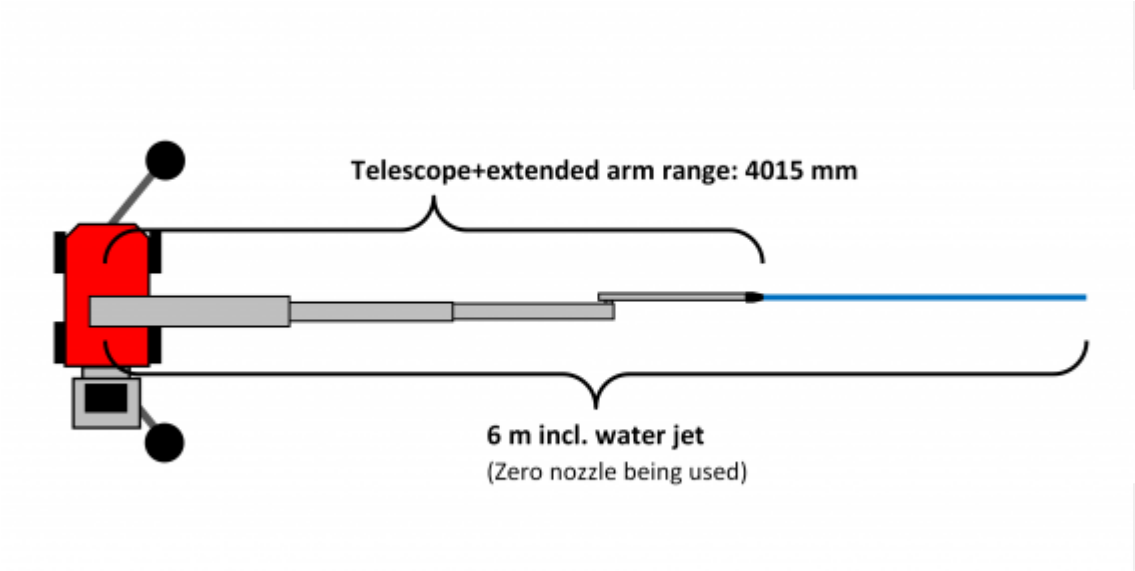
Double nozzle

The double nozzle is equipped with a rotory nozzle and a 0-degree nozzle. This double nozzle is used to reach further in deep pens. The 0-degree nozzle can reach up to six meters. However, use the rotory nozzle as much as possible if yoour robot is equipped with the double nozzle. The rotory nozzle are the most efficient one to use. Only use the 0-degree nozzle to reach the end of the pen.



It's very important to program the robot correctly if you robot is equpped with a double nozzle. If not, there may come water from the wrong nozzle.

How the double nozzle works

The double nozzle has a steel ball inside. The steel ball can move with the gravity when the water is turned off. This means that the nozzle has to be in a certain angle to make sure that the water comes from the correct nozzle when we switch the water on. The nozzle that has the steel ball closest to it will receive the water.

When the rotory nozzle is placed straight down (and arm position approx. 45 degrees or 135 degrees from the boom) the steel ball will fall down towards the rotory nozzle. The steel ball will in this case block the 0-degree nozzle which means that the rotory nozzle will be the one who receives the water when it's turned on.



Same if the 0-degree nozzle is placed straight down.

Once the water is turned on the steel ball will lock in this position and the water will come through the same nozzle until the water is turend off.

If the arm has a position close to 90 degrees when the water switch on we can not ensure where the steel ball are and which nozzle it blocks. This could make the water go through the wrong nozzle.

How to switch nozzle when programming

It's important to move the robot in a certain way to guarantee there will come water through the nozzle you want to change to. Here is how you switch the nozzle when programming. The instruction shows when the robot change from rotory nozzle to 0-degree nozzle. But it's the same process to go from 0-degree nozzle to rotory nozzle.

1. Switch the water off.



2. Rotate (if necessary) the nozzle so the correct nozzle is placed straight down. You might have to adjust the arm position as well (arm position should be approx. 45 degrees or 135 degrees out from the boom).



4. Make a movement with the boom or tower that lasts for 5 seconds without water on. This will give the steel ball time to fall down and block the other nozzle.

- *The water can with suction power hold the steel ball if we just turn the water off and place the nozzle in the right position. This means that the water will come back out from the nozzle we just used if the procedure is made to quick. The 5 seconds movement is to prevent this from happening.*



This picture shows when we moved the tower from the right side to the left side of the pen.

5. Turn the water back on.



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