# **Attachment**

# The Fixture Mounting on A Force Gauge

It helps compression/tension/peeling/coefficient of friction test and so on.

# Thread or A Test Stand Table.

### ■The Attachment Types and How to Use

IMADA attachments are separated to 2 types generally.



The mounting attachment on

force gauges.

The force gauge thread is M6 or M10 screw. The measurements are possible to mount the matching attachment on the force gauge thread.



The mounting attachment for



It is attached with test stands (except some models)



The attachment weight is applied as force. It is therefore, please choose the mounting attachments which is 10% or less of the capacity of force gauges.



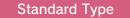
Please ask us how to use attachments before purchasing. Some sample shapes or materials are not approved for using. We help your measurements!!



Some attachments are in accordance with Japanese Industrial Standard (JIS). A force gauge or a test stand is required for measurements in accordance with JIS. Please feel free to contact us for the details. When you need other standard such as ISO or ASTM, please contact us as well

# **Included Standard Attachments**

The IMADA force gauge is including below attachments for basic compression/tension test.





# (Standard attachments for the force gauge

1000N or less capacities.) Made of Aluminum (A type) is included for the 100N or less capacity force gauge. Made of Steel is included for 200N to 1000N capacity force gauges



The including contents ZTS/ZTA General type: ①~8. ZTA/ZTS-DPU-2~500N:①~®、 DS2:①~⑥、PS/PSM:①~®、FB:①~⑥ For 1000N capacity, SR-1 is included instead of S-1.

●IMADA service group telephone number: +81(0)532-33-3288

A lot of force measurements are introduced on our website by types of force or industries. Each product specification is possible to download from the website. Please feel free to contact us.

# High Capacity Type



(Standard attachments for beyond 1000N high capacity model force gauges.)



The included contents: ZTA/ZTS-2500N/5000N:  $\bigcirc \sim$ 8. ZTA/ZTS-DPU-1000~5000N:①~6,PSH:①~8

http://www.forcegauge.net/en/

# **Attachments for Compression Test**

Fixtures for varieties of compression test such as durability tests, bending tests, sticking tests.

(Compression Test for Small Spots)

PG-2/3/4/5

Ideal for small sample compressions and intrusion tests.



Models	PG-2	PG-3	PG-4	PG-5
Capacity(N)	100	100	200	200
External diameter(mm)	Approx. φ2	Approx. φ3	Approx. φ4	Approx. φ5
Weight(g)	Approx.2	Approx.3	Approx.4	Approx.5
Mounting screw		(V	6)	

(Sticking Test Fixture)

### TKS-20N/250N



Models	TKS-20N	TKS-250N
Capacity(N)	20	250
Pin diameter(mm)	Approx. φ 1	Approx. φ 1
Pin weight(g)	Approx.22.2(Pin+Pin vice)	Approx.16
Mounting screw	M	<b>3</b>

It is in accordance with JIS Z 1707(1998)

### (Bending Test Fixture)

# GA-10N/5000N



Wire net Ply wood board Ceramic

Models	GA-10N	GA-5000N
Capacity(N)	500	5000
Weight(g)	Force gauge side: Approx. 100	Force gauge side: Approx. 120
Mounting screw	M6	M10

(Durability Test Fixture)

# PR-500N/2500N

Ideal for durability tests for retort pouch, heat sealed packages, box and so on.





	The test example of cardboard box durability test with PR-2500N.			
PR-500N		PR-2500N		
500		2500		
94XD120XH105		W200XD140XH105		
ce gauge side: Approx.900		Force gauge side: Approx.3100		
		)		

PR-2500N: Partly in accordance with JIS Z 0238(1998)

(Compression Test Fixture)

A-40/60, S-40/60

 $\label{thm:continuous} \mbox{Ideal for crashing test.} \\ \mbox{Type A made of aluminum and Type S made of steel.}$ 

Especially, Type A is suitable for low capacity force gauges.

Models A-40 A-60 S-40 S-60 200 200 500 ) φ40 φ60 φ40

**UR-8S/8M** 

Hemisphere compression test fixture made of urethane. It helps touching test with the hardness and the elasticity.

(Compression Test Fixture)



Switch Electrical Touch panel

Models	UR-8S	UR-8M
Capacity(N)	50	50
Weight(g)	Approx.5.4	Approx.5.2
Hardness	ShoreA50	ShoreA40
	Hardness like eraser	Hardness like rubber ball for base ball
Mounting scraw	<i>A</i>	6

\* Please note the fixture does not react to capacitance touch panels

(High Capacity Compression Test Fixture[Disc type])

# PC series

Ideal for high capacity compression/ breaking test

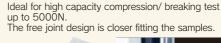


Plastic		compression strengt	h test with PC-5060
Models	PC-5040	PC-5060	PC-5100
Capacity(N)	5000	5000	5000
External diameter(mm)	φ40	φ60	φ100
Neight(g)	Approx. 160	Approx.330	Approx.820
Mounting scraw		<b>M10</b>	

High Capacity Compression Test Fixture[Rectangle type]

# **SQ** series

Cushioning Cushion Tablet





Models	SQ-5030	SQ-5075	SQ-5150
Capacity(N)		5000	
寸法(mm)	30X20	75X50	150X100
Weight(g)	Approx.65	Approx.500	Approx. 1560
Mounting screw		M10	

High Capacity Compression Test Fixture[Spherical type]

# SP series

Ideal for high capacity compression/ breaking test



Models	SP-5010	SP-5020	SP-5030
Capacity(N)		5000	
External diameter(mm)	φ10	φ20	φ30
Weight(g)	Approx.26	Approx.55	Approx.135
Mounting screw		M10	

The grips are used for varieties of tensile test such as tearing tests, breaking tension test.

Film Grip

**FC** series

Ideal grips for gripping thin samples like film. The single side of grip of FC-21U/41U/21UQ is attached urethane. The grips can tightly hold the samples without the breakings. FC-21UQ is lever type. It makes easy to grip samples.





					•	
Models	FC-21	FC-20	FC-40	FC-21U	FC-41U	FC-21UQ
Capacity(N)	250	500	500	250	250	250
Features	Light type	up to 500N	Wide type up to 500N	One side urethane	Wide grip one side urethane	One side urethane with a lever
Aperture width(mm)	Approx.20	Approx.20	Approx.40	Approx.20	Approx.40	Approx.20
Aperture opening width(mm)	Max.2	Max.2	Max.2	Max.2	Max.2	Max.0.2
Weight(g)	Approx.25	Approx.73	Approx.125	Approx.40	Approx.70	Approx.50
Mounting screw			M	6		

Wire Clamp Grip

CW-500N

The wedge type grip fixture. Easily but tightly hold wire/cable.



entative applications CW-500N



Cabl	e i	Wire	

Models	CW-500N
Capacity(N)	500
Aperture opening width(mm)	Max.5
Weight(g)	Approx.220
Mounting screw	M6

Small Grip

SC-3/8

Ideal for gripping fine samples or measuring at narrow spaces.





The test example of copper foil

Models	SC-3	SC-8
Capacity(N)	100	150
Aperture opening width(mm)	Max.1	Max.1
Weight(g)	Approx.20	Approx.21
Mounting corous		

Cam Grip

GR-30/2000

Ideal for tension measurement for thin, small and rectangle shape samples. Easy setting steps, put sample and pull the lever. It promotes measuring efficiency.



Capacity(N)

Aperture opening width(m



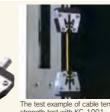


GR-30 GR-2000 Max.: Max.4 Max.3

### Wedge Grip

**KC** series

Ideal for gripping wire, cable and so on. The gripping is as easy as promoting measuring efficiency. The holding mechanism is automatically becoming strong when pulling the sample. (It is not suitable for tempered samples.) Wire Cable Optical fibercable Plastic Piece of metal



Models	KC-100	KC-1001	KC-5000
Capacity(N)	500	1000	5000
Aperture opening width(mm)	Max. 10	Max.2	Max.5
Weight(g)	Approx.330	Approx.95	Approx.565
Mounting screw	M6	M6	M10

### Pantograph Grip

**PGC** series

It is easy to hold sample like a clothespin. The holding strength becomes strong when pulling the sample. It tightly grips changeable shape samples such as rubber or resin.





Film Rubber Wire Cable Nonwoenfabric Plastic

Models	PGC-0505	PGC-0510	PGC-2530
Capacity(N)	500	500	2500
Aperture opening width(mm)	Max.20	Max.15	Max.15
Weight(g)	Approx.170	Approx.110	Approx.750
Mounting screw	_	_	<b>M10</b>

\*\*S-1 or SR-1is required when mounting PGC-0510 and 0505 on a force gauge.
\*\*PGC-AD6 is required when mounting PGC-0510 and 0505 on a test stand.

### Fine Point Chuck

FP-50/51





Textile Fur

Models	FP-50	FP-51
Capacity(N)	100	50
perture opening width(mm)	Max.0.5	Max.0.5
Weight(g)	Approx.19	Approx.8
Mounting screw	<b>U</b>	6

### Tape Grip

GC-60/100

Ideal for elastic or changeable shape samples such as rubber, film and tape. The holding strength is hardy by winding sample around the grip. It holds the sample properly.





Rubber Film

		-
Models	GC-60	GC-100
Measurable width(N)	500	500
Measurable width(mm)	Max.30	Max.50
Aperture opening width(mm)	Ma	x.2
Weight(g)	Approx.158	Approx.300
Mounting screw	(I	6

# (Wire Wrapping Grip) GC-30, WC-2000

Wind and hold line samples such as string and wire. The applied force on the sample is spread due to the winding hold. It helps to prevent sample from breaking.

Textile Wire Fur





Models	GC-30	WC-2000
Capacity(N)	500	2000
Diameter of bolt(mm)	M10	M16
Measurable line diameter(mm)	Max. φ 1	Max. φ 2
Weight(g)	Approx. 136	Approx.900
Mounting screw	M6	<b>M10</b>

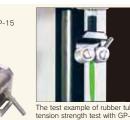
### Knurled Cam Grip

GP-15/30

Ideal for soft samples like resin becoming thin when it stretches. It reduces the sample breaking with the knurled cam style.



PGC-BC



**GP-15** GP-30 250 Max.4 Max. 10

### ( Hook for Corrugated Cardboard Adhesion Test )

Special measuring attachment for

corrugated card board opening

strength.

**DF-60** 

(Grip and Fixture for Tensile Strength Test of Sewed Buttons) BC-15/PGC-BC

Ideal for measurement of cloth button sewed strength. It is possible to grip a button up to 15 mm diameter. The measuring efficiency is board opening strength test with DF-60

improved with the simple sample mounting.

Capacity(N



BC-	-15	
	Models	BC-15
	Capacity(N)	300
	Measureable diameter(mm)	Max. φ 15
	Mascurable height(mm)	May 3.5

# Attachments for Compression and Tension Test

Convertible type attachments for compression and tension test

### Pin Grip

**CP-150N** 

CP-150N

Approx.  $\phi$  0  $\sim$ 

Approx.6

Ideal for gripping thin wire shape sample (cylindrical shape sample). Suitable for compression and tension test at a narrow space or low capacity measurements. Wire Optical fiber

Capacity(N





The test exam	ple of wire tension
strength test v	vith CP-150N

gripping a round stick shape sample. The chuck shape prevents the sample from slipping. Plastic

Jacob's Chuck

It is suitable for

Capaci Aperture op



GC-5/15

		5	tension excerption strength test with GC-
odels	GC-5		GC-15
ity(N)	500		1000
pening width(mm)	Approx. φ 0.5~6.5		Approx. φ 2.0~13
t(g)	Approx.235		Approx.500
ina screw	M	6	

### Flat Chuck

GC-1100/1200/5000

The large opening width chuck fixtures. They can grip varieties of thickness. Thin things and thick things are able to be gripped.

# Connector Cable Fastener Booklet Plastic Piece of metal

GC-1100 GC-1200 GC-5000 Capacity(N) Max.2

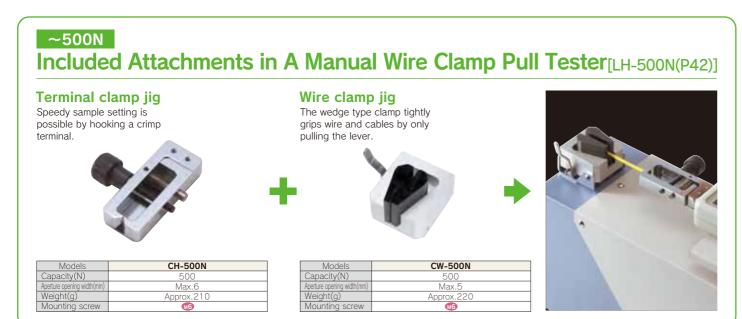




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# Attachments for Wire Harness Test

It can be used as a simple harness tester to combine a force gauge, a test stand and attachments for wire harnesses. The combinations are available for various size harnesses.



### ~1000N

# **Attachments for Vertical Test Stands**

### Rotary wire terminal jig It is approved for sample diameters



Models	FW-12
Capacity(N)	1000
Measureable diameter(mm)	φ1~8
Weight(g)	Approx.380

### Wire clamp jig Knurled cam grip. It prevents

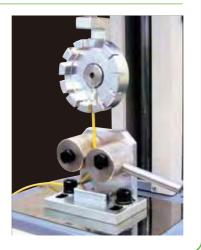
Wire clamp jig

coating breaking

The reduced design for wire



GP-30
1000
Max.10
Approx.880



### ~5000N

# **Attachments for High Capacity Measurements**

### Wire terminal jig

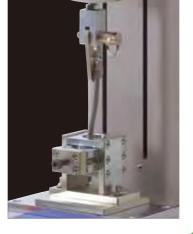
It is approved for terminal hole inside diameters from \$\phi 4\$ to φ12



Models	CH-5000N
Capacity(N)	5000N
Measureable diameter(mm)	φ4~12(Internal diameter of the terminal hole)
Weight(g)	Approx.315
Mounting screw	<b>M</b> 0

When using CH-5000N and CW-5000N together ,the measurement is partly in accordance with JIS C 2805 (2010)





# **Attachments for Peeling Test**

Peeling strength tests (adhesive strength tests) for sticky tapes and coating surfaces.

### 45 Degree Peel Test Fixture

P45-50N

Ideal for peeling test of cup container film covers. It keeps the peeling degree at 45 degree which is almost same as opening a cup container.





Models	P45-50N
Capacity(N)	50
Measurable size(mm)	Height: Approx. 10~100 Diameter: Approx. 20~140
Chuck opening width(mm)	Max.2
	Max.2 :: with JIS \$ 002(2001).

### (180 Degree Peel Test Fixture) P180-200N

Ideal for 180 degree peeling test for adhesive tape and so on.





### (90 Degree Peel Test Fixture) P90-200N/200N-EZ

Ideal for 90 degree peeling test for adhesive tape and so on. P90-200N keeps the peeling degree at 90 degree. The moderated price model is P90-200N-EZ.

Adhesive tape Copper foil Magnetic card Poultic



NC	100 10
7	
,	The test example of adhesive tape peeling strength test at 90 degree with P90-200N

Models	P90-200N	P90-200N-EZ
Measurable force(N)	~200	0.4~200
Measurable size(mm) Length: Max. 155 Width: Max. 80		
P90-200N is partly in accordance with JIS Z 0237(2009) and JIS C 5016(1994)		

### Rubber Roller for Peel Test ) APR-97

It helps more accurate peeling test by applying stable pressure to stick samples.





Models	APR-97
The roller weight(g)	Approx.2000
The sample contacting part material	Rubber(Hardness A80)

### Coating Surface Peeling Test Attachment

TH-1000N/5000N

It is ideal for peeling test of coating surfaces. It is including 5 peeling heads. Painted surface

Models		TH-1000N	TH-5000N
Capacity(N)		1000	5000
Upper fixture	Adhesive area shape	Diameter20mm	Diameter20mm
	Weight (g)	Approx.90	Approx.195
side)	Mounting screw	<b>M6</b>	<b>W10</b>
Lower fixture	The center hole diameter (mm)	Diameter30	Diameter30





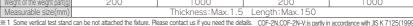
# Attachments for Coefficient of Friction

The included software automatically calculates Coefficient of Kinetic friction and coefficient of Static friction and draws graphs.

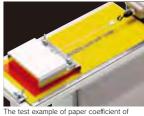
ORepresentative applications Paper Film Panel

It is partly in accordance with JIS Z 5600-5-7(1999)





COF-2N-V COF-10N-V



The test example of paper coefficient of friction test with COF2-10N

### Fixture for Shear Test

Fixture Set of Shear Test

The fixture set for shear test of QFP lead and chip components The X-Y stage can set the test position precisely



Models	LF		
The set content	For QFP lead strength test: 1) Hook attachment / QFP-45-1 (2) 45 degree table/QFP45-2		
	For soldered chip shearing test: 390 degree chip shear attachment/TIP90-1 490 degree table/TIP90-2		
	For QFP lead strength test and soldering shearing test: 6XY table/QFP-1		
Capacity(N)	100		
Table dimensions	Table dimensions 200X150		
Weight(g)	①QFP45-1: Approx.60g ③TIP90-1: Approx.50g		
It is in accordance with IIS 7 3198-6(2003), IIS 7 3198-7(2003)			

Chip Peeling Fixture

GT-10/20



Models GT-20 Applying force

# Other Attachments

Vice Grip

GT-30/2000N

It is possible to fix a sample by mounting on a vertical type test stand.





Models	GT-30	GT-2000N
Capacity(N)	1000	2000
Aperture opening width(mm)	Max.38	Max.64
Mountina	to Test st	and table

### XY-500N XY Table

It makes a sample put at the center with precise adjustment for X direction and Y direction.



Models	XY-500N
Capacity(N)	Tension:500 Compression:1000
X-Y movement amount	±30
Mounting	to Test stand table

### Optional Handle for Force Gauge FOH-1

It can mount on a force gauge with screws. It enables to apply stable force by mounting on a force gauge.



Models	FOH-1
Compatible model	1000N or less range of ZTA/ZTS/DS2/PSS/PS/PSM/FS/FB series
Weight(g)	Approx.500

Self-centering Vice Grip GTW-50R/50L

Self-centering vice when gripping a sample. High operability knob type and strong holding lever type.





Models	GTW-50R	GTW-50L
type	Knob type	Lever type
Capacity(N)	500	1000
Aperture opening width(mm)	Max	.68
Mounting	to Test st	and table

### T-Slot Table

**TS-5000N** 

The attachment for holding fixture. It can easily be attached and removed fixtures.



Models	TS-5000N
Capacity(N)	5000
Diameter of T-nut hole	M8
The space between T-nuts	Max.125
Movement amount(mm)	X:±64 Y:±15
Mounting	to Test stand table

Attachment Adapter ) JF/EJ series

The mounting adapter for grip type attachment for tension test. They helps smooth sample fixation and precise adjustments of gripping positions and angle.



Models	JF6-50N	EJ6-1000N	EJ10-5000N
Capacity(N)	50	1000	5000
Mounting screw for a force gauge	_	M6	M10
Mounting screw for a chuck fixture	M6	M6	M10
Weight(g)	Approx.8	Approx.29	Approx.140

\*\*Please contact us the detail that which attachment is available.
\*\*A-1/S-1/SR-1 is required for attaching JF6-50N to mount on a force gauge

## **Conversion Adapter**

**CA** series

The screw diameter of test shafts mounting attachments is different by force gauges. The conversion adopter enables to mount various attachments.

Models	Screw diameter	Capacity	Purpose
CA-F6T4	M6(Female Screw)→M4	100N	When mounting a M4 screw attachment of FRT to a M6 screw thread of a force gauge.
CA-F6T10	M6(Female Screw)→M10	500N	When mounting a M10 screw attachment to a M6 screw thread of a force gauge.
CA-F10T6	M1O(Female Screw)→M6	500N	When mounting a M6 screw attachment to a M10 screw thread of a force gauge.
CA-F4T6	M4(Female Screw)→M6	100N	When mounting a M6 screw attachment to FRT series.
CA-F5T4	M5(Female Screw)→M4	100N	When mounting a M4 screw attachment to a M5 screw thread of Load cell LMU series.
CA-F5T6	M5(Female Screw)→M6	500N	When mounting a M6 screw attachment of FRT series to a M5 screw thread of a load cell LMU series.
CA-8T4	M8→M4	100N	When mounting a M4 screw attachment of FRT series to M8 screw thread of a load cell LU series. **It does not mount to a T nut.
CA-8T6	M8→M6	500N	When mounting a T nut / M8 screw thread of load cell LU series to M6 screw attachment.
CA-8T10	M8→M10	2000N	When mounting a T nut / M8 screw thread of load cell LU series to M10 attachment.



# Eye Bolt and Eye Nut for Load Cells

Hoisting attachment for tension test by mounting on load cells.

### for Load Cell DPU series

### Eye Bolt )

EB series

It makes a sample or a load cell hang by catching a hook, chain, rope and so on Models EB-500N-M6 EB-2000N EB-20kN



### for Load Cell LU series

Eye Bolt

**EB-500N-M8** 

It makes a sample or a load cell hang by

atering a ricert, criain, repe and ce em		
Models	EB-500N-M8	
Compatible load cell	LU series	
Capacity(N)	500	
Weight(g)	Approx.39	
Mounting screw	M8 Male Screw	



### Rod End[for shafts]

RE-20kN

### Use by getting through a shaft.

Models	RE-20kN
Compatible load cell	DPU-10kN, DPU-20kN
Capacity (kN)	20
Weight(g)	Approx.300
Mounting screw	M18 Male Screw



### for Load Cell LMU series

Eye Nut

**EN-500N** 

### It makes a sample or a load cell hang by

catching a floor, chair, tope and so on.		
	Models	EN-500N
	Compatible load cell	LMU series
	Capacity(N)	500
	Weight(g)	Approx.11
	Mounting screw	M5 Female Screw



# **Custom Order Examples**

# 1. Size Change of Regular Size Attachment

[Example. GC-1200 series Length change of grip part]

It is possible to change the sample grip width and length.

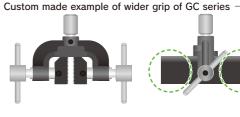


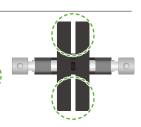
[Standard]



The size change is available for compression attachment PR series,

Film grip FC series and others. Please contact us if need the details.





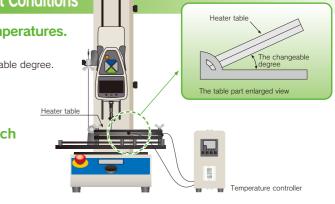
# 2. Specification Change of A Variety of Measurement Conditions

Condition change for the measuring angles and temperatures. [Example: Specification change of peeling test fixture]

The peeling degree can be changed from the fixed one degree to changeable degree. Besides, it is possible to heat the test stand table by combing a heater.

Measurements in accordance with standards such as Japanese Industrial Standard, ISO or ASTM.

The testers which is approved for measuring conditions of standards ( measuring speed / fixture design and so on) can be made.



# 3. Completely Original Product

### [Example: Cork excerption measuring unit]

We accept to make the special use fixture for your sample. Improve the measuring repeatability and efficiency.



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