

PROJECT

2

WOODWORKS: INTERMEDIATE TV/VCR CABINET WITH SWIVEL TRAY

Don't let the clean, handsome lines of this very functional piece fool you into thinking that building it is beyond your skills. In fact, it is an excellent project choice for a woodworking student starting his or her second year of workshop. Built from walnut cabinet-grade plywood, this handsome TV/VCR Cabinet with its swiveling tray top is an attractive entertainment center designed to house your television, VCR, video cassettes, or even a SEGA GENESIS or NINTENDO video game system.

The project presents the opportunity for woodworkers to practice and polish such skills as measuring precise layouts, routing, using stationary and portable power tools, installing swivel or "Lazy Susan" type hardware, and achieving a fine finish where stain and topcoat are applied together to bring out the beauty of the wood grain.

TOOLS REQUIRED:

- Pencil
- Ruler (zigzag or tape)
- Square (framing, try and 4 ft. T)
- Assorted files
- Phillips screw driver
- Sandpaper (80-grit through 220-grit)
- Hammer
- 11/32" nail set
- Mallet
- Block plane
- Assorted clamps (C, bar, spring-type)
- Table saw with dado head set
- Jointer
- Radial arm saw
- Sanders (stationary belt and portable belt, random orbit, pad)
- Drill press
- Cordless drill-driver with Phillips bit
- Router (3/4" diameter straight bit)
- Safety glasses
- Assorted bits
- Countersinking drill bits

MATERIALS REQUIRED:

See Shopping and Cutting Lists

FINISHING PRODUCTS:

Finish Recommended For This Project

- MINWAX® Pre-Stain Wood Conditioner
- MINWAX® WOOD FINISH™
- MINWAX® Fast-Drying Polyurethane
- MINWAX® Paste Finishing Wax

Alternate finish choices (Choose one)

- MINWAX® POLYSHADES® One-Step Stain & Polyurethane
- MINWAX® WOODSHEEN® Gel Stain & Finish

Miscellaneous

- Minwax® Blend-Fil® Pencils
- Minwax® Stain Markers™
- MINWAX® Professional Strength Wood Glue
- Tack Cloth
- Synthetic bristle brushes
- Clean rags
- Paint thinner, if required
- Water-filled metal container with cover

PROCEDURE:

I. Cabinet - Layout and Cutting

Builder's Tip: When building quality furniture, remember all wood grains should "run" in a certain direction. For this project: sides and back - vertical; top and bottom - left to right.

1. After checking direction of wood grain, rough cut all members (slightly oversized). Note: The easiest way to work a large sheet of plywood initially is by placing it on top of three lengths of 2x3s laid across a pair of sawhorses. This improvised "table" puts the material at a convenient height.
2. Using a securely-clamped 4-ft. T-square as the straightedge, carefully trim the top, shelf, bottom and side pieces to size. Note: Back and tray piece will be trimmed later.

Builder's Tip: Whether you use a table, radial arm, or portable circular saw, a fine tooth, plywood veneer blade should be installed to ensure perfectly clean cuts. Always cut wood with the veneer side down when using a portable circular saw, and with the veneer side up when cutting with table and radial arm saws.

3. Mark locations for ploughing all dados and rabbets on sides, top and bottom pieces.

Builder's Tip: No edge rabbet is required at back edge of the top piece to accommodate the back piece because the back is installed with a 2" space between its top edge and the cabinet top. This space ensures ventilation for the VCR, plus easy ingress/egress for the cords.

4. Plough grooves and rabbets using a 3/4" straight bit in the router guided by a securely-clamped straightedge. If necessary, set up dado heads in the table saw to make these cuts.

Builder's Tip: Cut edge rabbets for bottom piece in veneer side of plywood, so "good" side will face up into the cabinet. All other rabbets should be cut into the non-veneer or "lesser" side of the plywood panels.

II. Cabinet Assembly

1. Temporarily assemble cabinet by tack-nailing parts together with partially driven 1-1/4" finishing nails; if necessary, use several bar clamps as well. Note: Try to position nails where 1-5/8" drywall screws will eventually be driven, so nail holes will not be visible in veneer.
2. With piece assembled, bore screw holes using a counterbore bit, which makes the pilot, shank, countersink and counterbore holes in one step. Note: Drive home several strategically-placed screws to secure the piece until all the holes are bored.
3. With piece assembled, measure and trim back piece to size; temporarily install with veneer side out.
4. Lightly sand cabinet using 150-grit paper in the pad sander; always use with-the-grain strokes. Thoroughly dust all surfaces and disassemble.
5. Reassemble cabinet using carpenter's glue and 1-5/8" drywall screws. Immediately install back piece to ensure that cabinet remains square during glue drying period. Note: Since you may want access to cabinet from the back in the future, install back using screws only - no glue.
6. Use flexible veneer tape to cover exposed plywood edges:
 - a) Cut tape slightly overlength for each edge.
 - b) Work one edge at a time; apply contact cement to back of tape and mating surface, allowing adhesive to dry until it can be touched with a piece of clean brown paper without sticking.
 - c) Carefully position first end of tape and guide along edge. Trim off any overlap.
 - d) Allow entire assembly to rest for at least four hours.

III. TV Tray

1. Trim TV tray to size.
2. Install turntable (swivel) hardware. Note: Select and install turntable hardware that will accommodate the size and weight of the television it will support.
 - a) Center "blind" side of turntable on tray's underside and mark screw holes.
 - b) Remove turntable and bore holes for four No. 6 (1" long) self-tapping screws. On top side of tray, bore countersink holes (about 1/4" deep) using drill and countersink bit, so screw heads will be slightly below the wood surface when turned home.
 - c) To make certain that self-tapping screws are correct length and won't interfere with turntable operation, temporarily attach the tray to the turntable by driving at least two of the screws into the turntable's small holes.
 - d) Remove turntable from tray.
 - e) Center turntable on top of cabinet; "blind" side up, mark and bore pilot screw holes for bottom plate.

- f) Lubricate turntable's ball bearings with a light to heavy oil, depending on the degree of rotating action wanted.
 - g) Mount turntable on cabinet using four 1" No. 8 roundhead wood screws.
 - h) Place the tray on the turntable using 6d finishing nails as guide pins to position the pre-drilled holes over the small turntable holes. Remove nails one at a time and drive home four self-tapping screws.
3. Cut the required number of 1/4" long dowel plugs from a length of 3/8" dowel to conceal screws holding cabinet together. To keep sanding on veneer surface to a minimum, do not cut plugs too long. Squirt glue into each hole and press plugs into place. Immediately remove excess glue from surface with clean, damp rag. Allow glue to dry overnight if possible.
 4. Position plate casters on underside of bottom piece; mark for screws and bore pilot holes.
 5. Fasten casters to cabinet bottom using screws that come with the hardware.
 6. Inspect cabinet inside and out for smoothness. Sand lightly where necessary and wipe clean.

IV. Staining and Finishing

1. Wipe all surfaces with a tack cloth to remove dust.
2. Apply MINWAX® Pre-Stain Wood Conditioner according to label instructions. Wait 15 minutes, and wipe away excess using a clean rag. Apply stain within two hours.
3. Sand again lightly with 220-grit sandpaper and remove dust with the tack cloth.
4. Stir the stain well; apply the MINWAX® WOOD FINISH™ of your choice with a clean brush and with-the-grain strokes. Allow to set for 5 to 15 minutes, depending on desired tone. Wipe off excess with clean, lint-free rag. Apply second coat if desired. Note: For stain and polyurethane protection in one easy step, use any MINWAX® Polyshades® or MINWAX® WOODSHEEN® color according to label instructions.
5. Allow piece to dry for at least 8 hours, or, preferably, overnight.
6. To achieve a tough finish with a soft luster, apply a coat of MINWAX® Fast-Drying Polyurethane following the label instructions. Allow to dry overnight.
7. Allow piece to cure for at least two weeks.

V. Clean Up

- If you have product left over, wipe the can rim so that product in the rim won't dry out and prevent the lid from forming a tight seal.
- Clean brushes used for oil-based finishes with mineral spirits; soap and water is all that is needed for brushes used for water clean-up products.

PRODUCT SAFETY

DANGER! HARMFUL OR FATAL IF SWALLOWED. SKIN IRRITANT. COMBUSTIBLE. KEEP OUT OF REACH OF CHILDREN.

DANGER: Contains mineral spirits. Harmful or fatal if swallowed. Do not take internally. Skin irritant. Avoid contact with skin and eyes. Wear rubber gloves and safety glasses when handling. Combustible. Do not use or store near heat, sparks, flame or other source of ignition. Close container after each use. Avoid inhalation and use only with adequate ventilation. If using indoors, open all windows and doors to make sure there is fresh air movement. If adequate ventilation cannot be maintained, wear respiratory protection (NIOSH / MSHA TC23C or equivalent) or leave area. Keep out of reach of children.

FIRST AID: If swallowed: Do not induce vomiting. Call physician immediately.

FOR SKIN CONTACT: Wash thoroughly with soap and water. If irritation persists, get medical attention.

FOR EYE CONTACT: IMMEDIATELY flush eyes thoroughly with water, then remove any contact lenses. Continue to flush eyes with water for at least 15 minutes. If irritation persists, get medical attention.

IF AFFECTED BY INHALATION: Immediately remove to fresh air. If symptoms persist, call physician.

VI. Safe Disposal of Rags & Waste

Please be mindful of the safe way to dispose of used rags and other waste. Remember that rags, steel wool and other waste soaked with oil finishes may spontaneously catch fire if improperly discarded. Place these items in a water-filled metal container immediately after use. Tightly seal the container and then dispose of it in accordance with local fire regulations. Be sure to keep the container out of reach of children.

FINISHER'S TIPS

- Stain and finish all exposed surfaces including the cabinet's interior and bottom surfaces to help prevent warping.
- If additional surface protection is desired, apply a coat of MINWAX® Paste Finishing Wax over all exposed surfaces. Let stand for 10 minutes, then buff with a clean fiber brush (scrub brush). Finish buffing with a clean, lint-free rag.
- If you spot any minor imperfections in the wood (e.g. pinholes, surface scratches) resist the urge to use a wood filler before applying any stain. Conventional wood fillers may not absorb stain in exactly the same manner as adjacent wood, so the spot will become even more evident. Instead, wait until finish has dried completely and then use MINWAX® Blend-Fil® Pencils or Minwax® Stain Markers™ for touch-ups.
- It's critical that all stains and finishes be allowed to dry thoroughly between coats. Remember, drying times may vary due to humidity and other climatic conditions.

Materials Shopping List, nominal dimensions

A	TV tray	3/4 x 12 x 18"	pine (1 pc.)
B,C,D	Top, Shelf	3/4 x 4 x 8'	cabinet-grade plywood,
E,F	Bottom, Sides, Back		walnut veneer(1 pc.)

Cutting List, actual dimensions

A	TV tray	3/4 x 12 x 18"	1 required
B,D	Top, Bottom	3/4 x 18 x 25"	1 each required
C	Shelf	3/4 x 17-1/4 x 24-1/4"	1 required
E	Sides	3/4 x 18 x 23-1/4"	2 required
F	Back	3/4 x 21-1/4" x 24-1/4"	1 required

Miscellaneous:

MINWAX® Professional Strength Wood Glue, 1-5/8" drywall screws, 1-1/4" brads, assorted nails, length of 3/8" dowel, flexible wood tape, contact cement, machine oil for lazy Susan.

Hardware:

Four 1" no 6 panhead sheet metal screws, four 1" no. 8 round head wood screws, Lazy Susan swivel (No. 9548, Shepherd Hardware), 30mm plate casters (No. 27144, Woodcraft).

PROJECT 2 CONTINUED - WOODWORKS: INTERMEDIATE - TV/VCR CABINET WITH SWIVEL TRAY TOP

