Bin Stair
Assembly Manual

Getting Started

To install bin stairs it is best to start at the top of the bin and work your way down. For installation on new grain bins it will be necessary to erect the first 2 rings on 4.00 corrugation bins or 3rings on 2.66" corrugation bins. Lambton bin stairs have been designed for 4.00C corrugation bins, however they will fit 2.66" corrugation bins as well, though some field drilling of the bin will be required.

The standard bin section covers 44" in height. There is also a 22" high stair section available to help accommodate platforms that are installed lower than the bin eave but higher than the horizontal seam of the top (2) bin sidewall rings.

Note: All hardware supplied is $^{5}/_{16}$x$^{3}/_{4}$ grade 8 flange head. No hardware below this grade should be substituted.

Tools required

(1) $^{1}/_{2}$" box end wrench
(1) Aligning punch
(1) Ratched with $^{1}/_{2}$" socket or impact gun with $^{1}/_{2}$" socket.
(1) Drill with $^{3}/_{8}$" drill bit.

Note: If the bin stairs are leading to a platform the platform should be installed first (refer to platform manual.) Platforms can be installed in varied heights in relation to the last bin step but it is recommended that the platform floor be no more than 10" higher than the last step. If using standard 44" stair sections the last step will be approx 5 $^{3}/_{4}$" lower than the horizontal seam in the bin sidewall that the stair sidewall bracket is attached to. If you are using a 22" stair section the last step will be approx 16 $^{3}/_{4}$" higher than the horizontal seam in the bin sidewall.

Note: Measurements in this manual are all relation to 4.00" corrugated bins.

Note: If using a 22" stair section refer to the back of this manual for special instructions.

Step #1 (44" standard stair section)

Locate the standard sidewall brackets which are a short channel measuring 9"x 6"x 1" remove (1) bolt in the horizontal seam of the bin sidewall and bolt on the bracket in the middle hole as shown in the picture below. (1) bolt is sufficient to support the stairs. The other holes do not need to be drilled.

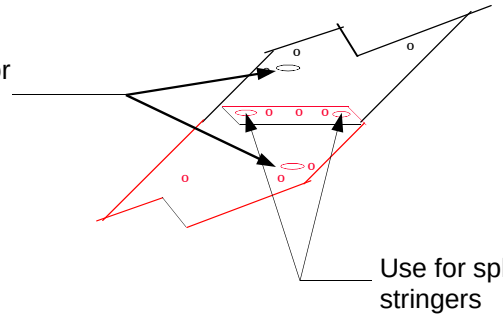
Note: If you are installing the stairs up to the eave of the bin roof, the stairs bracket may need to be attached in a lower position using one of the other holes in the bracket due to interference by the roof sheets.

Step #2

Install the next stair bracket down on the next horizontal seam. For bins with 9 $^{3}/_{8}$" horizontal bolt spacing the next bracket is 4 bolt holes around the bin in the horizontal seam. For bins with 4 $^{11}/_{16}$ horizontal bolt spacing the next bracket is 8 holes around the bin in the horizontal seam.

Step #3

Locate the inside stair stringers which measure 65 $^{5}/_{8}$" O.A.L x 10" wide and attach to the stair brackets using (2) $^{5}/_{16}$" x $^{3}/_{4}$" flange bolts, In the top and bottom holes of the bracket. The stringers also need to be overlapped and bolted using (2) $^{5}/_{16}$ x $^{3}/_{4}$" flange bolts.



Step #4

Once you have 1 or two inside stair stringers assembled the steps can be bolted to the inside stringers using $^{5}/_{16}$ x $^{3}/_{4}$ flange bolts.

With the steps attached the outer stair stringers measuring 70 $^{1}/_{8}$" O.A.L. x 10" can also be assembled, again using $^{5}/_{16}$" x $^{3}/_{4}$ flange bolts and over lapped in the same fashion as the inside stringers

Step # 5

With the outside stair stringers assembled locate and attach the handrail post and the kick brace angle as shown in the pictures below using $^{5}/_{16}$"x$^{3}/_{4}$" flange bolts. The handrail post is an angle which measures 52$^{5}/_{8}$" x1$^{1}/_{2}$" x1$^{1}/_{2}$" and gets bolted at the overlap of the outside stair stringers. The kick brace angle measures 41" 1$^{1}/_{2}$"x1$^{1}/_{2}$" and bolts to the bottom of the rail post and the bin sidewall at the horizontal seam. The end of the kick brace angle is bent at a 45º angle to meet the bin sidewall.

Step #6

Now locate the top handrail and handrail brackets and the intermediate handrail and hand rail brackets. The top handrail is a 1" Dia. Tube measuring 52" long. The intermediate handrail is a 1$^{1}/_{2}$"x1$^{1}/_{2}$"x57$^{3}/_{4}$" long angle. Attach the top handrail bracket to the handrail post with a $^{5}/_{16}$" x$^{3}/_{4}$ flange head bolt. Slide the top handrail into this bracket before installing the next bracket. Also install the intermediate handrail bracket to the handrail post, then install the intermediate handrail as shown.

Note: Handrail bolts should be installed with the bolt head to the inside or step side of the bin stairs to prevent snagging on clothes when climbing the stairs.

-The top handrails should be secured from sliding out of the top handrail brackets by inserting a self drilling screw through the handrail bracket & into the 1" Dia. Handrail. 2 set screws are required, 1 for the top of the 44"/22" section and 1 for the bottom of the 44"/22" section.

Step #7

Once your stairs are assembled down to the base of the bin there are a few different parts to finish off the stairs. The handrail post will not extend past the bottom of the outside stair stringer as there is no kick brace attached to the last handrail post and the handrail brackets will be replaced with end handrail brackets. All assembled using $^{5}/_{16}$”x$^{3}/_{4}$” flange head bolts from the inside out.

22” Stair Section

The 22” stair section is assembled in the same manner as the 44” standard stair section only the inner and outer stair stringers, as well as the top and intermediate handrails will be shorter all other components will be the same. Since this stair section will end in the middle of a bin sidewall sheet, field drilling of the bin sidewall will be required. For 22” stair section it is best to start at a horizontal seam on the bin sidewall and work your way up to find the proper location to field drill.

ROOF STAIR ASSEMBLY

1/ Bolt the steps to the stair channels (like shown below). The stair channels should face bends in, with the steps being in between.

2/ Bolt on the 55” long railing uprights to the outside of the stair channels.

3/ Bolt the roof attachment angles (4’ long, bent 45°) to the bottom of the railing uprights (under the stair channels). These will extend out either side of the stairs to allow bolting on the handrail side support angles. There are multiple holes that may be used in this step. The extra holes allow customizing the installation such as height from the bin roof.

4/ Bolt the handrail side supports onto the railing uprights and to the roof attachment angles.

5/ Bolt on the handrails.

NOTE: Stairs may be pre assembled on the ground and rose to the roof for installation or may be assembled on the roof. In either case, holes will have to be field drilled to fasten the roof attachment angles to the bin roof ribs. Wherever possible, use 1” long $^{5}/_{16}$” bolts to fasten stairs to roof. At least bolt at roof edge and peak. Middle sections may be fastened with self-tappers.