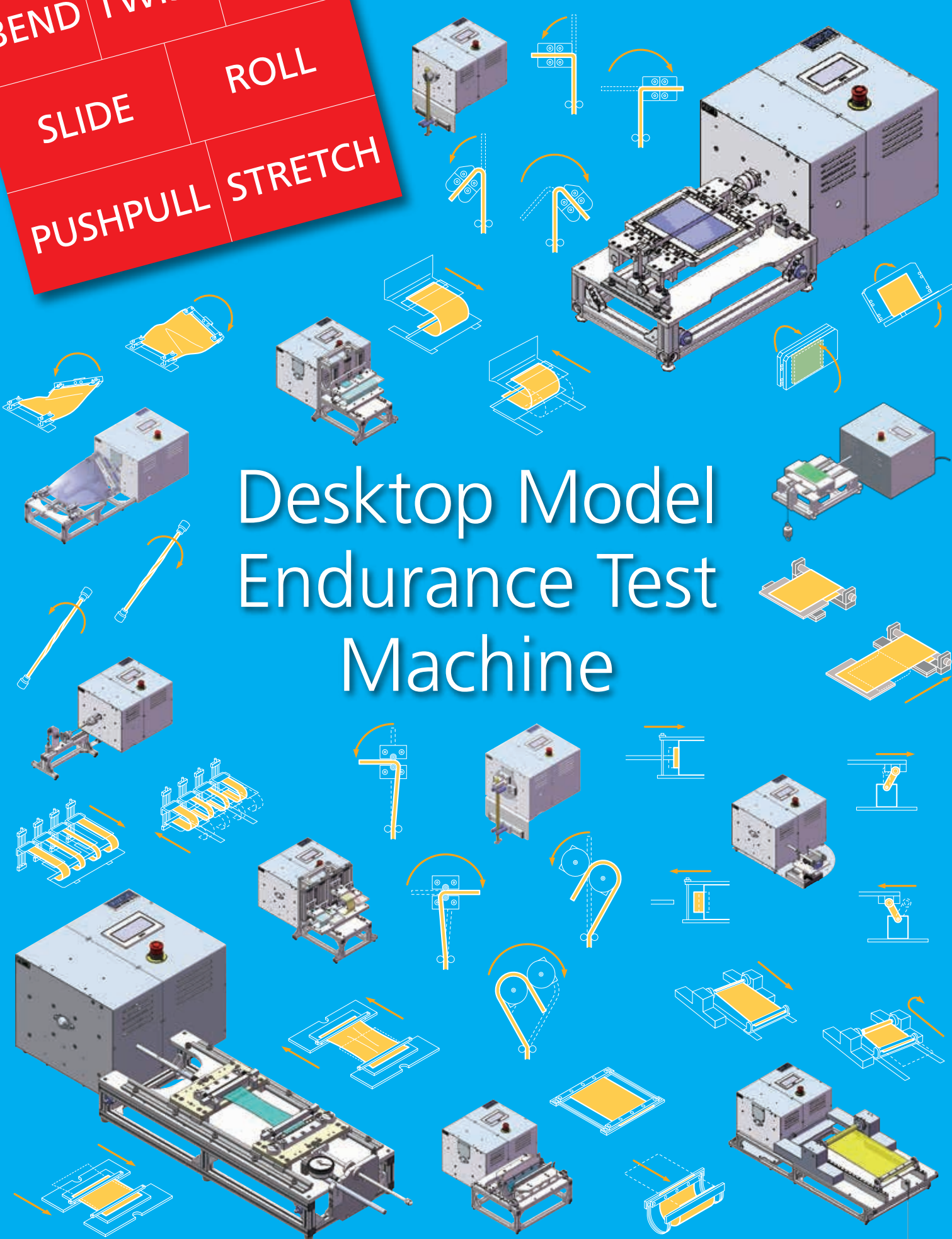


7 Basic Motions

BEND	TWIST	FOLD
SLIDE	ROLL	
PUSH/PULL	STRETCH	

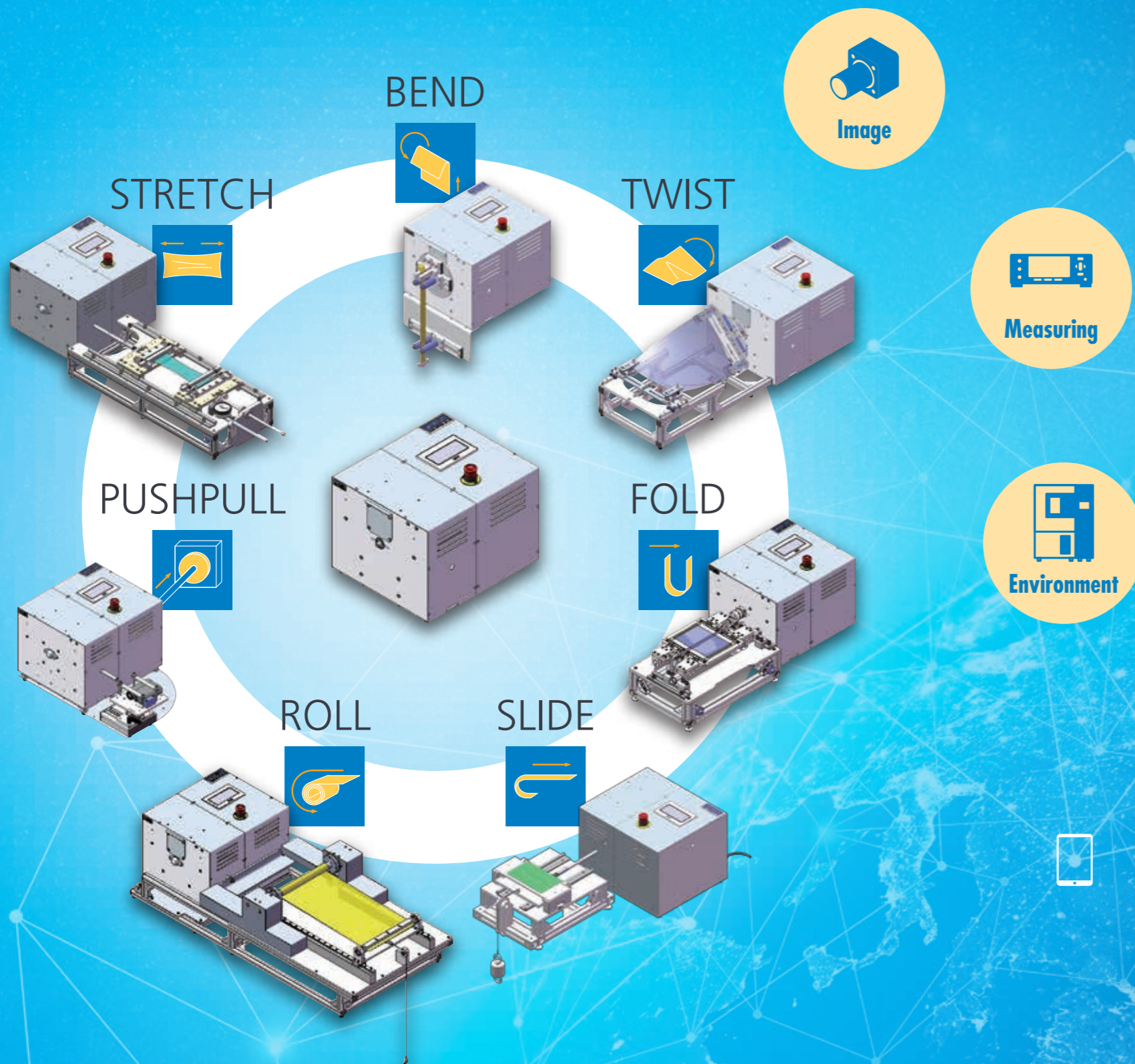


# Desktop Model Endurance Test Machine

# A Wide Range of Endurance Tests with Our Smaller Machine

## Desktop Model Endurance Test Machine

We can do various tests by changing the test jig. This machine is quiet and space-saving design.



## FlexData

Certification

Storage

Analytics

Experiment planning

Data management






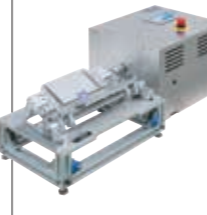


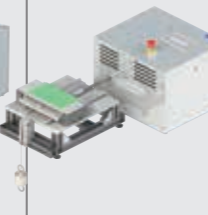
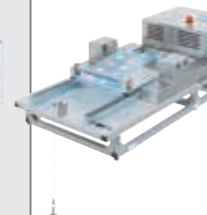

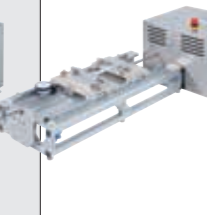
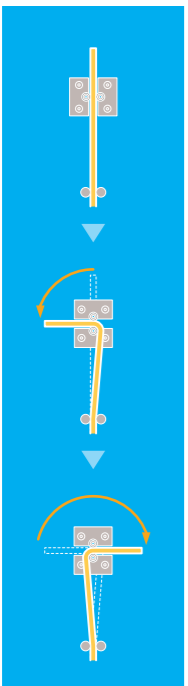
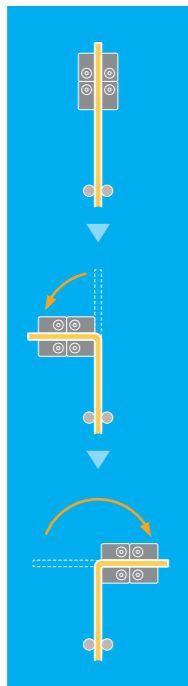
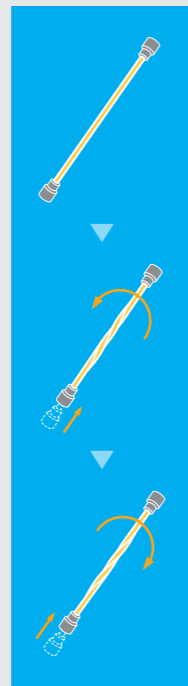
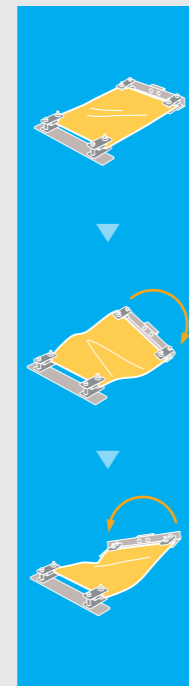

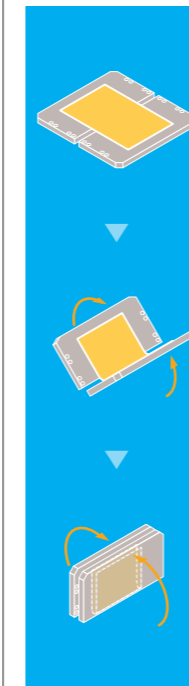
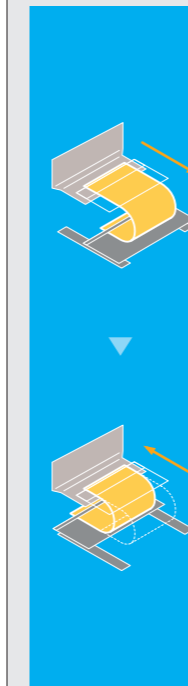
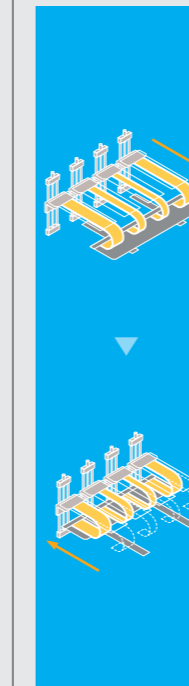
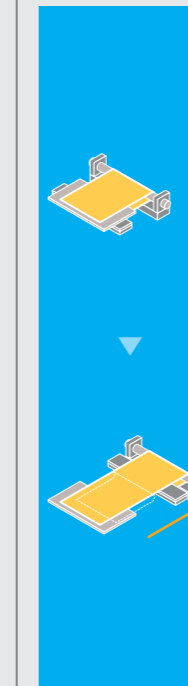
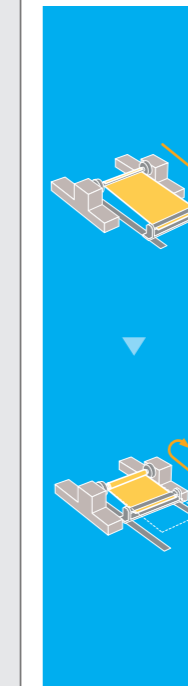
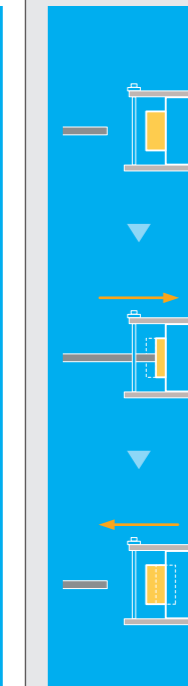
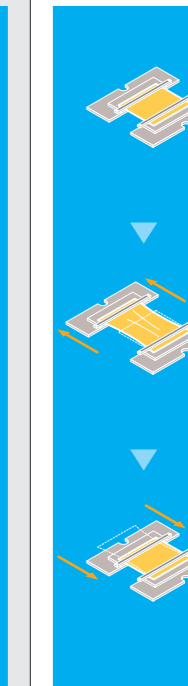
Get data in real time, from anywhere in the world.

New platform "FlexData" enables the users to monitor testing data in real time from anywhere in the world, moreover to analyze or save the data, and also to program the test or the measure on the cloud.

# Basic Motions

Yuasa's Desktop Model Endurance Test Machines provide  
**7 Basic Motions**



BEND		TWIST		FOLD		SLIDE			ROLL	PUSHPULL	STRETCH
DMLHB-P150	DMLHB-C4BR DMLHB-C2BR DMLHB-C1BR	DMLHB-TW	DMLHB-FT	DMLHB-FS DMLHB-FS-C	—	DMLHB-FU	DMLHB-4U	DMLHB-SU	DMLHB-FR	DMLHB-PP	—
DMLHP-P150	DMLHP-C4BR DMLHP-C2BR DMLHP-C1BR	DMLHP-TW	DMLHP-FT	DMLHP-FS DMLHP-FS-C	DMLHP-CS	DMLHP-FU	DMLHP-4U	DMLHP-SU	DMLHP-FR	DMLHP-PP	DMLHP-ST
—	—	DMLHPR-TW	—	—	—	—	—	—	—	—	—
Bending Test P150 Type (ø150 Faceplate)	Bending Test CBR Type (Centripetal Clamp Faceplate)	Twisting Test TW Type	Twisting Test FT Type	Folding Test FS / FS-C Type	Folding Test CS Type	Sliding Test FU Type (1-lane)	Sliding Test 4U Type (4-lane)	Sliding Test SU Type	Rolling Test FR Type	Pushing / Pulling Test PP Type	Stretching Test ST Type
											
<b>P150</b>	<b>CBR</b>	<b>TW</b>	<b>FT</b>	<b>FS</b>	<b>CS</b>	<b>FU</b>	<b>4U</b>	<b>SU</b>	<b>FR</b>	<b>PP</b>	<b>ST</b>
											
p. 05	p. 07	p. 09	p. 11	p. 13	p. 15	p. 17	p. 19	p. 21	p. 23	p. 25	p. 27

# BEND



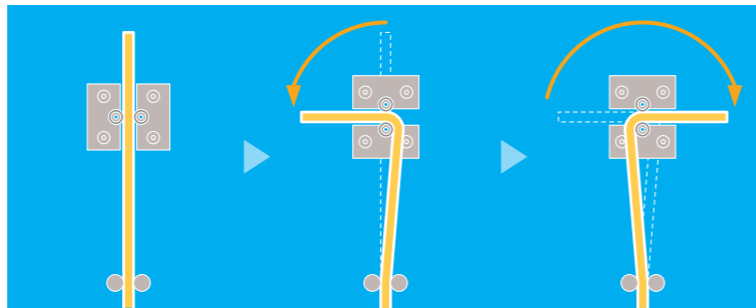
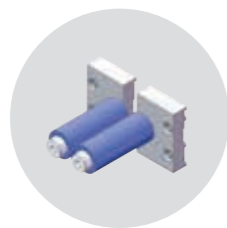
**SMALL** DMLHB-P150 / DMLHP-P150  
 Desktop Model Endurance Test Machine  
 Bending Test P150 Type (ø150 Faceplate)

Using an object such as cable, harness, element wire and fine line as well as belt-shaped objects up to 30mm in width, various bending tests are conducted quickly and easily.

## Attachment (Test Jig)

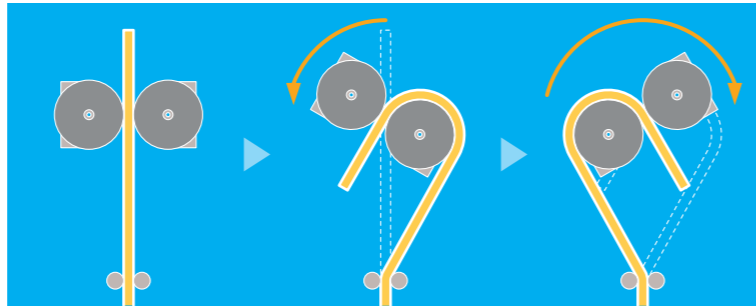
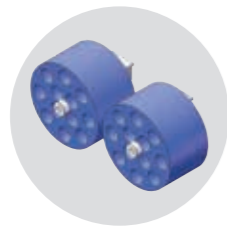
### Bend Radius: 10mm (Accessory)

A two-piece set of bend radius jig (mandrel) holds a test piece and bend it.



### Bend Radius: 40mm (max.)

Maximum bending radius is R40mm, operating range is up to ±180°.



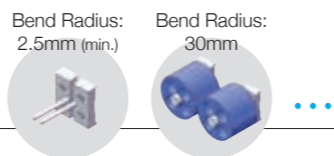
### Test Pieces

- Linear Test Piece ... »Cables (Electric Wires, Optical Fibers) »Harness »Cable Guides »Tubes »Wires »Fibers
- Planar Test Piece ... »Flexible Displays »Organic Electroluminescence Devices »Barrier Film »Flexible Printed Circuits »Flat Cables

### Notes

- »CE Marking

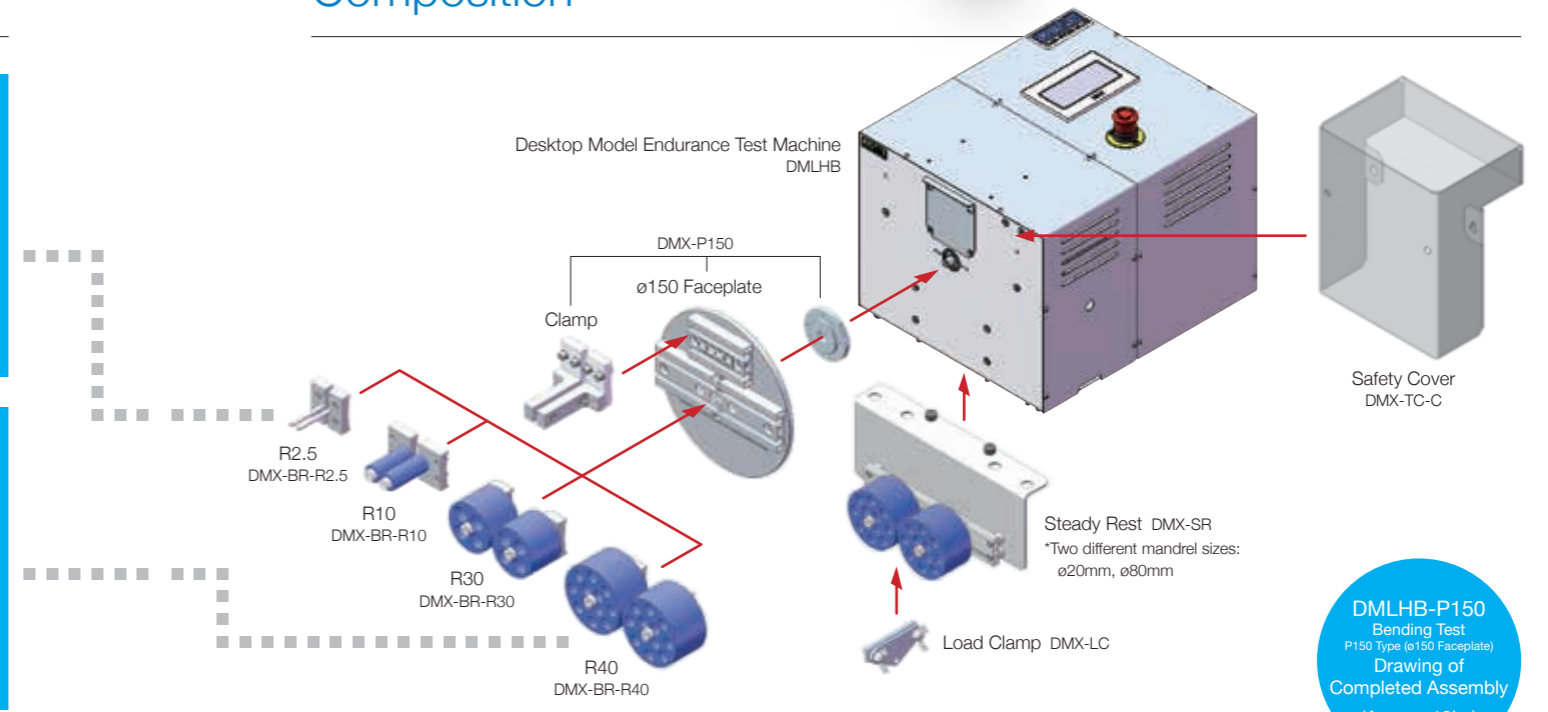
It is possible to change the bend radius from 2.5mm - 40mm.



**Web**  
 Please check the latest specification on the web.  
<https://www.yuasa-system.jp/en>  
 MODELS

You can download the specification. If you have any question, please ask us.

## Composition



### A wide range of bending tests confirming to JIS

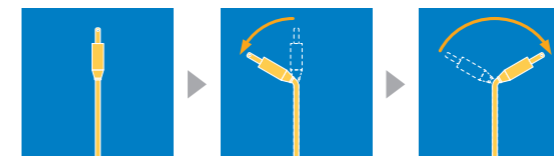
Based on JIS, this machine offers many different tests such as cable tests using weights. Moreover, belt-shaped objects like FFCs and FPCs up to 30mm in width will be tested.

### Free bending angle up to ±180°

A test piece and operating angle determine an operating angle. (ex. ø2mm Copper Wire : ±90° → 120r/min / ±180° → 60r/min)

### Connector test without bending radius

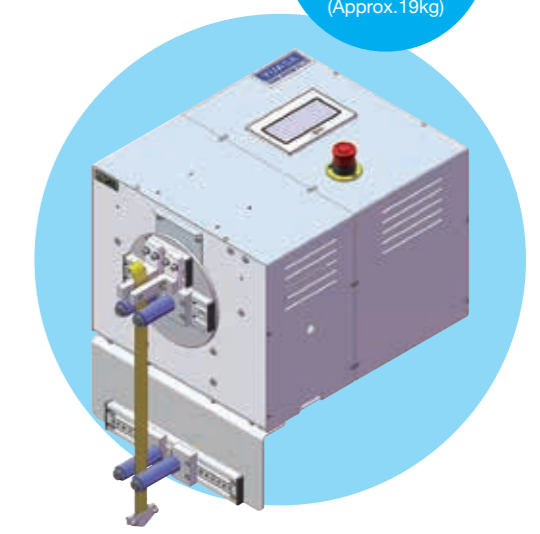
Please ask us about the clamp jig.



\*Refer to p.29 regarding the driving specification.



DMLHP-P150



A safety cover is available for the flexible area as an option. No weights are included.

BEND  
 Bending Test  
 P150 Type (ø150 Faceplate)  
 TWIST  
 Twisting Test  
 FOLD  
 Folding Test  
 SLIDE  
 Sliding Test  
 ROLL  
 Rolling Test  
 PUSH/PULL  
 Pushing / Pulling Test  
 STRETCH  
 Stretching Test  
 Specifications of Base Unit

# BEND



**SMALL** Desktop Model Endurance Test Machine

DMLHB-C4BR / DMLHP-C4BR (4R-block)  
 DMLHB-C2BR / DMLHP-C2BR (2R-block)  
 DMLHB-C1BR / DMLHP-C1BR (1R-block)

Bending Test CBR Type (Centripetal Clamp Faceplate)

With an effective combination of the clamp and bending radius blocks(R-block), a wide range of bending tests will be performed.

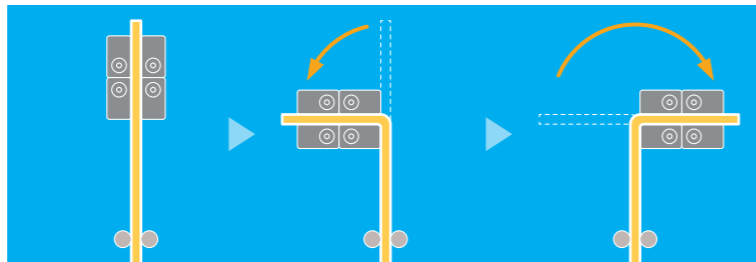
This machine is made for testing in smaller bend radii. There are some objects that can be tested with conventional mandrels.

## Attachment (Test Jig)

Bending block is usable as clamp.

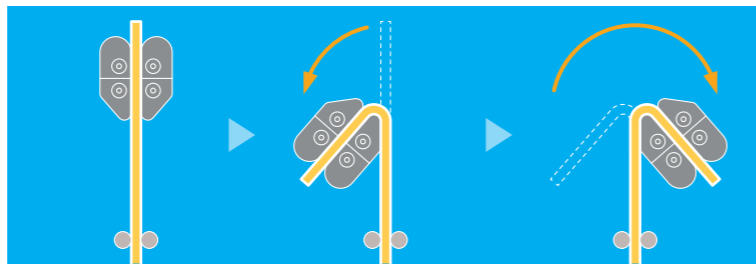
### 4R-block

Operating Range :  
 up to  $\pm 90^\circ$   
 Requirements for  
 R-Adjustment :  
 up to R10mm (Free  
 setting per R0.5mm)



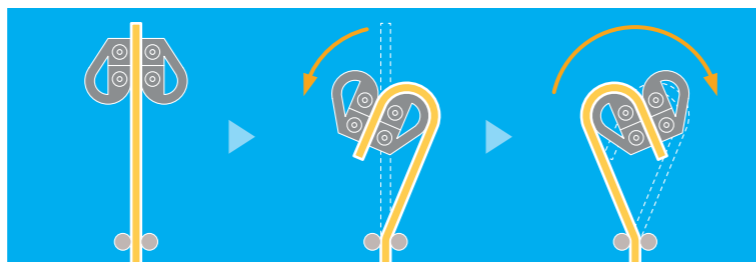
### 2R-block

Operating Range :  
 up to  $\pm 135^\circ$   
 Requirements for  
 R-Adjustment :  
 R10 mm (Fixed),  
 and up to R11mm  
 (Free setting per  
 R0.5mm)



### 1R-block

Operating Range :  
 up to  $\pm 180^\circ$   
 Requirements for  
 R-Adjustment :  
 R10 - 50mm (Free  
 setting per R5mm)



### Test Pieces

- » Linear Test Piece ... »Cables (Electric Wires, Optical Fibers) »Harness »Cable Guides »Tubes »Wires »Fibers
- » Planar Test Piece ... »Flexible Displays »Organic Electroluminescence Devices »Barrier Film »Flexible Printed Circuits »Flat Cables

### Notes

- »CE Marking

### Web

Please check the latest specification on the web.

<https://www.yuasa-system.jp/en>

MODELS

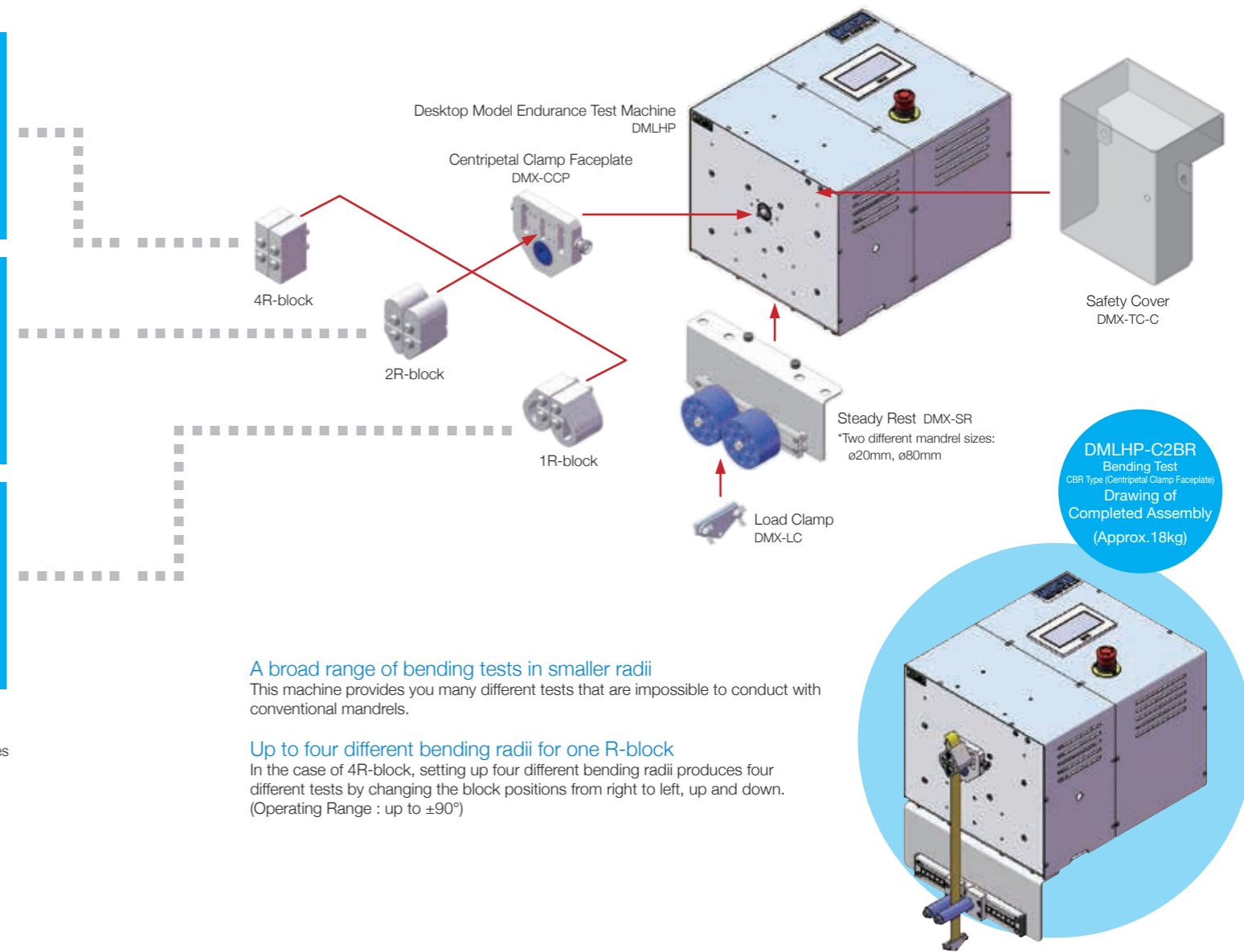


You can download the specification. If you have any question, please ask us.



DMLHB-C2BR

## Composition



### A broad range of bending tests in smaller radii

This machine provides you many different tests that are impossible to conduct with conventional mandrels.

### Up to four different bending radii for one R-block

In the case of 4R-block, setting up four different bending radii produces four different tests by changing the block positions from right to left, up and down. (Operating Range : up to  $\pm 90^\circ$ )

DMLHP-C2BR  
 Bending Test  
 CBR Type (Centripetal Clamp Faceplate)  
 Drawing of  
 Completed Assembly  
 (Approx. 18kg)

A safety cover is available for the flexible area as an option.  
 No weights are included.

\*Refer to p.29 regarding the driving specification.

BEND  
 Bending Test  
 CBR Type (Centripetal Clamp Faceplate)

TWIST  
 Twisting Test

FOLD  
 Folding Test

SLIDE  
 Sliding Test

ROLL  
 Rolling Test

PUSH/PULL  
 Pushing / Pulling Test

STRETCH  
 Stretching Test

Specifications of  
 Base Unit

# TWIST



**SMALL**

DMLHB-TW / DMLHP-TW / DMLHPR-TW

Desktop Model Endurance Test Machine

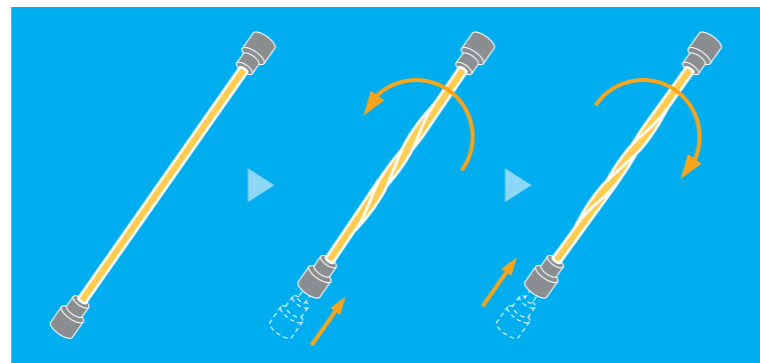
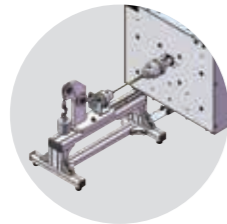
Twisting Test TW Type

This machine offers profitable tests for linear objects like cables and fibers.

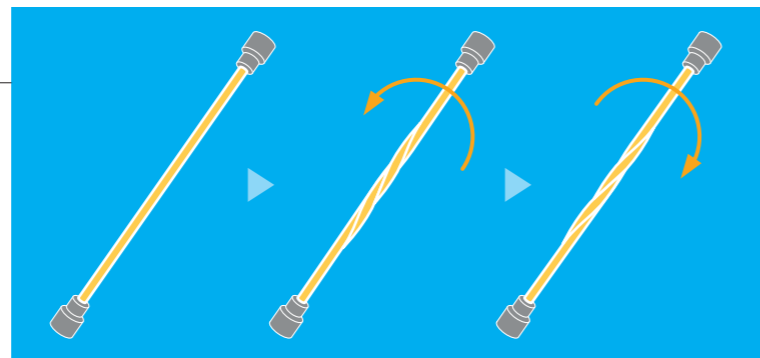
## Attachment (Test Jig)

### Twisting Test Jig

Holding a test piece with the chuck jig, the output axis twists one end of the object while the jig frame secures the other end.



Not following



#### Test Pieces

• Linear Test Piece ... »Cables (Electric Wires, Optical Fibers) »Harness »Cable Guides »Tubes »Wires »Fibers

#### Notes

»CE Marking

#### Web

Please check the latest specification on the web.

<https://www.yuasa-system.jp/en>

MODELS

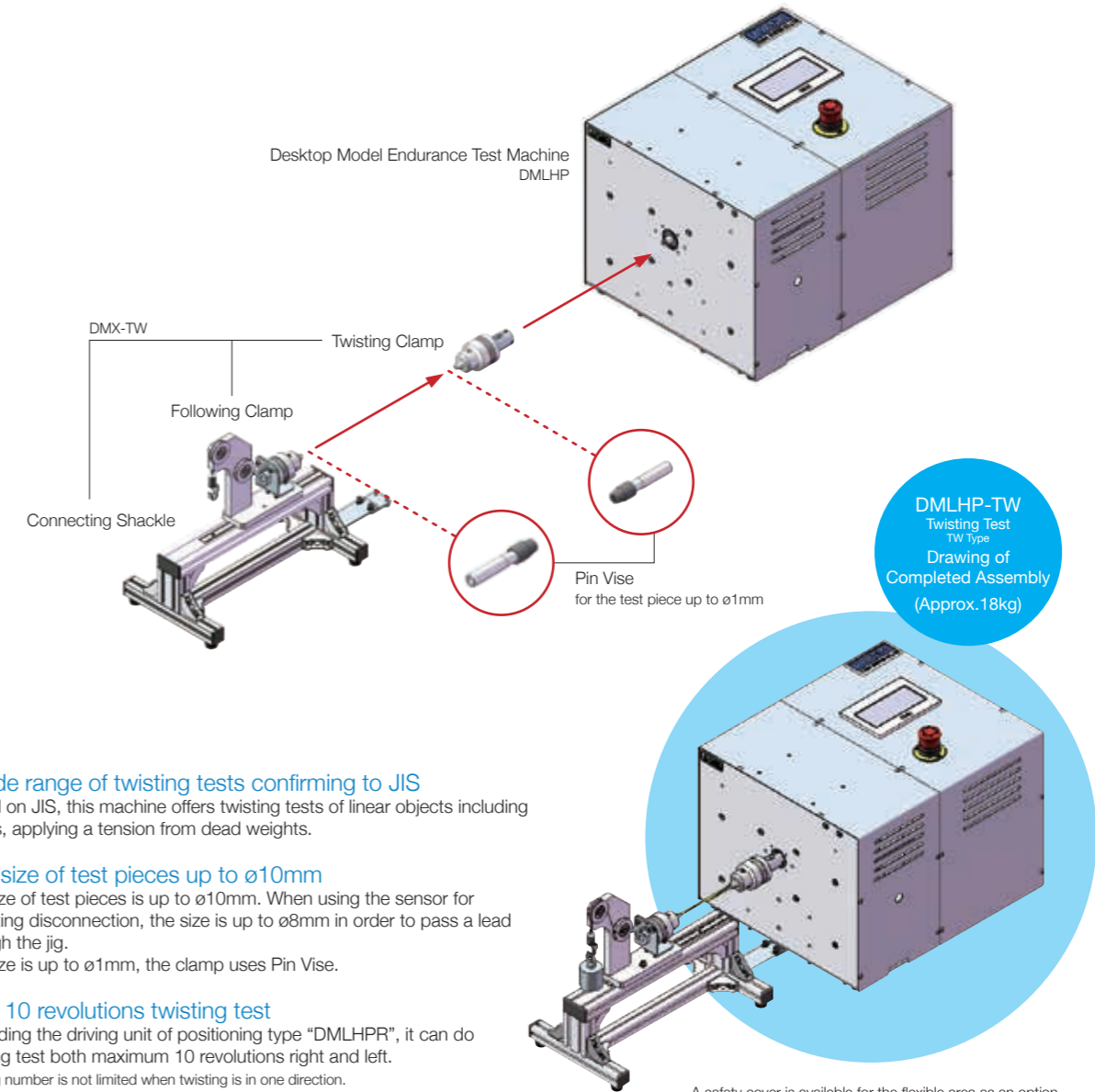


You can download the specification. If you have any question, please ask us.



DMLHB-TW

## Composition



DMLHP-TW  
Twisting Test  
TW Type  
Drawing of  
Completed Assembly  
(Approx. 18kg)

### A wide range of twisting tests confirming to JIS

Based on JIS, this machine offers twisting tests of linear objects including cables, applying a tension from dead weights.

### Free size of test pieces up to ø10mm

The size of test pieces is up to ø10mm. When using the sensor for detecting disconnection, the size is up to ø8mm in order to pass a lead through the jig. The size is up to ø1mm, the clamp uses Pin Vise.

### Both 10 revolutions twisting test

Regarding the driving unit of positioning type "DMLHPR", it can do twisting test both maximum 10 revolutions right and left. Twisting number is not limited when twisting is in one direction.

\*Refer to p.29 regarding the driving specification.

A safety cover is available for the flexible area as an option.  
No weights are included.

BEND  
Bending Test

TWIST  
Twisting Test  
TW Type

FOLD  
Folding Test

SLIDE  
Sliding Test

ROLL  
Rolling Test

PUSH/PULL  
Pushing / Pulling Test

STRETCH  
Stretching Test

Specifications of  
Base Unit

# TWIST



SMALL

DMLHB-FT / DMLHP-FT

Desktop Model Endurance Test Machine

Twisting Test FT Type

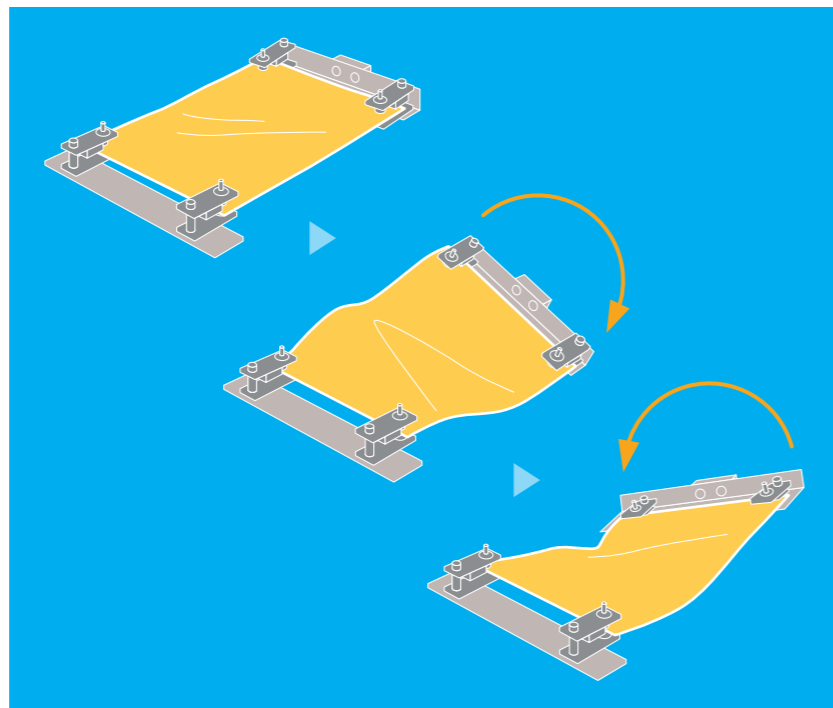
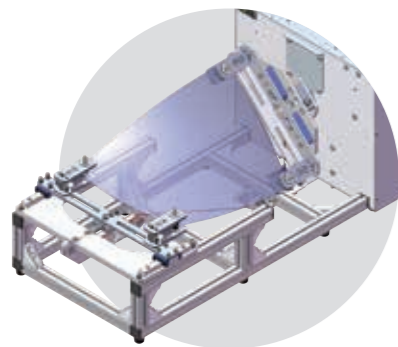


This machine realizes profitable tests for planar objects like flexible displays.

## Attachment (Test Jig)

### Twisting Test Jig

Holding a test piece with the clamp jig, the output axis twists one edge of the object while the jig frame clamp secures the other edge.



- Test Pieces
  - Planar Test Piece ...
  - Flexible Displays
  - Organic Electroluminescence Devices
  - Barrier Film
  - Flexible Printed Circuits
  - Flat Cables
- Notes
  - CE Marking

Web <https://www.yuasa-system.jp/en>

Please check the latest specification on the web.

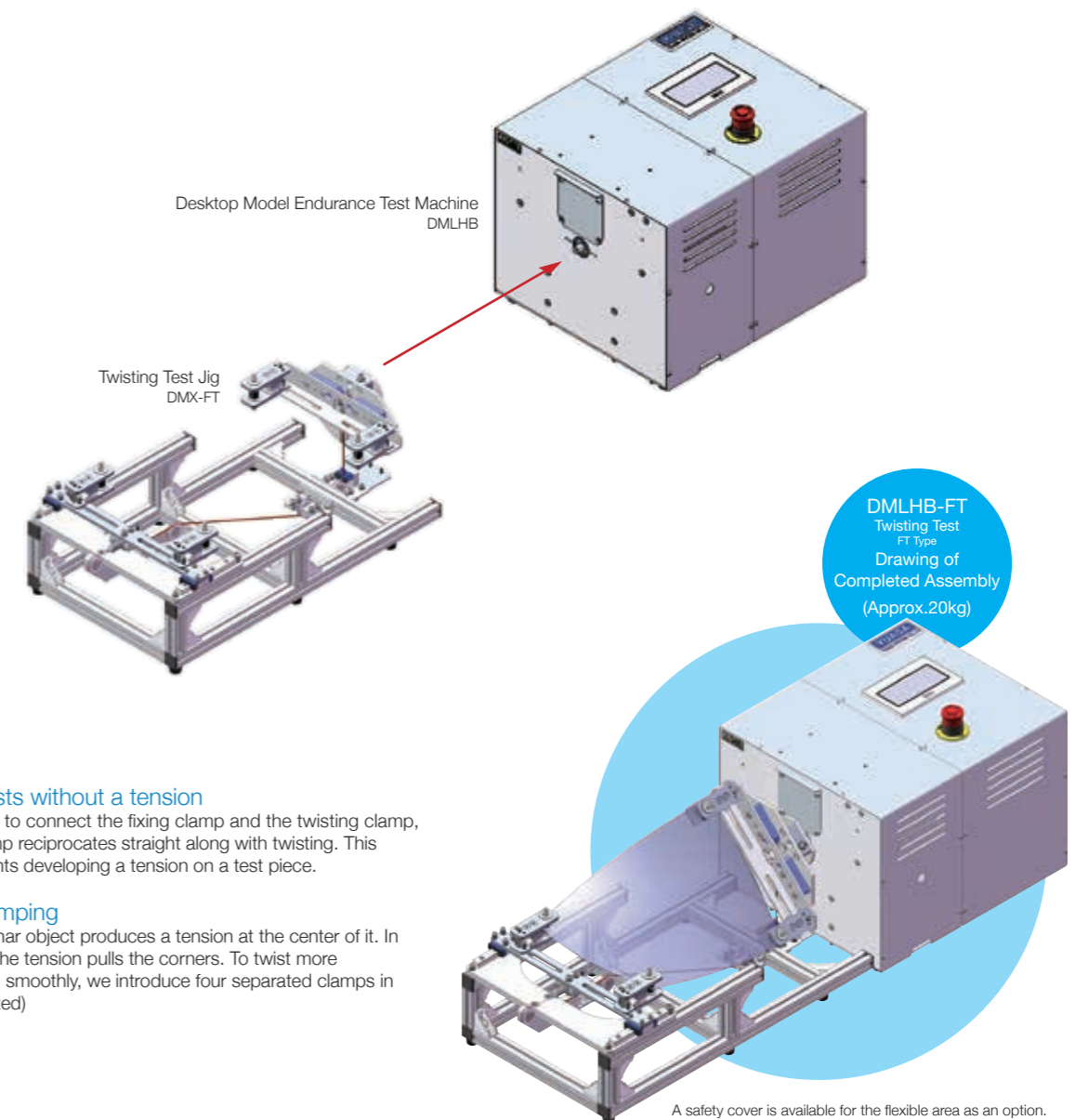
MODELS

You can download the specification. If you have any question, please ask us.



DMLHP-FT

## Composition



### Twisting tests without a tension

Using a string to connect the fixing clamp and the twisting clamp, the fixing clamp reciprocates straight along with twisting. This system prevents developing a tension on a test piece.

### 4-point clamping

Twisting a planar object produces a tension at the center of it. In other words, the tension pulls the corners. To twist more effectively and smoothly, we introduce four separated clamps in the jig. (patented)

A safety cover is available for the flexible area as an option.

\*Refer to p.29 regarding the driving specification.

- BEND
- Bending Test
- TWIST
- Twisting Test FT Type
- FOLD
- Folding Test
- SLIDE
- Sliding Test
- ROLL
- Rolling Test
- PUSHPULL
- Pushing / Pulling Test
- STRETCH
- Stretching Test
- Specifications of Base Unit

# FOLD



**SMALL**

DMLHB-FS / DMLHP-FS  
DMLHB-FS-C / DMLHP-FS-C (Cartridge-type)

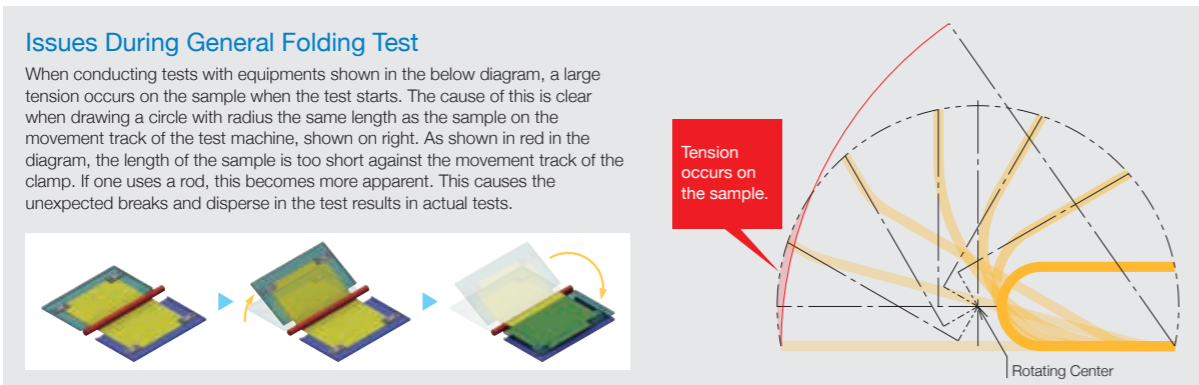
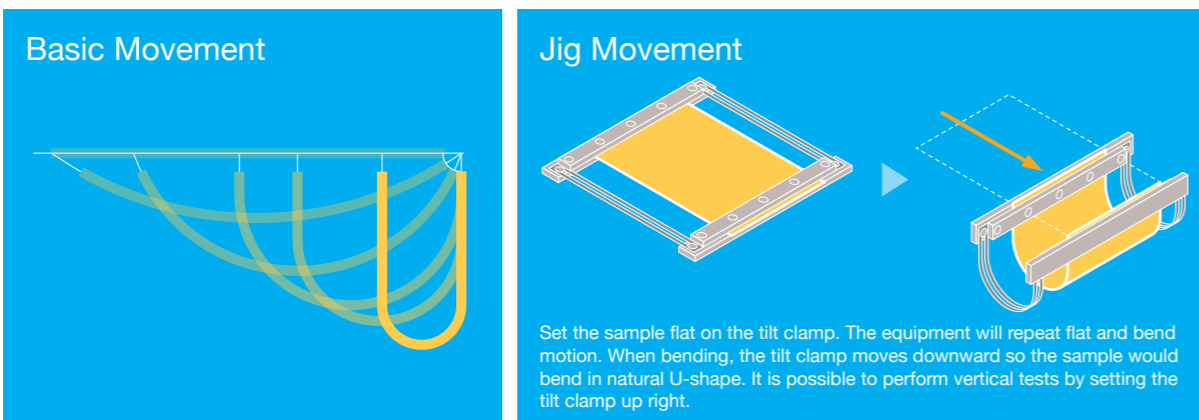
Desktop Model Endurance Test Machine

Folding Test FS / FS-C Type



The bending load is applied by having one side of the sample move straight towards the other side. The sample only receives bending load so there are no applied tension or friction.

## Attachment (Test Jig)



**Test Pieces** • Planar Test Piece ...  
»Flexible Displays »Organic Electroluminescence Devices »Barrier Film »Flexible Printed Circuits »Flat Cables

**Notes** »CE Marking

**Web** Please check the latest specification on the web.

<https://www.yuasa-system.jp/en>

**MODELS**

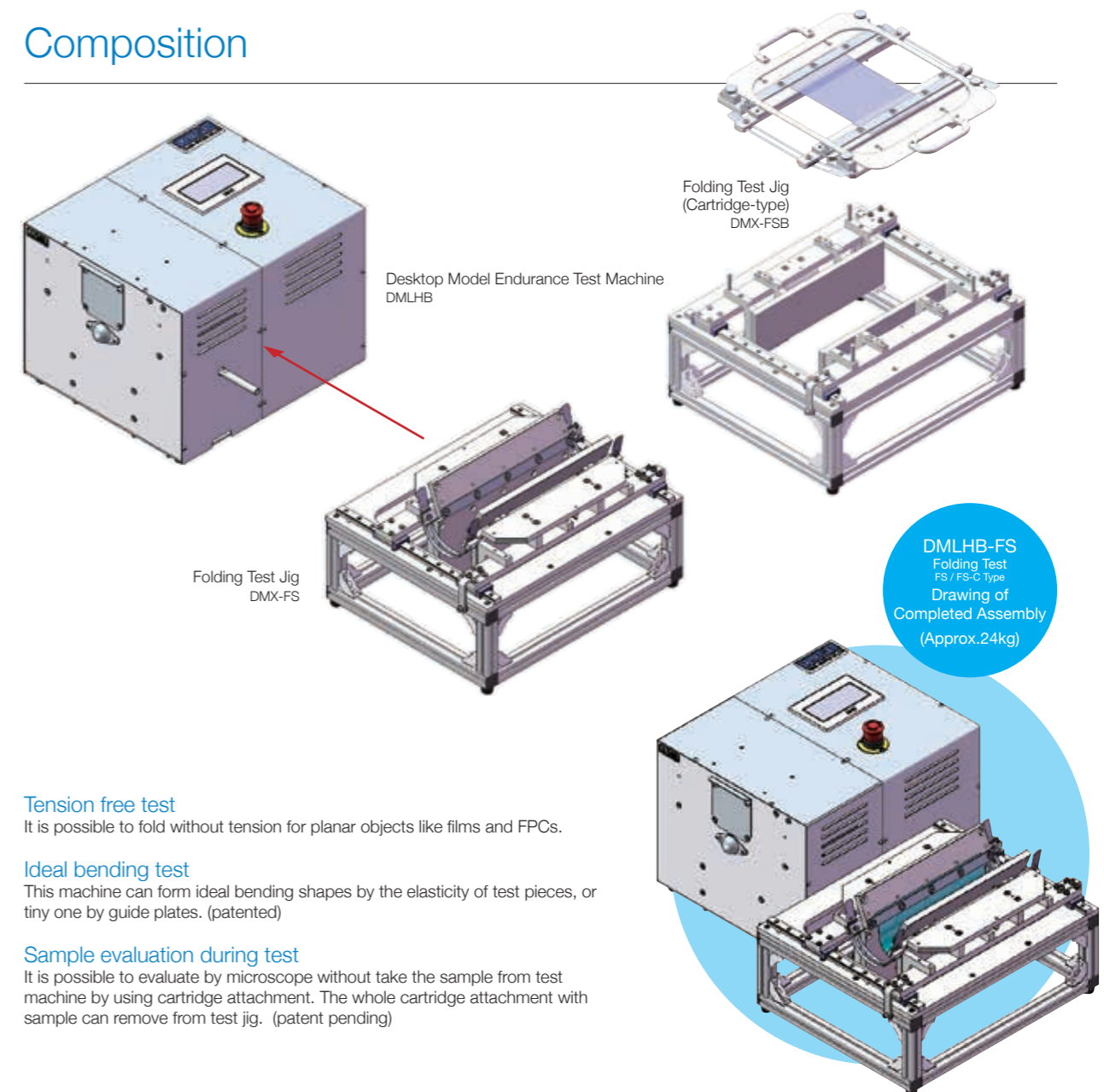
You can download the specification. If you have any question, please ask us.



DMLHB-FS-C

DMLHP-FS

## Composition



**Tension free test**  
It is possible to fold without tension for planar objects like films and FPCs.

**Ideal bending test**  
This machine can form ideal bending shapes by the elasticity of test pieces, or tiny one by guide plates. (patented)

**Sample evaluation during test**  
It is possible to evaluate by microscope without take the sample from test machine by using cartridge attachment. The whole cartridge attachment with sample can remove from test jig. (patent pending)

A safety cover is available for the flexible area as an option.

\*Refer to p.29 regarding the driving specification.

BEND Bending Test  
TWIST Twisting Test  
FOLD Folding Test FS / FS-C Type  
SLIDE Sliding Test  
ROLL Rolling Test  
PUSH/PULL Pushing / Pulling Test  
STRETCH Stretching Test  
Specifications of Base Unit



# FOLD



**SMALL**

**DMLHP-CS**  
**Desktop Model Endurance Test Machine**  
**Folding Test CS Type**

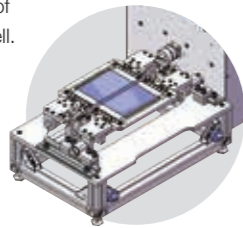


This test machine can examine by tiny bending radius.  
 This test method doesn't occur the tensile stress to the test sample.

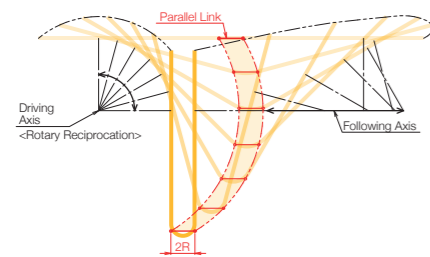
## Attachment (Test Jig)

### Folding Test Jig

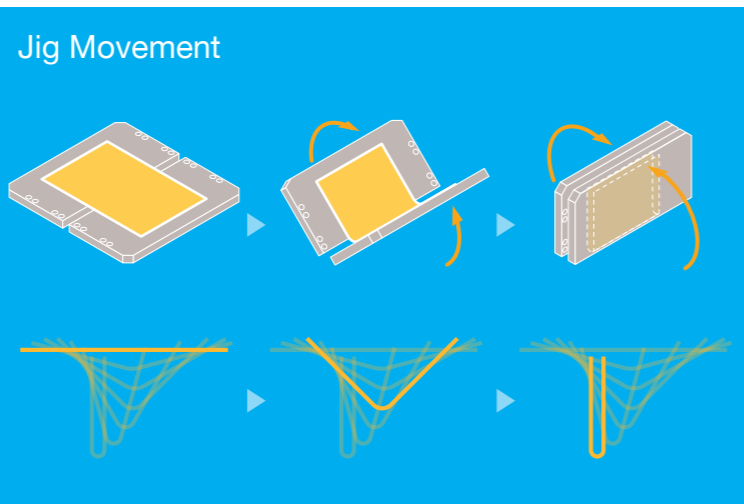
This test jig can realize the tiny bending radius test without tensile stress because test sample is kept by the 2 plates of double-joint clamshell.



### Sample-deformation process



Two plates keep the test sample, and then one plate operates by Rotary Reciprocation Axis. This two plates move open and close keeping each angle by the parallel link structure.



### Deformation process focused on test sample shape

This test jig doesn't make the tensile stress occur to the test sample because rotary point is at the edge of plate. If the rotary point is different position, the tensile stress or compression stress will occur to the test sample.

### Test Pieces

- Planar Test Piece ...
- »Flexible Displays »Organic Electroluminescence Devices »Barrier Film »Flexible Printed Circuits »Flat Cables

### Notes

- »CE Marking

### Web

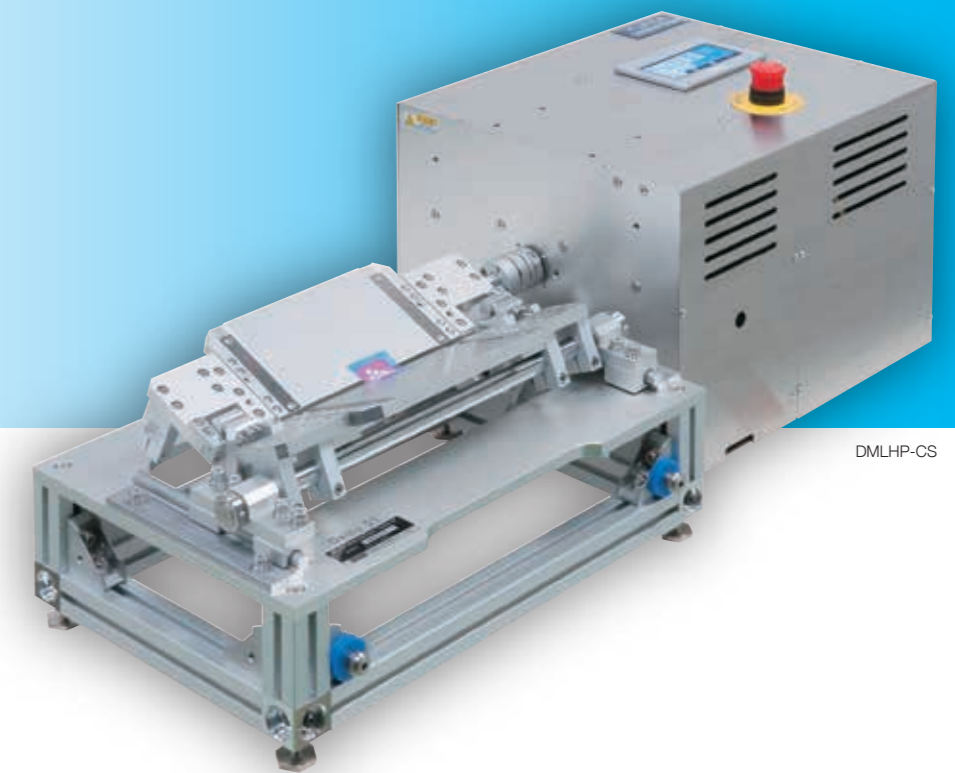
Please check the latest specification on the web.

<https://www.yuasa-system.jp/en>

MODELS

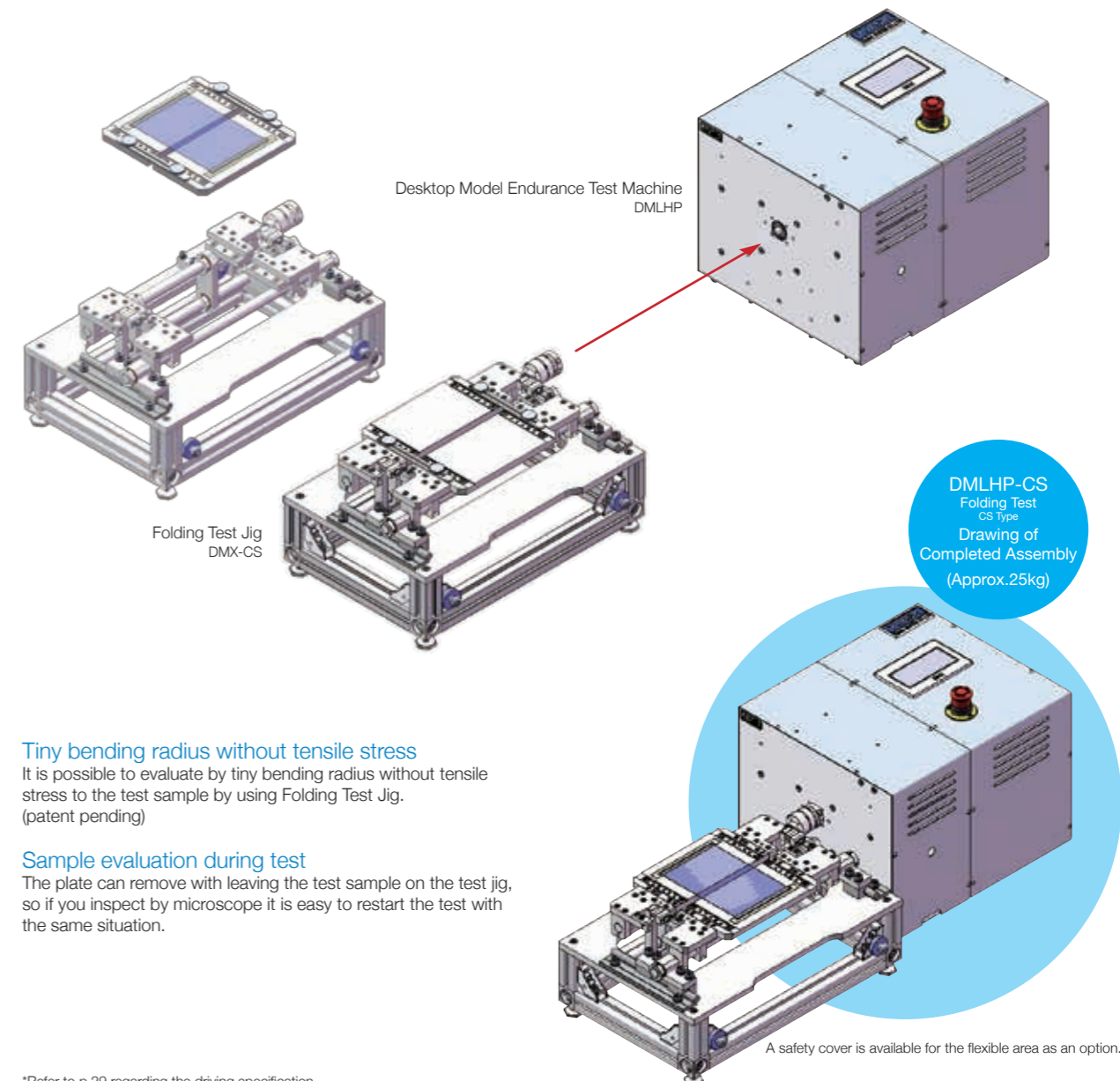


You can download the specification. If you have any question, please ask us.



DMLHP-CS

## Composition



### Tiny bending radius without tensile stress

It is possible to evaluate by tiny bending radius without tensile stress to the test sample by using Folding Test Jig. (patent pending)

### Sample evaluation during test

The plate can remove with leaving the test sample on the test jig, so if you inspect by microscope it is easy to restart the test with the same situation.

A safety cover is available for the flexible area as an option.

\*Refer to p.29 regarding the driving specification.

- BEND Bending Test
- TWIST Twisting Test
- FOLD Folding Test CS Type
- SLIDE Sliding Test
- ROLL Rolling Test
- PUSH/PULL Pushing / Pulling Test
- STRETCH Stretching Test
- Specifications of Base Unit

# SLIDE



DMLHB-FU / DMLHP-FU

**SMALL** Desktop Model Endurance Test Machine

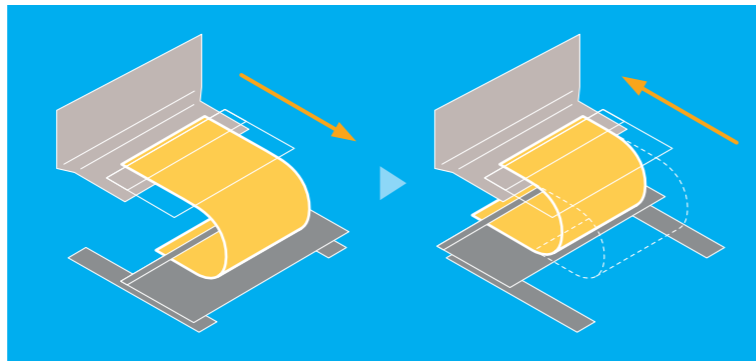
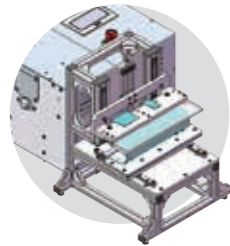
Sliding Test FU Type (1-lane)

This machine realizes profitable tests for planar objects like flexible displays.

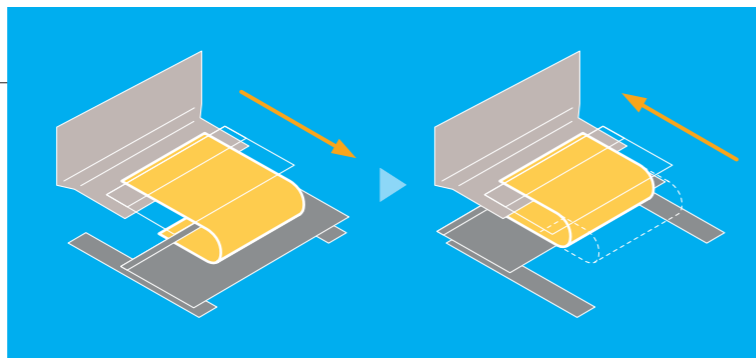
## Attachment (Test Jig)

### Single-lane Test Jig

Folding test pieces in U-shape to clamp, the output axis reciprocates the lower clamp back and forth.



Small bending radius



#### Test Pieces

- Planar Test Piece ...
- »Flexible Displays »Organic Electroluminescence Devices »Barrier Film »Flexible Printed Circuits »Flat Cables

#### Notes

- »CE Marking

#### Web

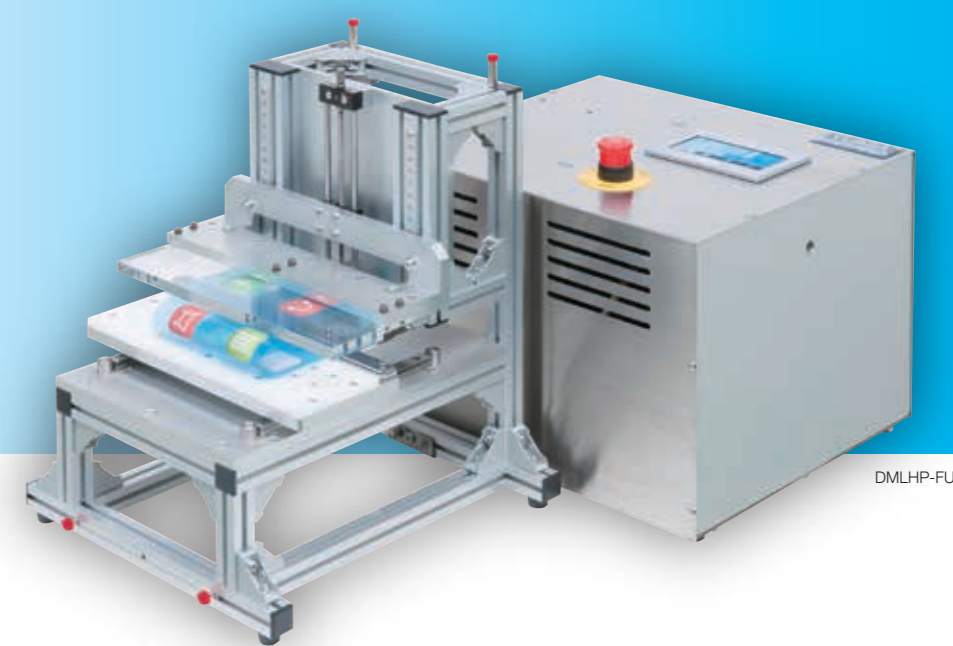
Please check the latest specification on the web.

<https://www.yuasa-system.jp/en>

MODELS

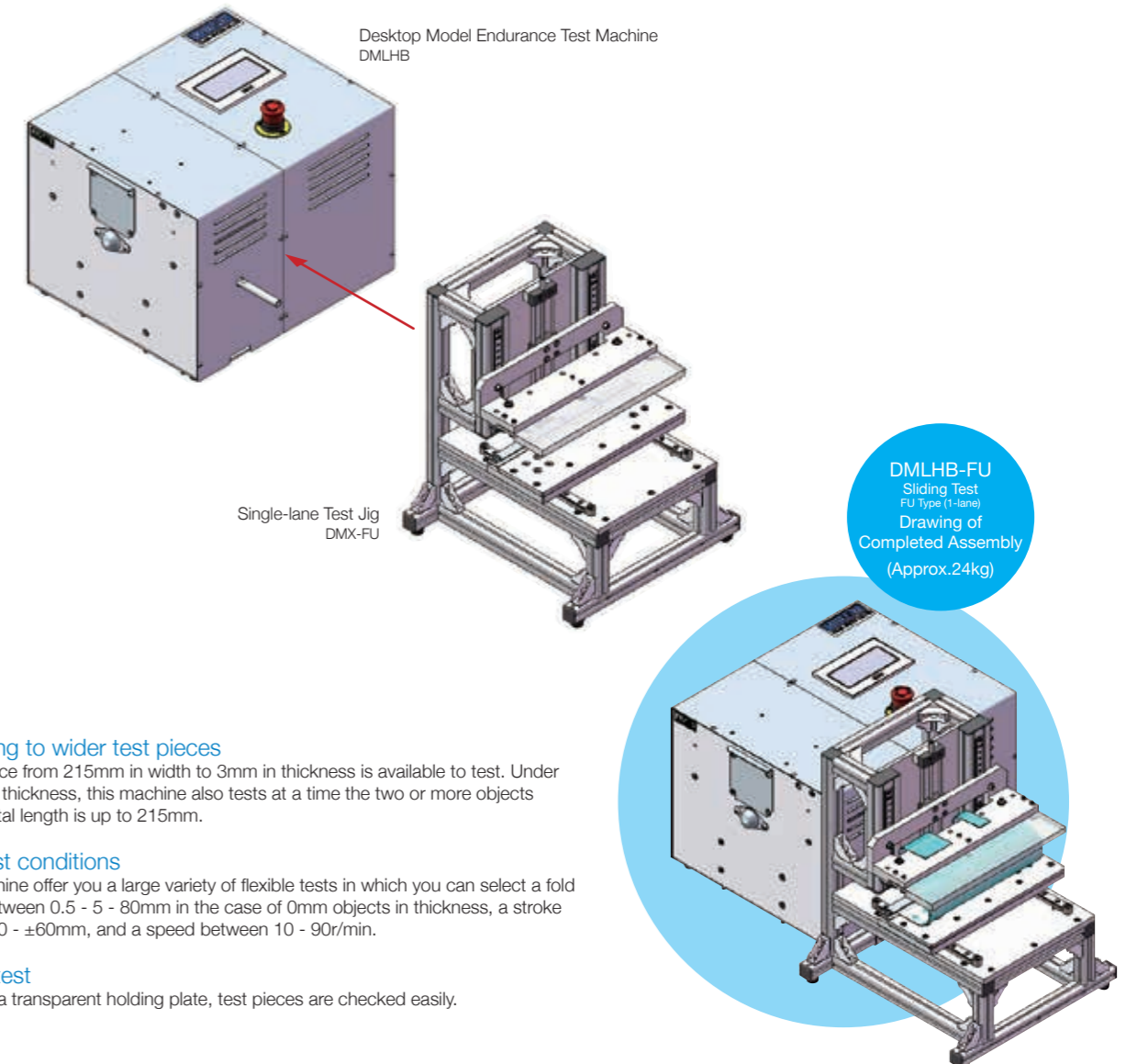


You can download the specification. If you have any question, please ask us.



DMLHP-FU

## Composition



### Clamping to wider test pieces

A test piece from 215mm in width to 3mm in thickness is available to test. Under the same thickness, this machine also tests at a time the two or more objects whose total length is up to 215mm.

### Free test conditions

This machine offer you a large variety of flexible tests in which you can select a fold radius between 0.5 - 5 - 80mm in the case of 0mm objects in thickness, a stroke between 0 - ±60mm, and a speed between 10 - 90r/min.

### Visible test

By using a transparent holding plate, test pieces are checked easily.

A safety cover is available for the flexible area as an option.

\*Refer to p.29 regarding the driving specification.

BEND  
Bending Test

TWIST  
Twisting Test

FOLD  
Folding Test

SLIDE  
Sliding Test  
FU Type (1-lane)

ROLL  
Rolling Test

PUSH/PULL  
Pushing / Pulling Test

STRETCH  
Stretching Test

Specifications of  
Base Unit

# SLIDE



DMLHB-4U / DMLHP-4U

**SMALL** Desktop Model Endurance Test Machine

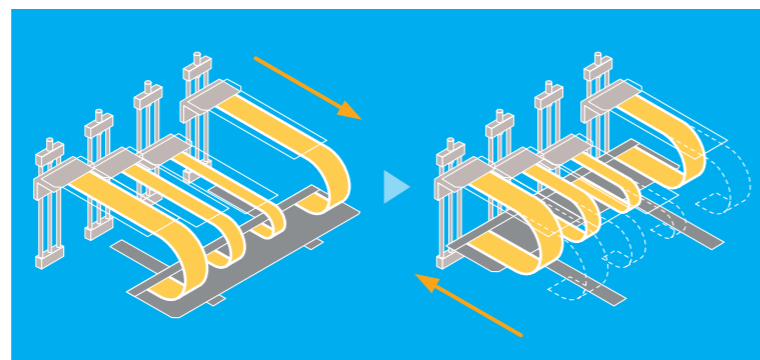
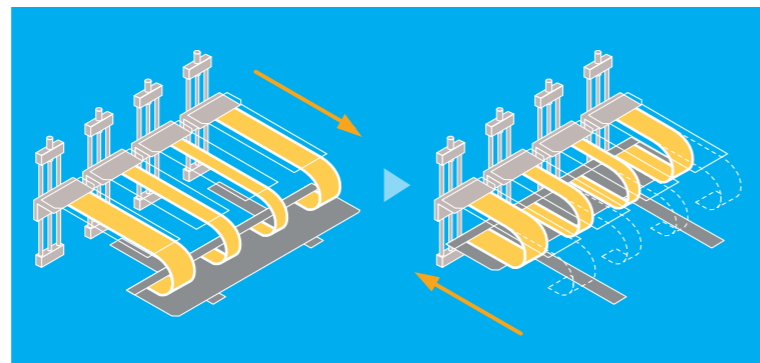
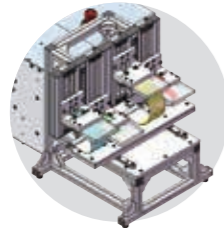
Sliding Test 4U Type (4-lane)

This machine offers profitable tests for linear objects like cables and fibers as well as planar ones such as flexible displays.

## Attachment (Test Jig)

### 4-lane Test Jig

Folding test pieces in U-shape to clamp, the output axis reciprocates the lower clamp back and forth.



#### Test Pieces

- Linear Test Piece ... »Cables (Electric Wires, Optical Fibers) »Harness »Cable Guides »Tubes »Wires »Fibers
- Planar Test Piece ... »Flexible Displays »Organic Electroluminescence Devices »Barrier Film »Flexible Printed Circuits »Flat Cables

#### Notes

- »CE Marking

#### Web

Please check the latest specification on the web.

<https://www.yuasa-system.jp/en>

MODELS

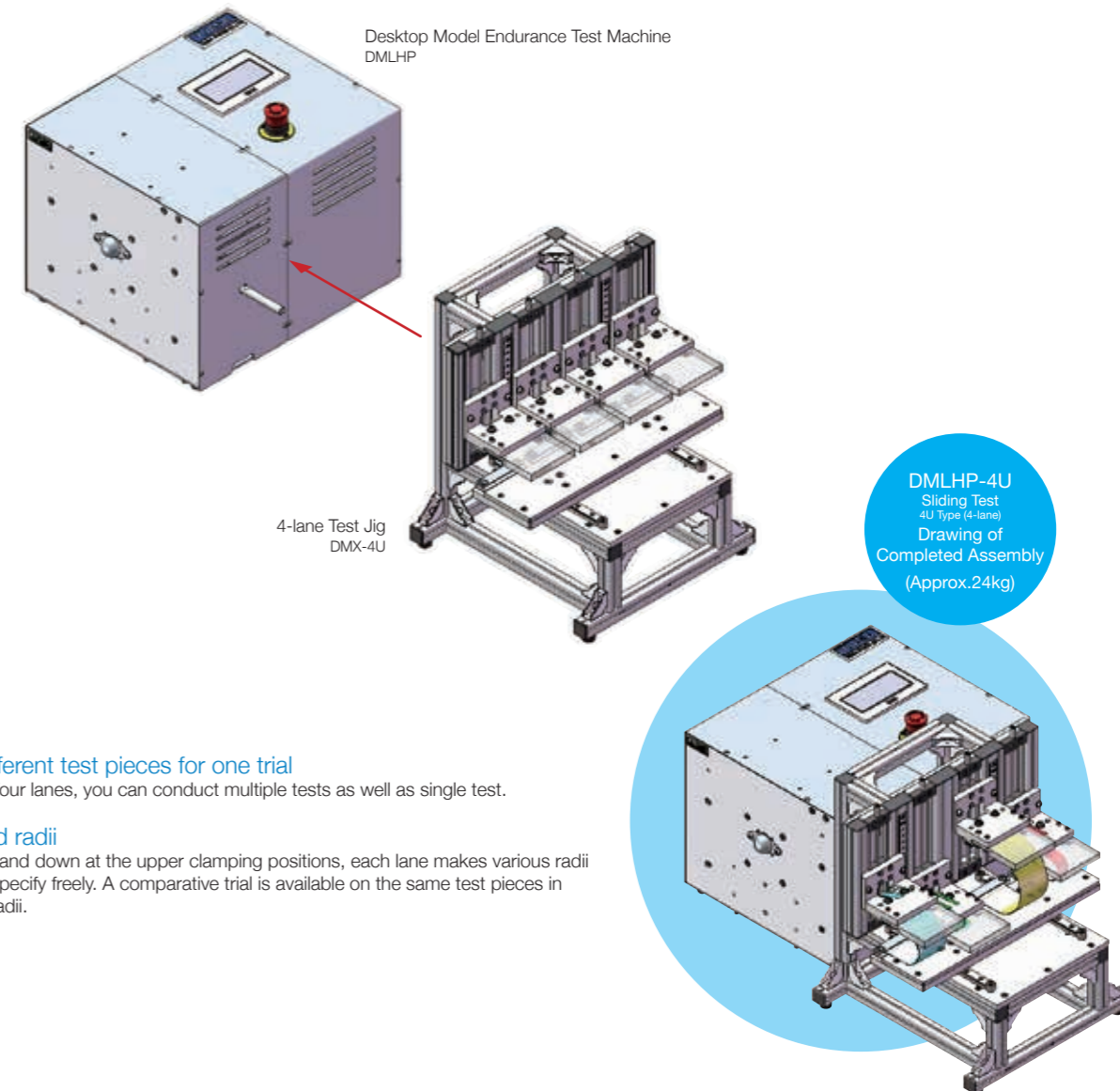


You can download the specification. If you have any question, please ask us.



DMLHB-4U

## Composition



### Four different test pieces for one trial

By using four lanes, you can conduct multiple tests as well as single test.

### Free fold radii

Going up and down at the upper clamping positions, each lane makes various radii that you specify freely. A comparative trial is available on the same test pieces in different radii.

A safety cover is available for the flexible area as an option.

\*Refer to p.29 regarding the driving specification.

BEND  
Bending Test

TWIST  
Twisting Test

FOLD  
Folding Test

SLIDE  
Sliding Test  
4U Type (4-lane)

ROLL  
Rolling Test

PUSH/PULL  
Pushing / Pulling Test

STRETCH  
Stretching Test

Specifications of  
Base Unit

# SLIDE



**SMALL**

DMLHB-SU / DMLHP-SU  
 Desktop Model Endurance Test Machine  
 Sliding Test SU Type

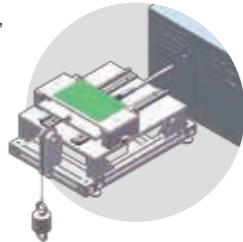
This machine can provide endurance tests for motion of planar objects like flexible display for slide type smartphones.

## Attachment (Test Jig)

### Sliding Test Jig

Folding test pieces to clamp in U-shape along the roller, and the roller reciprocates back and forth.

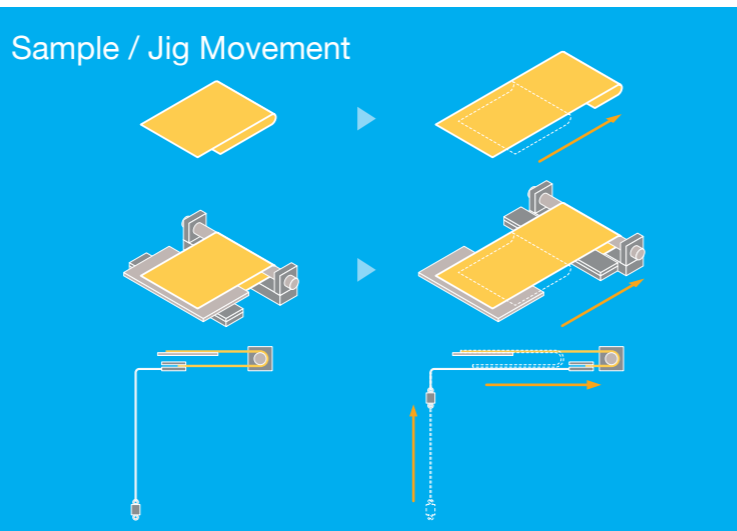
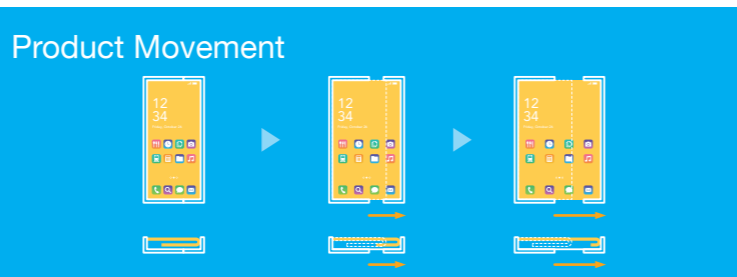
Upper clamp is fixed, lower clamp follows the roller.



### Load Cell (Optional)



Optional unit for measuring tension load. Tension load on test pieces can be measured directly by installing the load cell unit on jig side.



**Test Pieces** • Planar Test Piece ... »Flexible Display for Slide Type Smartphones

**Notes** »CE Marking

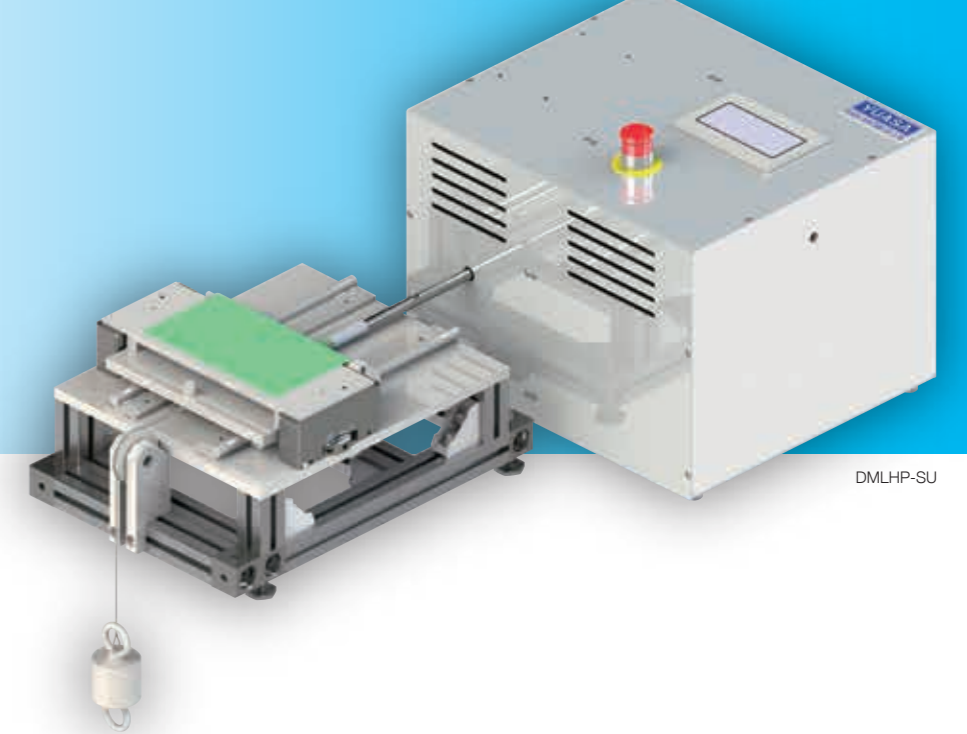
**Web** <https://www.yuasa-system.jp/en>

Please check the latest specification on the web.

MODELS

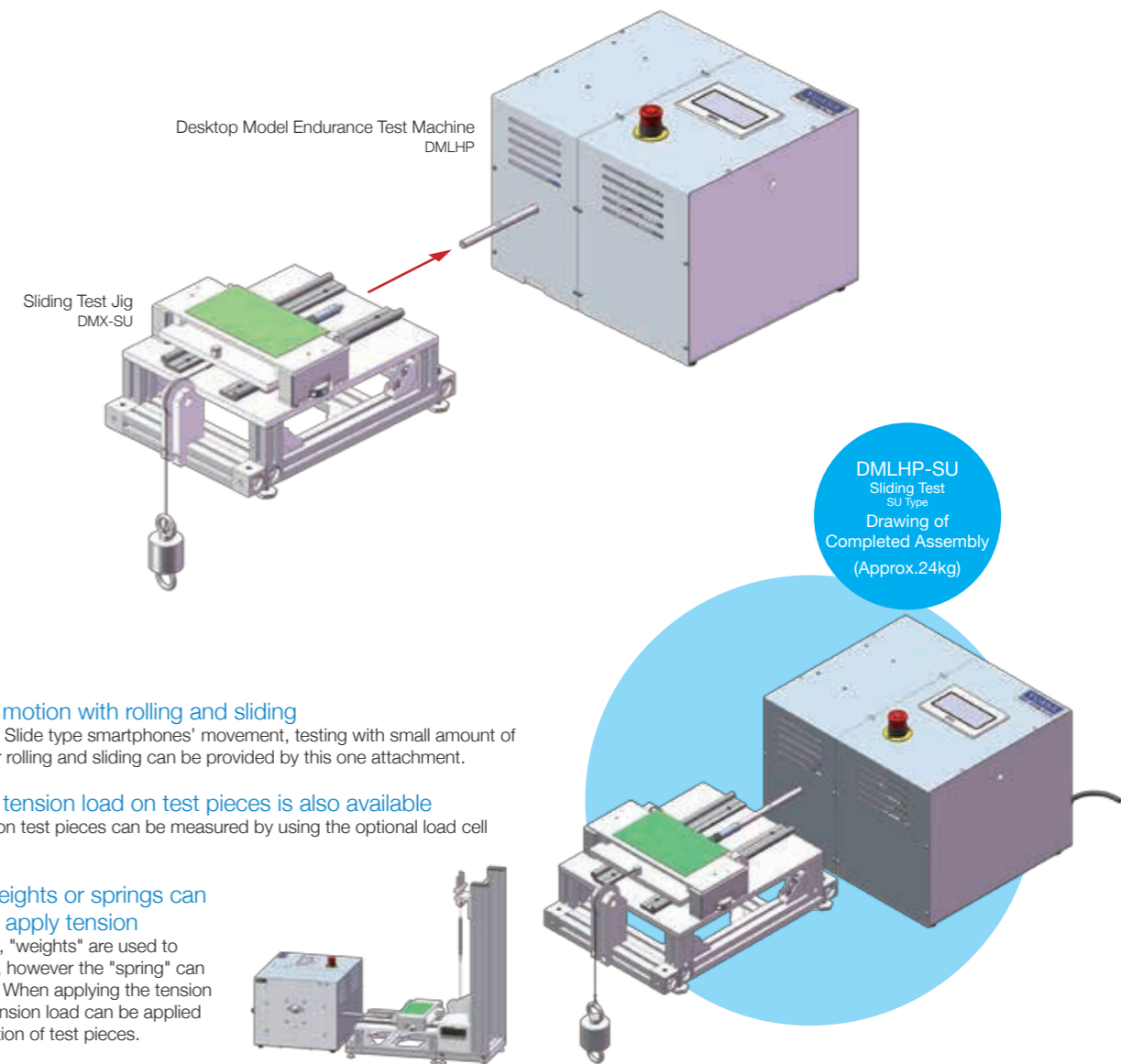


You can download the specification. If you have any question, please ask us.



DMLHP-SU

## Composition



### Combined motion with rolling and sliding

Assuming the Slide type smartphones' movement, testing with small amount of movement for rolling and sliding can be provided by this one attachment.

### Measure a tension load on test pieces is also available

Tension load on test pieces can be measured by using the optional load cell unit.

### Either of weights or springs can be used to apply tension

On illustration, "weights" are used to apply tension, however the "spring" can also be used. When applying the tension by springs, tension load can be applied along the motion of test pieces.



A safety cover is available for the flexible area as an option.

\*Refer to p.29 regarding the driving specification.

- BEND  
Bending Test
- TWIST  
Twisting Test
- FOLD  
Folding Test
- SLIDE  
Sliding Test  
SU Type
- ROLL  
Rolling Test
- PUSH/PULL  
Pushing / Pulling Test
- STRETCH  
Stretching Test
- Specifications of  
Base Unit

# ROLL



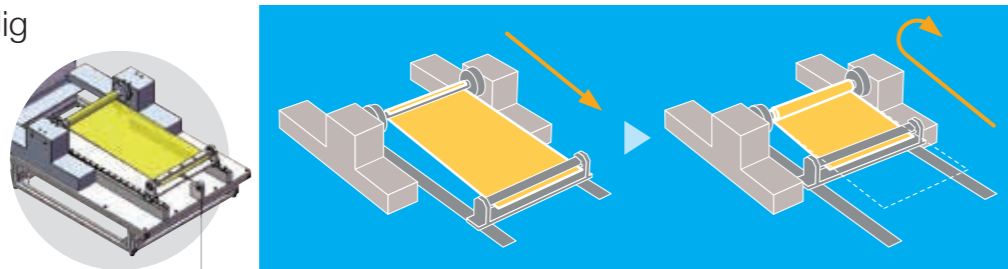
**SMALL** DMLHB-FR / DMLHP-FR  
 Desktop Model Endurance Test Machine  
 Rolling Test FR Type

Using an object such as flexible displays, as well as cables and fibers, your original "Roll to Roll (R2R)" tests can be conducted.

## Attachment (Test Jig)

### Rolling Test Jig

The rack and pinion actuator system repeatedly rolls up and unrolls a test piece by rotating and reversing a roller.

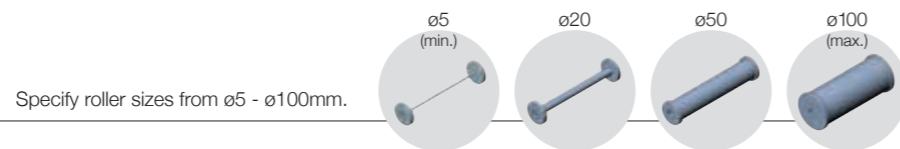


#### Test Pieces

- Planar Test Piece ...
- »Flexible Displays »Organic Electroluminescence Devices »Barrier Film »Flexible Printed Circuits »Flat Cables

#### Notes

- »CE Marking

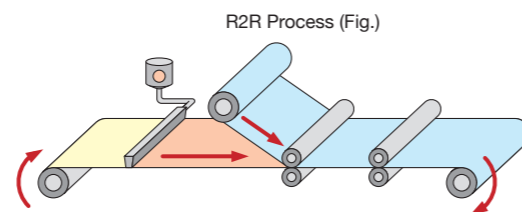


## The Needs of Rolling Test

Using a "R2R" manufacturing process, this machine provides evaluation tests as to a roll-up tension during rolling up and a friction between test pieces.

### R2R Process

R2R (Roll to Roll) is a manufacturing process of producing electronic devices such as liquid crystal panels and solar cells at high throughput and low costs. It prints organic EL elements or circuit patterns on a roll of flexible material like plastic substrate or film that is transferred one roller to one another.

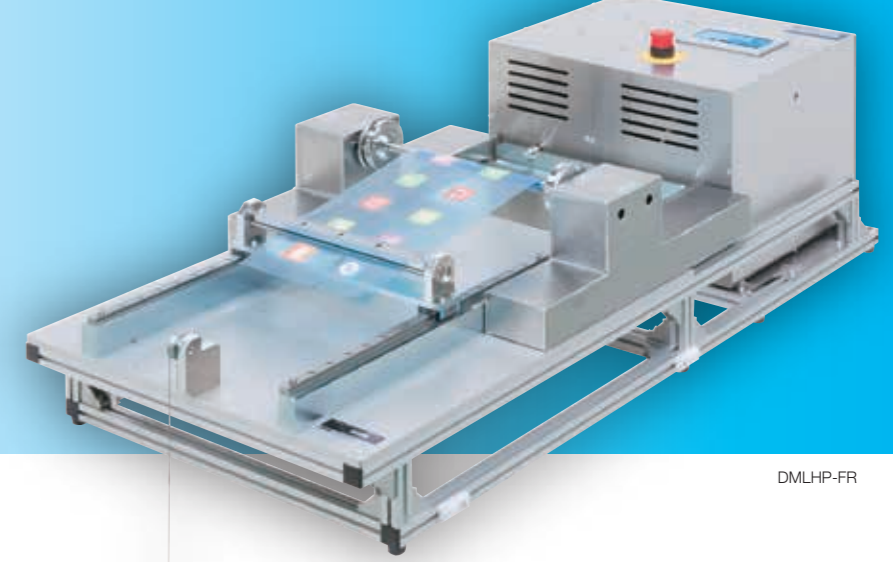


**Web**  
 Please check the latest specification on the web.

<https://www.yuasa-system.jp/en>

**MODELS**

You can download the specification. If you have any question, please ask us.



DMLHP-FR

## Composition

Desktop Model Endurance Test Machine DMLHB

Rolling Test Jig DMX-FR

ø5 Roller  
 ø20 Roller  
 ø50 Roller  
 ø100 Roller

DMLHB-FR Rolling Test FR Type Drawing of Completed Assembly (Approx. 40kg)

**Flexible setting for rolling up**  
 This machine rolls up a test piece at both normal rotation and reverse rotation. Additionally, you can freely change the roll-up capacity by adjusting the operation stroke.

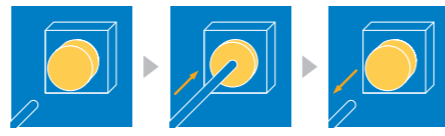
**The Tilt Clamp as an excellent holding**  
 The driven clamp flexibly moves along with the vertical movements of a test piece to reduce damages from the clamping part.

A safety cover is available for the flexible area as an option. No weights are included.

\*Refer to p.29 regarding the driving specification.

- BEND Bending Test
- TWIST Twisting Test
- FOLD Folding Test
- SLIDE Sliding Test
- ROLL Rolling Test FR Type
- PUSHPULL Pushing / Pulling Test
- STRETCH Stretching Test
- Specifications of Base Unit

# PUSH/PULL



**SMALL**

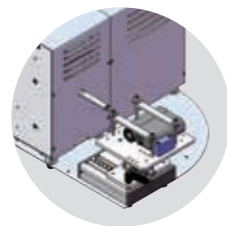
DMLHB-PP / DMLHP-PP  
 Desktop Model Endurance Test Machine  
 Pushing / Pulling Test PP Type

For switches, SD cards, and USB memories used in many industrial applications, this machine offers endurance tests of pushing and/or pulling.

## Attachment (Test Jig)

### Pushing / Pulling Test Jig

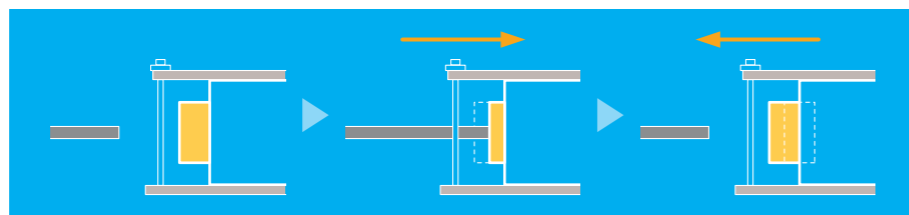
The output axis reciprocally pushes and pulls a test piece fixed on the XYZ table for testing its endurance. Please feel free to consult us about additional jigs attached to the output axis.



- |                    |                     |               |              |
|--------------------|---------------------|---------------|--------------|
| <b>Test Pieces</b> | »Push-button Switch | »Limit Switch | »Connectors  |
|                    | »USB Memory         | »SD Card      | »Card Reader |
| <b>Notes</b>       | »CE Marking         |               |              |

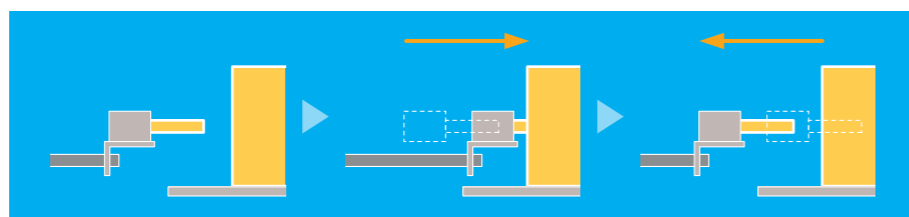
### Pushing Test for Push-button Switch

A proper jig is attached to the output axis to push a tested switch.



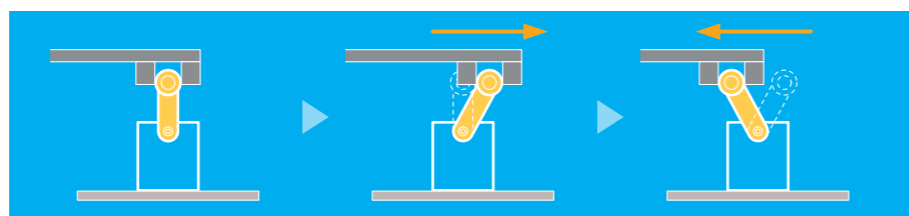
### Inserting and Ejecting Test for Storage Media

A proper jig is attached to the output axis to hold a tested media.



### Operating Test for Limit Switch

A proper jig is attached to the output axis to operate a tested switch.



**Web**

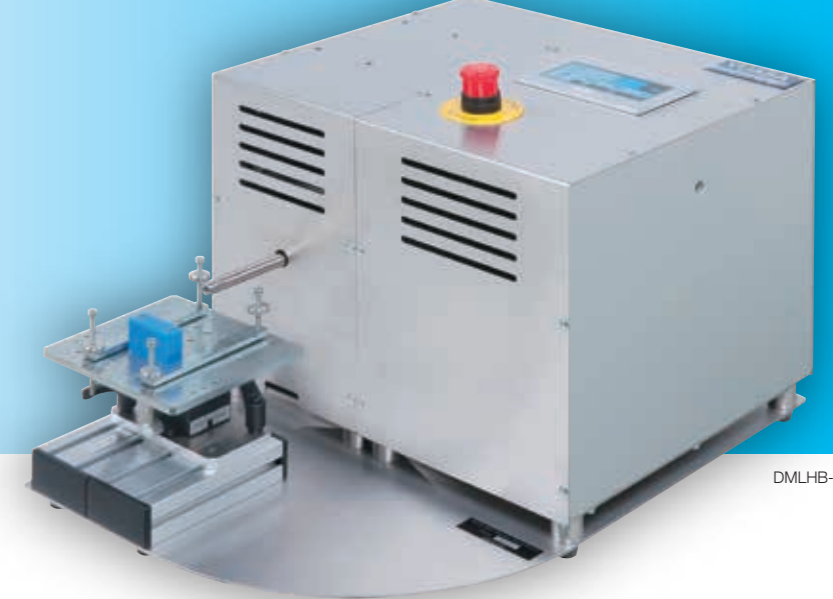
Please check the latest specification on the web.

<https://www.yuasa-system.jp/en>

MODELS

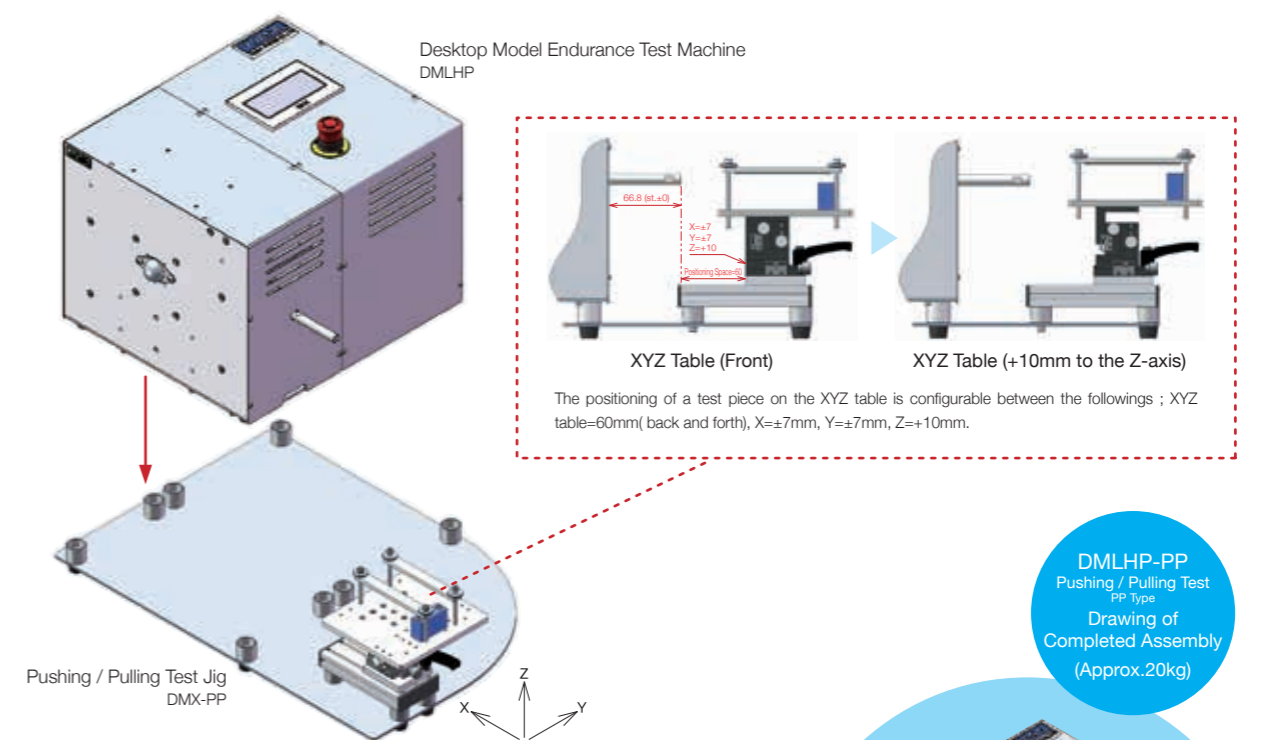


You can download the specification. If you have any question, please ask us.



DMLHB-PP

## Composition



### Smoothly linear reciprocating motion

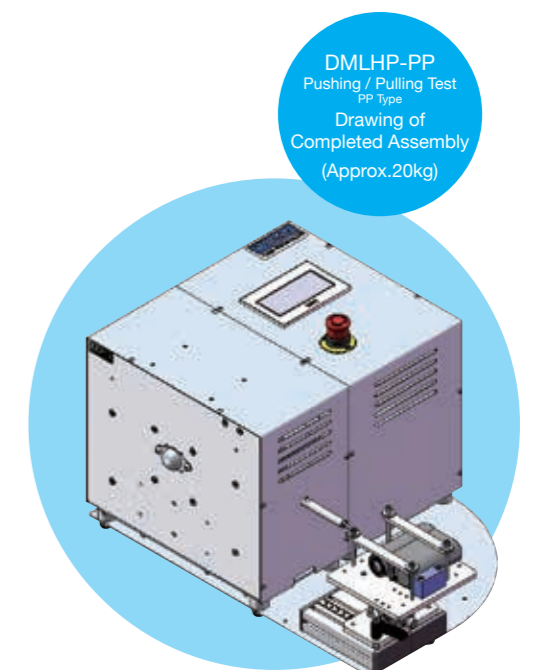
The linkable structure(DMLHB-PP) featuring a more smooth and stable operation continues to test with no damage to a test piece.

### Using the XYZ table

The positioning of test pieces is so easy. This machine is designed for testing a wide variety of products. Even your prototype products can be tested.

### Flexible change of strokes

In the main unit, it is possible to freely set up a stroke and effectively perform to test. Ex. (Push-button switch → Short stroke, Limit switch → Long stroke)



A safety cover is available for the flexible area as an option.

\*Refer to p.29 regarding the driving specification.

BEND  
Bending Test

TWIST  
Twisting Test

FOLD  
Folding Test

SLIDE  
Sliding Test

ROLL  
Rolling Test

PUSH/PULL  
Pushing / Pulling Test

STRETCH  
Stretching Test

Specifications of  
Base Unit

# STRETCH



SMALL

DMLHP-ST

Desktop Model Endurance Test Machine

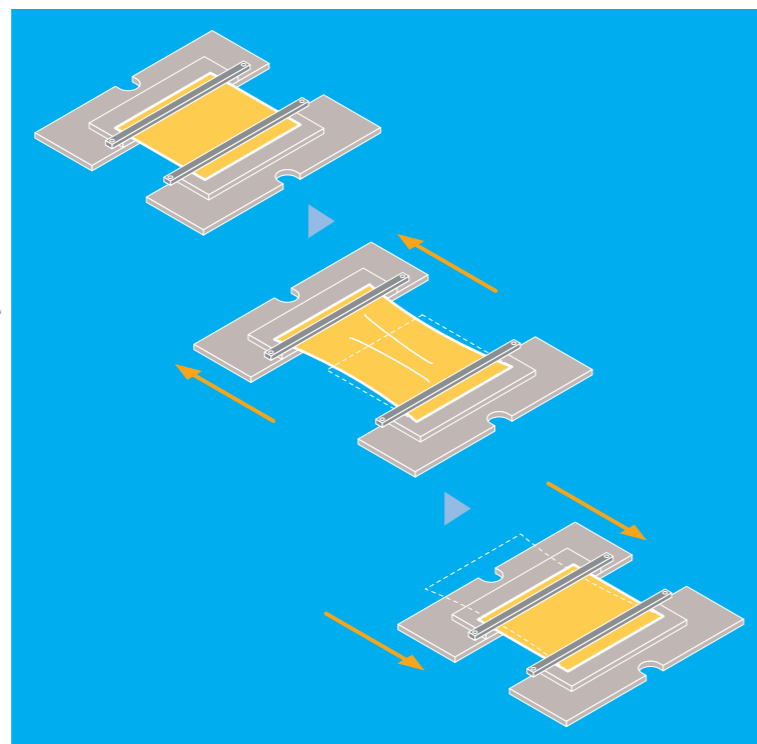
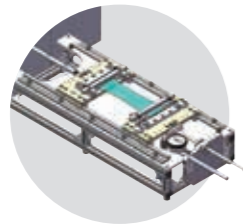
Stretching Test ST Type

This is the best test method to evaluate the stretching test sample such a wearable devices or flexible devices.

## Attachment (Test Jig)

### Stretching Test Jig

Clamp the test sample horizontally, and it makes tensile stress occur repeatedly by operating the slider of driving unit.



#### Test Pieces

- Planar Test Piece ...
- »Wearable Devices »Flexible Devices

#### Notes

- »CE Marking

#### Web

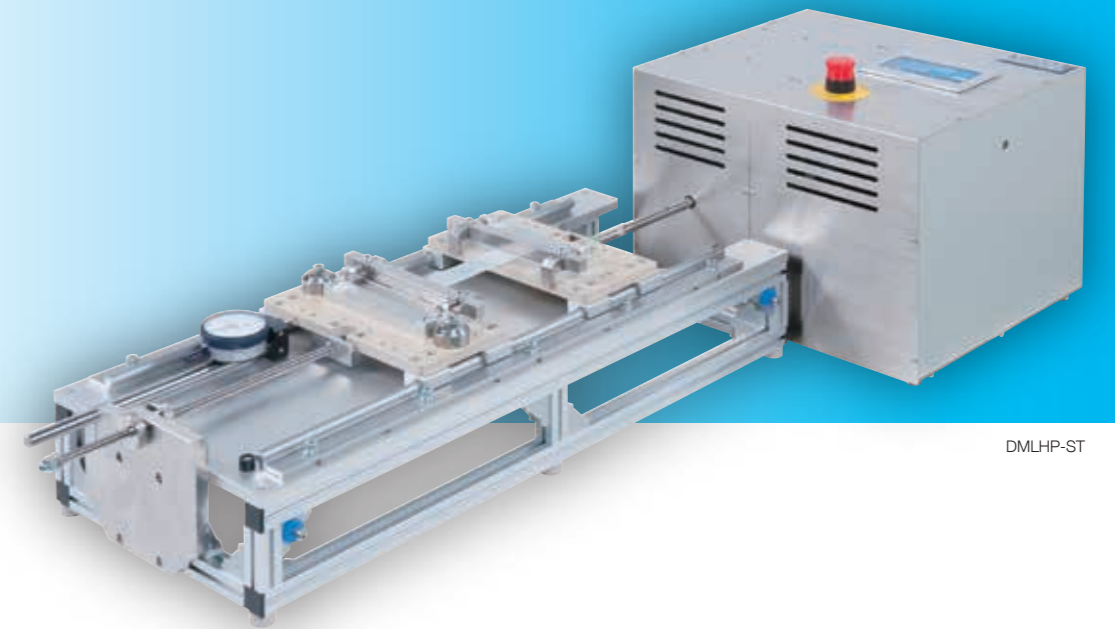
Please check the latest specification on the web.

<https://www.yuasa-system.jp/en>

MODELS

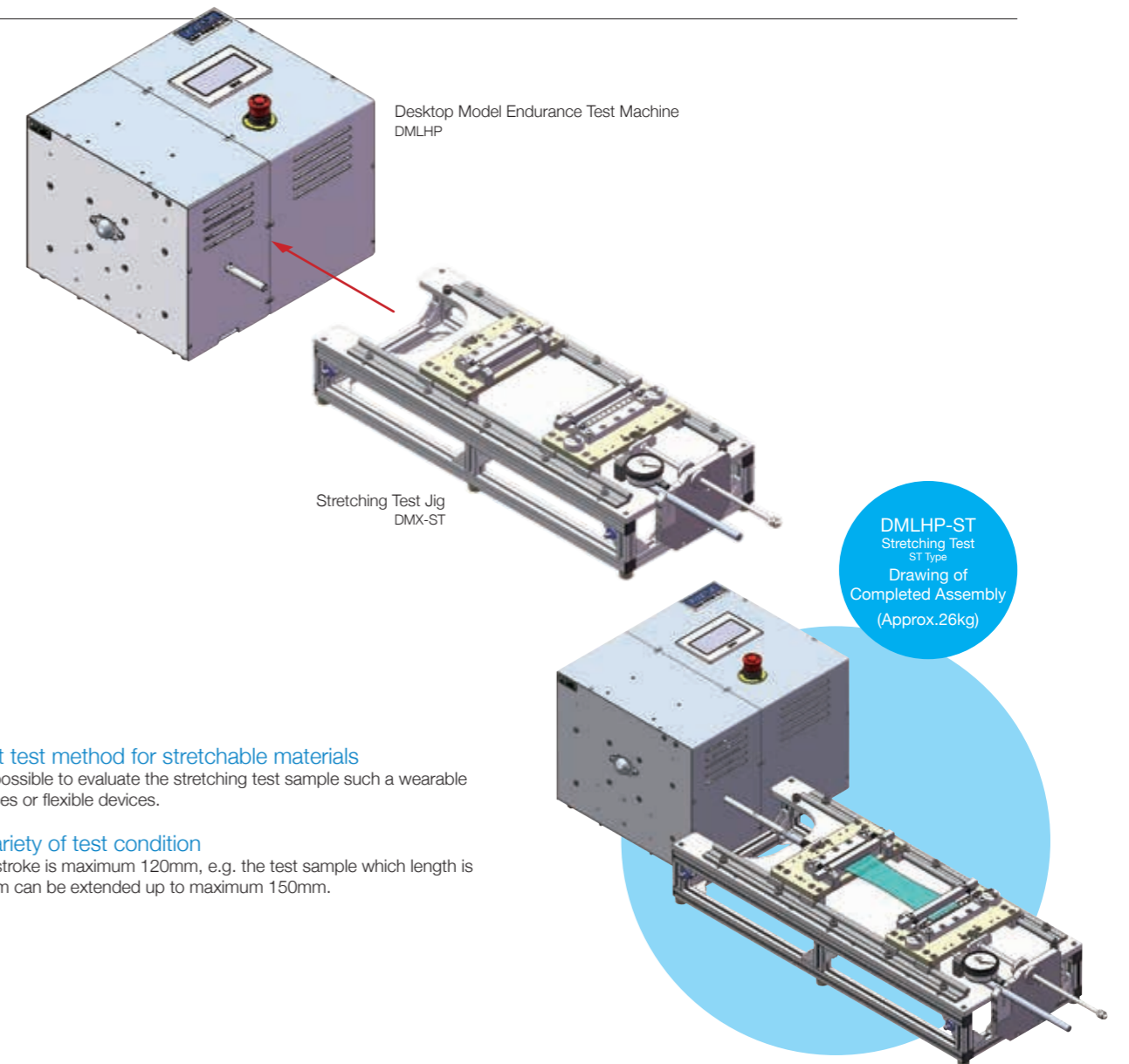


You can download the specification. If you have any question, please ask us.



DMLHP-ST

## Composition



Desktop Model Endurance Test Machine DMLHP

Stretching Test Jig DMX-ST

DMLHP-ST  
Stretching Test  
ST Type  
Drawing of  
Completed Assembly  
(Approx.26kg)

### Best test method for stretchable materials

It is possible to evaluate the stretching test sample such a wearable devices or flexible devices.

### A variety of test condition

The stroke is maximum 120mm, e.g. the test sample which length is 30mm can be extended up to maximum 150mm.

A safety cover is available for the flexible area as an option.

\*Refer to p.29 regarding the driving specification.

BEND  
Bending Test

TWIST  
Twisting Test

FOLD  
Folding Test

SLIDE  
Sliding Test

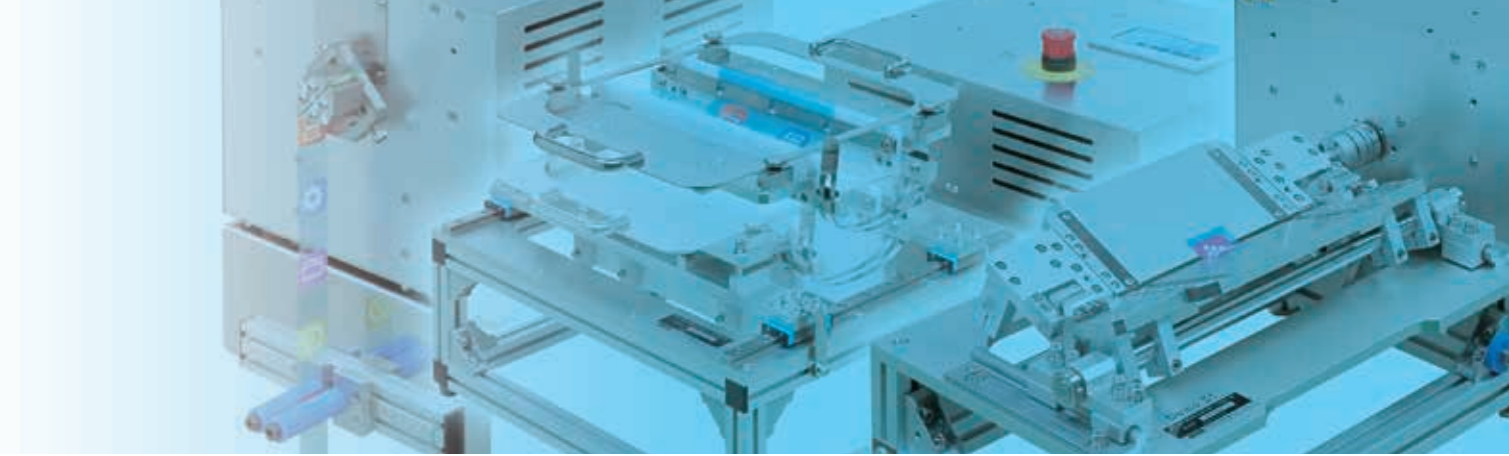
ROLL  
Rolling Test

PUSH/PULL  
Pushing / Pulling Test

STRETCH  
Stretching Test

Specifications of  
Base Unit

# Specifications of Base Unit



**SMALL**

- DMLHB (Driving Unit Simple Operation Type)
- DMLHP (Driving Unit Positioning Type)
- DMLHPR (Driving Unit Both 10 revolutions Positioning Type)

## Desktop Model Endurance Test Machine

Those are driving unit for endurance test machine which operate repeatedly under presetting test condition. Three type unit can be chosen for the test purpose.

### DMLHB (Driving Unit Simple Operation Type)

This unit is suit for long-time repeating test.

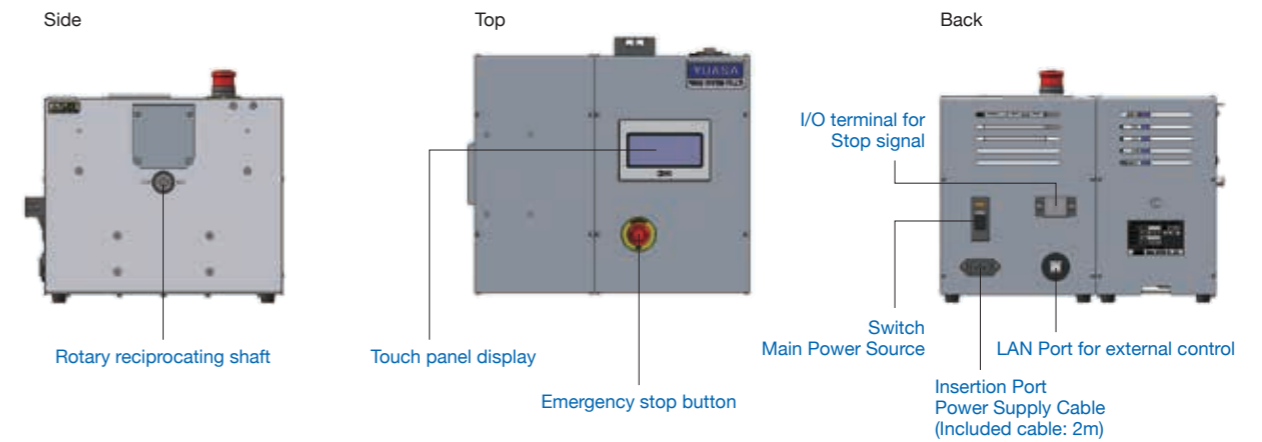


### DMLHP (Driving Unit Positioning Type)

It is possible to set a variety of test conditions, and it can operate freely any position.

### DMLHPR (Driving Unit Both 10 revolutions Positioning Type)

It is possible to operate freely within 10 revolutions both sides. Twisting number is not limited when twisting is in one direction. The appearance is same as DMLHP. There is no Linear shaft, this DMLHPR is only rotary motion.



### Endurance and quietness

Both mechanical linkage structure(DLDHB) and plastic gear realize the highly endurance and low noise.

### Various test condition

Simple operation type: Maximum operation angle  $\pm 270^\circ$  (rotary reciprocation mode), maximum operation stroke  $\pm 60$ mm, maximum operation speed 120rec/min.

Positioning type: Maximum operation angle  $\pm 270^\circ$  (rotary reciprocation mode), maximum operation stroke 120mm, 90rec/min.

### Fully automatic testing

A disconnection detector and preset counter are standard equipment.

### Basic Specifications

	DMLHB (Driving Unit Simple Operation Type)		DMLHP (Driving Unit Positioning Type)		DMLHPR (Driving Unit Both 10 revolutions Positioning Type)
	Rotary Reciprocation Mode	Linear Reciprocation Mode	Rotary Reciprocation Mode	Linear Reciprocation Mode	Rotary Reciprocation Mode
Electrical Power	AC100-240V (50/60 Hz) 100VA				
Motor Unit	DC brushless motor [DC24V, 3.5A(max.), 30W, Gear box 1/20]				
Reciprocating Speed / Rotation Speed	10 - 120 rec/min		5 - 90 rec/min		5 - 1280 deg/sec
Reciprocating Angle / Distance	0 - $\pm 270$ deg.	0 - $\pm 60$ mm	360 rad/s <sup>2</sup> maximum		4.5 m/s <sup>2</sup> maximum
Permissible Torque / Output	$\pm 90^\circ$ : 1.00 N·m $\pm 180^\circ$ : 0.88 N·m $\pm 270^\circ$ : 0.44 N·m (max. 1.00 N·m)	1800/st. (max. 400 N)	7 - $\pm 270$ deg. (in 0.1 deg. increments)		3 - 120 mm (in 0.1 mm increments)
Counter	8-digits display (Can set the target number)				
Installation Environment	Temp. : +5 - +40°C (41 - 104°F) Humi. : 15 - 85%Rh (No condensation)				
Safety Interlock	Safety cover for the testing jig: Covered or Not				
Dimensions (Excluding projections)	W 344 mm × D 296 mm × H 255 mm				
Net Weight	17kg				
Permissible Torque / Output	1.8 N·m		72 N		1.8 N·m
Reciprocating Angle / Distance	7 - $\pm 3600$ deg. Twisting number is not limited when twisting is in one direction.		72 rad/s <sup>2</sup> maximum		223 rad/s <sup>2</sup> maximum
Counter	8-digits display (Can set the target number)				
Installation Environment	Temp. : +5 - +40°C (41 - 104°F) Humi. : 15 - 85%Rh (No condensation)				
Safety Interlock	Safety cover for the testing jig: Covered or Not				
Dimensions (Excluding projections)	W 344 mm × D 296 mm × H 255 mm				
Net Weight	15kg				

\*No test jigs are included for each unit.

**Web**

Please check the latest specification on the web.

<https://www.yuasa-system.jp/en>

**MODELS**



**Notes**

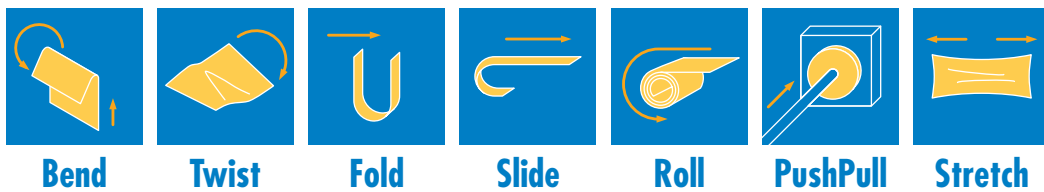
»CE Marking »KC Mark

You can download the specification. If you have any question, please ask us.

BEND  
Bending Test  
 TWIST  
Twisting Test  
 FOLD  
Folding Test  
 SLIDE  
Sliding Test  
 ROLL  
Rolling Test  
 PUSH/PULL  
Pushing / Pulling Test  
 STRETCH  
Stretching Test  
 Specifications of  
Base Unit



## YUASA SYSTEM ENDURANCE TEST SYSTEM



**YUASA SYSTEM CO., LTD.**

Our product information is also available on  
<https://www.yuasa-system.jp/en>



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TOKYO OFFICE SHINBASHI SN BLDG. 5-7-10 SHINBASHI, MINATO-KU, TOKYO 105-0004 JAPAN  
OSAKA OFFICE 8F, NLC SHIN-OSAKA EARTH-BLDG. 5-1-3 MIYAHARA, YODOGAWA-KU, OSAKA-CITY 532-0003 JAPAN

 **Safety Note** To ensure your safe and proper usage, please observe all the manuals before using these machines.