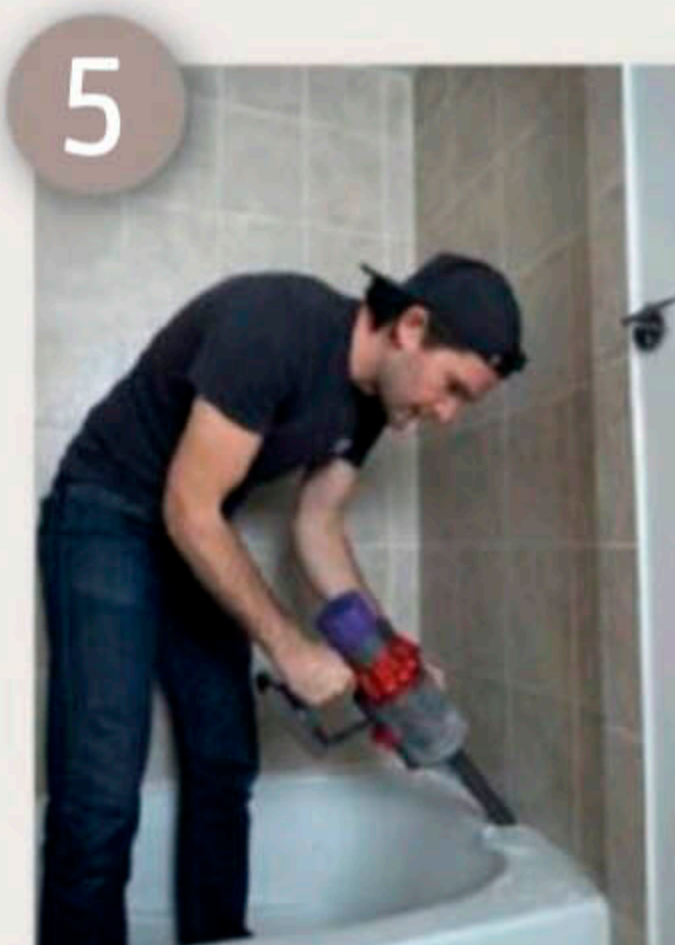
2 Next, give the whole shower a quick wipe down



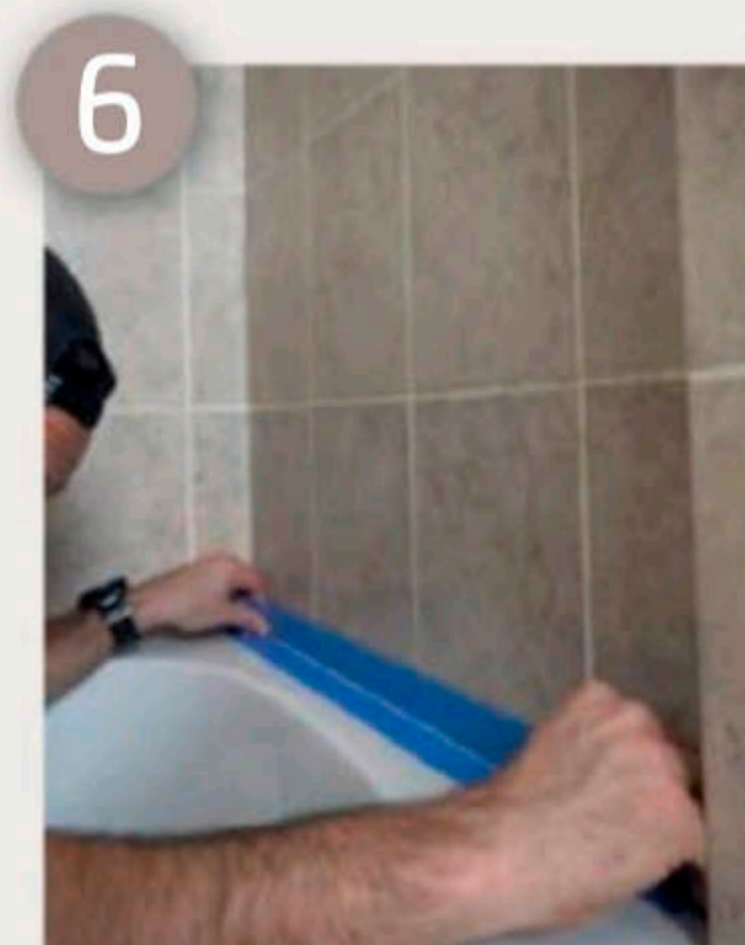
3 Cut out all of the old silicone



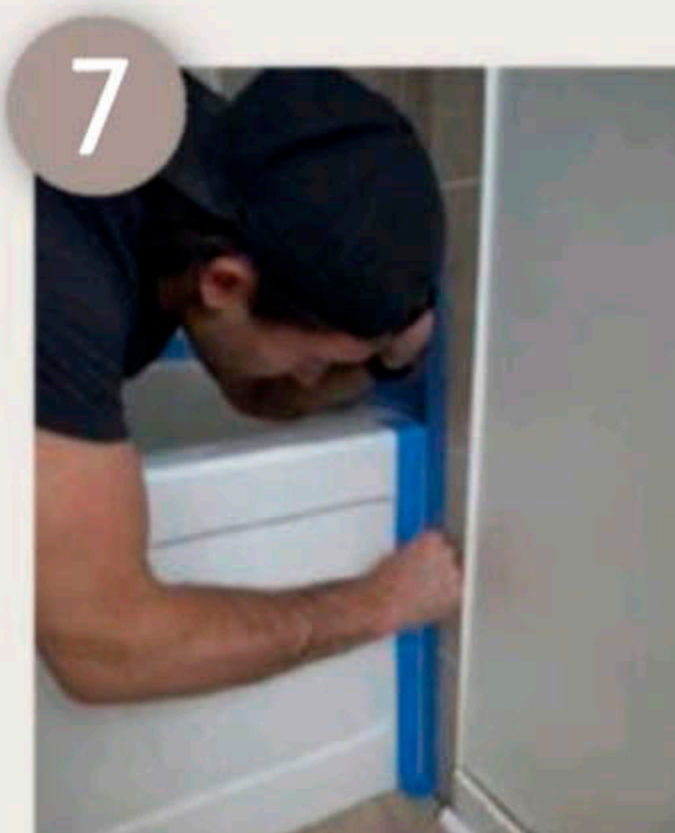
4 Start to pull off the silicone



5 Vacuum the area



6 Apply painters tape



7 While not strictly necessary I took the time to redo my entire bath surround as well



8 Prep your silicone tube

9



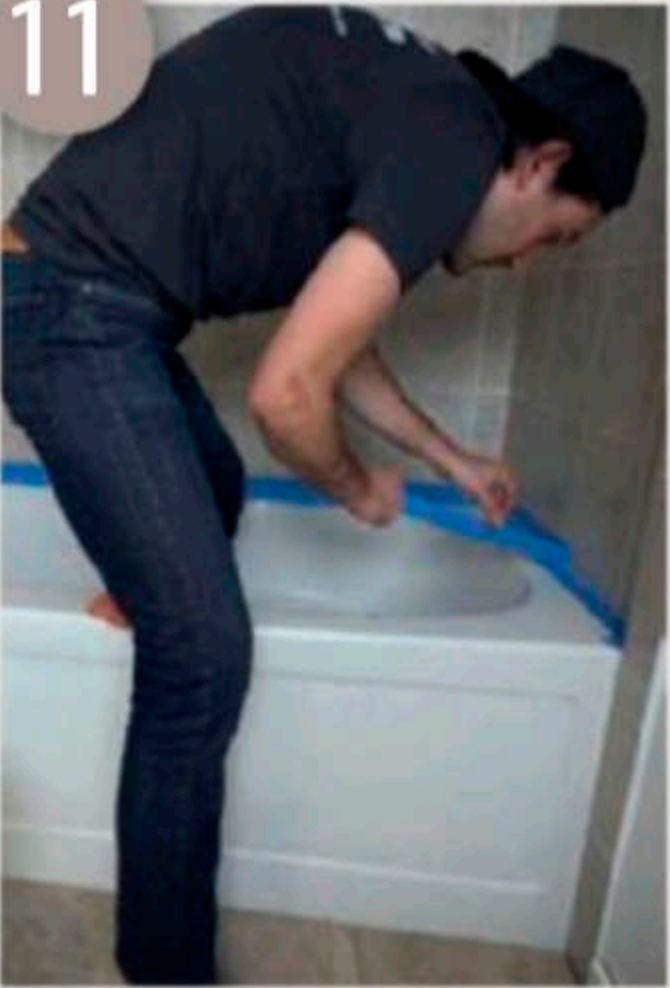
Slowly work your way around the bath

10



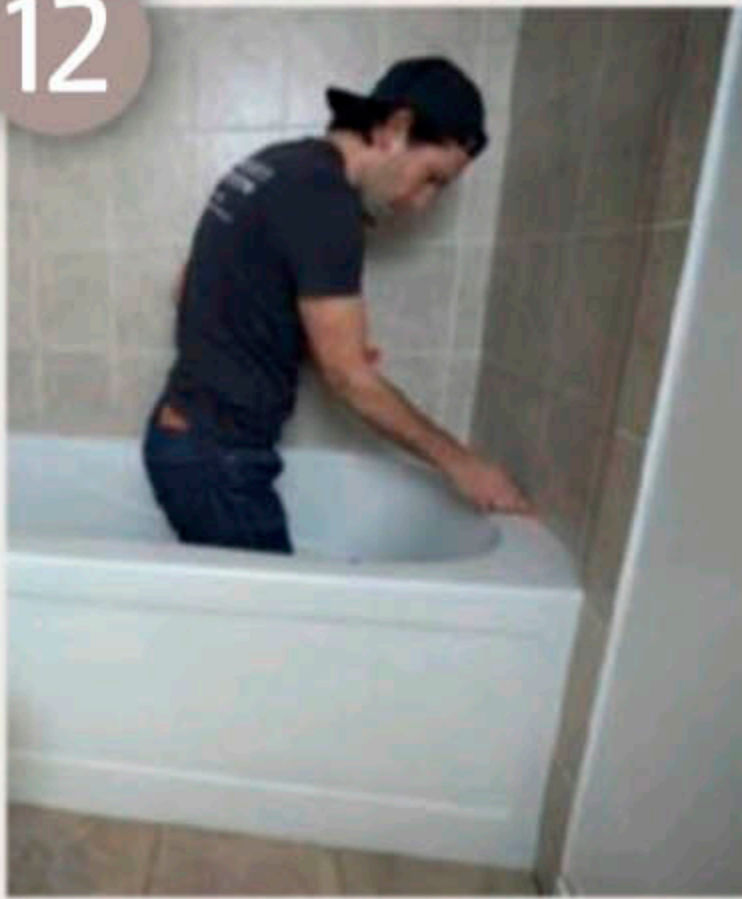
Use your to finger and press the silicone into the corners

11



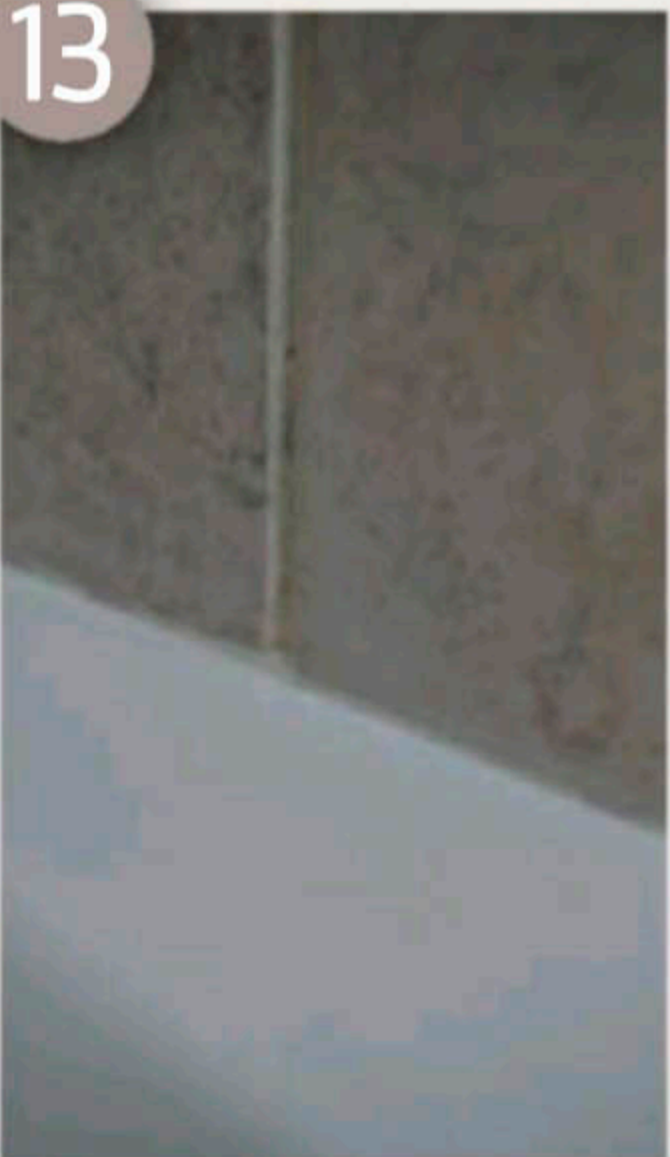
Remove the tape

12



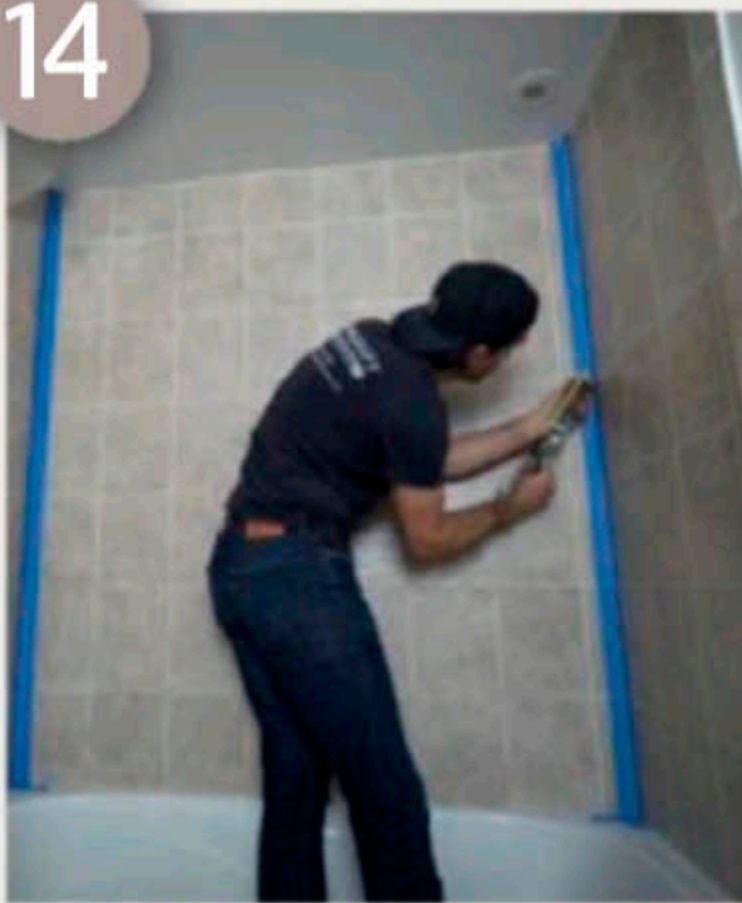
It's time for one last pass with your finger

13



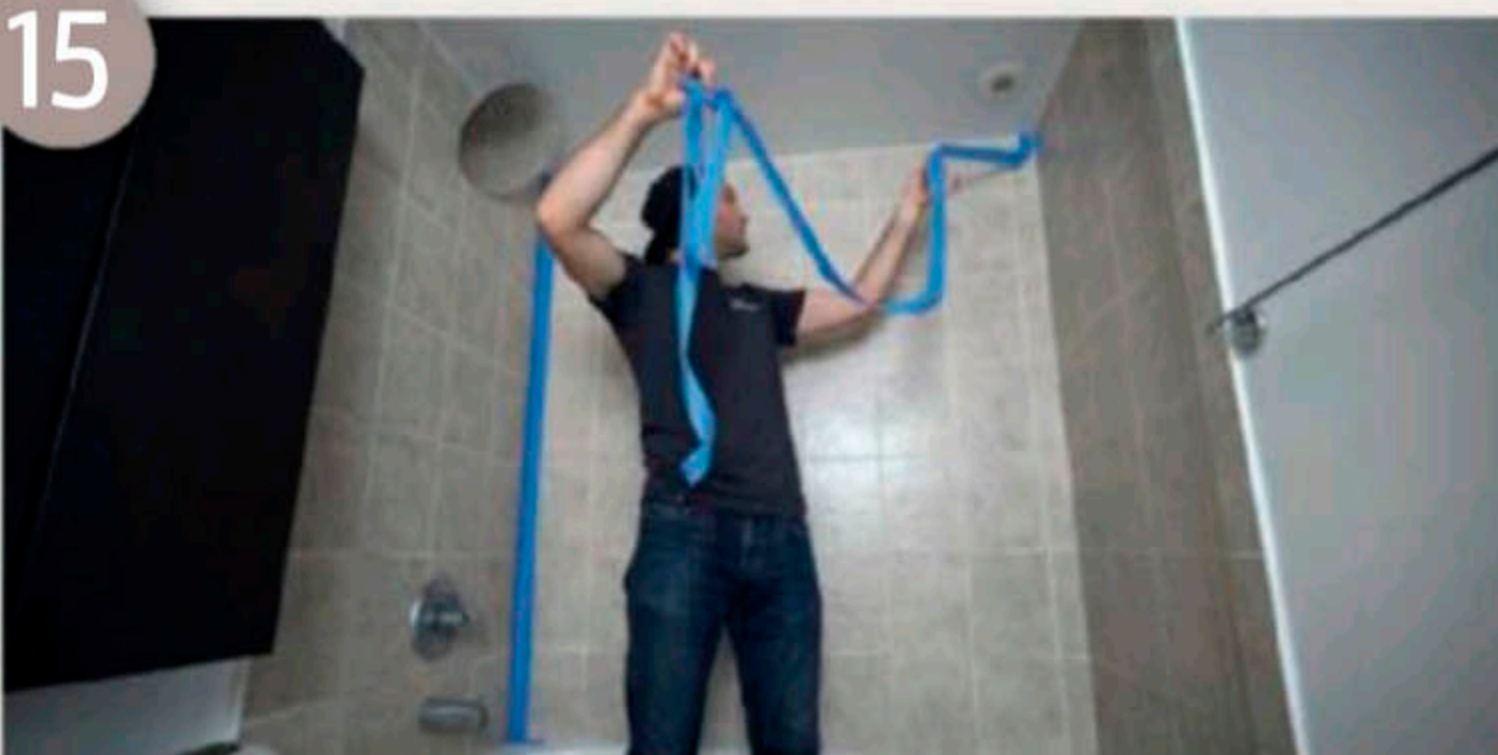
Admire your work!

14



The grout in the corner of my shower was in bad shape, so I had to re-silicone the corners

15



Follow the same steps

Don't beat yourself up if you colour outside of the lines a little bit, that's the whole reason you laid down the painter's tape.

Step 6: Initial wiping

After you've finished applying the silicone, you're going to take your finger and simultaneously press the silicone into the corner and squeegee off any excess the whole way around.

Try to make sure you're applying a consistent amount of pressure and have a rag handy so that you can wipe off any excess silicone on your finger.

You'll probably wipe off about three quarters of the silicone you just laid down, don't worry, that's perfectly normal. I like to do at least two full passes the whole way around the bath before I move onto the next step.

Step 7: Remove the tape

Once you're satisfied you've removed most of the excess silicone it's time to peel back the tape. Pick a corner and start peeling!

Be careful that as you peel the tape you don't accidentally rub it against anything because it's probably got a good amount of silicone still on it.

Step 8: Second wiping

It's time for one last pass with your finger. After the tape is removed your silicone line will have a hard edge on both the deck of the bath and the wall. In order to smooth out that edge and really blend the silicone out, you're going to do one last pass the whole way around with your finger. You don't need to press as hard as your first couple of passes, just enough to feather out the edge.

Step 9: Stand back and admire your work

Here's what my silicone lines looked like after I was done. They're basically invisible.

Not only are they much nicer and cleaner looking, but, because they're so much smaller there's way less surface area for mould to grow and accumulate. It should mean that these silicone lines stay mould-free for a long time.

Step 10: Silicone the corners (optional)

Let me preface this step by saying this: If your shower enclosure is properly waterproofed and your tiles are properly grouted, you don't need to silicone the corners. That being said, the grout in the corner of my shower was in pretty bad shape, so I had to re-silicone the corners. I would've much preferred not to, but in the interest of keeping the whole thing waterproof, I did.

I used the exact same procedure as before after the first application of silicone had dried.

Affordable • Reliable • Repairable



Rutherford

a member of the **Hudaco** group

For more info. or your nearest MT Dealer contact Rutherford:

• JHB: 011 878-2600 • CT: 021 932-0558 • DBN: 031 717-6400

www.makita.co.za

**STANDARD DUTY
INDUSTRIAL
POWER TOOLS**



Adhesives are indispensable. We use them to bond items, fix holes, and even decorate objects. However, using glues comes with several risks. But you can avoid harming yourself while working with adhesives by handling the bonds carefully and following safety procedures.

10 TIPS FOR USING ADHESIVES

Your projects may not turn out well if you don't know the correct way to use adhesives. This article will provide important tips you need to create awesome glue crafts and stay safe while using adhesives.

1. Avoid letting your glue freeze

Letting your glue freeze can destroy it, even if it's only getting thawed for the first time. During winter, store your glue in a cool space and keep it at room temperature.

2. Apply evenly

Always apply your adhesive in an even pattern. Clean off any excess you find immediately after you finish applying the glue.

3. Cover your glue container immediately after use

Close your glue container immediately after you finish applying the adhesive. This will maintain the performance of your bond and also help it last longer.

4. Store your carpenter's glue in a mustard bottle

Your carpenter's glue comes in a decorated dispenser. However, using your glue directly from these dispensers will clog their outlet.

In contrast, mustard bottles rarely get blocked when you use them to apply glue. Transfer your carpenter's glue from its

dispenser to a mustard bottle. Regardless of the project, the easy application allows you to fix it your way.

5. Rough up your surfaces before application

If you want your glue to stay longer on DIY projects, you can roughen up the surface you want to glue with sandpaper before applying the adhesive. Cleaning the surface with isopropanol will also increase the strength of the glue.

6. Apply pressure when gluing metal

When using adhesives, each material requires a different procedure. Metals are solid materials. As such, you must apply pressure when putting glue on metal if you want to create a strong bond. Use a clamp to hold the metal pieces together when spreading the adhesive between them.

Don't remove the clamp immediately after you finish applying the adhesive. Wait until the glue is completely dry, or you may end up with a weak bond.

7. Ensure proper ventilation

Many adhesives contain toxic fumes. Users might inhale these poisonous fumes if the ventilation in their environment is inadequate. That said, workplaces that use adhesives regularly must install air filtration equipment in their surroundings to facilitate proper ventilation.

8. Use protective clothing

Household adhesives have low toxic content, so you can use them without wearing any safety equipment. In contrast, some bonds are highly harmful. As a result, users need protective clothing to safeguard themselves against the toxic elements in these glues. Such protective equipment includes:

- Latex gloves
- Dust masks
- Safety glasses

9. Wash your hands and eyes if you come in contact with adhesives

If your exposed skin ever comes in contact with adhesives, wash them immediately after applying the glue. Wash your hands with soap and water. After drying your hands, you'll also need a skin moisturiser to remove any remnants of the adhesive.

If the exposed area is one of your eyes, you must wash them both in running water for about 10 minutes. After washing your eyes, cover them up with a bandage. Consult an eye specialist for medications that will help your eye heal faster.

10. Read the manual in your glue package for more safety instructions

Some glues have specific hazards, which are often documented in their manuals. Browse the manual to find recommendations on ventilation, handling and durability. You can also try out the adhesives on scrap materials before using them on actual projects.

Surface preparation for adhesive bonding

Preparing a surface for adhesive bonding is one of the most important things you can do to obtain a sturdy and strong bond. The adhesive needs to cover large areas of the two surfaces you are bonding together, and the task becomes easier when the two surfaces are clean and smooth.

Continue reading to find out how to properly prepare your surfaces for adhesive bonding.

Pretreatment

Pretreating the substrate surface before using the adhesive will assist in ensuring you get the most efficient and effective bond possible.

There are three methods of pretreatment: physical, mechanical or chemical:

- Physical methods require that the substrate surface is cleaned and then exposed to high-energy charges such as flame, plasma or corona discharge.
- Mechanical treatments include sandpaper, brushes or some other type of scraper to remove any contaminants like paint or rust. After sanding or abrading the surface

clean, a solvent is used to remove the dust or leftover chemicals.

- Chemical pretreatments, like acid etching or dipping the substrate into some other type of chemical to clean the surface, are an effective method also.

TYPES OF SURFACES

Three of the most common substrates that are often bonded together using adhesives are metal, wood and plastic. Each surface has its own properties and should be prepped differently before applying adhesives.

Metals

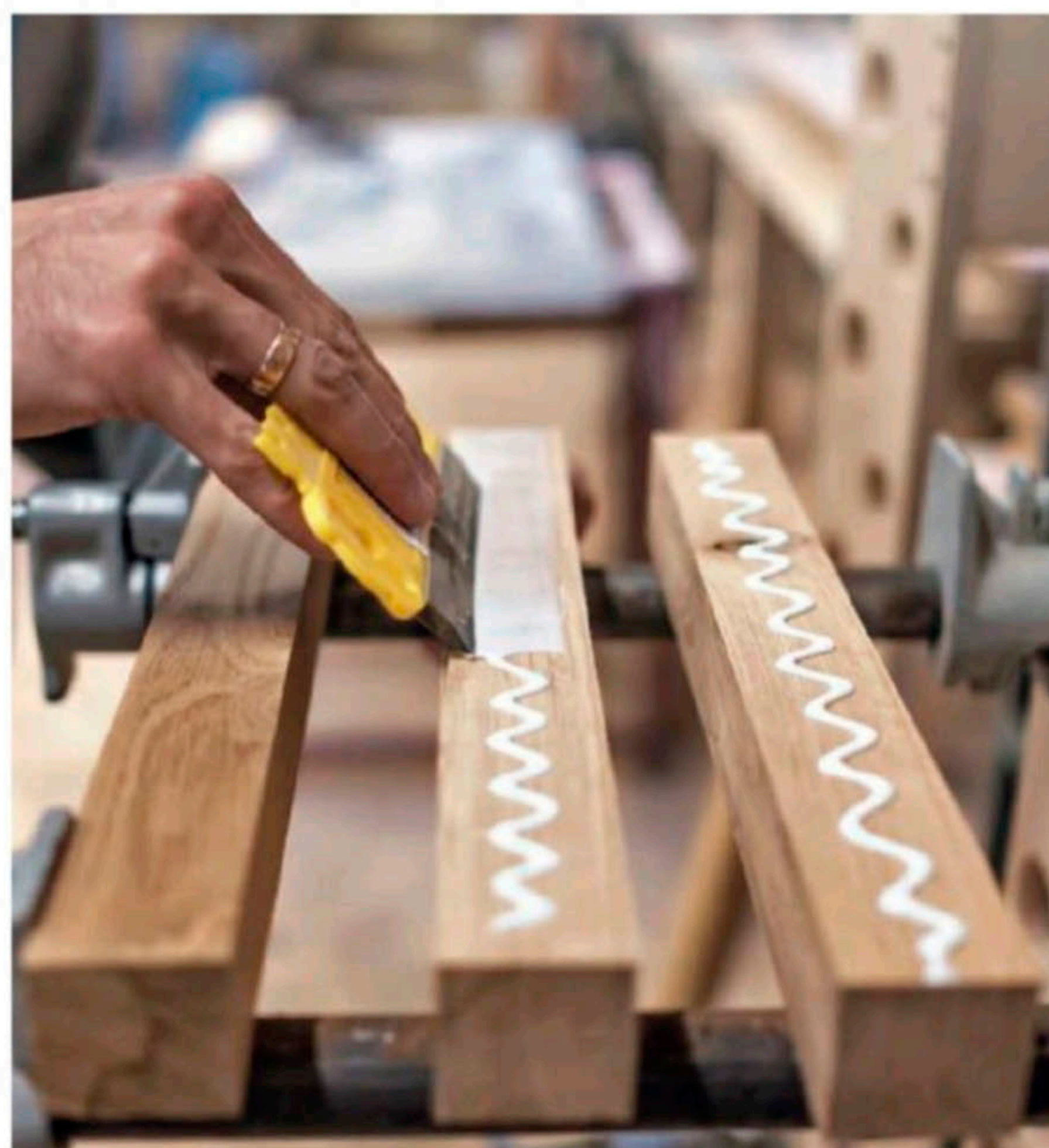
Metals, in addition to a reputation for strength and durability, are often tough to work with and can be difficult to cut and mold into the desired shape. Usually, chemical cleaning using solvents or other methods work better for metal surface preparation than detergents or soaps.

Wood

Wood surfaces in woodworking shops and manufacturing facilities, where wood is one of the primary substrates, are often contaminated with bits of resin and wax. To prepare wood surfaces for adhesives, pretreatment is strongly recommended. You also need to dry the wood first prior to pretreatment.

Plastic

Dust, dirt, oil and grease can easily contaminate plastic. These contaminants can also migrate around the surface due to the nature of the plastic material. To prepare plastic surfaces for adhesives, liquid solvents should be used along with abrasion and chemical surface modification.





- Computer/paper – to work out measurements for your space
- Pencil and eraser

Supplies:

- Wood of your choice (I used beech)
- Shoji paper – at least 6m x 500mm
- 200ml Shoji glue
- 200ml Woodworking glue – quality, fast-drying, for interior use
- 300ml Hardwax oil – high quality, non-toxic, colourless
- 6 x 50mm Hinges with screws: Brass – Brushed Effect
- 120 x Nails – 8mm length
- Surface protector (old towels, painting plastic sheets)
- 2 x Sanding sheets (for electric orbital sander) – 120 grit and 180 grit
- 1 x Sandpaper piece – wet and dry – 400 grit
- 1 x Sanding block
- Masking tape (gentle removal/ painters quality)
- 9 x Floor protectors/Felt pads 67mm x 13mm

>> Yvette McMaster

This project started when I was looking for a way to be able to 'close' my study door where I have an archway, instead of a doorway! I did some research on various room dividers and screens and loved how traditional Japanese shoji screens let through the light, while still providing privacy.

I recommend this project if you have some design and woodworking experience, have access to reasonable woodworking equipment, and some funds to put towards the project.

I worked out a shape and measurements for a room divider that would work in my space, and built it with assistance from a local woodworking workshop. They provided assistance with the how to construct the screen, as well as good quality woodworking equipment and tools. It took me over just 20 hours and cost quite a bit of money (for workshop

DIVIDE AND CONQUER



What you will need

Woodworking equipment:

- Woodworking bench
- Table saw
- Planer/thicknesser
- Band saw
- Router with tenon router bit and hinge router bit/lounge and groove router bit
- Electric orbital sander

Safety equipment:

- Eye protection (safety glasses)
- Hearing protection (ear muffs)
- Safety footwear (steel cap boots)

- Fitted, high strength disposable gloves

Tools:

- Drill – cordless
- Retractable ruler
- T-Square ruler
- Woodworking clamps
- Long nose pliers
- Pincer pliers
- Fine-detail hammer (ideally a Japanese woodworking hammer)
- Nail punch tool
- Chisel
- Hand plane (optional)
- Weights (small to medium books can be used)

hire and supplies) but it is worth it if you value hand-made quality furniture and enjoy the making process.

Consider changing the measurements to fit your space, but keep in mind that the

proportions needed to keep the screen upright, steady and safe for use.

It is also worth researching different shoji paper options – there are harder options available (at a much higher cost), ones

with different designs and colours – that is the fun part!

Also consider different hinge styles and colours – depending on the look and feel you want to create.

Step-by-step guide

Step 1: Evaluate your space (deciding on dimensions)

Evaluate your space. Consider the proportions you require for your room divider (make sure its steady). You can use my measurements*, as the screen is sturdy and above head height for most people. Consider keeping the same thickness (20mm), as this is used in quite a few commercially produced room dividers.

- See drawing – there are three screens, each is 1850mm H x 483 W x 20mm D (total width of the three screens is approximately 1450mm). The only change for the original drawing is that the inner frames are 20mm high, not 12mm.

Step 2: Choose and source wood

Choose the wood you would like to use for this project. I used beech based on the wood workshop's recommendations, and its colour (how well it works in the intended space), weight, ease of use, and strength. Another option is ash for slightly lighter colouring.

Step 3: Order other supplies

Consider which shoji paper and hinges would work best for your project and order. Order other supplies for the project (see list in 'Supplies').

Step 4: Cut pieces for the exterior frame

Put the undressed wood for the exterior frames through a wood planer to smooth it and to get the accurate thickness required for the different pieces. Or, alternatively, if you do not have access to specialist woodworking

machinery, order the pre-cut sizes from your favourite wood supplier. Cut the wood pieces to size using a table saw. Wood pieces final size needed:

- 6 pieces: 1850mm x 50mm x 20mm
- 3 pieces: 423mm* x 100mm x 20mm
- 3 pieces: 423mm* x 75mm x 20mm
- Includes extra 40 for the tenons.

Step 5: Create the joints for the exterior frames

Gather together the pieces for the three exterior frames; each piece has two long pieces and two short pieces. Each of the exterior frames is to have four mortise and tenon joints (one at each corner).

Create the 'tenons': On the six short pieces (three top pieces and three bottom pieces), mark out the Tenon joints with a pencil (one at each end). Each 'tenon' is approximately 20mm x 10mm x 50mm. Use a Bandsaw to remove the wood to create the 12 Tenon joints, then use a chisel to create a clean 'tenon'.

Create the 'mortises': On the six long pieces, mark out the 12 mortise joints with a pencil (one at each end, on inner edges only). Use a router (with tenon router bit), to cut the mortise (holes).

Step 6: Glue the exterior frames together

Do a 'dry run' of the exterior frames (put together the frame without glue, ensuring that the mortise and tenon joints work effectively). Add a moderate amount of wood glue to the mortise and tenon joints, then clamp the frames together. Ensure that the frames are clamped 'square'. Wipe away the excess glue and leave clamped for

recommended drying time (usually at least 24 hours).

Step 7: Cut pieces for the interior frame

Put the undressed wood for the interior frames through the wood planer (or, as above, order the sizes you'll need). Cut the wood pieces to size using a table saw. Wood pieces final size needed:

- 18 pieces x 383mm x 20mm x 12mm
- 3 pieces x 1675mm x 20mm x 12mm

Step 8: Create joints for the interior frame

Mark out the half-lap joints for the internal frames using a pencil. Cut out half the thickness of the wood in the designated spots using a bandsaw. There will be nine holes for each of the three long pieces, and one hole for each of the 18 shorter pieces. When all the pieces are cut, join them together (without glue) – you should end up with three 'internal frames' (one for each screen).

Step 9: Connect internal frame to external frame

Mark out in pencil where the two nails will go at each of the ends of the internal frame. Drill small holes (on a 45 degree angle), slightly smaller than the nail size.

Using the fine-detail hammer, and long nose pliers, and then a nail punch tool, hammer in two nails in each of the ends of the internal frame (on a 45 degree angle) to join the external frame. Continue this until all 120 nails are in (the internal and external frames are all connected). This took me several hours to complete.

Step 10: Create cut mortises for screen hinges

Do a couple of test mortises with the router and hinge router bit on a scrap piece of wood. Mark out with a pencil where the six hinges are going to be positioned on the screens (make sure that the screen will fold correctly – the three parts will fold flat).

Use a router with a hinge router bit to create the mortises for the six hinges. Do this slowly and carefully, keeping the router as steady as possible, to avoid cutting too big a hole (you want the mortice to fit the hinge snugly).

Place a hinge into each mortice and mark out with pencil where to drill the holes (my hinges required three holes for three screws for each hinge). Use a nail punch tool to create small holes at each point. Drill a hole at each point, deep enough for the hinge screws (but leaving enough wood for the screws to grip). Test the six hinges (making sure the frames align properly to create a folding room divider). Then unscrew the hinges and store safely.

Step 11: Apply oil finish to exterior and interior frames

Sand the frames with 120 grit and 180 grit sandpaper to get a smooth finish. Apply the hardwax oil to wooden frame (exterior and interior frames), following the manufacturer's instructions.

As a guideline, I did three coats (one side at a time), waiting eight hours between coats, and lightly sanding with wet and dry sandpaper after the second coat (apply a tiny bit of water to sandpaper, then wipe on a paper towel). Use an old (but clean) cloth and apply a moderate amount of oil each time, wiping off any excess oil at the end.

Once the three coats are applied and dried, the frame should feel smooth and the wood grain should be highlighted.

Step 12: Glue on the shoji paper

With the three wooden frames ready, it's time for one of the most fun and rewarding parts of the project; attaching the shoji paper!

Follow the instructions from the shoji paper manufacturers, or use my method as a guideline. I recommend looking at some YouTube videos on how to apply shoji paper to screens before applying shoji paper to your own screen. You can even do a test mini shoji screen (on a single small wooden square etc), to get a feel of how much glue to use and drying times.

Lay one screen frame on a woodworking bench (back side facing up). Use 'gentle removal' masking tape to temporarily tape down the paper at one end of the screen. Test the paper without glue first, to make sure it covers the entire screen.

Carefully roll back the shoji paper and apply (a small to moderate amount) glue to small sections of the wood frame (on the back side).

Roll the paper onto the glued sections of the wood and press down gently, avoiding getting excess glue onto the paper that is not attached to wood. Repeat until the shoji paper covers the entire back of the screen, then repeat with the other two screens.

Use a ruler and Stanley knife to very carefully cut the paper to the required size (e.g., leaving an outside border on the back of the frames). Do this slowly and carefully to avoid tearing the shoji paper. Alternatively, you can cut the paper to the exact size you want for each screen before applying the glue. Just make sure to test that the paper sits correctly on the screen before gluing. Peel off any unwanted shoji paper (before the glue dries).

Note: The glue will be quite visible under the paper when it is wet.

Leave screens to dry for at least 24 hours until the paper is taut and the glue barely visible.

Step 13: Cut pieces for the wooden back borders

If you have undressed wood for the borders on the back of the frames, put them through the wood planer. Cut the pieces required using the table saw. Wood pieces for the borders on the back of the frames are;

- 9 pieces x 1675mm x 20mm x 4mm
- 6 pieces x 383mm x 20mm x 4mm
- 18 pieces x 182mm x 20mm x 4mm

Step 14: Add oil finish to wooden border

Select the best side of each of the wood pieces for the back border, and use a pencil to mark the worse side with an 'X'. Sand the preferred faces with 120 grit and 180 grit sandpaper to get a smooth finish.

Lay out protection over the floor or workbenches where you will do the varnishing. Lay the wooden pieces face up in sections, ready for applying the oil.

Get out the hardwax oil, cloths and gloves. Apply hardwax oil to the front and sides of the wooden border pieces, following the manufacturer's instructions.

As a guideline, I did three coats (one side at a time), waiting eight hours between coats, and lightly sanding with wet and dry sandpaper after the second coat (apply a tiny bit of water to sandpaper, then towel off, so pat dry on a paper towel). Use an old (but clean) cloth and apply a moderate amount of oil each time, wiping off any excess oil at the end.

Once the three coats are applied and dried, the back border pieces should feel smooth and the wood grain should be highlighted. Overall, the wood will look slightly darker.

Step 15: Glue on wooden border (to back)

Do a 'dry run' (without glue) of the back borders on the screen, checking that the position of the borders is square and symmetrical. Carefully flip the wood pieces, just clear of where they will be glued on.

Apply a small to moderate amount of wood glue on one section of the screen at a time. Apply the glue to the shoji paper (the sections that are over wood), then glue the wood strips on.

Check the alignment of the border as

you go along, adjusting until the strips are straight and square. When one screen is complete, carefully apply light weights (I used small books) to press down the wooden border and assist with the glue bonding between the back wooden border, shoji paper, and internal and external frame.

Leave to dry for at least 24 hours (check glue curing time).

Step 16: Add hinges

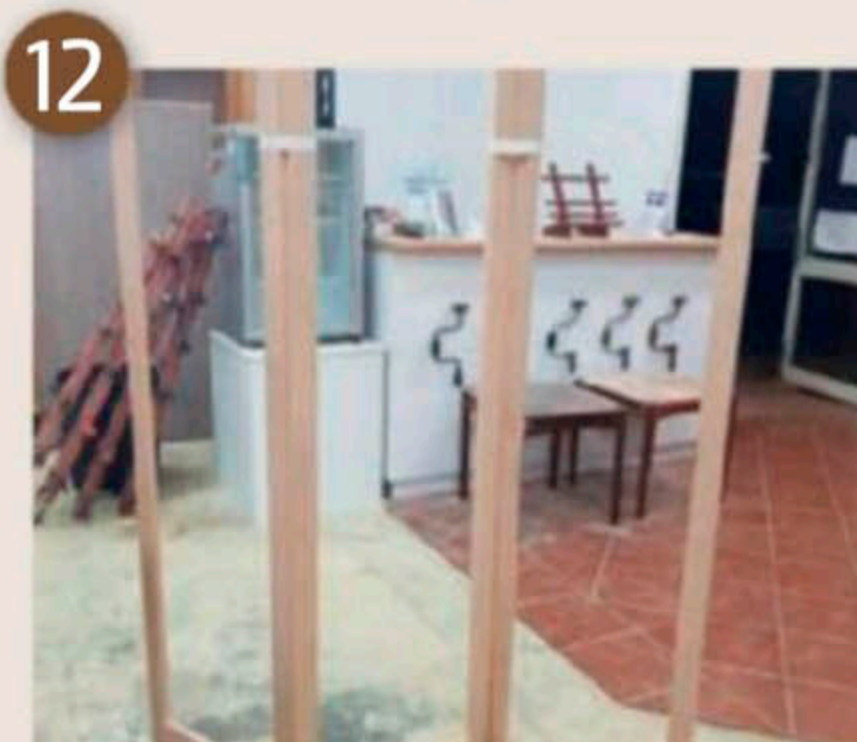
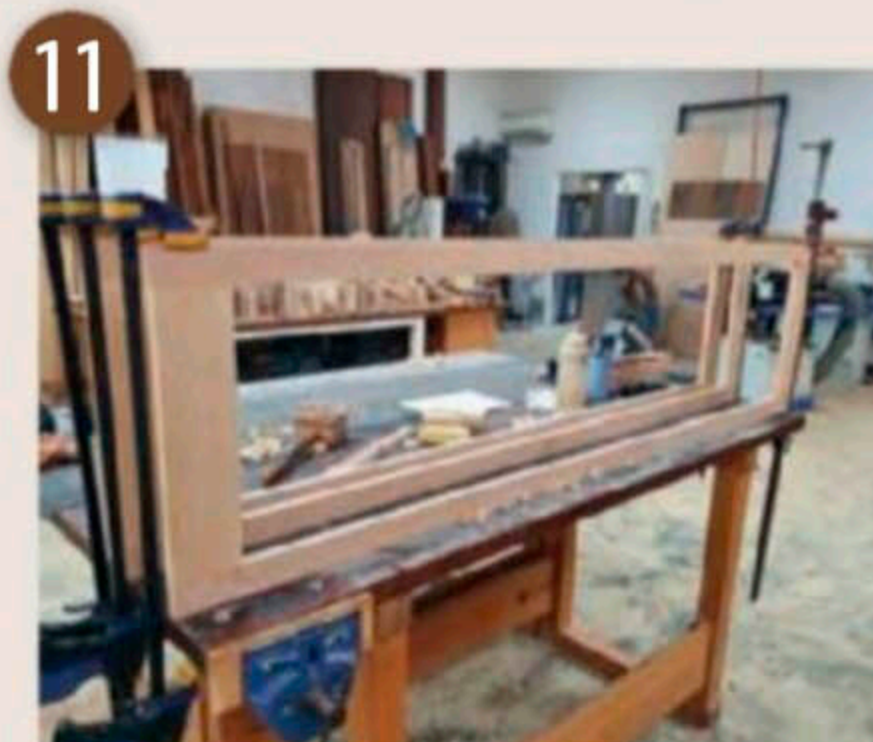
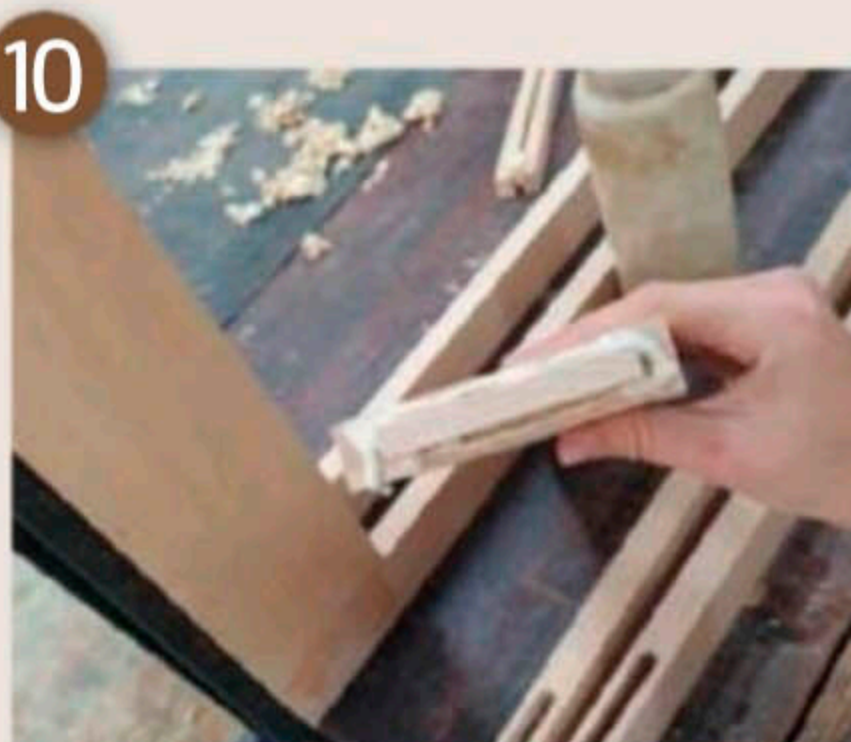
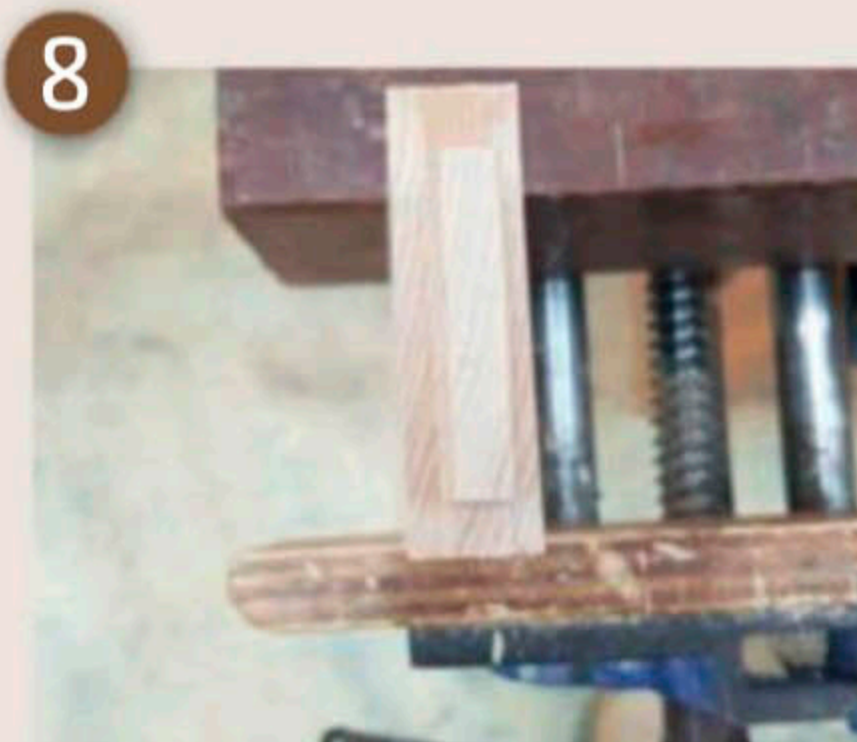
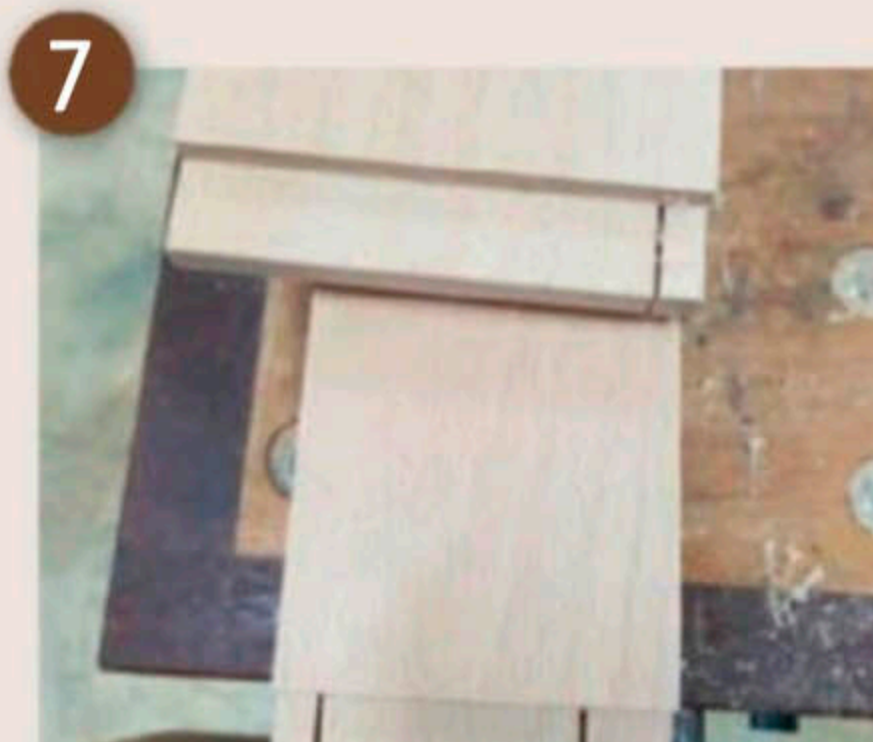
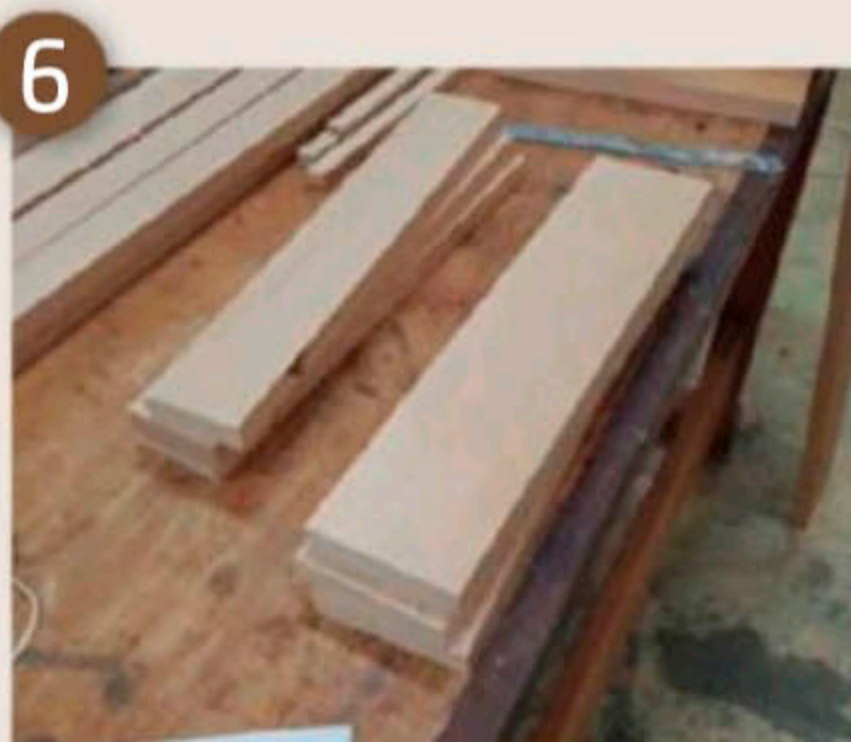
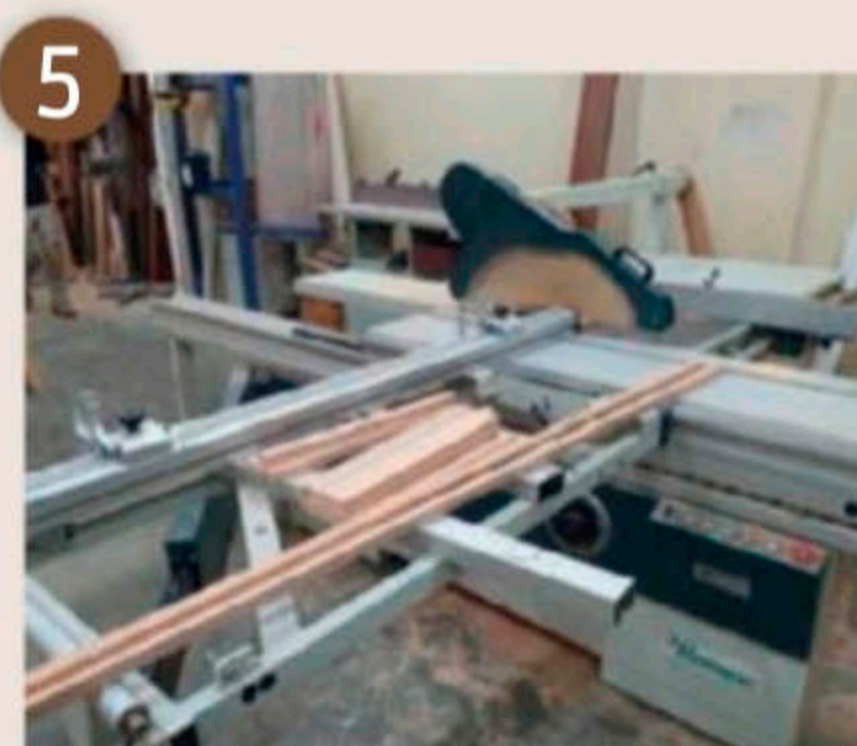
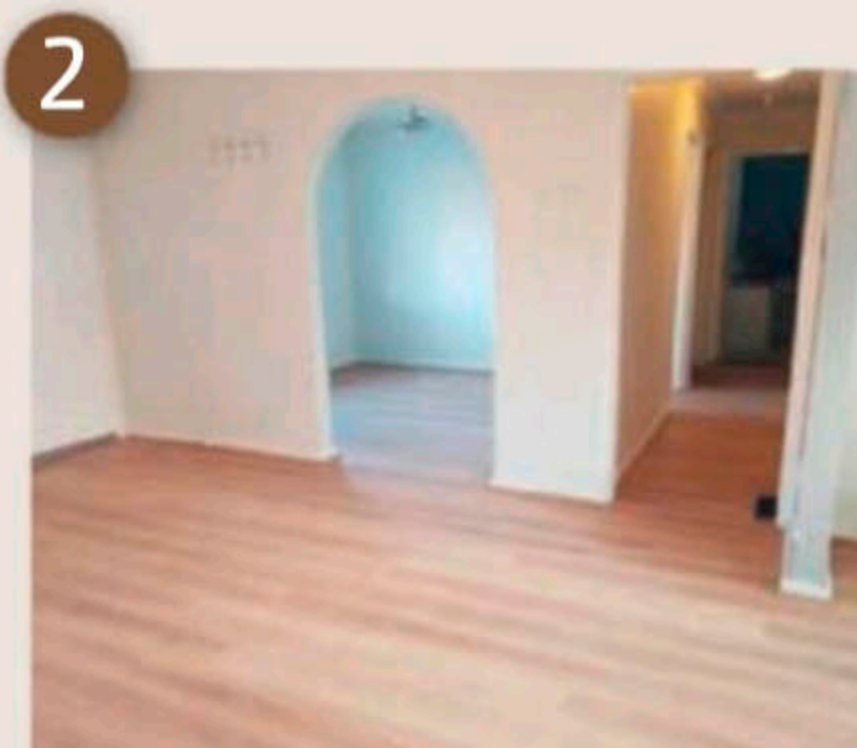
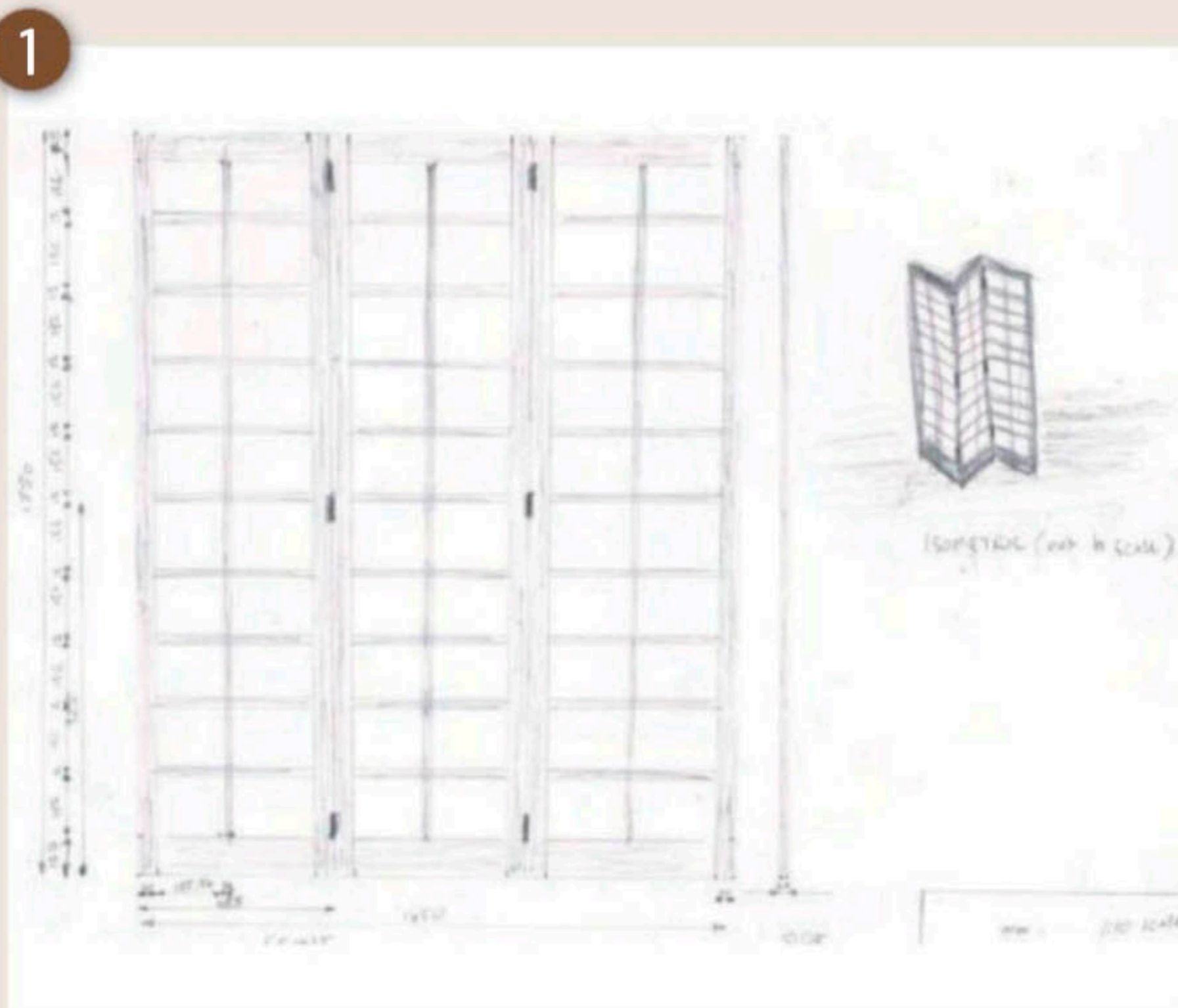
Loosely screw in the six hinges – checking alignment of the frames, before tightening the hinges to make the

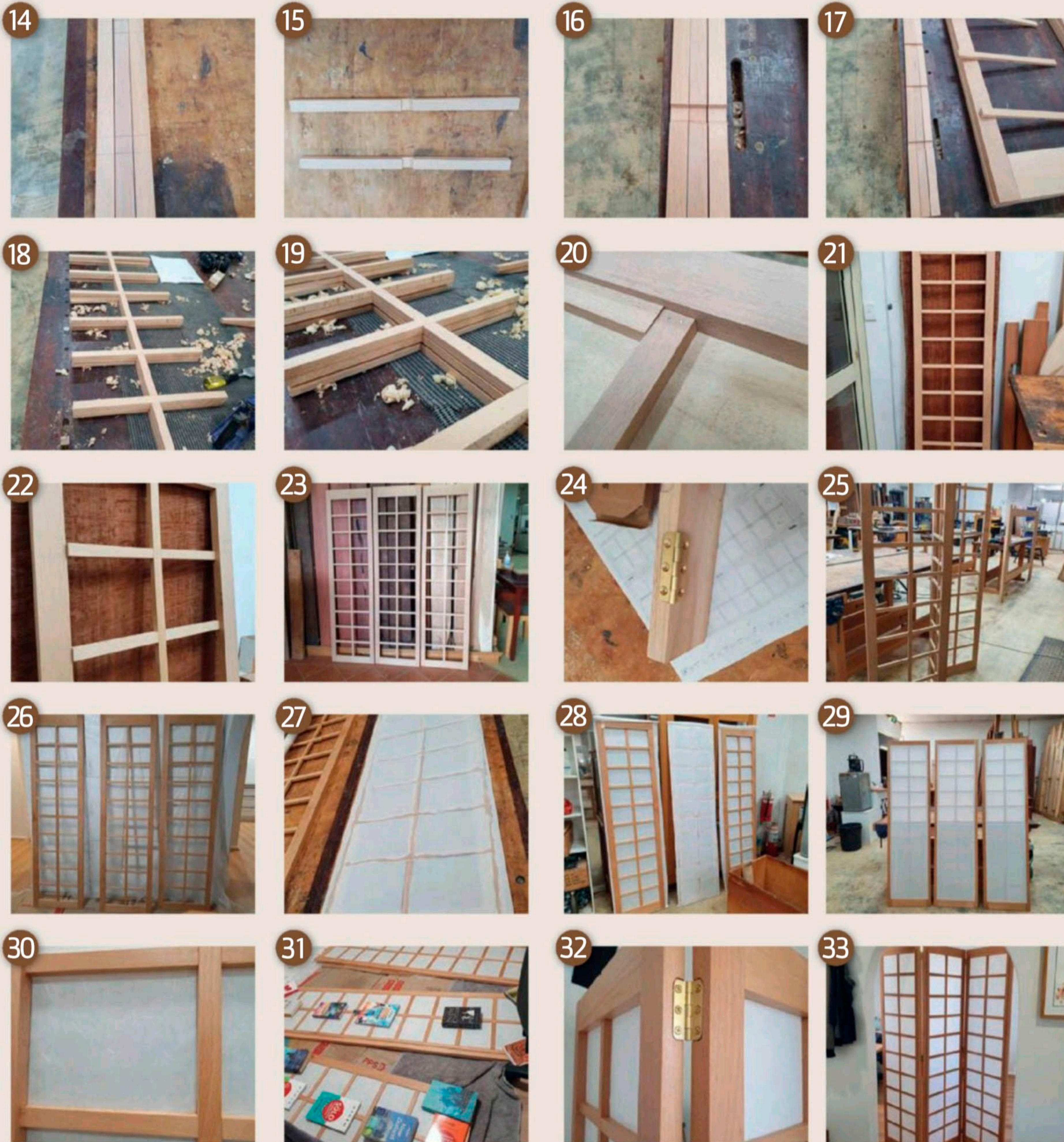
folding screen stable and secure. Test the alignment and movement of the screens.

Step 17: Done – enjoy your shoji screen

Depending on your flooring, you may want to stick on floor protectors. This also makes it easier to open and shut the folding screens. I used three small felt pads under each screen (nine total) from my local hardware store.

Enjoy your screen, try out different lights and if possible, allow sunlight through the paper to show off the beauty of the shoji paper and the wood.





1. Project dimensions 2. The area where the room divider will be used 3. Gather your tools and materials 4. Prepare your wood 5. Cut your wood to size 6. Gather together the pieces for the three exterior frames 7. On the six short pieces, mark out the tenon joints with a pencil 8. Use a bandsaw to remove the wood to create the 12 tenon joints 9. Then use a chisel to create a clean 'tenon' 10. Add a moderate amount of wood glue to the mortise and tenon joints 11. Clamp the frames together 12. How the frames should look 13. Doing some planning 14. Mark out the half-lap joints for the internal frames using a pencil 15. Cut out half the thickness of the wood in the designated spots using a bandsaw 16. There will be nine holes for each of the three long pieces 17. The shorter pieces will each have one hole 18. When all the pieces are cut, join them together (without glue) 19. You should end up with three 'internal frames' (one for each screen) 20. Mark out in pencil where the two nails will go at each of the ends of the internal frame 21. Using the fine-detail hammer, hammer in two nails in each of the ends of the internal frame 22. This is how it should end up looking 23. The room divider starting to come together 24. Mark out with a pencil where the hinges are going to be positioned on the screens 25. Test the hinges (making sure the frames align properly to create a folding room divider) 26. Sand the frames and then apply the finish of your choice 27. Lay one screen frame on a woodworking bench and apply the shoji paper 28. Leave screens to dry until the paper is taut, 29. Back view 30. Close up 31. Cut and apply the wooden borders 32. Close up of the hinges 33. All done!



Electric heat guns have now largely replaced the 'old fashion' paraffin and bottled gas blowlamps for stripping paint on timber.

KNOW YOUR HEAT GUN



The paraffin and bottled gas blowlamps still have a place in the tool kit where electricity is not readily available but they have to be used with care to avoid scorching the wood, setting fire to the stripped paint or cracking the glass when working on a window frame.

The hot air flow of a heat gun is less dangerous than a naked flame but it

can still cause highly flammable items to catch fire, crack glass and injury if directed onto skin. One great advantage is that the heat is almost instantaneous so the heat gun can be switched off during pauses in the work while the flame blowlamps have the inconvenience of needing to be relit if the flame is extinguished.

The electric heat guns now available are lightweight, easy-to-use tools which make it far less likely to scorch wood or crack glass when used correctly to strip paint.

How heat guns work

Heat guns look a lot like hair dryers – but, as many instructions thoughtfully point out, should never be used for drying hair! The method of operation of a hot air gun is similar to a hair dryer: a fan pulls air into the body of the tool and drives it across an electric heating element and out through a nozzle.

For stripping paint, the heated air is directed onto the painted surface, causing it to soften so that it can be easily stripped off – either by using a stripping knife or hook. For best results it is best to work up the surface with the heat gun above the stripping tool, softening the paint just before the stripping tool reaches it. The tool is used one-handed, with the other hand to hold the stripping tool.



Heat guns are great for stripping paint

Temperature settings

Very basic heat guns have just one heat setting and one fan speed and are designed primarily for paint stripping. More complicated models have two or three heat settings or even fully variable adjustment with in a range, together with a choice of two, three or variable speeds of air flow.

The effective temperature of any heat gun can be reduced by holding it further away from the surface, but having variable settings gives more choice.

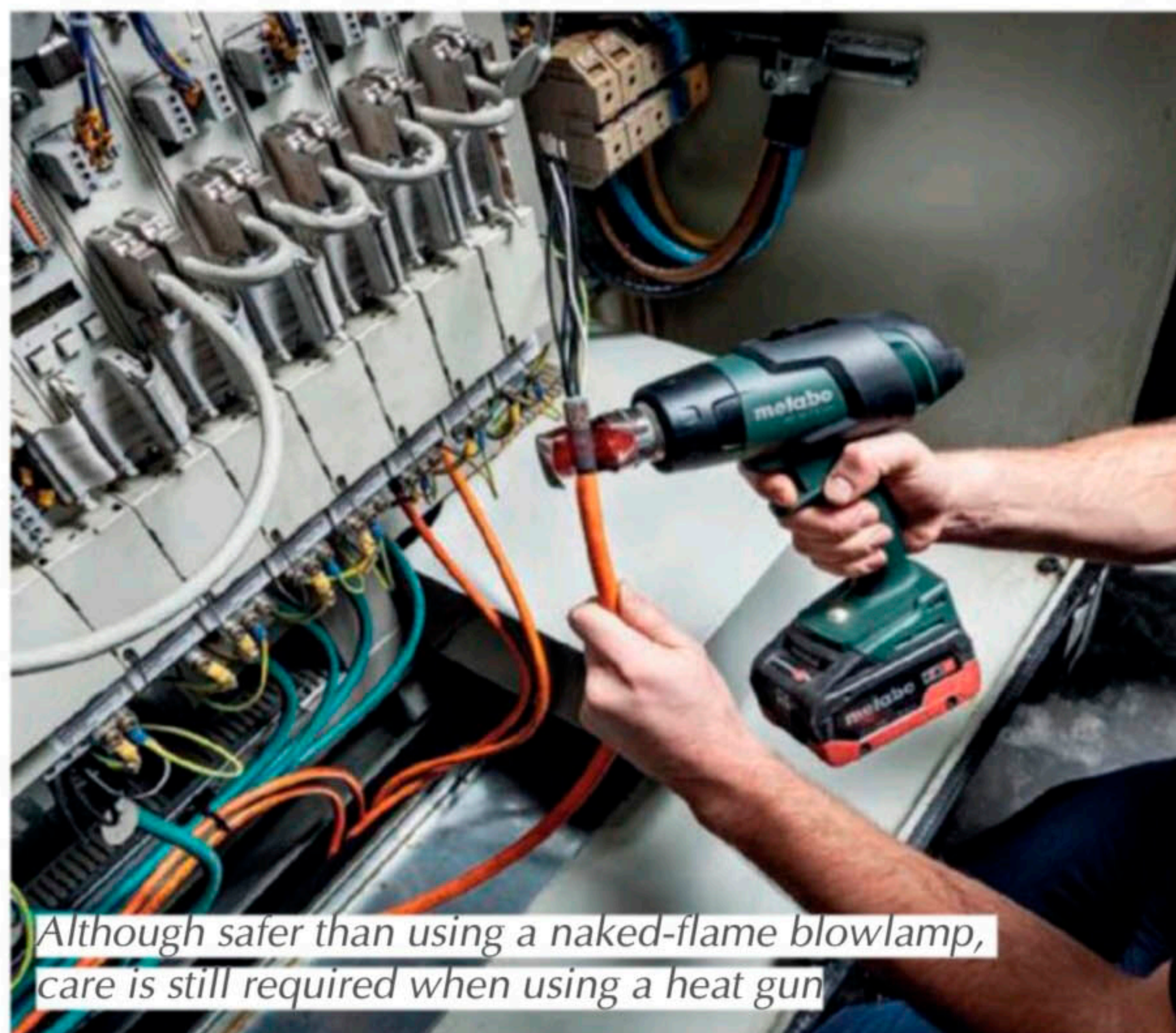
For paint stripping, the maximum speed and the maximum air flow is generally required - these settings are also needed for other jobs such as soldering plumbing joints and freeing rusty nuts. There are other uses of the heat gun where having lower air flows and/or lower temperatures can be useful.

Other uses for the heat gun include:

- Drying paint or varnish – 30 to 130° C – care has to be taken as dust particles may be blown onto the paint/varnish.
- Drying out damp wood (before filling or painting) – around 100 to 200° C.
- Softening adhesive (such as when applying worktop edge trim or lifting floor tiles) – 300 to 400° C.
- Bending plastic pipes – 200 to 300° C.
- Heat-shrinking plastic film – 200 to 300° C.
- Welding some plastics – 330 to 400° C.

A heat gun should always be used with care around copper plumbing where solder connectors have been used as the heat can melt the solder and weaken the joints.

Special nozzles are available for most models of heat gun for specific uses other than stripping paint.



Although safer than using a naked-flame blowlamp, care is still required when using a heat gun

Heat gun features

As such a simple tool, there are not many differences between one model of heat gun and another - but there are some features which are important.

- Wattage – commonly from 1000W to 2000W (a measure of the power of the gun). Providing that there are heat and/or airflow controls, the higher the wattage, the better.
- Main control switch – usually mounted on the front of the pistol grip, and normally a 'dead man' switch so that power is switched off when the finger pressure is removed - an ideal safety feature as the heat gun stops if it is accidentally dropped.
- Temperature setting – at least 500° C is needed for stripping paint - the lower the bottom end of the range the more useful. A choice of controls make the tool more useful.
- Airflow setting – having variable or more than one speed makes the tool more versatile.
- Thermal cut out – this will switch off the tool if it becomes overheated. If this occurs, it indicates a fault in the tool or method of use – for safety, the fault must be identified and corrected before the heat gun is again used.
- Flex length – lengths of 2.5 to 3m are normally fitted, this means that when using an extension lead, the tool can be used at the full reach without having the socket hanging in mid-air.
- Hanging hook – useful for storing the tool.
- Surface stand – this enables the heat gun to be safely 'rested' during pauses in the work and after uses. It also allows the gun to be used 'hands-free' when two hands are required on the work piece (such as when bending a plastic pipe).
- Nozzles – most heat guns have a range of nozzles that can be fitted for specific uses, generally these need to be purchased separately. The main types of nozzles are:
 1. Reducer nozzle – when you want to concentrate the heat onto a specific area.
 2. Reflector nozzle – wraps round a plastic or copper pipe to spread the heat around the pipe surface.
 3. Flat nozzle – for spreading the hot air over a wider narrower area.
 4. Glass protector nozzle – for use when stripping paint on a window to keep the direct heat off the glass.

Safety with heat guns

Although safer than using a naked-flame blowlamp, care is still required when using a heat gun. Specific points are:

- Because of the power of these tools (up to 2000W), when an extension lead is necessary, only use a lead rated at 10 amp or greater and always completely unwind the lead.

- Never obstruct or cover the air inlet grills. If the air flow is reduced the heat gun will overheat and possibly catch fire.
- Never operate the heat gun with the outlet nozzle hard up against a surface, this will reduce the air and can have the same effect as obstructing the air inlet grills,
- Do not use a heat gun near flammable materials.
- Always switch the tool off before putting it down on any surface.
- Allow the tool to cool before storing it.
- Do not place the nozzle next to anything whilst it is hot.
- Never touch the hot metal nozzle with clothing or skin.
- Do not use for stripping lead-based paints.
- Do not allow any paint to stick to the nozzle - and if some paint does stick, allow the gun to cool down and remove the paint.
- Do not look down the nozzle while the gun is turned on.
- Do not insert anything down the nozzle with the gun.

Uses for your heat gun

Thaw frozen pipes

During winter, temperatures decrease massively, so you'll need to gently warm pipes to get the water flowing – which you can do with heat guns. To do so, begin by reducing the environmental temperature by gently warming the pipes. This process might take a while because you don't want to provide too much heat at once to metal pipes, as it can lead to damage. Then, use a heat gun on the entire exterior for successfully thawing frozen pipes.

Loosen stiff screws

It can be a pain to untighten stiff screws and bolts. Fortunately, a heat gun makes this process much easier by causing the metal to expand, enabling you to loosen the screws in an instant.

Remove dents from cars

Does your car look like it needs some more loving? A heat gun can be useful for removing dents from your car's bodywork. Simply apply heat surrounding the dent using a low heat setting and move the tool around the area to not strip paint. Then, blast the dented area with air from the can to allow the dent to pop right out – without you having to do anything on the internal side of the car.

Repair a rip in a leather sofa

Got a rip in your leather sofa that's bugging you? A heat gun might save you from having to repurchase an entirely new sofa. Instead, use your heat gun on a low setting to activate glue across the cut to kiss that rip goodbye forever.

Shrink wrapping

Another common use of a heat gun is shrink wrapping, which is much quicker than using a hairdryer and removes any air to perfect results. This same method is used for applying window tinting.

Paint drying

If you've recently painted the walls in your home and want them to dry quickly, you can use hot air from a heat gun to dry paint quicker. However, make sure that you don't place the tool at a high temperature and don't place it too close to the wall to avoid burning any surfaces.

Drying wood

Wood can be a home for mould and mildew, and a heat gun can help with drying out the material to showcase its best condition. Once wood becomes damp, it can swell, change shape and crack. Fortunately, a heat gun can absorb the moisture from damp wood in a gentle yet effective process.

Sterilise tools

Heat is an excellent source of sanitising tools, and heat guns can be an easy and effective way to remove bacteria from work tools. Set the gun to its highest setting for optimal sanitisation.

Add a unique look to furniture

Enhance the look of your wood furniture by using a heat gun on its surface. Using this tool can add an antique appearance to furniture. Apply the tool in a gentle motion across all directions on the furniture for the best and safest results.

Make a leather belt looser

If you need to make your leather belt looser, a heat gun is an effective way to make it fit without buying a new accessory.

Candle making

A heat gun is ideal for craft tasks, and you can even make candles using these power tools.



Heat guns can be used to soften adhesives



10 THINGS to consider when choosing new lighting for your house

Having the proper lights is very important in promoting productivity and comfortability as well as keeping a room brightly lit. Lights are also important in defining the overall aesthetic of a room, be it your living room or your dining room. The proper type of lighting in a room helps in manipulating the overall feel of a room and how we perceive textures and colours in a certain space. There are numerous lighting options available in the market ranging from custom lights to big, beautiful chandeliers. Lights also have many different types of fixture designs as well.

Fixtures crafted in wood, bamboo, metal, marble, and many more design choices are also available to buy. When it comes to choosing the right lights for your house, there are many factors to consider, such as what is the size of the room or what type of bulbs you prefer in the light fixture. You should factor in your mind that there should be minimal fixtures while maximising their functionality at the same time. Today we are going to share with you 10 things that you should consider before you even think of purchasing new lights for your house.

1. Know the basics

Before considering what type of light you want to purchase, it is a good idea to have a little know-how about the types of lights currently being offered on the market, what bulbs they come with and where you are going to place them in a certain room. Do some research on the net beforehand, as this is a good place to start.

2. Know about types of lights

Listed below are some of the types of lights you can choose from. Scones are mounted directly to a wall and can be directly

plugged into an electrical source or hardwired through a wall. Flush mounts according to the name are directly mounted to a ceiling to avoid taking up a lot of space. Pendant lights are suspended from the ceiling with a cord or a rod and can be used above a kitchen table. Chandeliers are like pendant lights but are usually larger. They should be hung up in big rooms.

Table lamps are usually put in the bedroom or a reading room and are small in size. There is an option available for every type of room when it comes to the type of lights present in the market.

3. Decide a theme

Whether a classic, contemporary, or transitional, it is important to decide what type of theme you want to go for in a certain room before you even think about buying a light. Matching up your lights with the décor should be factored in when choosing to buy new lights for your home. Complementing your décor with the right type of lights will not only make your home feel welcoming but also spice up the entire area.

4. Size of the room

Whatever type of lights you may choose, it is important to know about the size of the room you want to install them in. They must be proportional to the space you want to put them in. Ask your dealer or designer to draw up an image to help you visualise the proportionality of the lights with the room.

5. Consider flexibility

You should consider getting a dimmer installed along with your new lights so you can control the overall feel and character of a room. No matter what the size of the room, it is a great addition along with your lights. A dimmer gives you flexibility

by allowing you to control the intensity of light according to the time of the day. Adding a dimmer will also help you save energy as well. It is also a very inexpensive thing to add to your lights and helps you adjust the mood of a room according to any time.

6. Buy locally

Consider purchasing lights from a seller that is available in your locality. This way you will have peace of mind that you will have somebody to call to, whenever any kind of malfunctions with your lighting. Purchasing from a local seller also ensures that you have the assurance of a warranty.

7. Types of bulb

An incandescent bulb provides warm light, is typical in interiors, and is super energy-efficient. It is best for floor lamps, table lamps, and chandeliers. A halogen bulb lasts longer than an incandescent bulb but consumes a lot of energy. It also provides warm light. A fluorescent bulb is energy efficient but is not quite as good in rendering colours when compared to incandescent and halogen bulbs. It usually takes some time to light up and get bright and is usually used for mood lighting. LEDs are expensive, but they last longer when compared with the types mentioned above. They are energy efficient and provide proper colour

rendering when compared to other types of bulbs. Nowadays, the light industry is adopting LEDs because they are cheaper to manufacture and easy to mass-produce.

8. Scale of fixtures

If the size of the room is larger, you should use larger fixtures. You should consider filling up space in a large room with a high ceiling by installing wider fixtures. Use the diagonal of the room and convert it into metres to find the size of the room and install fixtures accordingly.

9. Ceiling height

A high ceiling requires a narrower beam and high-intensity lights. Consider looking for a dome light with a wider throw of light to cover every centimetre of the area. You can also look at recessed ceiling lights to maintain the look of the ceiling without it being obtrusive.

10. Light positioning

You should also factor in how you would position a light fixture in a certain room. You should install fixtures and place them in such a manner that the whole room gets illuminated. If you are installing a bar light, you should look at getting moveable fixtures to adjust where the light falls on your bar.

Tips for outdoor lighting

Great outside lighting provides security, boosts curb appeal, and creates a welcoming atmosphere for your home.

Consider your current setup: What does your current exterior lighting look like? You're ready to get to work if you have a basic setup already in place. Most outdoor lights are low voltage, so you can safely work with the existing hardware. It'll help to decide where you want lights: on the patio, along a path, garden lights, or other landscape lights to make things easier to see at night. If you don't have any outdoor lights, you may want to hire professional electricians to get started.

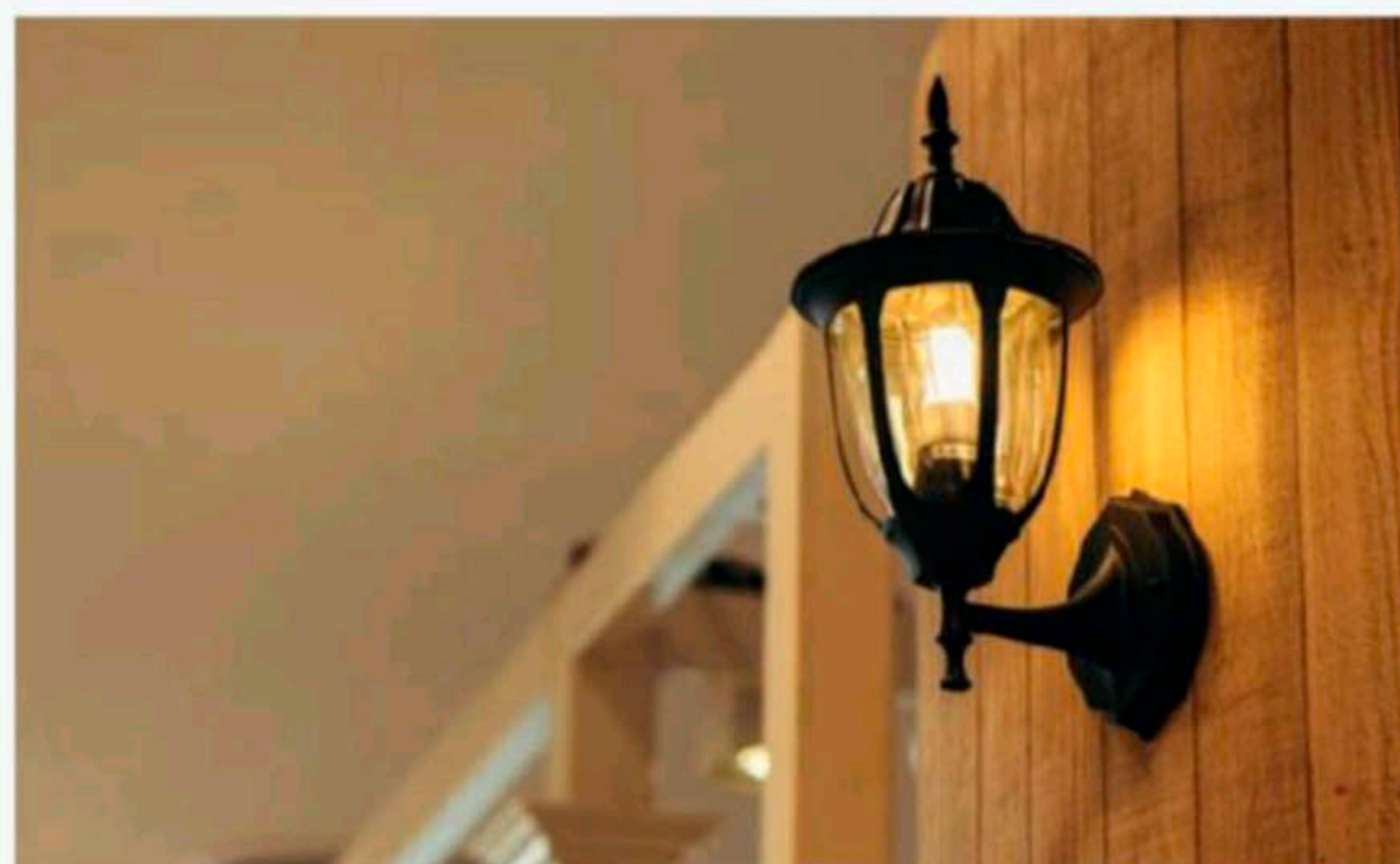
Plan ahead: After getting some outdoor lighting ideas, create a plan to go along with them. Decide which type of bulb you'll use – halogen or LED lights. Also, will you rely on solar-powered options or plug-in lights with wires? Should your backyard lighting be different than your other outdoor space? Make all of your decisions ahead of time about brightness, spacing, light temperature, and more so you can dive right into your DIY project.

Use the right components: Understanding each piece of your lighting system and how they connect will ensure success. Use the correct transformer, cables, and lighting fixtures to achieve the look and functionality you need. This is especially important for floodlights, which are a significant

part of any landscape lighting. A bonus tip to keep in mind – while light fixtures are permanent, you can upgrade your bulbs to find the wattage or temperature light you want.

If you're unsure where to put permanent fixtures, you can also set up flexible lighting with tiki torches, lanterns, or even tea light candle holders in jars. Testing things out will also help you know what the final result will give you an idea of how things will look with the final result.

Match your style: With so many front- and backyard lighting ideas available, you're sure to find lights that suit your home decor. Choosing light fixtures that complement the rest of your home decor takes your outdoor space to the next level. You'll also boost curb appeal and create an enjoyable atmosphere with a deck or patio light.



Read on to find out how to turn a winged bowl.

Experimental WINGED BOWL



>> Yuval Lahav

This bowl is titled experimental since I've taken on a type of woodturning I've never done before. Yet I documented the process enough to be sure I could pass on to you, the reader, enough insight for you to make one of your own!

This bowl is made by turning a whole piece of log on its side, and this presents the woodturner with many obstacles to overcome, starting with the mounting of the log to the lathe,

and ending with the fact that the bowl will present two large knots (which are the centre of the log, a part of the wood we try to avoid mostly in woodturning for its tendency to crack while drying), with a few more surprises between those.

The skill level you will need for this project is low to medium, and it has just a few more points to be aware of while turning than your normal bowl turning technique.

Step-by-step guide

Step 1: Mounting your log

Since this turning will be done on a whole log, instead of what we turners call a 'blank', it presents a few unique problems to overcome. Branches, uneven bark and the general shape of the log might prevent us from simply mounting the log and spin it freely.

First, if the length of your longest diagonal on your log is longer than the swing of your lathe (mine is a 12 inch – roughly 300mm – swing lathe), you will need to trim the edges of the log so it will spin without hitting the lathe bed.

Next we need to find the centre of the log by width and length (using one of two rulers), once we decide which side will be our top (that side will get tapped with the drive centre) and which is our bottom (will be held by the tailstock with a live centre), we can tap our drive centre into the log (some

like to flatten a spot for this, or even drill a small indentation using a forstner bit, but if the bark is not too thick, you can just hammer the drive centre to it well and make sure it grabs wood).

I had some problems with a few of the branches hitting the front facing motor cover, but a few strokes with an axe and some sawing took care of those. I finish by giving the log a test spin to see nothing hits the motor and the lathe bed, and we're ready to move to the next step.

Step 2: Shaping the outside

I used a bowl gouge exclusively on this entire project (except for a couple of uses I had for the paring tool) which makes the job of turning the outside of this bowl easy. We will make a conical shape that will show in the best possible way the 'wings' of the bowl made from the high points of the log vs.

the low points. Once the 'top' of our bowl is fairly round we can go on to shape the rest of the bowl, ending with the foot of the bowl, where we will turn a tenon so we could reverse mount the bowl into the chuck.

Step 3: Creating the tenon

In order for us to be able to hollow out the bowl we will need to create a tenon on the bottom of the bowl for us to grab on to with our chuck. Using the parting tool, I prepare the surface for the tenon by making a flat spot on the bottom of the bowl, then using a calliper to measure the tenon width I cut it flat against the bottom.

Step 4: Filling in the cracks

After giving the bowl a light sanding using 80 grit sandpaper, we will take the time to fill in the knots, small spots of rot and cracks we have all around the bowl. I chose to the glue (super glue) and used coffee grind as the filler, since I didn't want to 'hide' those features but make them even more pronounced against the bright grain of the wood.

By creating a small mound with the coffee grind, I can drop a few drops of the glue onto the centre and mix it until I get a putty like consistency which I can use to fill in the voids. I even used the same paste to fill in some worm holes that I located near the 'sting' of the bowl.

After the coffee putty has dried and hardened, I'm using some power sanding with my homemade sanding pads and 5 cm wide Velcro backed sanding paper circles, from grit 80 to 400, to smooth the bowl all over and get it ready to be finished on the outside.

Step 5: Finishing the outside

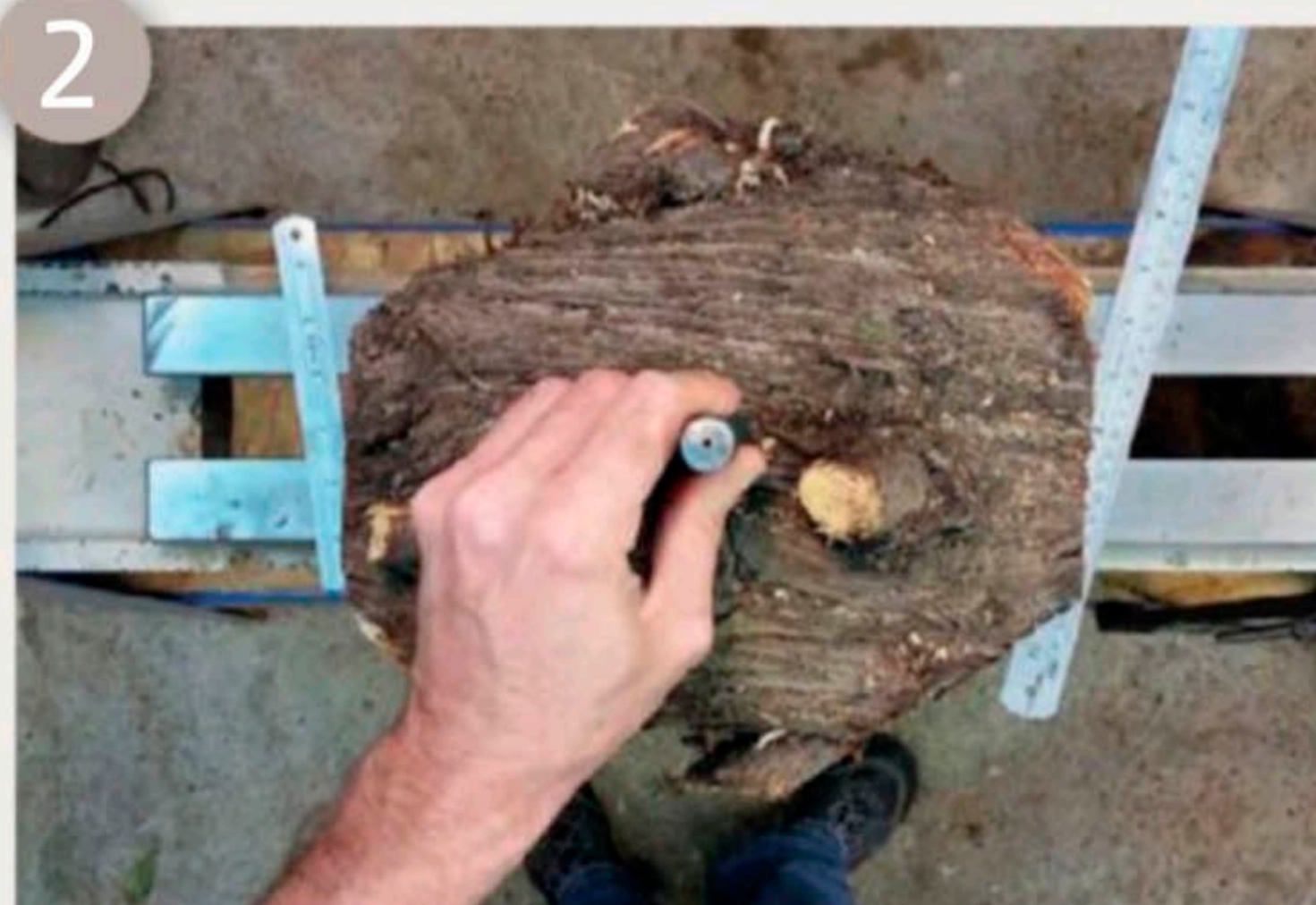
After the outside of our bowl is sanded down to 400 (for project I'm leaving with a natural edge and a matt oil finish I will sand up to 400, no more), I can start applying my choice of finish, in this case, mineral oil. Now, the oil I used will do a few different things; it will condition the wood, slowing down the drying process greatly, which is good, since it means there is a good chance the knots which are the centre of the log will not crack and knots tend to do when drying. It will displace some of the water in the cells of the wood, making it more stable, and it will give our wood a stronger colour, and will make the grain 'pop' out.

Applying the oil will show you very clearly the difference between end grain and cross grain, as when you will apply the oil on the end grain part (the centre knot of the wood) you will see it soak up really clearly, any oil placed on it at the start will quickly be absorbed, while the end grain, absorbing some, while leaving most of the oil floating on the surface. This is what we want to achieve in the end grain sides as well, for the oil to soak in until it floats on the surface, that is when we know the wood is saturated,

Once the whole bowl is soaked and no more oil penetrates the wood, wipe off the excess with a clean paper towel.



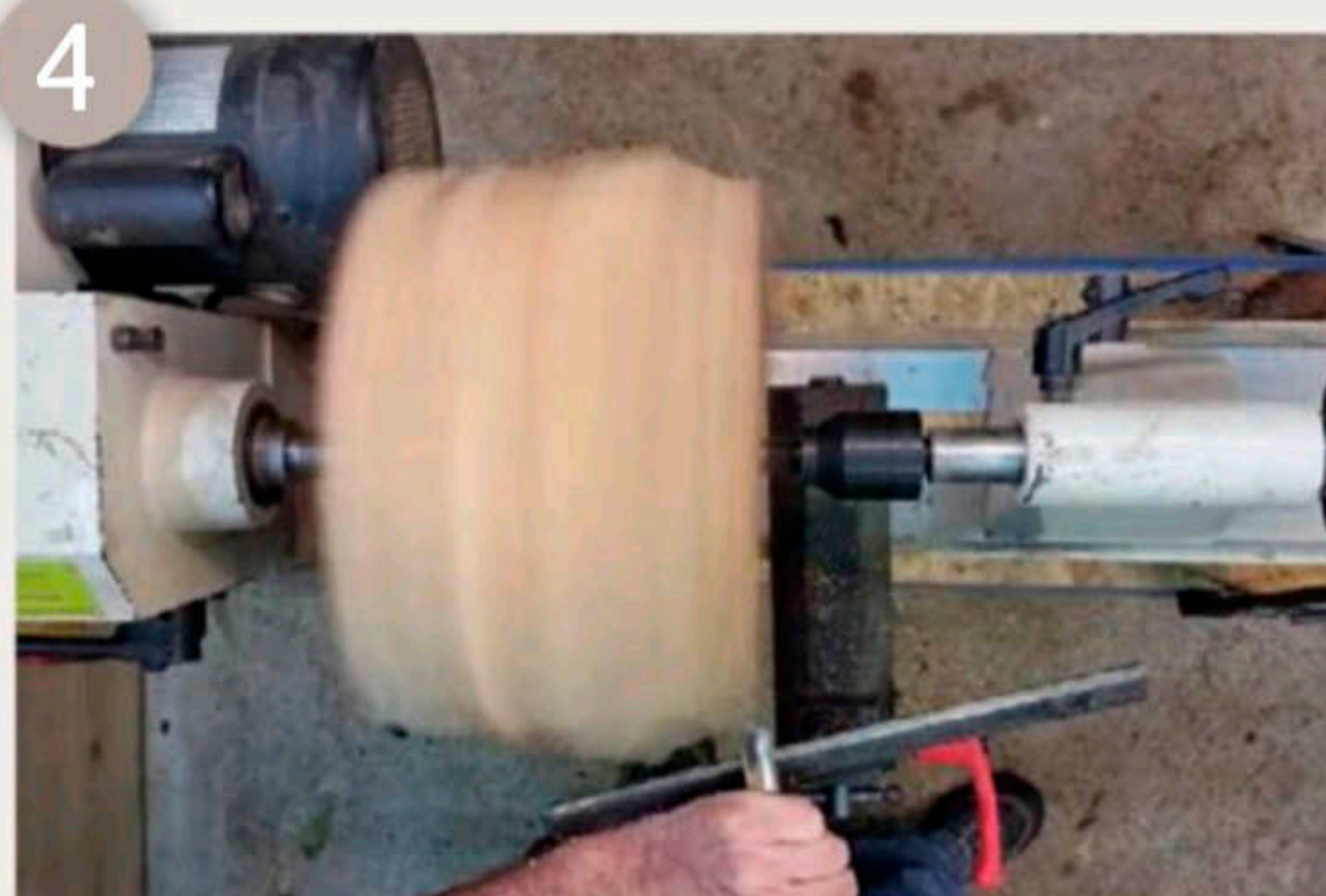
This turning was done on a whole log, instead of a 'blank'



Tap the drive centre into the log



Give the log a test spin



Turn the outside of the bowl

Step 6: Flipping the bowl over

Once the outside of the bowl is done, we can replace the drive centre with our chuck, and mount the bowl to it using the tenon we've created before. As you can see from the second picture, I am using my tailstock for support and to give the wood equal pressure while I tighten the jaws of the chuck, after which I remove the tailstock completely, in preparation for hollowing of the bowl. Bring your tool rest all the way to the bowl's face, but mind you, if you have any branches (like this piece has), make sure they don't hit the tool rest, or the banjo, while spinning.

Step 7: Hollowing the bowl

Although a crucial step in the process, this one is so straightforward, a good look through the images will give you all the information you need!

As you can see from the image progression series above, I started on the two small branches I had on the surface of wood, once those were taken down, I started pulling from the centre out (a pull cut is a little bit cleaner than a push cut, at the relatively low surface speed the centre of any vessel has), first taking out the barks, and then starting to dig well into the wood. I leave the edges of my bowl to the end to prevent stresses on the side walls of the bowl as the narrow profile is being created.

What I like the most about working with uneven wood surface, like this bowl, is that for a long time into hollowing the inside of the vessel, you can see clearly with your own eyes the width of the walls in the ghost image created from looking at something spinning which is not whole. Like you being able to see the bowl gouge cutting inside the bowl in one of the pictures. Of course, later on when the walls are already high, I will use a calliper, both to gauge the depth of the bowl, and both for the widths of the walls using a special curved calliper.

Notice how I position my tool rest in the last couple of images, to allow me to cut along the walls of the bowl with as little space as possible between the wood and the gouge. This will prevent the gouge from vibrating and creating marks on the walls of the bowl which will be problematic to sand even later.

Step 8: Finishing the inside

Dealing with the cracks and knots on the inside of the bowl is exactly the same as the outside, only this time I'm using fine sanding dust as a filler. The dust mixed with glue works perfectly to fill in any holes I can find in the wood.

Once the glue is dry, I can power sand the whole of the inside to the bowl, all the way to 400 grit, much the same as the outside, some done by hand to make sure the curve of the bottom of the bowl is sanded down correctly.

I finish up by applying once again a good amount of mineral oil, again, until the wood doesn't soak up the oil anymore, and then I wipe the excess with a clean paper towel to finish up.

Step 9: Parting the bowl off

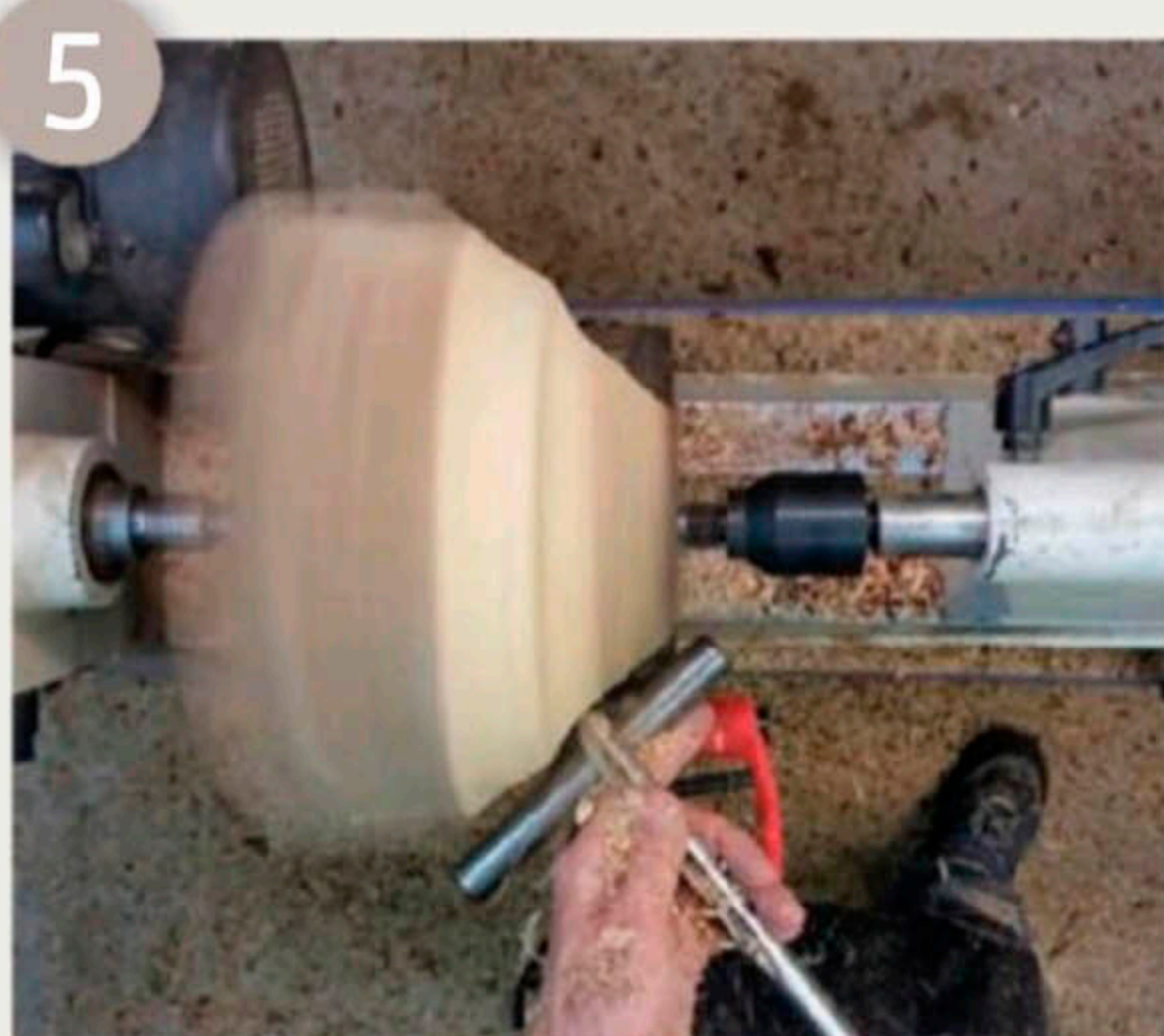
Now my bowl is done, both inside and out, I can use my parting tool again to start parting the bowl off the lathe. Slowly I chip away the wood at the base of the bowl, angling my tool upward into the bowl so I will have a ring of wood as the low point around the edges of the bottom of the bowl, while the rest of it will be 'lower' than the sides, so I know my bowl will always sit flush against any surface.

I stop before the bowl is completely parted and I finish parting the bowl using a saw. Later on I sanded the rough surface of the bottom of the bowl down using my power sanding pads, as seen before.

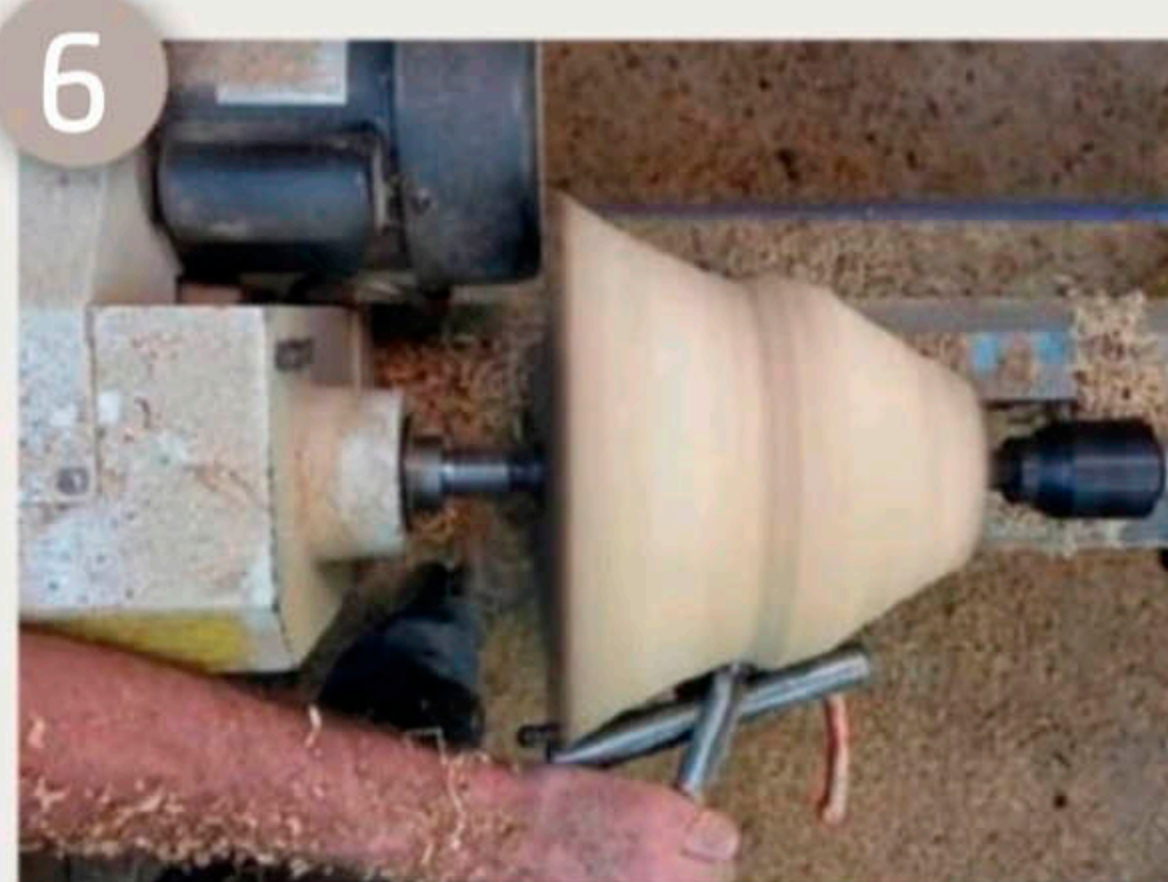
Step 10: Enjoying your work

And the bowl is done! I hope you didn't nick your fingers or hand on the spinning bowl wings, as that happens a lot, and if you had any 'special' feature survive the turning (note the 'sting' I had created from a branch that was luckily situated in my log), consider yourself lucky, as those add a lot of character to the bowl.

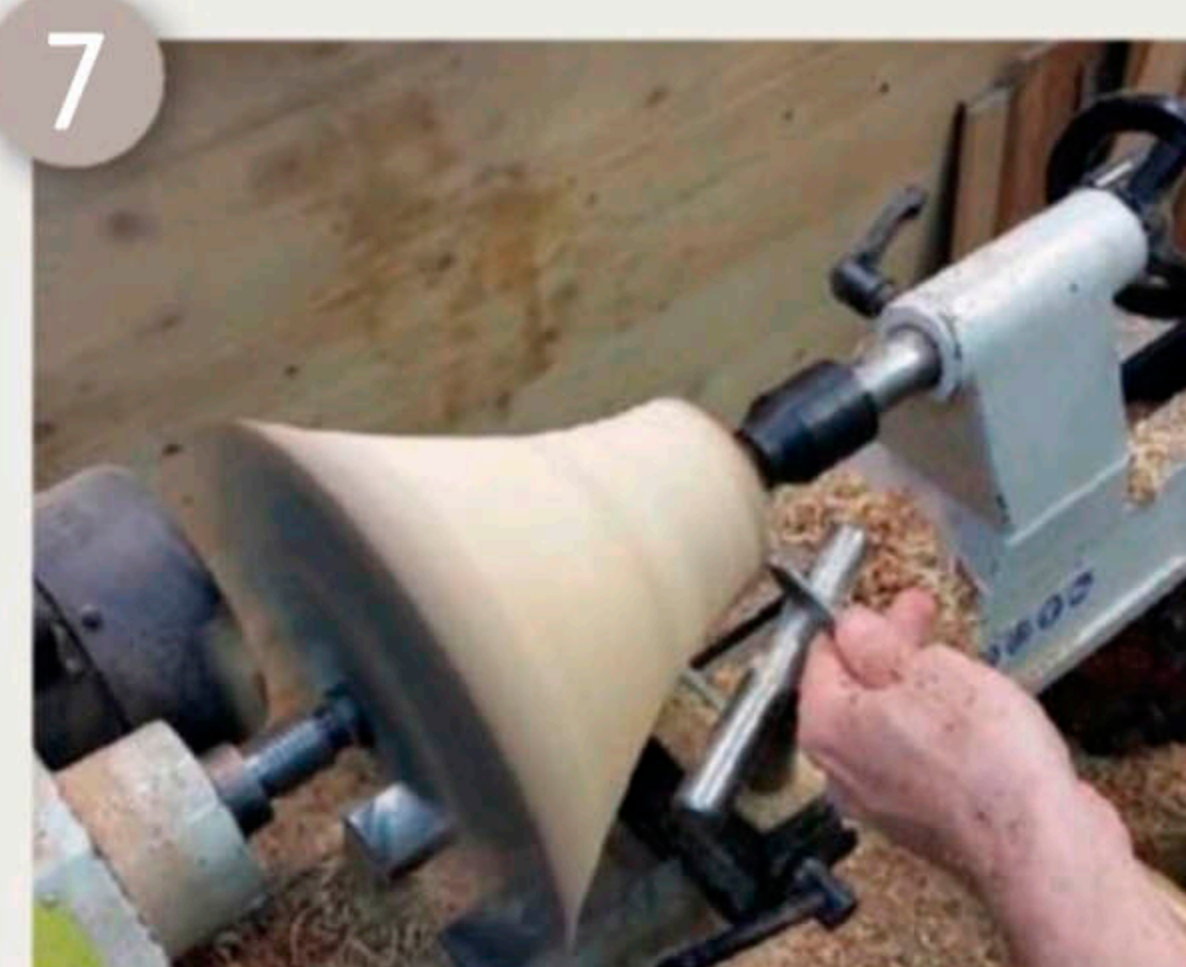
Mind you, I lost small pieces of bark turning this bowl. This is mostly avoided by applying a bead of glue along the border of the bark and wood all around the bowl, but since I didn't do this step in this project, it is not shown. Just be mindful of that technique and use it when needed.



I used a bowl gouge on this entire project



Make a conical shape that will show in the best possible way the 'wings' of the bowl



Once the 'top' of our bowl is fairly round we can go on to shape the rest of the bowl

8



In order for us to be able to hollow out the bowl we will need to create a tenon on the bottom of the bowl

9



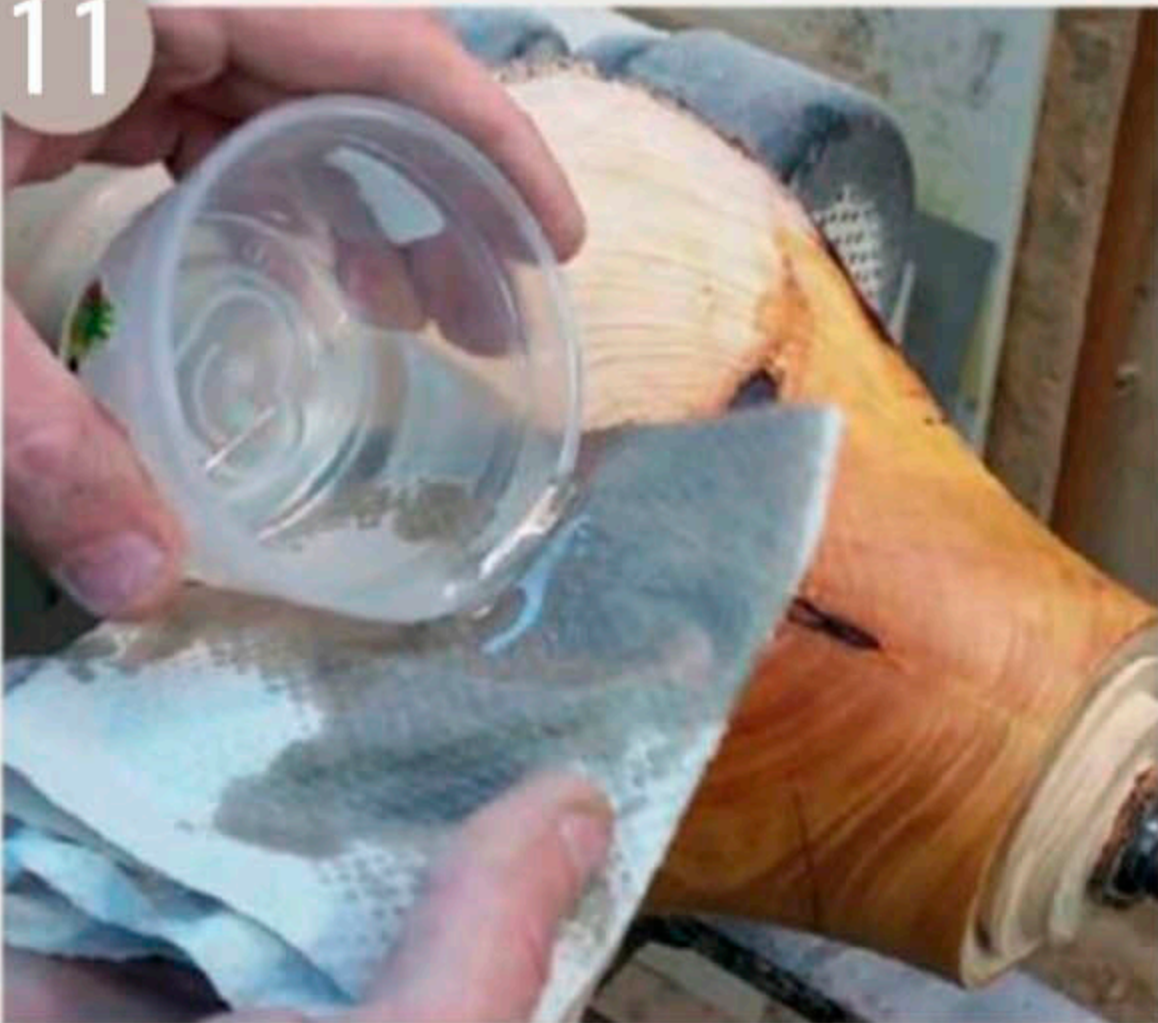
Give the bowl a light sanding using 80 grit sandpaper

10



I used coffee grounds and super glue as a filler

11



For my finish I applied mineral oil

12



Mount the bowl using the tenon created before

13



I started pulling from the centre out

14



First remove the bark, and then starting to dig into the wood

15



I left the edges of my bowl to the end to prevent stresses on the side walls of the bowl as the narrow profile is being created

16



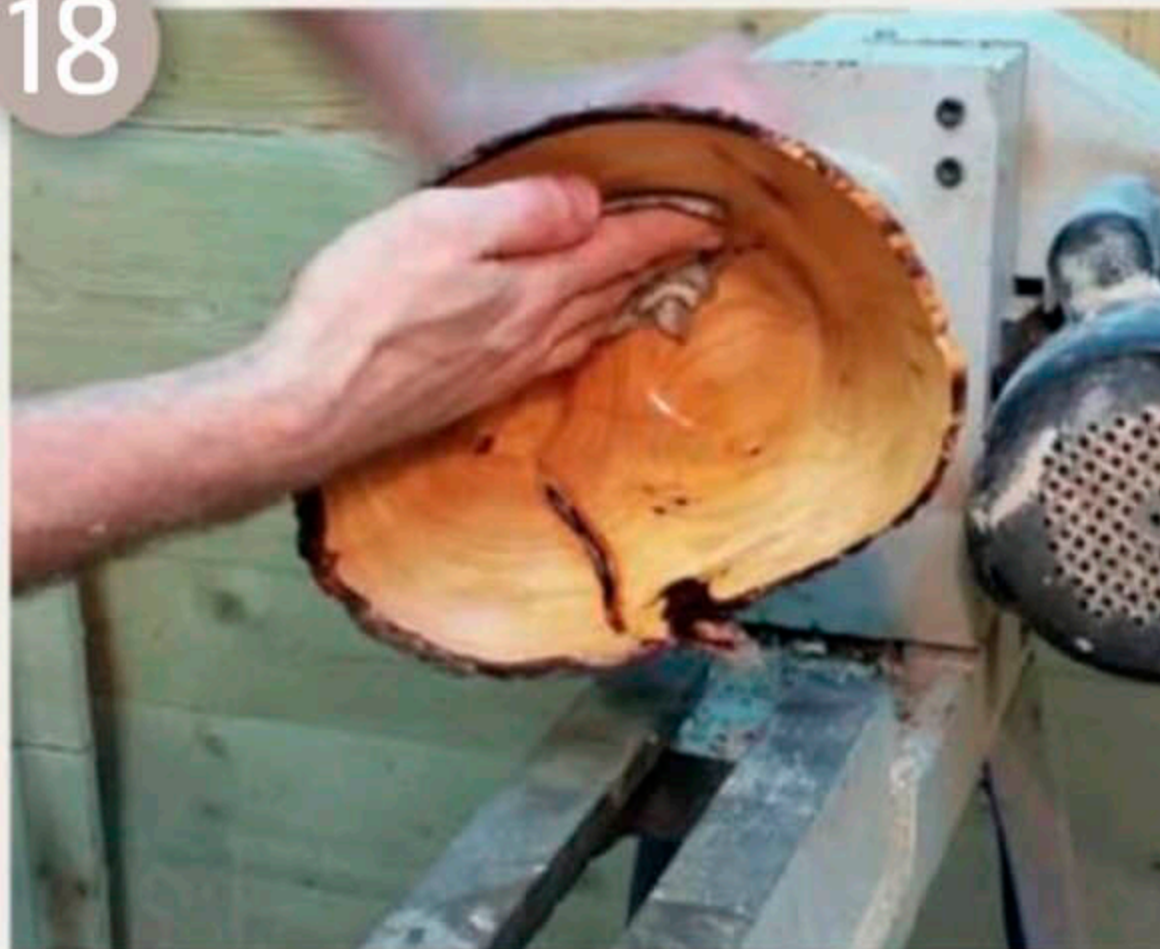
I used a calliper to gauge the depth of the bowl

17



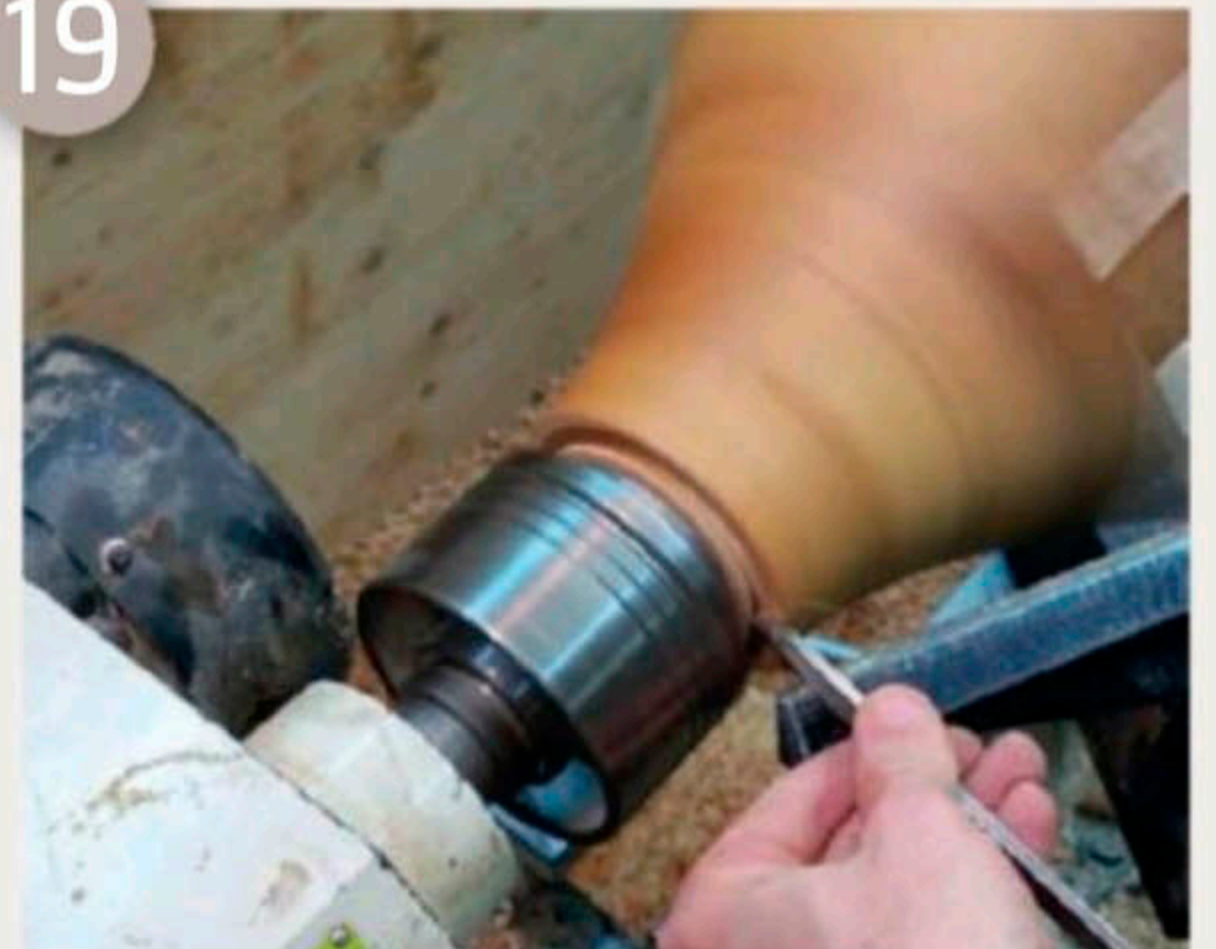
Power sand the whole of the inside to the bowl

18



I finish up by applying once again a good amount of mineral oil

19



Use a parting tool to start parting the bowl off the lathe



Workshop safety is important. Most of us knows the basic safety requirements in a workshop, but very little of us always enforce it. We are always in a hurry and don't see the need to take proper precautions before operating a machine. Workshop safety is actually more important than setting up your workshop.

WORKSHOP HAZARDS AND HOW TO AVOID THEM

If you are frequently in a workshop, you're likely exposed to many risks. Workshops are hazardous environments both by nature and the activities people carry out in them. Therefore, it's essential that you're aware of these hazards and how to protect your health and safety. This article outlines common workshop hazards and control measures that you can take to reduce them.

What are the most common workshop hazards?

There are many jobs associated with workshops, such as carpentry, welding, and paint spraying. Each role comes with different hazards and can make workshops dangerous places to occupy.

The top 15 workshop hazards are:

- Lack of guards or screens on equipment or around dangerous areas.
- Damaged or misused guards.
- Lack of adequate ventilation and temperature.
- No safety signs, outdated safety signs, and broken safety signs.
- Machinery left unattended while in use.
- Obstructions – of fire exits, cut out switches, etc.
- Cluttered workstations.
- Trailing wires and cables.
- Chemical substances in unmarked containers.
- Chemical splashes.
- Incorrect tools used for tasks.
- Confined spaces.
- Electric shocks, burns, or fires.
- Lone working.
- Sharp items.

How to reduce hazards in your workshop

Workshops are clearly dangerous environments and so you should do all you can to reduce the level of risk. Often, you can easily reduce risks through a few small steps, some of which we've outlined below.

Dress for the occasion: One seldom thinks of the importance of wearing the appropriate clothing when working with machinery. As the sign above states, a machine has no brain and getting tangled up in one happens very quickly. Do not wear baggy, loose, and otherwise ill-fitting clothing in your workshop. Do not wear jewellery or any other loose hanging items.

Nothing should be hanging down when you bend over to work on a machine. Tuck your tie into your shirt, but it is better to remove it completely. Long sleeves should be rolled up. Some people like to wear gloves, but this practice is very dangerous. It can get caught up in a machine's moving parts very easily. There is nothing wrong with wearing gloves when moving boards or timber, but please remove them before operating a machine.

Practice better housekeeping: You should always try to keep your workshop tidy and free from obstructions. Ensure you don't block any fire exits, cut out switches, and other things that you may need in case of emergency. Avoid the need for trailing cables by conducting activities closer to the plug socket. You should also maintain a tidy and clutter-free work area at all times. Also ensure that you have adequate lighting and ventilation.

Protect yourself from machinery: One of the most common workshop hazards is a lack of guards and screens around equipment. Misused or damaged guards that don't offer protection but give the impression that they do are also a big problem. Review your suite of tools, and research what safety equipment you need to keep them safe.

Make certain the equipment has appropriate guards and screens. If it is lacking, get it. For example, install a drill press guard instead of assuming safety glasses are good enough. Have a good funnel instead of assuming safety gloves are enough to protect you from chemical spills. Automatic shutoff switches are ideal while getting in the habit of turning everything off when you turn away is a good habit that improves safety. If you remove a screen or guard to perform maintenance on the tool, always put it back.

Not prepared to handle emergencies: Many minor accidents are made worse by the inability to mitigate the damage as soon as it happens. You need at least one fire extinguisher that is plainly visible and immediately accessible. Whether you put it in its own holder or store it on the corner of the workbench, it should be several feet above the ground.

Buy a first aid kit and put it where you can't miss it when you suffer an injury. If you can, have an eyewash station near

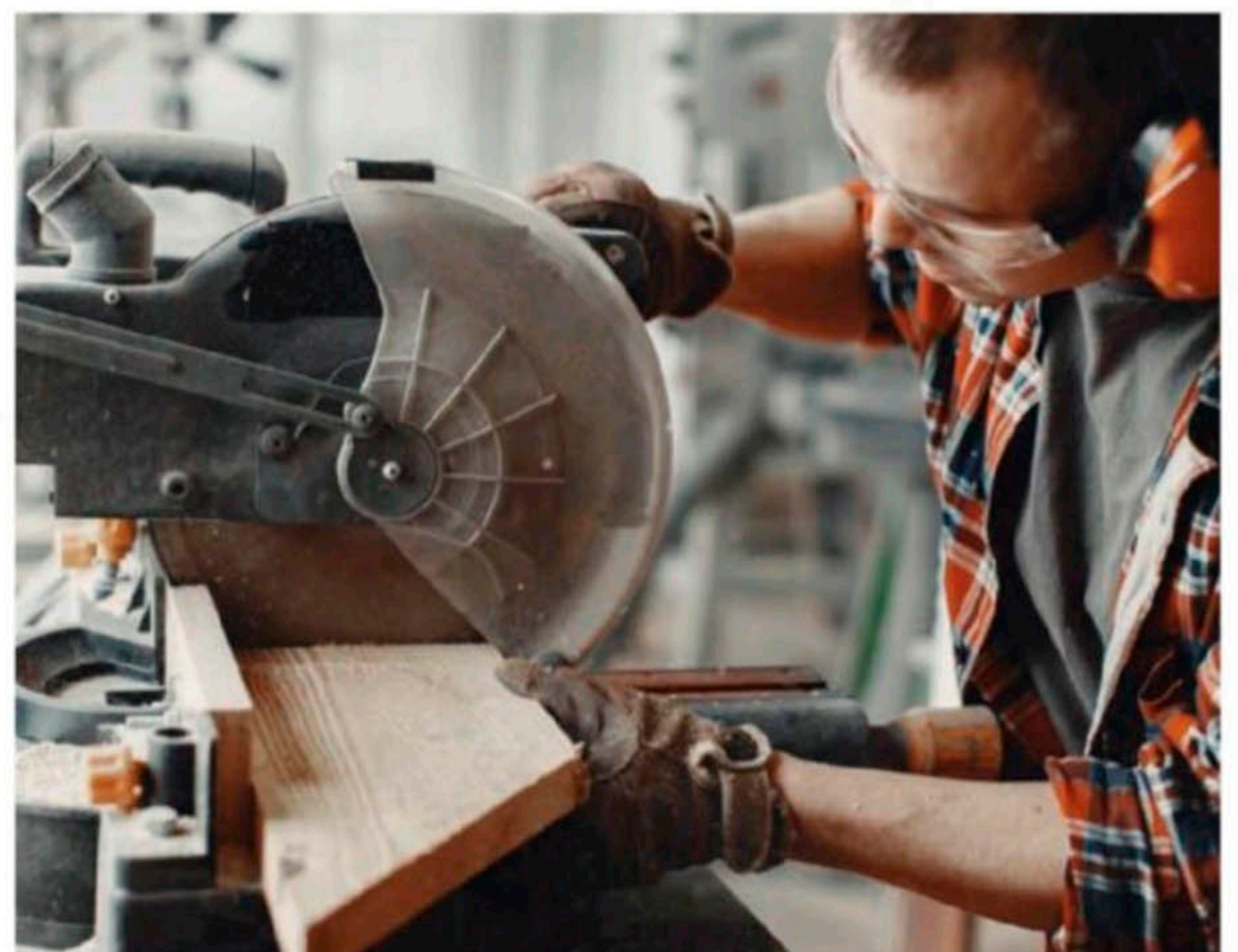
the first aid kit. This is critical if you're often working with chemicals, shavings, and sparks.

Clutter contributing to the chaos: Cluttered workstations raise the risk that a spark lands on something and starts a fire or an unexpected item is thrown in your face. The solution is clearing out the clutter. Get rid of chemicals in unmarked containers since someone could get hurt mixing substances that generate toxic gas on contact. Every other chemical container needs to be clearly labelled with the contents and any warning messages. You can easily reduce the hazard of chemicals in unmarked containers if you ensure that all chemicals are correctly labelled at all times. To reduce the risk of chemical splashes and spills, you should also make sure that chemicals are stored in appropriate containers and the lids are tightly secured.

Don't leave old blades and broken tools on the work surface. Get in the habit of disposing of them safely when you're done working for the day. When you can't remove a trip hazard like trailing wires and cables, find ways to minimise risks. Instead, consider rearranging the area so that the equipment is closer to the power outlet. Warning signs are inferior to something that eliminates the risk.

No drugs, alcohol or other impairments please! Just like you are not supposed to drive while under the influence, you are not supposed to work on machinery while having a few. This is common sense, and while I'm sure there are plenty of guys that like to have a beer or two while they are working on a project, it's generally not recommended.

Know your limits, and don't do anything stupid that will impair your vision or coordination putting yourself or anybody else in danger. This includes working while taking medication that dampens your ability to operate machinery properly. I know you want to show off your project to your buddies while standing around the braai having a few beers. Stay away from the workshop, just now you get the urge to maybe show them how it's done. Bad idea.



Mixing concrete and getting the right concrete mix ratio is vital for a durable and long-lasting job.

WORKING WITH CONCRETE

Concrete is a mixture of cement, sand (fine aggregate), small stone or gravel (coarse aggregate) and water. It has many applications, from fence posts to motorway bases and, because of this, there are many different concrete mix ratios that the constituents can be mixed to with each resulting in a different strength of concrete.

In terms of what different strength concrete mixes there are, they range from C10 up to C40, with C10 being the weakest and C40 being the strongest.

What's the best concrete mix ratio for general domestic jobs?

As a quick answer, a concrete mix ratio of 1 part cement, 2 parts fine aggregate (sand) and 4 parts coarse aggregate will cover most general domestic jobs.

Concrete mixed at this ratio is generally known as a C20 mix and it's more than suitable for garden paths, concreting fence posts, shallow retaining wall foundations, some extension bases, shed bases and many other domestic and commercial applications.

C20 is a medium strength concrete mix. This means it will attain a strength equivalent to withstanding a compression of 20 Newton's per square mm after 28 days. More details covering types and strengths of concrete and how they should be used can be found below. This mix is not suitable for house foundations.

If you are planning any major renovation or building project, your architect will probably specify the strength of concrete required for your project. If you are at all unsure on the strength you should be using, check!



Concrete mix ratio for a C20 and C20P (Portland) mix

The proportions of materials for a C20 and C20P (P = Portland cement) concrete mix are:

- 1 part cement
- 2 parts fine aggregate (sand)
- 4 parts coarse aggregate

If you are using premixed ballast, then:

- 6 parts premixed ballast
- 1 part cement

In an ideal world, where everything is delivered dry, a water to cement ratio of approximately 0.55 should be used. As we have explained above, if requiring 25kg of cement in your mix, then to calculate the suggested volume of water it would be: $25 \times 0.55 = 13.75\text{kg}$ (litres) of water.

Note: This is the maximum amount of water that should be used.

Most of the time however, the sand and other materials will be damp, or even wringing wet, and care has to be taken to ensure your concrete mix does not become too sloppy. It should be able to support itself, almost fully, in a heap on the shovel.

If you are only needing a small amount e.g., to concrete a small fence post or repair an existing concrete path it makes no sense to mix up a great load. To these ends, your local DIY shed should stock a range of ready mixed DIY concretes ideal for this job.

Many online calculators exist to help you. Enter your dimensions to calculate the volume of concrete needed for your project, then enter this total into the second calculator for the materials necessary.

Please remember that water volumes are approximate and care should be taken when adding this. Also please remember that cement can damage your skin, so wear the appropriate safety equipment and clothing when using it.



A bag of ready mixed aggregate can be bought at most builder's merchants

What are the other types and strengths of concrete mix?

As we have briefly touched on above, aside from the C20 mix that we have already looked at there are various other mix-types, each with its own specific use cases:

C10 Concrete Mix

This type of concrete is primarily used for drainage and trench filling, binding of floors and also step foundations.

C15 Concrete Mix

This type of mix is a great solution for step foundations, tags and also other types of paving.

C25 Concrete Mix

This mix is ideal for filling trenches, constructing foundations, laying patios and for some extension applications.

C30 Concrete Mix

The C30 mix is a great solution for outdoor applications that includes paving, hard standing areas, bases and concrete pads.

C35 Concrete Mix

This type of mix is most suited to commercial applications such as slabs and bases and for the bases of areas that may be subjected to weight.

C40 Concrete Mix

The C40 mix is a very strong mix and is ideal for paving that will receive sustained footfall, or for other areas such as parking bays for heavy vehicles. Is it also ideal for constructing foundations for heavy items such as water tanks.

Materials required for making a concrete mix

Aggregates

A bag of ready mixed aggregate can be bought in most builder's merchants, or it can be bought loose and delivered to you by lorry. Buying it loose is generally cheaper and, if you have the room to "drop", it is a more practical option. Check out your local builders' merchants for some fantastic deals on bulk sand, cement and aggregates.

Cement

Cement can be bought (mostly in 25kg bags, although some stores still sell 50kg bags) from all builder's merchants. It is crushed limestone, blended with other raw materials (sometimes shale and or sand) ground into a powder and then heated in a kiln. This process produces a cement clinker which is mixed with Gypsum and ground further to produce the cement.

Water is a very important part of the mix and the volume of water used can dictate the strength of the finished mix. On site or in ready mixed concrete yards a "slump test" is used to test the water content of the concrete.

Water

When mixing concrete, getting the correct amount of water in your mix is essential. Too little or too much will render the mix unusable.

In most instances, the materials you use e.g., sand, aggregate etc, won't be totally dry and they may even have quite a high water content. It is for this reason that an exact, calculated amount of water should only be used as a guideline as if you add a set amount

of water and there is already a high moisture content in the materials you're using then your mix is going to end up too sloppy and no good.

In respect to this, and only as a rough guide, the ratio of water to cement should be around 0.55. If your total cement requirements were 25kg, then the calculation would be: $25 \times 0.55 = 13.75\text{kg}$ (litres) of water. Water in litres = Total volume of cement required $\times 0.55$.



How to mix concrete

When mixing concrete, you will find that, while the ballast will heap on your shovel, the cement will slide off. This will give you incorrect proportions when mixing – 1 part of cement should be equal to 1 part ballast.

It is better to measure your quantities using a bucket to ensure correct proportions. If the exact same concrete mix ratios are required repeatedly, a builder's bucket should be used to maintain consistency.

Concrete mix by hand

Mixing concrete by hand is a bad idea unless you only have a tiny amount to do. Only very rarely will you be able to get the cement evenly distributed throughout the mix and if this is the case, then this leads to weak concrete.

If, however, you have no choice but to mix by hand and you only need a small amount, then follow these steps:

1. Spread a plastic sheet or tarpaulin out over your work area. If you have one or can afford it, use a spot or mixing board, they're much easier to work with and can be reused.

Handy spot board for mixing cement, mortar and many other forms of mixture.

2. Using the ratios above and a suitable standard size scoop or bucket, scoop out the exact amounts of sand or fine aggregate and put them in a pile in the centre of your work area
3. Thoroughly mix the sand and aggregate together by folding over and over, as you would when making a cake mix, until they are completely mixed and a uniform colour and consistency. Work your way from side to side, effectively moving your pile over itself and then back again. Mix the sand and aggregate together thoroughly, breaking up any lumps as you go.
4. Collect the mixture together in the centre of your work area and then scoop out the required amount of cement.
5. Sprinkle around a third of the cement over the top of your pile and then mix by folding as you did above until cement

is mixed thoroughly and then repeat process another two times for the remaining two thirds. If there are any lumps, break these up finely. The most important part of this is ensuring the cement is evenly mixed with the sand and aggregate.

6. Gather the mixture back up into a pile and then hollow out a crater in the centre. Add around a third of your water (use the calculation above to work out how much you need) into the crater. Collect the mix back into a pile and hollow out a crater and then add water
7. Fold the mixture from the outside into the crater, working your way around the pile in a circular motion, mixing the water in as you go. Also, use a trowel or the edge of a spade to 'chop' the mixture pile, mixing the water even more thoroughly.
8. With the first lot of water mixed, gather up into a pile again and make a crater and add the second third of water, repeat the above to mix thoroughly.
9. Depending on how damp your ingredients were to begin with will depend on how much water you will need to add. For the remaining water, sprinkle over the mix a small amount at a time until it's of the correct consistency, self-supporting and not too dry or sloppy.

Using cement mixers to mix concrete

A cement mixer can be hired from all tool hire shops, and if you have a lot to do it often pays to buy your own. Once your project is at an end you will always have the option of selling the mixer which is what most self-builders do.

Using this method, you will ensure that you have given yourself the best possible chance of mixing the components as thoroughly as possible.

To get started, follow these steps:

1. Lay out a tarpaulin in the area that you will be mixing. It can get messy, so protecting the floor of your mix area is a good idea.
2. Setup your mixer in centre of the tarpaulin and plug it

in. It's also a very good idea to use an RCD protected extension cable for safety reasons. Once plugged in, turn it on to make sure all is working.

Lay out a tarpaulin to protect the floor of your mixing area.

3. To ensure a well-mixed batch, first, add about 75% of your water to the mixer.
4. Next, add about 50% of the stone or aggregate you're using, followed by 50% of the sand.
5. Be very careful when adding materials to a rotating mixer, take care that any bucket handles do not get caught by the mixing spoons and never, ever put a shovel all the way in. If it gets caught it can easily flick with enough force to knock you out cold!
6. If using a shovel, you have to master the art of 'flicking it in'. The easiest method is to stand side on and flick the material from the shovel towards the opening of the drum, with the shovel stopping about 20cm from the opening. It takes a little practice, but once you've got the technique, it's easy.
7. With your 'material flicking' mastered, next, add all of your cement. As this is a fine material, it can create a cloud of cement dust that chuffs out of the mixer when it's thrown in. Watch this, as it can get in your eyes and mouth and the lime can burn!
8. Next, add in the remainder of your aggregate and then the sand.
9. Allow the mixture to turn for 30 seconds or so and then

check to see how damp it is. If it's starting to 'ball up' e.g., collect into balls, then it's too dry.

10. Add a small amount of water at a time, keeping an eye on the consistency and allowing it to churn for 30 seconds to a minute at a time before you add any more. Alternatively, if you have a hose with a hand operated trigger sprayer, this is a good way of adding water in a controlled manner. Using a hand operated trigger sprinkler on a hose to control amount of water added to mix.
11. With your materials now fully mixed, position your barrow in front of the drum and tilt the mixer slowly forward allowing the cement to slump out into the barrow. Give it a good shake to get out as much as possible.
Tip the cement from the mixer out into the wheelbarrow.
12. Once finished, stop the mixer and then using a small trowel, scrape out as much remnant from the drum as you can.
13. If this is your only mix, chuck a good half bucket full of water into the drum and, if you have any, a broken brick or some small stones and set the mixer going. This will dislodge any remaining cement.
14. Allow it to run for a few minutes, stop the mixer and empty out the waste and you're done.



Should I protect my new concrete until it's cured?

The simple answer to this question is, it depends on the conditions you are working in. Ultimately, the slower your concrete dries out or cures, the stronger and more resistant it will be. If you are working in very hot conditions or there are strong, dry winds then this will most likely dry your concrete out too fast and it will become brittle and crack, weakening it.

Likewise, if you are working in very cold conditions e.g., freezing any water or moisture present can easily freeze. As we know, when water freezes it expands and this expansion will force the mix apart preventing the components from bonding together correctly. When the temperature rises again and the ice melts, thousands of tiny cavities are left which can severely weaken your concrete.

In an ideal world, the best conditions to concrete in are mild weather conditions, slightly overcast, not too hot and not too cold. At the very minimum the temperature should be no less than 4 C.

If you have no choice but to work in slightly extreme conditions, then there are ways that we can minimise any potential damage:

- **Hot and dry conditions:** Lay your concrete and wait for it to firm up slightly. Once it starts to cure, cover with plastic sheeting as this will prevent any extreme moisture loss. Items ideal for this include plastic sheets, bubble wrap and also polystyrene
- **Cold and freezing conditions:** As above, once you have poured or laid your concrete, allow it to start curing on the surface and then cover with plastic, sheets or blankets or another similar covering. If you know it's going to freeze in the evening or at some point in the day, try to lay it a good few hours before hand to give it a chance

In any of the above situations, covering up is the best option to go for but if you are wanting a smooth or even mirror finish then chucking blankets and plastic on it before it's hardened is going to leave marks. If this is the case, then you are certainly going to need to leave it long enough for the surface to cure before it's covered to prevent marking.

The Desk Buddy was a request from a friend for a work-from-home 'helper' for her laptop and monitor.

DESK BUDDY: WORK FROM HOME ACCESSORY



Tools

There are a 101 ways to do just about everything, and it's impossible to cover all possible combinations of tools.

Here is a list of what I used:

- Table saw
- Tracksaw (circular saw with a track)
- Jigsaw
- Drill press
- 54mm forstner bit, though smaller will work too depending on how many cables you want to route!
- 35mm forstner bit
- Router table
- Router
- Router bits
- Flush Trim Bit
- Straight bit or rebate bit (preferably)
- Biscuit Joiner/Domino (Both optional)

>> Chris Knight

This was built entirely from scrap 9mm and 18mm plywood. As such, there isn't really a cut list or best case optimisation – I was entirely using what I had on hand. That is why the drawer front had a different veneer (before paint), and that is why the drawer is from 18mm rather than 12mm material!

A note on joinery... The joints are 'reinforced' with dominoes, but in truth that was just to stop them sliding around during glue up. I used 4mm dominoes, but any size biscuit will do the same job. It's plywood – butt joined plywood is plenty strong

Rebates/rabbets... The rebates on the backside of the cabinet, and for the drawer bottom are 6mm wide, 9mm deep (to match the 9mm plywood). Don't over think this. Wood movement isn't an issue, nor is strength in this application – I simply didn't have anything thinner on hand.

Step-by-step guide

Step 1: Cabinet

As all parts for the cabinet will be 300mm wide, cut a piece of plywood down to that size at the table saw.

The hardest part of the entire project is the mitre on the long piece (832mm) that forms the base for the Desk Buddy. If you have a sliding table saw, or a very large crosscut sled, this could be cut at the table saw, otherwise use a tracksaw or circular saw with a track. Take your time lining up this cut so that its square. Only one end needs to be mitred. If you make sure that the offcut is at least 100mm you can cut that down to width later to act as the 'short foot'.

The rest of the cabinet's parts can be safely cut at the table saw, with the blade tilted – two parts have one 90 degree end, and one has two 45 degrees.

Step 2: Joinery

To reemphasise, this sort of project does not need actual joinery. I used the domino for alignment only, and a biscuit jointer is a perfect substitute in this scenario. You could also use nothing, or use nails to hold things in place later on.

If you do choose to use either the domino or biscuit jointer, you might find it easier to cut the joints for the 45 degree pieces by butting two pieces back to back and clamping. This lets you set the fence to 90 degrees, and gives you a larger reference surface.

For the mid-panel alignment, clamp a scrap board across to align the tool. This is much easier to align square than the tool.

Step 3: Round overs

While you could certainly sand a round over on all parts, using a 1/8" (3.125mm) radius bit is a great way to break edges to give a much softer and consistent appearance.

Step 4: Cable hole

At the back of the Desk Buddy is a semi-circle to route all the cables through. Rough out the semi-circle with a jigsaw (or bandsaw, or coping saw) staying 2-3mm away from the line. Using some scrap plywood or MDF, 6mm or thicker, drill a hole through the template. Rip half of that hole 'off' at the table saw. You now have a perfect semi-circle template ready for routing.

The diameter of the forstner bit is really up to you – if you're able to move the Desk Buddy out from the wall, all you need is the cable diameter, otherwise you need to account for twice the diameter of your country's power plug to be able to fit through.

Step 5: Cable hole routed template

With the template clamped under the existing roughed out semi-circle, use a flush trim bit (or if you are using a pattern bit, the template will be on top) to create a perfect semi-circle. While you should probably route downhill (changing the direction of routing at the halfway point), I found no issues with tearout routing the full length in one pass.

Step 6: Cabinet glue up

I found it a little easier to glue up the single short end first, using a series of clamps and tape. Once that was dry, the other leg and 'drawer housing' could be all glued up.

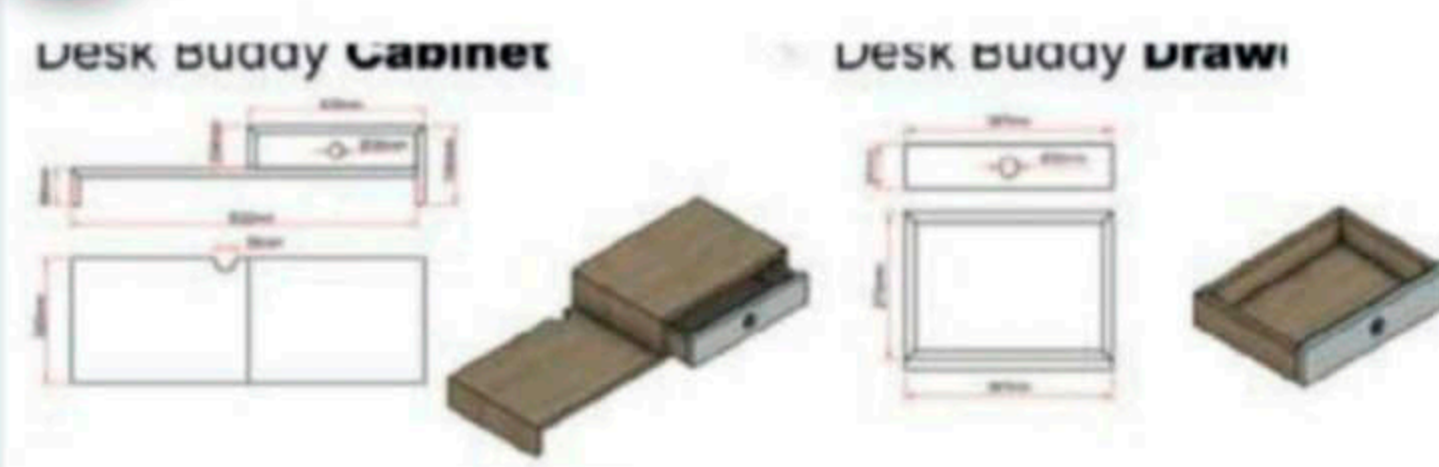
Breaking this into two stages means you can more easily move clamps and the workpiece onto angles that would be impossible if you were to try and glue up the whole thing all at once.

The initial glue up can be a little trickier as you don't have as good a reference for square – apply just enough clamping pressure and check with your best square. Too much pressure will pull the leg in.

Step 7: "Drawer Space Rebate"

Awkward title aside, the rebate on the backside of the drawer space can be made using a rebating bit using either a router or at the router table. This can look a bit dodgy, but the large cabinet surface makes

1



Project dimensions

2



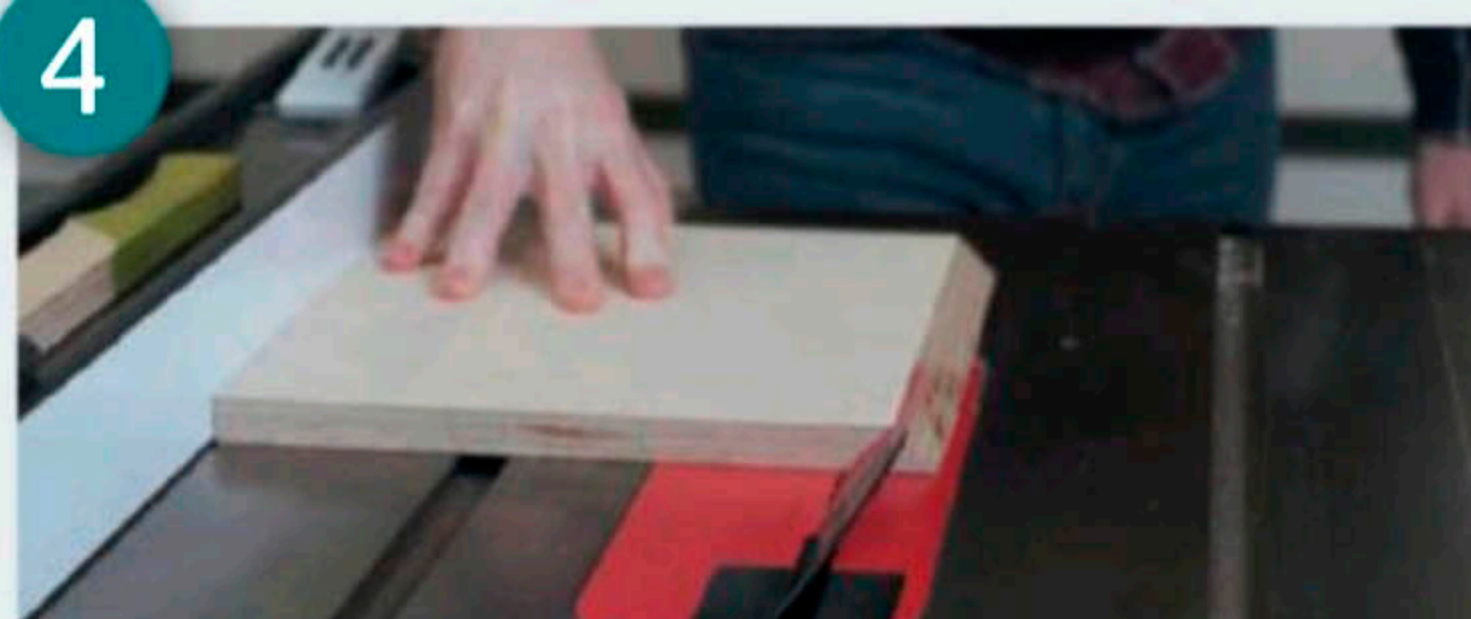
Cut your wood to size

3



Cut the mitres

4



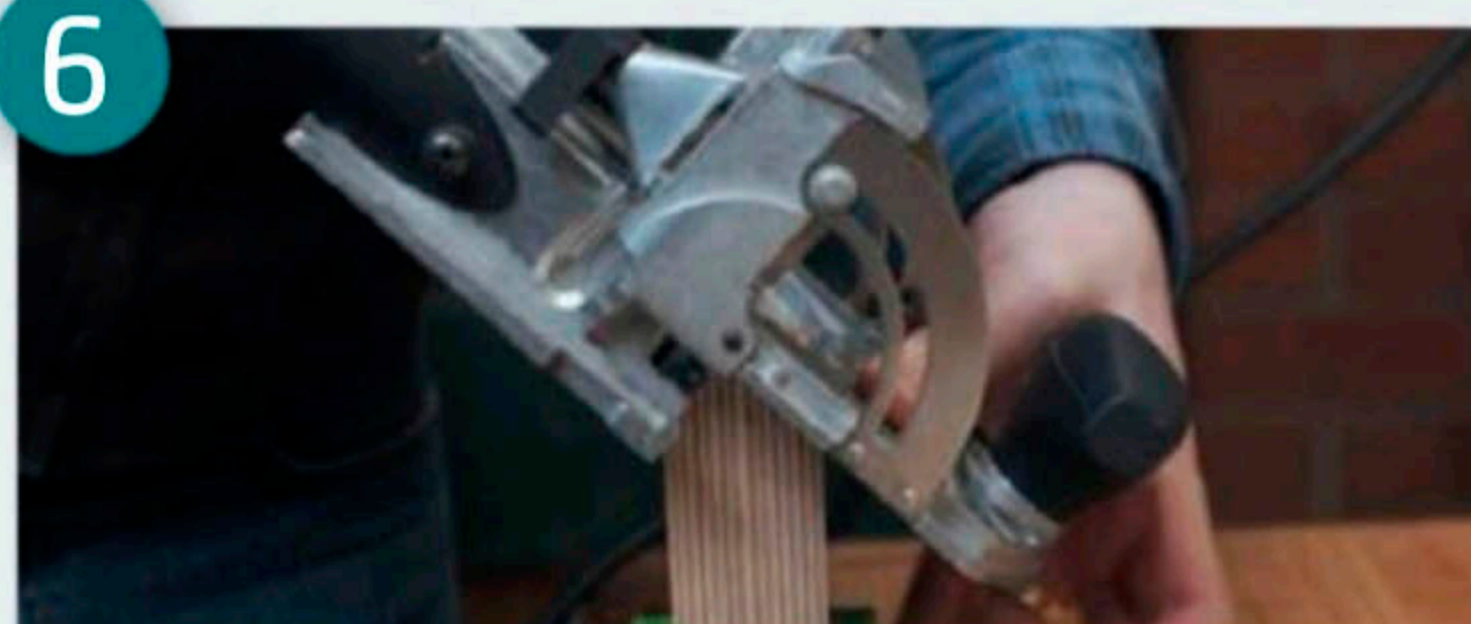
Two parts have one 90 degree end, and one has two 45 degree ends

5



The rest of the cabinets parts can be safely cut at the table saw

6



I used the Domino for alignment only, but you can use biscuits instead

it very safe. Just awkward. The rebate should be 9mm deep (presuming you're using 9mm plywood) and 5-9mm wide.

The radius of the rebate bit will need to be cleaned up with a chisel (the chunkier the better), then the back panel can be glued in.

Step 8: Drawer

The drawer was the remainder of the 18mm plywood material I had and, in my case, didn't need to be cut (it was already slightly smaller than the opening, which is why the false front is a little larger). Cut everything to length using a mitre gauge – according to the plans, that should be two pieces at 387mm, two at 273mm but measure the glued up cabinet to make sure that's correct. You want a little bit (1mm) of wriggle room, but not too much.

After everything is cut to length, a rebate can be cut for the drawer bottom. The rebate is cut on the inside of all pieces (i.e., the shortest edge). With all pieces mitred, this can be a through rebate as it won't be exposed like it would be if it was unmitred.

Using a rebate bit in the router table, cut the rebate in two passes – one to remove the bulk of the material, then the second pass to fine tune the rebate to fit the drawer bottom.

Step 9: Drawer pull and glue up

Tape up the drawer front and false front so that they're aligned. Using a 35mm forstner bit, drill through both at the same time, aligned with the middle of the false front. This drills and aligns the finger pull hole.

Untape the parts, and the drawer can be glued up. Given the mitres, a band clamp is the easiest way to apply pressure to all parts evenly.

Step 10: Drawer bottom

Once the drawer is out of clamps, the drawer bottom can be cut to fit. Alternatively, you could have used a dado/floating panel, but the short height of the drawer means you'll lose some additional internal storage compared to gluing the bottom into a rebate.

Step 11: Finishing

I went with a clear finish, and just a basic white spray paint. For the clear coat, some hardwax oils need two to three very thin coats, and are best applied in my experience with a 6mm nap microfibre roller, applying ample pressure. For difficult to reach sections, a brush or rag can be used to apply the finish sparingly.

For the white spray paint, apply very thin coats, sanding between. You won't get full coverage from a single coat, but don't apply it too thick otherwise it'll end up a gloppy mess.

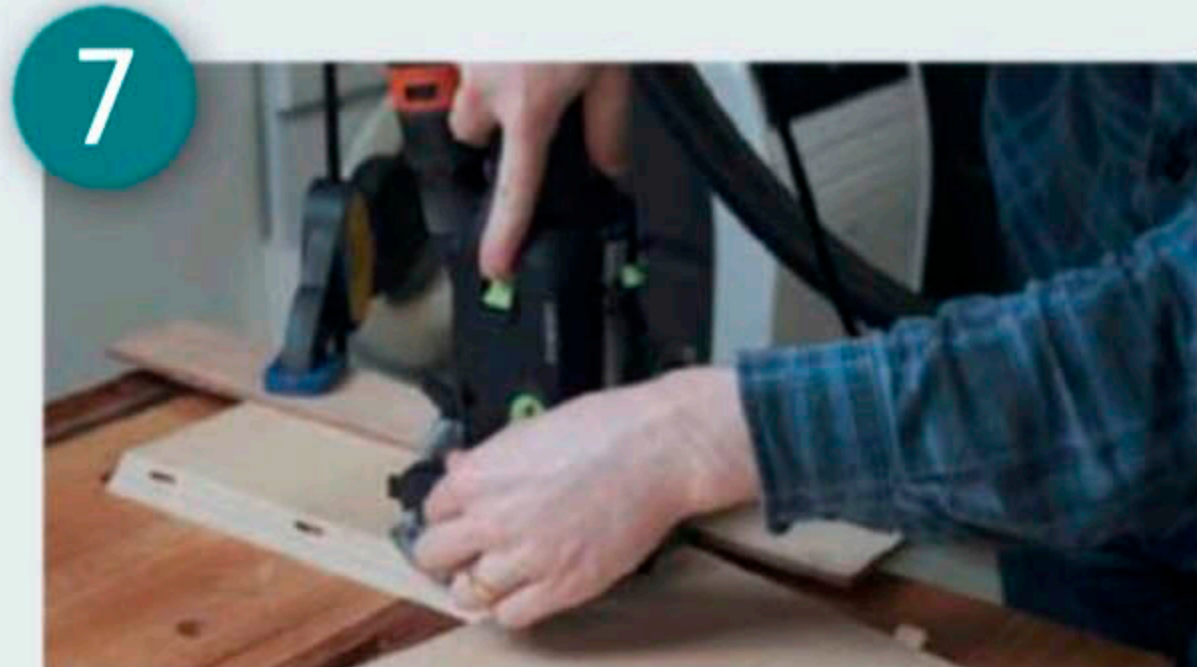
Fun story: The white drawer front was 'by accident'. Originally my friend wanted everything clear coated, but I sent through a render with no texture on the drawer front so it was easier to differentiate where things start/stopped. She loved that version and I had to figure out how spray paint worked

Make sure to not completely coat the backside – you want to leave an unfinished area to glue the drawer front onto the drawer.

Step 12: Final drawer glue up

After the paint is dried on the false front, it can be glued on, using the drilled finger hole for alignment.

The Desk Buddy should be done by this point – it's designed for a monitor on the lower section, and a 14-16 inch laptop on top of the drawer, and the drawer can hold all sorts of things.



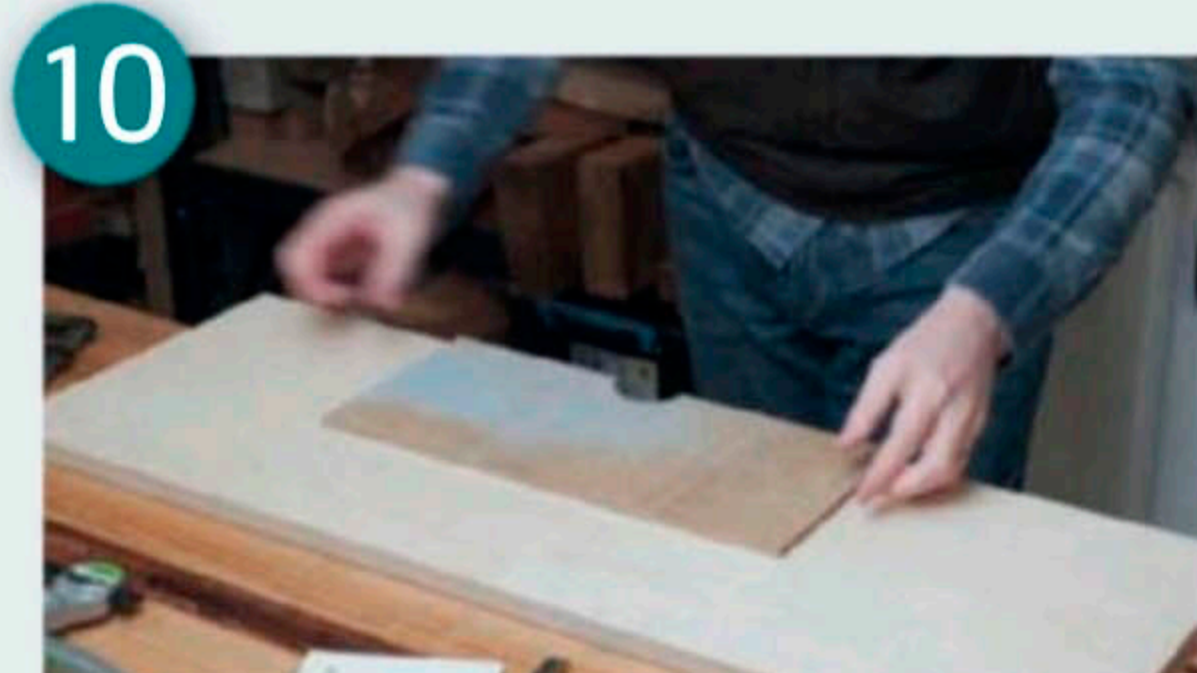
For the mid-panel alignment, clamp a scrap board across to align the tool



At the back is a semi-circle to route all the cables through



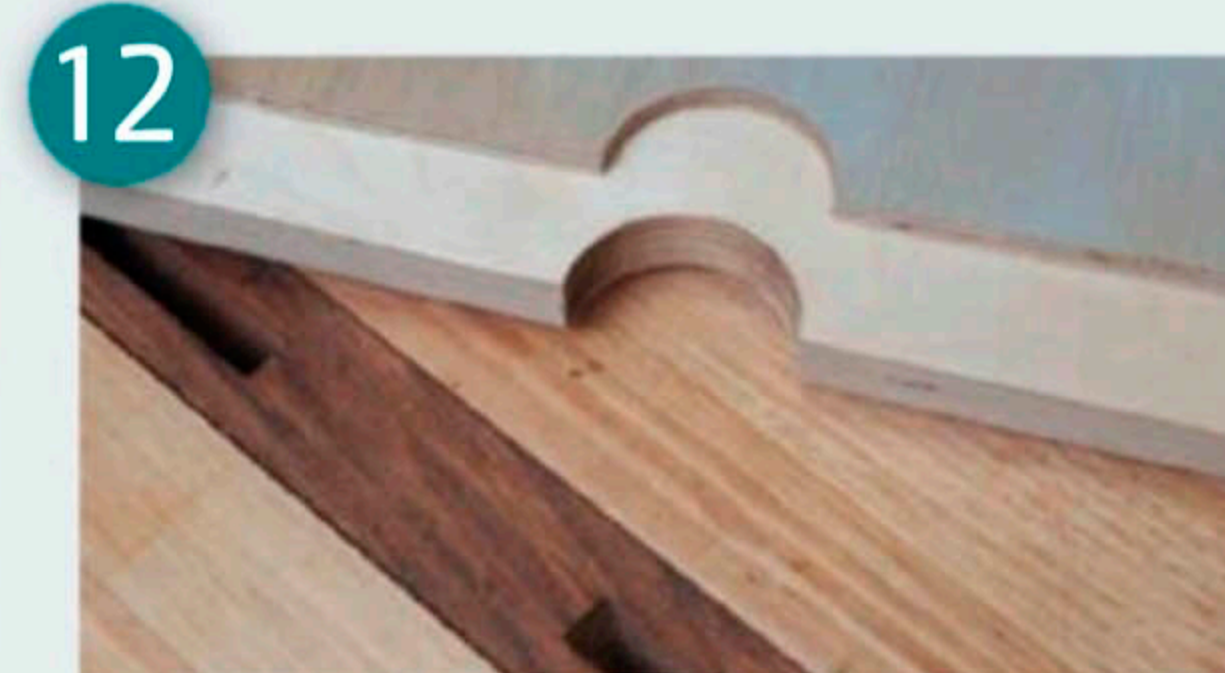
Using some scrap plywood or MDF, 6mm or thicker, drill a hole through the template



You now have a perfect semi-circle template ready for routing

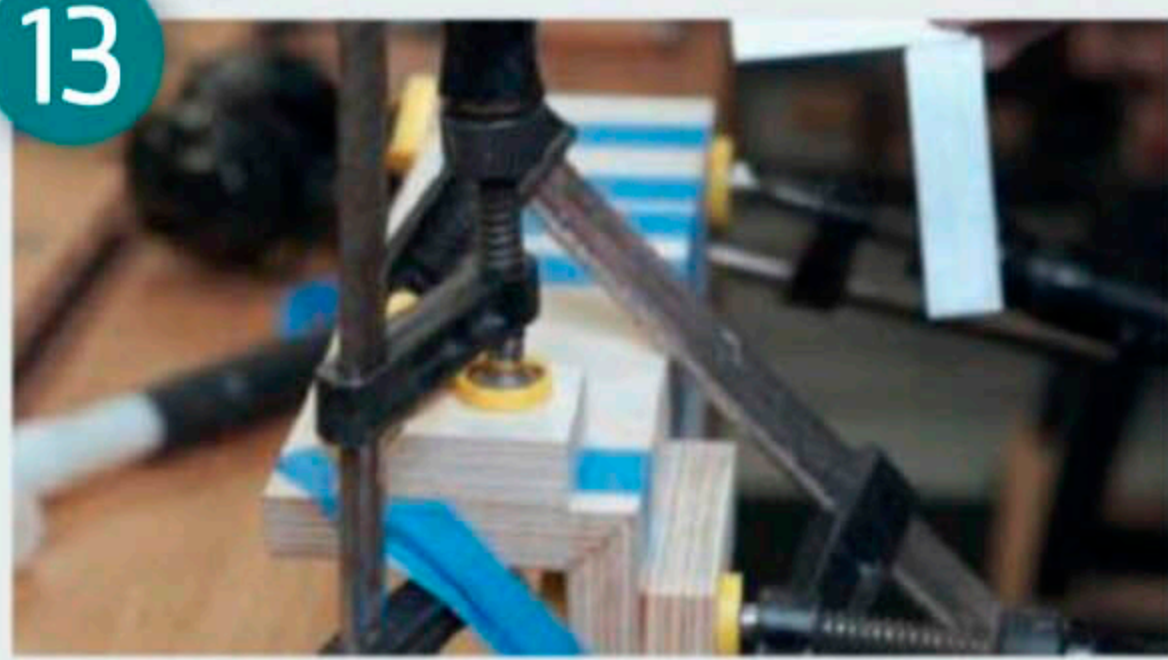


Clamp on the template



Use a flush trim bit create a perfect semi circle

13



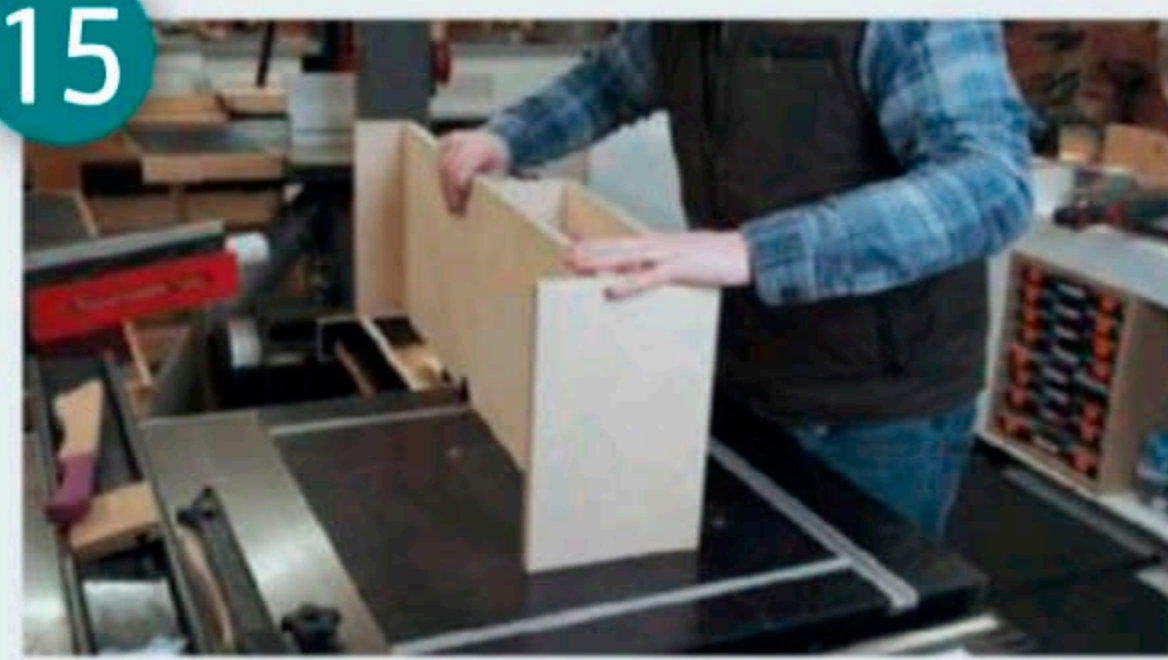
I found it easier to glue up the single short end first

14



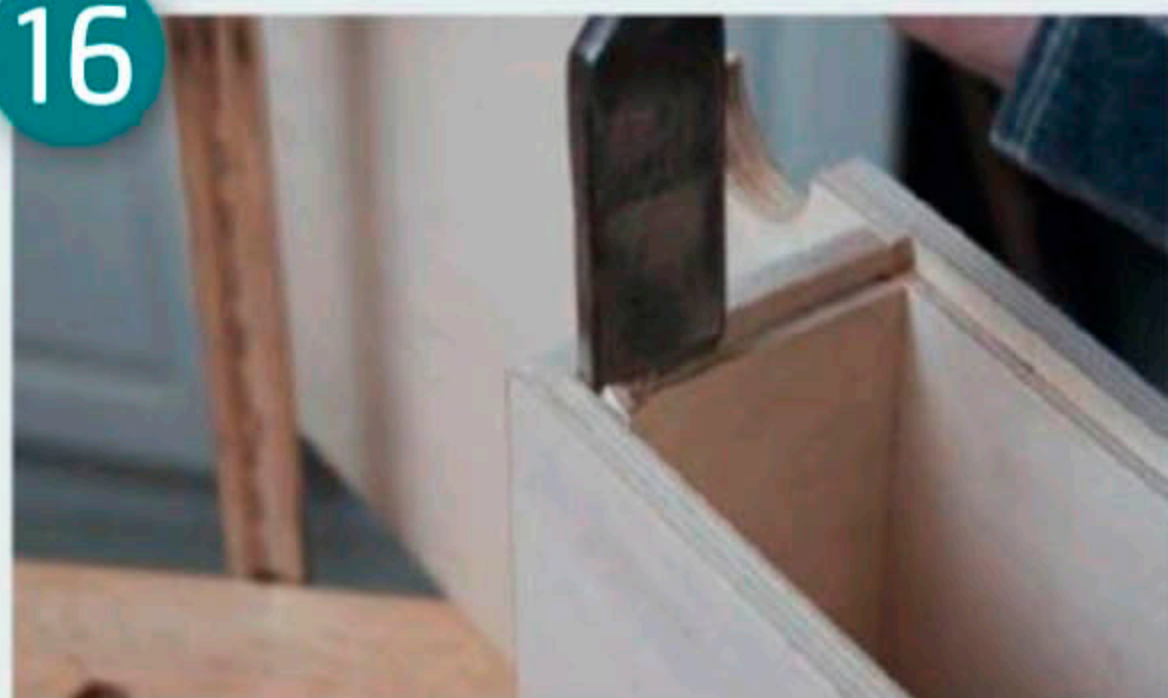
Once that was dry, the other leg and 'drawer housing' could be all glued up

15



The rebate on the backside of the drawer space can be made using a rebating bit

16



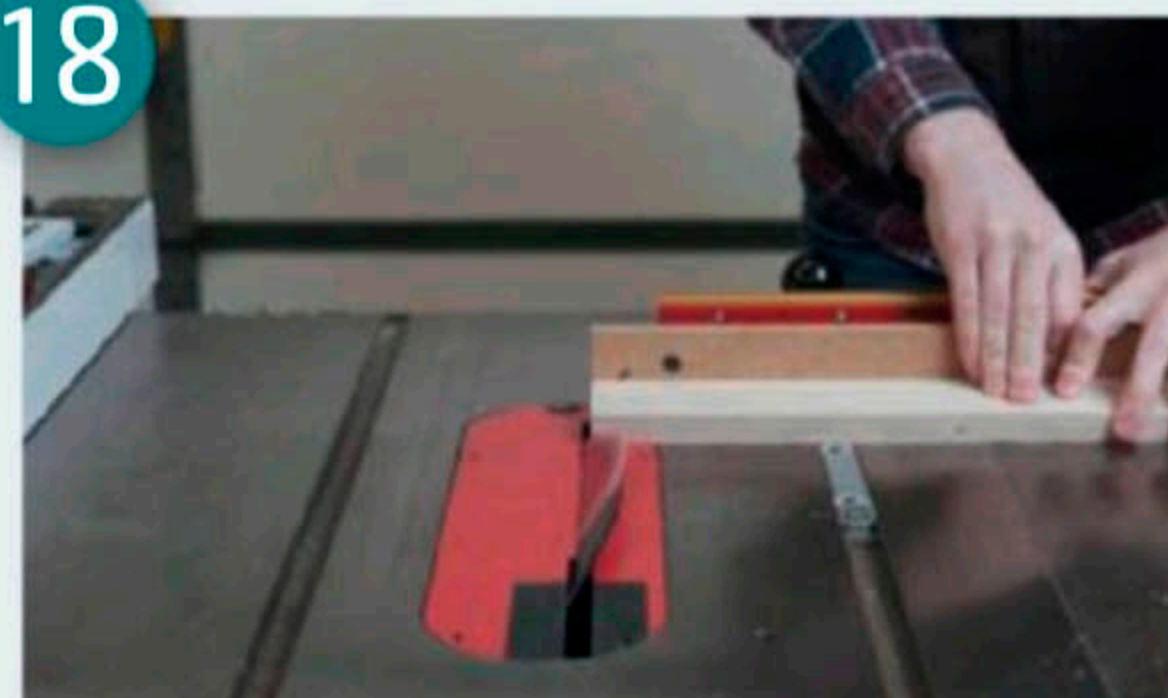
The radius of the rebate bit will need to be cleaned up with a chisel

17



Next, glue the back panel

18



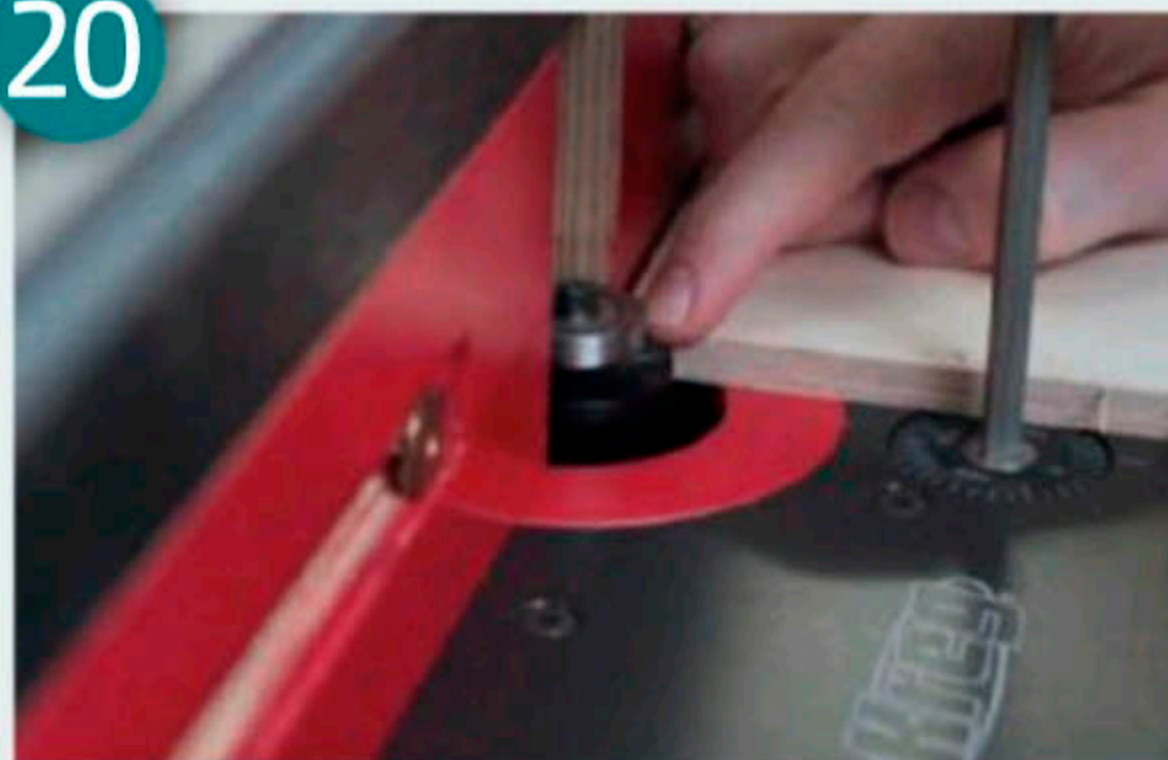
The drawer was the remainder of the 18mm plywood material

19



Cut everything to length using a mitre gauge

20



Using a rebate bit in the router table, cut the rebate in two passes

21



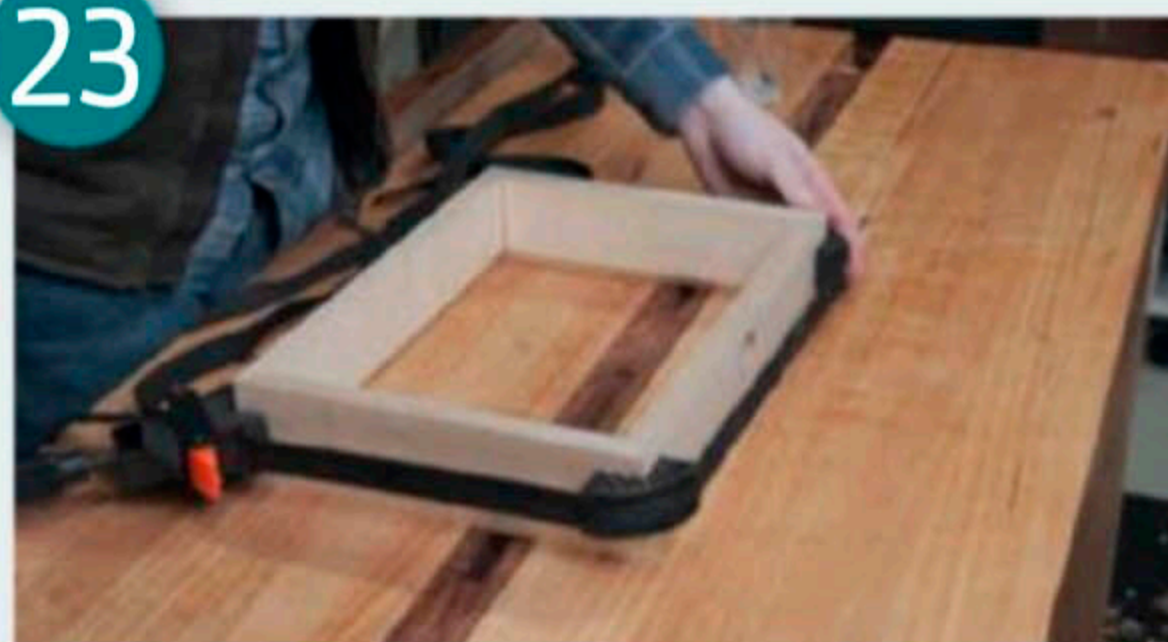
Using a 35mm forstner bit, drill through the drawer front and false front

22



The cut hole

23



Untape the parts, and the drawer can be glued up

24



Once the drawer is out of clamps, the drawer bottom can be cut to fit

25



I went with a clear finish

26



Spray the drawer front white

27



After the paint is dried on the false front, it can be glued on



Your front door serves as a focal point to your home's exterior, and is an important factor in maintaining your home's security and energy efficiency.

HOW TO CHOOSE A FRONT DOOR

Choosing a new front door is a great way to update the appearance of your house, and can be a great investment into the value of your home. Here are some things to take into consideration when remodelling or replacing your old front door.

Choose the material

Select a steel door for optimum security: Steel doors are available in a wide range of prices. Simple steel doors are among the least expensive type of door available, but they have a short lifespan.

- Plain metal doors, in wet and saltwater climates, may only last for 5 to 7 years.
- If security is your primary concern when choosing a front door, reinforced steel doors may be your best option.

Purchase a vinyl door for an inexpensive option: Like steel doors, vinyl doors are typically inexpensive, and are commonly used for screen doors and storm doors. However, they only have a life expectancy of around 20 years.

- Vinyl doors are typically hollow, and with the right amount of force, can crack, making them less secure than steel or wood doors.

Pick a wooden door for a long-term investment in your home: Wooden doors are a classic option, and can provide a luxurious, high end look to your house's exterior.

There are a number of types of wooden doors available, including solid, hollow, and solid core, which each have their own advantages and disadvantages.

- Hollow wooden doors provide the look of a wooden door, but at a lower cost. However, they only have a lifespan of 20 to 30 years.
- Solid core doors are wooden doors filled with a wood composite material. They have a lifespan ranging from 30 to 100 years.
- Solid wood doors will typically last for more than 100 years. They are also very difficult to break or kick open, and are therefore a great option for security.
- Wooden doors are typically the least energy efficient material for your front of door.

Choose a fibreglass door for a well-rounded option: Fibreglass doors are usually more expensive than vinyl or steel, but are less expensive than wood. If you want the look and durability of wood at a lower price, then choose a fibreglass door with a wood finish.

- Much like solid wood doors, fibreglass doors can last for over 100 years.
- Cheaper fibreglass doors may be hollow, and may crack easily. Solid fibreglass doors may be more expensive, but are also more secure.

Choosing the design

Explore the styles available

Doors come in many styles, so try to find one that matches the architectural style of your home. More traditional homes would pair best with traditional front door, while an ultra-modern home would look best with a sleek, modern front door.

Choose the colour of your door

Doors can be purchased or painted in any number of colours and finishes. For more conservative designs, pick a colour or finish that ties in with the existing colour palette of your home. For more adventurous designs, pick a bold, contrasting colour.

For energy efficiency and security, pick a door without a window

Glass is a very poor insulator, and solid doors are much more efficient than doors with windows. Solid doors also provide more privacy and security than doors with windows.

Let in natural light

If you'd like to let in some natural light, purchase a door with an inset window. Sidelights, windows that are placed to either side of the door, can let in even more natural light. Glass windows can be broken, making them less secure. If you are concerned about security but still want a front door with a window, choose a door where the window is high above the doorknob. This makes it more difficult for a potential intruder to open the door from the outside by breaking the window.

Improve the energy efficiency of your door

To keep your home energy efficient, look for a front door with an adjustable threshold. An adjustable threshold can be raised to block any air from flowing under your door, and can help keep your heating and cooling costs low.

Cool your home

Select a new front door with a transom attached to help keep your house cool. A transom is a small window placed above a doorway that can be pushed open to allow airflow into the house, even if the door itself is shut.

Add a security door, storm door, or screen door

Nearly any style of front door can be paired with an additional door, depending on how it was hung in its frame. As long as there is enough space on the outside of the door jamb for the new door to fit, installing a second door is as simple as screwing the frame for your new door in place.

- A two-door system can be a great way to add an additional layer of security, provide protection from the weather, and increase the energy efficiency of your front door.
- These additional doors have an average lifespan of 30 years, and can increase the lifespan of your main entry door.

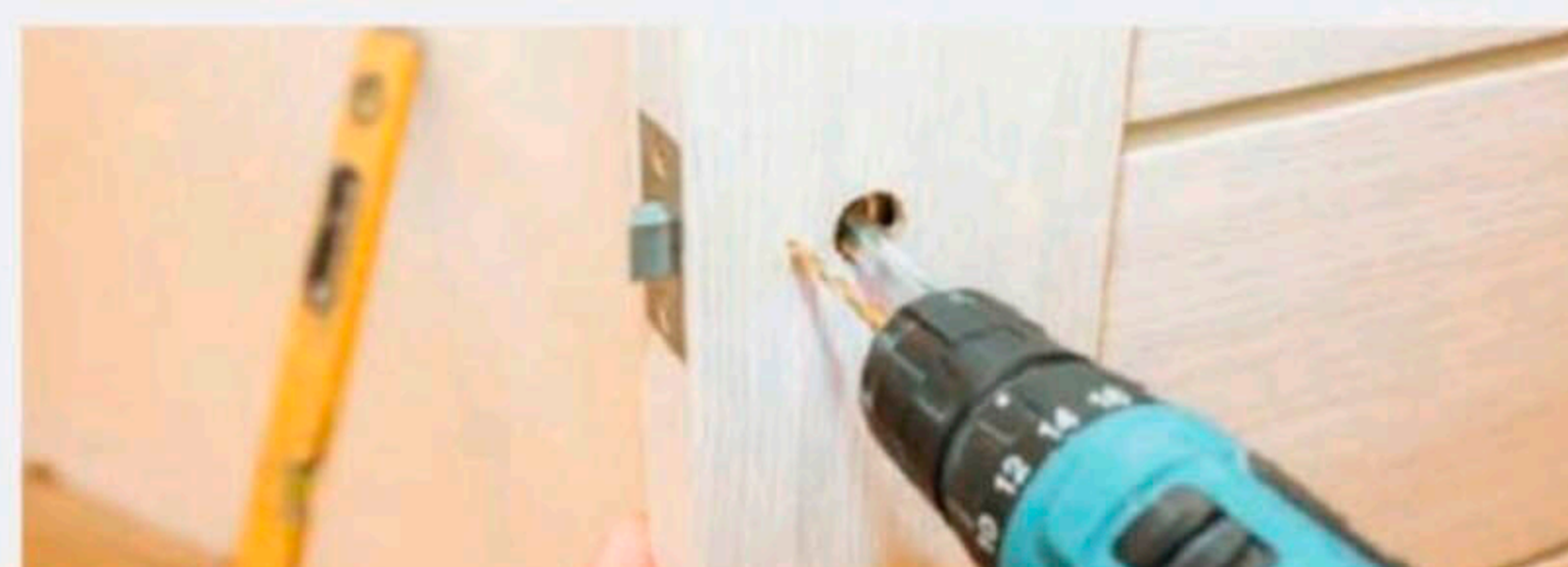
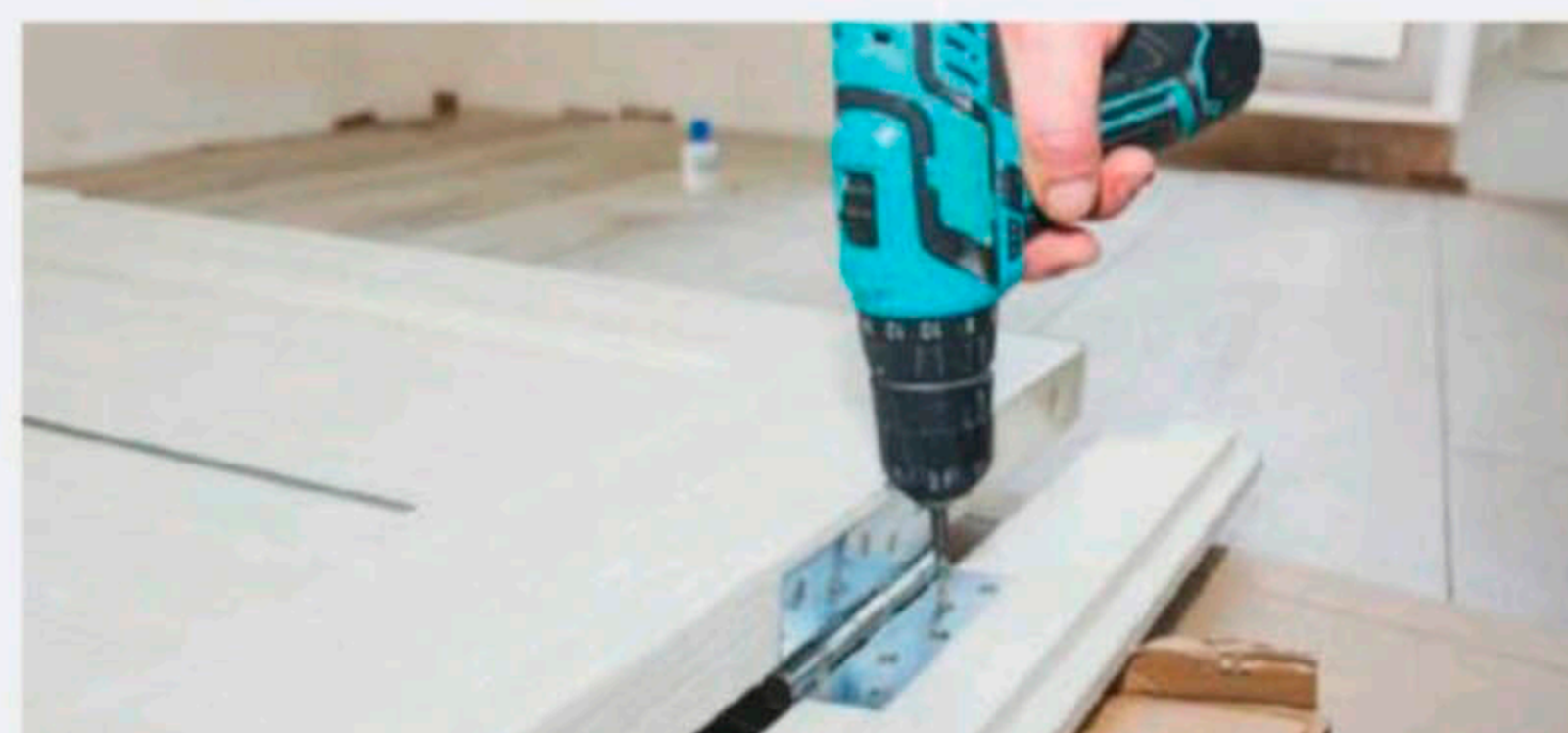
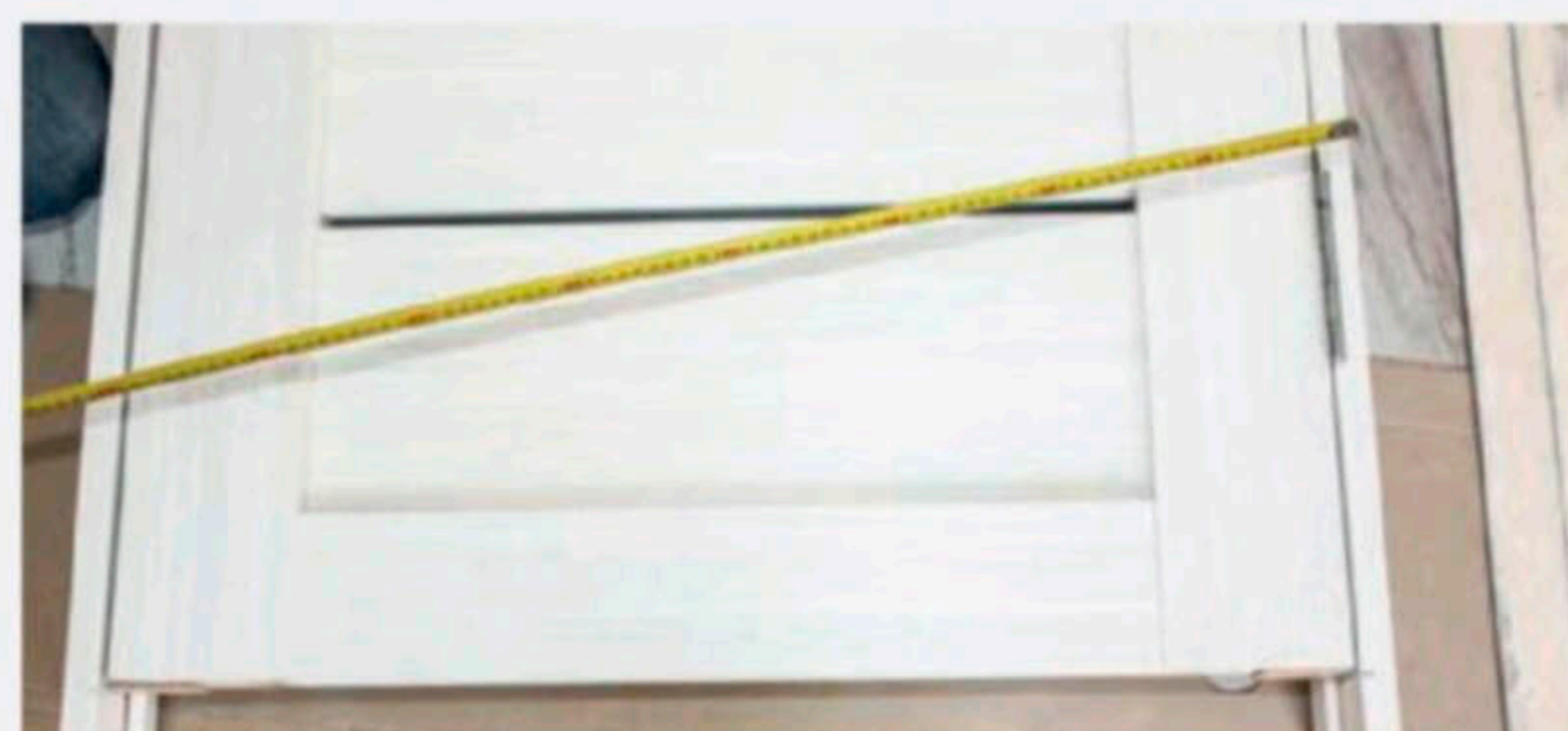
Buying a door

Measure the dimensions for your new door: If you're replacing your old front door with a pre-hung door, then measure the length, width, and depth of your current door jamb with a reliable tape measure. If you're replacing the door and are installing it in the existing door jamb, then measure the length, width, and depth of the old door.

- If you're undergoing a larger renovation and would like to replace your existing door with a door of a completely different size, you may want to find doors similar to what you want online, and see how long and wide they are. Then, use a tape measure to compare the dimensions of the potential new doors with your existing door. This will help you a better understand the dimensions and scale of your new door.
- Try to choose a door that matches or compliments the existing architecture of your home.

Choose if you want your door to swing open to the left or right: This is called the handedness of a door. Left-handed doors are attached to the left side of the door jamb, while right handed doors are attached to the right side of the jamb.

- To make this decision simple, choose a door with the same handedness as your old door.
- If your old door blocked traffic within the house or hit against a wall when it was open, you might want to choose a new door that swings open on the other side.



Make a metalwork
tea light candle
holder.

Step-by-step guide

Step 1: Making the candle holder bending jig

For this candle holder, we are going to be using 1/4-inch round aluminium rod. This material is readily available from the major hardware stores, or from a metal supply store, it will be much cheaper. Aluminium rod is easily bent as opposed to steel rod of the same thickness.

This candle holder has six arms so the amount of rod needed will be about ten feet at the most. It is, however, a good idea to purchase a little more material just to experiment with. Of course, you aren't restricted to the design here and can create anything you choose. The main component is the making of the bending jig.

The bending jig comprises of three bending tools,

- The candle holder ring maker – is the 25mm round block
- The candle holder support bender – two bending pins
- The upright bender slot
- Stem bending tool – 3-inch round block.

Step 2: Marking out

Begin by cutting a block of wood to about 300mm. Mark out the holes on one side for the bolts and bending pins.

Next, we need to pre-drill all the holes using a 1/16 inch drill bit, this is really just a guide for drilling the main holes. If you have access to a drill press this will make things easier, if not a cordless or power drill is fine, just try to drill straight.

Before we drill the main holes, we will recess the holes on the bottom to accommodate the bolt heads.

Using the 1-inch spade bit recess all the holes to about 15mm. Also, do the same on the top side for the two bending pins only. Next, drill all holes out to accommodate the 3/8 bolts.

LIGHT THE NIGHT



What you will need

Materials for the candleholders:

- 1/4-inch Aluminium rod – For this project we used about 3m
- Piece of timber for the base,
- Tealights, long burning

Materials for the candlemaker bending jig:

- Piece of wood about 300mm long
- Piece of wood 75mm x 25mm for the discs.
- Four 3/8-inch bolts 75mm long
- One 1/4-inch bolt 75mm long

Tools required for making the jig:

- Hand saw or mitre saw
- 3-inch hole saw
- 1-inch hole saw
- 3/8" drill bit
- 1/4" drill
- 1-inch spade bit
- Multi grips or pliers

Most people use tea lights in various ways, mainly they are placed inside glass cups or another small decorative vase. This project was designed to use tea lights in a way similar to larger candle holders.

The main idea was to create a candle holder that was simple to shape and could be made out of one piece of material with no welding, soldering or gluing required. While at the same time being highly functional and looking athletically pleasing and artistic.

So, I set about designing a jig that will enable anyone to create all manner of tealight candle holders by simply using lengths of quarter inch aluminium rod.

These tea light candle holders are simple to make once you have made the bending jig. The design can be any combination or pattern you choose as the bending tool allows any type of bend to be made, just let your creative juices run riot.

Step 3: Cutting the bending slot

Mark the position of the slot in the centre of your jig. Make the slot about 50mm deep. At the inside end of the slot drill a 115mm hole, this makes removal of the cut-out easy. Now cut the slot using a hand saw or if you have one a mitre saw. We need the slot to be wide enough to accommodate two widths of 1/4-inch aluminium, or a shade more than 15mm.

Step 4: Cutting the round discs

Cut the discs using a drill press if you have access to one, but if not a power drill is fine. Make sure the work is well held either in a vice or clamped to your workbench, to prevent the work from spinning. Cut the 3-inch and one-inch discs from the 3/4-inch wood.

You can if you don't have a 3-inch hole saw, use a jigsaw or scroll saw to cut the bigger disc.

Drill out the centre of the discs to 10mm. Hold the disc by clamping or using a pair of multi-grip pliers if you are using a drill press, otherwise, you can hold the work in a vice while drilling. Safety first!

Step 5: Cut the discs

Assemble the bender as shown. Bolt the two discs one on top of each other. Bolt the two bending pins using the four nuts and washers. Here you will need a socket wrench to tighten these as they need to be nice and tight to prevent movement. Using a hacksaw, mark, and cut the heads off the bolts at about

20mm above the jig base. Round of any sharp edges using a file.

Step 6: Mark bending pin holes and drill

Mark out the holes for the other two pins. The one through the round disc can be up to 10mm. The other is 6mm and is a removable pin. For the pin on the round disc, an easy way is to simply hold a piece of your 6mm round against the small block and run the drill down beside it.

Cut the thread of the 1/4-inch bolt so you end up with a pin about 50mm long. This will be the removable pin used in two locations.

Step 7: Bend the candle holder ring

Cut a length of 1/4-inch aluminium rod to 500mm long, round of the ends using a file. Hold the rod against the pin and bend around the top former to the finished shape as shown. In total it is about one and a half turns.

At this point, it's a good idea to check to see that a tea light candle fits snugly into the ring. You don't want it to lose but just snug enough so that you can easily push the tea light into the ring. If the ring needs small adjustments, we can use the two bending pins on the jig to make the ring slightly bigger or smaller.

Step 8: Bend the base and stemring

With the top made we can proceed to the final two bends required to make the

head stand up. The first bend uses the two bending pins and is required to hold the bottom of the candle. Use pliers or multi grips to hold the ring from slipping and bend the stem inwards to about centre.

Lastly, we utilise the slot bender, this is to straighten the candle holder top with the stem. Place the ring into the centre of the slot with the double part of the ring down into the slot. Insert the removable 1/4-inch pin into the hole and simply bend around so it's 90 degrees to the top.

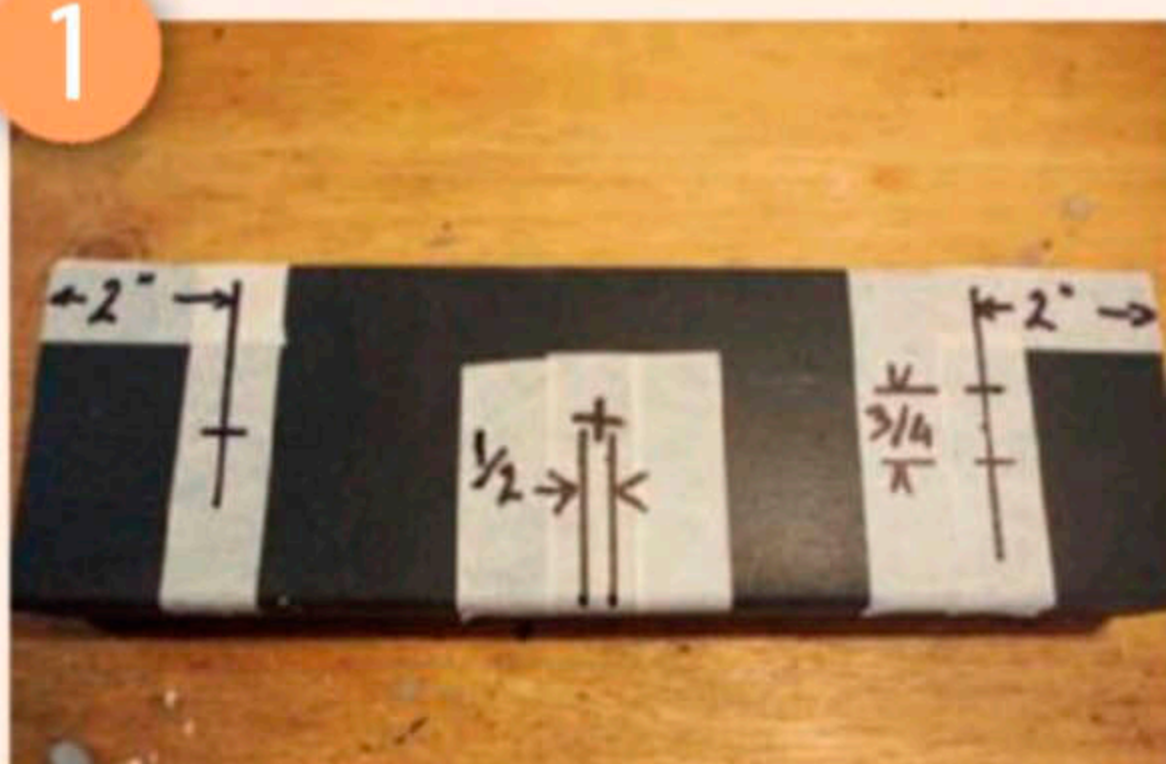
You now have the basic building block to whatever style candle holder you would like to make. The bending tool can shape and bend any angle, using the two discs, the end pins, and the slot bender.

Step 9: Making the base and finishing

You can either paint the candle holder stems or leave them natural. Painting them black gives the wrought iron look. Aluminium requires an etch primer before putting on top coats. Etch primers and black spray paint finishes are readily available at hardware stores.

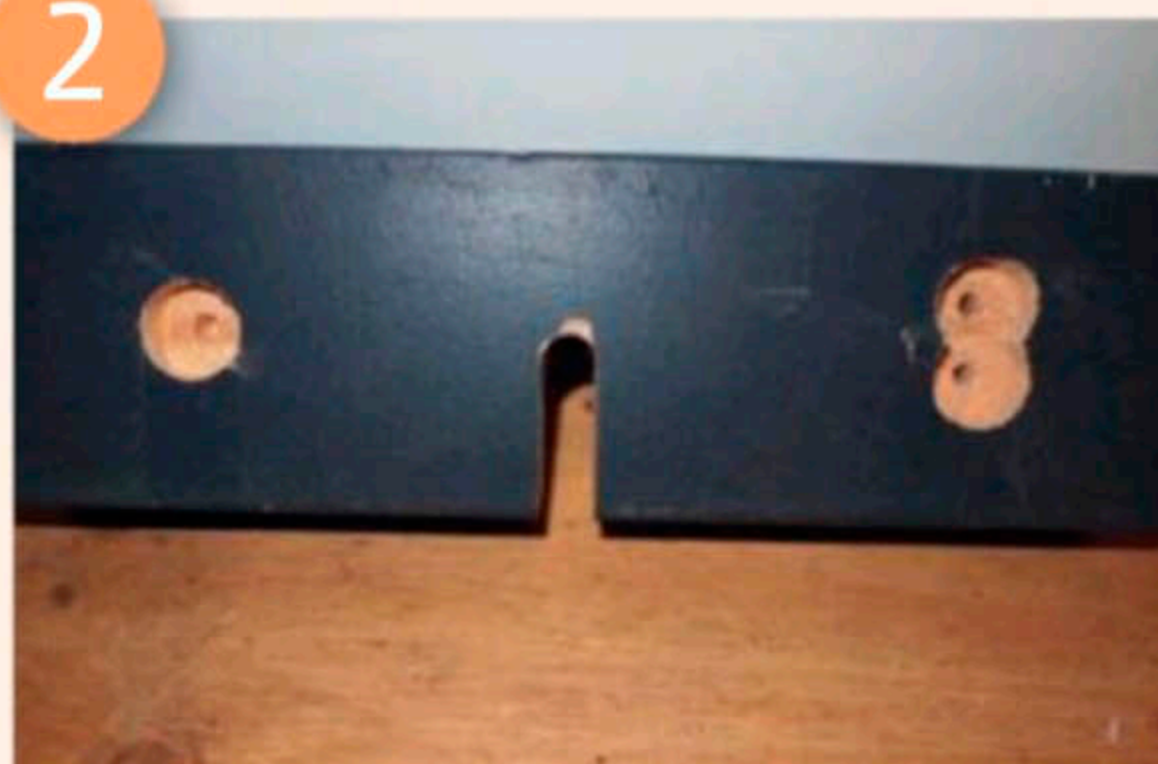
For this project, we used a piece of wood 175mm long with the ends cut halfway at a 45-degree angle. Drill the 1/4-inch holes to suit the number of stems you are using, in this case, it's six. Give the timber base a coat of varnish, insert the stems to your liking, hold in place using a hot glue gun or similar glue and you are good to go.

1



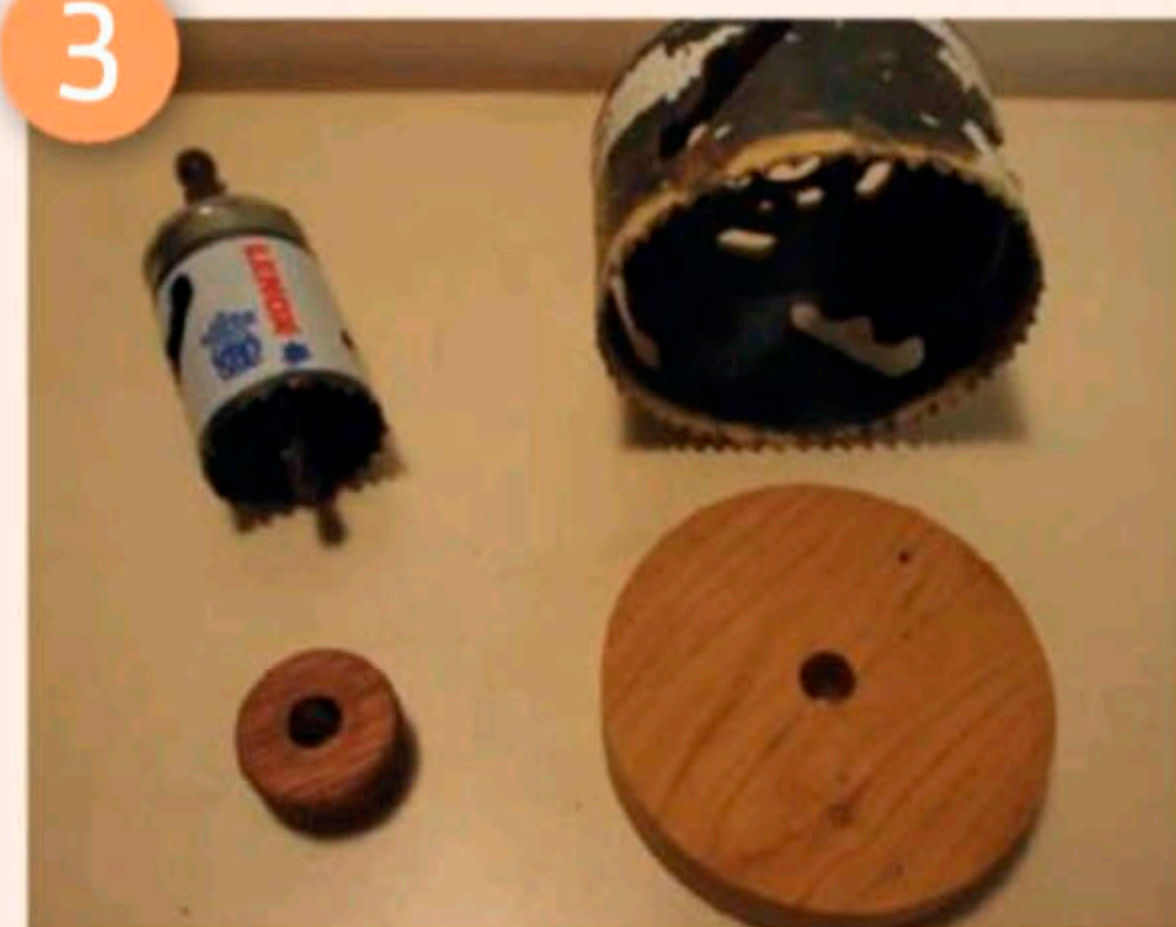
I set about designing a jig that will enable anyone to create all manner of tealight candle holders

2



Before we drill the main holes we will recess the holes on the bottom to accommodate the bolt heads

3



Cut the discs

4



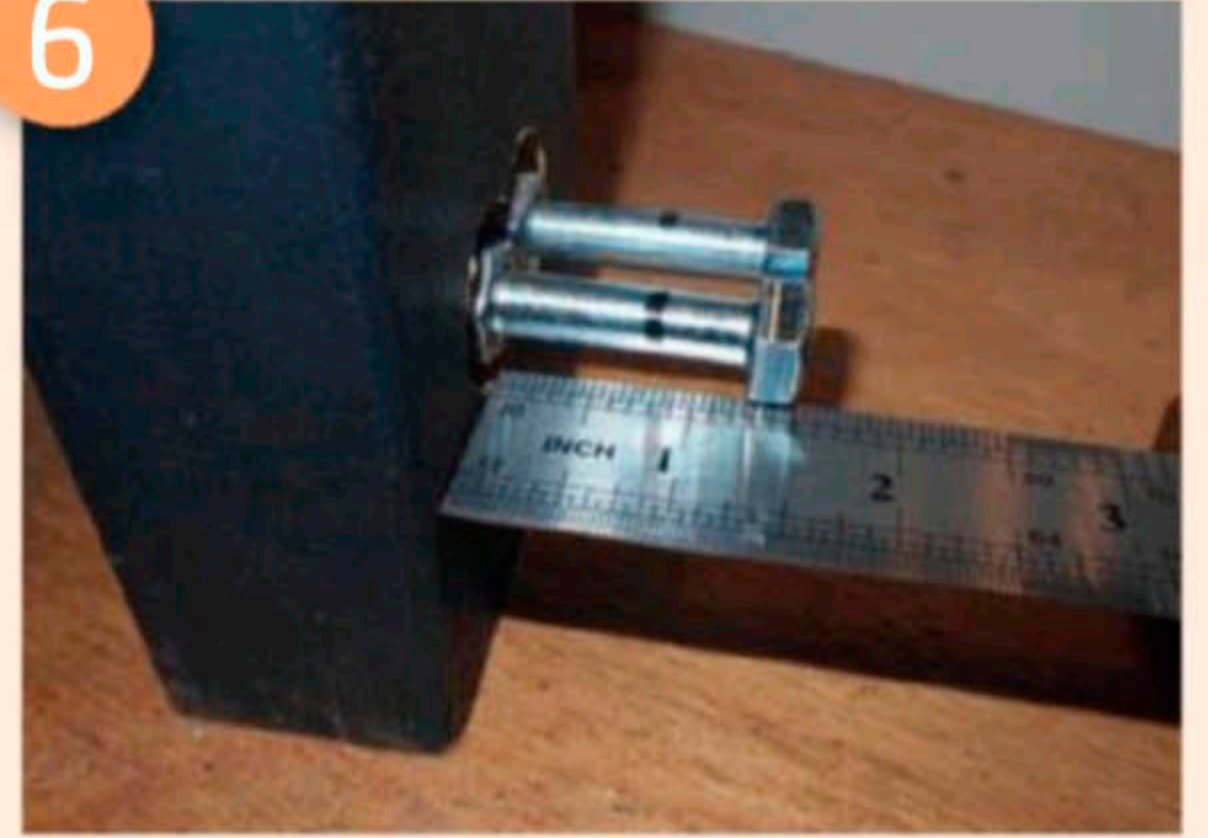
Assemble the bending tool

5



Bolt the two bending pins using the four nuts and washers

6



Using a hacksaw, mark, and cut the heads off the bolts at about 20mm above the jig base

7



Cut the thread of the 1/4-inch bolt so you end up with a pin about 50mm long

8



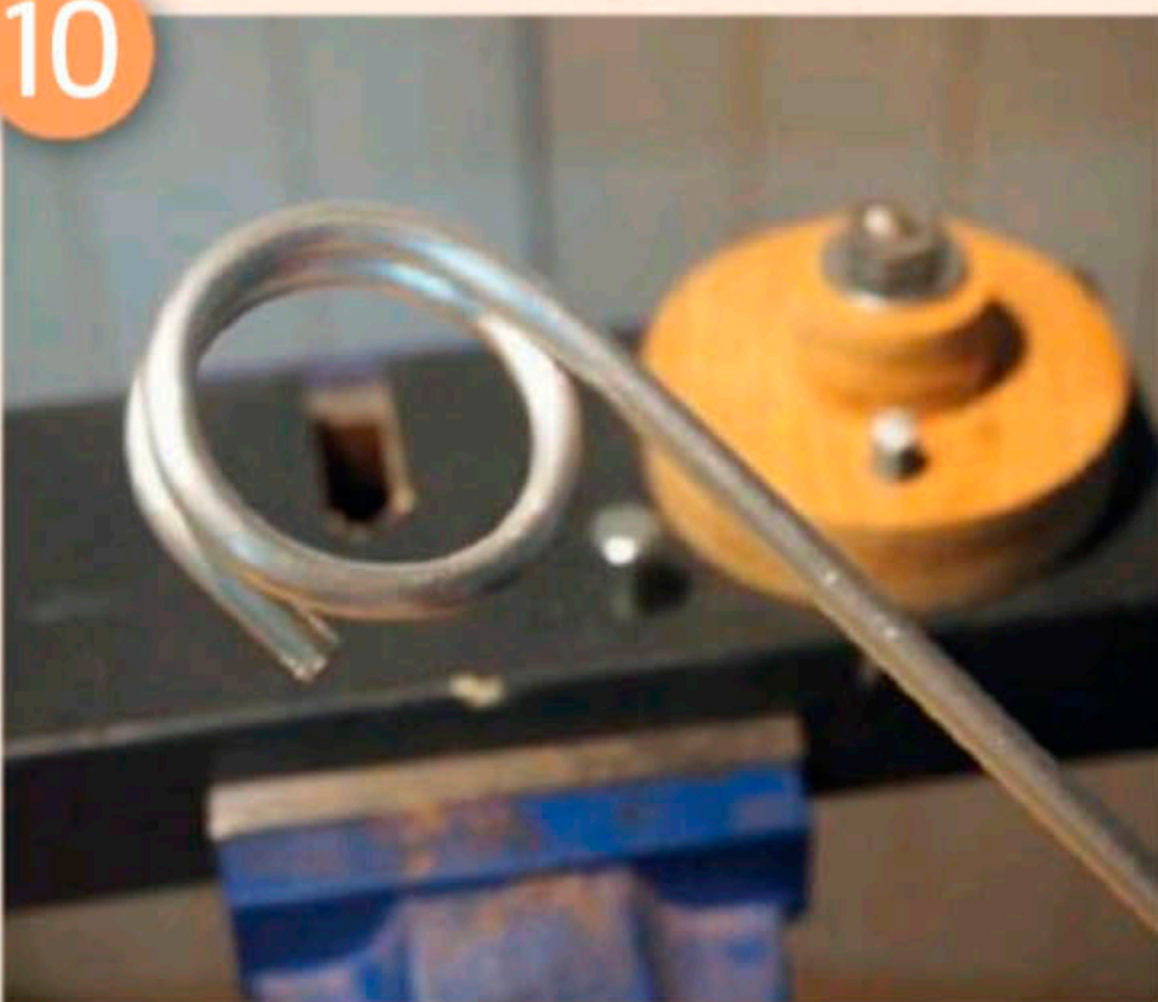
Cut a length of 1/4-inch aluminium rod to 500mm long, round off the ends using a file

9



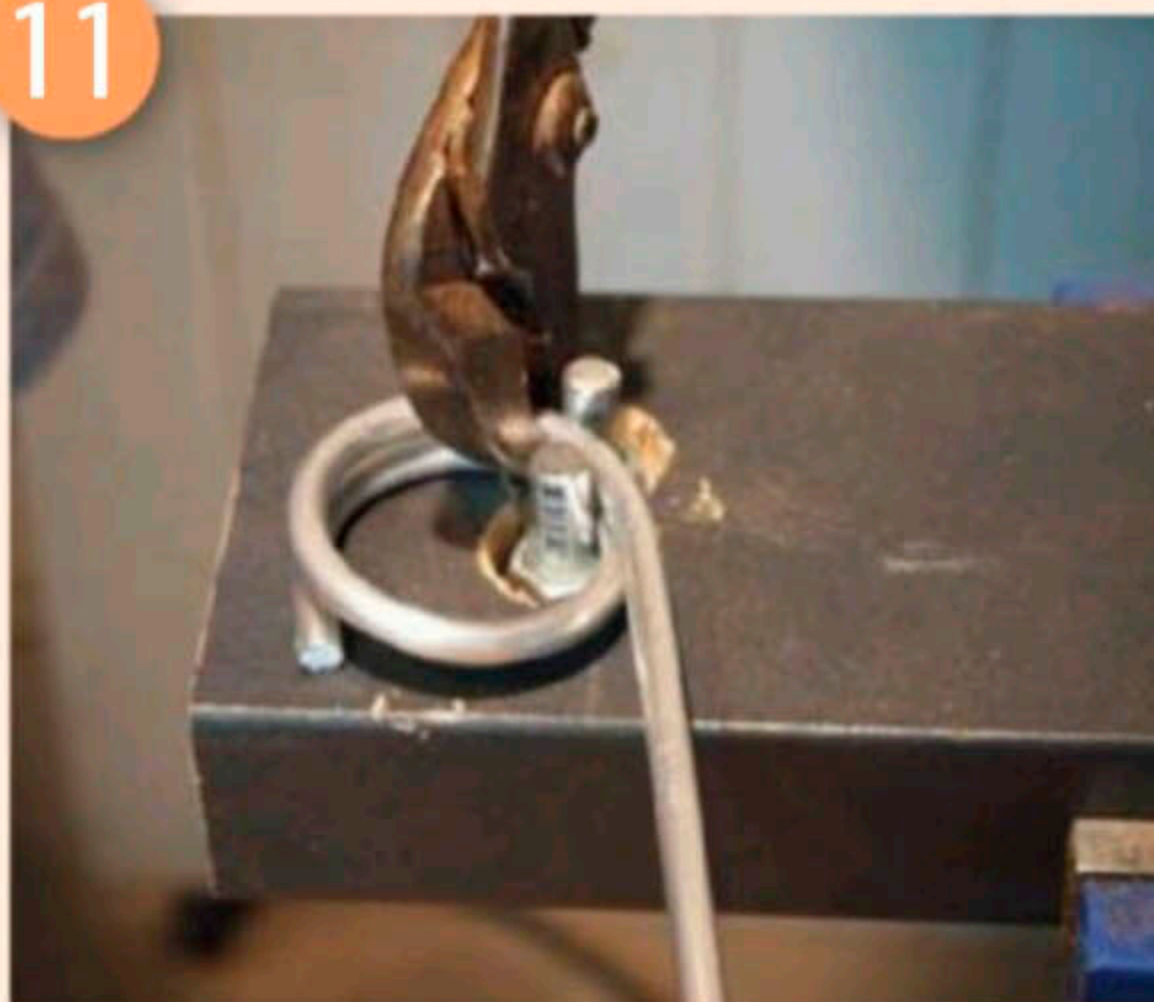
Hold the rod against the pin and bend around the top former to the finished shape as shown

10



In total it is about one and a half turns

11



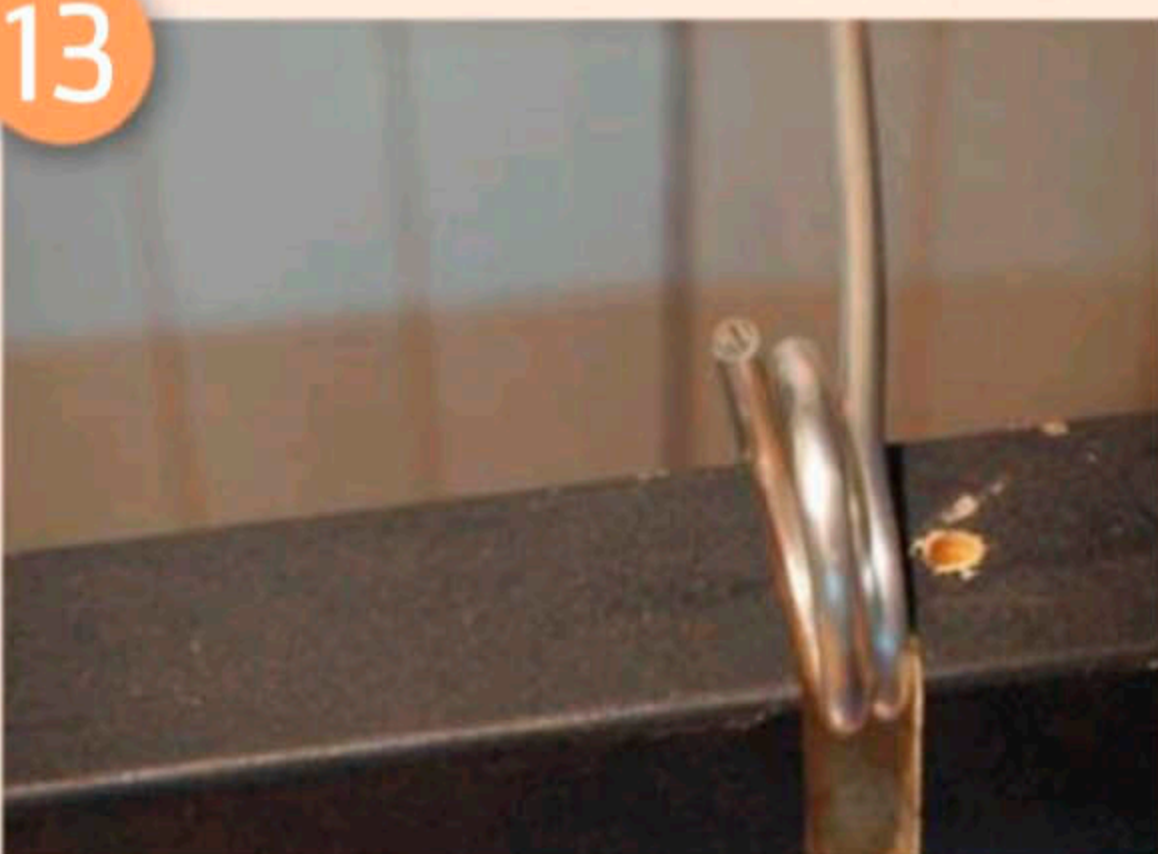
Remove from the jig

12



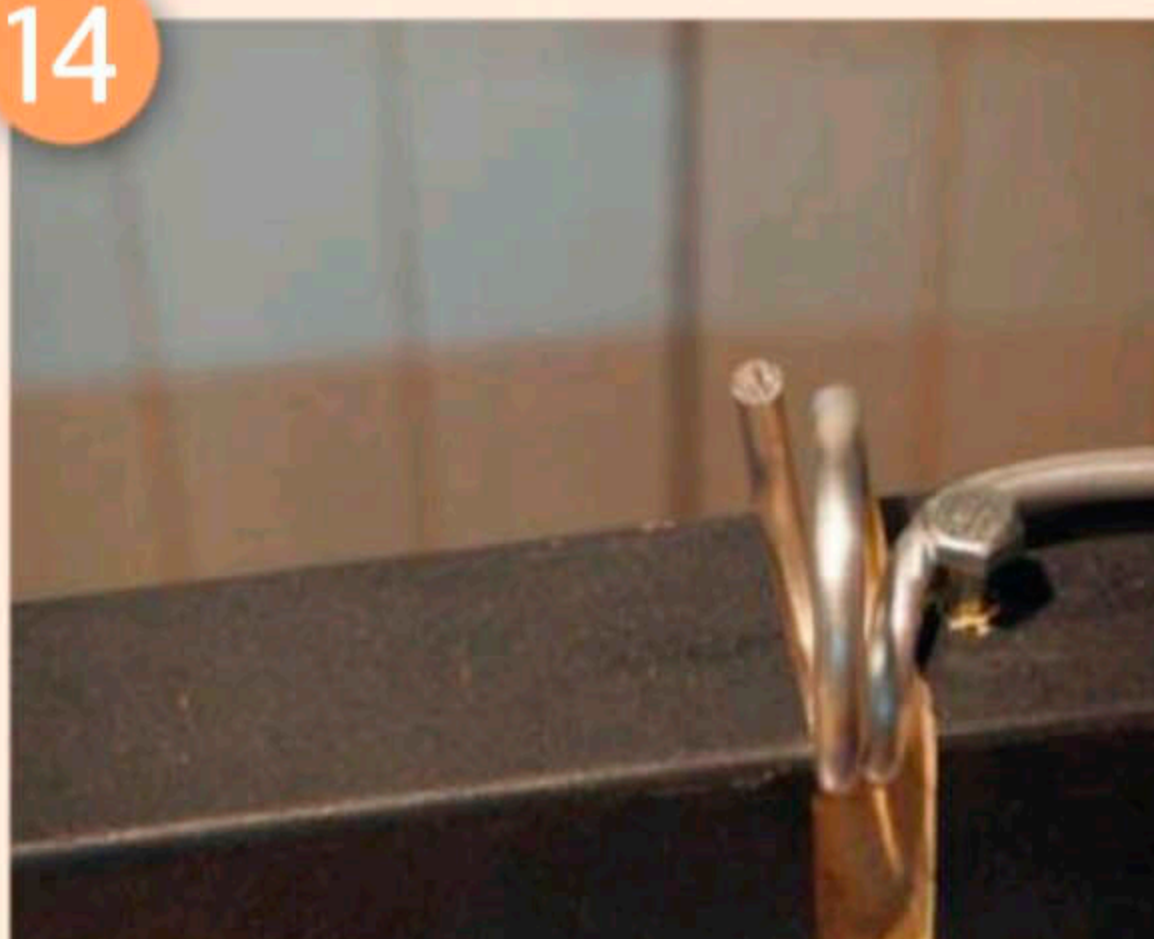
At this point, it's a good idea to check to see that a tea light candle fits snugly into the ring

13



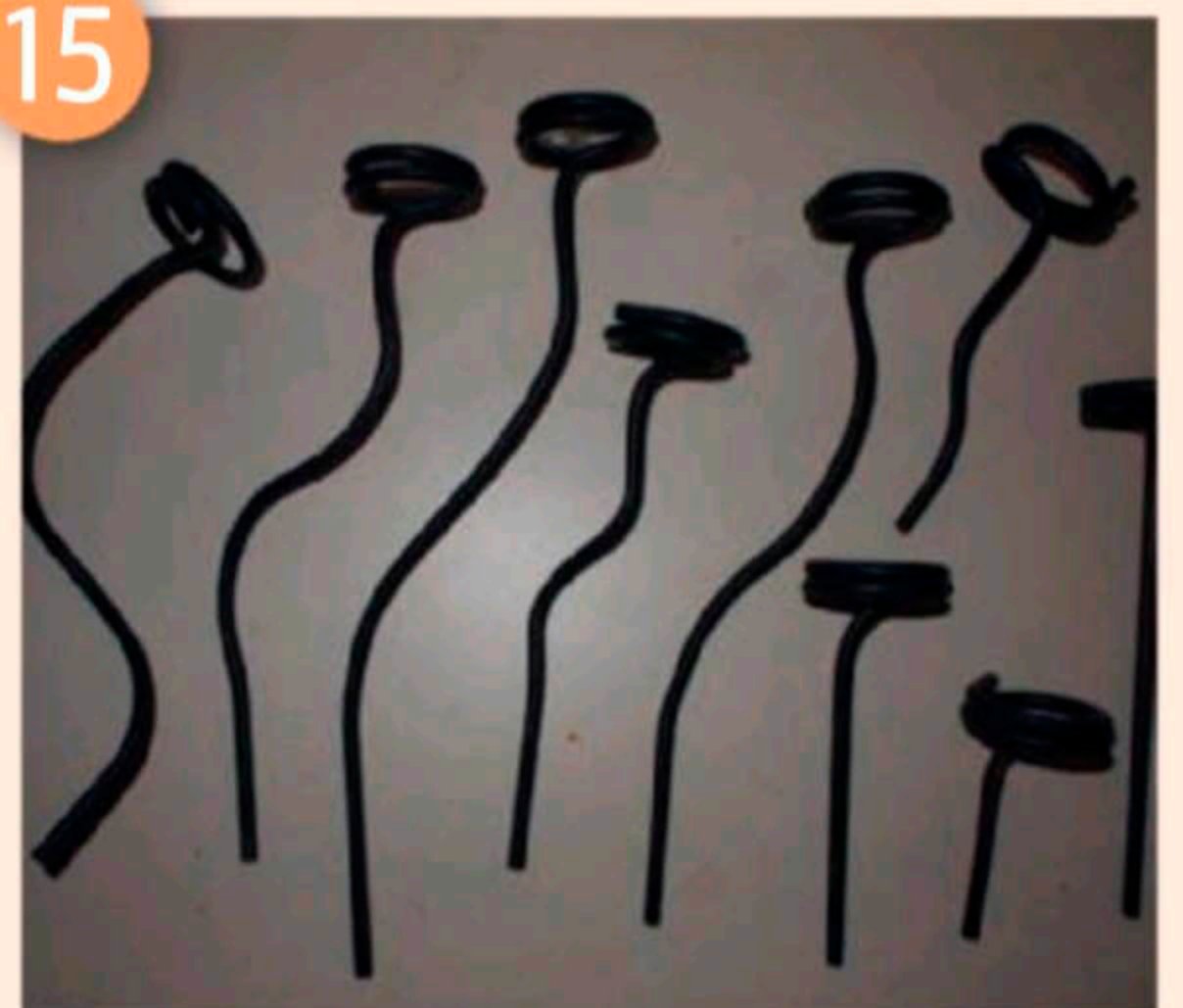
With the top made we can proceed to the final two bends required to make the head stand up

14



Utilise the slot bender, this is to straighten the candle holder top with the stem

15



All the 'stems' before assembly

BRIGHT IDEAS

Readers share their time-saving, space-saving or innovative ideas



Kitchen accessory makes for a quick finish mixer

After my wife's kitchen mixer ran its course and was too expensive to repair, I saved one of the beaters. Now I use it chucked in my drill to mix all of my gel stains, plus water and oil-based paints. It really saves me lots of time and effort over mixing them by hand with a stir stick — just make sure you don't remove the mixer while the motor is still running!

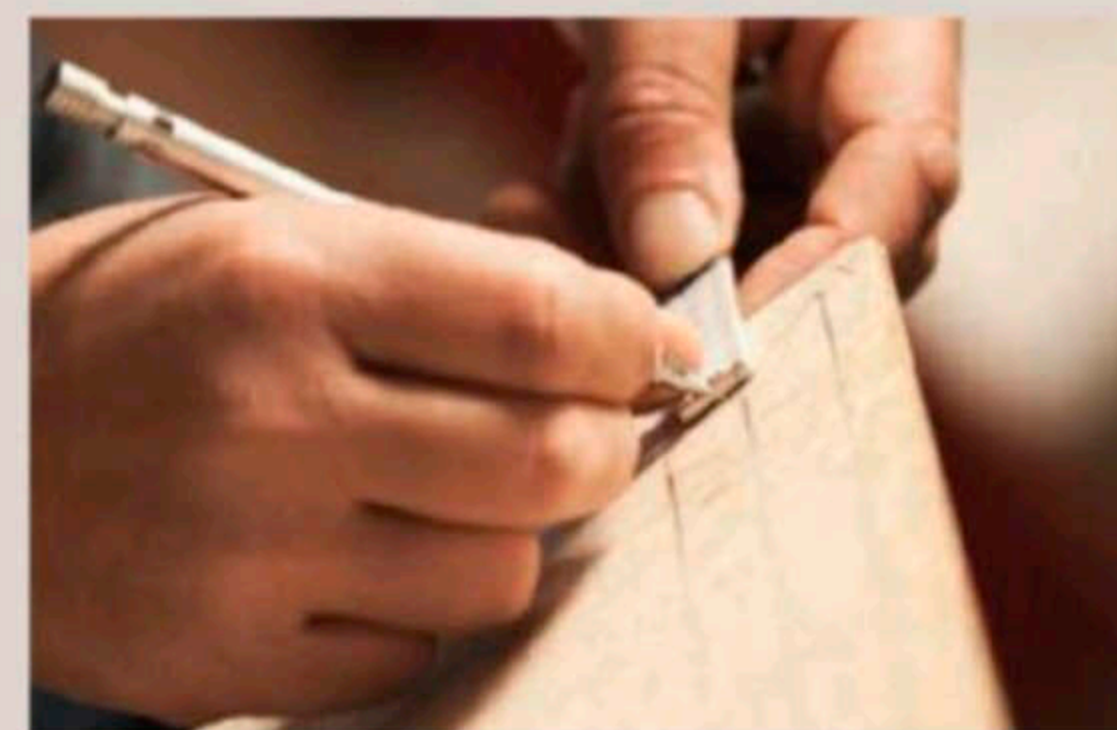
Ernest Guerra, Roodepoort



Always losing your pencils?

I tend to lose pencils in my workshop as fast as I can pick them up. I bought a couple dozen 0.9 mm automatic lead pencils along with a few containers of replacement leads. I keep most of them in an old cigar box on my workbench and place a few in key areas around the shop. I find that 0.9mm holds up better for woodworking than the more common .5mm found in stores. If you want to mark a finer line just swipe the tip over a piece of sandpaper a couple times. Having a couple dozen available, I just keep grabbing them as needed out of the box. Eventually I have enough lying around that usually one is at hand. When I clean up, most of them show up again and get dumped back in the box or put back in their 'areas.

Bill Koski, by email



Keep your collets and bits clean

I make it a point to keep my router bits and collets clean so they work more efficiently and in order to prevent slipping. I've found that brass bristle brushes made for cleaning hand gun bores also work very well for scrubbing out collets and cleaning pitch from router bits. Their cylindrical shape allows easy access, and the brass doesn't scratch steel or carbide surfaces. They're readily available and come in various diameters. Give them a try.

Charles James, Umhlanga



WIN!

Tork Craft Saw Horse set

Portable Saw Horse, Load Capacity 500Kg per Saw Horse, Working Height 730mm
Material : Steel - Body, Brackets and Legs, Rubber - Foot Pad, Plastic - Handle.

Send your bright ideas to:

editorial@homehandyman.co.za with 'Bright Ideas' in the subject line or PO Box 24938, Gezina, 0031
Please include your name, physical address and a contact number (office hours). You may also include a photograph (300kb) of your bright idea (where applicable).

Please note: Winners' prizes may take up to six weeks for delivery and are sent by the prize sponsor. Prizes are not exchangeable.

Vermont Sales (Pty) Ltd
SOUTH AFRICA'S #1 SUPPLIER
of power tool accessories



VALUED AT R1 095

Congratulations to Ernest Guerra who wins a Tork Craft 20-volt cordless Angle Grinder.



This is a really great and educational little project to do with kids. It's very easy and safe to do and they can see the results of their 'hard work' day by day. And it takes only 4 to 5 days before they can eat their homegrown sprouts.

This is also a great activity to keep kids busy at children's parties; the kids will have a great time and something great to take home. It's a great way for them to discover something about plants and it's healthy too!



What you will need

You need very little for this project:

- Eggs
- Some paper towel or cotton wool
- Cress seeds
- A black marker pen

When you work with kids, it might be a good idea to boil the egg(s) in advance, so they have time to cool down. Also make sure to have some spare ones

Step-by-step guide

Step 1: Let the kids gently crack open the top end of the egg and eat them or spoon them empty. Make sure that everything inside is gone or they will start to smell after a few days. Giving them a quick wash before continuing might be a good idea.

Step 2: When all the eggs are empty, let them draw a nice or funny face on the egg.

Step 3: Then let them fill the eggshell with paper towel or cotton wool. They should be filled about three quarters.

Step 4: Give the kids some seeds and let them put those on top of the paper or cotton wool. Make sure that they are somewhat evenly spread.

Step 5: When all is done, they can water the seeds. Finally, they should put Mister Sprout in a sunny spot to let his 'hair' grow.

Instead of Mister Sprout, you can also do Mister Grass. He is not edible, but the fun thing is that his hair can be cut in different styles and will grow back. Making him is entirely the same as Mister Sprout, the only difference is that you use grass seeds instead of cress.

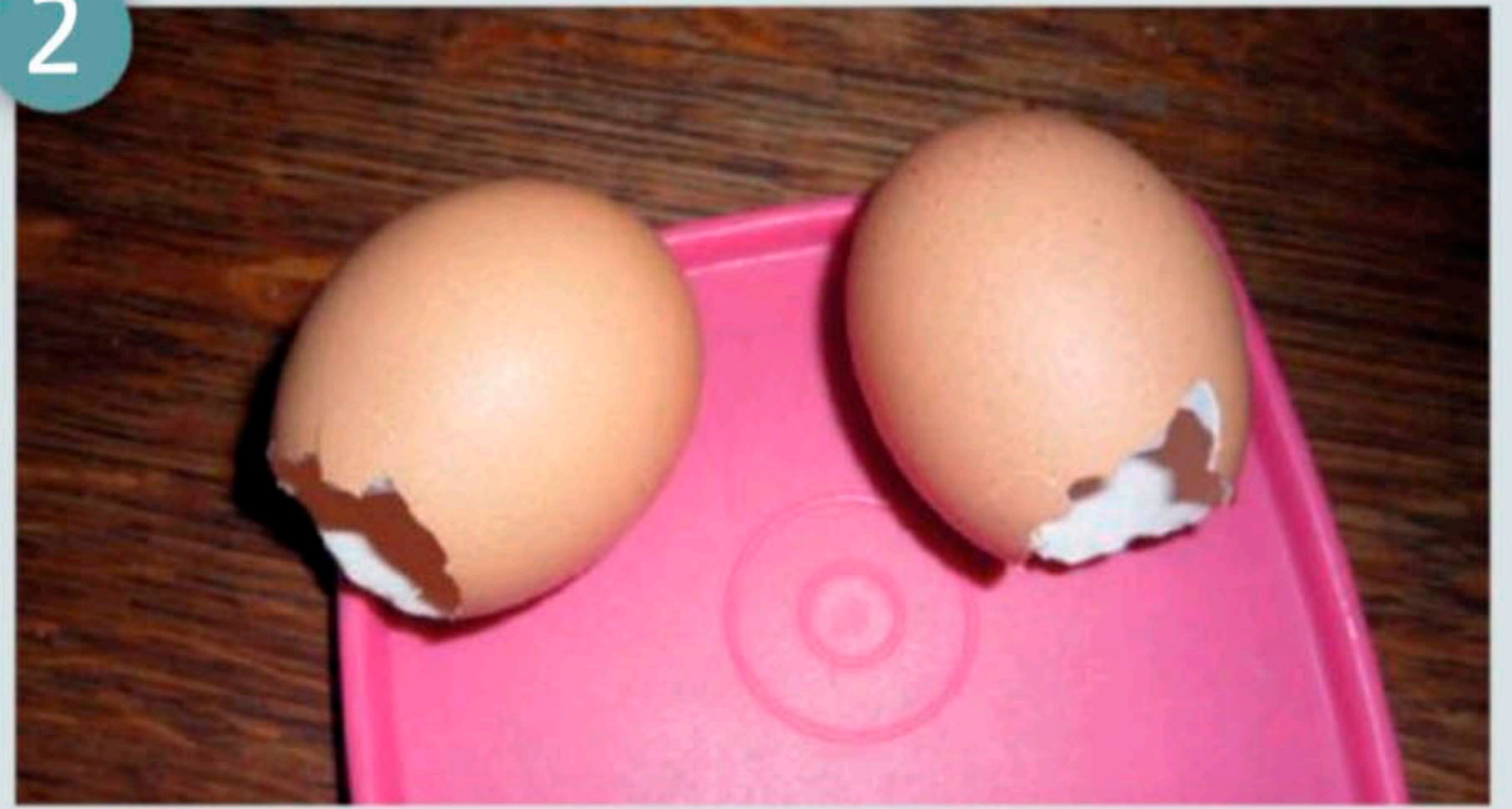
HELLO MR. SPROUT!

1



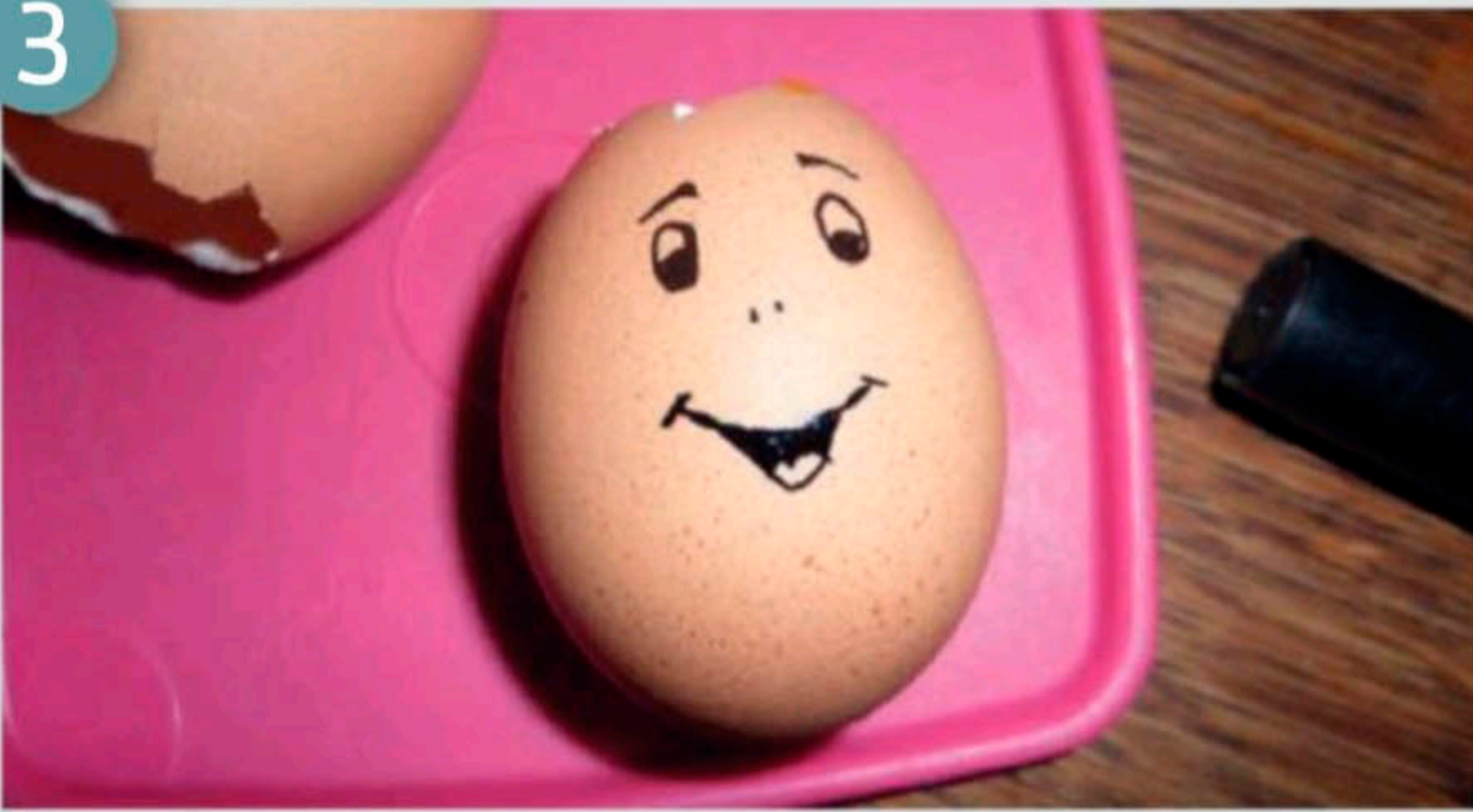
Gather your supplies

2



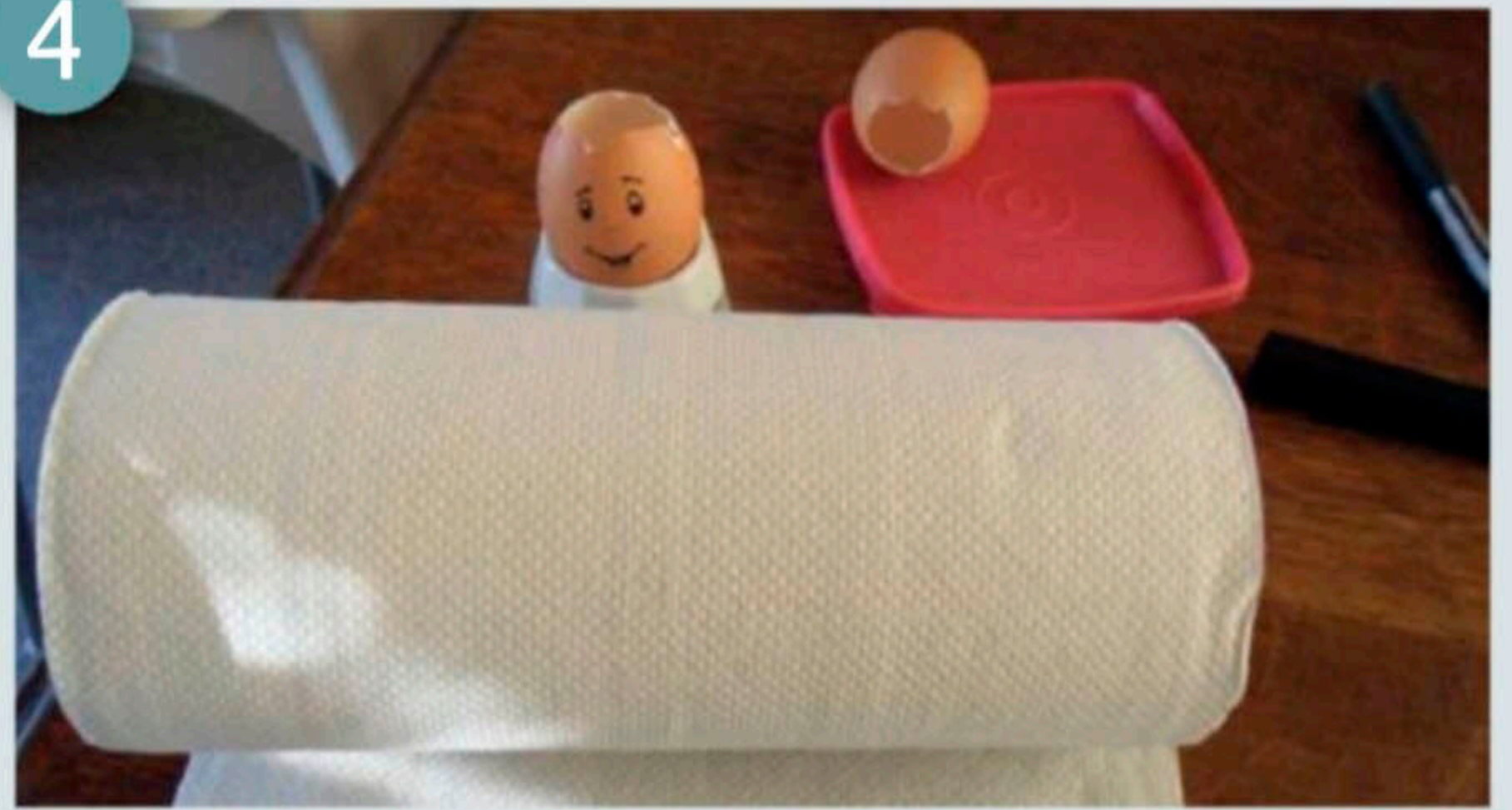
Crack the eggs

3



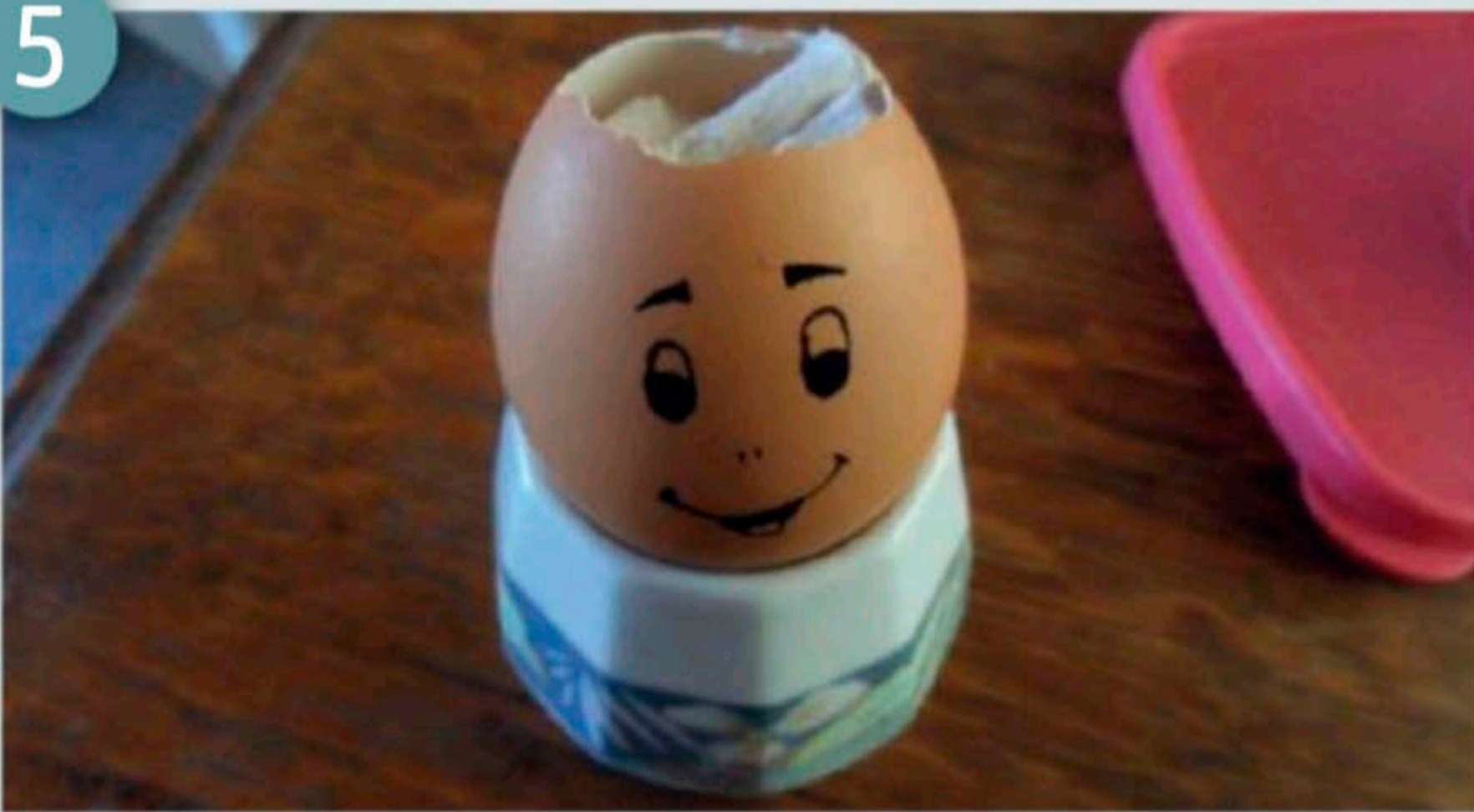
Decorate them if you want

4



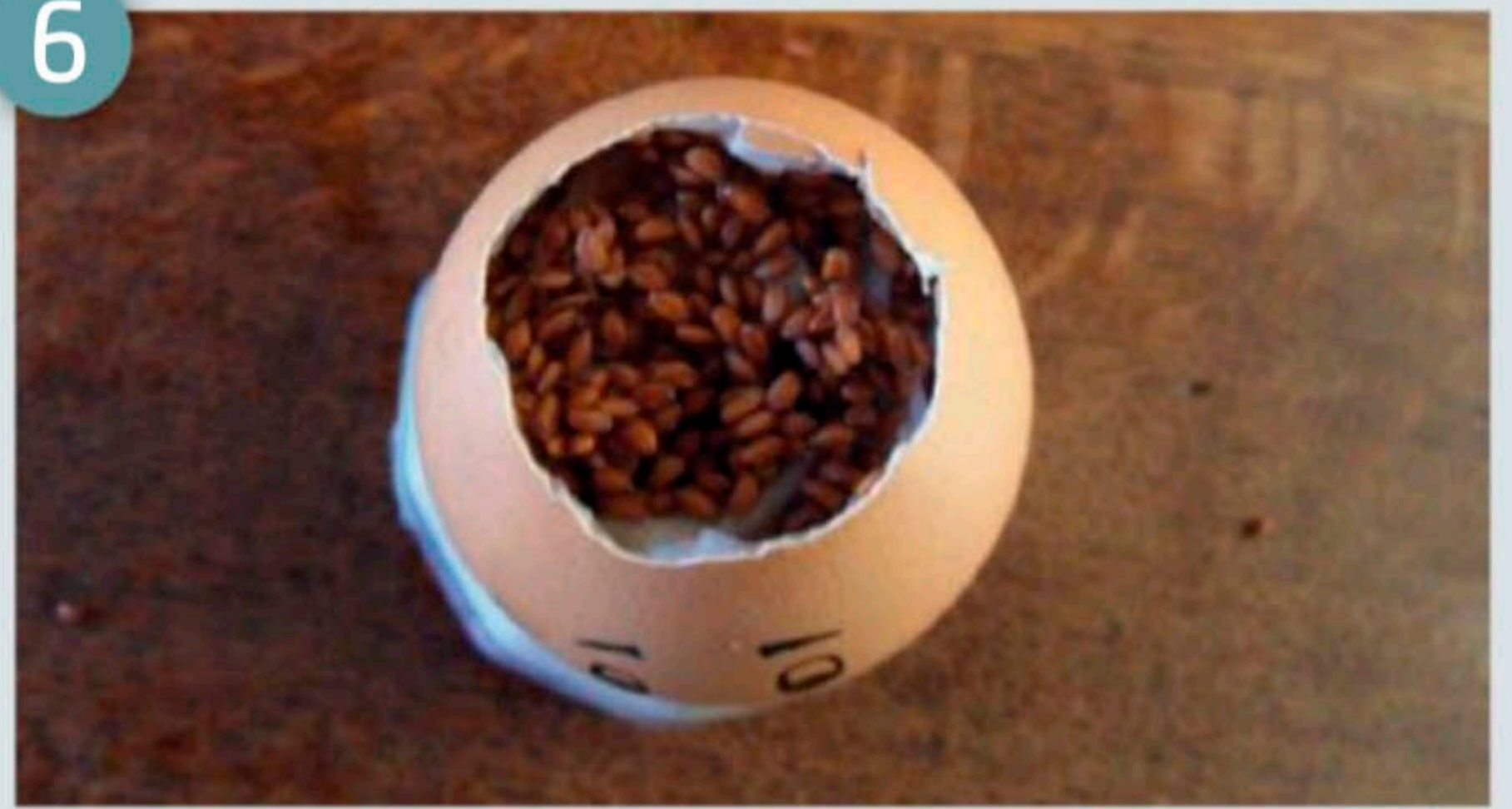
Tear off a piece of paper towel...

5



Fold it up and place it in the egg

6



Add the seeds

7



Hello Mr. Sprout!

8



Place in a sunny spot

ASK OUR EXPERTS

Our panel of experts answer your questions on DIY problems

Do I have efflorescence on my walls?

So far I have tried a vinegar and water solution. I have also tried a chemical solution called salt away. I have used a jetwash afterward.

What I have tried has failed to remove it. Do I have efflorescence on my walls? If I do how do I get rid of it?

Mark Leonard, KwaZulu-Natal

Ed replies: It looks like water is getting into the wall above the line of salts; this water is then permeating down to whatever the line of header bricks is laid on (presumably an impervious cement mortar) then coming to the surface carrying salts with it. You could try cleaning it off with brick acid, but ultimately it will eventually come back.



Big panel joint: should I use dowels or biscuits?

Dowel pins or biscuits? Which type of these would be better to join two large planks? They will be used for a tabletop for a TV stand.

Gilbert Hernandez, by email

Ed replies: Thank you for your question, Gilbert. We approached two seasoned woodworkers, and these were their opinions:

Answer 1: Without a question, if you have the ability to not use dowel pins, don't. They are nothing but long-term

trouble. I'll make my answer brief and not go into the reasons why, but dowels are just not a very effective jointing tool. Biscuits are great. Splines are great. A simple butt joint can be very good. Dowels? Last choice for me, always.

Answer 2: Either biscuits or dowels could work fine for your tabletop, Gilbert. But really, you don't need either one to reinforce this glue joint. Wood glue will be plenty strong all on its own. You could use biscuits or dowels to help align the boards, but

at the length for a television, they'll be pretty easy to line up anyway. I'd skip the extra work here and just edge-join those planks first, to make sure they meet in a nice tight seam. Then, glue them together with wood glue. Spread glue liberally on both edges (it will soak into the wood pretty quickly), slide the boards back and forth against one another to wet the joint thoroughly, then apply about six clamps along the length. You'll have an unbreakable panel joint when it dries. I promise.



A digital subscription to *The Home Handyman* magazine

Receive *The Home Handyman* magazine free for a year!

Send us your DIY queries and you could be a winner!

Send your queries to:

***The Home Handyman* DIY Queries:** editorial@homehandyman.co.za or
P.O. Box 24938, Gezina, 0031

Please include your name, email address and contact number (office hours)

Please note: Queries will only be answered in the magazine. Prizes are not exchangeable.



Our winning query comes from Ruben Knoetze who wins a digital subscription to *The Home Handyman* magazine for a year.

TLC of wooden patio deck

WINNER

My wooden patio deck is in serious need of TLC. I thought to tackle this task during the dry winter months in Johannesburg. The current wood sealer has started to flake and I suspect the sealer was painted on by the previous owners.

Please may you assist with advice on preparing and restoring my wooden deck?

Ruben Knoetze, by email

Ed replies: Thank you Ruben – we hope our advice will help you restore your deck to its former glory.

First start by inspecting your deck. Break off any large splinters. Then reset any protruding nail heads or remove them and secure the boards with deck screws instead. If you've previously applied a solid stain or clear sealer and then covered areas of the deck with planters or furniture, those sun-shielded areas must be sanded. Use 80-grit sandpaper to remove the gloss and rough up the surface in those areas.

Next, dilute a deck cleaning product, apply it, and let it soak in for the recommended time. Then scrub the entire deck using a stiff scrub brush and extension handle. Pay extra attention to any greasy areas; get all the grease off. Then power wash the entire deck to remove ground-in dirt and loose stain. Aim the nozzle into the board gaps to clean them out too.

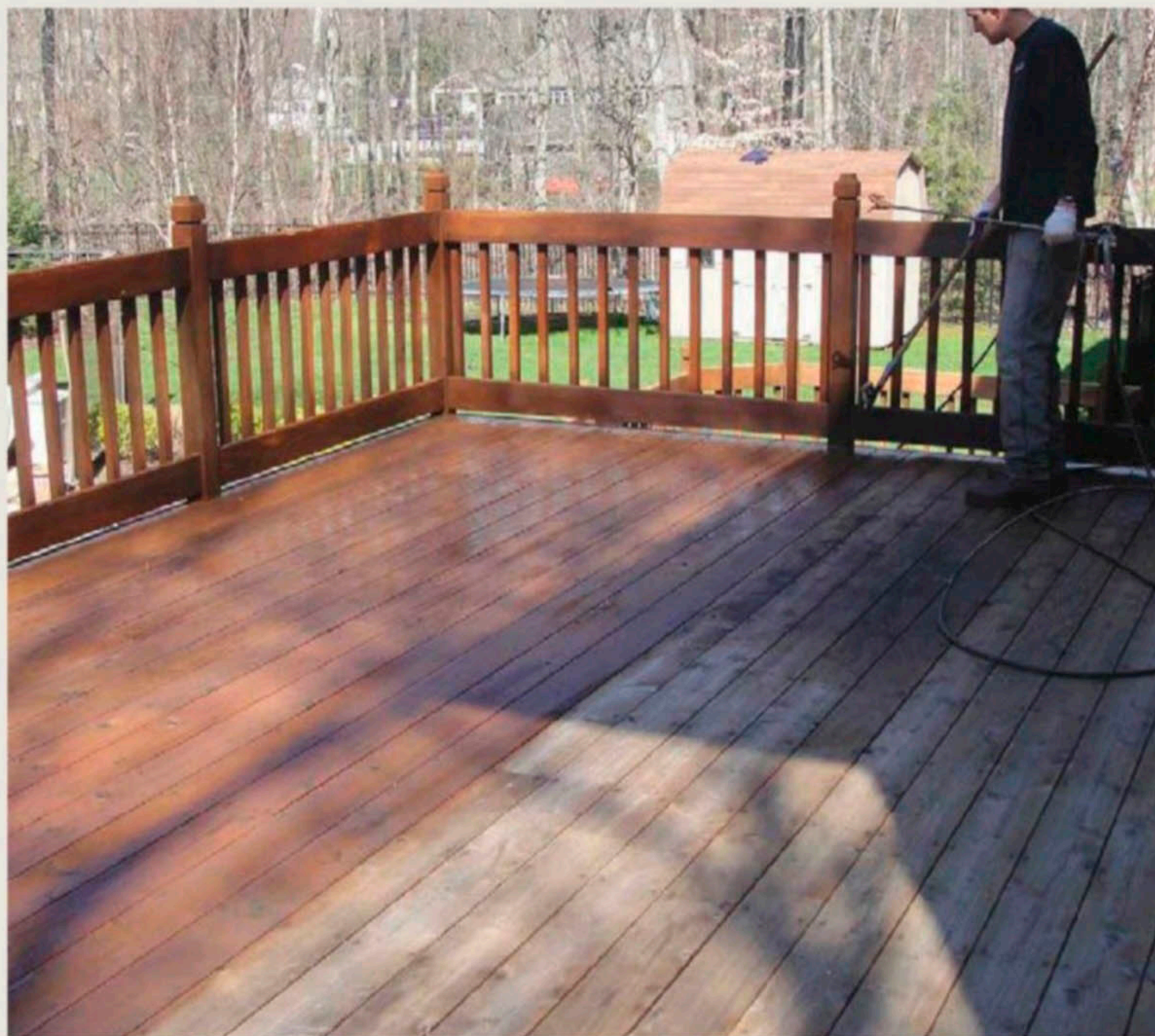
Before applying the restoration product, let the wood dry for a week and mask off all vertical surfaces

Start by filling knotholes, splinters and cracks with silicone or the restoration product you have chosen. Let it set until it's stiff. Then apply the deck coating with a roller. You'll have to reload the roller every metre or so to get the proper coating thickness. Don't try to make the product go further by working it back and forth – that will thin it and load it with air bubbles. Coat several boards at a time

Some product will fill the gaps and some will fall through and be wasted (it's part of the cost of the job). Refill

holes along the way. If you prefer a smooth finish, level the coating right away with a brush.

Clean up with soap and water and let the first coat dry for three to six hours (or until dry to the touch). You probably won't like the look of the first coat. Don't worry; it's just the primer coat. The second coat is the 'magic coat' that fills in all the gaps and provides the smooth texture you saw at the store. Apply the second coat using the same method. Then let the deck dry for two full days before walking on it.



Denis Lock provides some help for what can be one of woodworking's most frustrating tasks.

ASSEMBLY AIDS

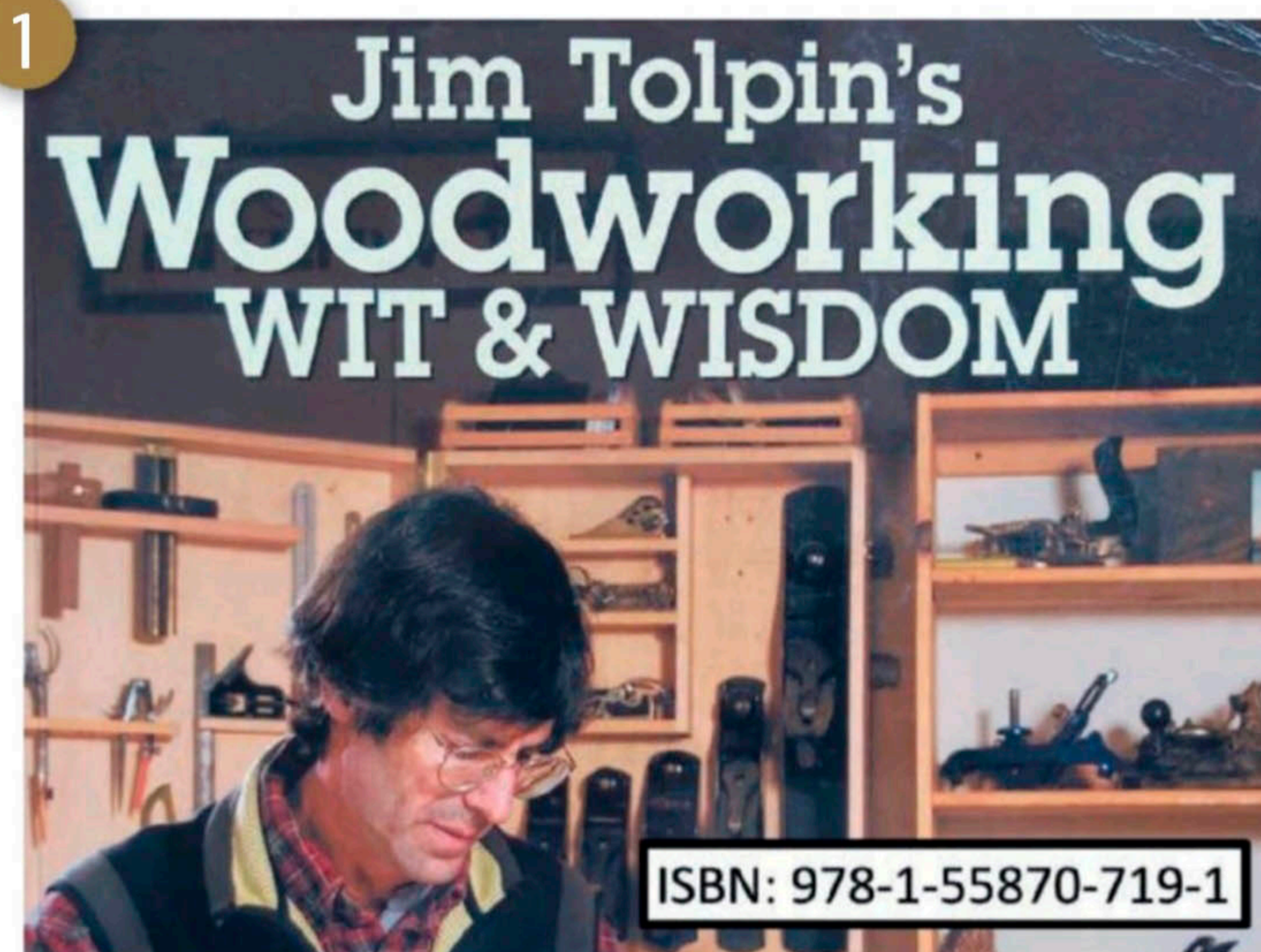
>> Denis Lock

Almost every woodworking operation I perform involves something extra: more than the piece of wood and the tool as it came out of the box. The same is true for the majority of woodworkers. Most woodworkers collectively refer to all these extras as 'jigs'. This is stretching the word jig too far. A jig is a work-holding device that holds, supports, and locates the workpiece and guides a tool to perform a specific operation. Examples of true jigs are a pocket hole jig, a dovetail jig and a mortice jig. Rather than struggling with semantics I use the collective acronym **JAG**. **J** stands for jigs; **A** stands for accessories, add-ons, aids and afterthoughts; and **G** stands for guides, gauges and gizmos.

Why do we need these extras? I like Jim Tolpin's reasoning. In his book *Woodworking Wit and Wisdom* (Photo 1) he states: "With hand tools, you are generally moving slowly enough to allow your hand-eye co-ordination skills to keep the cutter safely and accurately on track. But with the nearly effortless speed of the power tool things can get a little dicey ..." That is why I spend a fair amount of time designing and making JAGs. They improve my control of my hand-held power tool or the piece of wood I am feeding into a stationary power tool. Improved control leads to increased safety (my number one consideration). Control leads to accuracy, repeatability, quality and efficiency. Isn't this what you want from your woodwork? These compelling factors are the reason that a large aftermarket has developed for JAGs: for both hand-held and stationary power tools. I maintain that many of these commercial JAGs are unnecessarily complex and thus unnecessarily expensive. I urge my students to design and make their own JAGs. A number of *The Home Handyman* issues have examples of JAGs I have designed and built.

I have simplified the jigs-accessories-guides terminology by introducing the acronym JAG. I now want to complicate it by dividing JAGs into three categories: machining JAGs, assembly JAGs and finishing JAGs. I have written quite a lot about machining JAGs. In this article I will introduce a few assembly JAGs and one finishing JAG. The assembly stage can be the most frustrating part of a woodworking project. Glue is slippery and screws sometimes wander. Well machined components end up slightly out of position (sometimes leaving an ugly gap) and slightly out of square. These problems can be compounded at later assembly stages: try fitting out-of-square drawers into an out-of-square carcass. Woodworking adhesives have a limited open time and add extra stress to the assembly. Assembly JAGs improve the accuracy, decrease the time taken for an assembly step and improve repeatability. They also reduce the number of blue words accompanying the assembly.

The first assembly JAG was used when I made a set of patio chairs for my son's new home (see Photo 2). The components are shown in Photo 3. The chair back is made from two side pieces, eight slats and thirty two dowels. That is a lot of things to glue in one go. The assembly JAG for the chair back is shown in Photo 4. It consists of: **A** – a 16mm chipboard base; and **B** - a pair of mirror image cradles. The cradles, also made from 16mm chipboard, consist of two parts. Part 1 is a simple rectangle. Part 2 matches the curve on the back of the side piece. The two parts are held together by a few 25mm chipboard screws. As the side pieces were formed by pattern routing, they are all identical in shape and fit snugly into part 2. The slots in part 2 hold the five sash clamps used to give



Wit and Wisdom

the glue-up pressure. The slots position the clamps to provide pressure in the correct place. Ten slots are as good as five extra pairs of hands. The first assembly step is to glue the dowels (all 32 of them) into the end of the slats. The next step is to place glue in the dowel holes in the two side pieces. I use a length of 6mm dowel to get the glue well spread on the walls of the dowel holes. Don't make the mistake, as many furniture manufacturers do, and simply squirt a drop of glue into the bottom of the dowel hole. If the walls of the dowel holes have glue on them, it is not necessary to place glue on the dowels. Quickly push all the pieces together, drop the assembly in the cradle, place the sash clamps in the slots and systematically tighten them up (Photo 4). The seat, consisting of two side pieces, six slats and twenty four dowels were glued up using a similar assembly JAG.

The next assembly JAG (Photo 5) was also used for the patio chairs: this time for the assembly of the sides. This sub-assembly consists of a front (1) and back leg (2), an arm (3) and six dowels. The assembly JAG consists of a base board; A – two cleats shaped to hold the bottom of the legs; B – a temporary cross piece and clamping strip; C – two M6 bolts that screw into T-nuts fitted to the base board; and D – a clamping pad. The six dowels, three per leg, are pre-glued into the top of the legs. The legs are then positioned (as seen in photo 5) on the base board, using the two cleats A; the temporary cross piece B; and the two M6 bolts fastened through the cross piece and legs into T-nuts in the base board. The bolt holes in the legs are part of the final assembly and conveniently already exist. The six dowel holes in the arm have glue added and are clamped to the legs (held firmly in place) using two sash clamps. After the glue has cured the sash clamps are removed and the bolts unscrewed. Washers and nuts are then added to the bolts and the cross piece stays in place for temporary support. Note that the cross piece need not be shaped as shown. A simple rectangular strip would suffice. The leg assembly JAG is symmetrical and is used for both the left and right sides.

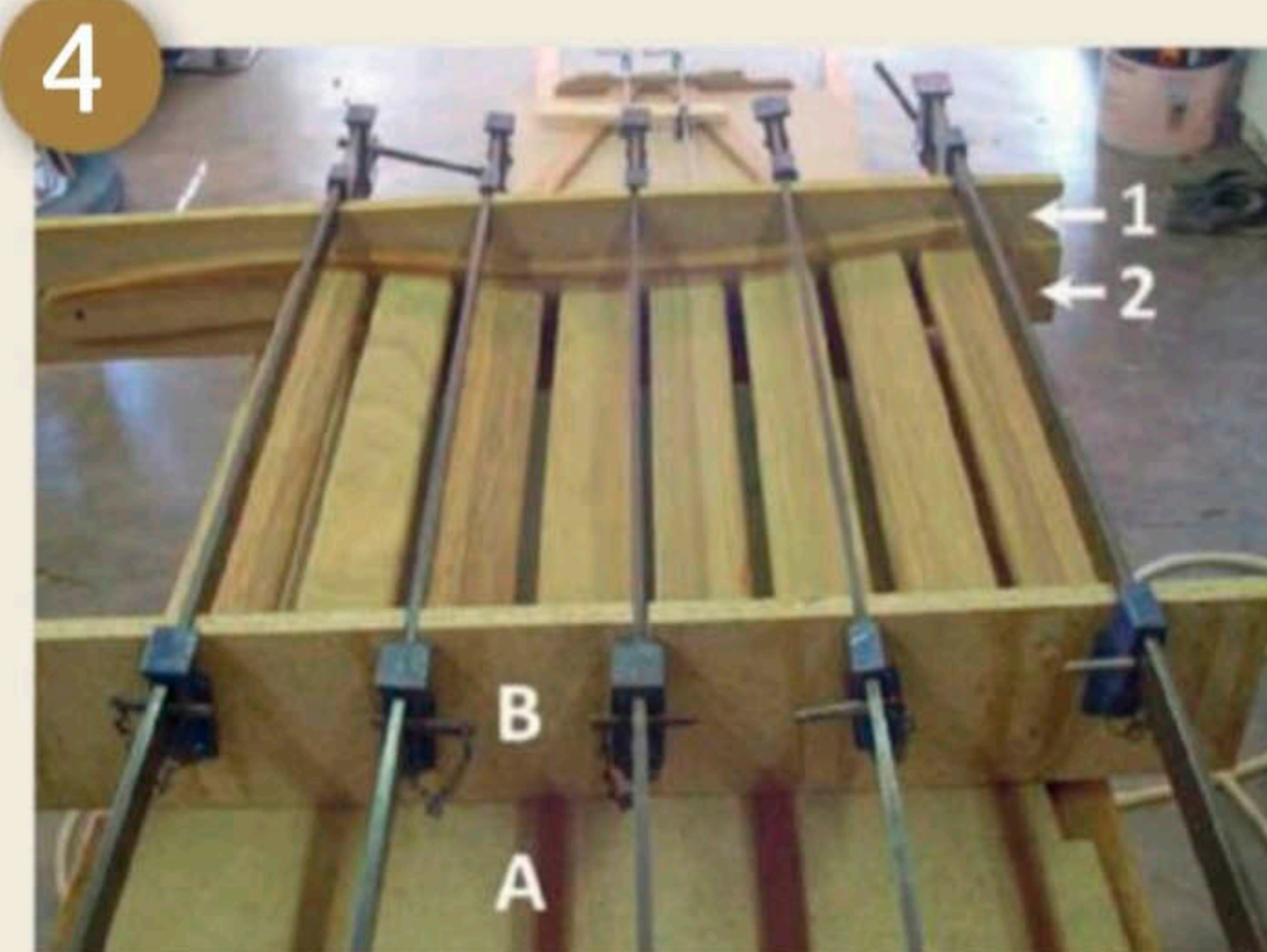
We now have four sub-assemblies: one back, one seat and two legs/arm-rest. These plus two leg stretchers are then fully assembled using twelve



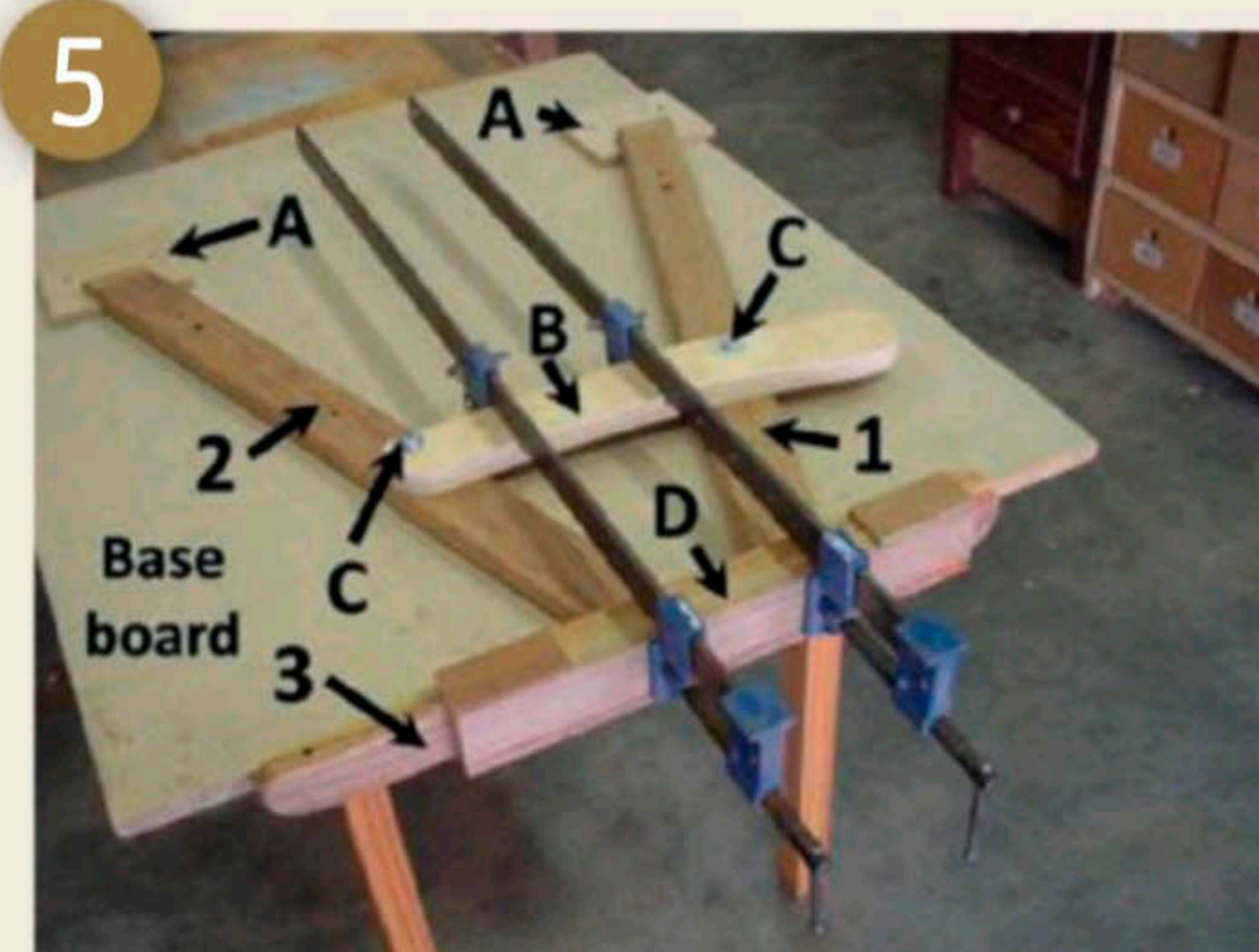
Patio chairs



Chair components



Chair back assembly JAG



Chair side assembly JAG

6



Connector bolts

7



Enough for six chairs

8



Lamp base

9



Lamp component

connector bolts (Photo 6). As all the components for six chairs (Photo 7) were machined using the same machining JAGs and assembled using the same assembly JAGs the six finished chairs are identical. Each one stood on a level floor without any rocking. They didn't need finicky adjustments.

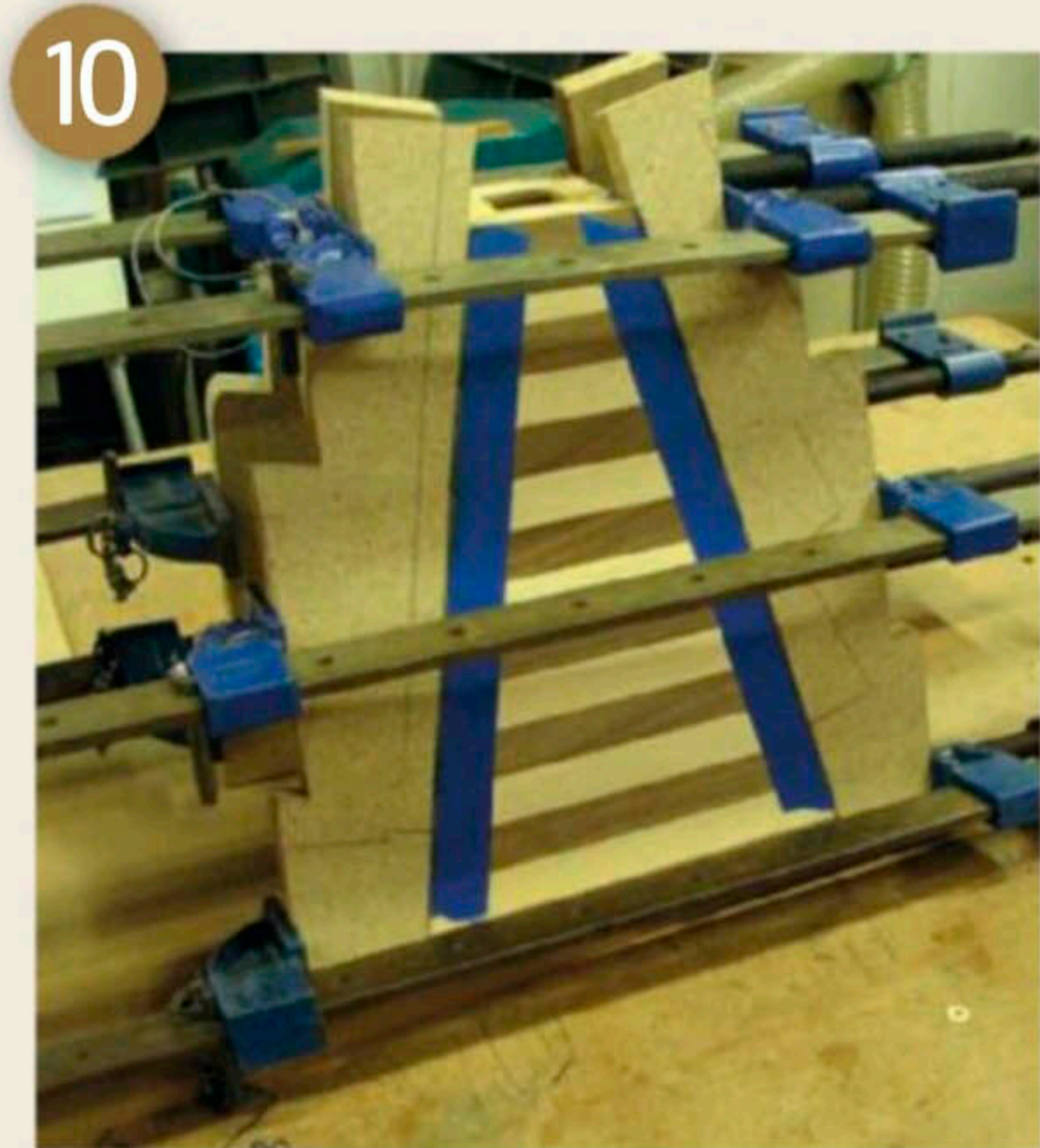
Photo 8 is the base for a lamp made from alternating strips of walnut and maple. Do you remember your high school geometry? The lamp is made from four isosceles trapezoids. The corner joints are lock mitres cut on a router table (Photo 9). Clamps work best when the two jaws are parallel. Clamping with non-parallel jaws eventually leads to a twisting of the clamp frame and is not allowed in my workshop. How do you achieve parallel jaws when working with a trapezoidal shape? Simple: use step-shaped clamping pads as seen in Photo 10. Once again I have used offcuts of 16mm chipboard.

Photo 11 shows a rotating storage unit. It was made for a lady customer to store her large collection of shoes and boots. The shelves were made from 18mm plywood using pattern bandsawing and pattern routing techniques. The raw edges of plywood are, to say the least, ugly. They were edged with 25mm x 18mm meranti strips (very obvious in Photo 11). Instead of using 22 1/2 degree mitre joints where the strips meet at the corner of the octagonal shelf, I used 45 degree butt joints. These can be seen in Photo 12. Instead of having to very accurately cut eight edging pieces per shelf I cut eight oversize lengths that were glued in place before final trimming. Having solved the joint problem, I was faced with the design of a clamping JAG. The result is shown in Photo 13. Like many of my clamping JAGs it starts with a 16mm chipboard base board. Next two 45 degree positioning blocks (A) are clamped (two C-clamps each) to the base board. These are appropriately spaced for octagonal shelf to fit as shown. Two clamping cauls (B) and spacer blocks hold the shelf in place ready to receive the next edging strip (C): in this case the last one.

Two sash clamps hold the edging strip in place while the glue cures. For the first time in this article, I introduce a wedge (D). Before tightening the sash clamps fully a few taps on the wedge push the 45 degree butt joint (E) up tight. Note how the front corner of the left positioning block (A) has been cut off at 90 degrees to cater for the wedge. A wedge is a very useful item: it can be used to apply clamping pressure in places where you could never fit a clamp or where a clamp would get in the way. Photo 14 shows the 45 degree butt joint after final trimming and sanding. Nothing wrong with that: a lot quicker than 22 1/2 degree mitre joints.

I promised you one finishing JAG. Here it comes. Photo 15 shows a garden bench that was salvaged and fitted with new saligna slats. Instead of finish sanding the slats one by one, battling to keep the orbital sander level and clamping and unclamping I came up with the simple finishing JAG shown in Photo 16. A pair of simple off cuts (A) with an appropriate size notch holds four (it could be more) slats. No more tilting of the orbital sander. No more unclamping and re-clamping halfway. Note the use of a wedge.

You have probably realised it, but it is worth reinforcing. The JAGs introduced in this article didn't cost an arm and a leg. Some scraps of chipboard, a few screws, some bolts and nuts, perhaps some glue and lots of clamps. "You can never have enough clamps."



10

Lamp assembly JAG



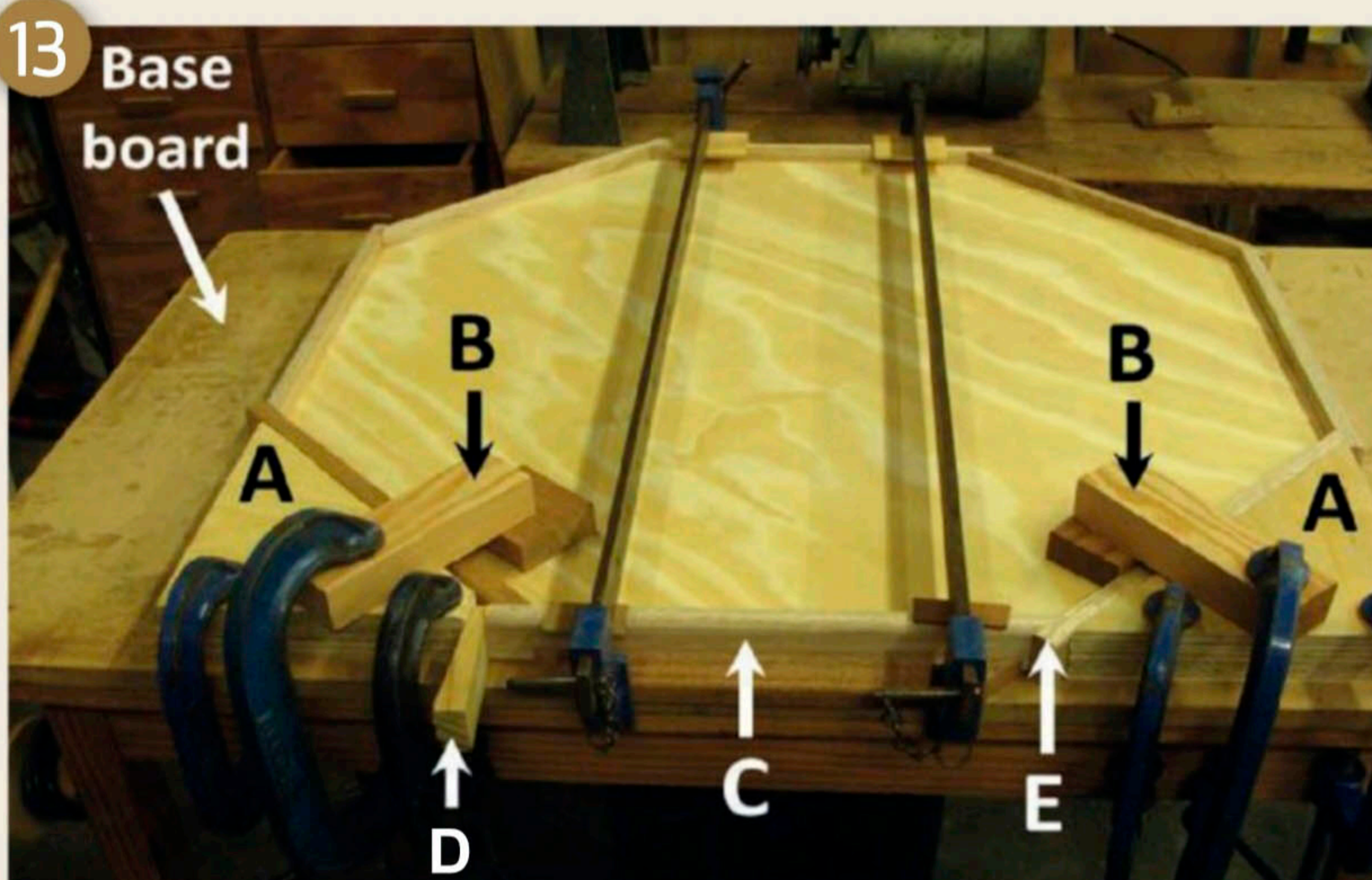
11

Rotating storage



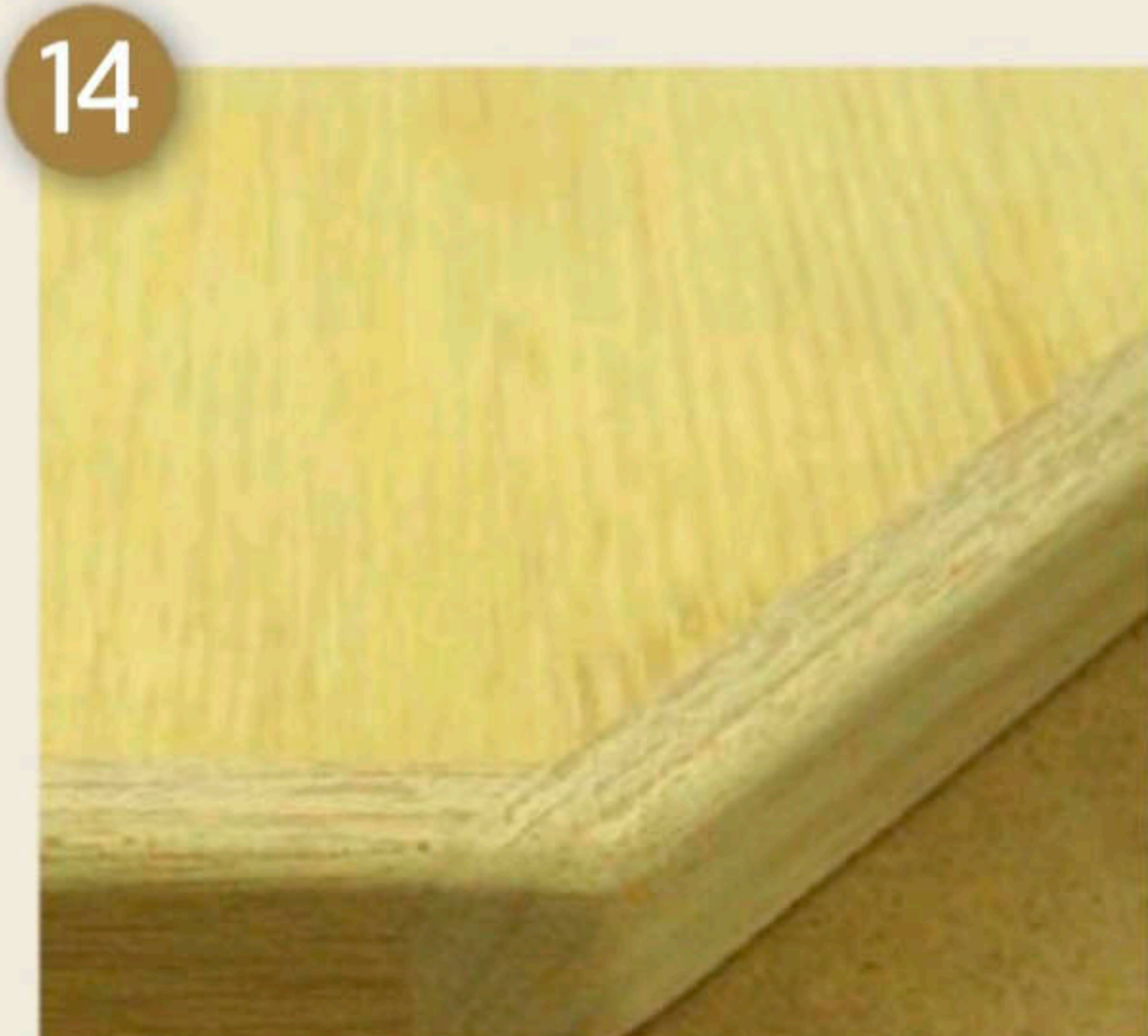
12

45 degree butt joints



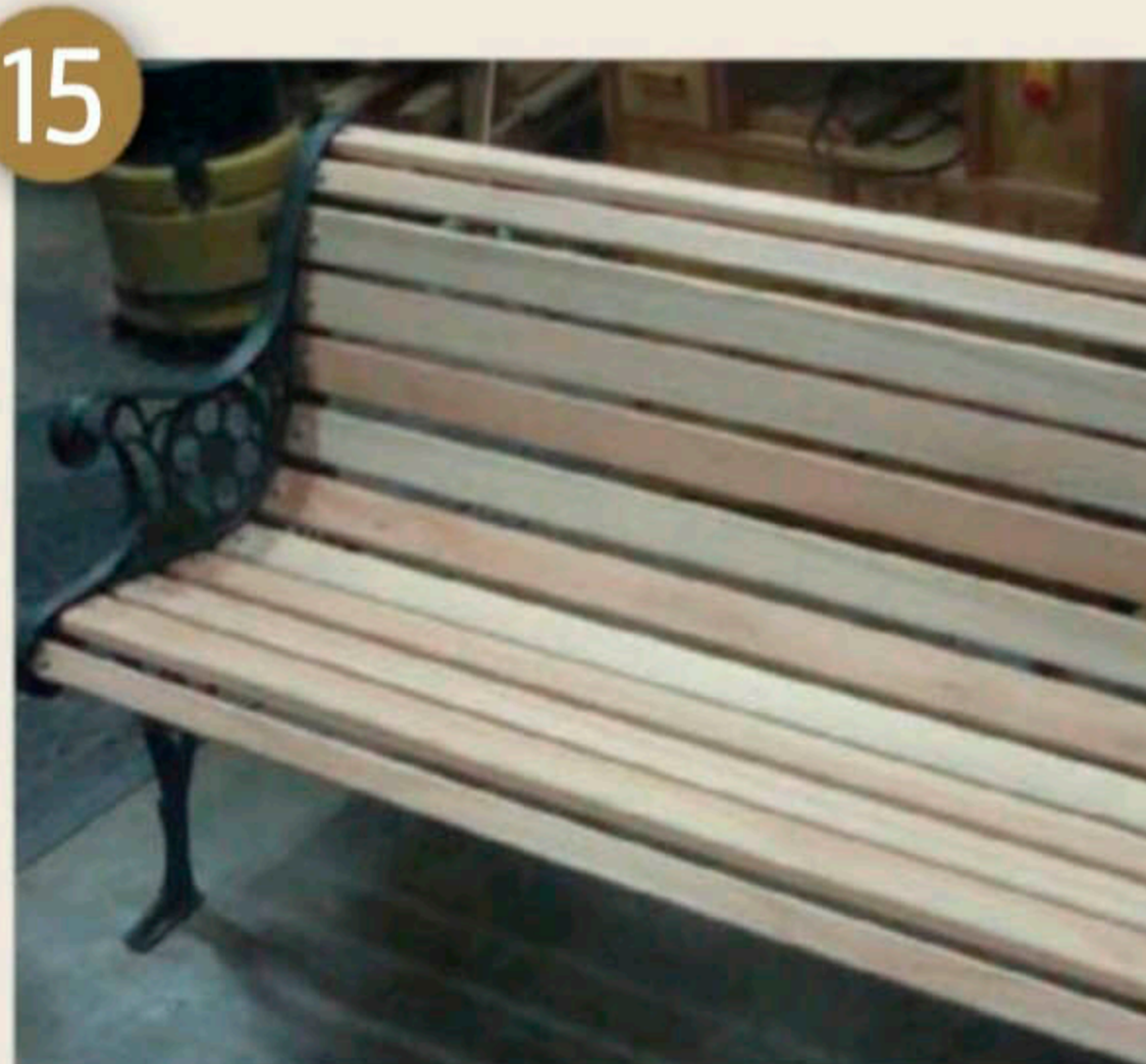
13

Base board
Shelf assembly JAG



14

Butt joint after final trimming



15

Refurbished garden bench



16

Finishing JAG



ABOUT DENIS:

Denis Lock runs a woodworking school and shop. He can be contacted at denis@tacazze.co.za or 082-267-5948. Visit his website at www.routingwithdenis.co.za

WOODWORKER'S CORNER

Sharing techniques, ideas and a love of wood

The art of chainsaw carving

The art of chainsaw carving has its origins in the ancient craft of woodcarving. Unlike the slow and deliberate methods required in woodcarving, however, chainsaw carving sees artists harness the power of modern technology to create their impressive masterpieces.

According to David Bithrey, Area Business Manager for Husqvarna South Africa and six-time National Chainsaw Speed Carving Champion, chainsaw carving is an expression of self. "Chainsaw carving is a dance of skill and dexterity, and a duel between the creation in your head and that which the wood shows you," says Bithrey, who goes on to explain that while his love for chainsaws developed at a young age, he only became aware of chainsaw carving, in its artistic form, much later on in life.

Entered into a competition unaware by his mentor in 2008, his first time carving was both exhilarating and frightening. "I was wielding one of the most dangerous pieces of forestry equipment to create something so delicate, and honestly, I had more guts than skill at that stage of the game," he says.

Despite being placed second last in that competition, Bithrey was hooked and worked hard at mastering his art before he finally won a competition, and took the title from that same mentor, several years later.

Today, he is one of the few chainsaw carvers in South Africa to have been published in both local and international magazines, and several of his pieces have found their way into homes and collections around the world. Despite these accolades, Bithrey admits to having

made his fair share of "firewood" over the years and encourages those new to chainsaw carving to see these "mistakes" as learning opportunities and to not compare themselves to anyone else.

"Everyone has their own style when it comes to carving. The key is to just get started," he advises and maintains that the way to learn the craft is through mentorship, skills development and trial and error. "When I first began, I had almost no skill in carving and no idea that some machines were more appropriate than others for the task at hand."

Over the years, however, Bithrey has indeed learnt that a workman, or an artist as the case may be, is nothing without his tools. "As a chainsaw carver, you need to be able to count on your equipment all the time. You are fighting several factors at the same time: your plan for the carving, the way the timber reacts to your saw, fatigue, the time element in competitions, and more. The last thing you want to worry about is your tools not performing. That's why I use Husqvarna chainsaws. The 353 chainsaw is my favourite, as it is just such a well-balanced machine with more than enough power to perform seemingly impossible tasks," he says.

For those looking to try their hand at chainsaw carving, Bithrey had some final words of advice to offer: "Enjoy creating something new out of something old. Be brave, be bold but above all else be safe. When you're working with a tool designed to carve through timber, inches away from your face or legs, safety is not a question, it's a necessity," he concludes.

For more information, visit www.husqvarna.com/za/



9 woodworking terms you need to know

Like any craft, woodworking comes with its own jargon and terminology that can be confusing, especially if you are brand new to this hobby.

The three types of straight cuts

A crosscut is a straight, 90-degree cut that cuts across the grain of the wood. Usually, that means turning long boards into shorter ones. On a table saw, you will usually use a mitre gauge to make crosscuts.

Crosscut: It's the most basic cut you can make. In fact, you can buy dimensional wood and make complete projects with only crosscuts on a mitre saw.

Rip cut: A rip cut is the opposite of a crosscut. Rip cuts are square, straight cuts made in the direction of the wood grain. To rip wood you will mostly use a rip fence on a tablesaw. Being able to rip wood will open up a world of options for sizing wood to any width you need.

Resawing: The third dimension you may need to cut wood is parallel to its face. In other words, making it thinner. While you can build tons of projects with standard boards, sometimes it's just too thick, especially if you are making something small and you want a less bulky appearance. Resawing on a tablesaw is a more advanced technique and takes special care to keep the wood from tipping as it's run through the blade on its edge. Plus, with a tablesaw you are limited to how high you can raise your blade. A safer tool for resawing is a bandsaw. Or shave the wood thinner using a planer.

The three types of angled cuts

Mitre cuts: A mitre cut is similar to a crosscut, but it's an angled cut other than 90 degrees, across the face of the

board and mostly across the grain. Think of the corners of picture frames. These can be made with a mitre gauge on the tablesaw or with a mitre saw with the head rotated.

Bevel cuts: Bevels are similar to mitres, but angled along the thickness of the wood. They can be either in the direction of the grain or against the grain. To make bevels on a mitre saw, you can either tilt the head of the saw and cut the wood face down, or you can stand the wood on its edge and rotate the head of the saw. To make a bevel cut on a tablesaw, you will need to tilt the saw blade.

Tapers: Tapers are probably the least common of the angled cuts. As you can imagine, a taper cut is one made mostly with the direction of the grain. You'll see this most commonly on table legs. You can make taper cuts on a bandsaw or a tablesaw. To do this on a tablesaw, you'll need a tapering jig... a method of feeding the wood through the saw at an angle along your rip fence.

The three types of non-through cuts

These three cuts do not cut all the way through the wood, usually just half the thickness. You can make these cuts with a router or tablesaw to cut out these channels.

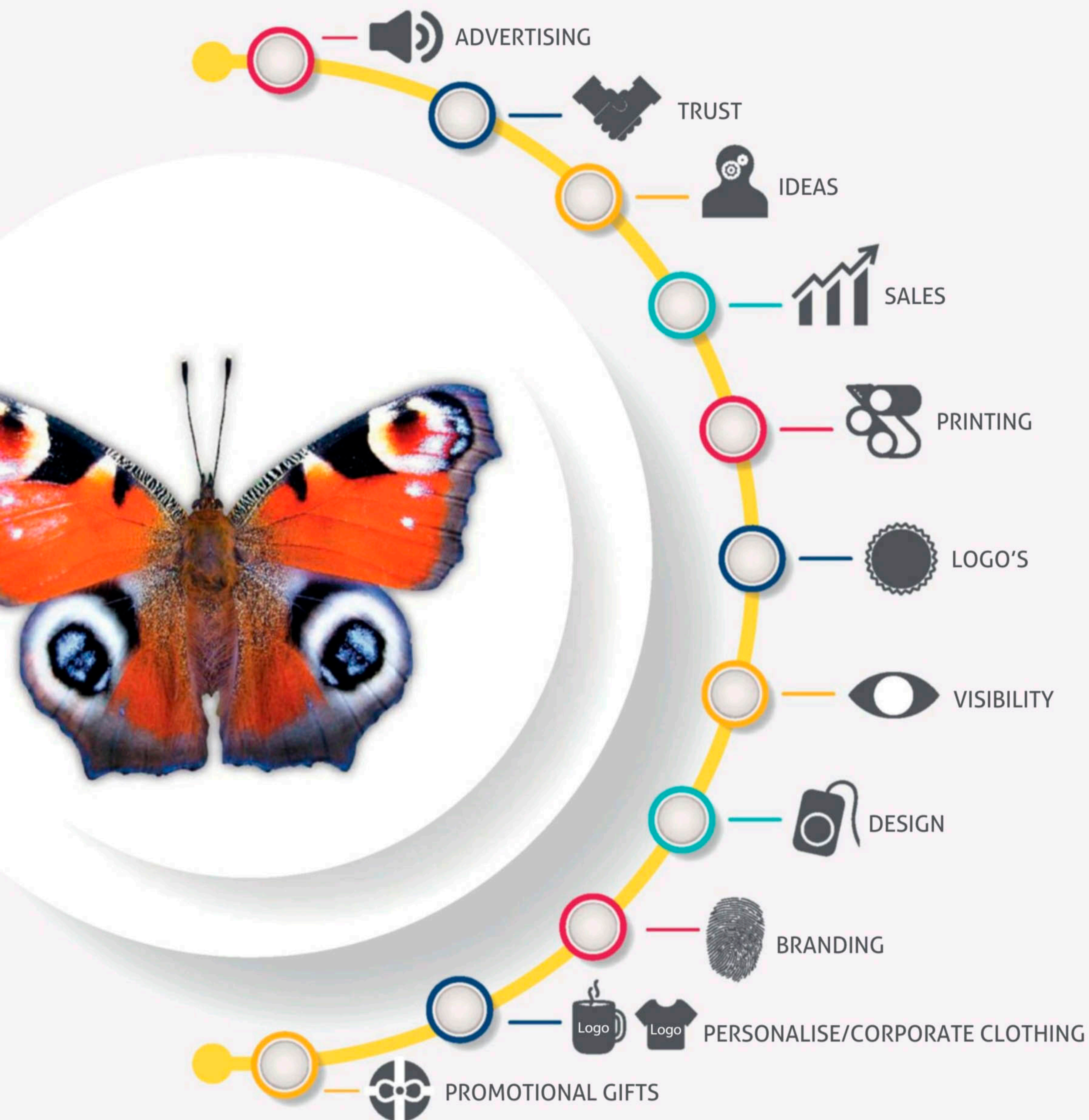
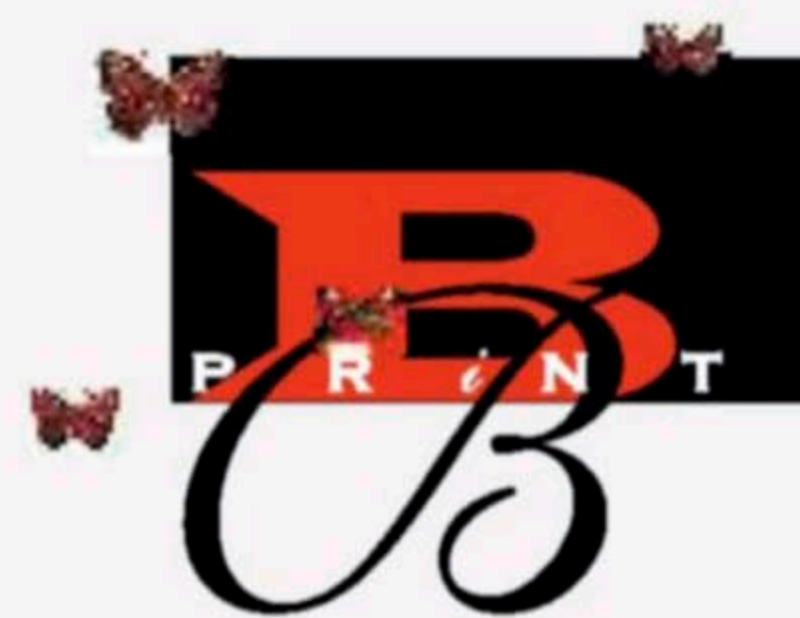
Dado: A dado is a rectangular three-sided channel cut across the grain of the wood. These might be used to hold shelves in place.

Groove: A groove is the same thing as a dado, but cut along the direction of the grain of the wood.

Rabbet/Rebate: A rebate is a two-sided recess cut into the edge or end of a board, against the grain or in the same direction. If you were making a box or say, a bookcase, these might be used to attach the top and bottom.



Call for your corporate needs



MISSING AN ISSUE?

Recent digital back issues can be ordered from the publisher



Please contact the publisher to find out which back issues are still available in hard copy.
To order back issues for only R22 each, use the order form below.
For orders outside South Africa please phone for a quote.

• Order these and more online on www.homehandyman.co.za •

No. of copies ordered: x R22.00 each = Total R

Name:

Address:

..... Code:

Tel: Cell:

Email: Signature:

Please make a direct deposit / EFT into our bank account:

Account holder: BB Print
ABSA Bank
Branch code: Ben Swart - 632-005
Cheque account: 404-881-8651
Reference: "THH + surname + initials"
(Example: THH-Lindeque, G)

Fax/email the form and proof of payment to 086-234-5052

(Please note: there is an additional fee of R69 if payment is made in cash)

Price valid until 28 February 2023



Let's face it, none of us was born as a skilful tradesman with many years' experience and therefore DIY can look quite daunting at times.

8 tips for DIY newbies

If you have some concerns before starting your first DIY project, that's a good sign – you're not the first and certainly won't be the last. Do it yourself is great for saving money and improving your lifestyle, just make sure you know what you are getting into. Here are some tips which we'd recommend any DIY newbie read before staring.

1. Know what you're getting into part 1: Before starting your DIY project, brush up on the work needed and educate yourself by reading, watching a demonstration video or even asking a friend who has relevant experience. Having motivation is essential to see the project through, but you really need to know how to do the job first.

2. Know what you're getting into part 2: When budgeting your project, keep some budget aside for unforeseen costs – even a professional project manager will have a contingency for each project. Having to stop your project before it's finished due to lack of funds can be avoided if you budget correctly and keep a list of all the materials and their costs as you go along.

3. Know what you cannot do: Some things, such as working with gas and most new electrical work, are covered by regulations which prohibit the ordinary DIY'er from carrying out the work even in their own home – don't rely on old DIY books for guidance; regulations change, old books don't. The regulations are there for safety's sake, don't try to do these jobs, not only is it against the law but you can endanger yourself and your family.

4. Pay attention to health and safety: Make sure to always read safety instructions on all products and tools and use protective clothing when necessary. Protective clothing such as goggles and gloves won't cost you much and will be of use for years to come.

5. Don't buy many tools at first: Although not a classic DIY tip, saving money is one of the reasons we love DIY so don't splash out on tools unless they are really necessary. If you are the occasional handyman, the chances are you don't need to buy too many tools. If you need a tool designed for one specific task you really don't need to rush and buy it. Instead consider hiring the tools you need or ask around between your family and friends to see if anyone can lend you the tool for the job.

6. Start small: To avoid disappointment, possible damage and possible expense of getting a professional to finish it off, make your first DIY project a simple job and get bolder as you gain experience. Although knocking down a wall may look simple enough, more experience DIY veterans and professionals will know to look for possible complications such as what the wall supports, water pipes, electricity cables and other issues.

7. Always test: For many DIY projects, particularly for complicated ones, always test your skills and materials on a small scale first. This will allow you to try out your tools, ensure you have all the necessary materials and avoid causing any damage. For example, if you decided to re-coat your hardwood floor after several years of use, testing your method first on a small surface area is what most retailers recommend.

8. Allow enough time and don't rush the job: When starting your DIY project, the chances are you will discover that whatever it is, it takes longer than you thought. Because there's nothing worse than ending up with half a job done, make sure you allow enough time to complete the work and allow some extra time for complications. Some projects seem to require one weekend, but in reality, one weekend could eventually spread across a few.

messe frankfurt

Hobby-X

4-7 May 2023

Kyalami Grand Prix Circuit

www.hobby-x.co.za

Want to turn your *Passion* into profit in 2023?

Showcase your products and services to a targeted audience at Hobby-X.

Book your stand now!

Contact:

Annelie Reynolds - Portfolio Director
Phone +27-10-599-6150
Annelie.Reynolds@za.messefrankfurt.com

Valentia Madube - Sales Executive
Phone +27 10 599 6150
Valentia.Madube@za.messefrankfurt.com



Show times:
08h00 till 17h00 daily

It's not a goodbye, **it's a good buy.**

WORX LOADING. Bigger, better, bolder.



WORX
it's your nature

Contact details:

Brandroid

Brandroid (PTY) LTD

☎ 010 824 4420

✉ info@worxSA.co.za

🌐 eu.worx.com