

**LTV UNITY MB / FX MODIFICATION:
FOLDING MATTRESS MURPHY BED Porthole Windows**

Project: Add two (2) portholes to the Murphy bed to allow access to the horizontal windows on the left side of coach with the bed up.

Cost: \$50 per window x 2 = \$100. Time: 4 hours

Materials:

Amazon: 2x Amarine-made Boat Yacht Rectangle Opening Portlight Porthole 15-3/4" x 7-7/8" Replacement Window Port Hole - ABS Tempered Glass, Color: White, Black. [Attachment 1]

Lowes: 22x 2" 10-24 stainless steel flathead bolts, Acorn nuts and lock washers.

1x M-D 10-ft 3/8" black rubber marine / automotive weatherstrip.

Home

Depot: 1x #2 Flat Head Phillips Black Screw Covers (24-Pack)

Construction:

1. Remove the locking hardware (knobs and threaded posts) from both portholes by carefully driving loose the retention pins with an awl. Remove the drainage channels from both portholes [Photo 1].
 - Note 1: My photos show I did it later in the process. Live and learn.
 - Note 2: I used a hand-held hacksaw blade to cut the drainage channels off.
 - Note 3: SEE NEW NOTE UNDER "OPERATION" ON LAST PRINT PAGE!
2. Lower the bed and remove the mattress. Remove the screws from the aluminum latching mechanism plate, remove the plastic pull handle and strap by loosening the Allen screw, and remove the plate by disengaging the locking nut on the end of the cable housing [Photo 02].
 - Note 1: Photo was taken after the hole was cut, because I forgot to take an earlier picture.
3. If you have wood pull-down handle, remove the screw holding the bottom of the handle, and angle the handle to the right [Photo 03] enough to drill a new screw hole to the right of the latching mechanism recess [Photo 02]. Re-fasten the pull-down handle through the new screw hole.

- Note 1: Photo was taken after the positioning holes were drilled, because I forgot to take an earlier picture).
- Note 2: See the re-positioned pull handle screw installed in its new location on the right side of the latching mechanism cutout in Photo 2.

4. Raise the bed. Using a thin trim plate, locate the right side hole location next to the pull down table. Place the trim plate as high as possible to still stay below the table locking knob. With a dry marker, trace around the inside of the trim plate. Drill at least two (2) holes on each straight line, as close as possible to the start of the corner arcs [Photo 03]. Place masking tape over all lines to minimize splintering of the wood panels during hole cutout [Photo 04].

5. Lower the bed. Place a porthole on the bed, using the drilled holes for location [Photo 5]. Make sure that the installed porthole in this location will clear the table locking hole. With a dry marker, trace around the inside of the porthole ring. Drill a starter hole, then cut out the mounting hole with a jigsaw and fine tooth blade.

- Note 1: Support the bed in a fashion that will prevent damage to the LTV cushions during hole cut-out activity. For example, on the FX, support the bed on the pull out chaise frames with a couple of properly-placed, on-edge 2"x 4"s.
- Note 2: The wood panels are very, very thin. Go slow.
- Note 3: Cut on the outside of the dry marker line to minimize any rasp or file work.

6. Temporarily replace the aluminum latching mechanism plate, and mark the area that must be removed to permit porthole clearance. Cut the plate as marked.

- Note 1: When temporarily replacing the aluminum plate for marking purposes, it is not necessary to reattach the cable, but it is helpful to replace a couple of screws for proper positioning.

7. Reinstall the latching mechanism by reattaching the cable to the plate with the nut, reattaching the pull handle and strap to the cable with the Allen screw, and reinstalling the plate to the bed [Photo 6].

- Note 1: There is a lot of spring tension on the latching cable. I found it necessary to use a needle nose pliers to hold the cable fully extended so the Allen screw would seat back fully into the slot on the end of the cable.

8. Apply adhesive-backed weather stripping to the bed side of the porthole mounting plate on each porthole, aligning it with the outer edge of the plate [Photo 7].

- Note 1: As manufactured, the porthole ring is too deep, and would extend out approximately .50" past the thin trim plate. This is bad from an aesthetic viewpoint in the vertical position but also would deepen the impression in the LTV support cushions in the horizontal position. And, 2.0" mounting bolts would be too long, 1.50" bolts would be too short, and 1.75" bolts are not readily available. Weather stripping cures all these ills, with no adverse aesthetic effect.

9. Dry fit the porthole into the opening, with the hinges toward the head (wall side) of the bed. [Photo 8] Raise the bed and remove the anti-splinter masking tape. Place a thin trim plate over the porthole ring. Holding the two components in place by hand, or with small clamps, drill mounting holes through the countersink holes in the thin trim plate, bed sandwich and porthole trim plate.

- Note 1: As manufactured, the holes in the porthole mounting plate and in the thin trim plate are offset, so as to allow mounting to a hull with screws, not thru-bolts. The holes drilled from the thin trim plate holes will therefore create new holes in the porthole mounting plate.

10. From the table side of the bed, insert 2" stainless steel bolts through the thin trim plate, add small lock washers and thread on Acorn nuts [Photo 7]. Carefully tighten the nuts in a random order, compressing the weather strip evenly and as little as necessary to get the lock washers seated, so as to minimize intrusion of the porthole ring past the thin mounting plate.

11. With the right porthole installed [Photo 9], measure the distance of the right thin trim ring from the top and side of the bed platform. Using these measurements, locate the remaining thin trim ring on the left side of the platform and repeat steps 4, 5, 8 and 9, except that there will be no table locking knob to avoid.

12. Lower the bed. Open the portholes with the glass flat to the bed platform [Photo 10]. Replace the mattress [Photo 11]. Snap the retaining strap in place. Raise the bed [Photo 12]. Using a very small drop of super glue on the tip of the cover, install a black cover into each bolt head [Photo 13].

- Note 1: There will be unused countersink holes in the porthole mounting plates. These will not be seen when the bed is vertical or when horizontal with the mattress in place. However, if you wish these can be filled with black plastic putty.
- Note 2: The covers are for #2 screws. The bolts used have driver slots larger than #2 screws. However, I could not readily find covers to fit the larger slots.
- Note 3: Use very little glue. Any excess will push out of the cover and mar the surface of the thin trim plate.

And you're done! [Photo 14]

Operation:

- A. Night: Lower the bed. Unsnap the retaining strap. Lift each corner of the folded mattress enough to close the porthole. Unfold the mattress.
- B. Morning: Fold the mattress. Lift each corner of the mattress enough to open the porthole. Snap the retaining strap in place. Raise the bed.

New Note (September 8, 2018):

After these instructions were originally published and disseminated in late August 2018, it was pointed out by several people at the annual rally in Winkler in early September that because the mattress is relatively stiff, and the porthole openings are not particularly large, it may not be necessary to leave the glass and glass frames in place [Photo 10]. After many nights of actual use, that is now my assessment as well. It is my intention to remove the glass and frames, and also cut off and sand smooth the plastic mounting tabs on the porthole mounting plates. If you agree, then this can be accomplished during the 1st construction step, and the Operation steps A and B, above, can be ignored.

New Note (October 15, 2018):

I have now removed the glass and frames, and also cut off and sanded smooth the plastic mounting tabs on the porthole mounting plates. This would have been easier at the outset.

If you have any questions, text, call or email Mark @

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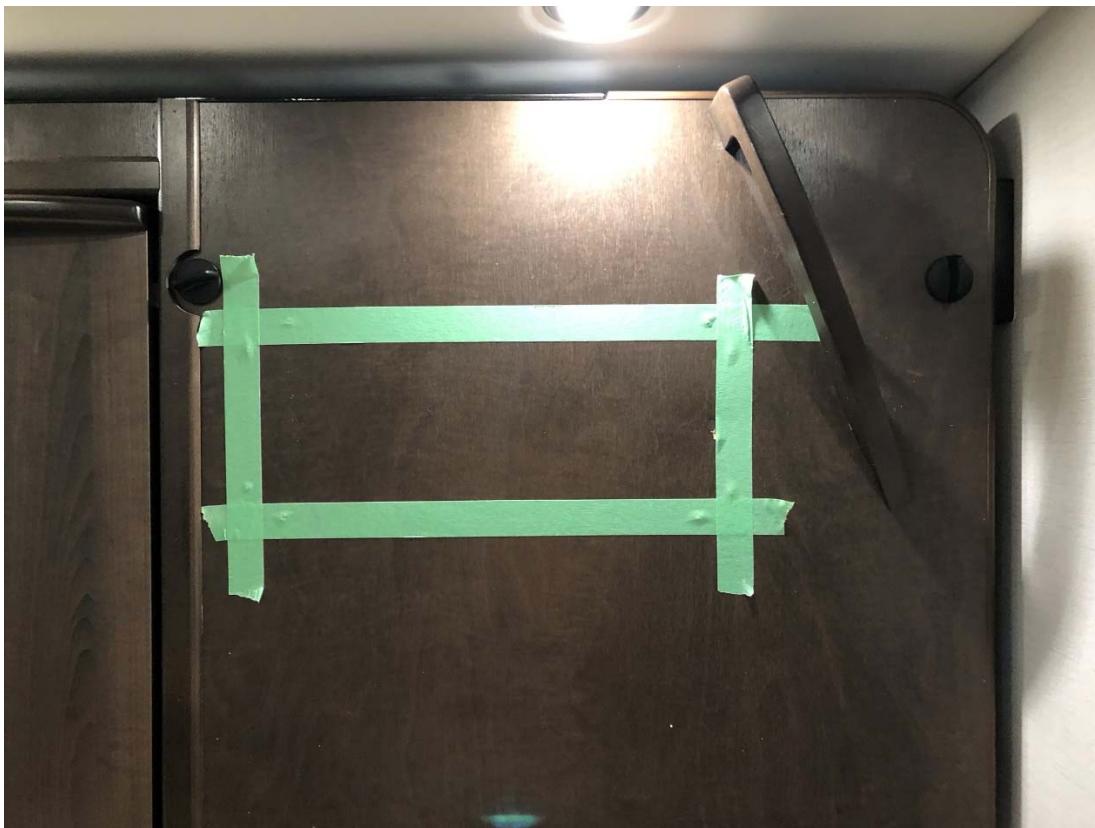
Murphy Bed Portholes: Photo 01



Murphy Bed Portholes: Photo 02



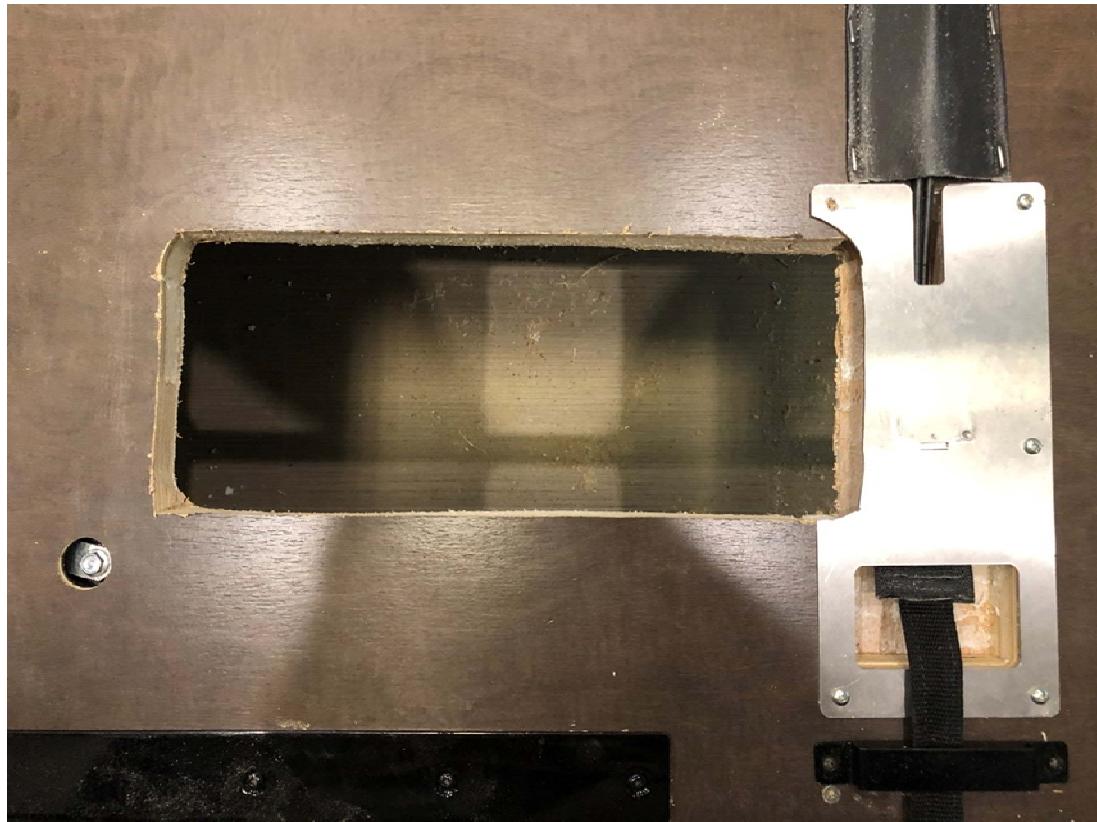
Murphy Bed Portholes: Photo 03



Murphy Bed Portholes: Photo 04



Murphy Bed Portholes: Photo 05



Murphy Bed Portholes: Photo 06



Murphy Bed Portholes: Photo 07



Murphy Bed Portholes: Photo 08



Murphy Bed Portholes: Photo 09



Murphy Bed Portholes: Photo 10



Murphy Bed Portholes: Photo 11



Murphy Bed Portholes: Photo 12



Murphy Bed Portholes: Photo 13



Murphy Bed Portholes: Photo 14

ATTACHMENT 1



Roll over image to zoom in

Amarine-made Boat Yacht Rectangle Opening Portlight Porthole 15-3/4" x 7-7/8" Replacement Window Port Hole - ABS Tempered Glass, Color: White, Black

by Amarine-made

35 customer reviews

| 25 answered questions

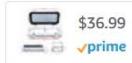
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- ABS Anti-aging, Anti-ultraviolet.
- Casted and polished 316 stainless steel accessories.
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