

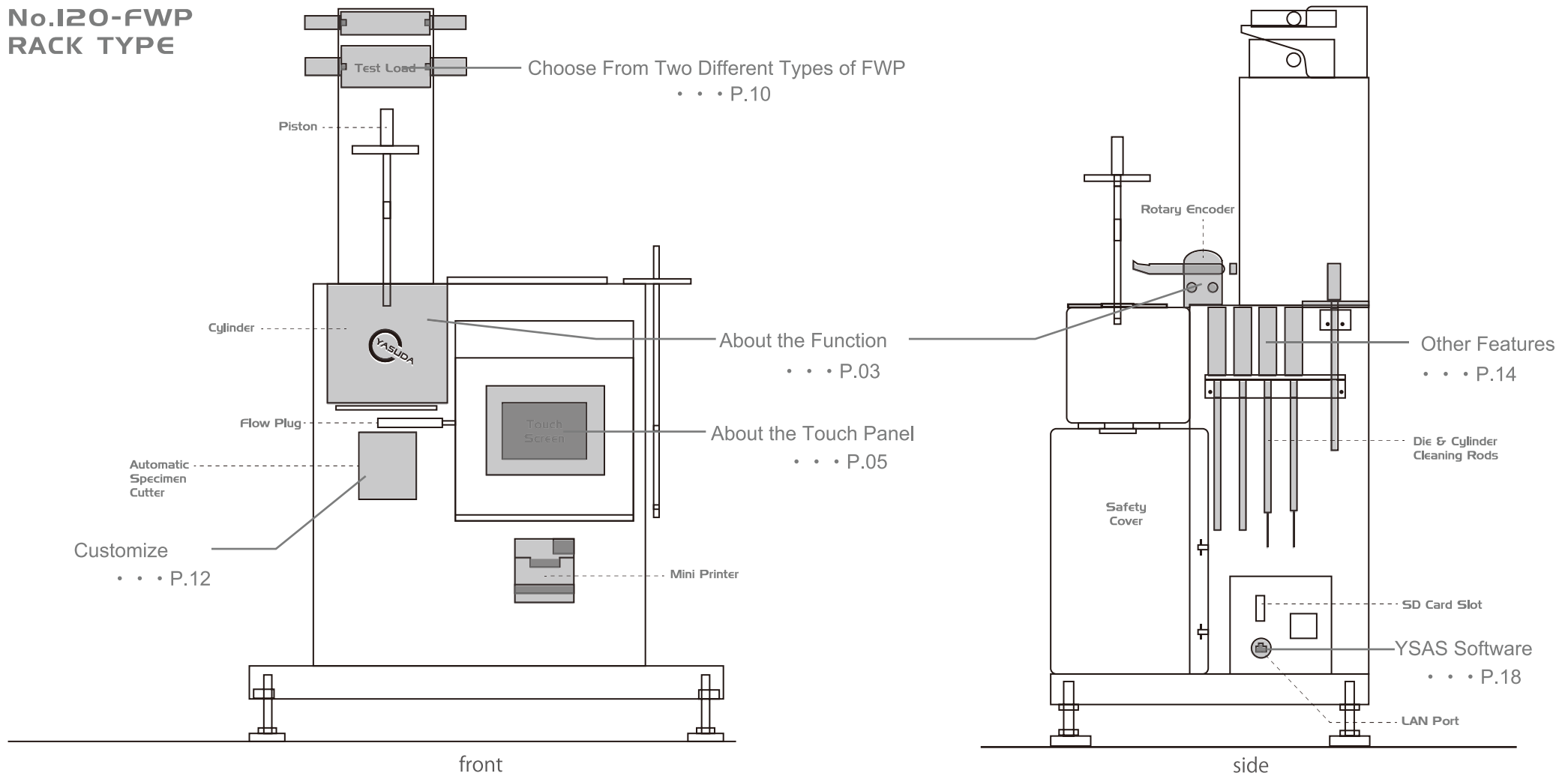
***No.120-FWP
MELT FLOW INDEX TESTER***



YASUDA SEIKI SEISAKUSHO,LTD.

Contents

No.120-FWP RACK TYPE



Yasuda Seiki's No.120-FWP is designed to improve the operability, usability and to accurately conduct the test for the customer.

About the Function



Get Accurate and Reliable Test Results

$\pm 0.3^{\circ}\text{C}$ Temperature Distribution

The No.120-FWP realizes a $\pm 0.3^{\circ}\text{C}$ distribution from 10mm to 70mm above the die which is requested in ISO-1133-2 (which is a test standard for test samples with high sensitivity to heat.)



Reading the Subtlest Movement of the Piston

The rotary encoder can read the traveling distance of the piston in $\pm 0.0018\text{mm}$ --greatly exceeding the necessary amount of $\pm 0.02\text{mm}$ from the standard. Which means it can read subtle movement to get an accurate traveling distance of the piston.



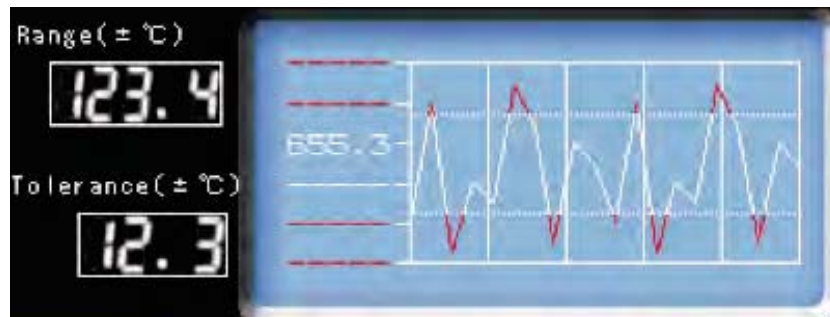
About the Touch Panel



Just the Kind of Functions You Need is All Here

See the Temperature Flow of the Cylinder

The operator can start the test when the temperature inside the cylinder is stable because the display will graphically show the temperature flow of the cylinder in chronological order.



Cut Off Sample with Helpful Guidances

The image below is a bar that will show the operator when to cut the test sample. Not only will it show through the display, it will also guide the operator when to cut the sample by a buzzing system.

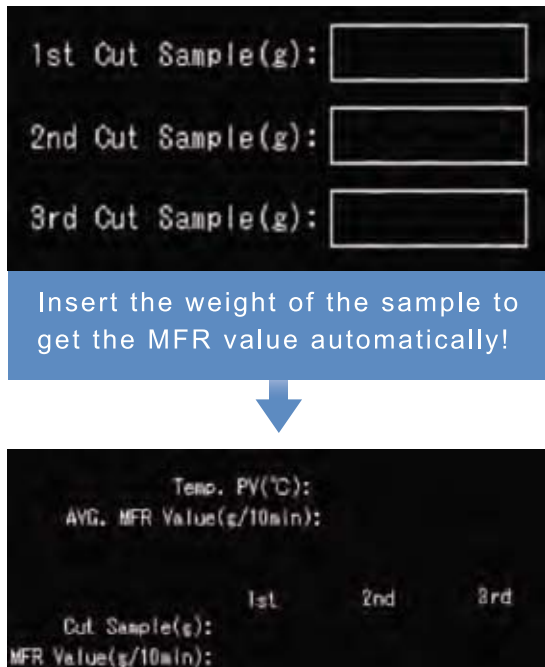
* You can also include the A Method Automatic Sample Cutter by option

Watch the Movement of the Bar to Cut the Test Sample

Test Time Cut
123.4 / 123.4 (s)

Automatically Calculates the MFR Value

After having the sample cut off, measure the weight of the sample and enter the data into the touch panel. The software will then automatically calculate the MFR value.



Available in 4 Different Languages

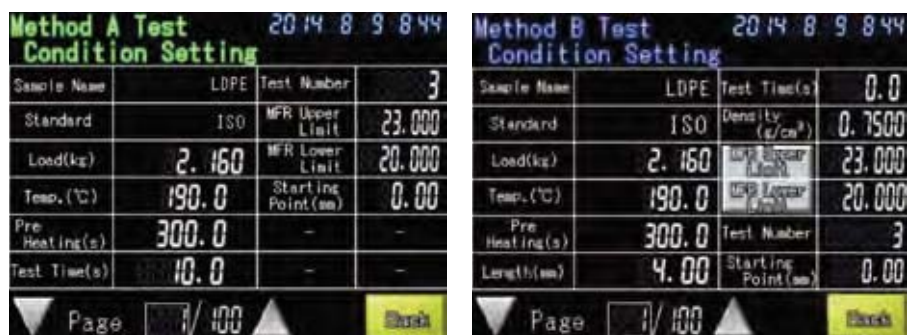
For those who are or has been extending their business abroad there is a function that lets the operator switch to other languages such as, English, Chinese(Simplified and/or Traditional) and Korean.



Test Condition Can Be Set in Various Details

The 5.7 inch wide touch panel makes it easier for the operator to enter and set various test conditions. When analyzing a data, setting various test conditions is key to sort and draw out the ones you need to see afterwards.

Save 100 Test Results Each for Method A and Method B



Save Maximum 500 Test Results

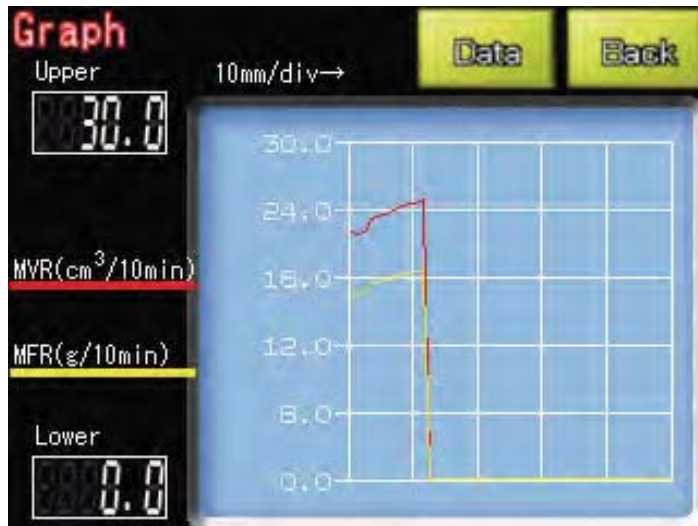
You can save up to 500 test results each for Method A and Method B in the touch panel. Use a 32GB SD card and save about 100,000 test results.

Using the SD Card Save 500 Test Results Each Test Method



Check the Transition of the MFR Through the Touch Panel

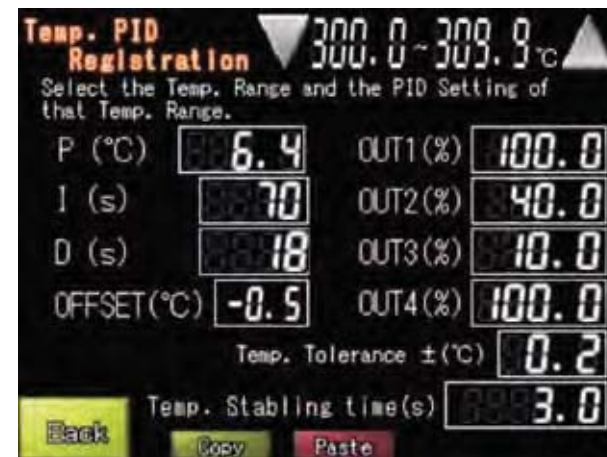
It is difficult to get a hold of the property of a sample with just the value of its MFR and MVR. For this reason, the touch panel can indicate the MFR and MVR in a chart so that the operator can see the property change during the test.



Freely Adjust the PID and the Output

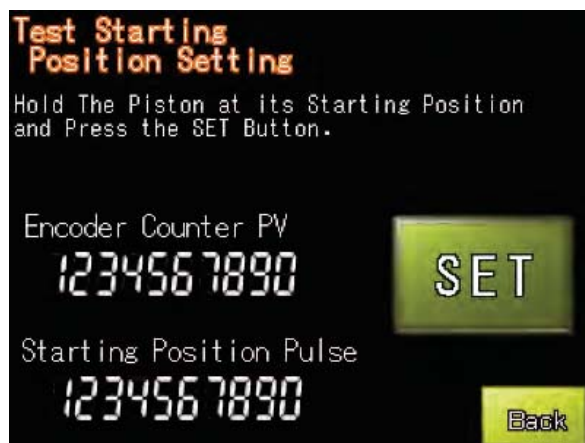
It is possible to adjust and to look at the offset value and PID value of each temperature zone and the four heater that distributes the temperature within $\pm 0.3^\circ\text{C}$ in the cylinder. Plus, only the manager and or the manufacturer is able to get into the maintenance screen.

*Please turn to P.15 for information on about the temperature distribution measuring apparatus.



Check the Position of the Piston

Just as the temperature of the cylinder can affect your test results, the precision of the rotary encoder can also affect your test results. In particular, the accuracy of the encoder's calculation will determine the accuracy of where the piston is. You can check out the position of the piston from the display as seen below, and use a pulse meter for calibration to check how accurate the rotary encoder is.



Setting Up a Unit Number

The manual type melt flow index tester, like our No.120-FWP, is frequently used and several are placed in research labs. To distinguish which test results came from which machine, just as it is introduced in page 20, when the test results are being collected into your PC it will show which machine it came from.



Two Different Types

Choose From Two Different Types of FWP



Select from Two Different Types by the Frequency of Use

Suited for Quality Control

■ Rack Type

The test load is designed so that the operator can easily pick up and down repeatedly. Also, it is stackable for the test load is in an embedded form.



When the test loads you use is relatively light (2.16kg, 3.8kg, 5.0kg, or 10.0kg) the rack is effective.

Less Labor Using the Automatic Type

■ Automatic Type

The largest test load for the melt flow test is 21.6kg. Placing this heavy test load back and forth is not only operating ineffectively, it may be dangerous for the operator. With this automatic FWP, all the operator has to do is to place the necessary test load on the automatic test loader. After the preheating is done, the test load will be placed onto the piston. When the test is over, the automatic test loader will lift the test load up back to its starting position.



Customization

RACK TYPE



Standard



+ Mini Printer



+ A Method Cutter



+ A Method Cutter
+ Mini Printer

AUTOMATIC TYPE



Standard



+ Mini Printer



+ A Method Cutter



+ A Method Cutter
+ Mini Printer

You can customize No.120-FWP even after the installation is done.

Automatic A Method Cutter

We recommend this to customers who frequently conduct the A Method test. The automatic A Method cutter, which has been design registered, can cut off any stiff sample helping the operator from labor.



The sample will drop into the pocket of the cutter.



The sample will be cut.

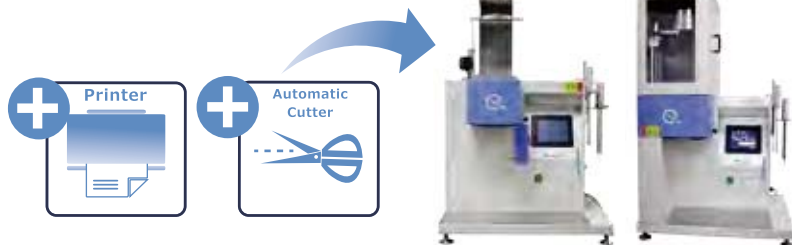


An air will blow out at the cut off sample, and will drop onto a plate.



Cutter & Printer Can Be Added Later

The automatic A Method cutter and the printer can be added on later when necessary. ※However, switching the type of FWP (Rack type to Automatic type) after installation is not applicable.

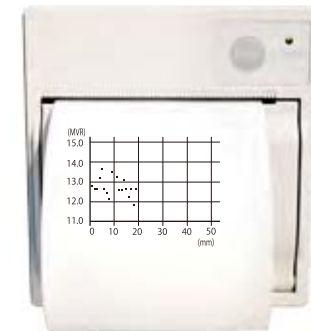


Mini Printer

The test results can be printed out including the MFR graph.

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Test Result Method B
Standard: ISO-1311
2012/12/28 17:48:09
Condition No.:1
Sample Name: ABCD
Test Weight (kg)= 1.200
Temp. SV(°C)= 250.0
Temp. PV(°C)= 250.4
Preheat(s)= 0.0
Length(mm)= 6.35
Test time(s)= 0.0
Density(g/cm³)=1.0200
Starting Point(mm)= 0.00
AVG. MFR(g/10min)= 13.005
1st_Length(mm)= 6.35
2nd_Length(mm)= 6.35
3rd_Length(mm)= 6.35
1st_Test time(s)= 20.96
2nd_Test time(s)= 21.19
3rd_Test time(s)= 21.66
1_MVR(cm³/10min)= 12.936
2_MVR(cm³/10min)= 12.796
3_MVR(cm³/10min)= 12.518
1_MFR(g/10min)= 13.195
2_MFR(g/10min)= 13.052
3_MFR(g/10min)= 12.768
    
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Other Features



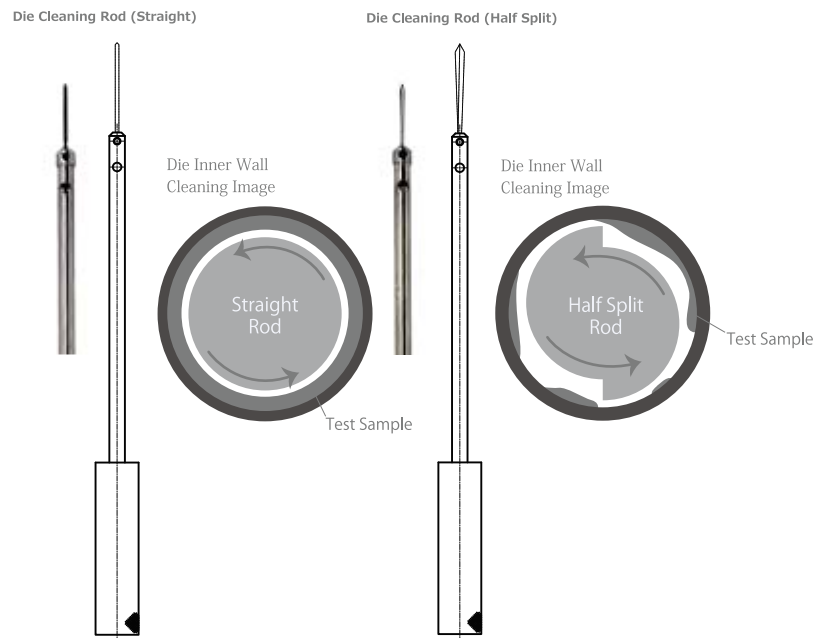
Temperature Distribution Measuring Apparatus

Add the temperature distribution measuring apparatus when calibration is needed. This tool can measure six parts of the temperature starting from 10mm of the die surface to 60mm all at once.



Die & Cylinder Cleaning Rods

The die cleaning rod of Yasuda Seiki Seisakusho is specially made to clean the inner wall of the die. One of the rods have a tip that is designed half split so that it is easy to scrape off the sample from the die.



The cleaning rods have a handle to grip so that it is easy to apply force.

Manual Type Die Plug

By using the die plug while preheating the sample, it will help prevent the melted sample from flowing out.



Prevents sample that is even sensitive to heat from flowing out

Take Out the Die Using the Die Shutter

The die can be taken out from below the cylinder as you open the die shutter by pulling the handle such as in the image below.



Simply pull the handle that opens the die shutter to take out the die from the cylinder

Half Die

Use the half die if there is a sample where the value of the MFR is larger than 75g/10min or, the value of the MVR is larger than 75 cm³/10min. (ISO 1133-1) The half die, just like the name suggests, is half the size of the regular die.



Software

YSAS Software



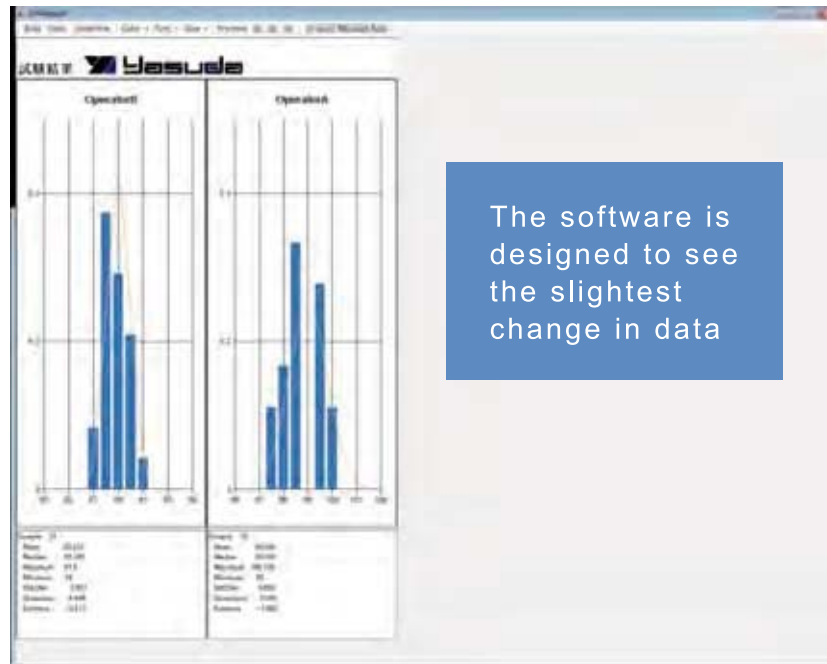
YSAS
SOFTWARE



Easier to See On the Focused Test Data Group

Manage All Data in One PC

If test data is just simply collected to a PC, it's just a row of numbers. But if they are correctly sorted and statistically analyzed, the numbers become into an efficient reporting tool. The test data stored in Yasuda's Testing machines can be collected to one PC via LAN or SD Card for data analysis.



Connect the LAN to your PC and save the data in CSV format!

About the YSAS Software

The Collected Data

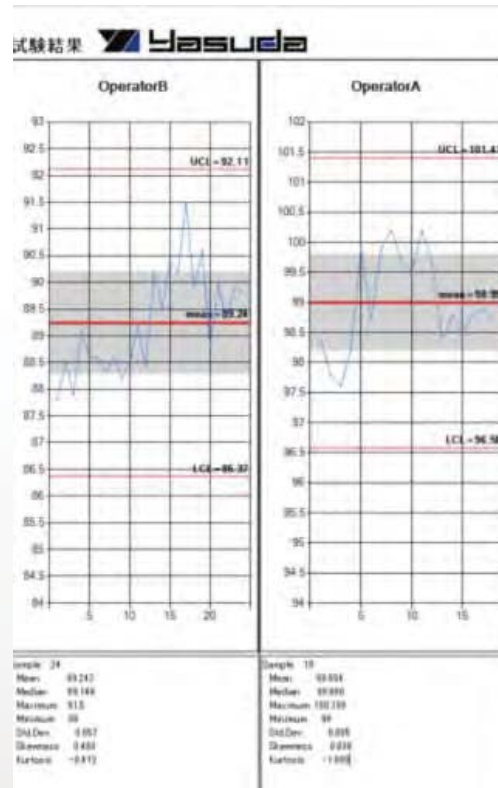
The collected data can be saved, statistically analyzed, and also be reported through YSAS(Yasuda Statistical Analyzing Software)

Collected Data Can Be Sorted As the Following

- test range
- operator
- sample grade
- test conducted time

Making a Test Report

The difference between two different operators on the same test sample, and the test data flow in time series term can be seen and can simply help make a test report.



The difference between two different operators on the same test sample can be seen graphically

Standard Specification



Rack Type Approx. 70kg



Automatic Type Approx. 90kg

Hangings	1 Hanging
Die	Diameter: $\varnothing 2.095 \pm 0.005\text{mm}$ Length: $8.000 \pm 0.025\text{mm}$
Piston	Diameter: $\varnothing 9.475 \pm 0.010\text{mm}$ Length: $6.35 \pm 0.10\text{mm}$
Cylinder	Inner: $\varnothing 9.550 \pm 0.025\text{mm}$ length: 160mm
Temperature	Max.400°C
Test Load	Automatic Type: 1.20、2.16、3.80、5.00、10.0、12.5、21.6kgf Rack Type: Choose two kinds from the following 1.20、2.16、3.80、5.00、10.00kgf
Test Method	Method A: Manual Cutting (Option: Automatic Cutting) Method B: Automatic
Data Processing	Method A: Automatic (Weigh the Sample Manually) Method B: Automatic

Method B Measuring

Standard Specification

Option

Accessories

Power Source

Air Source

Rotary Encoder

SD Slot
LAN Port
Manual Type Die Plug
Safety Cover with Interlock Attached (Automatic Type Only)
Method A Air Pressure Type Automatic Loader(Automatic Type Only)

Mini Printer
Method A Automatic Specimen Cutter
Half Die
Temperature Distribution Measuring Apparatus

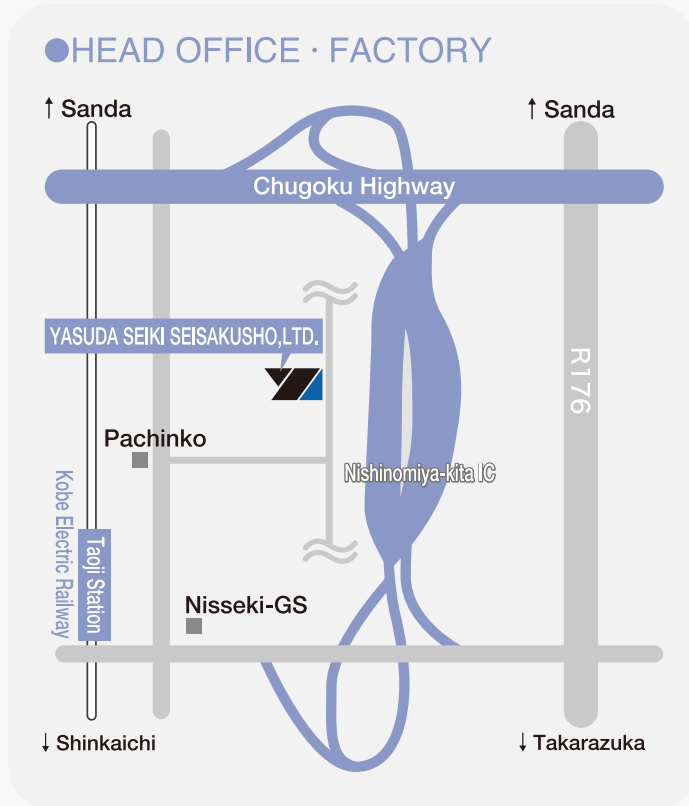
Cleaning Rod (Die・Cylinder)
Injection Rod
Funnel
Die Gauge
PET Material Sample Scatter Shield
32GB SD Card
Method A Cutting Knife
Spirit Level
Gauze

AC100V、1-Phase、15A、50/60Hz or
AC200V、1-Phase、10A、50/60Hz

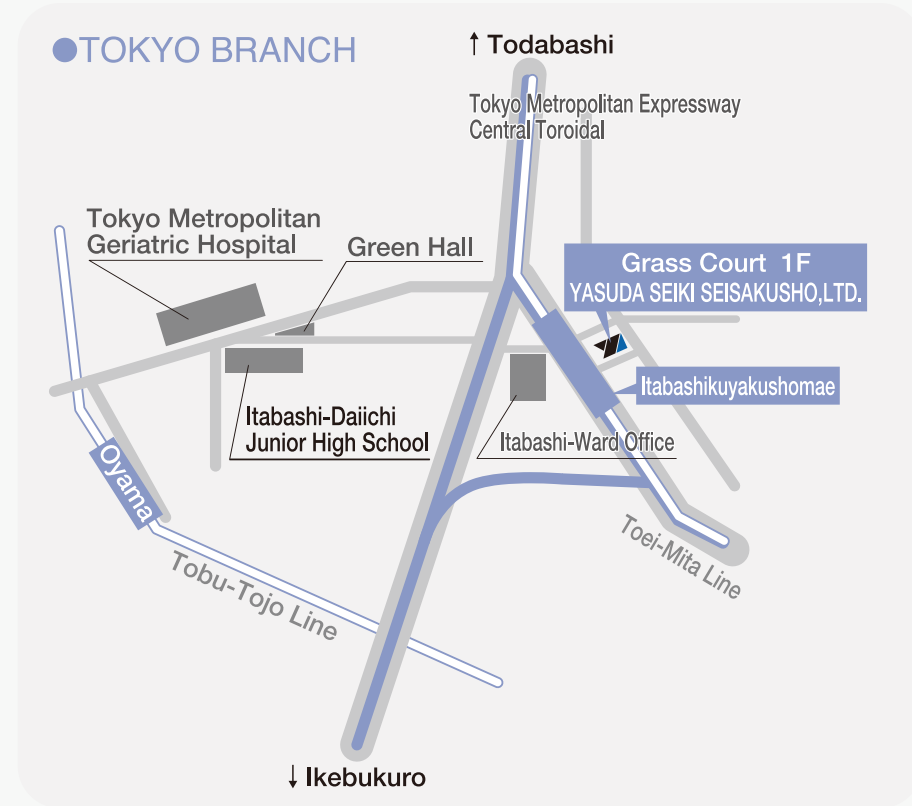
0.5MPa or More (For Automatic A Method Cutter and Automatic test loader)

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