



# iWorks MM

# Instructions

Software for Measuring Microscope

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# iWorks MM

## Versatile Software for Measuring Microscope

The Report Manager software is developed for the users to create the report with various data, graphs and values for measurement results in the required contents and report format. It is especially focused on making the report in the user's selected report format with the specific data in Microsoft Excel at the fastest rate. In particular, it is very useful and convenient in re-using the previously made or existing report format of a certain company fast and accurately.

The Report Manager measures defined measurement pattern and achievement record form and creates report to simplify and automate report editing process of adjusting and changing measurement results according to form in case of users executing frequent and complex measurement.



1. Create new report template
2. Open saved template
3. Save changes of template
4. Save report as another name
5. Print report
6. Insert image in the report
7. Add chart
8. Pattern manager
9. Pattern property apply
10. Basic Right pattern apply
11. Basic Down pattern apply
12. Pattern start
13. Pattern stop
14. Pattern start point change
15. Pattern information

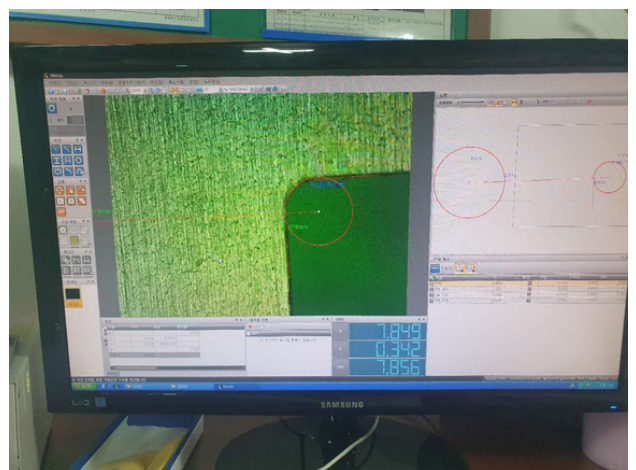
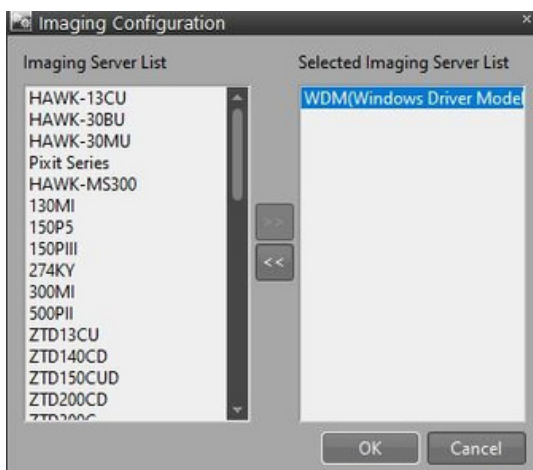
**Step 1.**

Connect RS232C cable from measuring microscope to PC.



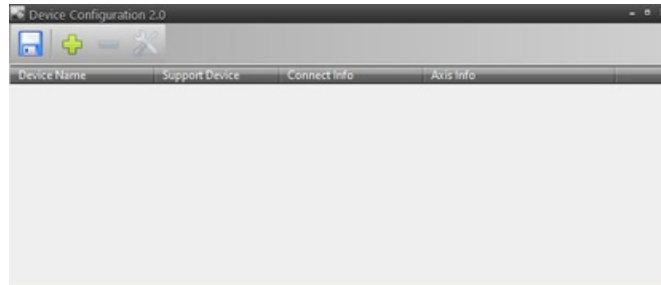
**Step 1.**

Connect RS232C cable from measuring microscope to PC.



### Step 3.

Connect RS232C cable from measuring microscope to PC.



### Step 2.

Connect Camera. (when you are using MC500G-3 or MC4K, select WDM on the list)

### Step 2.

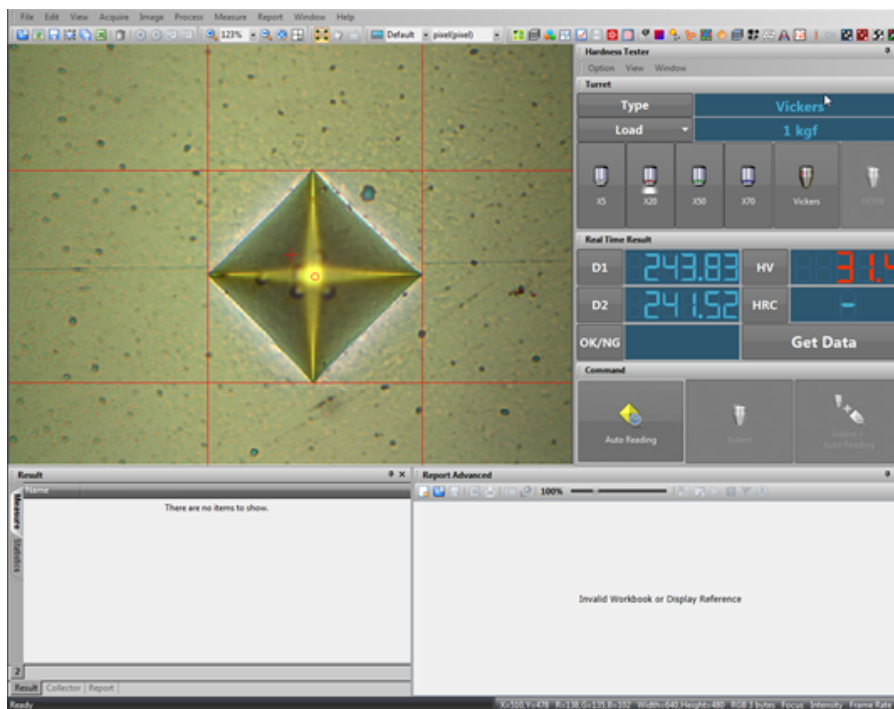
Connect Camera. (when you are using MC500G-3 or MC4K, select WDM on the list)

## Use the Report Manager

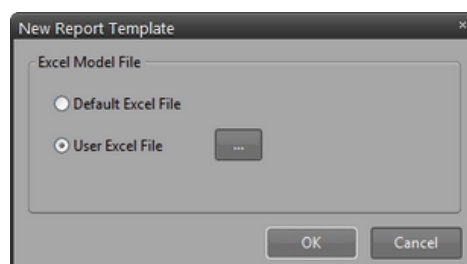
The Report Manager function allows the users to make and re-use the various formats of the report in Microsoft Excel. To take advantage of using the Report Manager function, users must set up the required format and pattern first before the measurement. Once the set up is completed, the measurement results and the required contents are automatically made in the required report format in Microsoft Excel and can be exported to Microsoft Excel.

### To use the Report Manager

- ✓ On the menu bar of the main window, choose Window and then select Report Advanced Window to open the Report Advanced window. Make sure that the Status Bar, Result Window and Measure Window must be selected for the basic windows to be open. (Refer to the picture below)



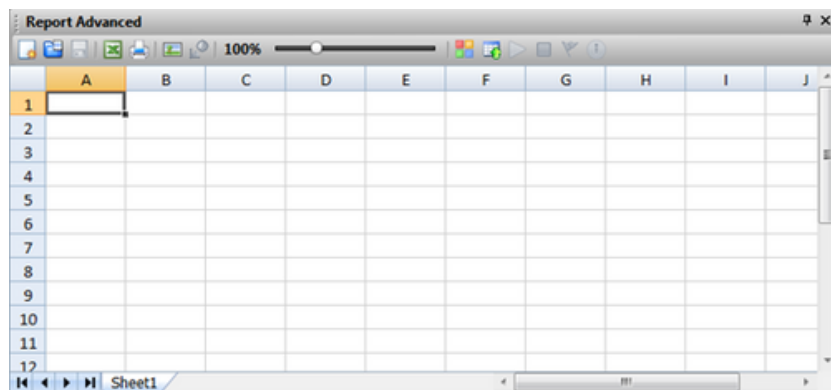
- ✓ On the application toolbar of the Report Advanced window, choose the New Report Template button to open the New Report Template dialog box. (Refer to the picture below)




# New Report Template

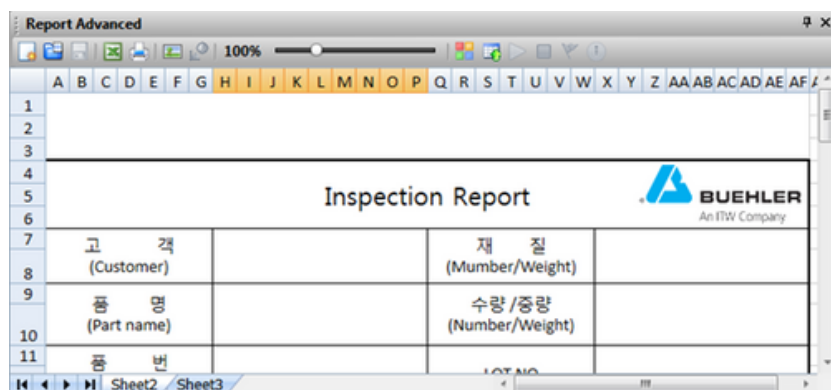
- ✓ To use the new report format, use the Default Excel File function and to use the existing (previously saved) report format, use User Excel File function.

**Default (New) Excel File:** select the Default Excel File and then choose the OK button to create and import a new Excel file to the Report Advanced window. (Refer to the picture below)



- ✓ If you want to go back to the New Report Template dialog box, choose the New report template button on the application toolbar of the Report Advanced window.


**User Excel File:** select the User Excel File and then choose the Browse button  to open the Open dialog box. In the Open dialog box, users may select the preferred Excel file which are previously made (especially for the report format of a company), and then choose the Open button. In the New Report Template dialog box, choose the Ok button to import the selected Excel file to the Report Advanced window. (Refer to the picture below)

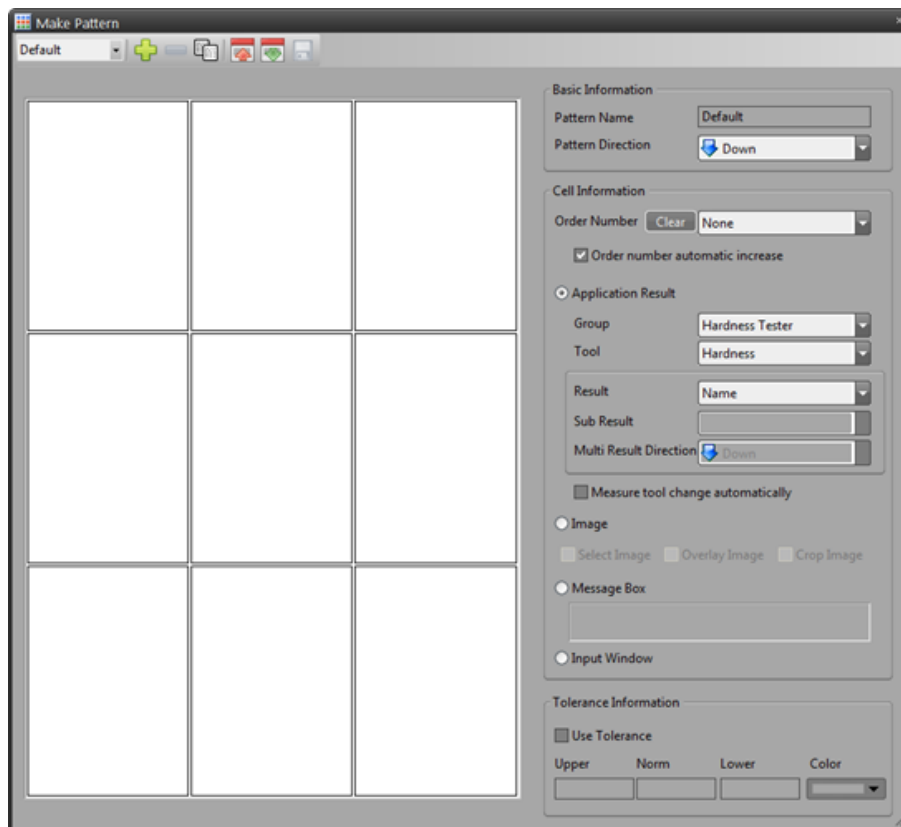


# Set up Report Manager

When using the Report Manager function, knowing how to set up the various formats is the most important stage. To make sure the users can know and understand the exact way of use in various formats, descriptions with examples to set up the report format using Report Manager are specified below.

## To set up the Report Manager


- ✔ On the application toolbar of the Report Advanced window, choose the  Show Pattern Manager button to open the Make Pattern dialog box. (Refer to the picture below)

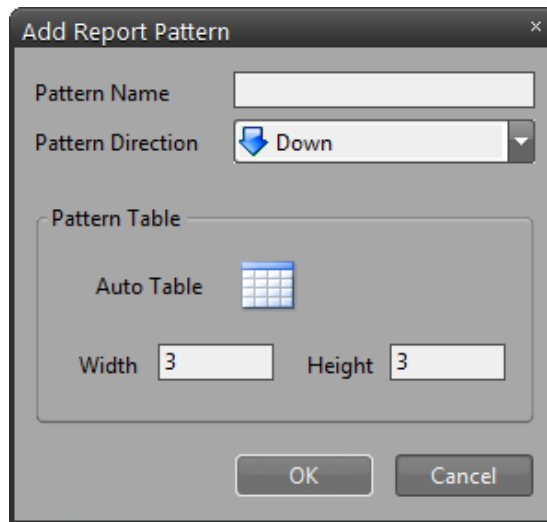


- ⚠ Refer to the terms for the understanding of specific explanations ; E-cell – single cell in the Microsoft Excel, R-cell – single cell in the report consists of merged E-cells, Pattern – single R-cell or merged R-cells, designating the part for the measurement value to be input in the report. Each cell in the Make Pattern dialog box indicates E-cell in the report.





# Add Report Pattern

- On the application toolbar of the Make Pattern dialog box, choose the  Add to Pattern File button to open the Add Report Pattern dialog box. (Refer to the picture below)



**Pattern Name:** name the Pattern name in the edit box.

**Pattern Direction:** designate the Pattern direction. Users can select the  Down direction or the  Right direction to set up the direction of the Pattern's repeat and progress in the report for the measurement value to be input

**Pattern Table:** specify the Width (Row) and the Height (Column) in the edit box to set up the Pattern table to designate the Pattern in the report [Width (Row) and Height (Column) indicates the numbers of the E-cells]. Auto Table is for the use of the set table when not specifying the Width (Row) and the Height (Column). Choose the OK button for the setup to be displayed in the window and the Basic Information group box of the Make Pattern dialog box. (Refer to the picture Sample 1 below)

# Sample 1

Pattern Direction: Down / Pattern Table: 9×2 [Width(row) 9 × Column(height) 2]

The screenshot shows an Excel spreadsheet titled 'Sample1.xls [호환 모드]'. The main content is an 'Inspection Report' form with the following structure:

- Header: Inspection Report (with BUEHLER logo)
- Customer (고객) and Material (재질) fields.
- Part Name (품명) and Quantity/Weight (수량/중량) fields.
- Part Number (품번) and Lot Number (LOT NO) fields.
- Customer Lot Number (고객 LOT NO) field.
- Hardness Measurement Table (경화깊이 측정 DATA):
 

표면으로부터거리(mm)	경도(HV)
1	①
2	②
3	③
4	
5	
6	
7	
- Progress (공정) and QT distance (QT열처리) fields.
- Inspection Item (검사항목) table with columns for SPEC, 광신열처리 측정, and 업체 측정.
- Appearance (겉모양), Surface Hardness (표면경도), Hardening Depth (경화깊이), and Depth Hardness (심부경도) fields.
- Remarks (특기사항) field.
- Measurement Conditions (측정하중: Hmv500gf, HRC150KG) and Standards (유효경화기준: Hmv).
- Inspector (INSPECTOR), Checker (CHECKER), and Approved (APPROVED) fields.
- Organization Photo (조직사진) field.

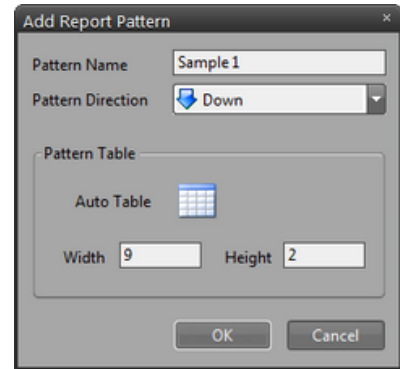
A red box highlights the '경화깊이 측정 DATA' table. A red arrow points to the pattern of red cells in the '경도(HV)' column, labeled 'Pattern: each red cell'. Another red arrow points to a downward arrow below the table, labeled 'Direction of the Pattern's repeat and progress'.

경화깊이 측정 DATA	
표면으로부터거리(mm)	경도(HV)
1	
2	

The 'Make Pattern' dialog box is shown with the following settings:

- Pattern Name: Sample1
- Pattern Direction: Down
- Cell Information: Order Number (set to 1), Application Result (set to Hardness Value)
- Tolerance Information: Upper, Norm, Lower, Color (set to a color swatch)

In the above picture Sample 1, the single Pattern consists of merged cells of Microsoft Excel : 9×2 [Width(row) 9 × Column(height) 2]. The direction of the Pattern's repeat and progress is downward. So, for the report of the picture Sample 1, users should specify the contents accordingly in the Add Report Pattern dialog box. (Refer to the picture below



### Cell Information

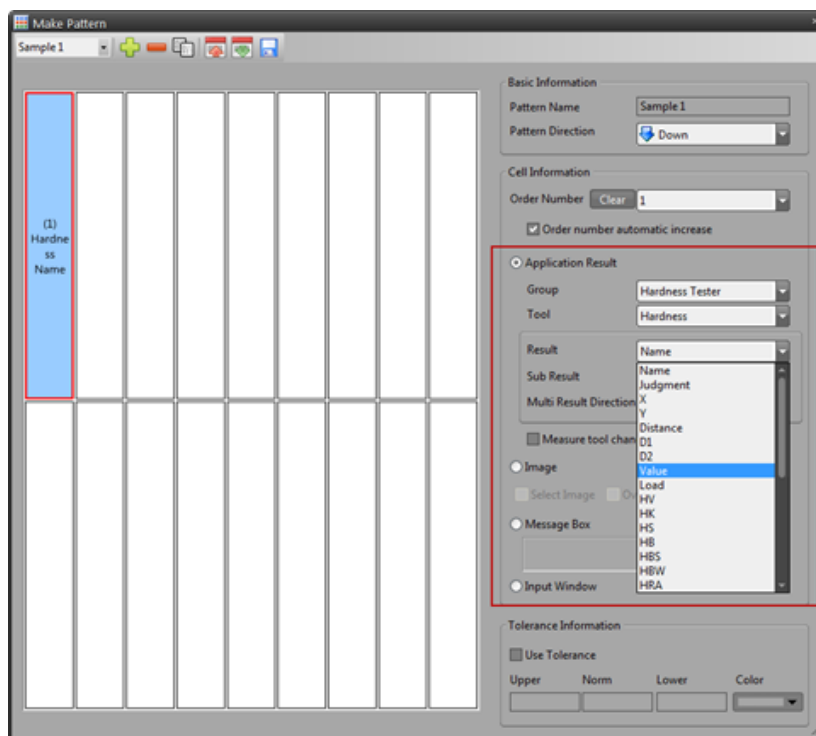
**Order Number:** users may select the number order of the cell for the result value to be displayed. When check box of the Order Number Automatic Increase is selected, the numbers of the cells in the window will be automatically designated in sequence. To unselect the cell, choose the Clear button.

### Application Result:

**Group:** select Hardness Tester in the Group combo box for hardness testing

**Tool:** when Hardness Tester is selected in the Group combo box, Hardness will be automatically selected in the Tool combo box.

**Result:** users may select item in the Result combo box for the results of the hardness testing to be displayed in each cell. For specific explanation, refer to the examples below.



**⚠** As explained with the picture Sample 1, for the Pattern in the report to be input in sequence, users must pay attention to selecting the initial cell in the window of the Make Pattern dialog box and specifying the contents accordingly in the Cell Information group box. When making the report with more than one values to be input in sequence, the Pattern must be included with more than one R-cells accordingly and select the each initial cell in the window of the Make Pattern dialog box and specify each content accordingly in the Cell Information group box. (Refer to the picture Sample 2 and Sample 2-2 below)

## Sample 2 -1

Pattern Direction: Right / Pattern Table: 3x2 [Width(row) 9 × Column(height) 2]

The image shows an Excel spreadsheet titled 'Sample2.xls' in '회환 모드' (Review Mode). The spreadsheet contains an 'INSPECTION (TEST) REPORT' form in Korean. The form includes fields for document number, inspection date, and report date. A table lists inspection items and their required specifications, with a 'RESULT' section for recording measurements. A 'Make Pattern' dialog box is open, showing a grid where a pattern is being defined. The dialog box has the following settings:


- Pattern Name: Sample2
- Pattern Direction: Right
- Cell Information: Order Number: 1, Order number automatic increase: checked
- Application Result: Group: Measure, Tool: Line, Result: Distance, Sub Result: (empty), Multi Result Direction: Down
- Tolerance Information: Use Tolerance: unchecked, Upper: (empty), Norm: (empty), Lower: (empty), Color: (empty)

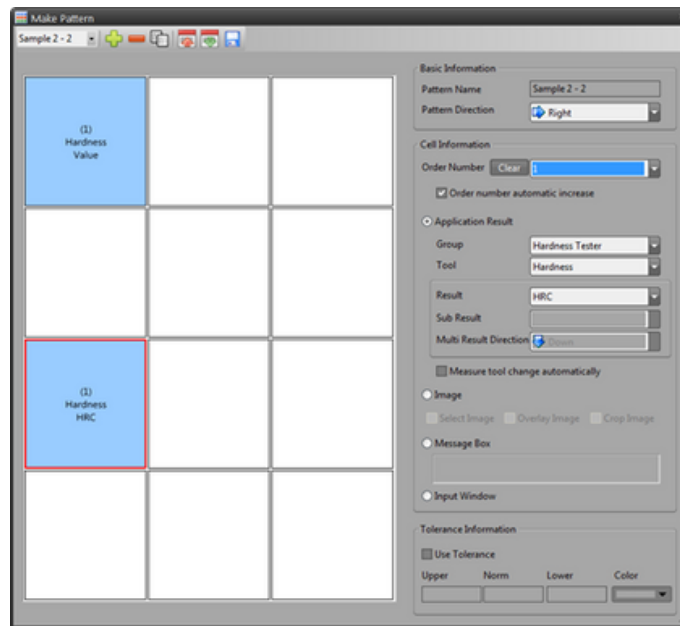
The 'Make Pattern' dialog box is overlaid on the spreadsheet, with a red box highlighting the area where the pattern is being defined. A red arrow points from the 'Make Pattern' dialog box to the 'SURFACE HARDNESS' cell in the 'RESULT' table. A red dotted arrow points from the 'SURFACE HARDNESS' cell to the 'CORE HARDNESS' cell, indicating the direction of the pattern.


## Sample 2 -2

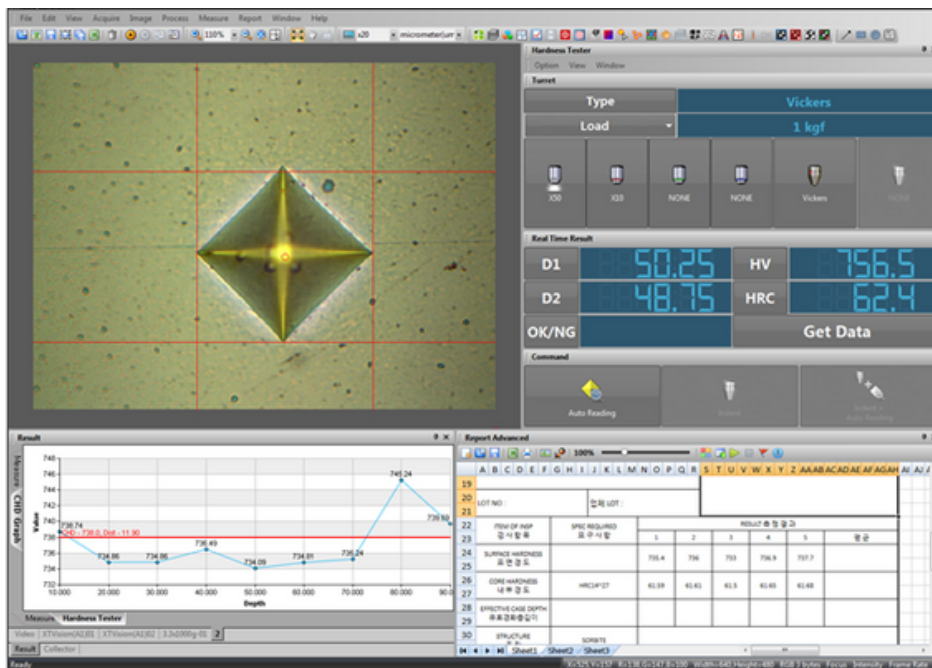
Pattern Direction: Right / Pattern Table: (3×2) + (3×2) = 6×4 [Width(row) 6 × Column(height) 4]




The image displays an Excel spreadsheet titled 'Sample2.xls [호환 모드]' with columns A-J and rows 1-49. The main content is an 'INSPECTION (TEST) REPORT' (조질 검사 (시험) 성적서) for BUEHLER. The report includes fields for document number, inspection date, and issue date. A table for 'RESULT 측정 결과' (Measurement Results) is shown, with columns for 'ITEM OF INSP' (Inspection Item), 'SPEC REQUIRED' (Required Specification), and five result columns (1-5) plus an average column. The 'ITEM OF INSP' table lists various inspection items like 'SURFACE HARDNESS', 'CORE HARDNESS', 'EFFECTIVE CASE DEPTH', 'STRUCTURE', and 'SURFACE CONDITION'. A 'Measure Pattern' dialog box is overlaid on the spreadsheet, showing a 3x2 grid of cells. The top-left cell is selected and contains '(1) Hardness Value'. The bottom-left cell contains '(2) Hardness HRC'. The dialog box has tabs for 'Basic Information', 'Cell Information', 'Application Result', 'Image', 'Message Box', and 'Input Window'. The 'Basic Information' tab is active, showing 'Pattern Name: Sample 2-2' and 'Pattern Direction: Right'. The 'Cell Information' tab shows 'Order Number: 2' and 'Order number automatic increase' checked. The 'Application Result' tab shows 'Group: Hardness Tester', 'Tool: Hardness', 'Result: HRC', and 'Multi Result Direction: Down'. The 'Image' tab has 'Image' selected. The 'Message Box' and 'Input Window' tabs are also visible. The 'Tolerance Information' tab shows 'Use Tolerance' checked and 'Upper', 'Norm', 'Lower', and 'Color' options.

 In the above picture Sample 2-2, two R-cells are included in one Sample for the different values to be input in the each of the R-cell. In this case, users must select each of the initial cell in the window of the Make Pattern dialog box (which also indicates the initial cell of E-cells) and specify each content accordingly in the Cell Information group box for the measurement values to be input in order to start from the each of the initial R-cell and proceed in sequence at the same time. If the users want the different values to be input in each R-cell at the same time, select and change the number order (2) of the other initial cell(E-cell) of the R-cell into number order (1) and specify the same contents in the Cell Information group box. (Refer to the picture below)



 In this way, users can adjust the sequences of the measurement results and make various report formats to be imported to the Report Advanced window. (Refer to the picture below)



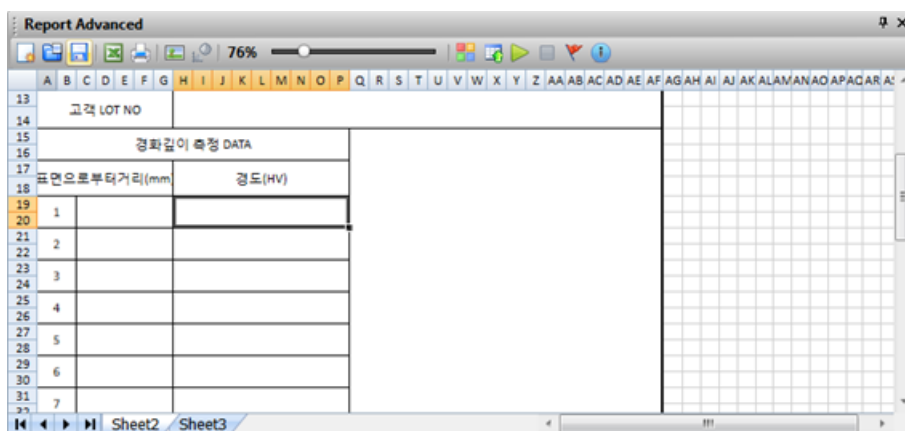
 When all the setups in the Make Pattern dialog box are done, choose the  Save a Pattern File button on the application toolbar to save the setups and then choose the  X button on the status bar to close the Make Pattern dialog box.


## Import to Report Advanced Window

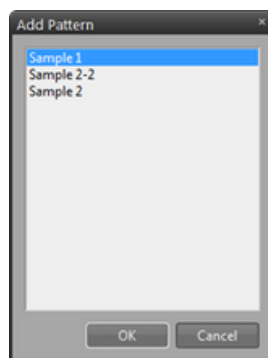
For all the setups made in the Make Pattern dialog box to be displayed in the Report Advanced window, users must import them to the Report Advanced window and the setup data will be displayed upon measurement.

### To import to the Report Advanced window

- ✓ For all the setups made in the Make Pattern dialog box to be displayed in the Report Advanced window, users must import them to the Report Advanced window and the setup data will be displayed upon measurement.




- ✓ On the application toolbar of the Report Advanced window, choose the  Pattern Property Apply button to open the Add Pattern dialog box. Choose the previously designated name among the lists in the Add Pattern dialog box and then choose OK button. (Refer to the picture below)

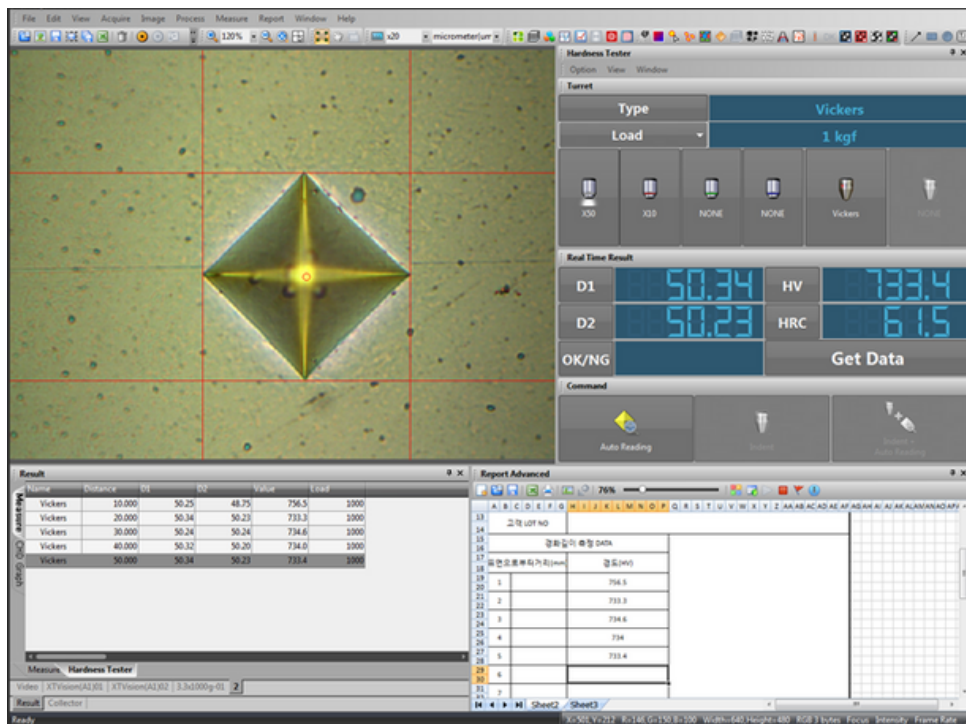



# Measurement Using Report Manager

After the previous setups, users may begin the hardness testing measurement using the Report Manager, displaying the previously setup data in the Report Advanced window upon measurement.

## To perform the measurement using the Report Manager


- ✓ 1 On the application toolbar of the Report Advanced window, choose the  Pattern Start button and start the measurement of the indentation on the screen, using either the Auto Reading(auto-measuring)function or the Manual(manual-measuring)function.
- ✓ 2 After the measurement of the indentation, choose Get Data button in the Real Time Result window for the previously setup data to be displayed in sequence in the Report Advanced window. (Refer to the picture below)






- ✓ 3 On the application toolbar of the Report Advanced window, choose the  Pattern Stop button to finish the Report Manager.

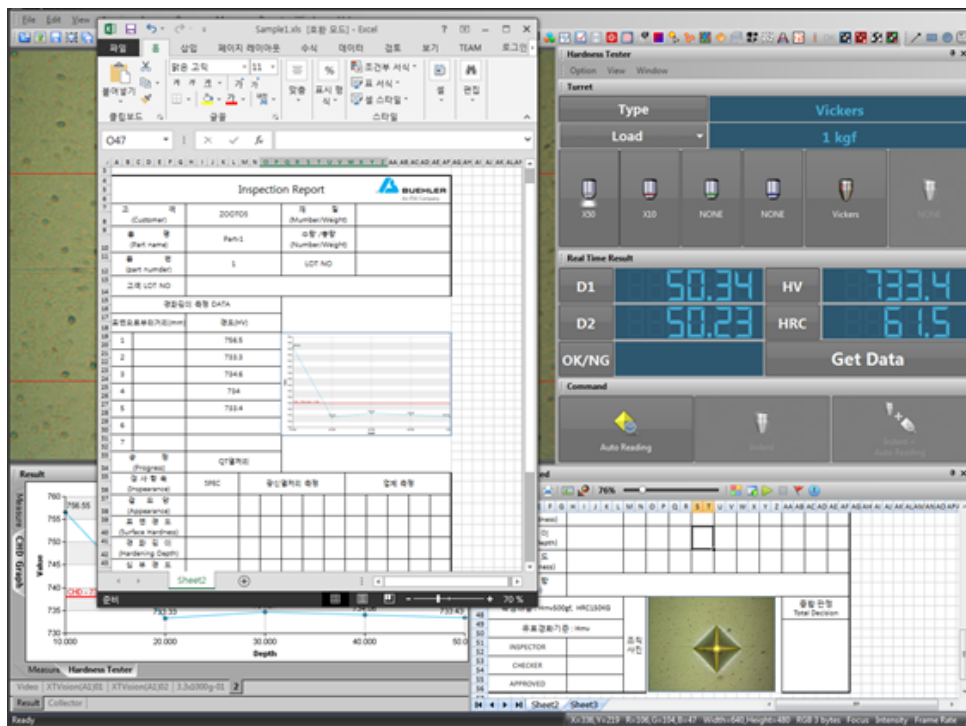


# Export to Excel

When the measurement is done, users can export the report in the Report Advanced window to Microsoft Excel. (If needed, choose the  Print an Excel button on the application toolbar of the Report Advanced window to print the report without exporting to the Excel)

## To export to the Excel

-  On the application toolbar of the Report Advanced window, choose the  Export to Excel button to open the Save as dialog box. Name the file in the File Name edit box and then choose the  Save button to save the report in Microsoft Excel file. (Refer to the picture below)



Specifications are subject to change without any obligation on the part of the manufacturer.

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