

SDW

UNIVERSAL TESTING MACHINE

SDW type is a testing machine for a load capacity from 10kN upto 200kN. The machine is placed on the floor. The load is given onto test pieces by the crosshead which moves up and down by the forwarding screws on both sides of the frame. For the 200kN type, please inquire us of the specification.

※ Please refer for the type of 200kN specifications.

■ Characteristics

- Universal type testing machine from 10kN to 200kN.
- It can be also used for an examination of the small load by adding a smaller load-range.
- The examinations of the comparatively large sample is possible due to gate type frame structure.
- It can be easily handled by exclusive software. (Option)

■ Usage example

- Various examinations of large load.
- Various evaluation examinations of machine parts and comparatively bigger sample.

■ Options / Special specifications

- A wide type of the valid examination width.
- The type that is long (short) of the stroke.
- The type that an environmental examination (Homoiothermal box) was added to
- The addition of the load range.
- A type of displacement resolving power 1 μ m.
- Output of ANALOG/PRINTER

This option is necessary for the connection to Analog recorder or printer.



SDW-5003



SDW-9103



With Protection Cover

Standard specifications

Model (※1)	SDW-1003-□	SDW-2003-□	SDW-5003-□	SDW-9103-□
Maximum Load	10kN	20kN	50kN	100kN
Load Display	[The specifications of Load Range] Reference [The combination of Load Range according to the model]			
Minimum Unit				
Load Precision	JIS 1 class (Indication value ±1% range)			
Displacement Minimum Unit	0.01mm			
Drive type	AC Servo Motor			
Speed Range	0.1～500mm/min			
Distance from a Table to a Load-cell	Max. 1100mm (An effective stroke is decided by selection of an attachment)		Max. 1080mm (An effective stroke is decided by selection of an attachment)	
Effective Test Width	445mm		439mm	
Table Size	300×300mm (With T-groove)		350×350mm (With T-groove)	
Safety Device	Optional setting Upper and Lower Limit Over-load Prevention function			
Convenient Function	Memory function of the examination conditions Peak/Bottom Hold function Cycle mode function Detect function of Break Point Detect function of Start Point Auto Cancel/Auto Feed function Auto Start Point Return function Judgment function			
Output (※2)	USB			
Power supply	AC100V 10A	AC200V 15A 3phase	AC200V 30A 3phase	
Weight	Approx 320kg		Approx 460kg	Approx 486kg
Size	W985×D460×H1850mm (P33 reference)		W1038×D580×H1962mm (P33 reference)	

(※1) The model symbol is put in □. Refer to [The combination of Load Range according to the model]. (※2) Analog output and Printer output can be installed with option.

Specifications of Load Range

Load Range	Maximum Load Display	Minimum Unit
100kN	100.00kN	0.01kN
50kN	50.00kN	
20kN	20.00kN	
10kN	10.000kN	0.001kN
5kN	5000N	1N
2kN	2000N	
1kN	1000.0N	
500N	500.0N	0.1N

※ The usable range is recommended at 20~100% of each setting Load Range.

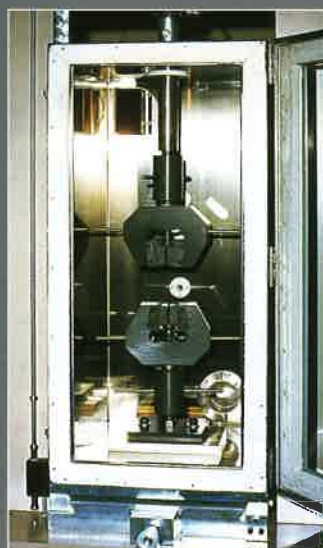
※ It is possible for the option to add other Load Range that Load-cell is changed to other than the above.

Combination of Load Range according to the model

Model	Usable Range	Setting Load Range							
		100kN	50kN	20kN	10kN	5kN	2kN	1kN	500N
SDW-1003-R1	2kN ~ 10kN	—	—	—	●	—	—	—	—
SDW-1003-R2	400N ~ 10kN	—	—	—	●	—	●	—	—
SDW-1003-R3	100N ~ 10kN	—	—	—	●	—	●	—	●
SDW-2003-R1	4kN ~ 20kN	—	—	●	—	—	—	—	—
SDW-2003-R2	1kN ~ 20kN	—	—	●	—	●	—	—	—
SDW-2003-R3	200N ~ 20kN	—	—	●	—	●	—	●	—
SDW-5003-R1	10kN ~ 50kN	—	●	—	—	—	—	—	—
SDW-5003-R2	2kN ~ 50kN	—	●	—	●	—	—	—	—
SDW-5003-R3	400N ~ 50kN	—	●	—	●	—	●	—	—
SDW-9103-R1	20kN ~ 100kN	●	—	—	—	—	—	—	—
SDW-9103-R2	4kN ~ 100kN	●	—	●	—	—	—	—	—
SDW-9103-R3	1kN ~ 100kN	●	—	●	—	●	—	—	—



Wide type



Constant-Temperature Chamber furnished



Longer Stroke type



200kN Range type

ACCESSORIES/OPTION

Digital printer BS2-80TS

The value of "load and displacement" can be printed out.



No.	荷重 (N)	変位 (mm)
001	14.1	1.45
002	19.3	1.65
003	21.4	1.97
004	24.8	2.13
005	26.6	2.33

ex.: Printing

Specifications

Model	BS2-80TS
Printing style	Thermal line dot
Communication	RS-232C (Exclusive output terminal)
Paper	BS-80-15 (80×φ38)
Power supply	AC100V (Special DC Adapter)
Weight	Approx 410g
Size	W134×D180×H60mm
Accessories	DC adapter / Paper 1role / Cable C-101

※ As for the models with NB (specifications), the output to printer is optional.

Digital printer DP-1VR

The value of "load" can be printed.



SUB	GR.	NO.	
1			27.54
2			28.30
3			27.71
4			28.35
5			27.43

ex.: Printing

Specifications

Model	DP-1VR
Printing style	Thermal line dot
Communication	Digimatic output terminal
Paper	No.09EAA082
Power supply	AC100V(Special DC Adapter)
Weight	Approx 390g
Size	W94×D201×H75mm
Accessories	DC adapter / Paper 1role / Cable C-201

※ As for the models with NB (specifications), the output to printer is optional.

Pen recorder

The transformation curve of "load and the time" can be recorded.



Specifications

Model	R-01A
Paper	Model H-25-1(width 250mm)
Range	1·2·5·10·100·500mV·1·2·5·10·20·50V
Feed rate	1·2·3·6·10·15·30·60cm/min&hour
Pen	Model R-3000
Power supply	AC100V±10%
Weight	Approx 6kg
Size	W376×D425×H158mm
Accessories	Paper 1role / Pen 1 / Cable C-302

※ As for the models with NB (specifications), the output to printer is optional.

Transformer

For the usage abroad of the testing machine with AC100V power supply, it is necessary to do transformation of the local voltage to 100V.



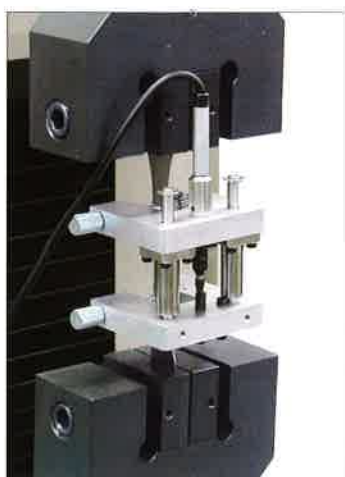
Specifications

Model	Input	Output	Max. current	Suitable appliances	Weight
SU-300	110~120V	100V	3A	SV-55C/SV-5A	2kg
SE-300	220~240V				4kg
600AU	110~120V		6A	Under 2kN	2.5kg
600AE	220~240V				7.1kg
1000AU	110~120V		10A	5kN~10kN	3.3kg
1000AE	220~240V				11kg

Many accessories are available to ensure the expansion of the function of our Testing Machine. Accessories are to be connected with the output of our testing machine. Please notice that some of our tester does not equip an output for certain accessories, or equip an output as an option.

Extensometer (gauge length unit) Model GTD-50

It is clipped to test pieces such as metal or the plastic, in order to measure quantity of elongation precisely. The elongation is displayed by switching on the displacement display.



Specifications

Model		GTD-50
Gauge mark		50mm
Max. elongation		10mm
Resolution		0.001mm
Max. sample size	Plate	13mm
	Pipe	ø15mm
Weight		Approx 400g

Extensometer (gauge length unit) Model GTD-1000

This is a type to use in case of a large elongation like rubber. It is produced by quantity of stroke / a testing machine type.



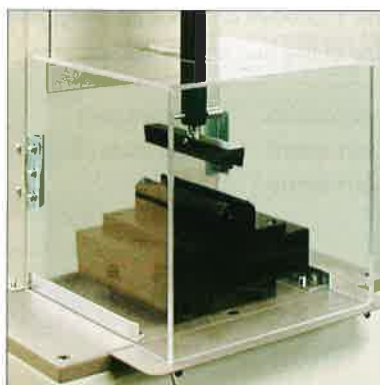
ex.: Mounted on a SDT-203 testing machine

Protection cover

There are the dangerous examination contents which are scattered when a sample is destroyed. Various protective covers to have examine it safely are optional. Please refer to P10, P12 for SDWS/SDW type use.



General model for desk testing machine
The whole of the moving part is covered.
When a window is not closed, there is the safety device which cannot perform movement of the testing machine.



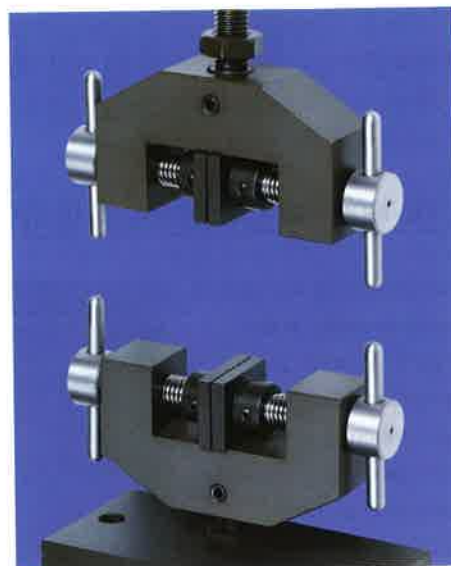
Simple model
The simple model to cover the minimum area in danger.



For fire prevention protection
When it might catch fire by the compression examinations such as the lithium ion battery.

ATTACHMENTS (JIGS)

Selection of an attachment is very important, and it will bring out the full-capability of the testing machine. Almost every IMADA-SS testing machine can measure both "tensile" and "compression". The test of "Tension", "Compression", "Bending", "Peeling test", and so on is possible by selecting the correct attachment for the testing purpose. We have many special attachments besides the items listed in this catalogue. We design the attachment which meets your requirement. Please feel free to contact us and let us know your requirement.



■ Caution when choosing the right attachment

- Testing load has to be lower than the maximum load of the attachment.
- The weight of the upper attachment has to be lower than the 10% of the maximum load of the loadcell. If the maximum load of the loadcell is very small, it is recommended to adjust the testing machine with the attachment attached being placed.
- Make sure the size of the connecting rod is correct. Chart below shows the size of the screw for upper/lower attachment.
- If you plan to test special materials, it is highly recommended to perform the sample testing to choose the right attachment.

■ Installation size list

(1) The installation of the upper jig

The upper jig is installed to a loadcell. The screw size is as follows.

The machine model to use a loadcell equal to or less than 500N is for a male screw. The jig side gets the female screw.

The machine model to use loadcell more than 1kN is for a female screw. The jig side gets the male screw.

Load	Under 500N	1kN~10kN	20kN	50kN	100kN
Type	SV-55C SVZ-50NA SVZ-200NB-50 SDT-203NB-50	SVZ-200NB-200 SDT-203NB-200 SDT-503NB SDWS-0213 SDWS-0513 SDWS-1013 SDW-1003	SDWS-2013 SDW-2003	SDW-5003	SDW-9103
Screw size	M6P1	M12P1.75	M16P1.5	M24P2	M32P2

※ When a jig of the small capacity is installed with the additional load range, a connection screw is necessary.

(2) The installation of the lower jig

The surface plate with T-Groove to fix lower jig is situated on the base of testing machine and the push-pull stand.

Two T-throw nuts are to be inserted into the T-Groove and fix a jig onto them with two bolts.

The dimension of the T-Groove and the size of the bolt are as follows.

Type	SV-55C SVZ-50NA	SVZ-200NB SDT-203NB SDT-502NB	SDWS-0213 SDWS-0513	SDWS-1013 SDWS-2013 SDW-1003 SDW-2003	SDW-5003	SDW-9103
T-Nut	M8P1.25	M8P1.25	M8P1.25	M12P1.75	M16P2	M20P2.5
T Groove						

Film chuck

- This is designed for the tension test of the thin film (max. thickness of 2mm)
- Suitable for the 180° peeling test of the glued sheet.
- GC-2-2A/GC-2-5A are made of aluminum, and there are no filing around the gripping area.
- "GT-71" is recommended as a lower attachment if you need to set the samples without any sagging.



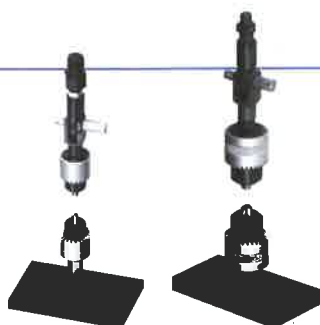
GC-2-2A

GC-2-5

Type	Max. Load	Face width	Upper Weight
GC-2-2A	50N	20mm	38g
GC-2-5A		50mm	65g
GC-2-2	500N	20mm	75g
GC-2-3		30mm	100g
GC-2-5		50mm	155g

Drill chuck

- This chuck is used to hold the round bar shaped samples, or attachment with round bar.



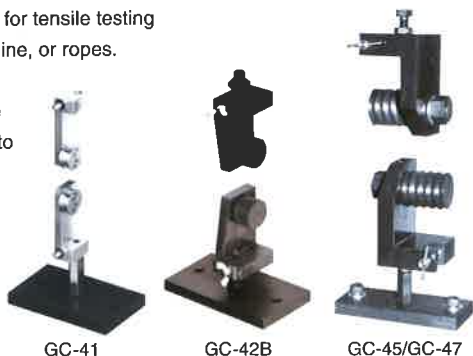
GC-20TR1

GC-20TR4

Type	Max. Load	Grip	Upper Weight
GC-20TR1	1kN	ø0.5~3mm	100g
GC-20TR4A	5kN	ø2~9mm	440g
GC-20TR4B	10kN		

Wire winding grip

- This is suitable for tensile testing of strings, thin line, or ropes.
- It hold the samples by the frictional force to the drum, avoiding the samples to be cut at the edge of the attachment.



GC-41

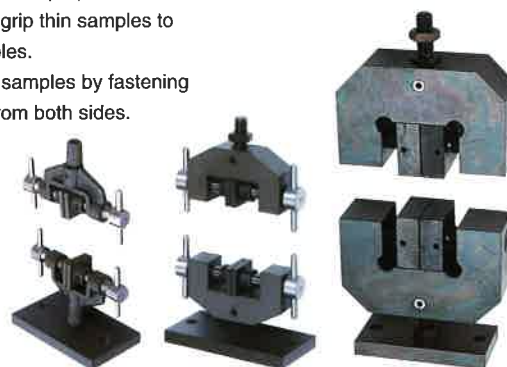
GC-42B

GC-45/GC-47

Type	Max. Load	Wire diameter	Drum	Upper Weight
GC-41	50N	ø0.5mm	ø16mm	27g
GC-42A	500N	ø2mm	ø30mm	580g
GC-42B	2kN			
GC-45	5kN	ø8mm	ø40mm	3kg
GC-47	10kN			

Flat chuck

- Flat chuck is all-purpose chucks which can grip thin samples to thick samples.
- It clips the samples by fastening the plate from both sides.



GC-10-1

GC-12

GC-15

Type	Max. Load	Face width	Open wide	Upper Weight
GC-10-1	500N	20mm	0~10mm	140g
GC-10-2			0~20mm	200g
GC-10-3			10~30mm	220g
GC-12	2kN	30mm	0~18mm	530g
GC-15	5kN	48mm	0~20mm	3.6kg
GC-17	10kN			

Pin chuck

- It is a jig which clamps a pin, and to be used by a compression examination.
- This chuck is commonly used at stab examination.



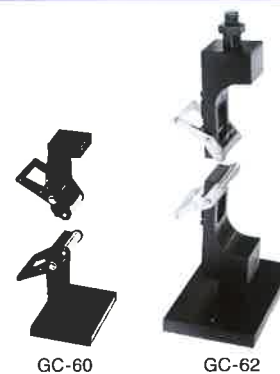
GC-30A

GC-30-05~15

Type	Max. Load	Grip	Upper Weight
GC-30A	200N	ø0.5~5mm	160g
GC-30-05	10N	ø0.5~1mm	16g
GC-30-10		ø1~1.5mm	
GC-30-15		ø1.5~2mm	

Roller grip

- This attachment is suitable for testing materials which are deformable and elastic such as rubber and films.
- The more tensile force is applied, the more self-clamping force is obtained.



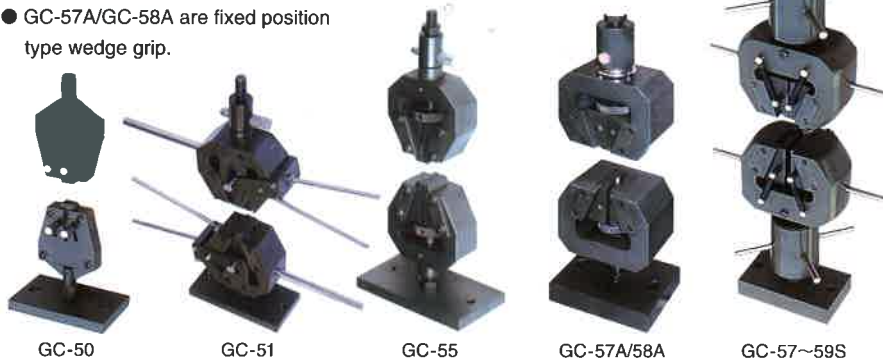
GC-60

GC-62

Type	Max. Load	Width	Upper Weight
GC-60	500N	30mm	180g
GC-62	2kN	40mm	500g

Wedge grip

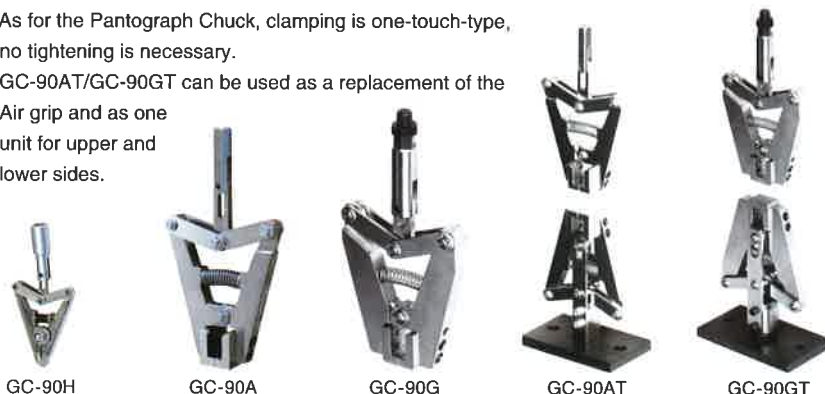
- Wedge grip has a self-clamping effect to hold the samples tightly, and it is very easy to clamp or release the samples.
- Hardened parts may cause slip since the initial grip force might be not enough. This needs to be checked before testing the samples.
- Surface of the gripped area is flat. As an option, "V" shaped surface for the round rod can be manufactured.
- GC-57A/GC-58A are fixed position type wedge grip.



Type	Max. Load	Face width	Open wide	Upper Weight
GC-50	500N	8mm	4mm	200g
GC-51	2kN	30mm	7mm	1.9kg
GC-55	5kN		5mm	2.8kg
GC-57	10kN	38mm	8mm	6.5g
GC-57A		40mm	9mm	7kg
GC-58	20kN	38mm	8mm	
GC-58A		40mm	9mm	
GC-59	50kN	45mm	8mm	8kg
GC-59S	100kN			

Pantograph chuck

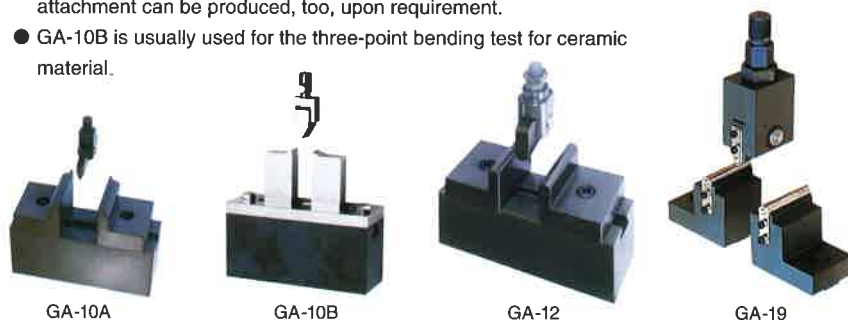
- As for the Pantograph Chuck, clamping is one-touch-type, no tightening is necessary.
- GC-90AT/GC-90GT can be used as a replacement of the Air grip and as one unit for upper and lower sides.



Type	Max. Load	Face width	Open wide	Upper Weight
GC-90H	50N	4mm	2mm	30g
GC-90A	500N	20mm	4mm	200g
GC-90G	1kN			920g

Bend test attachment

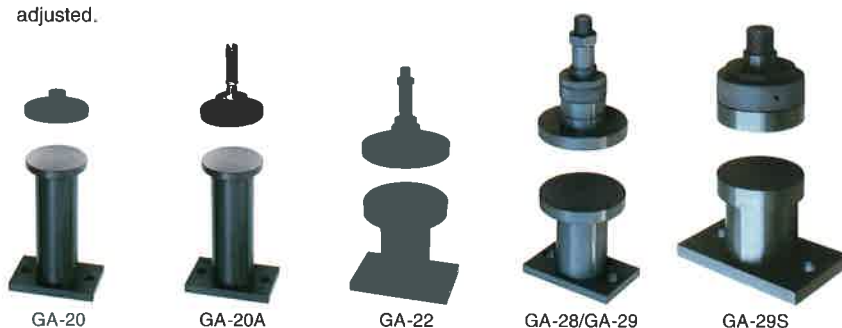
- This jig is for 3-point bending test attachment. The 4-point bending attachment can be produced, too, upon requirement.
- GA-10B is usually used for the three-point bending test for ceramic material.



Type	Max. Load	R	Width	Upper Weight
GA-10A	500N	2mm	55mm	150g
GA-10B		0.5mm	15mm	200g
GA-12	10kN	5mm	50mm	400g
GA-18	20kN			980g
GA-19	50kN			1.1kg
GA-19S	100kN			1.2kg

Flat type compression attachment

- This attachment is designed for compression test use. ● Attachment GA-20A is a self-centering type.
- Upper flat head of GA-22/28/29 is a self-centering type, and the extent of alignment can be adjusted.



Type	Max. Load	Diameter	Upper Weight
GA-20	500N	ø55mm	150g
GA-20A			200g
GA-22	10kN	ø100mm	920g
GA-28	20kN		1.3kg
GA-29	50kN		2kg
GA-29S	100kN		4.3kg

X-Y table / Y-Z table

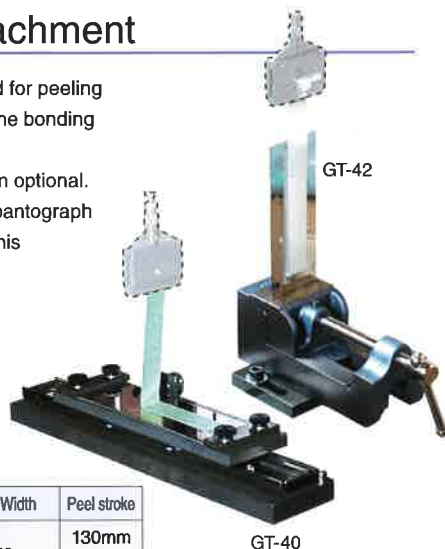
- This is used for positioning of the samples.
- Y-Z table "GT-20-4" is to be used for horizontal type test machine.
- If you wish to mount another attachment on GT-20-4, in some cases, table needs to be modified. Please contact us for detail.



Type	Max. Load	Stroke
GT-20-1	50N	X±7.5mm/Y±7.5mm
GT-20-2	3kN	X±25mm/Y±25mm
GT-20-3	500N	X±30mm/Y±30mm
GT-20-4		Y±15mm/Z±10mm

Peel test attachment

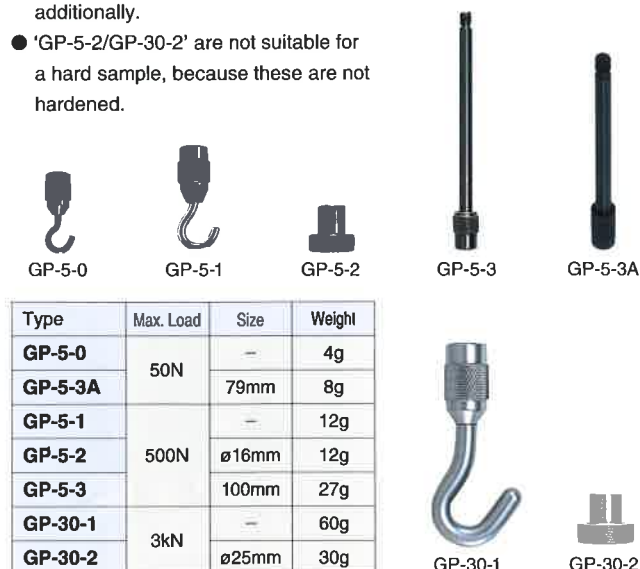
- GT-40/GT-42 are used for peeling test which measures the bonding strength.
- Upper attachment is an optional. Usually film chuck or pantograph chuck is selected for this attachment. (option)



Type	Max. Load	Width	Peel stroke
GT-40	200N	50mm	130mm
GT-42	500N		150mm

Miscellaneous attachment

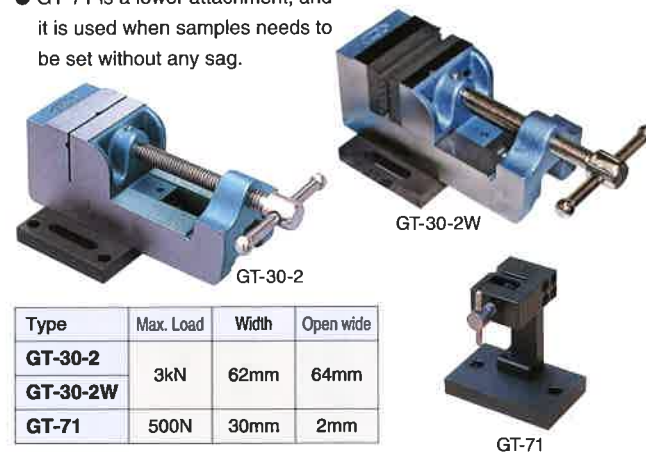
- GP-5-0/1 is a hook for catches.
- Connection screws such as 'GQ-10-3' are necessary for 'GP-30-1/2' additionally.
- 'GP-5-2/GP-30-2' are not suitable for a hard sample, because these are not hardened.



Type	Max. Load	Size	Weight
GP-5-0	50N	—	4g
GP-5-3A		79mm	8g
GP-5-1	500N	—	12g
GP-5-2		ø16mm	12g
GP-5-3		100mm	27g
GP-30-1	3kN	—	60g
GP-30-2		ø25mm	30g

Vice grip / Paper chuck

- It can be used as a lower attachment for many purposes.
- By customizing the surface of the gripping area, it will be used in many ways of testing.
- GT-30-2W is specially designed for gripping covered cable.
- GT-71 is a lower attachment, and it is used when samples need to be set without any sag.



Type	Max. Load	Width	Open wide
GT-30-2	3kN	62mm	64mm
GT-30-2W			
GT-71	500N	30mm	2mm

Chip peeling test attachment / Square-shape attachment

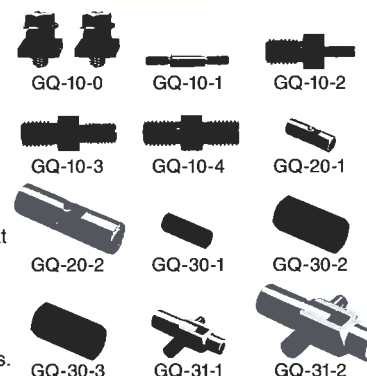
- GT-52 is a "Pulling" chip exfoliation test attachment. GT-53 is a "Pushing" chip exfoliation test attachment.
- GC-91 is very useful for fixing the samples by its hook. It is used with GT-30-2W for the strength test of crimping terminal.



Type	Max. Load	Specification	Upper Weight
GT-52	500N	φ10mm	105g
GT-53			100g
GC-91	200N	Open wide 0~4mm	150g

T-nuts / Connecting Joint / Universal Joint

- GQ-10-0 is a T-shape nut used to mount the lower attachment.
- GQ-10-1 to 4 is a connecting rod which has male screws at both ends.
- GQ-20 is an universal joint which has female screws at both ends.
- GQ-31 is a pin-type connecting joint which has female screws at both ends.



Type	Screw diameter
GQ-10-0	M8
GQ-10-1	M6 (M) × M6 (M)
GQ-10-2	M12 (M) × M6 (M)
GQ-10-3	M12 (M) × M10 (M)
GQ-10-4	M12 (M) × M12 (M)

* (M) means male screws.
(F) means female screws.

Type	Screw diameter
GQ-20-1	M6 (F) × M6 (F)
GQ-20-2	M12 (F) × M12 (F)
GQ-30-1	M6 (F) × M6 (F)
GQ-30-2	M12 (F) × M12 (F)
GQ-30-3	M12 (F) × M10 (F)
GQ-31-1	M6 (F) × M6 (F)
GQ-31-2	M12 (F) × M12 (F)

SOFTWARE

Testing equipment is possible to be connected to a PC. This software has various useful utility such as analyzing, saving and managing of each data as well as parameter-setting for controlled operations.

Data processing software / ISP-V

Software ISP-V receives the value of load and displacement from the testing machine, and draw load-displacement curves (Stress-Strain Curves) and load-time curves. It also processes these values and prints / saves the results.

■ Characteristics

1. Capable of processing data of "Tensile", "Compression", "Bending", and "Peeling" test.
2. During the measurement, you can see the real-time drawing of the curves.
3. Various conditions for tests can be set from the PC side, and the measurement start and end can be executed from it as well. Because the condition setting is synchronized both on the testing equipment and the PC, changes and/or updates of the condition can be done on either device.
4. Data management can be carried out in several ways, such as saving overlapped graphs from the same work in one file or in separate files.
5. By registering initially, the measurement data is to be automatically processed.
6. An operation processing result, and the graph data file can be automatically saved.
7. Each result and data can be saved as text file and graphs can be converted to BMP from. So by using commercial software, the results can be output in a preferable layout or style.
8. The calculation result or the statistic data can be checked any time, since those are displayed at the bottom of graph screen.

■ Main function

1. Graph	① The color for background and data lines, etc. can be set arbitrary.
	② Enlargement of the graph can be done by clicking directly with mouse.
	③ Function to let the screen-scale automatically widen or scroll.
	④ Function to overlap plural data. (*1)
	⑤ By layout setting, a good look even on the wide screen is possible.
2. File	① The parameters of conditions and various processing can be saved / read with a specific file.
	② Measured data can be saved automatically into a specified folder.
	③ Measured value (load / displacement / time) are able to be saved automatically into a specific folder.
	④ The value of calculation results can be saved automatically into a specific folder.
3. Setting / Measurement	① Function to synchronize various conditions of the test and its control with testing equipment.
	② By varying the number of sampling, data measurement process for a long period is possible.
	③ Function to slip over unnecessary data using the cycle control, which repeats data by data.
4. Calculation / Result	① Value of the load / displacement / time (Peak, Bottom, Break, and Yield point).
	② Computing process of stress-strain, elongation rate and energy at status mentioned above (4-1). (*2)
	③ Computing process of the elastic slope, modules of elasticity and proof stress.
	④ Result of peeling examination; peeling load, strength, peak/bottom as well as average of max. and min. point.
	⑤ Extraction of data for load, displacement or time at an arbitrary point.
	⑥ Processing the statistic average, the standard aviation as well as the maximum and minimum value from each result.
	⑦ Graph judgment function to analyze the actual data graph in a specified range.
	⑧ Function to detect the multiple peak values in the one examination. (consecutive measurement function)
	⑨ Average graph out of several graphs from measurement can be made. (S-S average graph)
	⑩ Comparison process among several data by a particular point. (measurement cursor function)

(*1) There is no limit for the numbers of files to be take in, but depending on the size of the data it cannot be displayed.

(*2) The calculation of the energy is not for the yield point.

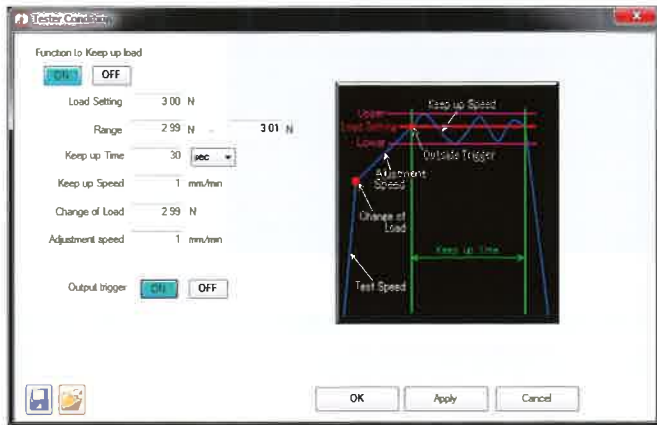
Additional function software

There is the software that can expand its exclusive control function by being used together with data handling software, ISP-V.

※ Data handling software ISP-V is necessary for each option software.

Keep up Load function

It is the software to control the operation of the testing machine and maintain the set scope of the required load value at all time.



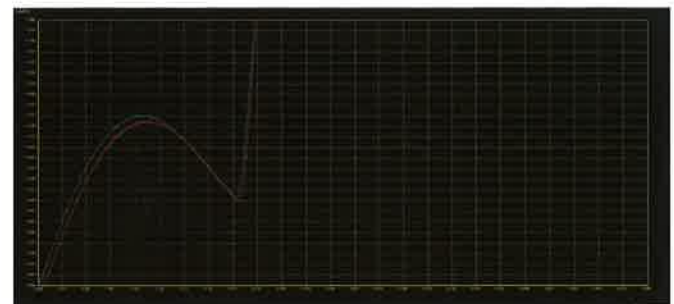
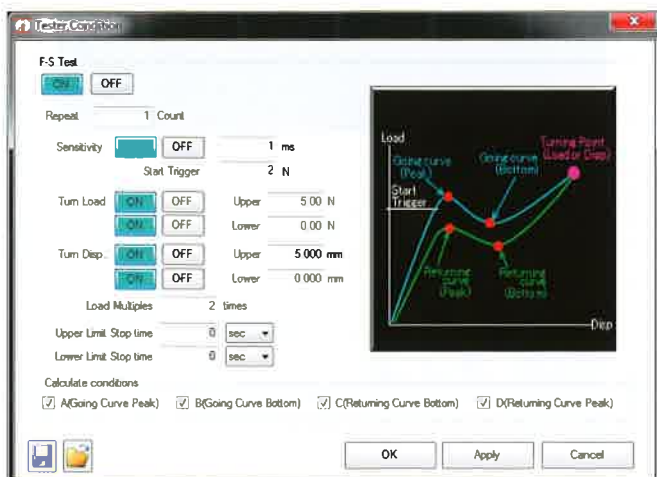
Load speed follow function

Normally for tensile and compression testing machine, the speed of adding load (test speed) is calculated at "○○ mm/min", which means the displacement amount per time. However for some tests, the examination regulation gives a guideline that the test should be performed at N/min. for example, which means the variation amount of load per time. This is the function to maintain the preset variation amount of load per time by adjusting and setting back continuously changing load values.



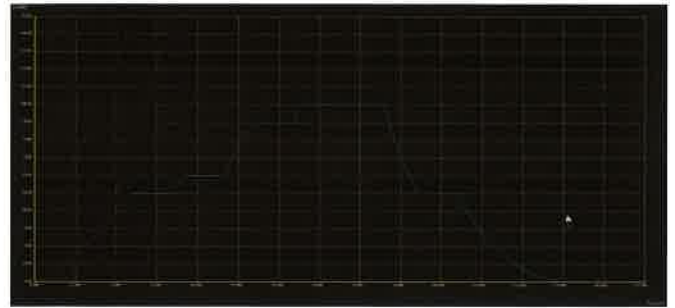
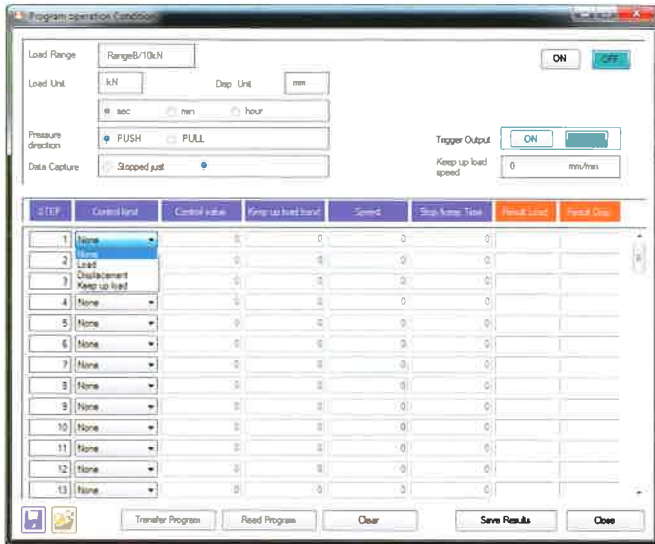
Switch feeling examination

This is an option for the exclusive use of the feeling examination of switches. Each peak and bottom value of the hysteresis can be measured by the exclusive setting item. Repeat test can be also performed by setting the required number.



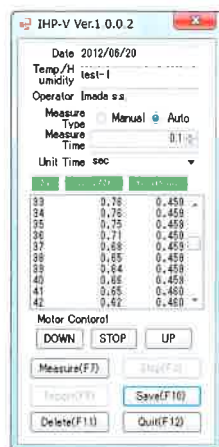
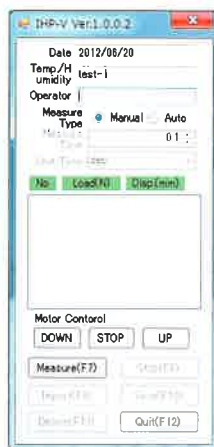
Program operation

This is for the function to measure the operation with several steps in connection, for every steps specified value for load or displacement can be set. UP to 99 steps are possible to be preset. The "Keep Up Load Function" is also one of the control types and can be set for it. The step can set either plus or minus side (in case of no minus load, load specification is not possible). The result data from each step can be displayed and output as text.



Data collect software / IHP-V

This is the software which enables the hold value of load and displacement from the testing machine to be saved in a CSV text format. Under the automatic mode, consecutive accumulation at an interval of over one second can be carried out.



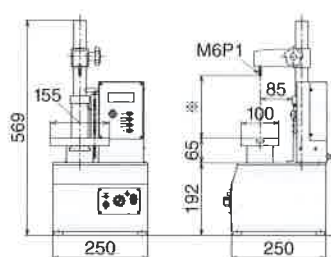
	A	B	C
1	Date	2012/06/20	
2	Temp/H	test-1	
3	Operator	Imada s.s.	
4	No	Load(N)	Disp(mm)
5		1 074	0.141
6		2 074	0.141
7		3 074	0.141
8		4 075	0.141
9		5 075	0.141
10		6 075	0.141
11		7 075	0.141
12		8 075	0.141
13		9 075	0.141

CSV output

Software operation environment

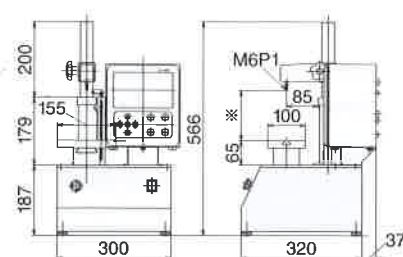
- Compatible Test Machine Tensile and Compression Testing machines except for SV-55C and Push-Pull stand
- Operation System Windows XP (SP2~), Vista 7 (32/64bit)
- PC composition CPU Core2~ (Core i5 recommended) / Memory 2GB~ (4GB recommended)
- HDD 80GB~ (500GB recommended) / USB port 2.0

* Windows is a trade mark of Microsoft Corporation. * The recommended specifications are for a stable operation with Windows 7 class.



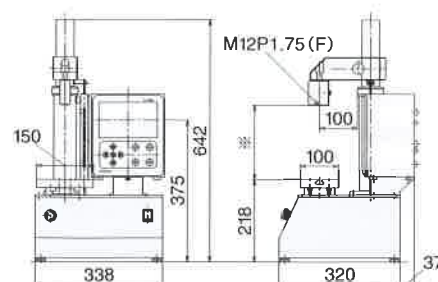
※ Sample Mounting Span: 115~239

Model SV-55C



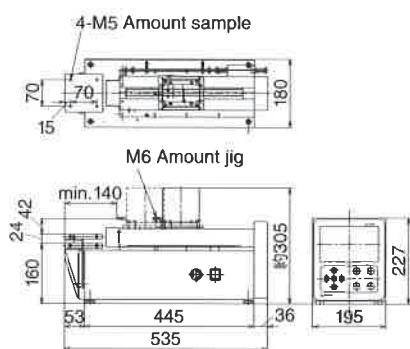
※ Sample Mounting Span: 110~240

Model SVZ-50NB

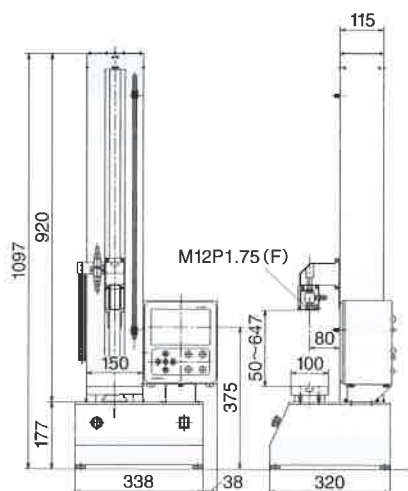


※ Sample Mounting Span: 197~295

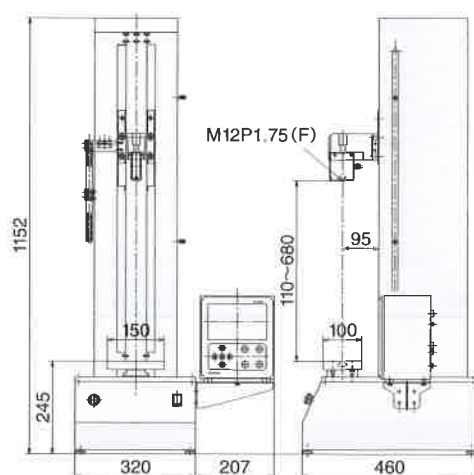
Model SVZ-200NB



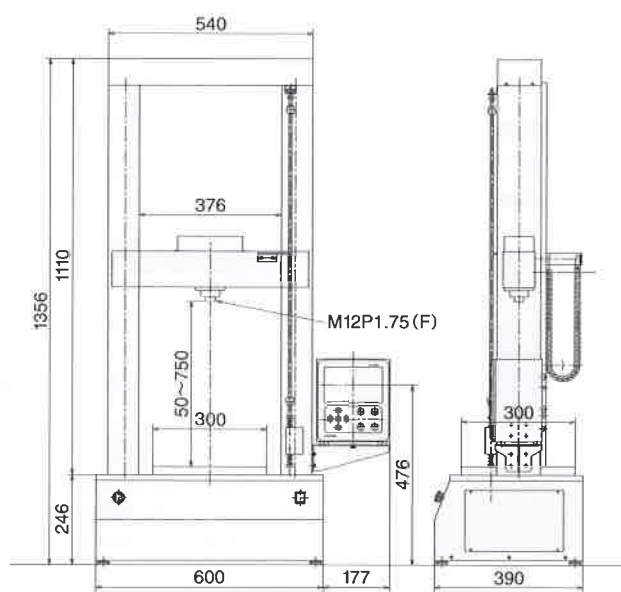
Model SH-14NB



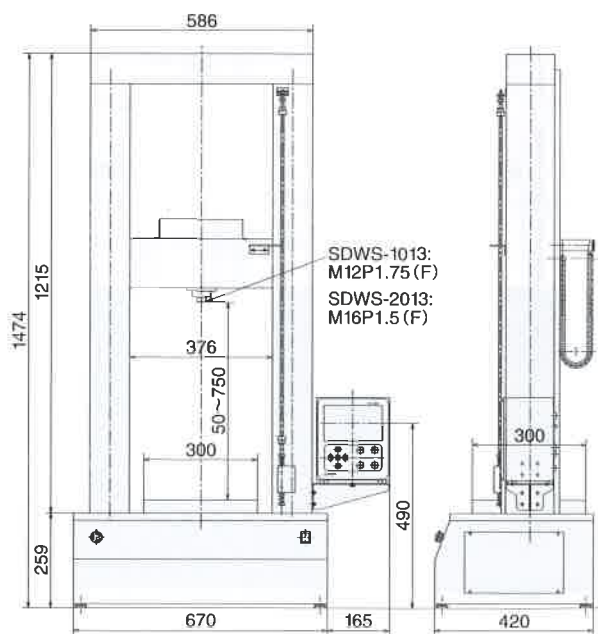
Model SDT-203NB



Model SDT-503NB

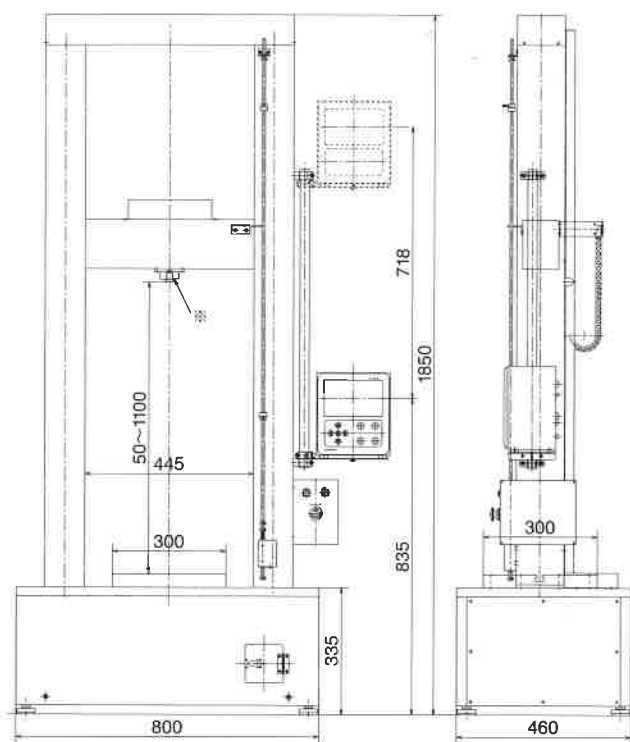


Model SDWS-0213/0513

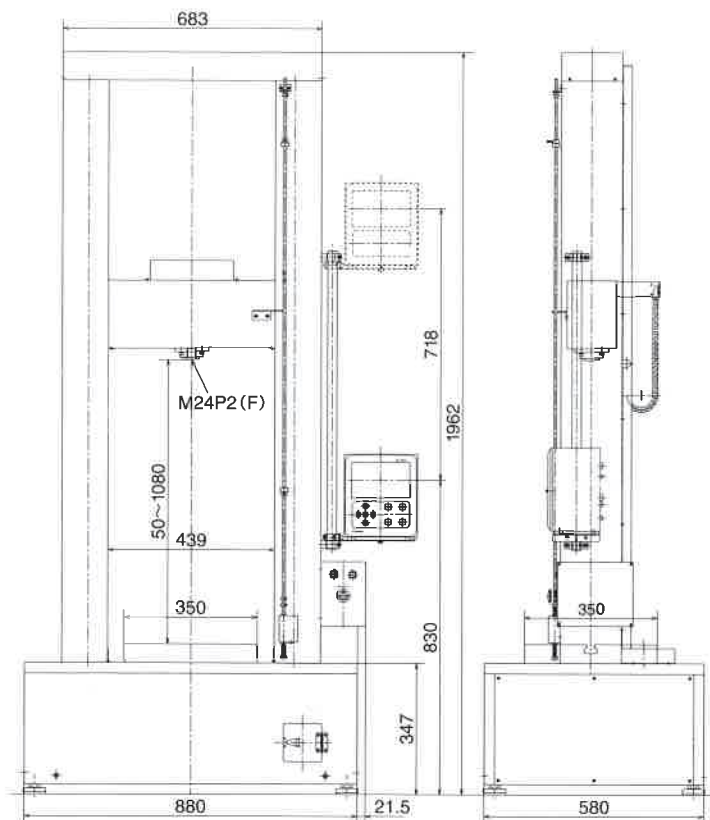


Model SDWS-1013/2013

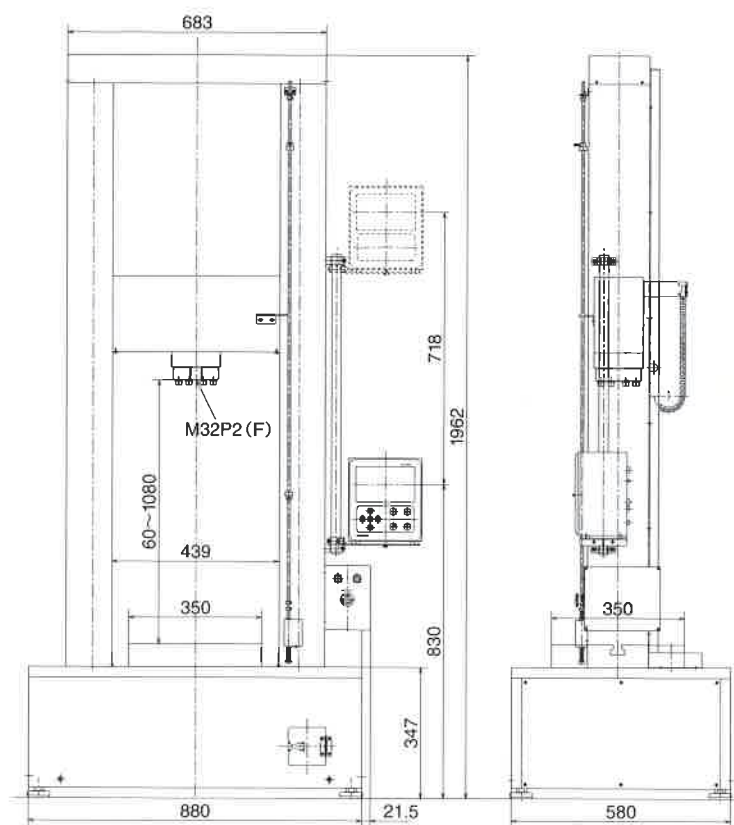
※SDW-1003: M12P1.75 (F)
SDW-2003: M16P1.5 (F)



Model SDW-1003/2003



Model SDW-5003



Model SDW-9103