General Program Information

Inputs Needed to Call the Chemical Stock Tank Barrels Function

- `origin` - a 3x1 matrix with user defined x,y,z positions corresponding to origin. The origin is located at the top right corner of the platform.

- `disp` - displacement between the edge of the drum containing the chemical stock solution (sometimes also referred to as the chemical stock barrel) and the edge of the platform.

- `thick` - specifies the thickness of the platform.

- `walkway` - the width of a walkway space on the platform, so that the plant operator can walk on the platform next to the chemical stock drums/barrels

- `R` - chemical stock drum radius/chemical stock barrel radius

- `H` - chemical stock drum radius/chemical stock barrel height

Inputs Defined within the Chemical Stock Tank Barrels Function

```plaintext
platform_origin =
```
• $x : \text{origin}_0$
• $y : \text{origin}_1$
• $z : \text{origin}_2$

\text{platform}_{\text{dim}} =
• $x : (2(2*R) + (3*\text{disp})$
• $y : (2R) + \text{walkway} + \text{disp}$
• $z : \text{thick}$

$H_{\text{barrel}} = H$

$\text{barrel1}_{\text{origin}} =$
• $x : \text{platform}_{\text{origin}0} - ((3*R) + (2*\text{disp}))$
• $y : \text{platform}_{\text{origin}1} - (R + \text{disp})$
• $z : \text{platform}_{\text{origin}2} + \text{platform}_{\text{dim2}}$

$\text{barrel2}_{\text{origin}} =$
• $x: \text{platform}_{\text{origin}0} - (R + \text{disp})$
• $y : \text{platform}_{\text{origin}1} - (R + \text{disp})$
• $z : \text{platform}_{\text{origin}2} + \text{platform}_{\text{dim2}}$

**Technical Program Outline**

cylinder1 - Creates a cylinder with the CylinderC function.
NorthEast Isometric view

cylinder1 <- cylinderC(barrel1\textsubscript{origin}, R, H_{barrel})

\text{barrel1\textsubscript{origin} = }
  \begin{itemize}
  \item \text{x : platform\textsubscript{origin0} - ((3*R) + (2*disp))}
  \item \text{y : platform\textsubscript{origin1} - (R + disp)}
  \item \text{z : platform\textsubscript{origin2} + platform\textsubscript{dim2}}
  \end{itemize}

\text{H_{barrel} = H}

cylinder2 - Creates a cylinder with the CylinderC function.
NorthEast Isometric view

cylinder2 <- cylinderC(barrel2_origin, R, H_{barrel})

barrel2_origin =
  • \textbf{x}: \text{platform}_{\text{origin0}} - (R + \text{disp})
  • \textbf{y}: \text{platform}_{\text{origin1}} - (R + \text{disp})
  • \textbf{z}: \text{platform}_{\text{origin2}} + \text{platform}_{\text{dim2}}

H_{barrel} = H