

Gateleg Table

Tradition meets practicality



Traditionally, gateleg tables share two general design elements: They are small (tea-table or occasional-table size) and have round or oval tops. When we decided to resurrect the gateleg approach, we deliberately disregarded tradition, choosing instead to make a large, rectangular-top kitchen table with a drop leaf at each end.

The resulting table has a top that's generously proportioned to make it useful even when the leaves are down, but it's compact enough to fit into a small alcove or up against a wall. With the leaves extended, the table can seat six diners comfortably. Because each end has not one but two gatelegs, you can slide chairs under the table on all sides. The gateleg pairs also provide

In redesigning the classic gateleg table, we came up with this variation that is both practical and elegant, with room for six diners, yet small enough for almost any space.

more stability and support than a single gateleg or a pull-out drop-leaf support.

We used hard maple for the table base and maple-veneered medium density fiberboard (MDF) for the tabletop and leaves. MDF-core sheet stock is denser than veneer-core plywood, which makes it more stable and less prone to deflection or warping and gives it a heavier feel. We chose sheet

stock with plain-sawn hard maple veneer that looks more like solid wood than the more typical (but considerably cheaper) rotary-cut veneer.

Make the top and leaves

To begin, cut the tabletop and leaves to rough size from heavy MDF-core sheet stock (photo 1). Then cut them to final size on your table saw. (We

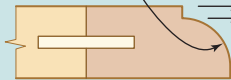


GATELEG TABLE

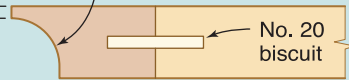
1/2" rad. roundover

1/8" lip

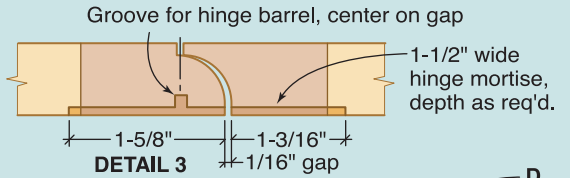
1/2" rad. cove



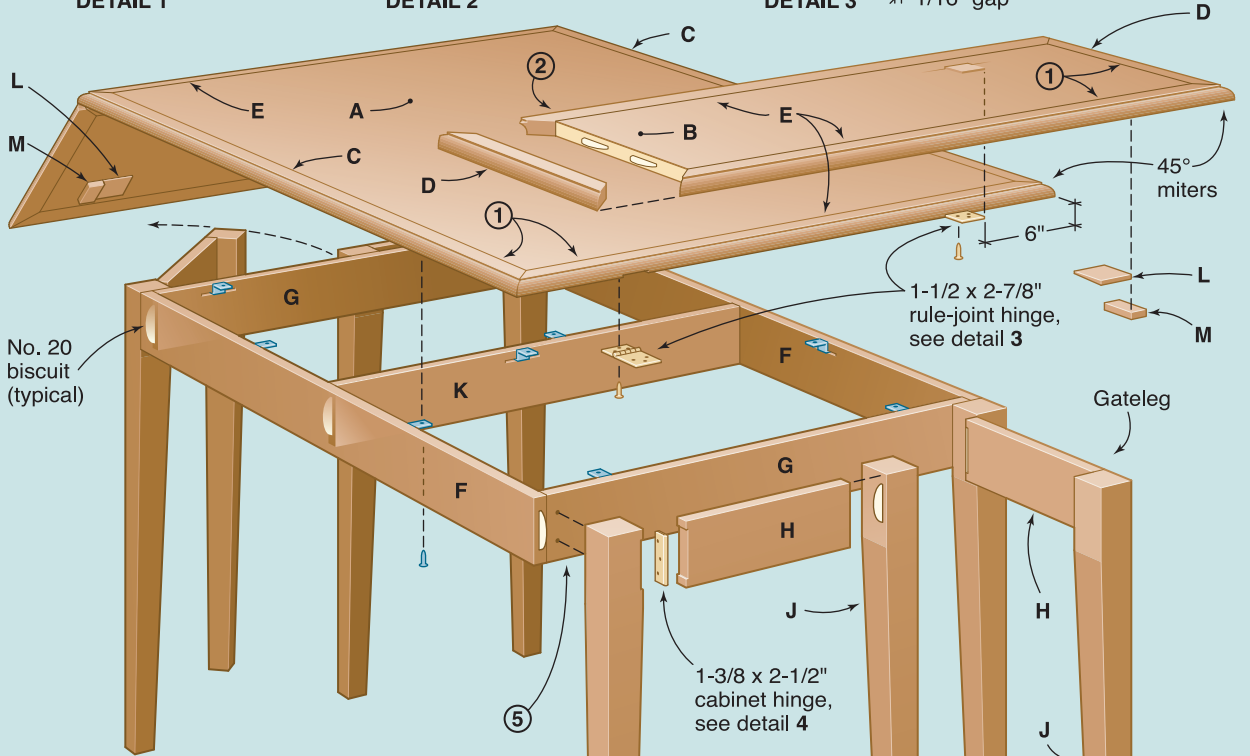
Tabletop
DETAIL 1



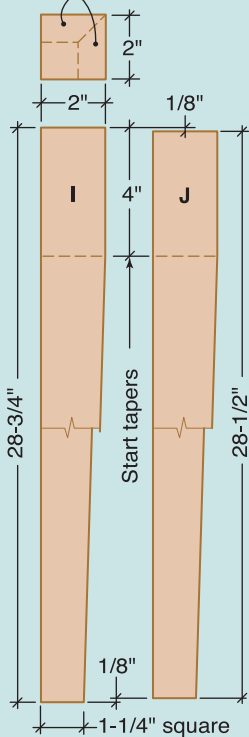
Leaf
DETAIL 2



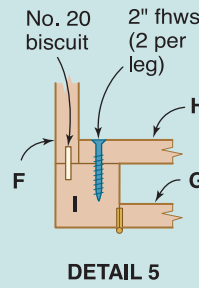
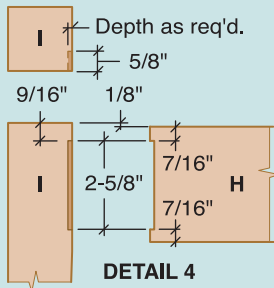
DETAIL 3



Taper on two inner sides

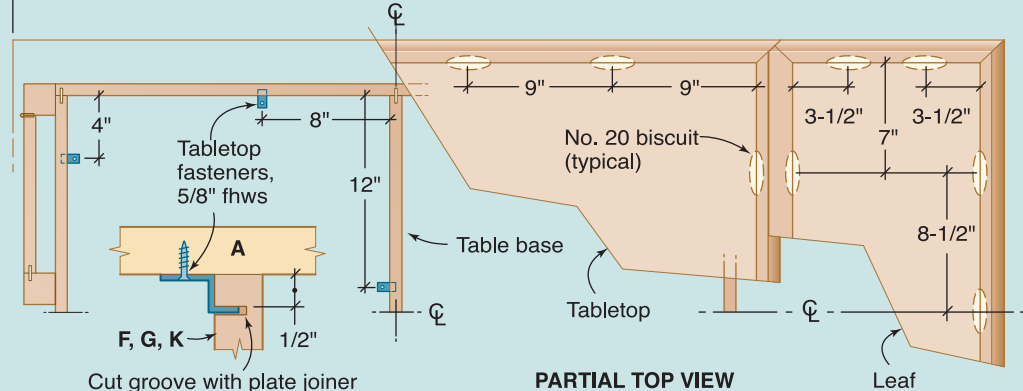
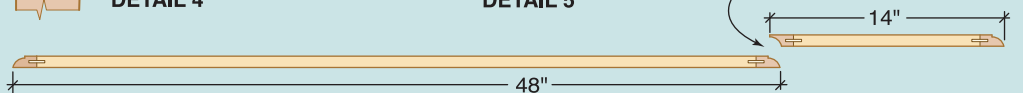


LEG DETAILS

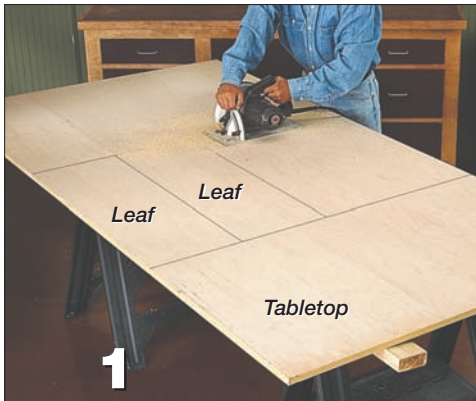


DETAIL 5

Rule joint (see details 1 and 2)



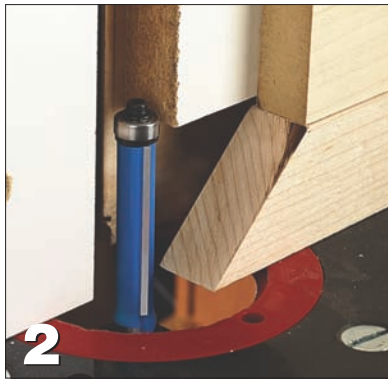
PARTIAL TOP VIEW



1 Lay out the tabletop and leaves on sheet stock. Cut them to rough size with a circular saw and then to final size on the table saw. The grain runs in the same direction on all parts.

used a 40-tooth blade on our circular saw and an 80-tooth blade on our table saw.) Try to cut the pieces so all four sides have freshly cut edges.

The leaves and tabletop are banded with 1-1/2-in.-wide maple strips to conceal the edges. You have a couple of milling options when making the banding. The easier way is to plane and joint your banding stock so it's exactly the same thickness as the MDF stock. By using biscuits to align the banding strips, you should be able to get a pretty clean fit. But if you're a little more particular and you want to guarantee that your banding strips are exactly flush with the top and bottom surfaces



2 After mitering the corners of the 1-1/2-in.-wide banding strips, attach two opposing strips with No. 20 biscuits; then trim the banding flush with the surfaces of the tabletop and leaves using a 2-in.-long flush-cutting bit.

of the MDF, mill the strips so they're slightly thicker than the MDF — about 7/8 in. Then after you attach them, trim them — either by sanding or by using a router and flush-trimming bit. We chose the latter approach. It turned out to be a bit cumbersome, but our effort resulted in nice, flush seams.

To trim the banding, first attach a tall auxiliary fence to your router table fence. The bottom of the auxiliary fence should be far enough above the surface of the router table to provide clearance for the banding (at least 1-3/4 in.). Mount a piloted flush-cutting bit in your router table — we used a 2-in. bit to trim our 1-1/2-in.



3 Attach the second set of opposing strips as shown here, again using No. 20 biscuits and glue. Once the glue is dry, run this banding through the router table as before. Repeat the process until you have finished all three panels.

banding strips. Adjust the fence so it's aligned exactly with the outside edge of the bearing on the piloted bit. Then feed the panel through the bit after the banding strip is attached, pressing the surface of the panel against the fence.

When framing a panel, trim each banding strip before the adjoining untrimmed strip is attached. Otherwise, the untrimmed strip will catch on the auxiliary fence, throwing off the cut. We cut all of our miters before flush-trimming, taping each banding strip in place once all the miters fit. Then we labeled and removed the strips. We attached two opposing strips to each panel using glue and No. 20 biscuits.

SHOPPING LIST

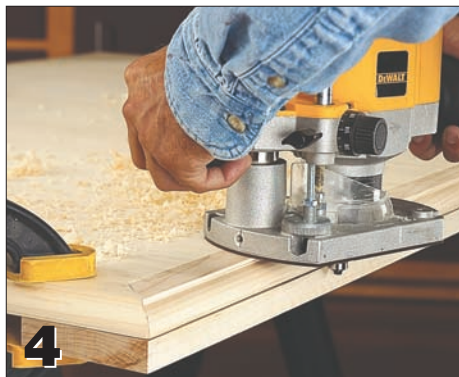
- 3/4-in. x 4x8 sheet MDF-core plain-sliced maple veneer plywood (1)
- 10 bf 10/4 hard maple (for eight legs)
- 14 bf 4/4 hard maple, for 25 ft. of 7/8 x 1-1/2-in. trim and 20 ft. of 3/4 x 3-1/2-in. rail
- 2-1/2 x 1-3/8-in. cabinet hinges (4)
- 1-1/2 x 2-7/8-in. rule-joint hinges (2)
- Table clips (10)

MATERIALS AND CUTTING LIST*

- A1.....Tabletop, veneered MDF3/4 x 31 x 45 in.
- B2.....Leaves, veneered MDF.....3/4 x 11 x 31 in.
- C2.....Banding3/4 x 1-1/2 x 48 in.**
- D4.....Banding3/4 x 1-1/2 x 14 in.**
- E6.....Banding3/4 x 1-1/2 x 34 in.**
- F....2.....Front/back rails.....3/4 x 3-1/2 x 42-1/2 in.
- G....2.....End rails.....3/4 x 3-1/2 x 27 in.
- H....4.....Swing rails3/4 x 3-3/8 x 10 in.
- I....4.....Legs2 x 2 x 28-3/4 in.
- J....4.....Gatelegs2 x 2 x 28-1/2 in.
- K1.....Spreader3/4 x 3-1/2 x 27 in.
- L....4.....Leveling wedges.....1/4 x 2 x 2 in.
- M....4.....Stop blocks3/8 x 1 x 2 in.

*All parts solid maple except as noted

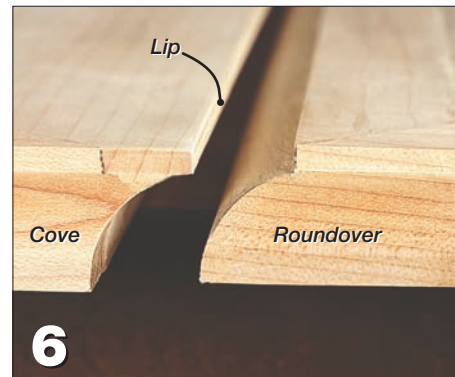
**Finished size, see text



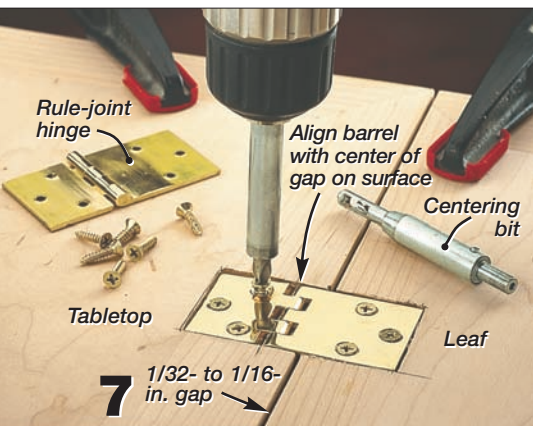
4 With a piloted 1/2-in. roundover bit, cut the profile in all four edges of the tabletop and in all but the hinge edges of the leaves. Don't try to cut the entire profile in a single pass — you'll need to make at least two or three passes.



5 Cut cove profiles in the hinge edges of the leaves. Make test cuts on scrap wood first until the router is set up so the coved board fits snugly together with the roundovers on the hinge edges of the tabletop (see next photo).



6 When cutting both the roundover and the cove (thus forming a rule joint), make sure the mating parts fit together snugly, with the tops and bottoms flush. Leave a lip (1/8 to 1/4 in.) at the top of each edge.



7 Cut mortises for the rule-joint hinges, remembering to allow for the hinge barrels. Use spacers between the tabletop and leaves to create a consistent 1/32- to 1/16-in. gap.



8 Cut tapers in two adjoining faces of each leg, starting 24-3/4 in. from the leg bottom. The bottoms of the legs should measure 1-1/4 x 1-1/4 in. after the tapers are cut. We used a tapering jig and table saw to make the taper cuts.



9 Using No. 20 biscuits and glue, attach a pair of legs to each end of each front/back rail. The outer face of each rail should be flush with the outer faces of the legs. Make sure the tapered faces of the legs meet at the inside corner.

Once the glue set, we ran the strips through the flush-cutting bit on both faces (photo 2). Then we attached the second set of opposing strips and ran them through, repeating until all three panels were framed (photo 3).

Once you've attached all the banding, cut the edge profiles and the rule joints. Start by mounting a piloted 1/2-in. roundover bit in your router. Cut a roundover in all four edges of the large tabletop, leaving a 1/8-in. lip at the top of each cut. Also round over the end and short edges of each leaf, leaving the longer edge that will mate against the tabletop uncut. You'll need to make a minimum of two passes on each cut, deepening the cut after each pass (photo 4).

Make a 1/2-in. cove cut on the mating edge of each leaf (photo 5). This cut should also leave a 1/8- to 1/4-in.-thick lip at the top edge. Make the cove cuts a little at a time, checking the fit of the coved edge against the mating roundover cut on the tabletop edge (photo 6). Cut until the matching parts fit together perfectly, forming the rule joint.

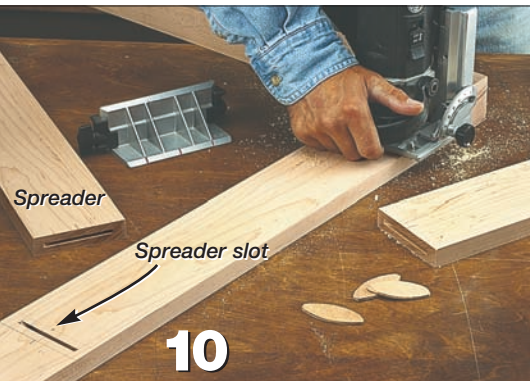
Next, attach the rule-joint hinges (see SOURCES) to the tabletop and leaves. Use a pair of hinges at each joint, positioning the hinges so the near edge is 6 in. from the tabletop and leaf edges.

To lay out hinge locations, set the tabletop and leaves upside down on a flat surface. Press the rule joints together; then separate them by 1/32 to 1/16 in. to provide joint clearance.

Position the hinges so they're parallel with the joint and the hinge barrels are centered on the seam of the rule joint on the top side of the tabletop. Outline the hinge plates on the tabletop and leaves. Cut the mortises with a sharp chisel — note that the mortises for the short plates should start about 3/4 in. from the mating edges of the tabletop. You'll need to cut a shallow groove in the tabletop mortise to house the hinge barrel. Attach the hinges with 3/4-in. screws driven into pilot holes (photo 7). Use a centering bit to drill the pilot holes.

Make the legs

To begin making the legs, plane 10/4 maple to 2 in. thick; then rip it into



10 Cut biscuit slots for joining the rail/leg assemblies to the end rails. (Remove the fence from the biscuit joiner to cut the slots for the legs.) Cut biscuit slots for the spreader that fits between the front and back rails as well.

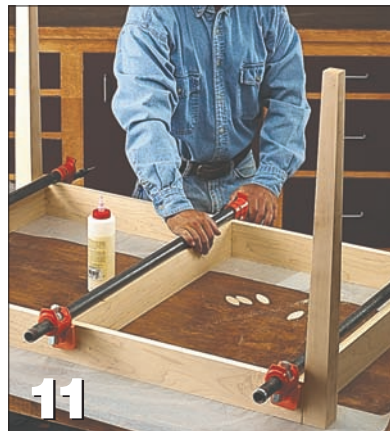
2-in.-wide strips. (You could laminate thinner strips of maple into blanks if you prefer.) Cut all eight legs to a rough length of at least 30 in.

Lay out tapers in the two adjacent edges of each leg. The tapered legs will be 1-1/4 x 1-1/4 in. at the bottoms and gradually increase to the full 2 x 2-in. thickness 24-3/4 in. from the bottom. To cut the tapers (photo 8), we used a table saw and taper-cutting jig. You could also use your jointer or a band saw.

Once you've cut the tapers, cut all eight legs to 28-3/4 in. long, resulting in 4 in. of untapered stock at the top of each leg. Then trim 1/8 in. off each end of four of the legs (the gatelegs). Making the gatelegs slightly shorter prevents them from touching the floor when the table leaves are down — otherwise, the table will rock.

Make the table base

Now that the legs are completed, you can begin the table base. Plane and rip stock to thickness and width; then cut the front/back rails, end rails, swing rails and spreader to length. Attach a fixed leg to each end of the front and back rails. The legs should be flush with the rail ends and tops. Make sure the legs and rails are perpendicular and the



11 Glue-up the table base assembly. Check to make sure the legs are square to the rails, and adjust as necessary. Clamp until dry.

tapered faces meet in the inside corner. Join the legs to the rails with glue and No. 20 biscuits (photo 9).

Position the end rails and spreader between the leg/rail assemblies. Cut slots for biscuit joints (photo 10); then glue and clamp the joints, checking to make sure the assembly is square (photo 11). For extra reinforcement, drive a pair of No. 8 x 2-in. flathead wood screws through the inside faces of the end rails into each leg.

Next, make the swing rails. Attach the gatelegs to the swing rails using glue and biscuits (photo 12). The tops of the swing rails should be flush with the tops of the gatelegs, and the faces should be flush.

Cut mortises for your cabinet hinges in the free ends of the swing rails and in the inside faces of the fixed legs. Position the hinges so the bottom edges of the swing rails are flush with the bottom edges of the end rails, creating a 1/8-in. gap between the tops of the swing rails and the tops of the fixed rails. (This will provide clearance for the swing rails and allow you to level the leaves.) Screw the hinges to the swing rail ends and then to the fixed legs (photo 13).

Attach the tabletop

We used table clips to attach the MDF-core tabletop to the table base. We cut the grooves for the clips with a biscuit



12 With No. 20 biscuits and glue, attach the swing rails flush with the tops of the gatelegs. Make sure to trim 1/8 in. from the end of each gateleg first, and note that the swing rails are 1/8 in. narrower than the fixed rails.

joiner. Once the grooves are cut, lay the tabletop and leaves upside down in an open position on a flat surface. Position the table base on the underside of the tabletop, adjusting so the overhang is equal at the front and back and on the ends. Attach the tabletop by driving 5/8-in. flathead wood screws through the guide holes in the table clips and into the underside of the tabletop (photo 14). Do not use glue.

Adjust and level

Set the assembly upright; then swing the gatelegs open. Use a framing square or straightedge to adjust the gatelegs until the swing rails are parallel with the front and back rails. Outline the position of the gatelegs on the undersides of the table leaves.

Bevel-rip a 2-in.-wide strip of maple so it's 1/4 in. thick on one edge and 1/8 in. thick on the other. Cross-cut the strip so you have four 2 x 2-in. pieces to serve as leveling wedges for the leaves. Slip each wedge between the bottom of the leaf and the top of a gateleg, leading with the thin edge of the wedge. (Make sure the legs match up with the outlines you made on the tabletop.) Adjust the wedge position so the leaf is level with the tabletop. Trace a cutting line onto each wedge by following the edge of the gateleg (photo 15). Trim each wedge along



13
Cut mortises for the swing rail butt hinges, making sure to center the hinge plate top-to-bottom on the swing rail. Use a centering bit to drill pilot holes for the hinge screws; then attach the hinges.



14
Use table clips to attach the tabletop to the table base. Drive 5/8-in. screws through the clips and into the tabletop. Make sure the top is centered on the base and that the leaves have clearance to swing.



15
Open the table and adjust the level of each leaf by slipping a wedge between the top of each leg and the underside of the leaf. Adjust the wedge until the leaf is level. Mark the position of the wedge, trim it to size and glue it in place.

the cutting line; then glue the wedges to the undersides of the leaves. Test the fit when the glue is dry: You may need to attach leveling feet to the gateleg bottoms, depending on how flat your floor is.

To prevent the gatelegs from swing-

ing open too far, cut thin stop blocks and glue them next to the wedges, away from the direction of swing.

Finally, sand thoroughly and apply your finish of choice. We sprayed satin-finish waterborne lacquer with an HVLP sprayer.

SOURCES:

Lee Valley Tools (Drop-leaf hinges)
 Ogdensburg, NY, 800-267-8735
www.leevalley.com

Woodcraft (Drop-leaf hinges)
 Parkersburg, WV, 800-225-1153
www.woodcraft.com

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