

Case IH Right Hand Steps and Toolbox

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Problem:

There are two main problems that we must solve in this project. One problem is that the new design for the tractor lacks steps for the right side of the tractor. These steps are to be used for cleaning and adjusting the mirror and air intake on the right side of the tractor. The other problem is that we need to design a new mounting system for the toolbox on the tractor. The current location and mounting of toolbox is not a suitable location for the user and impedes the use of surface area intended for adjustments and cleaning on right hand side of tractor.

Constraints:

- Must meet European width restriction of 2.55m
- Must be robust and durable
- Must be cost effective
- Have minimal change to current component design



Final Step Solution:

For the final solution our group integrated a modified step design mounted to the tractor. It was decided to utilize factory Case IH steps. This gives the product a factory look with aftermarket usefulness. Eleven-gauge rectangular tubing was chosen for the frame of the project. Using that size tubing will provide the strength needed to support the weight the product will be subjected to.

Alternative Solutions:

For our project the group had a couple of different ideas for the toolbox mount and the steps. For the toolbox mount we had an idea of putting the mount behind the front tire just in front of the cab. Another idea was to mount it on the front weight brackets. For the steps an idea was to put a staggered four step design. Another idea was to have four stamped Case IH steps.



Final Toolbox Mount Solution:

For the final solution our group wanted the toolbox to be easily accessible for any operator standing on the ground. Since operator access is located on the left side of the tractor our group decided to locate the toolbox on the same side. The product uses existing hardware to mount to the tractor. The toolbox itself is the factory Case IH toolbox. This allows it to be an affordable and effective solution.

Item	Estimated Cost	Actual Cost
Steel Tubing	\$80.00	\$40.67
Angle Iron	\$20.00	\$7.41
Flat Steel	\$75.00	\$49.34
Molded Steps	\$400.00	\$330.90
Hardware	\$100.00	\$70.16
Paint	\$15.00	\$9.85
Total	\$690.00	508.33