

Double Bale Lifter Cormac Porter

Aim of the Project

The Aim of the project is to design, build and test a Double Bale Lifter with a hydraulically operated separate lift mechanism .

Background

The reason for designing and manufacturing a double bale lifter for our farm is to speed up the job of carting the bales in from the field to the yard. We currently use a single bale lifter and it takes far too long. With the adaption of the hydraulic lifting mechanism we will be able to protect the bale wrap of the first bale so its not dragging on the ground while loading the second bale. Thus protecting the two bales and speeding the job up twice as much while also reducing diesel usage.



Design of euro brackets

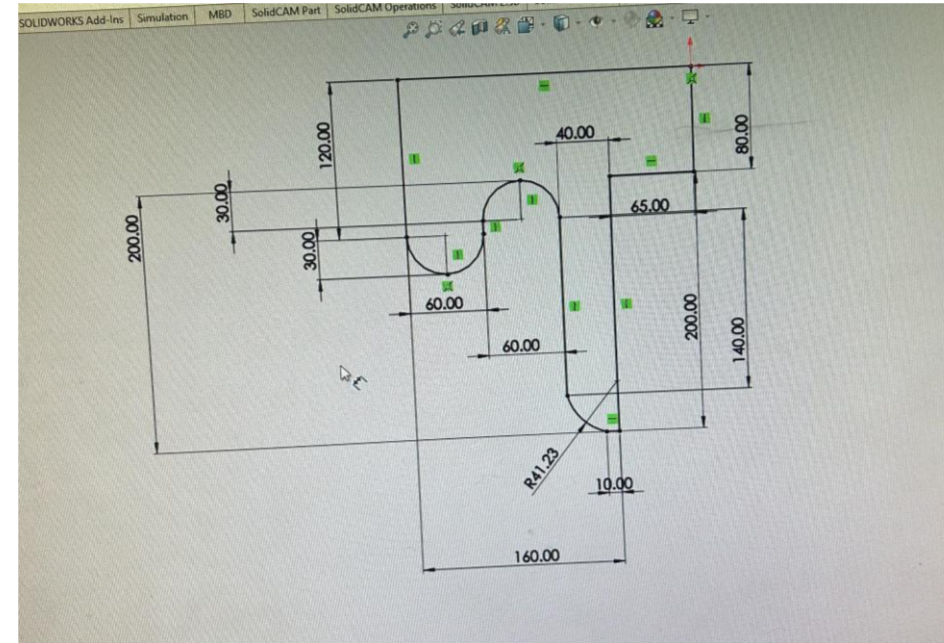


Figure 1: cad drawing of euro bracket

The euro brackets I have designed have been designed from a strength aspect towards being able to lift 2 ton worth of silage plus the weight of the bale lifter itself . The reason of the L shape on the top of the hook is so that I can put as much weld as possible on the hook while also catching as much as the main frame as possible. I feel that the position of the middle supports are important towards this as I'll be welding the brackets on there as well so that I'm not just pulling out of the top beam but also the supports

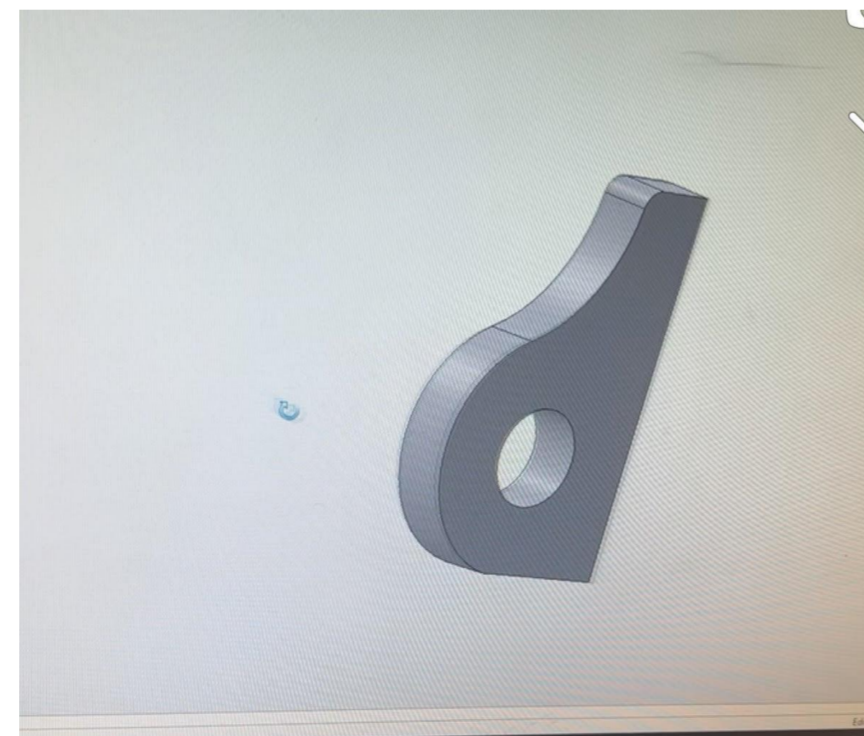


Photo of: bottom euro bracket

Lift mechanism

The lift mechanism I've chosen to manufacture is designed to be very strong and not buckle or fail when put under load.



Photo of: lifting mechanism

The mechanism tracking is channel iron which is supported by 10mm wall box iron. The mechanism is made from box iron sliding inside the channel iron and held apart with flat plates. This all runs at 30 degree angle so the bale goes up and out of the way at the same time. This enhances visibility and practicality

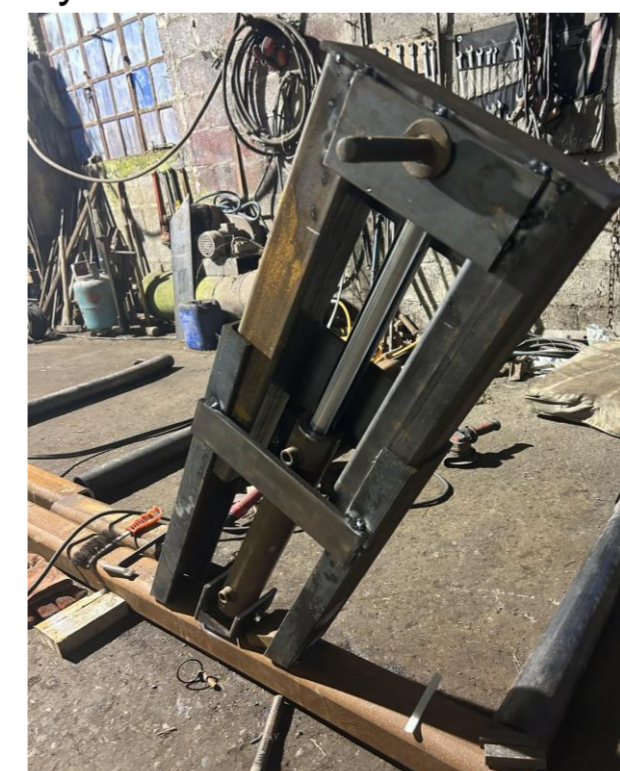


Photo of: mechanism folded out

Conclusion



Figure 3: o Shea bale lifter

To conclude my project I think its best to say that the bale lifter I have designed is not like any other on the market in the sense that its strength is a step above the rest while also being practical to the degree of the operator ease. Our bale transport time and our diesel costs will be down with the inclusion of the double bale lifter in our silage processes this summer.

References

Pallalskenry agricultural College

O Shea Engineering, Laois

Alstrong Engineering, Galway

Ard Engineering Supplies, Galway

