

Toray MBR

Normalization Sheet

Instruction Manual



'TORAY'

Innovation by Chemistry

The Toray MBR Normalization Sheet is developed to normalize the operating data of Toray MBR modules. It includes temperature compensation, permeability calculation, and unit conversion. Based on these calculations, the sheet generates graphs showing temperature, filtration flow rate, filtration flux, permeability, and normalized TMP. By using this sheet, users can accurately evaluate the operating conditions of Toray MBR modules.

1. Access the following URL.

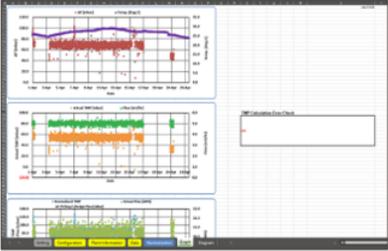
URL : <https://water.toray/knowledge/tool/mbrsoftware/>

2. Click on "Download File" at the bottom of the MBR NORMALIZATION SHEET. The Excel file download will begin.

Excel : Toray MBR Normalization Sheet ver.1.0.0(E).xlsx

MBR NORMALIZATION SHEET

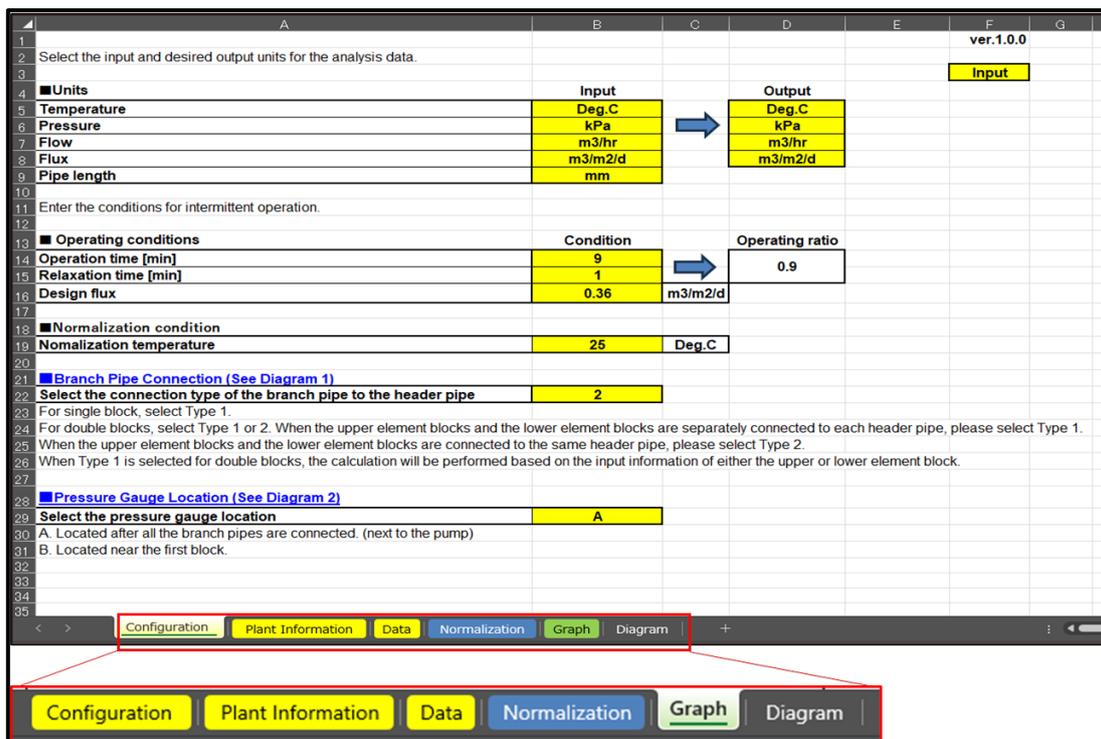
The Toray MBR Normalization Sheet is developed to normalize the operating data of Toray MBR modules. It includes temperature compensation, permeability calculation, and unit conversion. Based on these calculations, the sheet generates graphs showing temperature, filtration flow rate, filtration flux, permeability, and normalized TMP. By using this sheet, users can accurately evaluate the operating conditions of Toray MBR modules.



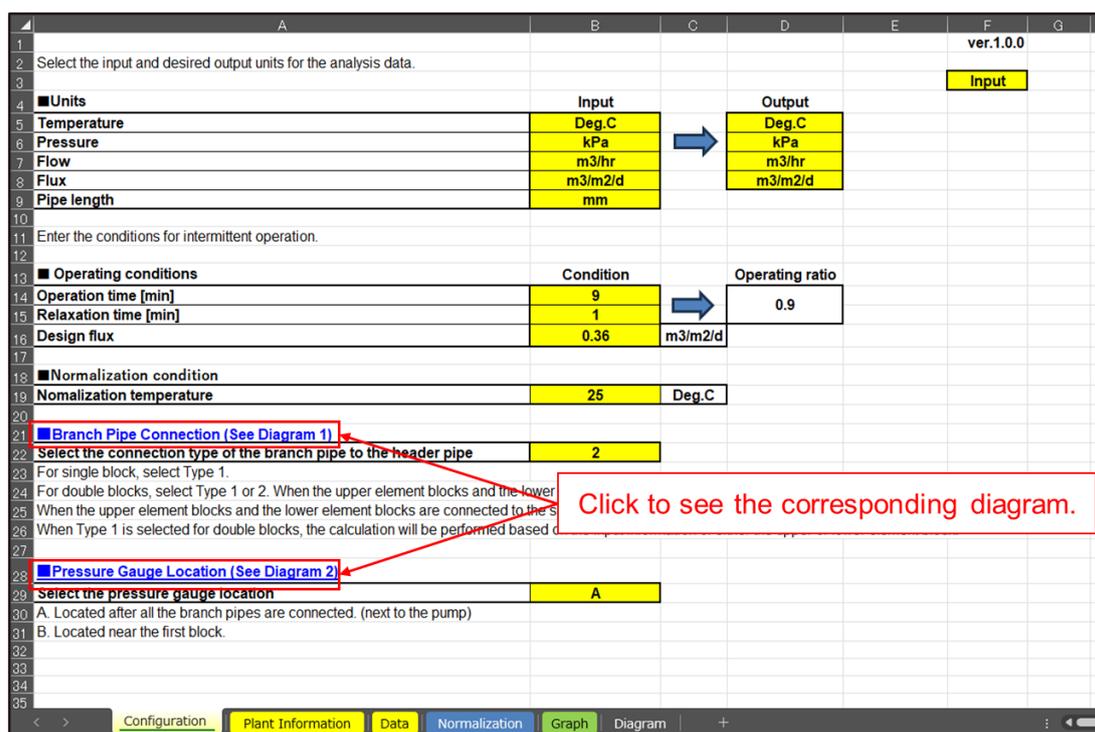
[USER MANUAL](#) PDF
*Updated November 2025

Download File

- Open the downloaded Excel file, Toray MBR Normalization Sheet. The file consists of 6 sheets: [Configuration], [Plant Information], [Data], [Normalization], [Graph], and [Diagram].



- Open the [Configuration] sheet and enter or select values in the yellow cells. For the “Branch Pipe Connection”, refer to Diagram 1 and select the appropriate number. For the “Pressure Gauge Location”, refer to Diagram 2 and select the appropriate letter. Clicking the blue titles will display the corresponding diagrams.



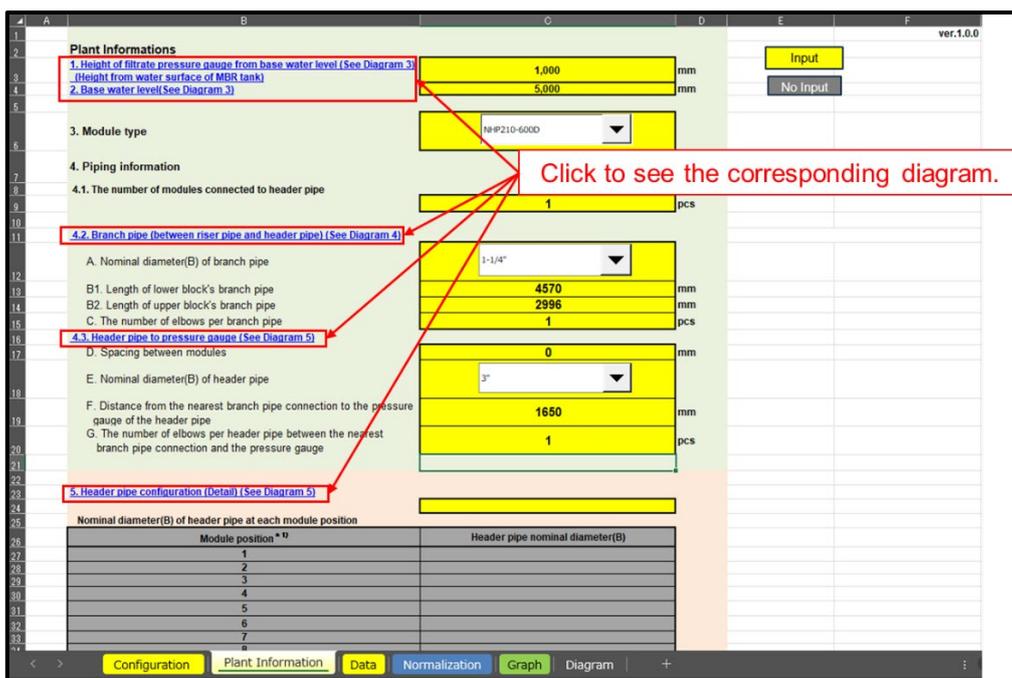
5. Open the [Plant Information] sheet, enter or select values in the yellow cells. Please prepare the Piping and Instrumentation Diagrams (P&ID) or General Arrangement Drawing (GAD) while completing the information in this sheet.

For the “1. Height of filtrate pressure gauge from water level” and “2. Base water level”, refer to Diagram 3.

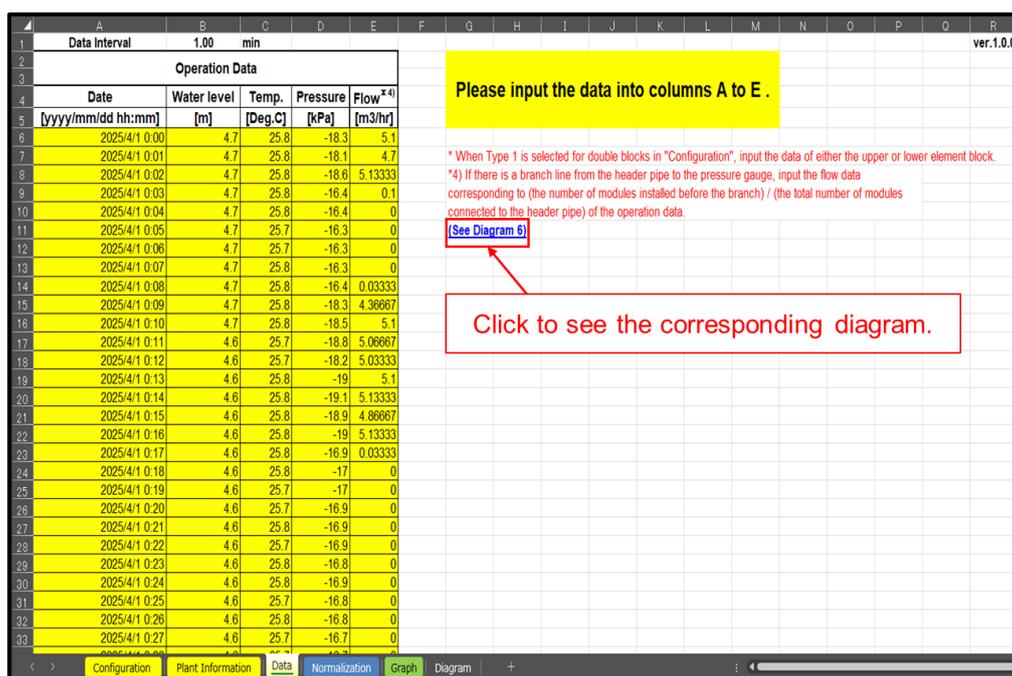
For the “4.2 Branch pipe”, refer to Diagram 4.

For the “4.3 Header pipe to pressure gauge” and “5. Header pipe configuration”, refer to Diagram 5.

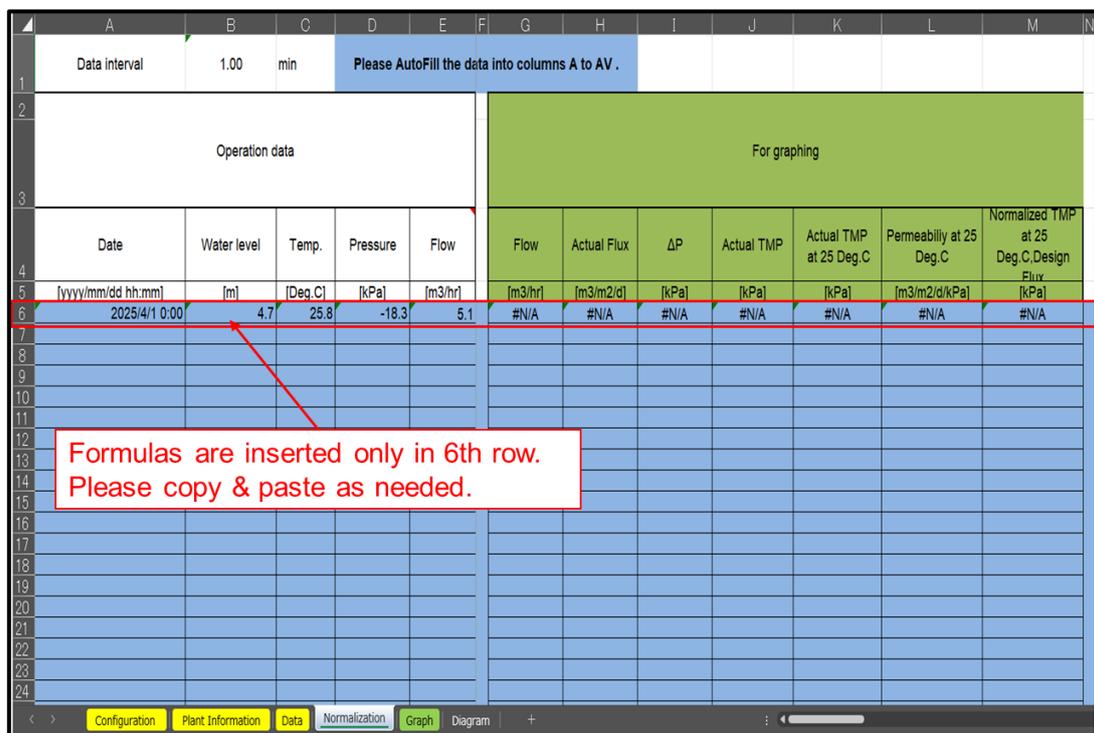
Clicking the blue titles will display the corresponding diagrams.



6. Open the [Data] sheet and enter (copy and paste) the operating data into columns A to E. Calculation will start automatically once the operating data has been entered.



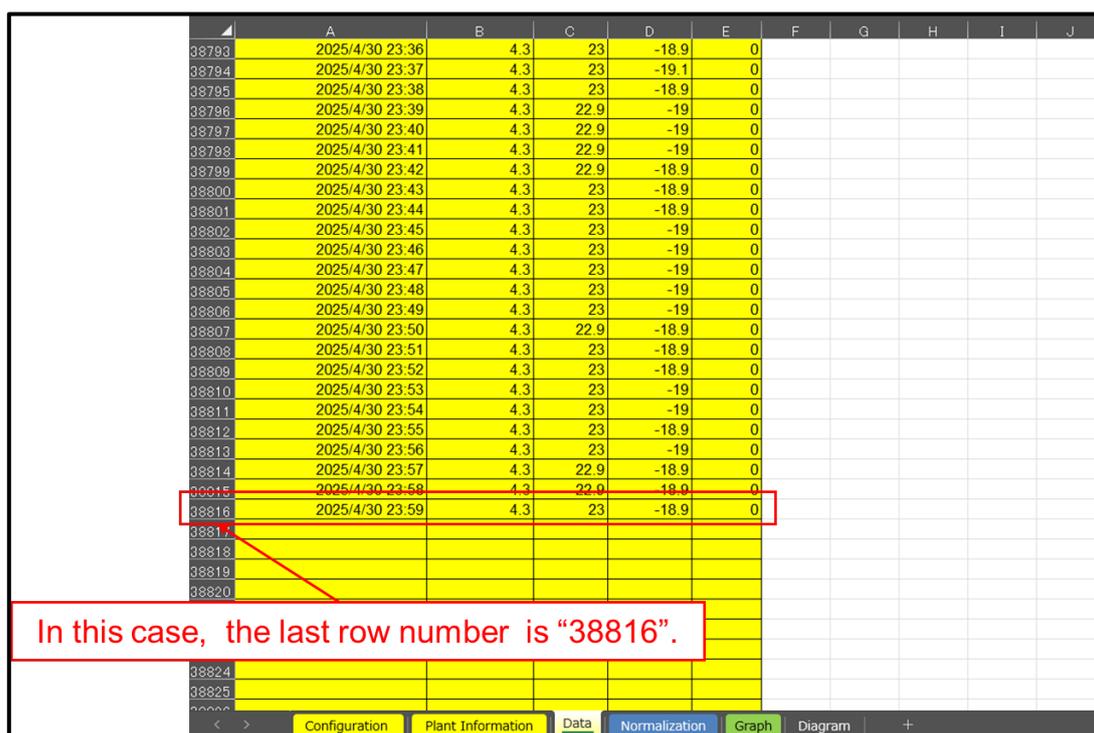
7. Open the [Normalization] sheet. The formulas (the first calculated data) have been entered only in row 6, which is enclosed in a red box. Follow the steps below to copy and paste the required number of rows.



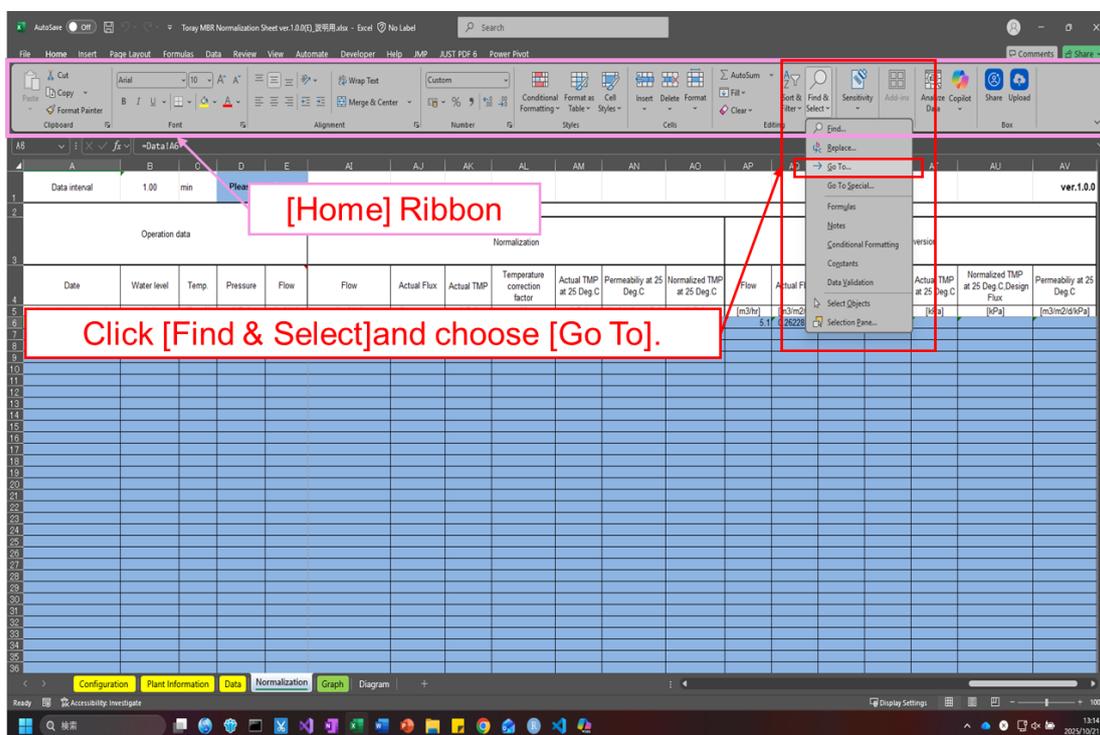
■ How to copy and paste the formulas

- i. Confirming the last row of operating data.

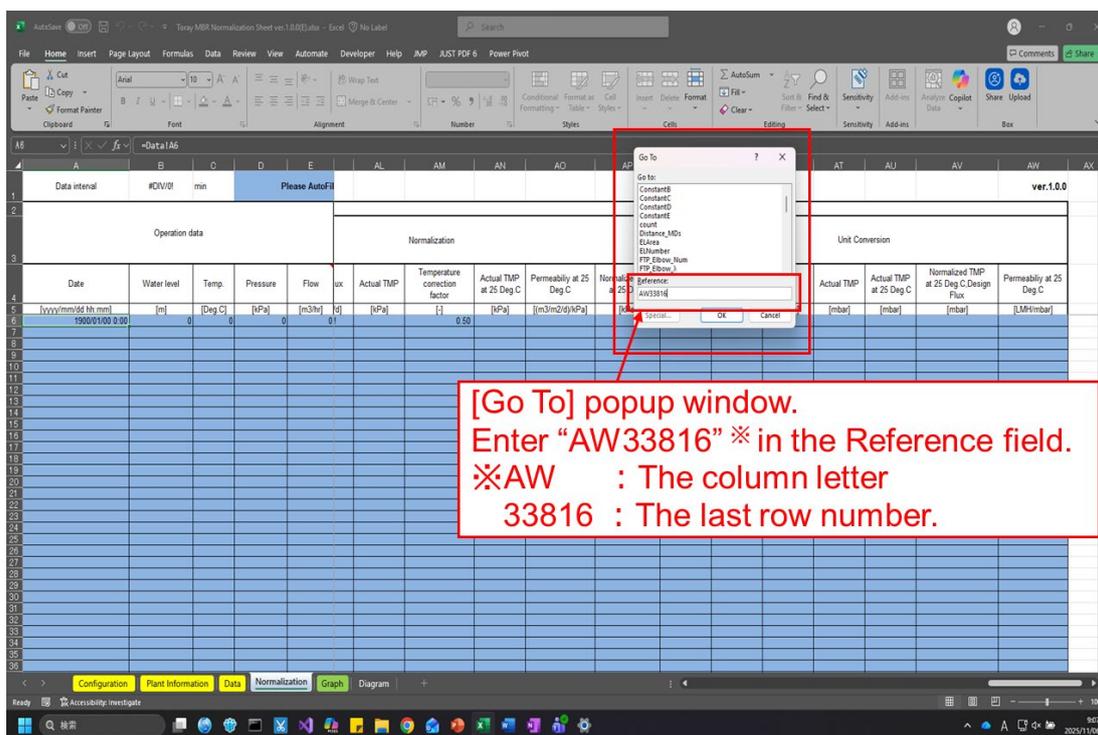
Open the [Data] sheet and check the row number of the last data. In the case shown below, the row number of the last data is “38816”.

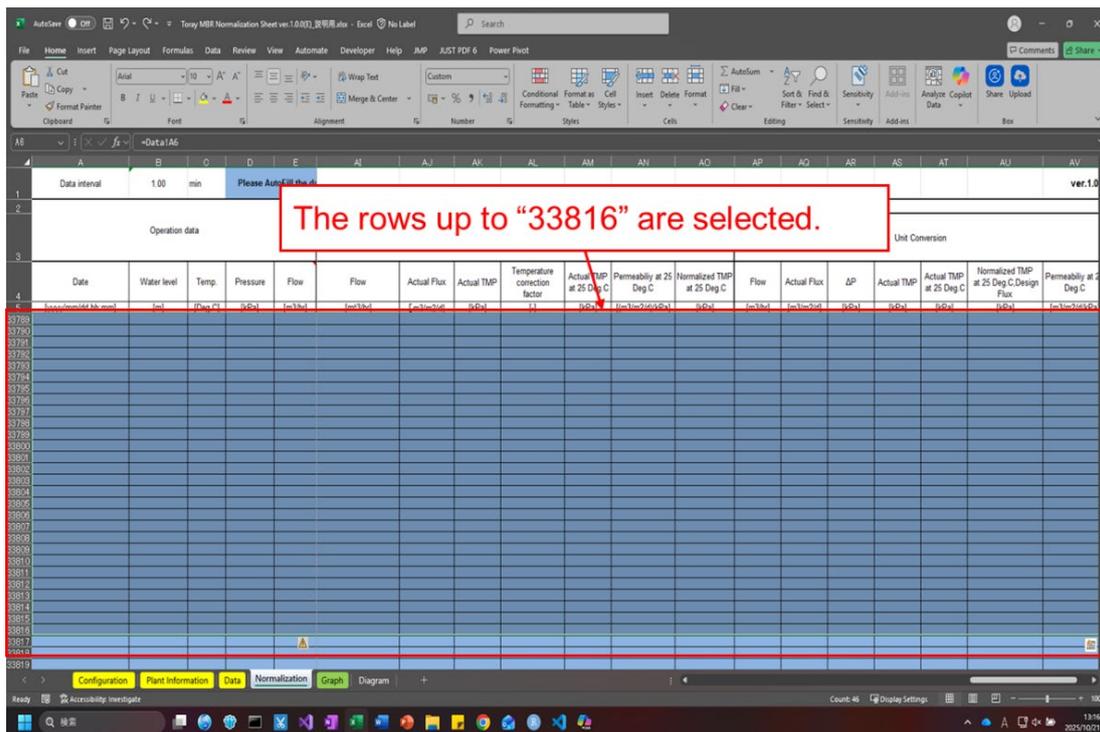


- ii. Selecting the cell range where the formulas will be pasted.
On the [Normalization] sheet, click cell A6, then click [Find & Select] on the Home ribbon. From the dropdown menu, choose [Go To].

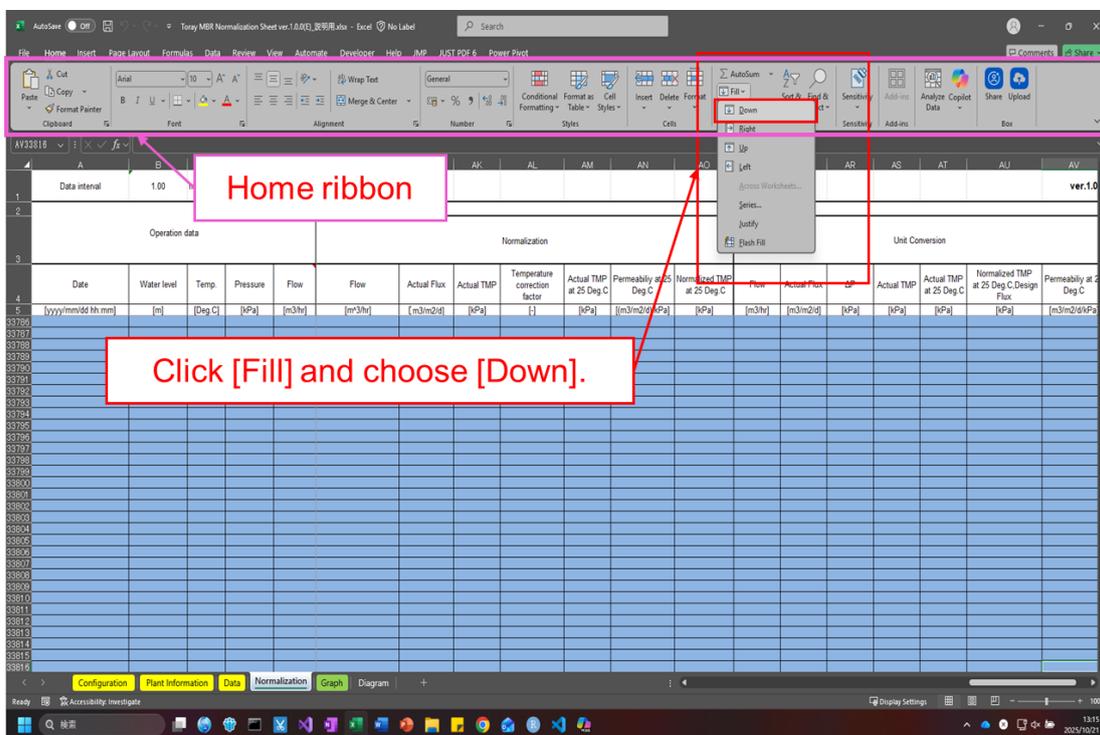


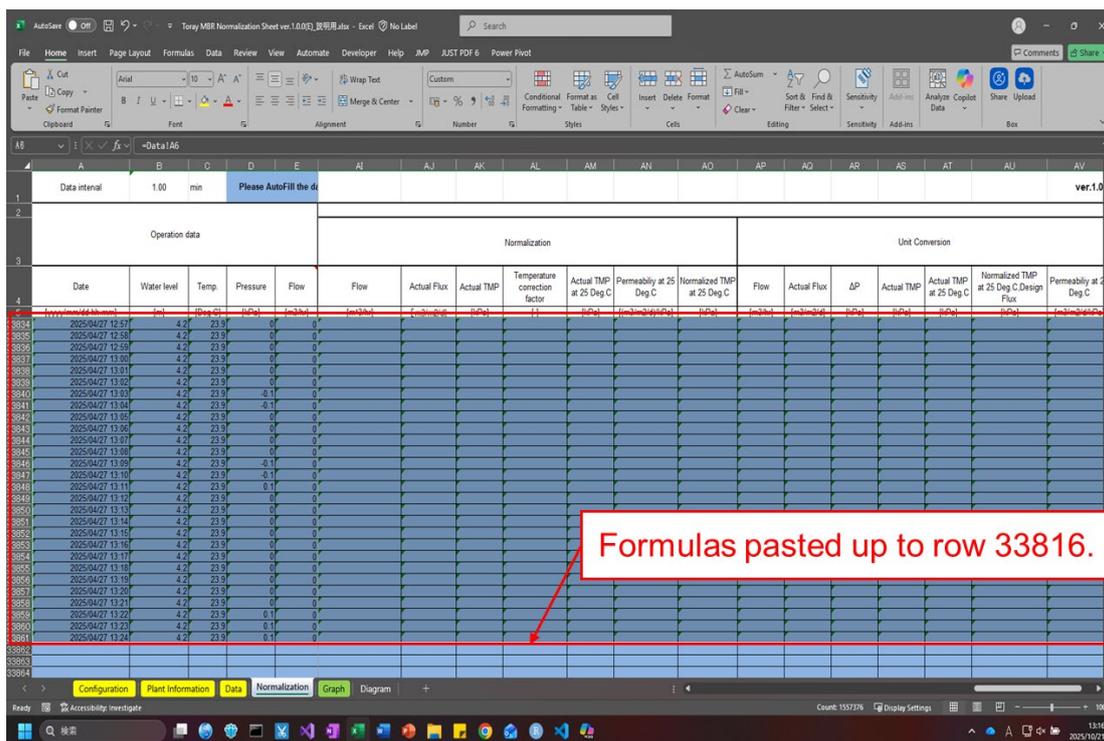
- iii. The [Go To] popup window will appear. In the "Reference" field, enter the last row number of column AW. In this example, enter "AW33816". While holding down the Shift key, click the "OK" button. This will select the range from cell A6 to AW33816.



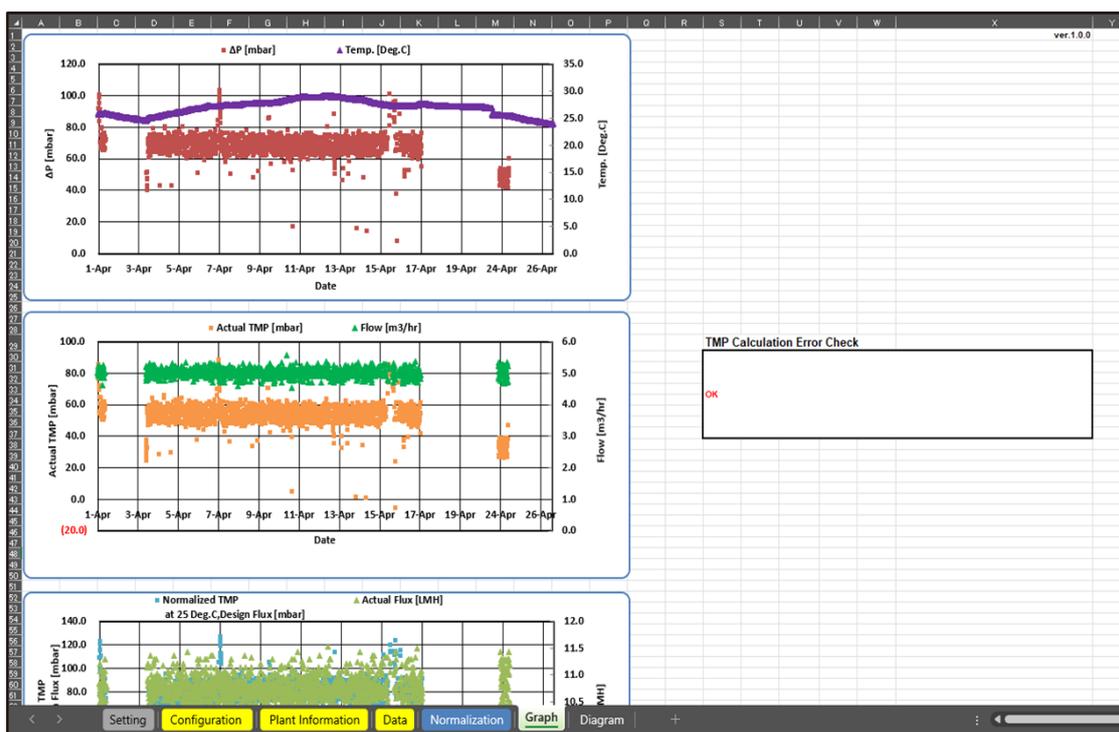


iv. Copying and pasting the formulas to cells selected at iii. While the cells remain selected, click "Fill" on the Home ribbon. From the dropdown menu, choose [Down]. This copies and pastes the formulas into the selected cells and automatically starts the calculations.





- Open the [Graph] sheet, check the result graphs. This sheet shows the following 6 items.
 ΔP: Differential pressure (including the piping pressure loss)
 Temp.: water temperature
 Actual TMP: Transmembrane pressure (not including the piping pressure loss)
 Flow: Filtration flow rate
 Actual Flux: Filtration flux
 Normalized TMP: Normalized transmembrane pressure (not including the piping pressure loss)
 Permeability



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FOR QUESTIONS, PLEASE CONTACT US:

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If you require any further information, please do not hesitate to contact us.

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