

# Ash Gunwale Installation

Enjoy the warmth and timeless beauty ash gunwales bring to your canoe. Restoring or upgrading your gunwales can be accomplished with simple hand tools. This sheet shares process and techniques we at the NWC repair shop, tips to help make your project flow smoothly.



## What's Included

4 gunwales: 2 inwales, 2 outwales

Optional:

- 1 stainless hardware set: #8 gunwale screws & deck screws, 10-24 yoke, thwart & seat bolts
- 2 end decks (call for availability)
- 2 seats
- 8 seat hangers
- 2 thwarts
- 1 portage yoke



## Tools You'll Need

- measuring tape & pencil
- bar of soap / wax
- T-bevel sliding square
- compass
- #2 phillips screwdriver
- 3/8" wrench
- cordless drill or screwdriver w/square drive & #2 phillips bits
- electric drill and bits w/ #8 & #10 countersinks
- 2 10" hand screw clamps
- 2 9" spring clamps
- 1 24" quick grip / bar clamp
- soft mallet / hammer
- sanding block / electric sander
- file
- fine tooth saw

## Safety

Wear protective eyewear and clothing.

## How To

1. Mark the placement of seats, thwarts, portage yokes... any components attached to your gunwales. Measure and diagram; place your tape on the stem and swing left then right, drawing an imaginary isosceles triangle. Measure from the bow stem to the bow carry handle, front edge of the bow seat, bow thwart, yoke; and measure from the stern to the front edge of the stern seat...  
A hand-drawn diagram of a canoe on a whiteboard. The word "Yoke" is written in large letters on the left side, and "stern" is written on the right side. A vertical line is drawn through the center of the canoe, and a horizontal line is drawn across the width of the hull.
  2. Remove the gunwales. You can toss the gunwales but hang on to the components, even if you intend to replace blown-out cane seats and dry rotted thwarts. You'll want these parts for cutting/drilling templates later.  
A hand-drawn diagram of a canoe on a whiteboard. A hand is shown holding a yellow measuring tape against the diagram. The word "stern" is written on the right side of the diagram.
3. Clean-off any accumulation of dirt, or gummy-goo (detergent and fine pot scrubby works as well as anything). Cut off stray fiberglass or Kevlar threads. File the top edge of any rough spots. The installation will go more smoothly on a clean boat.
  4. Place a spring clamp near the bow and stern, same side of the canoe. Hold one inwale parallel to and above the keel line. Pull the center of the inwale towards you letting the ends of the gunwale rest against the clamps. Match centers. Spot nail, tack, or screw the inwale to the hull in three to five places. [Tip: leave the hull 1/16" higher than the top of the gunwale] The final tack should fall no closer than three feet from the ends of the canoe. The outwale will cover the nail/screw heads, keep the heads flush. Tacked-in, the inwale now protrudes a foot or two beyond the stems.

5. Trim the inwale. For the cap style end decks typical on Royalex hulls, saw the inwale an inch short of the stem. It's OK to square-off the end, remember it's covered by the deck. The shorter inwale will help ward off Royalex cold cracks, a concern if you reside in the northern tier. If you plan to finish with an inset deck, bisect the angle. Remember those parts you saved? Retrieve the deck; trace the outside edge; lock the compass and draw six tic marks as shown in the above photo. Use your sliding square to transfer the angle to the inwale tacked into the hull. Cut. Leave the line; you can sand to shorten the inwale, but you can't stretch it.



6. Repeat steps four and five to tack-in and cut the second inwale. If you're insetting the decks, your angled ends will mirror and nest inside the hull.

7. Starting dead center, mark the screw positions on both inwales. Spacing varies from 6" to 8" among canoe manufactureres. The tighter 6" spacing will give you a better fit. IGNORE the original holes.



8. Clamp an outwale to the canoe placing one of the 10" screw clamps on either side of your center mark. Use a quick clamp / spring clamp near each end to support the outwale and prevent it from flopping around.



9. Drill a pilot hole. The electric drill provides the speed and torque you need. Tapered drill bits work best. Set your #8 countersink to the exact length of the screw, typically 1 1/4" for composite and 1 1/2 for Royalex hulls. Drill from the inwale towards the outwale.

10. Wax / soap a screw.

11. Set your cordless to the MINIMUM torque setting and drive the screw. It's better to set the torque light, back the screw in and out it if it does not go home on the first try. Heavy on the torque increases the risk of splitting a gunwale.

12. Loosen both screw clamps; slide them to either side of your next mark, retighten, and repeat steps 9, 10 and 11. Tap the top or bottom of either screw clamp to micro align the outwale. Continue working towards one end of the canoe. As the canoe narrows to zero working room, drill the pilot holes from outwale to inwale.

13. Return to the center and work your way down the gunwale towards the opposite end of the canoe.

14. Trim the excess gunwale off both ends.

15. Attach the second outwale following the same sequence, but do not cut off the excess.

16. Do you plan to inset the deck? If so, study the clamp menagerie in the bottom photo. See the uncut outwale. A horizontal screw clamp on the uncut gunwale is keeping the whole mess from sliding off the end



17. With the inset deck clamped in place, remove the outwale screws one at a time. Tap a deeper hole and replace each with a (well waxed) 2 or 2 1/2" screw. Your deck is now securely attached.

18. You want the final screw on the uncut outwale to go all the way through the boat and halfway into the opposing outwale.

19. Now it is safe to remove your clamps and trim off the excess gunwale. If you cut the gunwale before you drive that final long screw you will more than likely split your new outwale.

20. Sand the gunwales.

21. Go back to the parts you set aside. If you are replacing any components, mirror old to new and mark cutting lengths, angles and hole positions.

22. With your measurement sketch in hand, mark the position for seats, thwarts, etc. Drill with #10 countersink. Make the holes large enough that bolts slide freely though the hole.

23. Give your new gunwales a final sanding and a couple of coats of a penetrating finish like WATCO.