



The drawers are made using butt joints with the base flush between the sides and a face panel secured from inside with two screws.

### Install the vice

Mark the vice mounting holes on the vice blocks, using a 19mm offset as a spacer to allow for the maple edge trim. Clamp the blocks under the benchtop and drill pilot holes for 90mm coach screws. Position the vice in the notch and secure with coach screws.

**MAXIMUM  
EFFICIENCY**

# Ultimate DIY workbench

**It's a dream with lights, extra powerpoints plus slide-out space and even a dust extraction system**

WORDS **FRANK GARDNER**

**DIY > \$1230**

HAVE IT DONE FOR \$3230

**SKILL > 1 2 3 4 5**

**TIME > 5 DAYS**

**T**his workbench has it all with built-in lighting, dust extraction ports, a bench dog system for clamping long objects, lots of drawers and slide-out shelving.

Built mostly of CD plywood with maple edging, the bench has quarter-circle supports underneath that are made of two pieces of 19mm plywood with 90 x 45mm pine spacers

plus masonite faces. Fluorescent lighting with plastic diffusers, available in sheet form from plastics suppliers, is installed under the top shelf.

The modular design allows for adapting to suit your garage or workshop by removing some of the drawer and light assemblies and reducing the length of the bench.

It's a straightforward project although there is a lot of cutting so allow about five days to complete it.

## FASTENERS

Use PVA adhesive on all timber joints with 40 x 2mm galvanised nails for

the drawers and dust collection frame, and to assemble the supports. Use 25 x 1.5mm bulletheads to secure the 12 x 19mm maple edging strips.

Use 40mm x 8g timber screws to secure the benchtop to supports, pipe cleats to the top, the shelf to the back and the light assembly to the upper back panel.

Use 30mm x 8g timber screws to secure the benchtop layers and the faces to the drawers.

Use 75mm x 10g timber screws to secure the supports to the lower back panels from behind and the lower and upper back panels to wall studs. ➤

## Making a dog hole jig

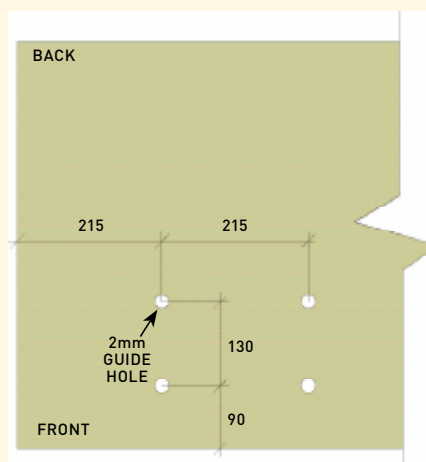
Bench dogs are accessories that lock into holes on a bench, allowing long boards to be braced with the vice. Dog holes also provide a way for tools such as a mitresaw to be securely yet temporarily attached.

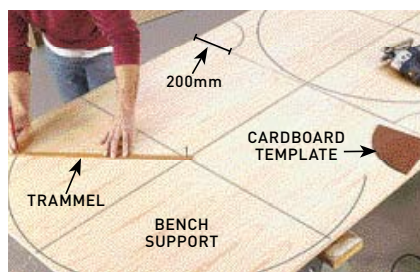
Square cut a 450 x 300mm piece of plywood for a jig, using nails to secure a 450 x 31 x 19mm fence along one edge. Drill 2mm holes as guides for punching starter holes on the benchtop and dog bases using 40 x 2mm nails then use a drill guide to make 19mm dog holes 25mm deep. Secure the bench dog pegs and handles to the bases using adhesive.



Use a drill guide to make dog holes.

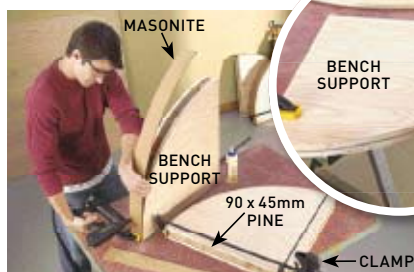
**BENCH DOG HOLE JIG**  
(measurements in mm)





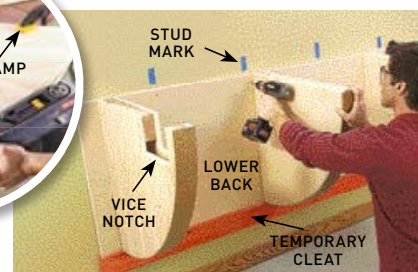
## 1 Mark up the supports

Make a trammel from an offcut with a 3mm hole at one end for a nail and a 6mm hole centred at 597mm for a pencil to mark three circles on the plywood then quarter them. Make a 200mm quarter-circle template from cardboard for the light supports.



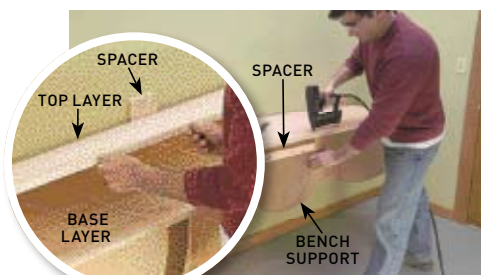
## 2 Assemble the supports

Cut out the supports with a jigsaw, clamp in pairs and sand the edges. Use adhesive and nails to secure support blocks between pairs of supports. Secure the masonite faces by applying adhesive, clamping one end, bending it onto the curve and securing with nails.



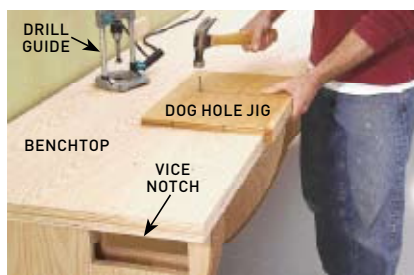
## 3 Secure the supports

In one support cut out a notch for the vice. Position the lower backs together, securing the supports with four screws through the back. Mark the wall studs, position the assembly on a temporary cleat and secure the lower back with three screws into each stud.



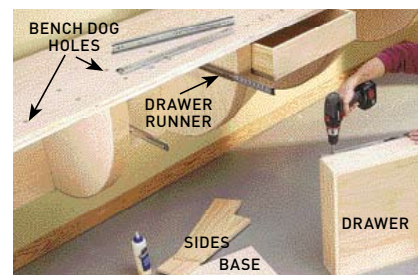
## 4 Attach the benchtop

Position the first bench support perpendicular to the back using 19mm offcuts as spacers, secure and align the other supports using offcuts as spacers. Secure the benchtop base with screws. Apply adhesive then position the benchtop top, securing from beneath.



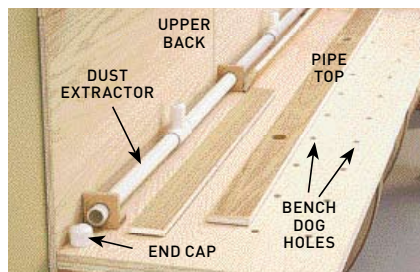
## 5 Drill the bench dog holes

Make the jig and use nails to punch starter holes for the bench dogs then slide the jig along the benchtop to align its edge with the previous holes and repeat. Follow with a 19mm Forstner bit and drill guide to drill 25mm deep holes.



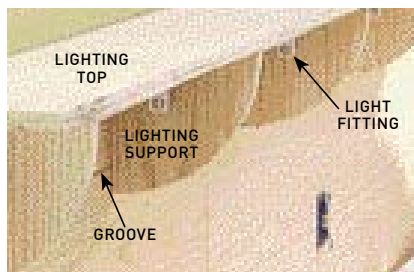
## 6 Make the drawers

Use adhesive and nails to secure the front and back of the drawers between the sides, positioning the base inside to square up the assembly. Attach the drawer runners then use two screws to secure the faces from the inside then attach the handles.



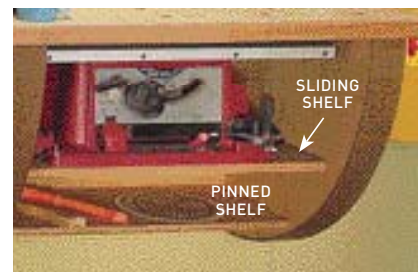
## 8 Install the dust extractor

Remove the spacers from behind the benchtop and slot the upper backs in position, securing to the studs. Mount the dust extractor then use a tablesaw to cut a 3mm deep groove along the lighting tops and backs for the diffuser plastic.



## 7 Install the lighting

Secure the lighting tops to the backs then drill holes for the conduit in the supports. Secure the supports using nails then secure the assembly to the wall studs with screws. Drill level pairs of 5mm holes 10mm deep in the bench supports for the shelf pins.

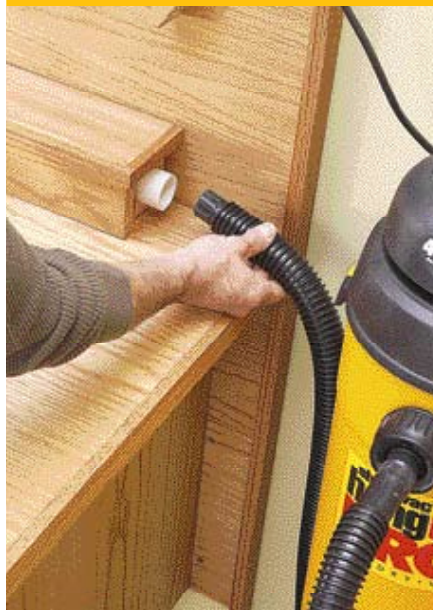


## 9 Install the shelves

Position shelf pins in the 5mm holes to support the shelves. For the sliding shelves secure aluminium angle to the bench supports (see Diagram) using 40mm x 8g screws. Cut the shelves to size then secure maple trim using adhesive and nails.



## Dust extraction system



Made from 32mm PVC pipe, the dust extraction system has three T junctions for connecting tools that are covered with end caps when not used. Buy the parts at a hardware or plumbing store and cut lengths of bulk vacuum hose as required.

Cut the plywood pipe blocks and use a holesaw to make 40mm holes then attach cleats with adhesive and nails and secure them to the benchtop (see Diagram). Cut the pipe, feed it through the blocks and



secure it to the T junctions using PVC pipe cement, with 75mm protruding from the ends to fit the end caps, securing to the blocks using construction adhesive.

On the pipe tops drill 40mm holes for the T junctions, position with the pipe fronts, securing with nails and adhesive and finishing with maple trim over the exposed edge.

**TIP** If your power tools have extraction ports that don't fit the hose, use duct tape to make a seal.

## The finishing touches



**TO ADD THE ELECTRICAL WIRING** have a qualified electrician wire powerpoints along the back, and wire the strip lighting and switch box. Cut the diffuser plastic to size and flex it into curves to slot into the grooves of the lighting assembly.



**FOR LASTING APPEAL** secure maple trim around the edges using PVA adhesive and nails. Round the edges with 100 grit abrasive paper and smooth all over with 150 grit abrasive paper. Apply two coats of a light-tone Danish oil to finish. ➤

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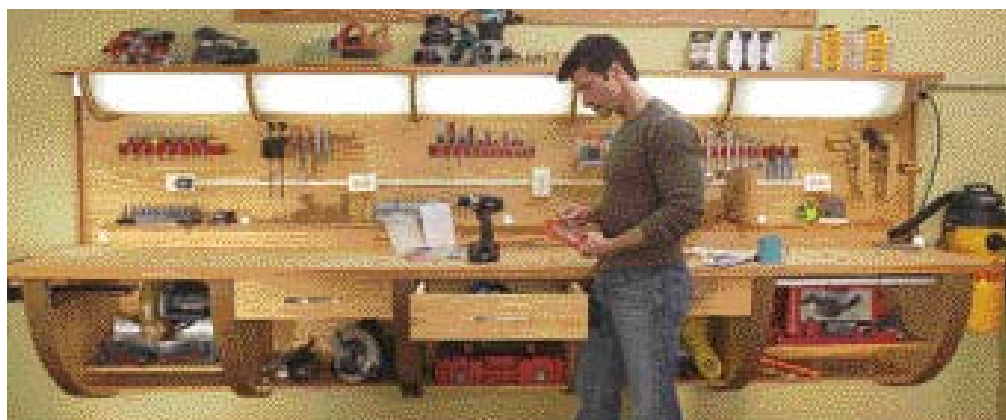


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## CUTTING LIST

(measurements in mm)

PART	KEY	SIZE	NO.	PART	KEY	SIZE	NO.
<b>CD PLYWOOD</b>				<b>LIGHT DIFFUSER</b>			
Bench				Diffuser	J1	648 x 260 x 3	4
supports	A1	597 x 597 x 19	12	Diffuser	J2	768 x 260 x 3	1
Lower back	A2	2400 x 600 x 19	1	<b>MAPLE</b>			
Lower back	A3	1300 x 600 x 19	1	Bench side trim	K1	1353 x 31 x 19	2
Benchtop	A4	2400 x 600 x 19	2	Benchtop			
Benchtop	A5	1300 x 600 x 19	2	end trim	K2	588 x 31 x 19	2
Drawer base	B1	522 x 462 x 19	3	Benchtop			
Drawer face	B2	580 x 150 x 19	3	front trim	K3	3738 x 31 x 19	1
Lighting top	C1	2400 x 230 x 19	1	Light end trim	K4	230 x 31 x 19	2
Lighting top	C2	1300 x 230 x 19	1	Light front trim	K5	3738 x 31 x 19	1
Lighting back	C3	2400 x 200 x 19	1	Pipe end trim	K6	105 x 19 x 12	2
Lighting back	C4	1300 x 200 x 19	1	Pipe front trim	K7	3390 x 19 x 12	1
Light supports	C5	200 x 200 x 19	6	Right shelf			
Upper back	E1	2400 x 565 x 19	1	edge	L1	708 x 19 x 8	1
Upper back	E2	1300 x 565 x 19	1	Shelf edges	L2	583 x 19 x 8	4
Pipe blocks	E3	85 x 85 x 19	4	Right sliding			
Cleats	E4	85 x 50 x 19	4	shelf edge	L3	700 x 19 x 8	1
Pipe front	E5	2400 x 85 x 19	1	Left sliding			
Pipe front	E6	966 x 85 x 19	1	shelf edge	L4	575 x 19 x 8	1
Pipe top	E7	2400 x 105 x 19	1	Bench dog base	L5	200 x 90 x 45	2
Pipe top	E8	966 x 105 x 19	1	Bench dog			
Right shelf	F1	708 x 300 x 19	1	handle	L6	200 x 60 x 19	2
Shelves	F2	583 x 300 x 19	4	<b>HARDWOOD</b>			
Right sliding				<b>DOWEL</b>			
shelf	F3	700 x 460 x 19	1	Bench dog			
Left sliding				pegs	M1	40 x 19	4
shelf	F4	575 x 350 x 19	1	<b>ALUMINIUM</b>			
<b>PINE</b>				<b>ANGLE</b>			
Support block	G1	580 x 90 x 45	6	Right shelf			
Support block	G2	490 x 90 x 45	6	runner	N1	460 x 25 x 25	2
Support block	G3	200 x 90 x 45	6	Left shelf			
Drawer sides	H1	500 x 140 x 19	6	runner	N2	350 x 25 x 25	2
Drawer front							
and back	H2	522 x 140 x 19	6				
Vice blocks	H3	200 x 90 x 38	2				
<b>MASONITE</b>							
Support faces	I1	940 x 83 x 5.5	6				

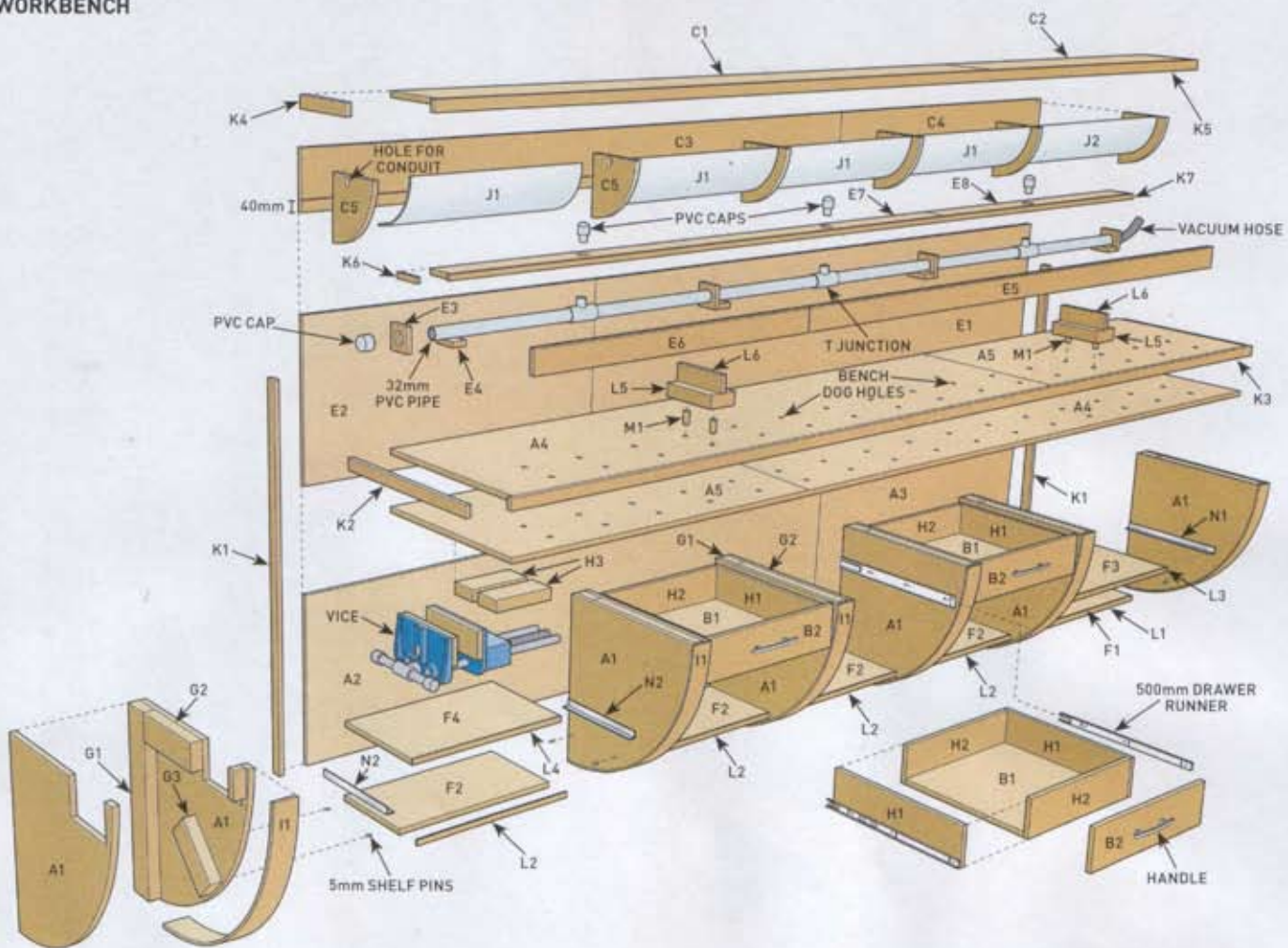
Handyman.net.au



Download the tools, materials and costs for making this workbench.



## WORKBENCH



### SIDE AND FRONT ELEVATION

