WOODWORKER'S JOURNAL
"America's leading woodworking authority"™

Classic Project

In this plan you'll find:

- Step-by-step construction instruction.
- A complete bill of materials.
- Construction drawings and related photos.
- Tips to help you complete the project and become a better woodworker.

Shop-Built Spindle Sander

The availability of inexpensive sanding drums has made possible the construction of low-cost shop-built spindle sanders. Our design takes the simple motor-in-a-box spindle sander one step further. Its adjustable table and replaceable insert enable the owner to use any number of different size and design sanding drums, from shaft type to threaded. All that's required to convert from the large 3 in. diameter threaded drum to the shaft-type drums is the addition of the screw-on chuck (part R). A source for the shaft-type drums, in addition to the arbor (P), the 3 in. diameter drum (Q) and the chuck is given in the Bill of Materials.

Start with the top (A). We used cabinet-grade birch plywood for this and all other wood parts, except the cleats (D) and feet (K), which are hardwood. After cutting the top to 20 in. square, make your cutout for the insert (C). First we marked out the perimeters of the 7¼ in. square cutout. Next, we drilled a starter hole for the jigsaw blade inside the cutout, and used the jigsaw to cut out most of the waste, staying just off the line. Then we clamped guide boards in place, using our 7¼ in. perimeter lines as a guide, and flush-trimmed the cutout to the 7¼ in. square dimension. A laminate trimmer, if you have one, is a little easier to use than the router. The ball-bearing guided flush trimmer bit won't get into the corners of the cutout, so they'll remain rounded.

Next, cut your inserts to size, 8 in. square. We only show one insert, but you should make an insert for each size sanding drum that you use. Use the router equipped with a ⅜ in. ball-bearing guided rabbeting bit to cut the ⅜ in. by ⅜ in. rabbets in the top and inserts. Then, using a file, round the

Published in *Woodworker's Journal* January/February 1990

Get Adobe Reader To download these plans, you will need **Adobe Reader** installed on your computer. If you want to get a free copy, visit: **http://adobe.com/reader**.

Having trouble downloading the plans?
Right click on the download link and select "Save Target As..." or "Save Link As..." (depending on the web browser you are using) to download to your local drive.

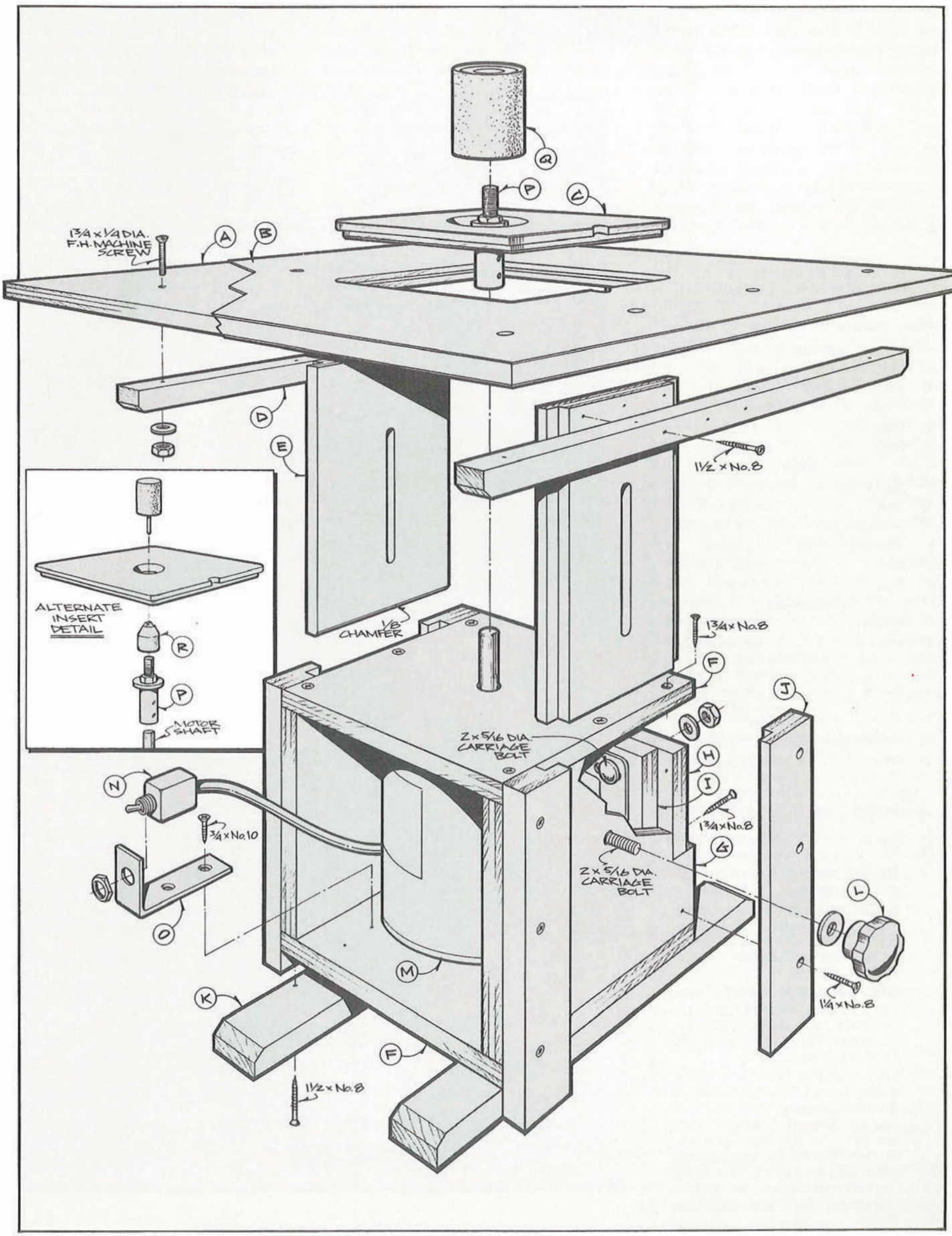
$1.00
WJC009

Shop-Built Spindle Sander

The availability of inexpensive sanding drums has made possible the construction of low-cost shop-built spindle sanders. Our design takes the simple motor-in-a-box spindle sander one step further. Its adjustable table and replaceable insert enable the owner to use any number of different size and design sanding drums, from shaft type to threaded. All that's required to convert from the large 3 in. diameter threaded drum to the shaft-type drums is the addition of the screw-on chuck (part R). A source for the shaft-type drums, in addition to the arbor (P), the 3 in. diameter drum (Q) and the chuck is given in the Bill of Materials.

Start with the top (A). We used cabinet-grade birch plywood for this and all other wood parts, except the cleats (D) and feet (K), which are hardwood. After cutting the top to 20 in. square, make your cutout for the insert (C). First we marked out the perimeters of the 7 1/4 in. square cutout. Next, we drilled a starter hole for the jigsaw blade inside the cutout, and used the jigsaw to cut out most of the waste, staying just off the line. Then we clamped guide boards in place, using our 7 1/4 in. perimeter lines as a guide, and flush-trimmed the cutout to the 7 1/4 in. square dimension. A laminate trimmer, if you have one, is a little easier to use than the router. The ball-bearing guided flush trimmer bit won't get into the corners of the cutout, so they'll remain rounded.

Next, cut your inserts to size, 8 in. square. We only show one insert, but you should make an insert for each size sanding drum that you use. Use the router equipped with a 3/8 in. ball-bearing guided rabbeting bit to cut the 3/8 in. by 3/8 in. rabbets in the top and inserts. Then, using a file, round the



Bill of Materials
(all dimensions actual)

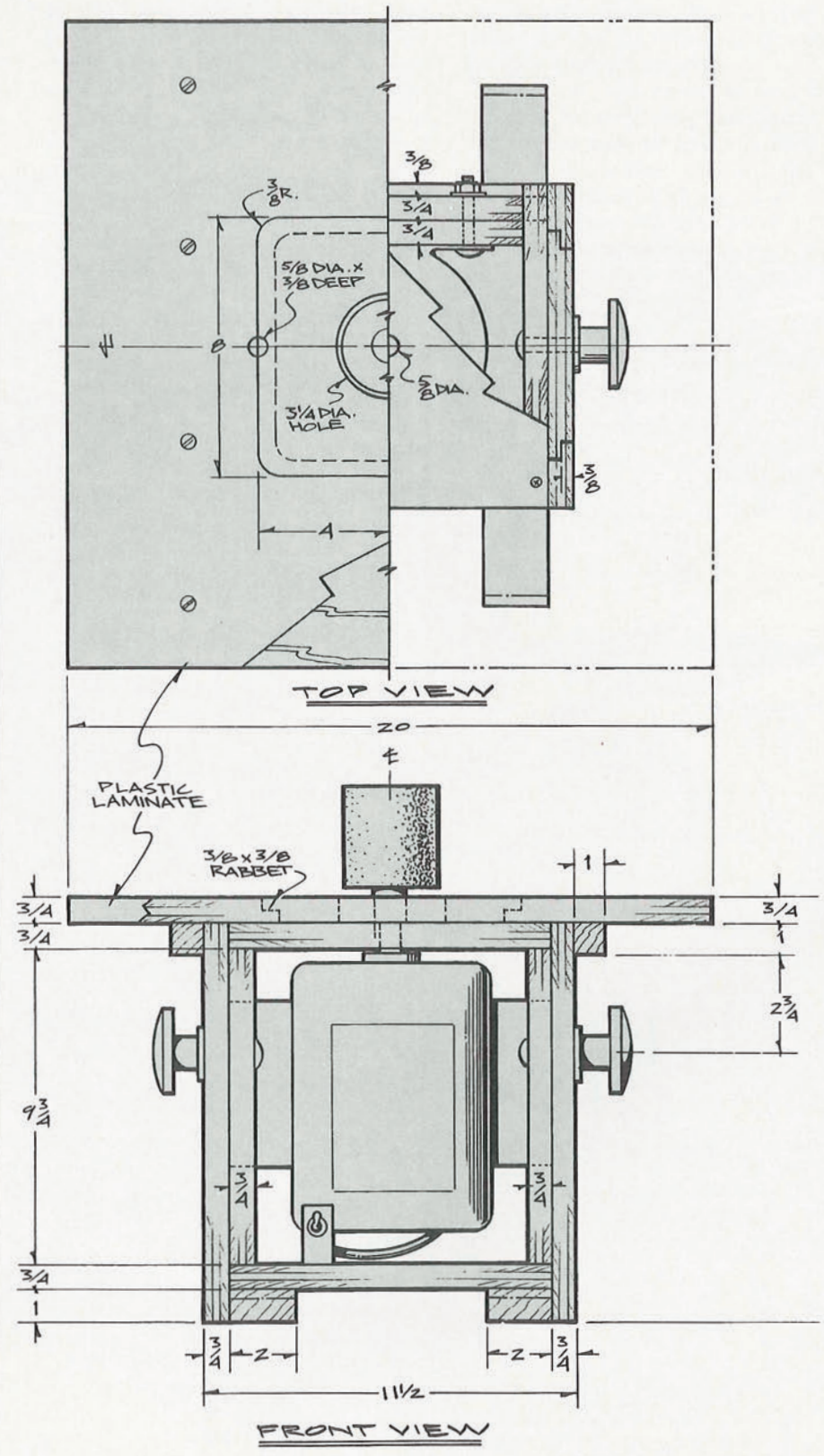
Part	Description	Size	No. Req'd.
	Adjustable Table		
A	Top	3/4 x 20 x 20*	1
B	Plastic Laminate	about 24 x 24	2
C	Insert	3/4 x 8 x 8*	1
D	Cleat	1 x 1 x 19	2
E	Side	3/4 x 7 x 12 1/4	2
	Base		
F	Top/Bottom	3/4 x 10 x 10	2
G	Side	3/4 x 9 3/4 x 10	2
H	Motor Support	3/4 x 5 x 10	1
I	Mounting Block	3/4 x 5 x 8 1/2	1
J	Way	3/4 x 2 x 12 1/4	4
K	Foot	1 x 2 x 16	2
	Hardware		
L	Knob	1 3/4 diam.**	2
M	Motor	1/2 horsepower, 5/8 shaft, 1725 RPM***	1
N	Switch	As shown, included w/ motor***	1
O	Switch Bracket	7/8 x 1 3/4 x 4 1/4	1
P	Arbor	3 1/2 long; Right hand 1/2-20 thread****	1
Q	Sanding Drum	3 in. long x 3 in. diam.****	1
R	Chuck	Right hand 1/2-20 thread****	1

* Top and insert dimensions do not include laminate.

** Knobs are available from United States Plastic Corp., 1390 Neubrecht Rd., Lima, OH 45801. Cost is $1.74 each for their part no. 83-85212.

*** Motor w/ switch available from Woodworker's Supply of New Mexico, 5604 Alameda Place NE, Albuquerque, NM 87113. Cost is $79 for their part no. 803-113.

**** Arbor, sanding drum and chuck available from Craftsman Wood Service Company, 1735 W. Cortland Ct., Addison, IL 60101. Costs are $4.69 for the arbor (part no. H0714), $14.95 for the sanding drum (part no. H0763), and $5.45 for the chuck (part no. H0703). Craftsman also sells shaft-type drums.



corners of the insert to match the radius of the cutout. Finally, bore the 3 1/4 in. diameter center hole.

Another option, if you don't want to fuss with either the rabbeted cutout or the inserts, is to just bore a 3 1/4 in. diameter hole in the adjustable top, and then make several extra tops of 3/4 in. plywood, each with a hole bored in the center to match a particular drum size. These tops can then be clamped or screwed to the adjustable top as needed. Neither these tops nor the adjustable top need be covered with plastic laminate, although the addition of the laminate makes a smoother and more durable working surface.

If you've decided to apply the laminate (B), note that it's applied to both sides in addition to the edges. It's important to laminate both sides of the top to equalize stresses on the plywood substrate. The thumbhole is bored to a 3/8 in. depth with the insert in place. A gentle chamfer on the thumbhole side of the insert will facilitate lifting it out. We usually like to follow a laminating procedure where we first apply the laminate to the bottom, then the edges, and finally the top surface. Use a laminate trimmer bit to trim the laminate flush with the edges of the cutout and insert. The countersunk screw holes in the top are made after the laminate is applied.

Also cut the cleats and the sides (E). We used the router with a rabbeting bit to mill the 3/8 in. wide by 1/2 in. deep rabbets in the sides. The slots can be made by boring two holes, then cutting with a hand-held jigsaw to connect them.

With the adjustable table complete, next go to work on the base. It's just a box with a top and bottom (F), sides (G), and the motor support (H) and mounting block (I). The ways (J) and feet are applied after the box is assembled.

Our box is designed to fit the Delta motor (M) specified in the Bill of Materials. Note that the location of the motor support and mounting block situate the motor so that its shaft is dead-center on the table. If you use another motor, you'll need to locate the motor support and mounting block with respect to it. The way to do this is to first drill the hole in the box top. This hole is drilled to the size of the shaft, which was 5/8 in. diameter on our motor. Then block up the motor so the shaft is dead-center in the hole. Finally, cut the notches in the base sides for the motor support so the support and mounting block will hold the motor on-center in that position.

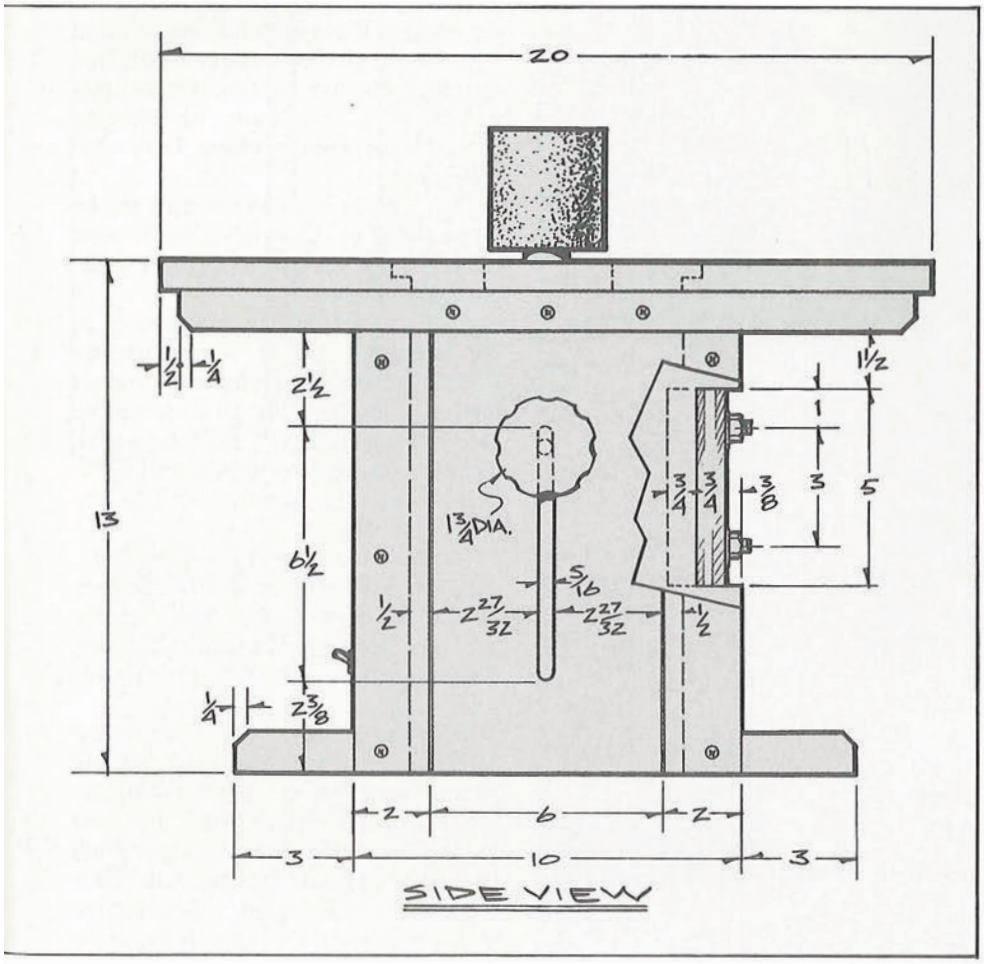
If you have an old motor, but no way of mounting it, a universal strap-type motor mount is available from American Machine & Tool Company, Fourth Avenue and Spring Street, Royersford, PA 19468. It's their part no. A440, which costs $6.75 plus shipping. If you have an old washing machine or dryer motor, these motors usually have a mounting flange with screw holes, so you can dispense with parts H and I altogether. Just screw the motor up into the base top. Use machine screws and threaded inserts for a strong connection.

If you opt for the Delta motor, it comes complete with the cord and switch (N). Toggle switches can be purchased at an electrical supply store, if you use an old motor. In either case, you'll need to make the switch bracket (O). Ours is a hardware store variety right-angle bracket, with one leg cut back and the holes drilled as shown. You may have to alter the bracket size and switch-hole location based on the switch you buy.

The ways have a 3/8 in. by 1/2 in. rabbet, matching that in the table sides. Mount the ways so that the table slides up and down easily without binding. A little paraffin wax on the ways will help prevent wear. Note that we applied a 1/8 in. chamfer to the bottom inside end of the adjustable table sides so that they don't catch on the base bottom or feet as the table is lowered. The plastic knob (L) secures the adjustable table at the desired level. Holes drilled through the box sides accept the carriage bolts onto which the knobs are screwed.

When mounting the arbor to the motor shaft, line up the setscrews in the arbor with either the keyway in, or the flat on, the shaft. If you try to tighten the setscrews directly onto the curved part of the shaft, they'll strip out.

Safety Note: The 3 in. diameter sanding drum we specify is rated as safe for use only below 2500 rpm. Do not use a higher rpm power source.



Thank you for purchasing this *Woodworker's Journal* Classic Project plan.

Woodworker's Journal Classic Projects are scans of much-loved woodworking plans from our library of back issues. Please note that specific products and sources cited in a plan when it originally appeared may no longer be available.

If you experience any problems with this plan, please contact: info@woodworkersjournal.com

or

Attn: Classic Projects
Woodworker's Journal
4365 Willow Drive
Medina, MN 55340

Thank you again for your purchase, and happy woodworking!

Matt Becker
Internet Production Coordinator