

Cubicle scraper

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TUS

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Aim for the project

My aim is to make a machine which can be used to brush cow manure of cubicles then throw lime out on them after. It will also have a scraper front for scraping the passageways in the shed. I hope to sell the machine after my project is finished as I do not have any use for it at home.

Background

These machines are necessary as cubicles need to be cleaned and limed every single day to prevent cows getting diseases such as mastitis.



The machines shown in the picture are similar to what my machine will be once it is finished. These machines help to speed up the process of scraping and liming cubicles as they are a lot faster and more efficient than a hand scraper and brush.

Objectives

- Design my own cubicle scraper
- Start making parts to go on the machine in January and finish before easter.
 - Make sure the machine runs smoothly.
- Sell the machine when the product is finished

Materials used

- 2mm steel plate (6 foot 6 x 1 foot)
 - 4 inch box iron (6 foot 6)
- 12 steel brackets which were 3 inches wide x 6 inches in height.
 - Brush
 - 3 foot of 3 inch box iron
- Hydraulic motor to the drive brush
- 2 Hydraulic rams to lift the scraper up and down.
- Rubber 1 inch x 6 foot 6 wide x 1 foot height.
- Plastic lime box and spinner to hold and throw out the lime.
- Hydraulic ram to lift the bush up and down.
- Electric motor to drive the spinner to throw out the lime.

I purchased all of the steel I bought from O'Sullivan iron works in Rathkeale, I bought the brush from murphy machinery in Kilkenny. The reason I bought the brush of them is because they sell a lot of bob man parts and the brush is the same brush as what is used on a bob man cubicle scraper.

Design work

I looked at a number of different designs and took what I thought was the best working but simplest design out of all of the ones I looked at. I went to Purcell Agri sales in Ballycallan Co. Kilkenny as they sell bob man branded cubicle scrapers and also have their own brand of scrapers that they make themselves.

I made the scraper from 2mm steel plate and 4 inch box iron behind it, this is because it needed to be light so ithe lawnmower could hold it without the back wheel lifting off the ground but also be strong. The scraper in the image below is similar to the one which will be going on the front of my machine.



Conclusion

Although I am not fully finished my project I am happy with my progress so far and how it is turning out. I have mounted the scraper and brush onto the machine, I still have to mount the lime box onto the machine, connect the hydraulic hoses to the brush and the rams to lift up and down the scraper, I hope to do this in the next two weeks