

RamstaRobotics AB

CleverCleaner

Teaching hints for the
cleaning robot



Teaching hints for the cleaning robot.

1. The teaching process in new pens **will** be taken place using working pressure, because the arm is affected by the power from the running water.
2. The teaching of new pen types should be done in dirty pens in order to see the trace of the water jet. Try to find a “middle-dirty” pen.
3. Check for obstacles in the stable, for example posts and things like that. If so, the teaching process should be taken place in this particular pen to avoid collisions.
4. Keep distance to all stable equipment, feed pipe and things like that during the teaching. This is important when changing position of the boom, to avoid collision if the cleaning robot has a slightly different position during the cleaning process. There can also be a discrepancy in the stable equipment going from one pen to another.
5. If it doesn't work to take item 4 into consideration, because of tight space or something like that, you should think of leave the area that could cause a collision before you change for example the height of the boom or if you retract the telescope. In this way you can be sure that it won't be any production stop in due to collision, even if some parts of the arm will touch the equipment.
6. Take care of the stable equipment; keep the nozzle at the right distance.
7. The cleaning robot get different parking positions at transport forward or backward. Try to do the learning process in the same order that it will be in recipe later.
8. When you drive forward to a marker, the distance must be longer than 20 cm. Check it every time before you move the robot forward and if you is standing to close to a marker. Drive the robot first the other way so you get 30-40 cm and then drive to the next marker. It's very important that you hold the joystick until the machine stop too the marker, if you let go before the machine has felt the marker, the distance will be written in wrong way.
9. If you're using a double nozzle, be very careful with how you turn the water on, so the right nozzle is getting choosed. When you change nozzle, turn the water of, drive the arm out in horizontal position, turn the nozzle at least 180 degrees that the nozzle you will use is pointing down, drive the tower, telescope or the machine in at least 5 seconds and then, turn the water on.
10. Try to perform the teaching process of new pens efficiently. Time measurement for each pen is a good working tool and another way is to compare the number of used distance. Very important is to divide the pen in smaler parts. It's easy to be concentrated in some minutes but after a while you loose focus and starts to do mistakes.

Always do one rough cleaning and one careful cleaning!

In the first teaching the floors of the slaughterpen will be washed and saved as a pentype. Do a limit to the standardpens i.e. in that type you have many pens of. It's direct wrong to make a teaching on a sickpen or a halfpen for the first time when

you're in a new stable. Make thereafter a new recipe to clean the floor and start it so you can see the result of your work. If it's time for coffee, now it's a good while the robot is working, that's the way it should be.

After the coffee is it time to do a teaching of walls. Again it's only the standard types who will be cleaned. (Often right and left) Don't be over-ambitious, rather 50% clean in 15 minutes than 70% in 30 minutes. There's no one who get a perfect result in the first cleaning, you got to practise.

Make a recipe for the walls, use the floorrecipe as a template.

11. Be careful to document all teachings: the name of the farm, housenumber, pathnumber, pennumber, pentype. This feels obvious at the teaching, but after some more teaching it will be very much to keep in order. Besides it should be possible for other staff in the farm, like substitute, to handle the robot and that programming. It's a good idea to write some notes of the recipe template to use in the stable and write it in a computer after the learning. If you save it as a file in the computer it's easy to print a new one when you've forgotten the recipe in the stable, which you often gonna do.

12. Next time you clean a stable who looks like the the one you did install the robot in, you should do the badest pentype again. Which means that it's good if you make some notes about how it did work out after you made the after-wash, so you will remember what you want to do. Maybe you wasn't satisfied with the floor in the right pen, so you do it again. That you do by start the recipe on a position for that pentype. Now you can let the robot work until you think it's doing something wrong. Push F4 for "Pause", the water will turn off and the arm will stop when the began distance is finished. Push F1 "Adjust pentype" and thereafter F3 "Go to teach mode". Now you are in teaching position and learn again from here to the end. When the robot is parked by the marker you complete the teaching as usually and choose replace pentype. The type who was working when you choosed pause will be prechosen so it's only to "Confirm choice" then you don't have to make any changes in the recipe. Restart the robot and finish the cleaning.

If you do it this way you will use between 15 and 30 minutes in learning on each cleaning some time ahead. The result will be that you the whole time will lower the time for cleaning, improve the result and you will also learn how to use the robot in the most effective way.

When you're completely satisfied whit the standardpens it's time to do a teaching on the rest. Take one per cleaning and add into the recipe with the add function.

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