Set liquid level

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NextGen offers chance to set liquid level inside an item, whether it is a vessel or a heat exchanger.

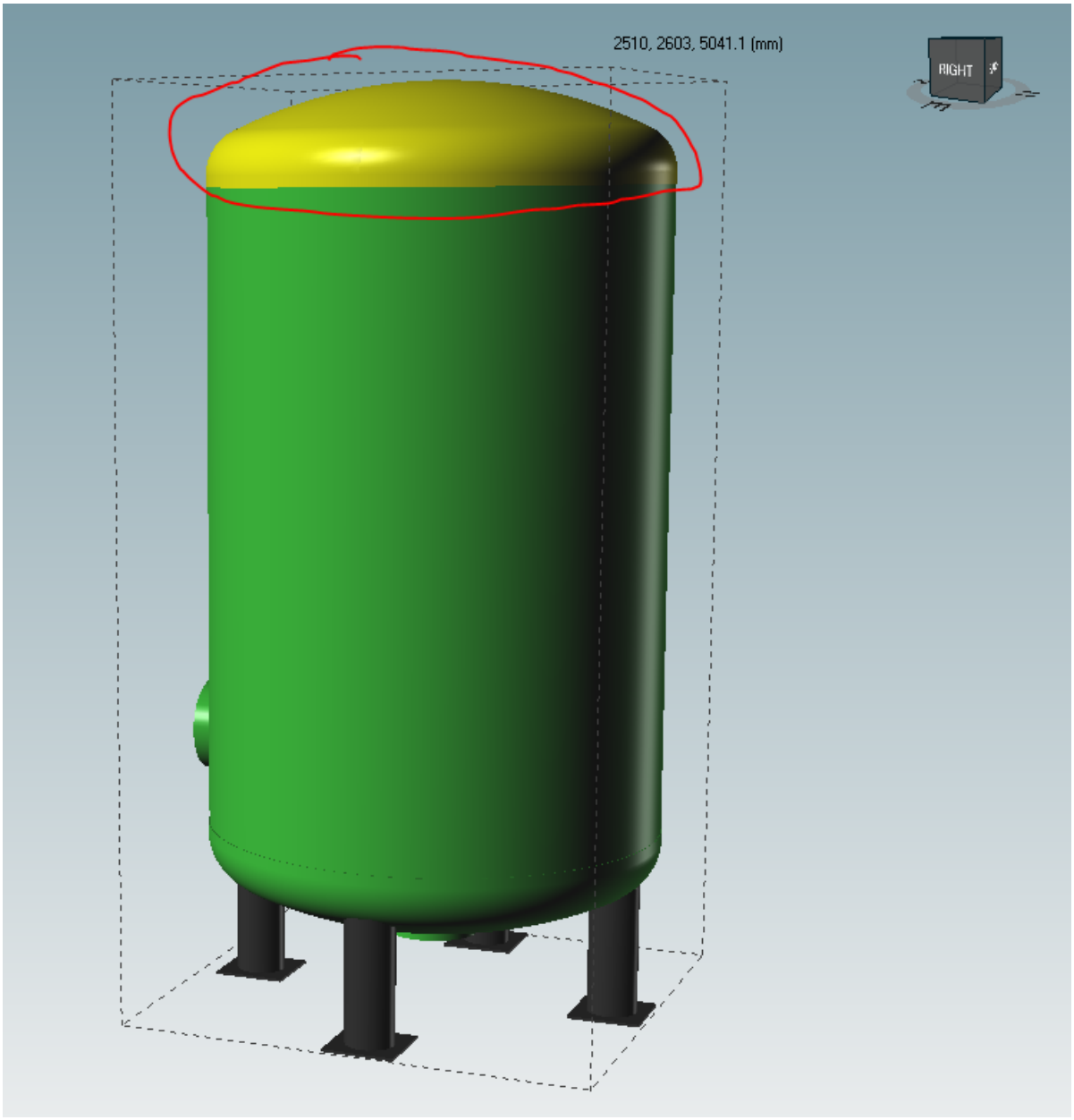
First of all, you have to select componente within liquid reaches maximum quota.

Tipically, there are two different scenarios.

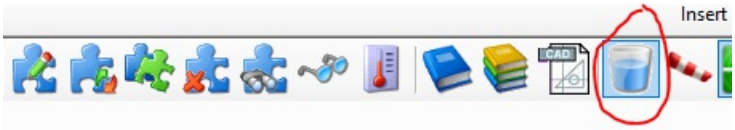
1. completely filled item
2. liquid does not fill the whole item

SCENARIO 1

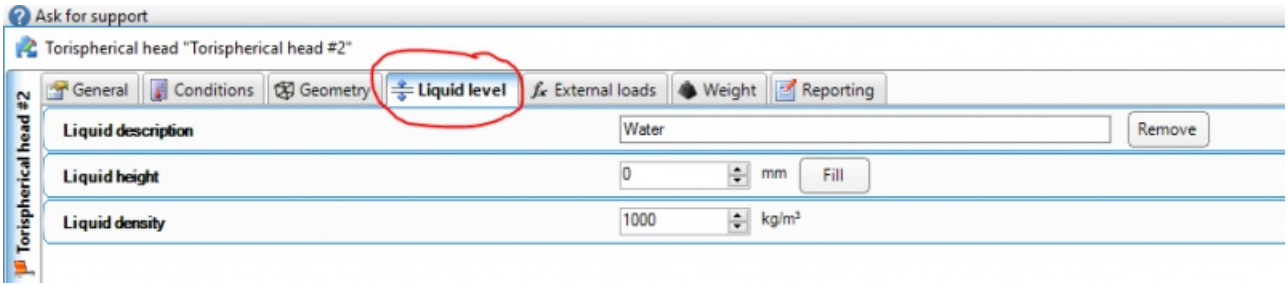
In the first case, you have to select main component (e.g: cylinder, head but not a nozzle) that is placed at the top of the item. It's easy to spot it amongst all, both from graphic view (especially if you design a vertical item) and looking at reference line value.



Now let's click on the appropriate toolbar button



Component window form opens up with a new tab, called *Liquid level*



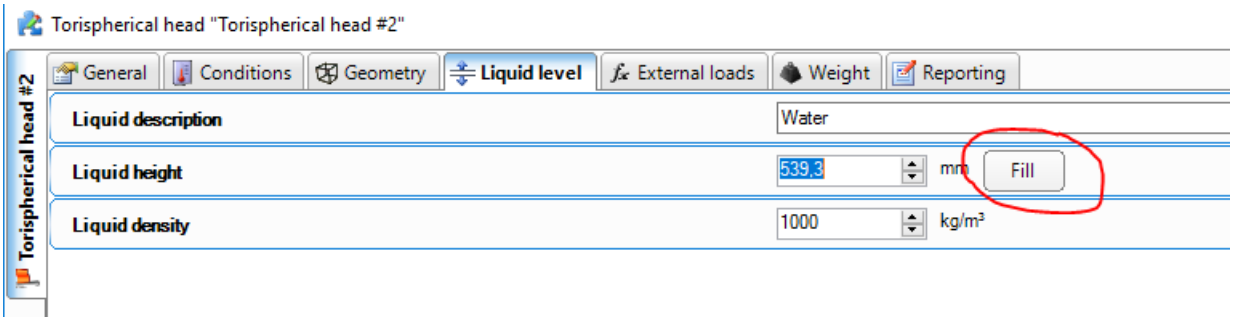
And three properties:

- liquid description: merely indicatory and doesn't concur to calculations but it does appear in the final report
- liquid height

- liquid density (default is water value)

Second and thirt property influence weights and pressures of the item.

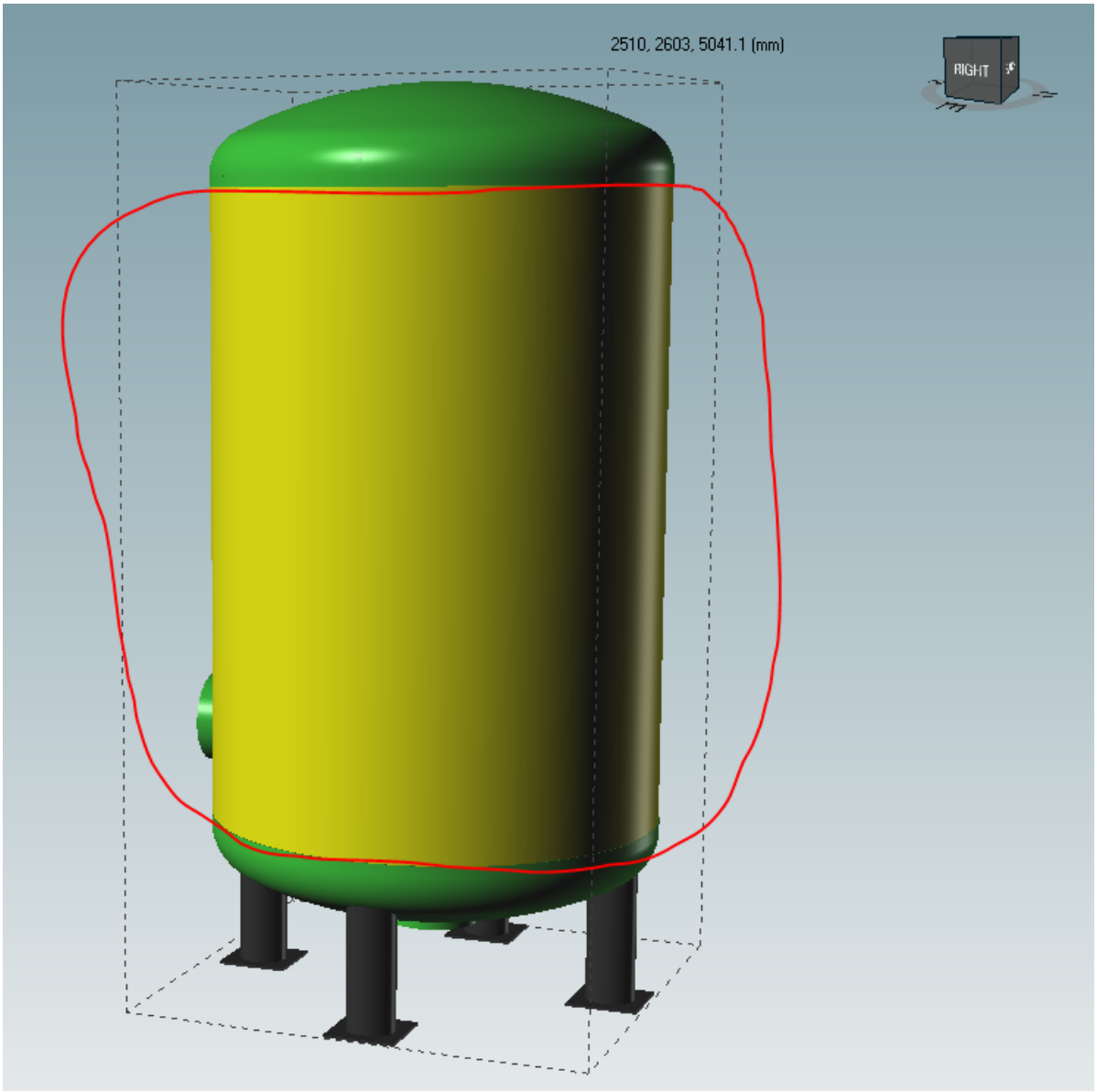
We may observe that, next to ***liquid height***, there is a button called "Fill"; and that is the one we are looking for, when we want to fill the item until it reaches its maximum capacity with the chosen liquid.



SCENARIO 2

In the second scenario instead, we select the component where we know liquid reaches maximum height.

Let's say that in the attached vertical column, water fills only half of the main shell.

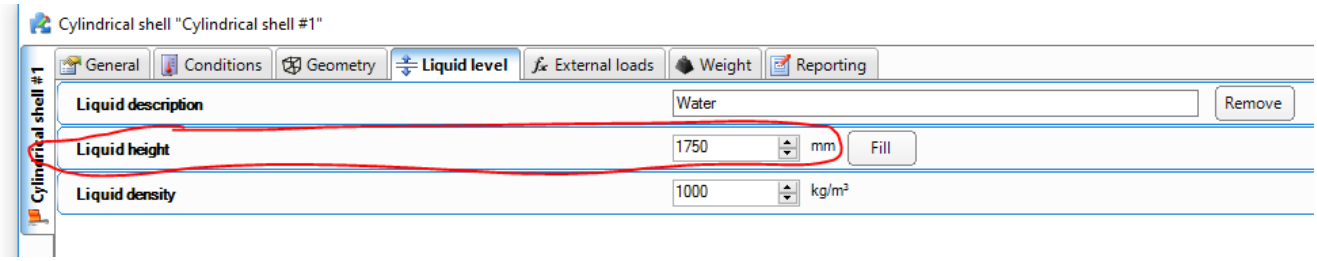


Then we select main shell and click on the liquid level button.

New liquid level tab will show, but this time user won't be required to press button "Fill". Liquid height

has to be set as custom value.

Cylinder is 3500mm high, therefore *liquid height* will half of it, 1750 mm.



Both liquid height and weight will be considered in final calculations and printed in the output report.

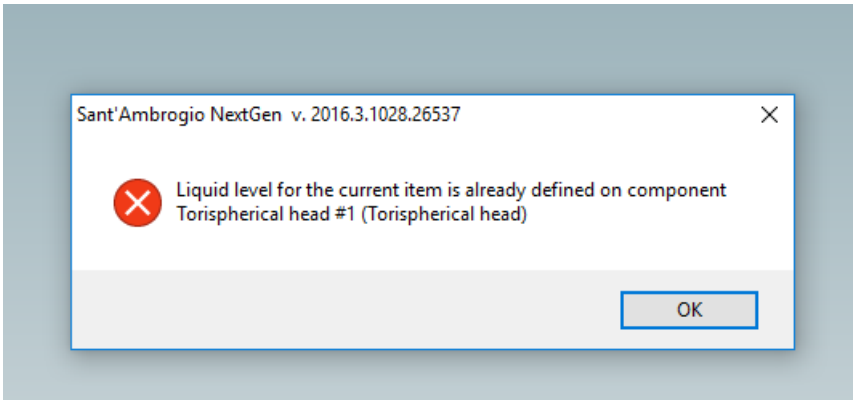
Weights

Component	*Dead*	*Live*	*Liquid*	*Full of water*	*Operating*
Torispherical head #1	652 kg	602 kg	1 800 kg	2 452 kg	3 054 kg
Legs #1	744 kg	0 kg	0 kg	744 kg	744 kg
Cylindrical shell #1	4 258 kg	2 129 kg	16 907 kg	21 165 kg	23 294 kg
Totals:	6 324 kg	3 056 kg	20 549 kg	26 873 kg	29 929 kg

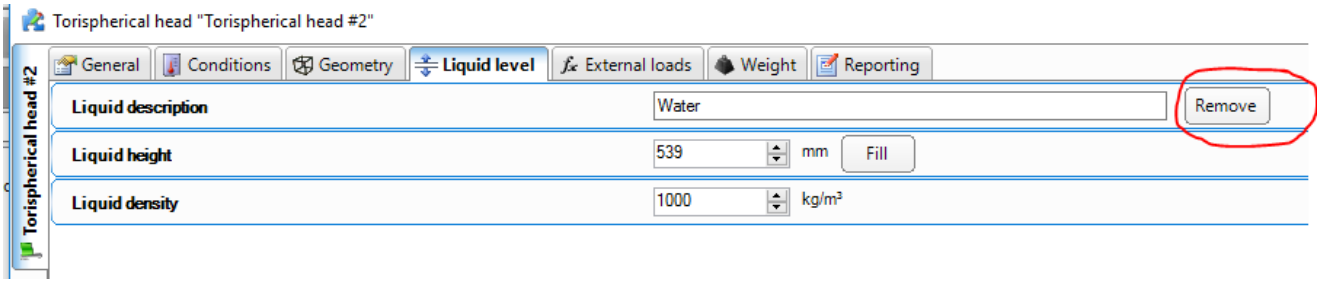
Pay attention that liquid height value is measured from component bottom base; therefore, in case you want an overall quota that counts item base also (not the case of completely filled one, that we already explained), you have to input custom value, that includes height of components below the selected one.

E.g.: we know that in the item we are designing, there will be a liquid 2 meters high. Base cylinder is 500 mm, connected cylinder is 3000mm, therefore liquid height will be 1500mm.

After defining liquid level on a component, it's not possible to repeat the operation on another one, because, as we already learnt, liquid level is defined as the liquid maximum quota inside an item and has automatic repercussions to the other components. When you try do it, an error message will appear.



Not to make it occur, first you have to remove liquid settings, pressing the "Remove" button, as shown below.



Now it's possible to define it again.