Minebea

*DATA PROCESSOR FOR LTS-*NB type Load Test Stand SR-09-002EN (PEEL TEST)*

Instruction Manual

EN294-1639B

Contents

1. General

Connected for the purpose of communication with LTS-B type of testing machine and USB, this data processor receives the data from the testing machine and controls the machine through the command from personal computer and also performs various kinds of tests efficiently, after that prints out the results and outputs them into various files as well.

2. Instruments targeted to operate

Personal computer

Installed OS	windows Xp、Vista,7,8,8.1,10 (32bit,64bit)
Memory	Windows Xp: Above 512MB Windows Vista,78,8.1,10: Above 2.0GB
HardDisk	Space area above 1.0GB (Approx.10 MB of empty capacitance is required when installing is made.)
USB port installed instrument	
Serial port	Required when RS-232c is applied. *In the case of RS-232C is applied, an option is required.
USB port	Required in the case of USB communication cable is used.
CD-ROM drive	Required during installing is made.
Mouse, Key board	
*Monitor	The resolution is a color display of 1024×768 or more.
*Color printer	Necessary for printing out, but operation can be made if a printer is not prepared.
*Targeted Load measuring instrument	Load measuring instrument： LTS-*NB
*USB cable	A communication cable between PC and Load measuring instrument

*** This software doesn't guarantee the operation with all PC.**

3. Attached documents

Instruction manual	1 set

4. Specifications

4-1. Kinds of test

Peel test(Peel angle: 90°,135°,180°)

4-2.Overall specifications

Maximum number of tests 50 pcs (per one report file)

Maximum number of input dimensions of samples

100 pcs (per one test condition file)

4-3.Input parameter

1)Test condition name

2)Report file stored folder name

3)Report file name

4)Condition creator's post/creator's name

5)Inspector's name

6) Temperature, humidity

7)Setting test force amplifier and load cell

Type, Rated capacity and Range

8)Peel angle 90°,135°,180°

9)Test direction UP, DOWN

10)Break detection OFF, STOP, RETURN

11)Test speed

Type	Set test speed (mm/min)
LTS-*NB-S500	50,100,200,300,400,500
LTS-*NB-S400	40,75,100,200,300,400
LTS-*NB-S300	30,50,100,150,200,300
LTS-*NB-S200	15,20,50,100,150,200
LTS-*NB-S100	10,20,30,50,75,100
LTS-*NB-S50	5,10,20,30,40,50
LTS-*NB-S20	1.5,2,5,10,15,20

12)Detectable break sensitivity Input range ; 0.1 to 9.9 %F.S.

13)Rapid return ON, OFF

14)Limit setting Max. control : LOAD, POSITION

Operation of max. point : STOP, RETURN

Set value of Max. point

15)Limit of displacement at software side

Limit setting detected at soft of displacement at the side of displacement (POSITION).

*When only the MAX. CONTROL is the LOAD, setting can be effective.

16)Setting sample dimension

Sample width, Sample thickness, Common sample name, Conversion width, Dimension table(Use, Not used.)

17)Dimension table for sample (Effective only when dimension table for Sample setting is applied.) Width, Thickness, Sample name

18)Sampling frequency

19)Optional setting of acquired data

20)Setting analysis items (16 items at max.)

21)Setting statistics items (8 items at max.)

22)Setting analysis condition

23)Setting collection average

24)Optional setting

4 - 4 .Analysis Items

1)The Max. peak point:

Test force, converted test force, unit test force, displacement, peel distance, friction coefficient

2)The Min. bottom point

Test force, converted test force, unit test force, displacement, peel distance, friction coefficient

3)The 1st peak point

Test force, converted test force, unit test force, displacement, peel distance, friction coefficient

4)The 1st bottom point

Test force, converted test force, unit test force, displacement, peel distance, friction coefficient

5)Break point

Test force, converted test force, unit test force, displacement, peel distance, friction coefficient

6)Integral average

Test force,converted test force,unit test force,friction coefficient

7)Simple average

Test force, converted test force, unit test force, friction coefficient

8)Peak point average

Test force, converted test force, unit test force, friction coefficient

9)Average of bottom points

Test force, converted test force, unit test force, friction coefficient

10)Average of peak/bottom points

Test force, converted test force, unit test force, friction coefficient

11)Tearing load

Test force, converted test force, unit test force, friction coefficient

12)Tearing strength

13)Static friction coefficient (The 1st peak point)

14)Dynamic friction coefficient (Simple average)

15)Average of 6 large and small peak points

Test force, converted test force, unit test force,friction coefficient

16)Energy

17)Average of 6 displacement points

Test force, converted test force, unit test force, friction coefficient

18)Average of 5 displacement points

Test force, converted test force, unit test force, friction coefficient

19)Average of 4 displacement points

Test force, converted test force, unit test force, friction coefficient

20)Average of 3 displacement points

Test force, converted test force, unit test force, friction coefficient

21)Average of 2 displacement points

Test force, converted test force, unit test force, friction coefficient

22)Average of collection from 1 to 6

Test force, converted test force, unit test force, displacement,
peel distance, friction coefficient

23)Displacement points 1 to 6

Test force, converted test force, unit test force,displacement,
peel distance, friction coefficient

24)Initial test force point

Test force, converted test force, unit test force,displacement,
peel distance, friction coefficient

25)No. of peak points

26)No. of bottom points

27)Sample name

28)Sample width

29)Sample thickness

4 - 5 .Statistical process items (In one(1) lot)

1)Average value

2)Standard deviation σ(N-1)

3)Maximum value

4)Minimum value

5)Median value

6)Maximum – minimum
7)Coefficient of variation
8)Standard deviation*3
9)Average of JIS K6301
10) $\sum X i^2$
11) $\sum X I$
12)No. of data

4 - 6 .Printing items

Test condition set value, analysis results, statistical process results, re-calculation of acquired data, random draw of graph of acquired data, individual graph of acquired data

5. Definition of process of test result

5 - 1 . Data output items

Output items	Selection items	Data calculation range
Max. peak point, Min. bottom point	Test force, converted test force, unit test force, displacement, peel distance, friction coefficient	Within the set section (Measurement start point to end point)
1st peak point, 1st bottom point	Test force, converted test force, unit test force, displacement, peel distance, friction coefficient	All sections
Break point	Test force, converted test force, unit test force, displacement, peel distance, friction coefficient	All sections
Displacement points 1 to 6	Test force, converted test force, unit test force, displacement, peel distance, friction coefficient	All sections
Initial test force point	Test force, converted test force, unit test force, displacement, peel distance, friction coefficient	All sections
Integral average	Test force, converted test force, unit test force, friction coefficient	Within the set sections (Measurement start point to end point)
Simple average	Test force, converted test force, unit test force, friction coefficient	Within the set sections (Measurement start point to end point)

Average of peak point and bottom point	Test force, converted test force, unit test force, friction coefficient	Within the set sections (Measurement start point to end point)
Average of peak-bottom points	Test force, converted test force, unit test force, friction coefficient	Within the set sections (Measurement start point to end point)
Tearing load	Test force, converted test force, unit test force, friction coefficient	Depends on the no. of peak points
Average of 6 peak and bottom points	Test force, converted test force, unit test force, friction coefficient	Within the set sections (Measurement start point to end point)
Average of displacement of 2,3,4,5 and 6 points	Test force, converted test force, unit test force, friction coefficient	All sections
Collection average 1 to 6	Test force, converted test force, unit test force, friction coefficient	Depends on the items selected.
Energy		Within the set sections (Measurement start point to end point)
Tearing strength		Depends on the No. of peak points.
No. of peak and bottom points		Within the set sections (Measurement start point to end point)

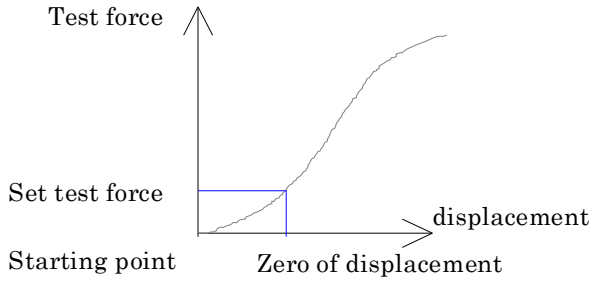
5 - 2 .Definitions of data analyzed process

The test results can be analyzed by the method as follows:

1) Zero of displacement

Zero point of elongation can be calculated by the Initial test force in order eliminate a play of error at the time installation of test. All the analyses can be performed with this zero point of elongation as a standard.

Initial test force point



Zero of elongation is supposed to be from 0.1% to 9.9% of full scale of test force.

Initial test force point: The point when the test force has past the set value by the initial test force.

2)Analysis starting point

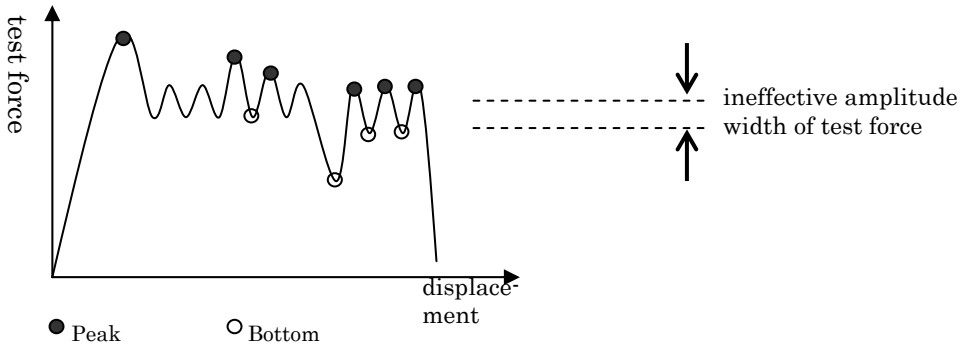
The starting point of data analysis section. Set one item among the three items as follows: ①＊＊mm from the initial test force point
②＊＊mm from the 1st peak point
③＊＊mm from the 1st bottom point
※Zero (0) mm can't be set for ① to ③.

3)Analysis end point

The end point of data analysis section. Set one item among the three items as follows:

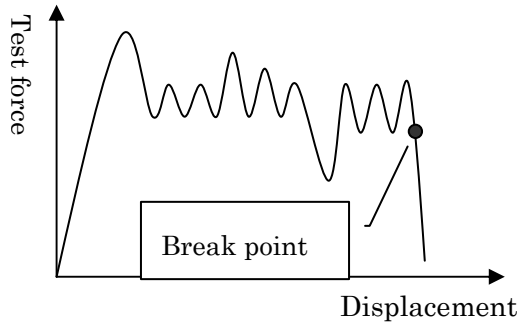
①＊＊mm from analysis starting point
②＊＊mm before break
③＊＊mm prior to final peak point
※Zero (0) mm can't be set for ① to ③.
※Setting range should be from 0 mm to 1999.99 mm.

4)Definition of peak point and bottom point



More than the amplitude of the ineffective amplitude of test force (Set by the test force of value or the ratio of test force measurement range to full scale.) will become the peak value and/or bottom value.

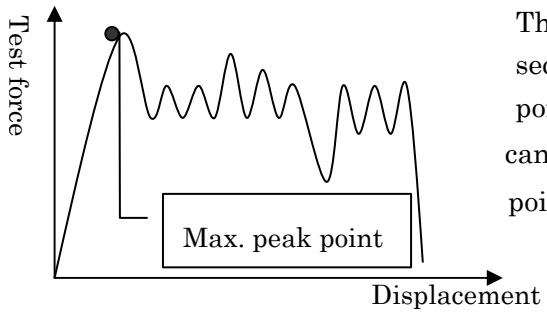
5)Break point



Compared with the test force at the sampling just before,it's considered to be the sampling point just before the decrease exceeds the break detective test force. Or when the break point isn't obtained at the setting of break detective test force, the break point shall be decided on the point under the break detective level.

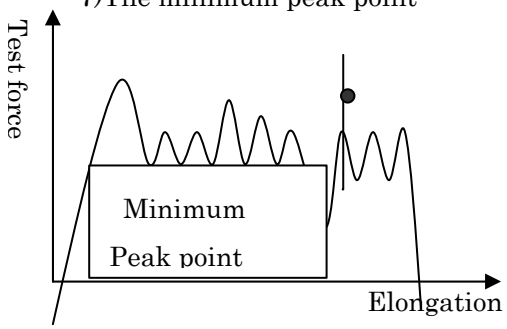
* The break point shall be decided as the "test end point", when you can't detect the break point by neither the break detective test force nor break detective level.

6)The maximum peak point



The maximum peak point within the analysis sections. When the multiple maximum peak points are existed, the maximum peak point can be defined as the most largest displacement point of them.

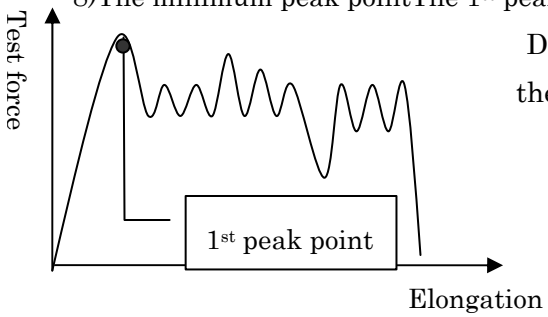
7)The minimum peak point



The minimum peak point will be the smallest bottom point of test force within the analysis sections.

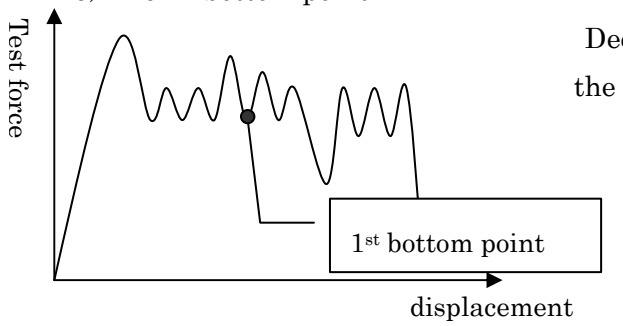
When the minimum peak points are existed in plural numbers, the minimum peak point can be defined as the largest displacement point.

8)The minimum peak pointThe 1st peak point



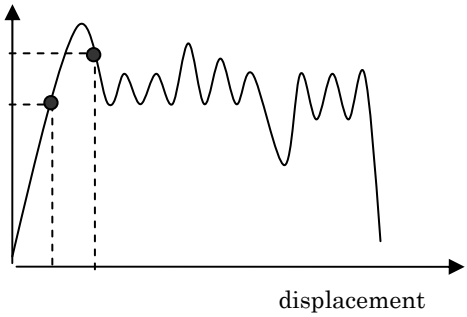
Decided as the 1st peak point within the sections of all.

9) The 1st bottom point



Decided as the 1st bottom point within the sections of all.

10) 1 to 6 displacement



Displacement point shall be the one that equal to sampling point to the set displacement. * When there is no sampling point equal to the set displacement, the displacement point will be decided as the first sampling point where it becomes larger than the set displacement.

11) Integral average

The average value of all the test force within the analysis sections.

（Calculates by integrating the test force value. ）

12) Simple average

The average of all of the test force with in the analysis sections shall be simple average.

（Calculates by averaging the test force values.）

13) Average of the peak points

The average test force of the peak points within the analysis sections shall be the Average of peak points.

14) Average of the bottom points

The average load of the bottom points within the analysis sections shall be the Average of bottom points.

15) Average of the peak and bottom point

The average of the peak point and the bottom point within the analysis sections shall be the Average of peak and bottom point.

16) Tearing test strength

TR ＝ P／t

TR（N／mm） ：Tearing test force, Tearing strength

P（N） ：Test force

t（mm） ：Sample thickness ():Units

Depending to the number of peak points within the analysis sections, calculation can be made by the one among the three below:

① The median of the peak points when the number of peak points are less than 5.

② The median of the peak value within the range of except the section of 10 % of displacement from the start of measurement and also except the section of 10 % of displacement from measurement end, when the number of peak points are between 5 to 20.

③ When the number of peak points are more than 20, the zone from the start of measurement to the end of measurement is divided into 10, and seek the peak points near to the each 9 points of displacement, apart form the 1st and the last displacement points, then decide the median value of them.

Median : When the data are ordered according to size, the value of positioned data that divides equal in two among the data.
That means, when the values are 15,13,10,8 and 7 in order by size, the median will be " 10", for example. And in the case of values of 15,13,10 and 8 in order by size, the median will be "(13+10)/2=11.5.

17) Average of 6 points of the peak point and the bottom points

The average of largest 3 points of peak points within the analysis sections and the smallest 3 points of bottom point within the analysis sections.

18) Average of 2,3,4,5 and 6 points of displacement

Based on the displacement point set by 1 to 6,
2-points average shall be the average among 1 to 2 displacement.
3-points average shall be the average among 1 to 3 displacement.
4- points average shall be the average among 1 to 4 displacement.
5-points average shall be the average among 1 to 5 displacement.
6-points average shall be the average among 1 to 6 displacement.

19) Energy

The energy value is the integrated test force value by displacement within the analysis sections.

20) No. of peak points

Shall be the number of peak points within the analysis sections.

21) No. of bottom points

Shall be the number of bottom points within the analysis sections.

22) Collection average

Selecting the each analysis point and peak/bottom point optionally, and then calculates the average of selected items.

The items that can be selectable are as follows:

- The 1st, 2nd, 3rd, 4th, 5th and 6th large peak points of test force
- The 1st, 2nd, 3rd, 4th, 5th and 6th small peak points of test force
- The 1st, 2nd, 3rd, 4th, 5th and 6th large bottom points of test force
- The 1st, 2nd, 3rd, 4th, 5th and 6th small bottom points of test force
- The maximum peak point, the minimum bottom point
- The 1st peak point, the 1st bottom point
- Break point
- Displacement 1, displacement 2, displacement 3, displacement 4, displacement 5 and displacement 6
- Integral average, simple average
- Average of peak points, average of bottom points, average of the peak and bottom point
- Tearing test force
- Average of 6 small/large peak points
- Average of 2 displacement, average of 3 displacement, average of 4 displacement, average of 5 displacement and average of 6 displacement

23) Peel distance

90°peel　Same value(x1) of shifting value of movable crosshead.

135°peel　$\frac{\sqrt{2}}{1+\sqrt{2}}$ time of shifting value of movable crosshead.

180°peel　1/2 of shifting value of movable crosshead.

24) Unit test force

$\sigma = P / W$

σ（N／mm）　：Unit test force

P（N）　：Test force

W（mm）　：Sample width　　( ) units

25) Conversion test force

$R = \sigma \times WX$

R（N／mm）　：Conversion test force

σ（N／mm）　：Unit test force

WX（mm）　：Conversion width　　( ) units

26) Friction coefficient

μ ＝（P×1000）／（G×M）

μ	：Friction coefficient
P（N）	：Test force
G（m/s²）	：Acceleration of gravity ＝ 9.80665（m/s²）
M（g）	：Mass of dead weight for the measurement of friction of coefficient

（ ）units

5 - 3 .Definition of statistical process

average value $\frac{\sum_{i=1}^{n} x_i}{n}$

standard deviation $\sqrt{\frac{\sum_{i=1}^{n}\left(x_i-\bar{x}\right)^2}{n-1}}$

standard deviation*3 $\left(\sqrt{\frac{\sum_{i=1}^{n}\left(x_i-\bar{x}\right)^2}{n-1}}\right)*3$

The maximum value　Calculates the maximum value.

The minimum value　Calculates the minimum value.

The max.- the min.　The maximum value – (minus) the minimum value

Median　The middle value when arranged the values in size.

EX. : When the data are 10,15,25,30 and 40, 25 will be the median.

Note : When the number of data is even number, the average of middle two shall be the median.

EX. : When the values are 10,15,25 and 30,the median will be (15+25)/2=20.

JIS K6301 average No. of sample ＝1 χ_i

No. of sample＝2 $\left(x_1*0.1+x_2*0.9\right)$

No. of sample＝3 $\left(x_1*0.1+x_2*0.2+x_3*0.7\right)$

No. of sample＝4 $\left(\left(x_1+x_2\right)*0.1+x_3*0.3+x_4*0.5\right)$

No. of sample＞4 $\left(\left(x+x_{n-3}\right)*0.1+x_{n-2}*0.3+x_{n-1}*0.5\right)$

Coefficient of variation $\frac{\sqrt{\frac{\sum_{i=1}^{n}\left(x_i-\bar{x}\right)^2}{n-1}}*100}{\frac{\sum_{i=1}^{n}x_i}{n}}$ (Standard deviation *100/average value)

ΣX2 $\sum_{i=1}^{n}x_i^{\,2}$

ΣX $\sum_{i=1}^{n}x_i$

No. of data Calculates the No. of data (No. of samples).

6. Application

6 - 1 .Preparation

・Connect between the connector located on the rear side of control section of LTS-B type of testing machine and the connector at Personal computer with the USB cable.

・Fix the connector with the setscrews firmly.

6 - 2 .Supplying power

Supply power for the universal testing machine and data processor according to the following procedures.

Universal testing machine (LTS-B type)

According to the Instruction manual for the Testing machine, supply power.

POWER　SW on back of the main body ON

↓

Data process unit

Display	POWER　ON
Printer	POWER　ON（When the printer is used.）
Personal computer	POWER　ON

7. Operating procedures

7 - 1 .Various kinds of notes for the application of this software

As for the “CLOSE” button

The “CLOSE” buttons on the following windows on the right above aren’t used due to the system programs.

- Main menu
- Test window
- Report analysis window

As for the Function key, Short cut key

The F1・F2….F12 keys in this manual are Function keys, so by pressing the Function key makes to operate the specified operations. (Take care if you press the F10 key for the first time, another function keys will not work.)

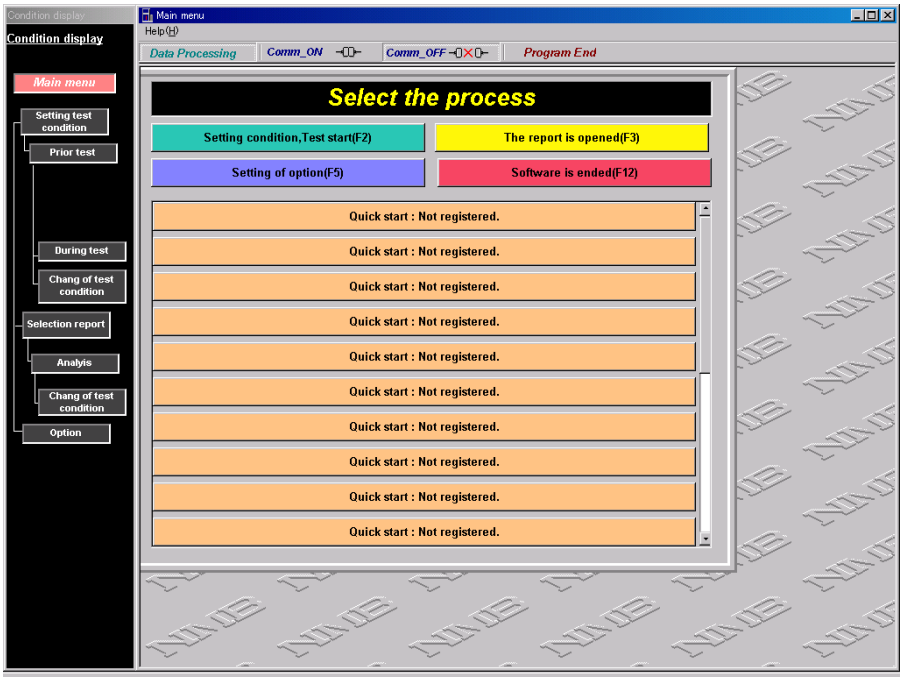
The access keys such as N・L・R , in this manual will operate the specified operations by pressing the character key at the same time.

7 - 2 .Starting up data processor software

When the personal computer starts up, the following icon shows “Peel ”, so apply double clicks on it. (The right figure.)

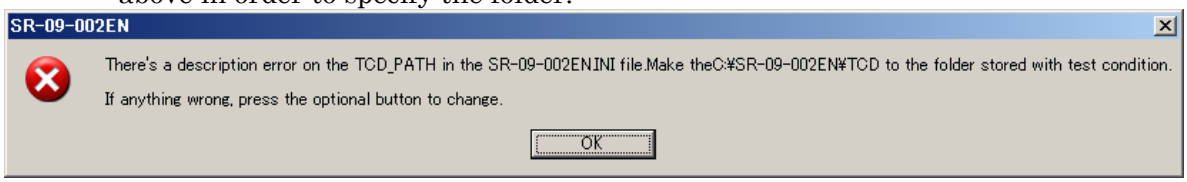
peel test

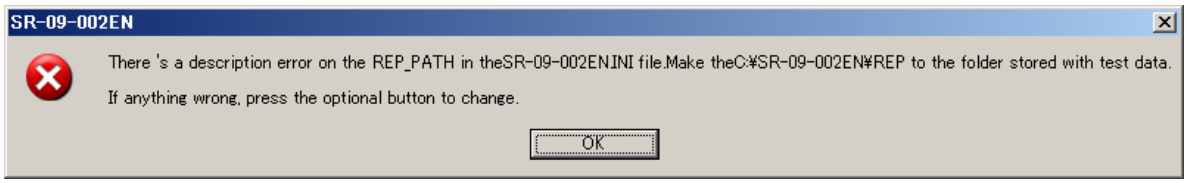
The data processor software will start up, and the following window will be appeared.



Note: Either the first start-up or change of folder is made, the following message might be appeared. Though the SR-09-002EN.INI file has descriptions for the stored location of data processing program or like that, this message is the one that there is a difference between the descriptions and the stored location (folder) where the software has started up.

In this case, the descriptions of SR-09-002EN. INI file will be changed automatically to the stored location where the software has started up, so if there may have some inconvenience, select the “Setting of option” on the menu above in order to specify the folder.





1) Selection of test condition, condition edit, test start (F2)

Make the registration for test condition of creating newly, making correction, registration, copy, deletion and quick start.

Moreover, specify the test condition as shown above, and then test can be started.

2)The report is opened (F3)

The analysis, print, copy and deletion of report file reported can be made.

Moreover, it’s possible to make test by using the test condition sorted on the report file.

3)Setting options (F5)

Setting communication conditions, report/stored folder, graph display color,printer and kinds of testing machine can be made.

4)Ends the software （F12）

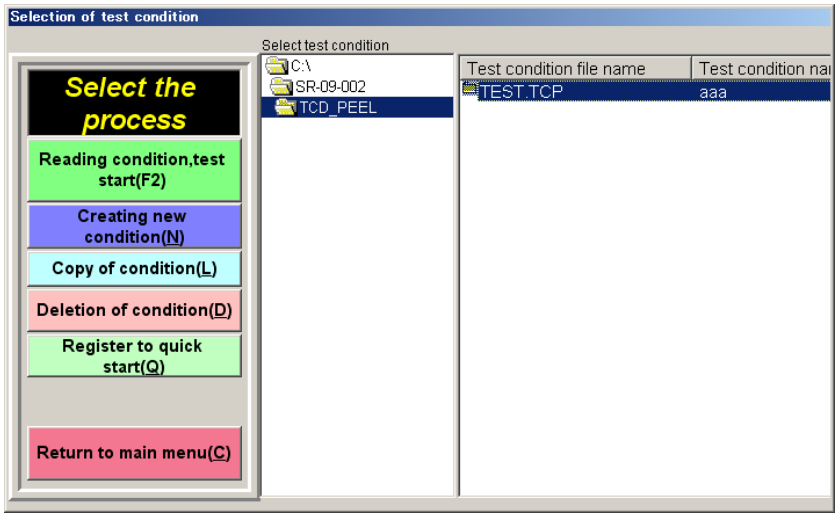
Ends the data processing software.

5)Quick start：

By registering the test conditions (Up to 20 kinds), test can be started directly without setting the window of test condition

7 - 3 .Setting condition, test start (F2)

Clicking on the “Setting condition, test start (F2)”. Then, the window of “Selection of test condition” can be entered.



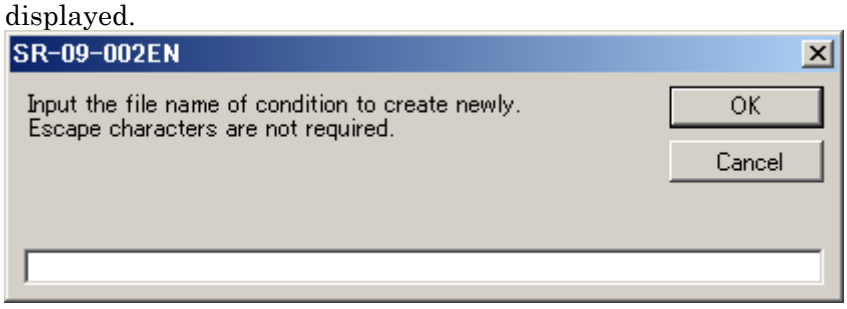
1) Reading condition, test start (F2)

Makes correction/registration of test condition that has created previously, and this is used in the case of executing test. Select the test condition file and click on the “Reading condition, test start (F2)”, test condition setting window can be shifted.

Also, the same operation as above can be obtained by clicking on the optional “Test condition file name” twice.

2)Creating new condition （N）

Used when creating test condition newly. By clicking on the “Creating new condition （N） ”the following window shall be displayed.



Input the condition file name and execute the following steps.

(You don’t have to input escape character, because escape character “. TCP” shall be attached to the file name automatically.)

“OK” ：Confirms the file name and shifts to the setting window of test condition.

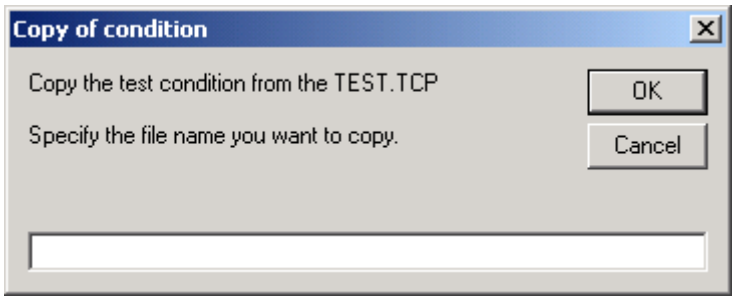
“Cancel” ：Returns to the selection window of test condition.

Take care that the following marks can’t be used.

¥ / : , ; * ? "< > |

3)Copy of condition（L）

When you want to make a copy with another name for the test condition file made previously. Select the original test condition file and click on the “Copy of condition（L）”button, then you can see the window as follows:



Input the file name you want to copy, then execute as follows:

(You don’t have to input escape character, because escape character “. TCP” shall be attached to the file name automatically.)

“OK” : Confirms the file name and shifts to the setting window of test condition after copy has made.

“Cancel” : Returns to the selection window of test condition.

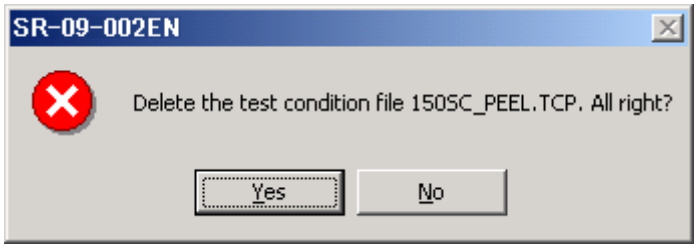
Take care that the following marks can’t be used.

You can’t set the same file name as that of the original one.

¥ / : , ; * ? "< > |

4) Deletion of condition（D）

Used when you want to delete the test condition file that created previously. Select the test condition file you want to delete and click on the “Deletion of condition(D)”, the following window shall be shown.



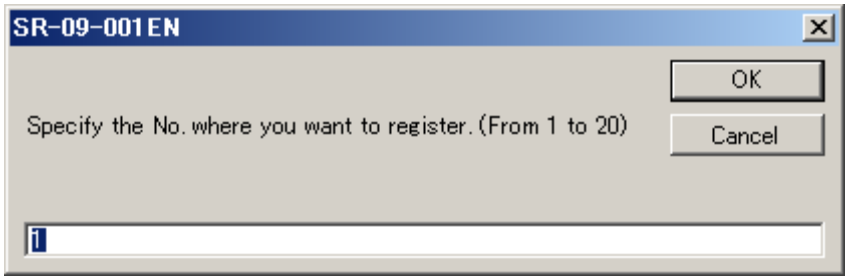
Execute as follows:

“YES” :Deletes the selected file, and returns to the selection window of test condition.

“NO” :Suspends deletion and returns to the section window of test condition.

5)Registers to quick start (Q)

When you want to register for the test condition applied frequently, this Quick start can be used. Select the test condition file to register, and click on the "Register to a quick start(Q)", then the following window will be shown.



Input the No. of Quick start (1 to 20), and execute as follows:

"OK" :Registers for the input Quick start, and returns to the setting window of test condition.

"Cancel":Suspends the registration for the Quick start, and returns to the setting window of test condition.

When registration is made for the Quick start No. registered previously, then overwriting can be made.

6)Return to main menu (C)

Returns to the main menu.

7) Sort of files

By clicking on the column header (the headlines for the test condition file name or like that), you can change the order of File list (for names, kinds).

7-3-1.Setting common window for test condition

1) To the list window (C)

By clicking on the "To the list screen(C)", present test condition that has opened shall be closed, and returns to the selection window of test condition.

2) Return (Q)

By clicking on the "Return (Q)", you can return to the set window prior to one test condition of Wizard.

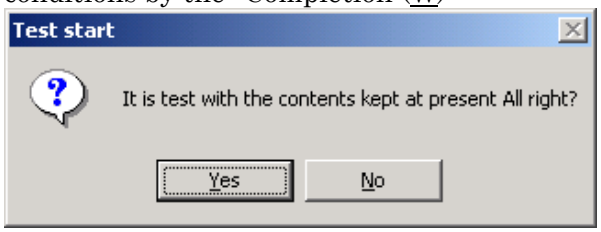
3) Next (N)

By clicking on the "Return (N)", you can return to the set window behind one test condition of Wizard. When creating conciliation newly, set it orderly "Next" to "Next". You can also set irregular steps (skipping or like that) by using the Wizard bar of test condition.

4) Test start (S)

By clicking on the "Test start (S)", the following window shall be displayed so that the test can be started with the opening condition at present.

Besides, in the case of changing condition or creating newly, this operation has to be started after registration for the test conditions by the "Completion (W)"



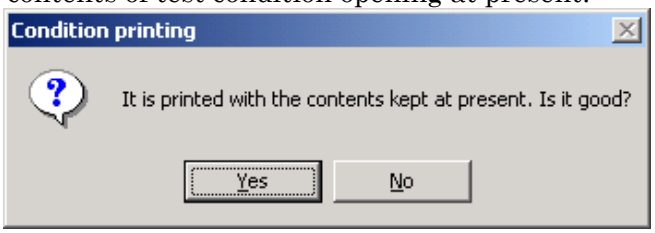
The followings should be executed.

"YES" : Shifts to the test start.

"NO" : Returns to the selection window of test condition.

5) Condition print (P)

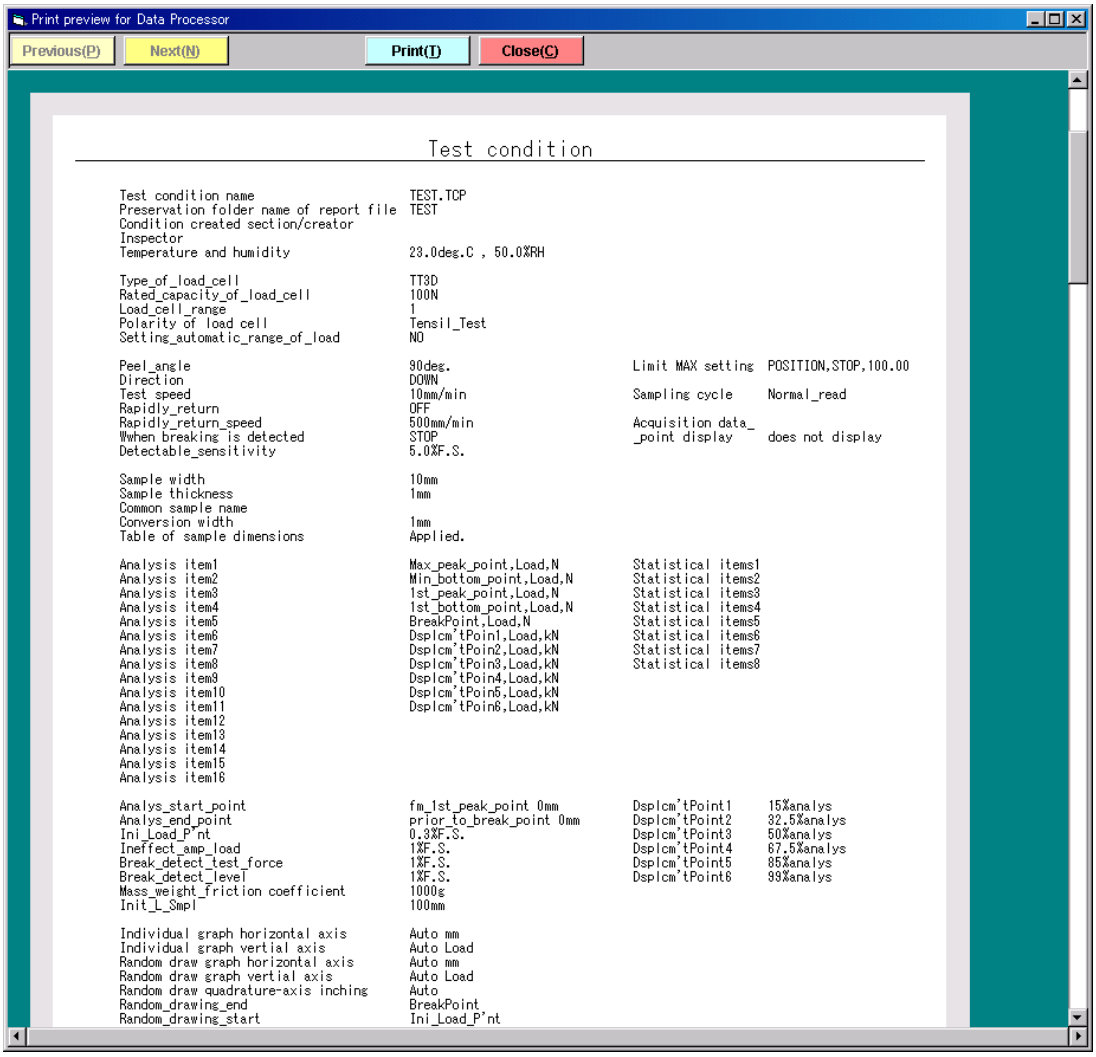
By clicking ON the "Condition print (P)", the following window shall be displayed to print out the registered contents of test condition opening at present.



The followings should be executed.

"YES" : Shifts to the Print preview displayed as the procedures below:

"NO" : Returns to the selection window of test condition.



The followings should be executed.

"Print (T)" :Executes printing to the printer and returns to the selection window of test condition.

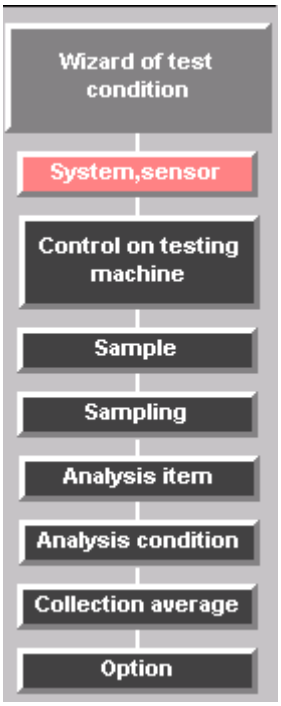
"Close (C)" : Returns to the selection window of test condition.

6) Completion (W)

By clicking on the “Completion (W)”, you can resistor the test condition and enter into the test window

7)Wizard bar of test condition

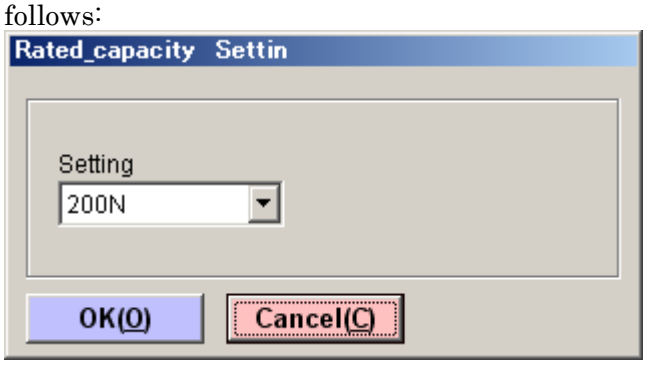
By clicking on the optional item on the Wizard of test condition as shown in the right, you can shift to the setting window of the test condition related to the item.



8)List view

Item	Set_value
Rated_capacity	200N
Range	1

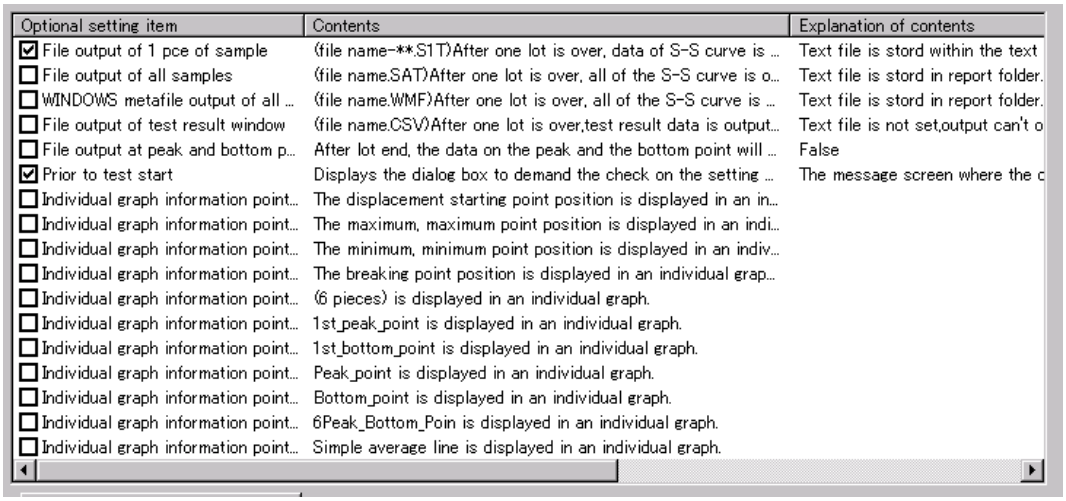
By clicking on the item twice that can set within the list view shown above, the setting window shall be displayed as follows:



Make selection or input the set value on the compo box shown above, then execute as follows:

"OK (O)" :Confirms the set value and closes the set window.

"Cancel (C)" :Suspends the set value and closes the set window.

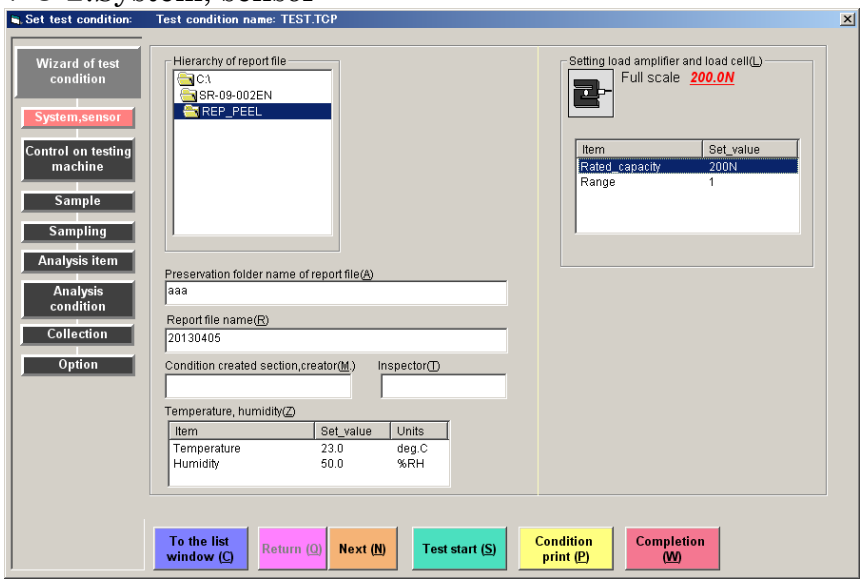


Optional setting item	Contents	Explanation of contents
☑ File output of 1 pce of sample	(file name-**.S1T)After one lot is over, data of S-S curve is ...	Text file is stord within the text
☐ File output of all samples	(file name.SAT)After one lot is over, all of the S-S curve is o...	Text file is stord in report folder.
☐ WINDOWS metafile output of all ...	(file name.WMF)After one lot is over, all of the S-S curve is ...	Text file is stord in report folder.
☐ File output of test result window	(file name.CSV)After one lot is over,test result data is output...	Text file is not set,output can't o
☐ File output at peak and bottom p...	After lot end, the data on the peak and the bottom point will ...	False
☑ Prior to test start	Displays the dialog box to demand the check on the setting ...	The message screen where the c
☐ Individual graph information point...	The displacement starting point position is displayed in an in...	
☐ Individual graph information point...	The maximum, maximum point position is displayed in an indi...	
☐ Individual graph information point...	The minimum, minimum point position is displayed in an indiv...	
☐ Individual graph information point...	The breaking point position is displayed in an individual grap...	
☐ Individual graph information point...	(6 pieces) is displayed in an individual graph.	
☐ Individual graph information point...	1st_peak_point is displayed in an individual graph.	
☐ Individual graph information point...	1st_bottom_point is displayed in an individual graph.	
☐ Individual graph information point...	Peak_point is displayed in an individual graph.	
☐ Individual graph information point...	Bottom_point is displayed in an individual graph.	
☐ Individual graph information point...	6Peak_Bottom_Poin is displayed in an individual graph.	
☐ Individual graph information point...	Simple average line is displayed in an individual graph.	

By clicking on the item in the list view as shown above, you can set effective/ineffective of the function for the item.

The check mark(s) shall be displayed for the effective items.

7-3-2.System, sensor



1)Hierarchy of report file

You can check that which hierarchy the report file is stored in.

In the above figure, the report file is stored within the Preservation holder of report file under the C:¥SR-09-002EN¥REP_PEEL.

2) Preservation folder name of report file (A)

Set the folder name where the report file is stored.Up to 128 characters (half size : 256) shall be input.

Take care that the following marks can't be used.

¥ / : , ; * ? " < >

Take care no to make a long file name, because it'll be out of the window and that makes the manipulation worse. (Of course, you can check the file name by scrolling it fully.)

In the case of "Creating new condition", the file name of test condition will be set to this item as the default.

3) Report file name (R)

Set the report file name. (Can be changable prior to test.)

Up to 128 characters (half size : 256) shall be input.

Take care that the following marks can't be used.

¥ / : , ; * ? " < >

Take care not to make a long file name, because it'll be out of the window and that makes the manipulation worse. (Of course, you can check the file name by scrolling it fully.)

In the case of "Creating new condition", the created date (YYY/MM/DD) will be set to this item as the default.

4)Condition created section,Creator (M)

Input the test condition created section and creator's name.

If you input 42 characters (half size 84) or more, there may have the case of out of printing width.

5) Inspector (T)

Input the tester's name.

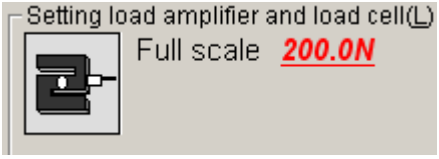
If you input 42 characters (half size 84) or more, there may have the case of out of printing width.

6) Temperature, humidity (Z)

Input temperature and humidity value each. As for default, 23 ℃ and 50.0 % each.

7) Setting load amplifier and load cell (L)

Set the test force amplifier for the testing machine and select the load cell installed on the testing machine.



1. Rated capacity

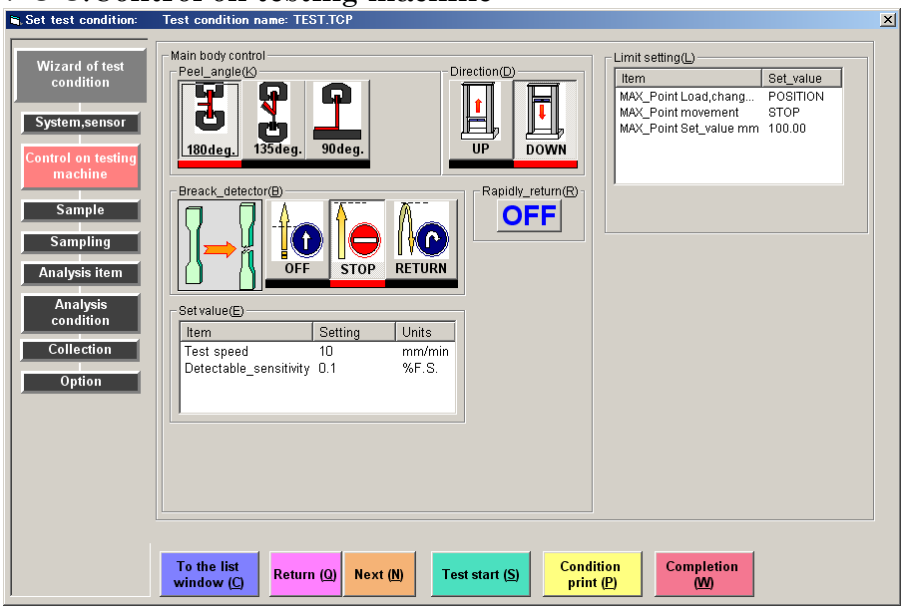
Select the capacity of load cell.

2. Range

Set the range of capacity of test force.

The maximum test force value shall be shown in the right figure.

7-3-3.Control on testing machine



1)Peel angle (K)

Select from 180°,135°and 90°.

2)Direction (D)

Set the test direction (DIRECTION) of testing machine.

3)Break detector (B)

Select the operation of movable crosshead when the sample has broken.

"OFF" :The test will continue without detecting break.

"STOP" :

The movable crosshead stops after detecting the break.

"RETURN":

The movable crosshead reverses after detecting the break, and the position will return to 0 (zero).

4)Rapidly return (R)

After test end, and when executing the "Zero recovery" on the test window, select that the movable crosshead should make Rapid return to the position of test start (POSITION : 0 mm) or not.

ON : "Zero recovery" can be made with the rapid set speed.(When the capacity of testing machine is 20 kN or more, the max. speed will be 500mm/min.)

OFF : "Zero recovery" can be available at the test speed.

5)Set value (E)

①. Test speed

Setting of test speed.

Type	Set test speed (mm/min)
LTS-*NB-S500	50,100,200,300,400,500
LTS-*NB-S400	40,75,100,200,300,400
LTS-*NB-S300	30,50,100,150,200,300
LTS-*NB-S200	15,20,50,100,150,200
LTS-*NB-S100	10,20,30,50,75,100
LTS-*NB-S50	5,10,20,30,40,50
LTS-*NB-S20	1.5,2,5,10,15,20

②. Break detectable sensitivity

Set the sensitivity of break detection function.

Setting input range will be 0.1 to 9.9 %FS.

6) Limit setting (L)

Set the limit (CONTROL section of the testing machine) on the testing machine.

① Change of Max. point of test force and displacement

Select the control on the Max. point.

② Operation of Max. point

Select the operation of movable crosshead after reaching to the Max. point.

③ Set value of Max. point

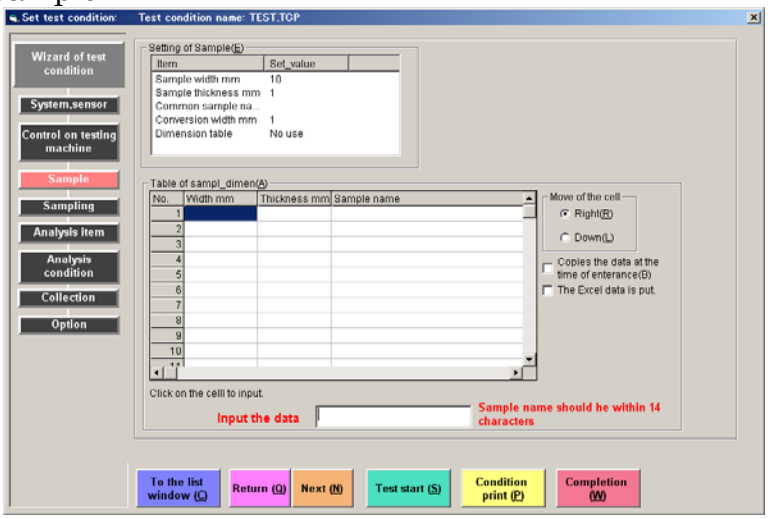
Set the Max. value (The CONTROL MAX. value on the testing machine.)

④ Displacement limit setting at the side of software

This is the limit of displacement at the side of software. When the POSITION value reaches the set value, test end will be made automatically. Use it for the purpose of safety stopper.

*Setting of limit of displacement at the side of software can be available only when the Change of Max. point of test force and displacement has set as LOAD (test force).

7-3-4.Sample



1)Setting of sample (E)

①Sample width　　: Input the sample width.

②Sample thickness : Input the sample thickness.

③Common sample name :

When the “Dimension table” is set to “No use.”, all of these set values will change to “Sample names”at the time of test start. It’s possible to change the name during actual test or after the test. It’s also possible to input each sample name for the sample name in “Dimension table”.

Normally, this sample name is applied to the sample kind, sample No. and comments

after test and so on. There’ll be no trouble in operation even if you don’t input it.

④Conversion width

Input the conversion width. (Conversion width is the value to be applied to calculate conversion test force.)

⑤Dimension table

When you set “Use.”, each set value in the “Dimension table” will change to each sample dimension, name. Be sure to input value in the “Dimension table” at first, then start the test.
When you set “Not used.”,each set value in the “Dimension table” set value for the common sample dimension on the right side of the window will be changed to each sample dimension and also the set value for common sample will be changed to each sample name.

*** Setting method of dimension table

2)By the key input, set the dimensions of sample and name.

1. Click on the cell with the mouse where you want to input on the dimension table.
2. Input values or characters on the “Data input column” shown below the window, and press the “Enter” key.
3. The input data on the cell clicked shall be written

** If you want to make correction, click on the cell to correct and then make correction on the displayed data on the “Data input column”, and press the “Enter” key.

** “Input after cell” is the item to set which direction will the cursor shifts after input the data on the “Data input column” and the “Enter” key is pressed on.

** The item “At the time of ENTER, copy the data above” displays the data on “Data input column” for the cell located above one on the cursor position of present.
When inputting the same data as above, or changing data partially, you can’t take time to make key input.

3) Copy the data made by Excel and paste it on the dimension table.

1. Check on the item that shows “Paste the Excel data”.
2. By inputting the check, the display of “Data input column” will be disappeared. (in the pasting mode exclusively)
3. From the Excel sheet where the dimension data are created, copy the portion of data that you want to paste.
4. Click on the cell with the mouse that you want to start to paste the dimension data on the table of dimensions.

5. After clicked on, the data can be pasted from the starting cell indicated by pressing the “Ctrl+V” key.
6. After pasting is over, if you want to correct the data, release the check of “Paste the Excel data” and change it by using the “Data input column”.

**When creating dimension data with the Excel, create it by obeying the format in the next.

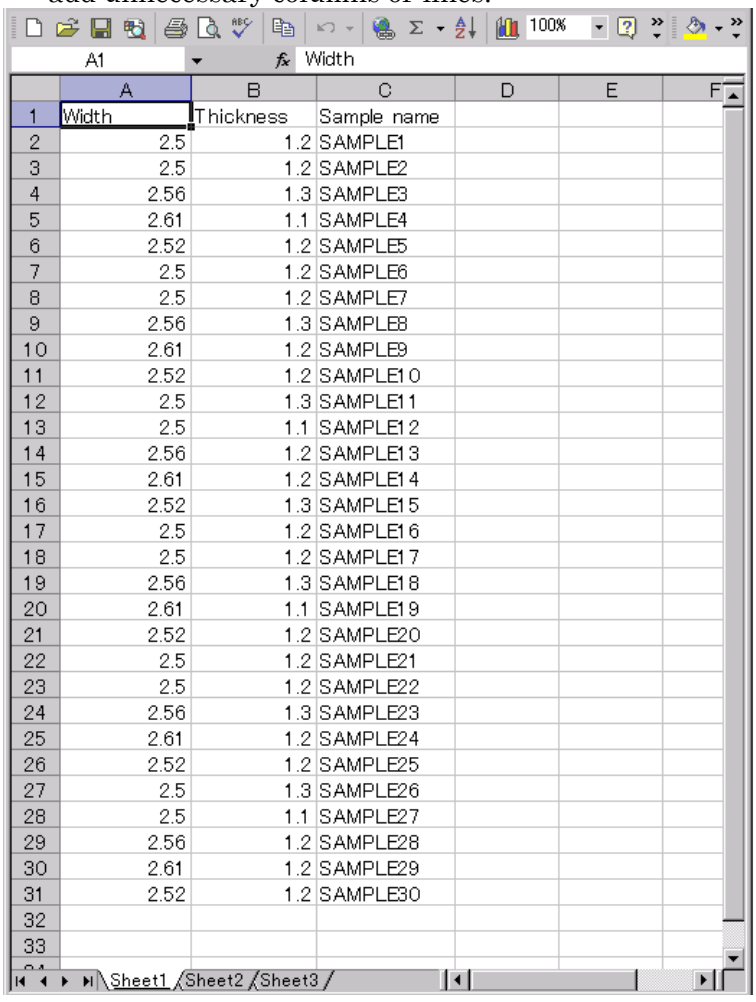
The data created in another format can not be pasted on the dimension table normally.

Format :

Create the data in the order “Width, Thickness, Sample name”from the right inorder.

EX)

On the 1st line, the “Width, Thickness, Sample name” are written, but there are samples, so you don’t have to write on it. Beside, when you copy the data, take care not to add unnecessary columns or lines.

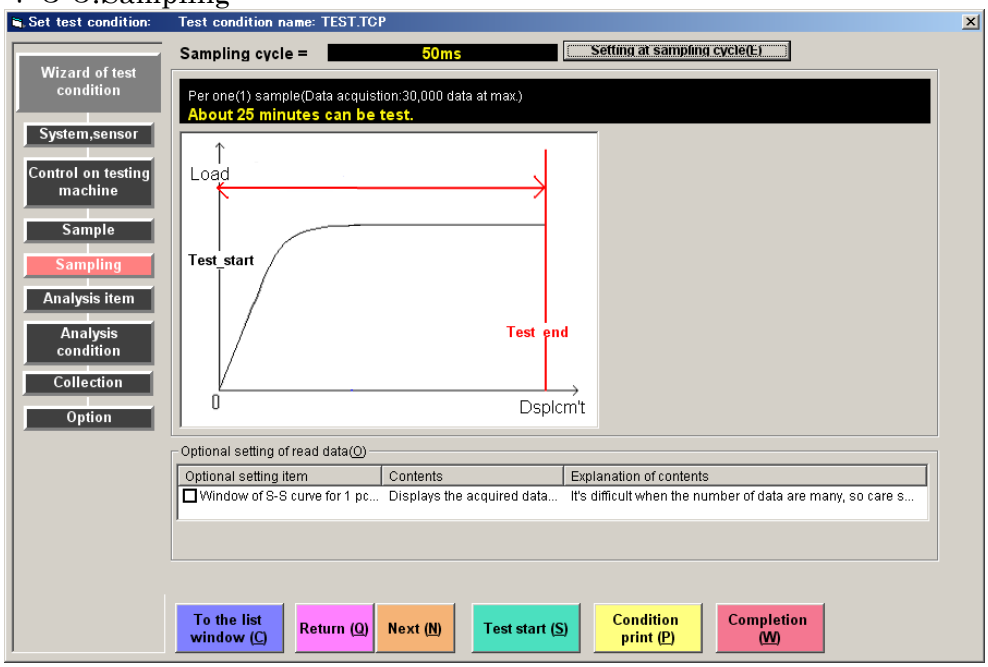


A1 | Width

	A	B	C	D	E	F
1	Width	Thickness	Sample name			
2	2.5	1.2	SAMPLE1			
3	2.5	1.2	SAMPLE2			
4	2.56	1.3	SAMPLE3			
5	2.61	1.1	SAMPLE4			
6	2.52	1.2	SAMPLE5			
7	2.5	1.2	SAMPLE6			
8	2.5	1.2	SAMPLE7			
9	2.56	1.3	SAMPLE8			
10	2.61	1.2	SAMPLE9			
11	2.52	1.2	SAMPLE10			
12	2.5	1.3	SAMPLE11			
13	2.5	1.1	SAMPLE12			
14	2.56	1.2	SAMPLE13			
15	2.61	1.2	SAMPLE14			
16	2.52	1.3	SAMPLE15			
17	2.5	1.2	SAMPLE16			
18	2.5	1.2	SAMPLE17			
19	2.56	1.3	SAMPLE18			
20	2.61	1.1	SAMPLE19			
21	2.52	1.2	SAMPLE20			
22	2.5	1.2	SAMPLE21			
23	2.5	1.2	SAMPLE22			
24	2.56	1.3	SAMPLE23			
25	2.61	1.2	SAMPLE24			
26	2.52	1.2	SAMPLE25			
27	2.5	1.3	SAMPLE26			
28	2.5	1.1	SAMPLE27			
29	2.56	1.2	SAMPLE28			
30	2.61	1.2	SAMPLE29			
31	2.52	1.2	SAMPLE30			
32						
33						

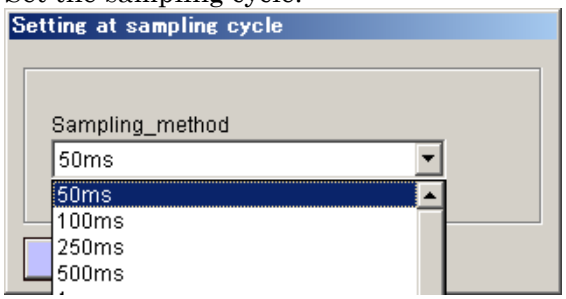
Sheet1 / Sheet2 / Sheet3

7-3-5.Sampling



1) Setting at sampling cycle (E)

Set the sampling cycle.



When the test speed is slow, such as it takes 20 minutes or more in one test, use the “Long term read”.

By changing the sample cycle, the maximum test time for one sample shall be displayed.

*You can get up to the maximum 30000 data per one (sample) test.

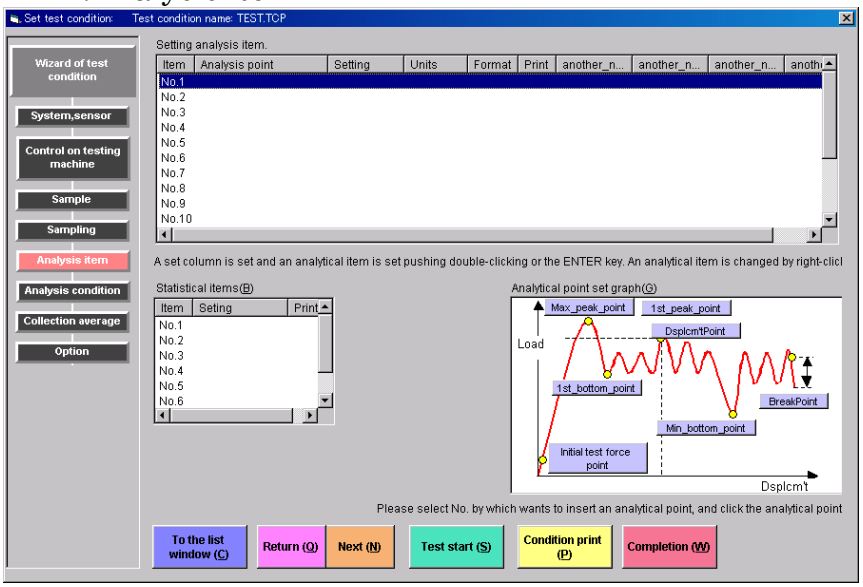
2) Optional setting of read data (O)

① SS curve window for one sample

The acquired data on the graph of individual graph can be plotted with the mark of “x”.

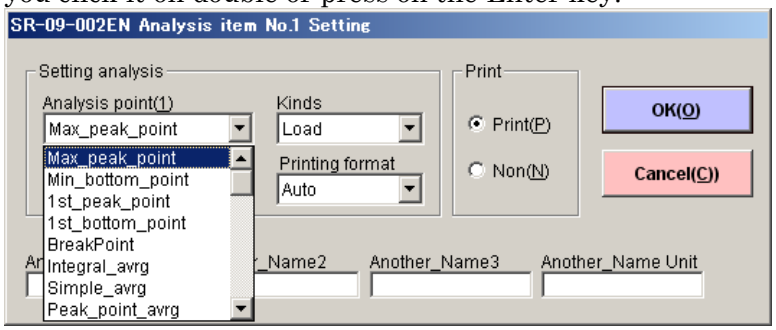
In the case of the number of data is too many, the graphs might be unclear.

7-3-6.Analysis item

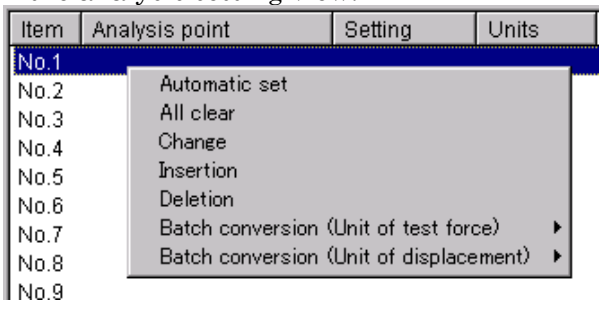


1) Setting analysis item (K)

Select the specified line on the setting column of Analysis item, then you can set change the analysis item every time you click it on double or press on the Enter key.



The hop up menu will be appeared by clicking on the right side on the analysis setting view.



① Automatic set

Set the default to the analysis items (the maximum peak point, the minimum bottom point, the 1st peak point, the 1st bottom point and break point).

② All clear

All of the analysis items are cleared.

③ Change

Changes the analysis item selected.

④ Insertion

Insert the analysis item to the line selected.

⑤ Deletion

Delete the line of analysis item selected, and pack the below lines upwards.

⑥ Batch conversion (Unit of test force)

Convert the units of test force of set analysis into the specified unit (Selects among kN, N, mN, tf, kgf and gf.) all at once.

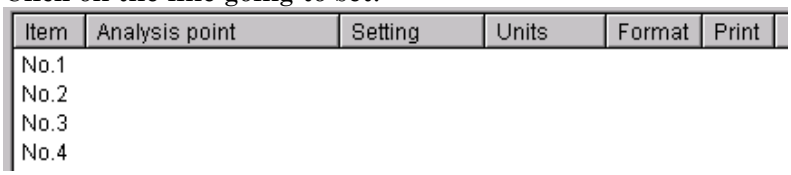
⑦ Batch conversion (Unit of displacement)

Convert the units of displacement of set analysis into the specified unit (Selects from mm and cm.) all at once.

2) Analytical point set graph (G)

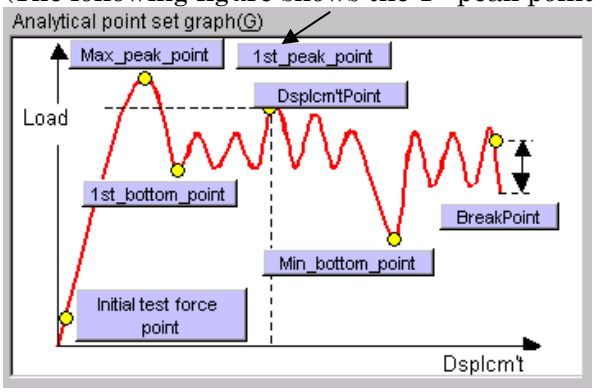
By clicking on the button of each analysis point on the graph, the analysis point can be set.

Click on the line going to set.



By clicking on the analysis point set on the analysts point setting graph, the 1st peak point shall be set on the setting view of analysis item.

(The following figure shows the 1st peak point.)



Item	Analysis point	Setting	Units	Format	Print
No.1	1st_peak_point	Load	N	Auto	Print
No.2					

* As for printing format

「Automatic」 Calculates to 4 digits significant figures.

「0」 … Calculates to Integer number by sounding off the first decimal place.

「0.0」 … Calculates to the first decimal place by sounding off the second decimal place.

「0.00」 … Calculates to the second decimal place by sounding off the third decimal place.

「0.000」 … Calculates to the third decimal place by sounding off the 4th decimal place.

「0.0000」 … Calculates to the 4th decimal place by sounding off the 5th decimal place.

「0.00000」 … Calculates to the 5th decimal place by sounding off the 6th decimal place.

「#0」 … Calculates with 10 increments.

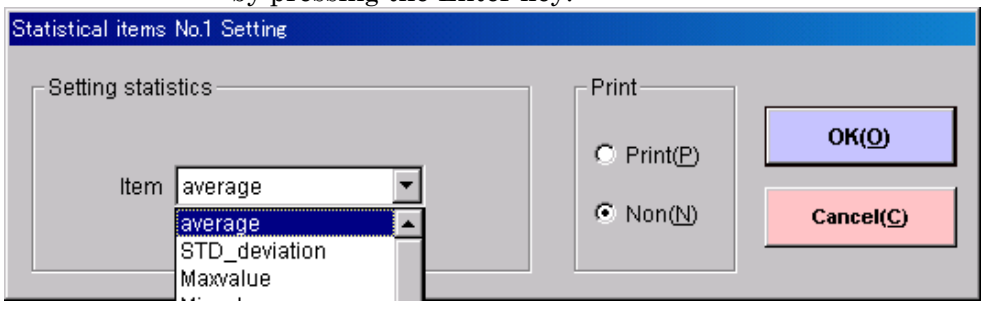
「#00」 … Calculates with 100 increments.

「#000」 … Calculates with 1000 increments.

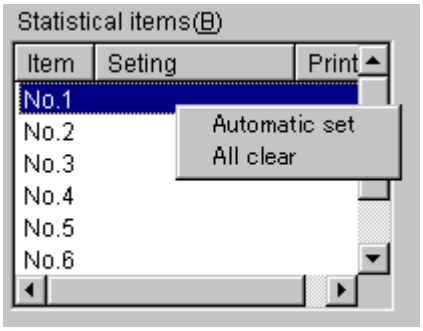
「#0000」 … Calculates with 10000 increments.

3) Statistical item(B)

Select the specified line on the setting view of Statistics item, statistics item can be set/changed by clicking double on it or by pressing the Enter key.



The following pop up menu will be appeared by right side click on the Statistics item setting window.



① Automatic set

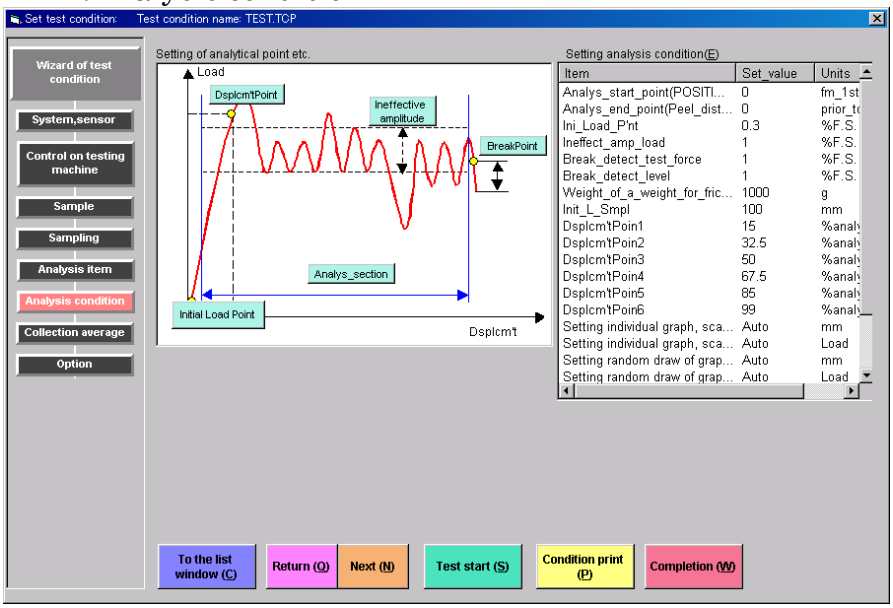
Set the default on the analysis items (Average value, standard deviation, the peak value and the bottom value).

② All clear

All of the analysis items are cleared.

As for the calculation method for each item, refer to the “chapter 4. Specifications” (page 2) and “5. Definition of process of test result” (page 6) described in the manual.

7-3-7.Analysis condition



Setting analysis point ETC./Setting analysis condition setting (E)

Setting on the analysis condition can be made by whichever graph on the above figure (left side) or settinganalysis condition view at the right side of above, and also setting and changing can be available. Other than the initial test force point, ineffective amplitude load and analysis section set by analysis item only can be effective.

The following [ ] will show the button on the graph.

① Analysis start point (POSITION value) mm [(Anlysis section)]

Set the analysis start point. Select from the three of “from initial test force point”, “from the 1st peak point”, and “from the 1st bottom point”. Then you can set from whichever selected point, such as the analysis from **mm after.

② Analysis end point (Peel distance value) mm [(Analysis section)]

Set the analysis end point. Select one from the three “Analysis start point”, “Prior to break point” and “Prior to maximum peak point. Then you can set from whichever selected point, such as the analysis from **mm before.

③ Initial test force [(Initial load point)]

Input the initial test force. Set by the percentage (%) of test force or % of full scale range.

④ Ineffective amplitude width test force (Ineffective amplitude width)

When calculating the peak point and the bottom point, this prevents from calculating a minute amplitude of graph as the peak or bottom point, by ignoring the amplitude width less than the width of ineffective amplitude of test force.

⑤ Break detector test force (Break point)

When the continuous two data in the analysis section becomes under the point of set test force, it is called as a Break point. Set the value by the percentage (%) of test force or range full scale.

⑥ Break detector level (Break point)

When the break point isn't found on the setting of break detector test force, the break point is defined as the point when the data become under the set test force in the analysis section. Set the value by the percentage (%) of test force or range full scale. But, when the break point isn't found neither break detector test force nor break detector level, the final data shall be defined as the Break point.

⑦ Mass of dead weight for Friction coefficient

Input the mass of dead weight to calculate the friction of coefficient.

⑧ Initial sample length

Input the initial sample length.

⑨ Displacement point 1 to 6 (Displacement)

Analyze the test force value for the set displacement. When there isn't the same sample as the set displacement, you can calculate from the sampling data of set displacement of before and after.

⑩ Setting individual graph,scale of horizontal axis

Set the scale of horizontal axis scale for individual graph after test. When "Automatic" is selected, automatic adjustment can be made to make the waveform in the maximum scale.

⑪ Setting individual graph, scale of vertial axis

Set the scale of vertical axis scale for individual graph after test. When "Automatic" is selected, automatic adjustment can be made to make the waveform in the maximum scale.

⑫ Setting random draw graph and scale of horizontal axis

Set the scale of horizontal axis scale for random graph after test. When “Automatic” is selected, automatic adjustment can be made to make the waveform in the maximum scale.

⑬ Setting random draw graph and scale of vertical axis

Set the scale of vertical axis scale for random draw graph after test. When “Automatic” is selected, automatic adjustment can be made to make the waveform in the maximum scale.

⑭ Random draw quadrangular-axis inching value

Set the inching value (interval of between graphs) for the random graph.

“Automatic” is selected, automatic adjustment can be made to make the waveform in the maximum scale.

⑮ Random drawing start position

Select the position where the random draw graph starts to draw ; from the initial test force point or test start point.

⑯ N number

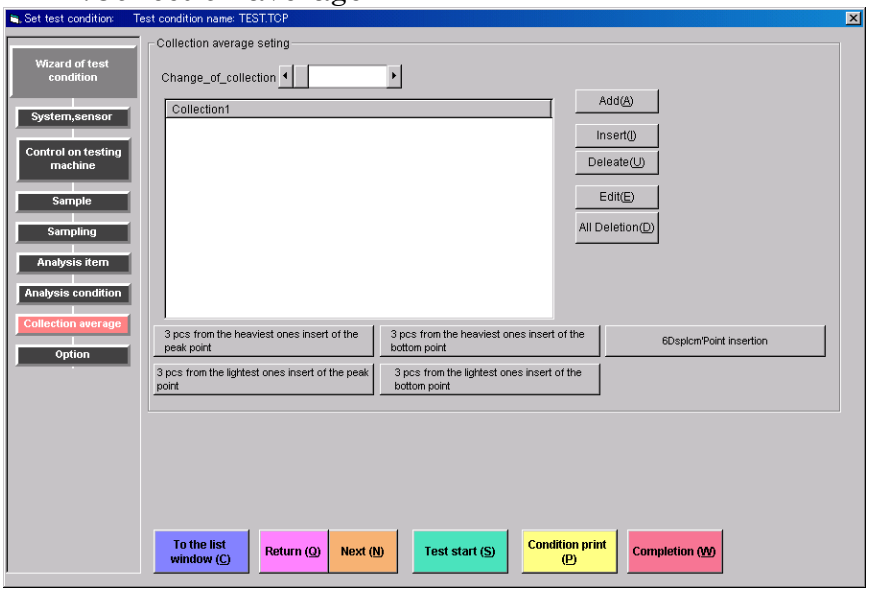
Statistical process can be made every set of N number is made.

When the N number is 0 (zero), statistical calculation can be made with all of the samples of 1 (one) lot got together.

When the N number is “3”, statistical calculation can be made by dividing the samples of 1(one) lot into 3 divisions.

For specifying the N number will be from “0” or “3” to “50”.

7-3-8.Collection average



Setting collection average

By selecting each analysis point and also peak and bottom point optionally, you can calculate the average of selected items.

① Collection average setting

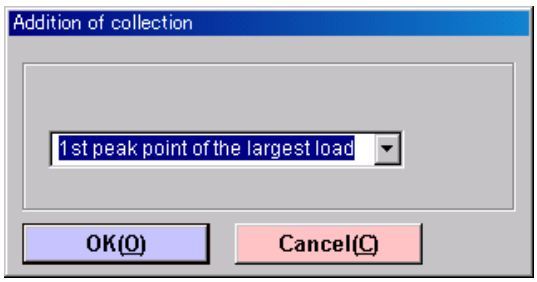
By scrolling the scroll bar, set view for the collection 1 to 6 can be changed.

② Add (A)

Add the item to add to the collection average on the 1st line.

The items that can be selectable are as follows:

- The 1st, 2nd, 3rd, 4th, 5th and 6th largest peak point of load
- The 1st, 2nd, 3rd, 4th, 5th and 6th smallest peak point of load
- The 1st, 2nd, 3rd, 4th, 5th and 6th largest bottom point of load
- The 1st, 2nd, 3rd, 4th, 5th and 6th smallest bottom point of load
- The maximum peak point, the minimum bottom point
- The 1st peak point, the 1st bottom point
- Break point
- Average of the peak points, average of the bottom points, average of the peak and bottom points
- Tearing load
- Average of 6 points of large/small peak point
- Average of 2 points of displacement, average of 3 points of displacement, average of 4 points of displacement, average of 5 points of displacement and average of 6 points of displacement
- Integral average, simple average
- Displacement 1, displacement 2, displacement 3, displacement 4, displacement 5, displacement 6



Select the item to add on the view, and execute as follows:

"OK (O)" : Confirms the setting and closes the set window.

"Cancel(C)" : Suspends the setting and closes the set window.

③ Insert (I)

Insert the item before the selected step. The window will be displayed on ②Addition (A)so, proceed the same step.

④ Deletion (U)

Selected item shall be deleted.

⑤ Edit (E)

Selected item can be edited.

⑥ All deletion (D)

All of the items of average of collection displayed at present shall be deleted.

⑦ Insertion of 3 peak points from the largest test force

The 1st large test force peak point, the 2nd large test force peak point, the 3rd large test force peak point can be added all at once.

⑧ Insertion of 3 bottom points from the largest test force

The 1st large test force bottom point, the 2nd large test force bottom point, the 3rd large test force bottom point can be added all at once.

⑨ Insertion of 3 peak points from the smallest test force

The 1st small test force peak point, the 2nd small test force peak point, the 3rd small test force peak point can be added all at once.

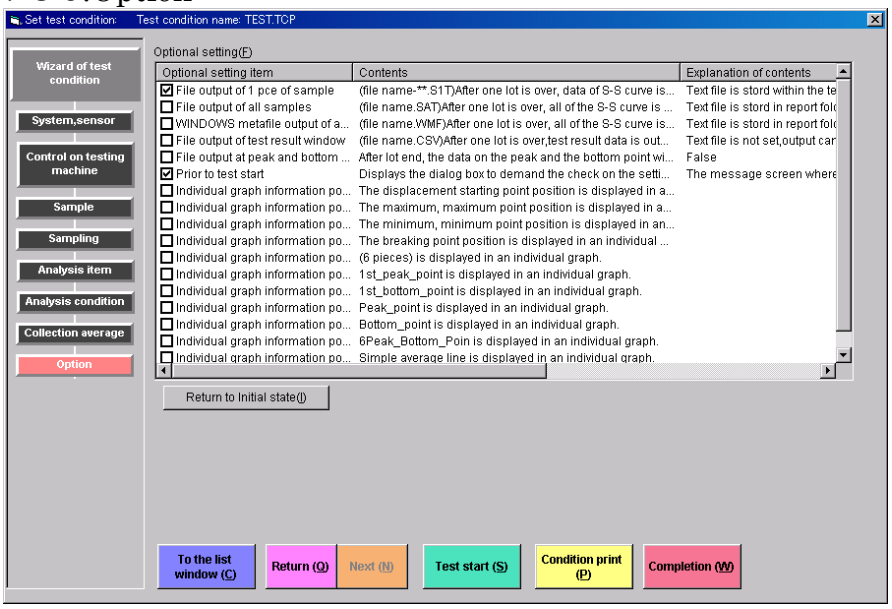
⑩ Insertion of 3 bottom points from the smallest test force

The 1st small test force bottom point, the 2nd small test force bottom point, the 3rd small test force bottom point can be added all at once.

⑪ Insertion of 6 points of displacement

Add 1 to 6 displacement at the same time.

7-3-9.Option



Option setting (F)

For the optional setting item, check on the contents and descriptions for them, then make check on the necessary items.

①File output of 1 pce of sample

After measurement of 1 sample is over, acquired raw data can be output with text file.

Output as the Report file name-**.S1T file in the TEXT folder within the stored folder of report file. Since the raw data is output with the TAB format, so make use of it through the software such as EXCEL and so on.

②File output of all samples

After the end of lot, all of the raw data acquired from all the test in the lot can be output with test file.

Output as the Report file name. SAT file in the TEXT folder within the stored folder of report file.If the number of sample is too many, it takes a long time to process.

③WINDOWS meta file output of all samples

After the end of lot, all of the S-S curve acquired in the lot can be output with the Windows meta file. Output as the Report file name-**.WMF file in the SS_DATA folder within the stored folder of report file. Paste or process can be made on the software such as WORD/EXCELL.

④File output of test result window

After one lot is over, the contents of the windows of test result can be output with test file. Output as the file name-

CSV file in the text file within the stored folder of report file. Since the data is output with the TAB form, you can open with the software such as EXCEL and the like.

⑤File output of at peak and bottom point

After one lot is over, the data of peak/bottom point can be output into text file.

As the file name_PEAK-BOTTOM-**.CSV file in the TEXT folder within the report file stored folder, outputs the peak point (sorted in the order of load values) and the bottom point (sorted in the order of load value). Since the data is output with the TAB form, you can open them with the software such as EXCEL and the like.

⑥Prior to test start

Displays the message window to shown the confirmation of setting of testing machine when shifting from the setting window of test condition to test window.

⑦Individual graph information point display (zero point of displacement)

Displays the information point on the position of zero point of displacement on each graph.

⑧Individual graph information point display (the maximum peak point)

Displays the information point on the position of maximum peak point on each graph.

⑨Individual graph information point display (the minimum bottom point)

Displays the information point on the position of minimum bottom point on each graph.

⑩Individual graph information point display (break point)

Displays the information point on the position of break point on each graph.

⑪Individual graph information point display (displacement point)

Displays the information points on the positions of displacement (1 to 6) on each graph.

⑫Individual graph information point display (the 1st peak point)

Displays the information points on the position of the 1st peak point on each graph.

⑬Individual graph information point display (the 1st bottom point)

Displays the information points on the position of the 1st bottom point on each graph.

⑭Individual graph information point display (the peak point)

Displays the information points on the position of the peak point on each graph.

⑮Individual graph information point display (the bottom point)

Displays the information points on the position of the bottom point on each graph.

⑯Individual graph information point display (the peak/bottom point)

Displays the information points on the position of the peak point (6 points) of average of 6 points of peak/bottom points on each graph.

⑰Individual graph information point display (simple average line)

Displays the simple average line for each graph.

7-3-10.Test start

1)General

①Test by creating the test condition file newly

From the Main menu, click on the “”Setting condition, Test start (F2)”.

↓

From the test condition selection window, “Creating new condition(N).”.

↓

Creating test condition on the test condition selection window.

↓

After completing the test condition, click on the “Completion (W)” and store the test condition and after that you can proceed to the test with the condition.

↓

(In the case of test) Test window

②Test by using existence the test condition file

From the Main menu, click on the “”Setting condition, Test start (F2)”.

↓

From the test condition selection window, select the test condition file and click on the “Reading condition, Test start (F2)”. (Or click on “Test condition file double.)

↓

Chick on the test condition on the test condition setting window.

↓

After checking on the test condition, when you proceed to test with the condition,click on “Test start (S).

After checking on the test condition, if there is some change in the condition,click on the “Completion (W)” on the test condition setting window after changing the test condition, and store the test condition and then proceed to test with the condition.

↓

Test window

③Test by using the Quick start

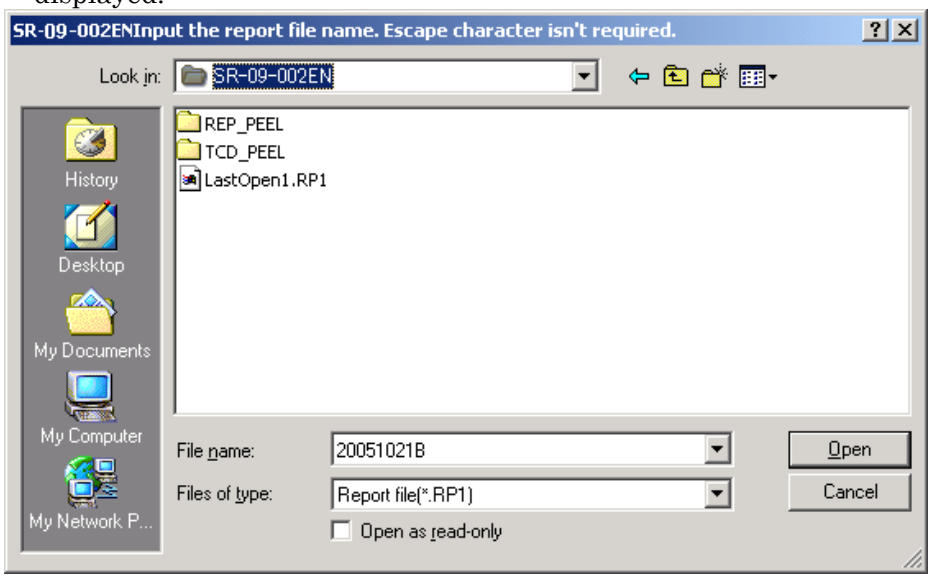
From the main menu, click on the Quick start button where test conditions going to make test are registered

↓

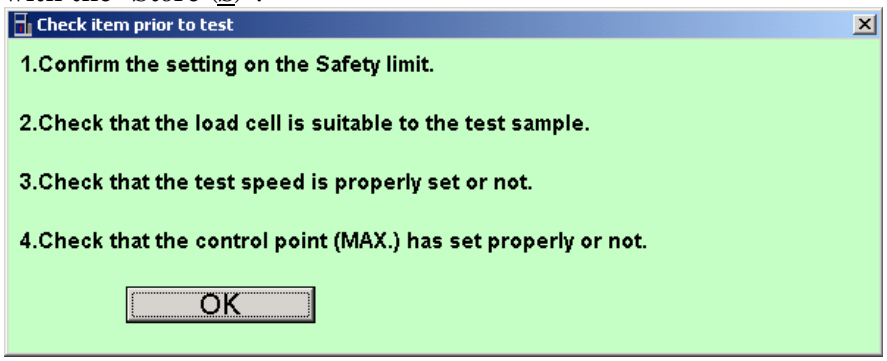
Test window

2) Operation

Prior to shift to the test window, the following window can be displayed.



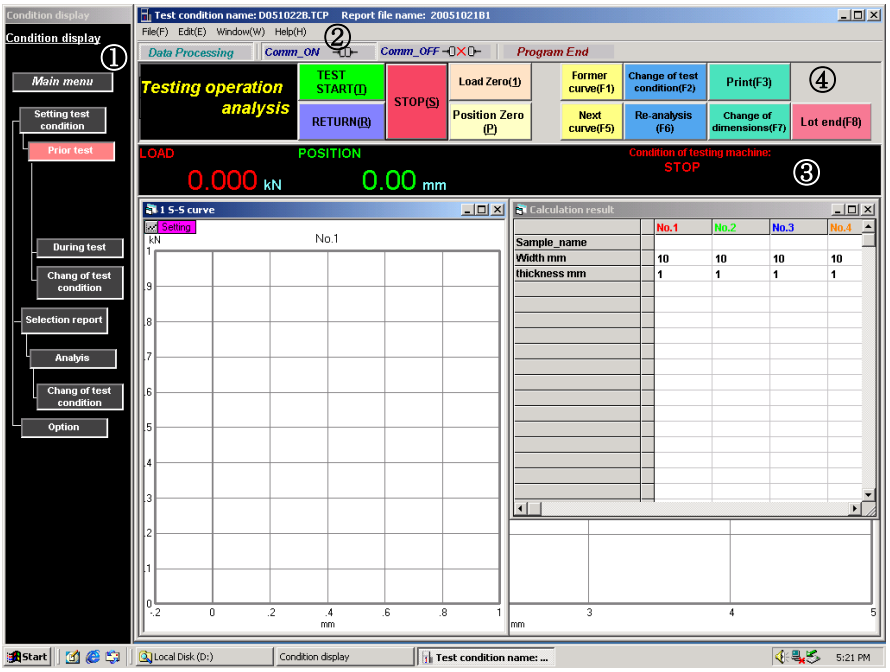
Confirmation window for the report file name and report file stored folder. You can change the report file name. Proceed to the next with the “Store (S)”.



Just prior to the test window, “Check item prior to test” window that introduce the check on setting of testing machine shall be displayed. According to the contents of display, check on the setting of testing machine.

Moreover, there will be no necessity to display this, you can dismiss it by removing the check on “Prior to test” on the optional setting of test condition.

7-3-11.Test window



①Condition display

Displays the present condition of the window. （Prior to the test or during test, test speed and test direction shall be displayed.）

②Menu bar

・File（F）

SS data file（D） －Reading SS data file（R）

Reads the SS data file and displays graph on the test window and report window.

And by the read data you can make analysis, creating report and printing as well.

*.SSD：SS binary file of SR type data processor

*.S1T：SS data text file of SR type data processor

*.0**：SS data text file of TGD type data processor

*.LS?：SS data text file of LTSD-01 data processor

End（X）

Ends the lot and returns to the Main menu.

・Edit（E）

Transfers to SS data clip board（T）

Each graph and test conditions are output to the clip board.

Transfers to all of SS data clip board（A）

Random graphs are output to the clip board.

・Window（W）

Returns to the initial window.（I）

Each size and layout of each window for individual graph, test result and random draw graph can be returned to the initial condition (default).

1 Random draw graph

Random draw graphs can be displayed forward.

2 Test result

Test result can be displayed forward.

3 S-S curve of ～ n　No. of acquired data＝*****

Each graph of (No.) n can be displayed forward. (No. of Acquired data shows the No. of raw data.)

・Help（H）

Version information（A）

Displays the version information for the software applied.

・Communication ON button

Opens the communication port between the testing machine and PC.

・Communication OFF button

Closes the communication port between the testing machine and PC

・Program end button

Ends the software of data processor. (If you end the program without storing the acquired data, the data will not be stored.)

③ Parameter display

・LOAD

Displays the present test force value. (Displays the LOAD display value on the control section of testing machine.)

・POSITION

Displays the present position value. (Displays the POSITION display value on the control section of testing machine.)

・Condition of testing machine

Shows the present testing machine and present condition of test.

④ Command button

・TEST START（T）

By clicking on the **TEST START(T),** test can be started.

Also test can be started by pressing the “START” on the testing machine.

・(Zero) RETURN（R）

Return the movable crosshead to the POSITION of 0 (zero) mm.

・STOP（S）

Makes the test end.

・Load zero（1）

Adjust to zero on the LOAD range at present.

・Position zero（P）

Makes the POSITION value to zero reset.

・Former curve（F1）

The former graph, that is, before the individual graph shown at present shall be displayed

・Next curve（F5）

The next graph, that is, next to the individual graph shown at present shall be displayed

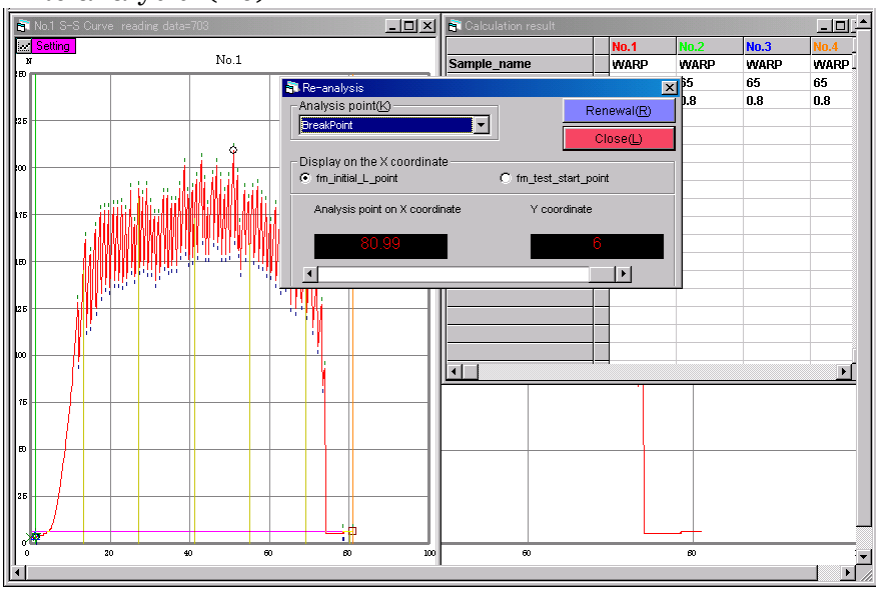
・Change of test condition（F2）

Changes the test condition. After the test condition has changed, the test data acquired up to now can be animalized with the new condition and you can confirm the test result. Moreover, the next test data shall be reflected with the changed condition.

(But, change of setting of "Report file stored folder name" can't be made. After acquiring the S-S curve, you can't change "Test force amplifier, load cell setting" neither.)

During test and/or check on report, you can't change the original test condition file,so take care of it fully.

・Re-analysis（F6）

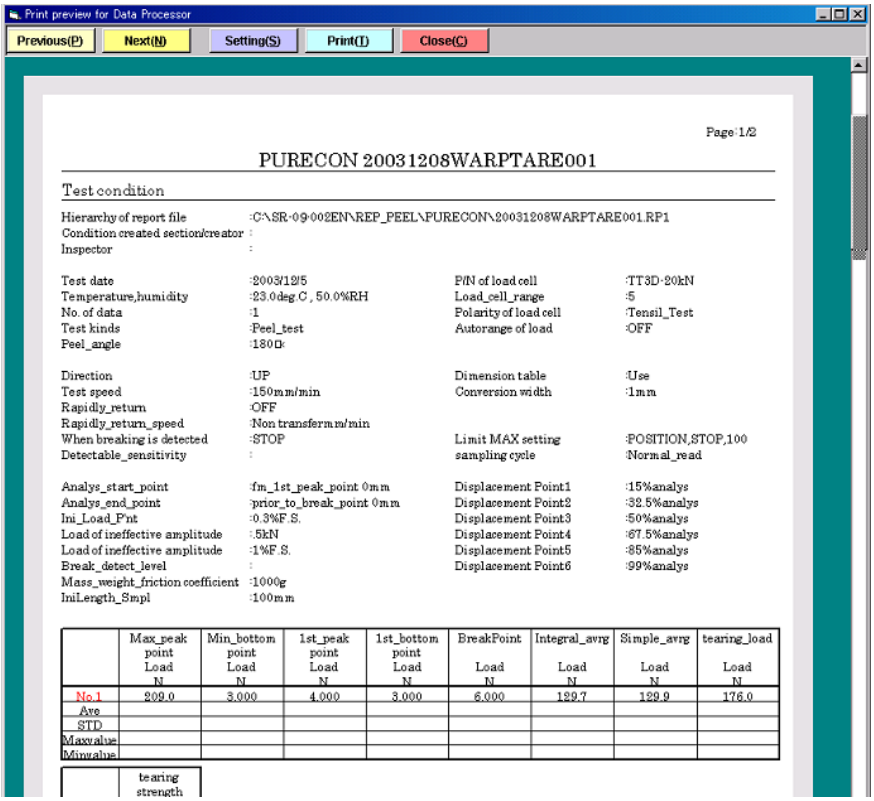


Select the analysis point on the window of “Re-analysis”, and set the X axis display and analysis range (by moving the cross-bar on the calculation start point and calculation end point, the corresponding positions for these points can be shown on each graph.), then by clicking on the “Renewal（R）” button, you can make re-analysis with the new analysis condition.

However, statistical process shall not be made by the changed analysis results.

When you want to make statistical process at the same time, click on the “Lot end (F8)” button, and then also click on the “After statistical calculation, test window (F4)”, then statistical calculation can be performed.

・Print（F3）



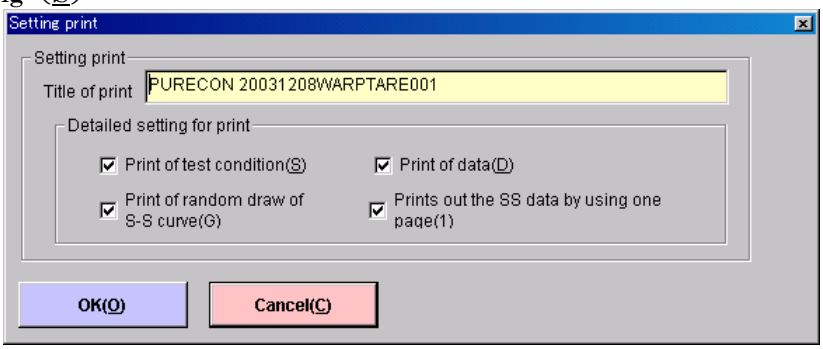
"Previous（P）"

When the printing pages are more than two (2) pages, the former page can be displayed.

"Next（N）"

When the printing pages are more than two (2) pages, the next page can be displayed.

"Setting（S）"



Title of printing

Input the desired printing title for the test box. The title inputted here shall be effective until the input is made newly again.

Moreover, the graph title (title of graph) shall be changed together.

* As for the default for the title of print, are “Report file stored folder name”,”Report file name”.

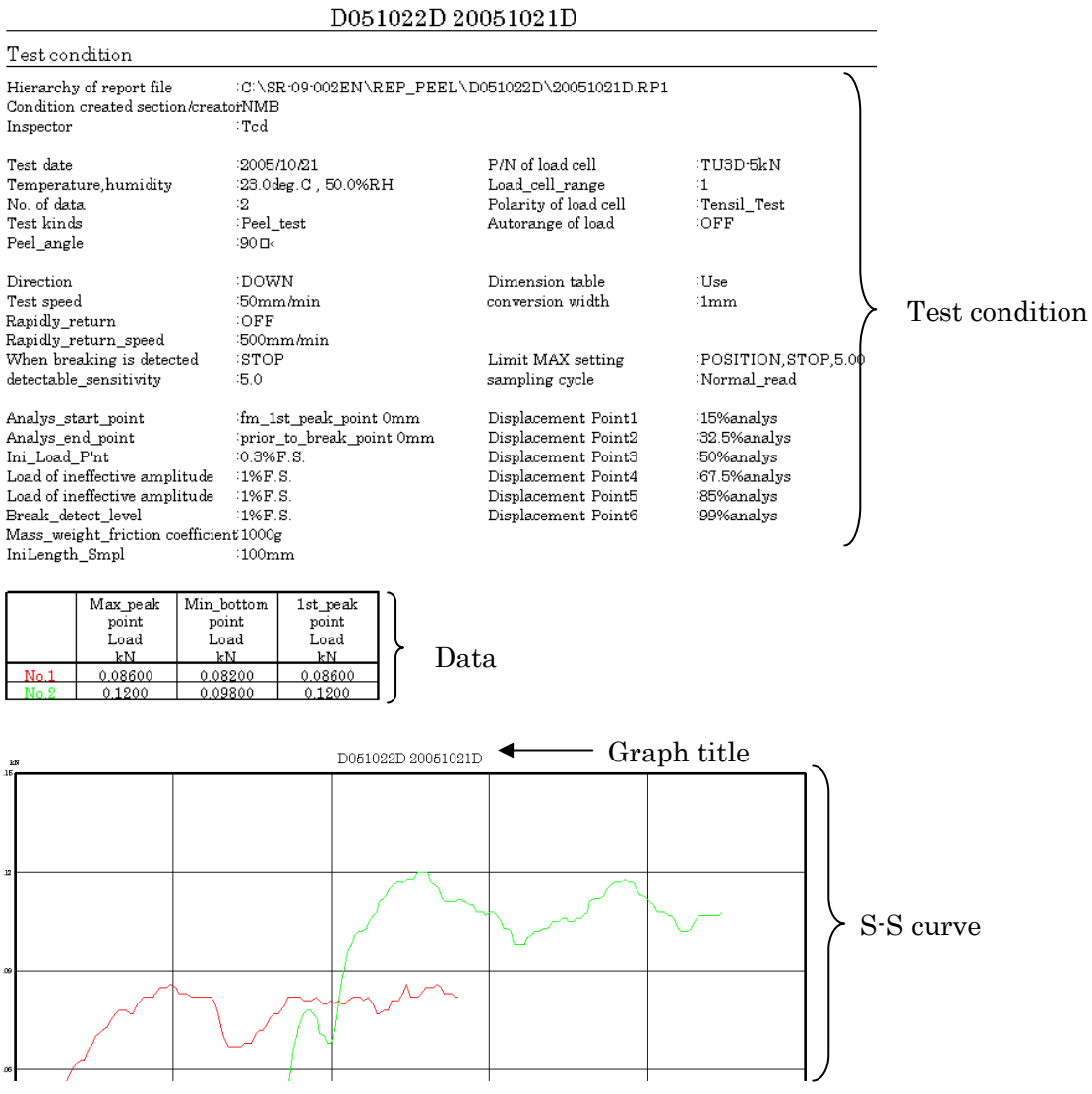
Detailed setting for print

The target of the printing shall be the checked item of “Test condition print（S）”, “Data print（D）””SS data print（G）”.

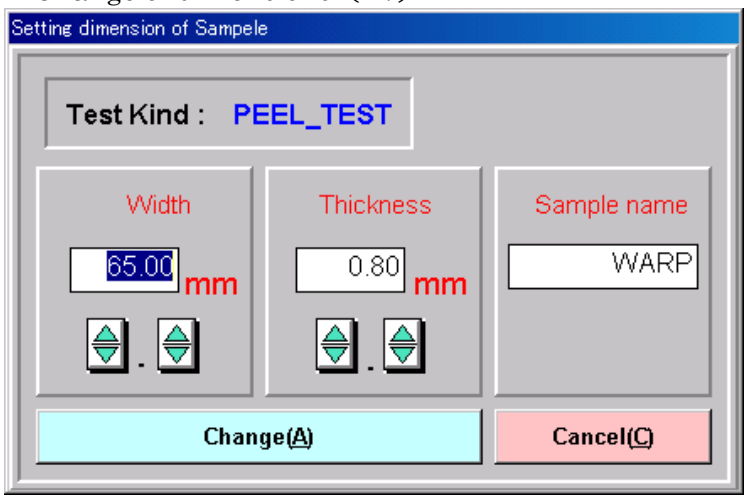
“SS data　Print by using one page（1）”

By checking it on, random draw graphs can be printed on another one page.

By releasing the check, printing can be made combined with the test condition and data as follows:



・Change of dimensions（F7）

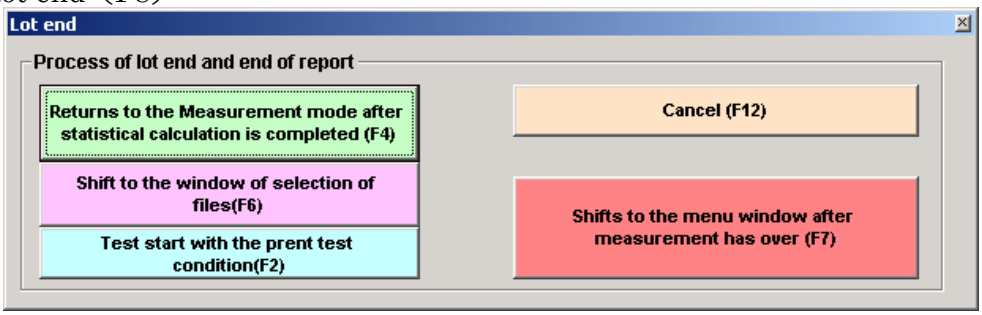


In the next, you can change the sample dimensions and sample name for the test going to make. When you've changed here, dimensions value for the test results window can be changed.

・Destruction of data（F4）

Deletes the test results and raw data tested finally.

・Lot end（F8）



"Return to the Measurement mode after statistical calculation is made.（F4）

"Re-calculates the statistical process.

"Shifts to the window of selection of files (F6)"

Ends the test and shifts to the window of selection of test condition.

"Test start with the present test condition (F2)"

Makes the next test for lot with the same test condition.

"Cancellation (F12)"

Cancels the lot end and returns to the window of test condition.

"Main menu (F7)"

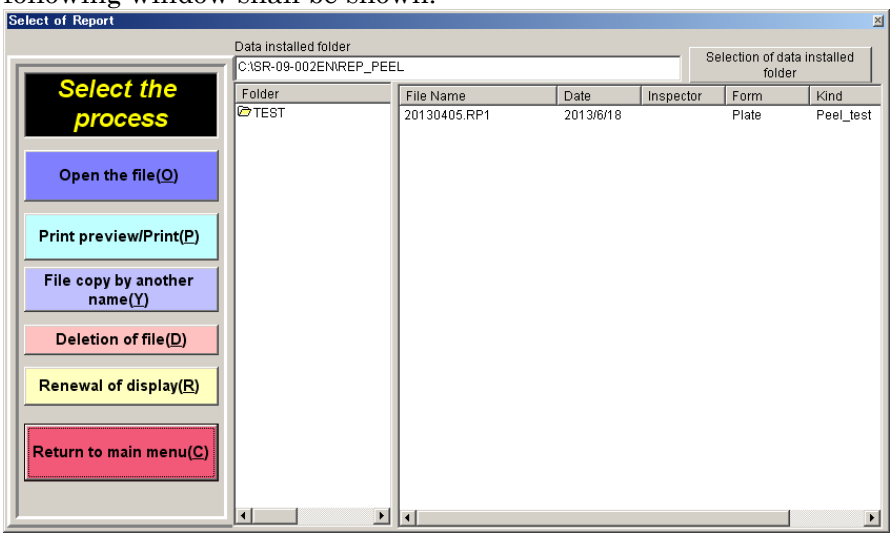
Ends the test and shifts to the main menu.

7 - 4 .Open the report

The report means that test result data based on the acquired data. Due to the report file, you can check the test result, added test, print and re-analysis.

7-4-1.Report selection window

By clicking on the “Select of Report（F3）” on the main menu, the following window shall be shown.



1) Open the file.（O）

Select the report file and click on the “Open the file.（O）”, then report window can be shifted. Besides, the same operation can be obtained by clicking on the optional report file twice.

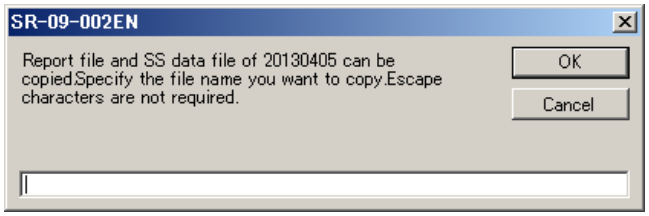
2) Print preview/ print（P）

Select the report file and click on the “Print preview/ print（P）”, the preview shown in the chapter “7-3-11 Test window ④ Command button, Print (F3) “can be displayed. The same operation can be made.

3)File copy by another file name（Y）

Report file can be copied with another name in the same stored folder.

Select the original report file and click on the “File copy with another file name（Y）”, the window can be shown as follows:



Input the file name going to copy and execute as follows:

“OK” ：Confirms the file name and makes copies and then shifts to the report file window.

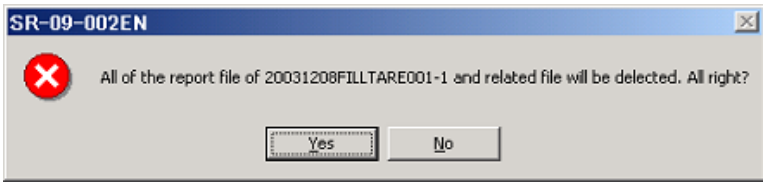
“Cancel”：Returns to the report selection window.

Take care that the following marks can’t be used. Besides, the same file name as the original can’t be made.

¥ / : , ; * ? " < > |

4)Deletion of file（D）

Select the report file that you want to delete, and click on the “Deletion of file （D）”, then the following window can be obtained.



Execute as follows.

“YES” ：Deletes the selected file and returns to the report selection window.

“NO” ：Suspends the deletion and returns to the report selection window.

5)Re-newal of display（R）

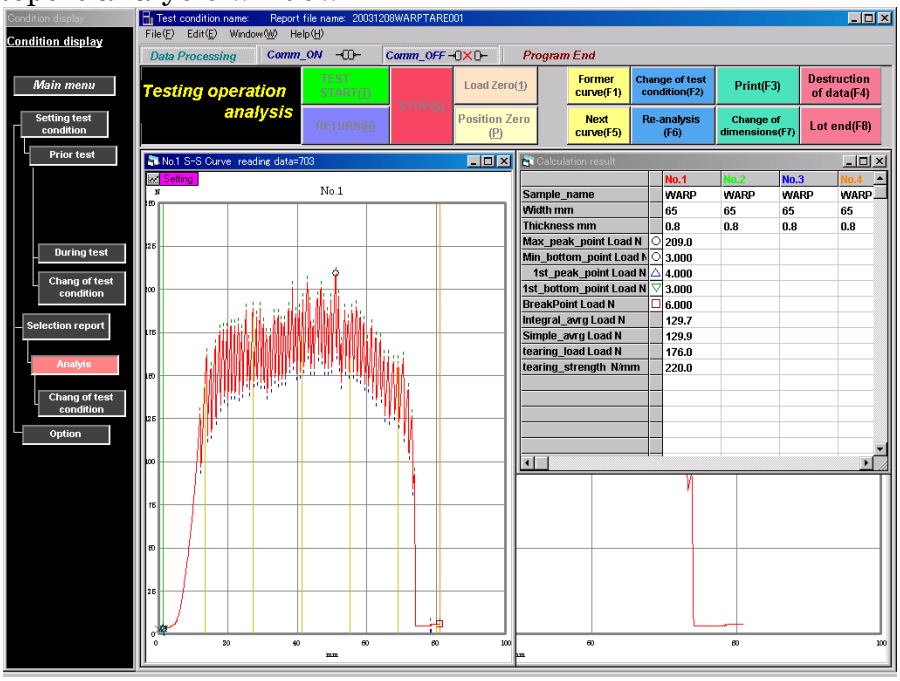
The display can be renewed to the newest file information.

(When you want to check the newest condition after operating the file by using the Explore and so on without using the data processor software.)

6)Return to the main menu（C）

Returns to the main menu after closing the report selection window.

7-4-2.Report analysis window



1) Additional test

When you want to make test (additional test) from the report analysis window,with the same condition as the report file opened at present, you can shift to the test window by clicking on the “Comm_ON” button on the menu bar.

(However, when the number of test pcs is reached to 50 pcs, you can’t make test.)

2)Print

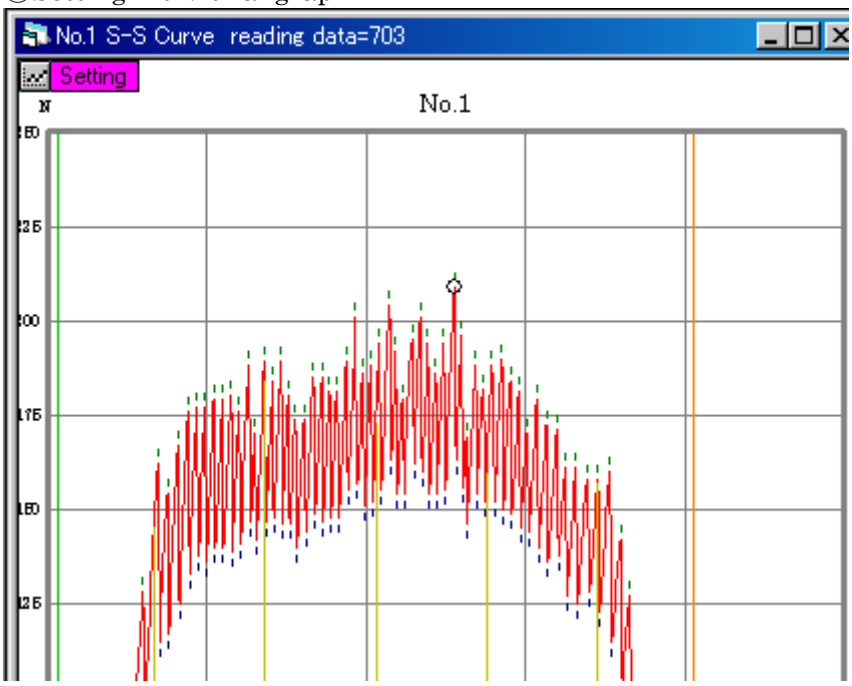
Refer to the item 7-3-11 Test window.

3)Re-analysis

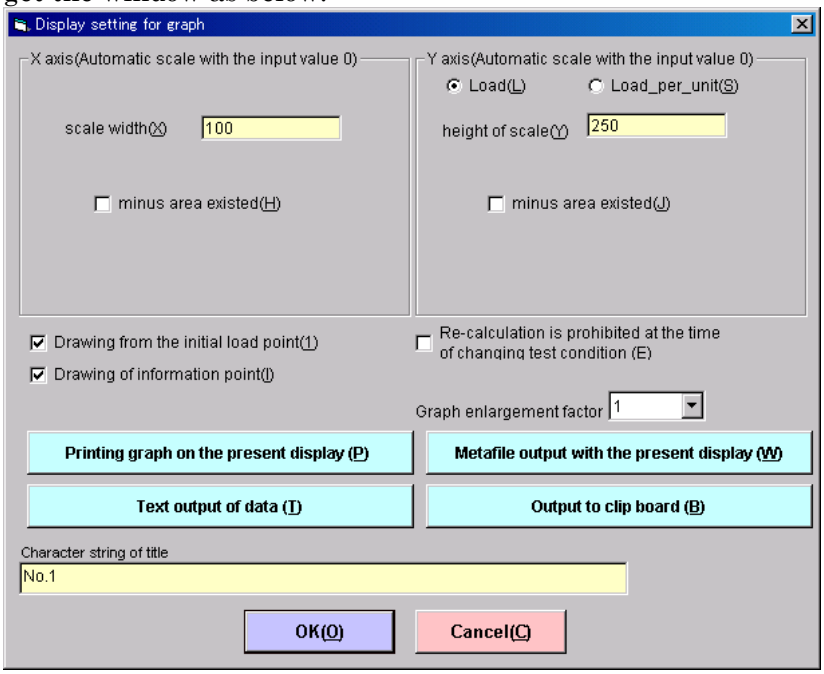
Refer to the item 7-3-11. Test window.

4)Setting individual graph and random draw graph

①Setting individual graph



Whichever clicking on the "Setting2 button at the upper left on the Setting graph or clicking on double on the individual graph, you can get the window as below.



・Y axis parameter setting

The display format of Y axis can be selectable from the below:

Load (L) ,Load_per_unit (S)

・Scale width（X）

Input the maximum value for the X axis. (Automatic scale with zero (0) input)

・Scale height（Y）

Input the maximum height for the Y axis.

・Minus (-) area exists（H）

By inputting the check, you can extend the X axis to the minus area.

・ Minus (-) area exists（J）

By inputting the check, you can extend the Y axis to the minus area.

・Drawing from the initial test force（1）

The graph can be drawn from the initial test force.

・Drawing information point（I）

The information mark set by the options can be drawn on the graph.

・Prohibition of re-calculation at the time of change of test condition（E）

This is the mode not to make re-calculation on specified individual graph

when re-calculation is processed due to the change of test condition.

(Stores the calculation results before the change of test condition.)

・Graph enlargement factor

The X axis of the graph can be enlarged by the specified factor.

1:（Normal display）, 2:（Enlarged display (x2)）

・Printing graph on the present display (P)

Print view can be displayed combined with the test condition (partly) and test result for the each graph set at present. Printing can be made on the printing view.

・Metafile output with the present display (W)

The graph data (the data that output with graph on the printing shown above.) of each graph set at present can be output with Windows metafile.

The location of output is within the SS_DATA folder in the report file stored folder, and output file name is "Report file name-**. WMF". (** will be 00 for No.1 of each graph and 01 for No.2.)

・Text output of data

Text file output of raw data for the each graph set at present can be provided.

The location of output is within the TEXT folder in the report file stored folder, and output file name is "Report file name-**. SIT". (** will be 00 for No.1 of each graph and 01 for No.2.)

・Output to clip board

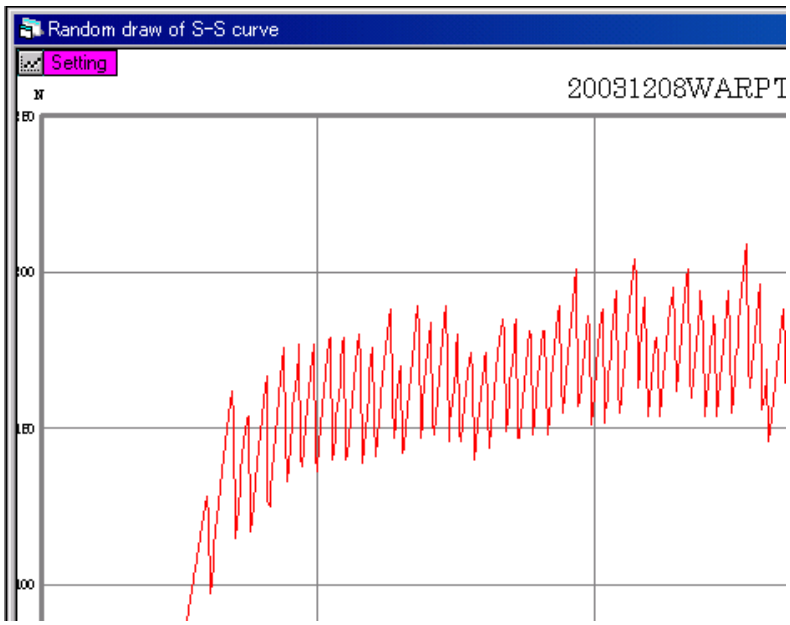
The graph data of each graph set at present can be output to the clip board.

・Graph title

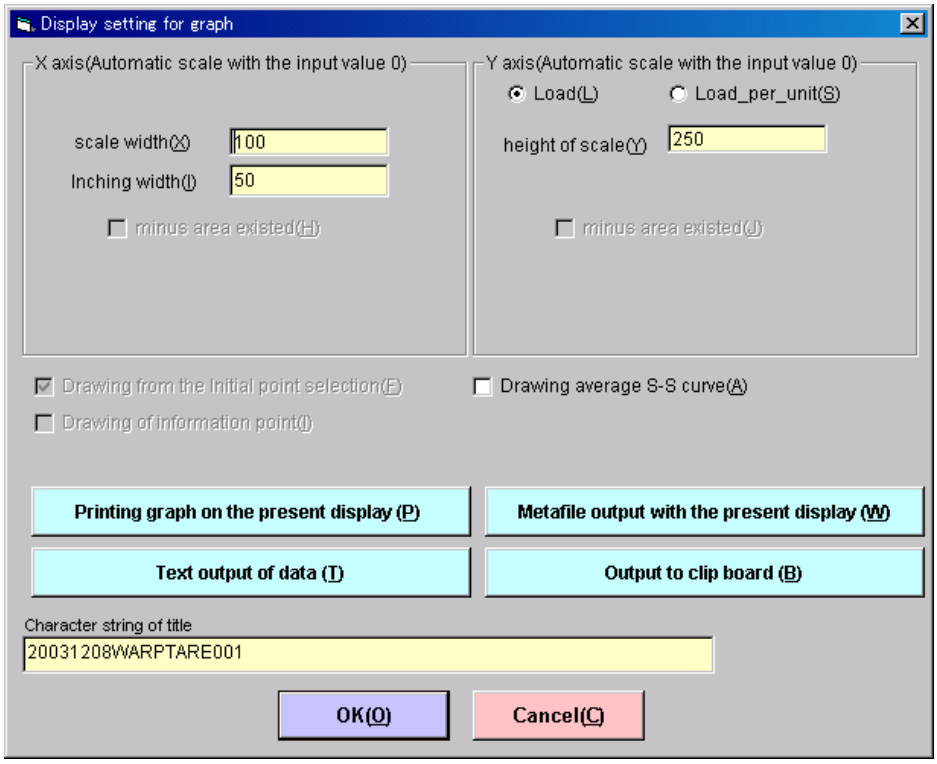
Input the graph title for each graph. (But, the graph title changed can't be stored.)

② Setting random draw of graph

As for the setting random draw of graph features the common functions with the setting each graph partly. Fro the common functions, please refer to the item of "7-3-2. Report analysis window 4) Each graph and random draw graph setting ① Each graph setting".



Whichever clicking on the “Setting” button at the upper left on the Random draw graph or clicking on double on the random graph, you can get the window as below.



・Scale width　X

Input the maximum value at X axis on the random draw graph.

・Inching width　I

When the graphs exist plural, input the interval between the graphs.

・Height of scale　Y

Input the maximum value at Y axis on the random draw graph.

・Drawing average of SS curve（A）

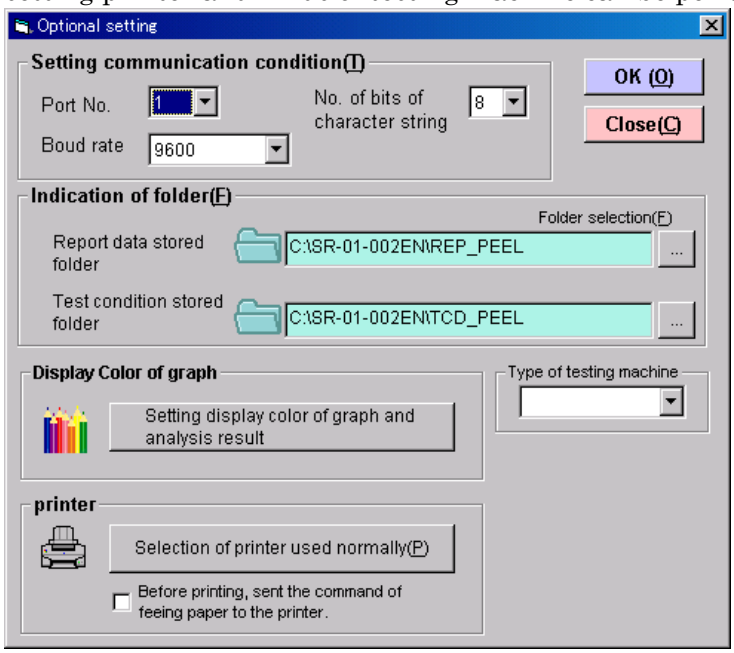
The average graph from all of the each graph can be drawn at the last end of the random draw of graph. (The color of the line is black.)

・Graph title

Input the graph title of the random draw graph.

7 - 5 .Optional setting（F5）

Setting communication condition, Indication of test condition and stored folder of report data, setting of graph and display color of analysis results, setting printer and kinds of testing machine can be performed.



1)Setting communication condition

①Port No.

Selects the communication port No. of PC to communication with the testing machine.

②No. of bits of character string

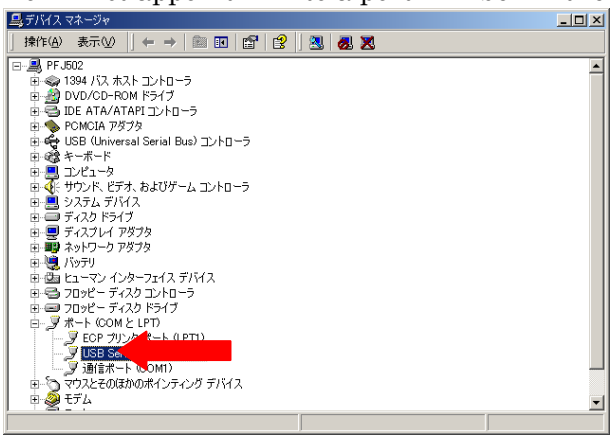
Selects the No. of bits required to send one character.

③Baud rate

Makes selection of communication speed.

You can confirm a port number with a device manager.

You must appoint "14" to a port number in the case of the following.

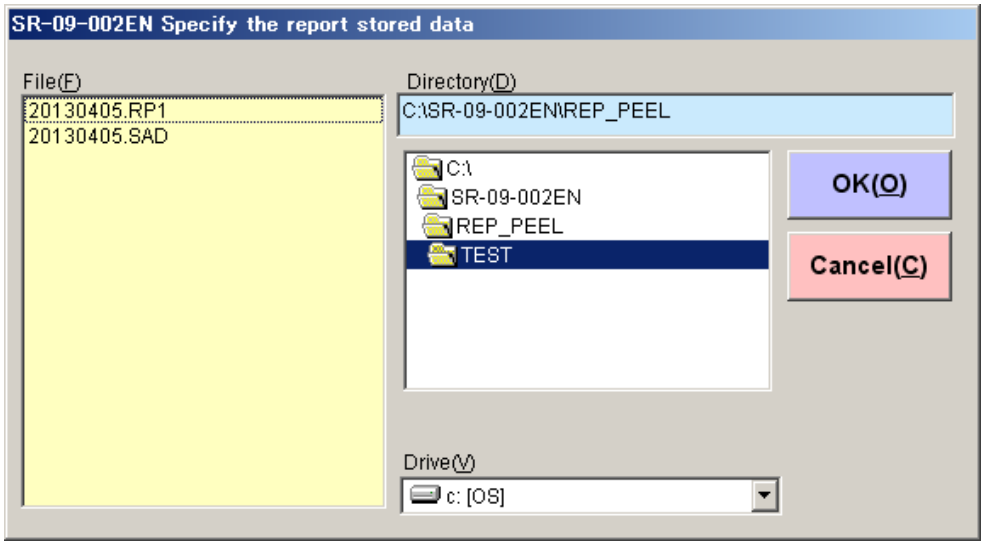


2)Indication of folder

Set the folder to store the report data and test condition file.

Input by using the test box, or click on the folder selection button [...] located on the right side of the window of test box.

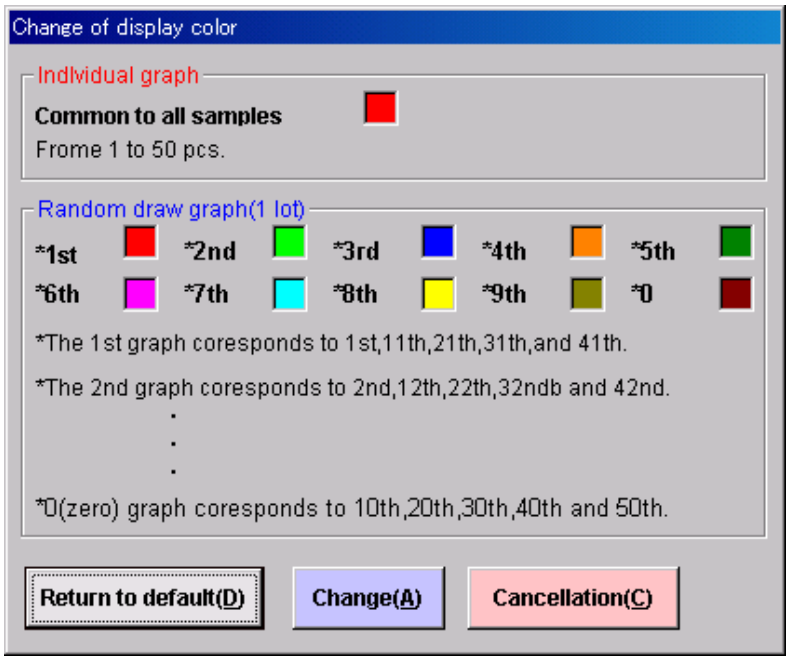
Up to 1000 pcs of files can be stored for the report and test condition stored folder.



3)Display color of graph

Set the color of each graph and random draw graph.

By clicking on the button on the optional setting window “Setting of display color of graph and analyzed results”, the following window can be shown.

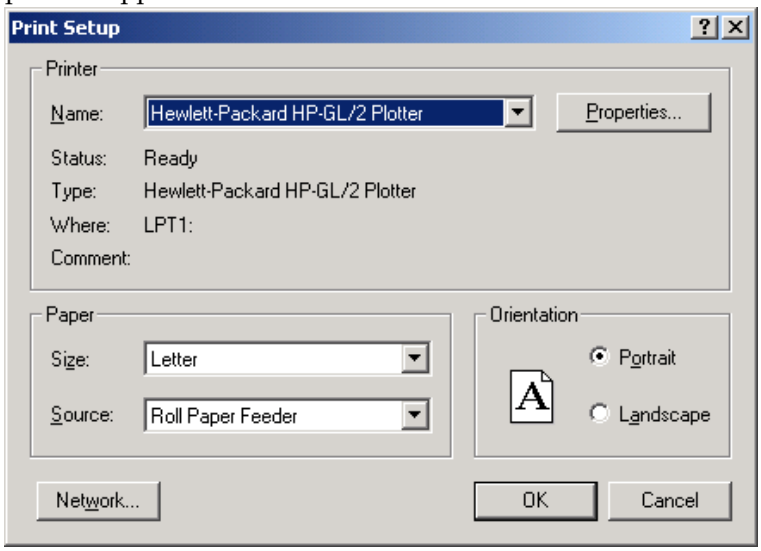


When you clicked on the setting section for display color of graph to change the color (square part), the following window shall be displayed. Then select the specified color and click on the OK button and also click on the “Change （A）” button on the “Change of display color”, the display color of graph can be changed.

4)Printer

①Selection of printer used normally

By clicking on the “Selection of printer used normally”, the following window can be displayed, so set the various kinds of setting for the printer applied on this window.



②Before printing, sent the command of feeding paper to the printer (P)

When a white page shall be appeared on the 1st printed paper, remove the check.

5)Kinds of testing machine

Select the kinds of universal testing machine (Normal type, Upper tension type).

7 - 6 .End the software（F12）

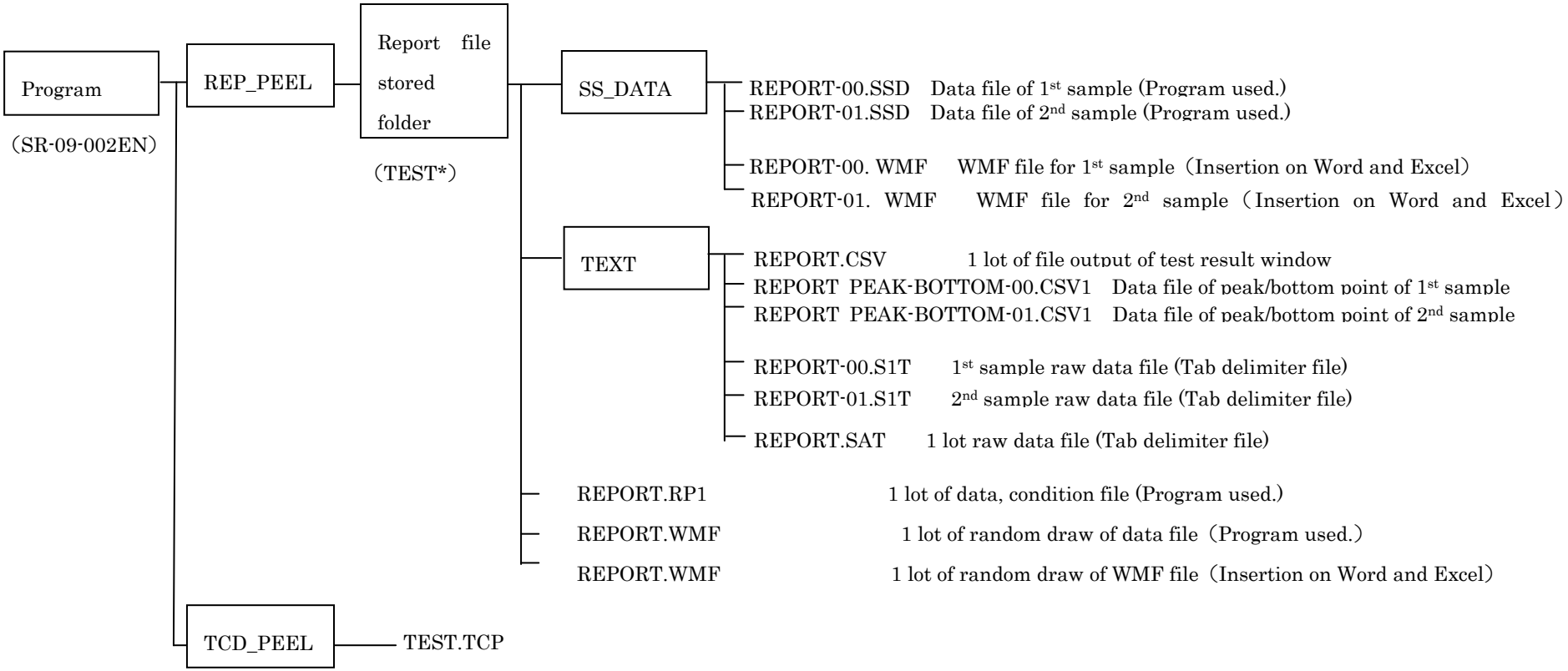
By clicking on the “End of software” on the main menu, finishes the data processor software for the universal testing machine.

7 - 7 .Stored file

Acquired data and so on are stored in the hierarchy as follows:

The followings are the case when 2 pcs of sample test have applied through the program SR-09-002EN with the test condition name :TEST, Report file name : REPORT.

（Report stored folder, test condition stored folder and report file stored folder are changeable optionally.）



●The contents of this manual may subject to change without notice.

HEAD QUARTER: MinebeaMitsumi Inc.

4106-73 Miyota, Miyota-machi, Kitasaku gun, Nagano-ken 389-0293 Japan
Tel: +81-267-32-2200 Fax: +81-267-31-1350

Sensing Device Product Sales Management:

1-1-1, Katase, Fujisawa-shi, Kanagawa-ken, 251-8531 Japan
Tel: +81-466-23-2681 Fax: +81-466-22-7191

Sensing Device Business Unit

FUJISAWA PLANT 1-1-1, Katase, Fujisawa-shi, Kanagawa-ken, 251-8531 Japan
Tel: +81-466-22-7151 Fax: +81-466-22-1701

KARUIZAWA PLANT 4106-73 Miyota, Miyota-machi, Kitasaku gun, Nagano-ken 389-0293 Japan
Tel: +81-267-31-1309 Fax: +81-267-31-1353

HOMEPAGE ADDRESS http://www.minebea-mcd.com