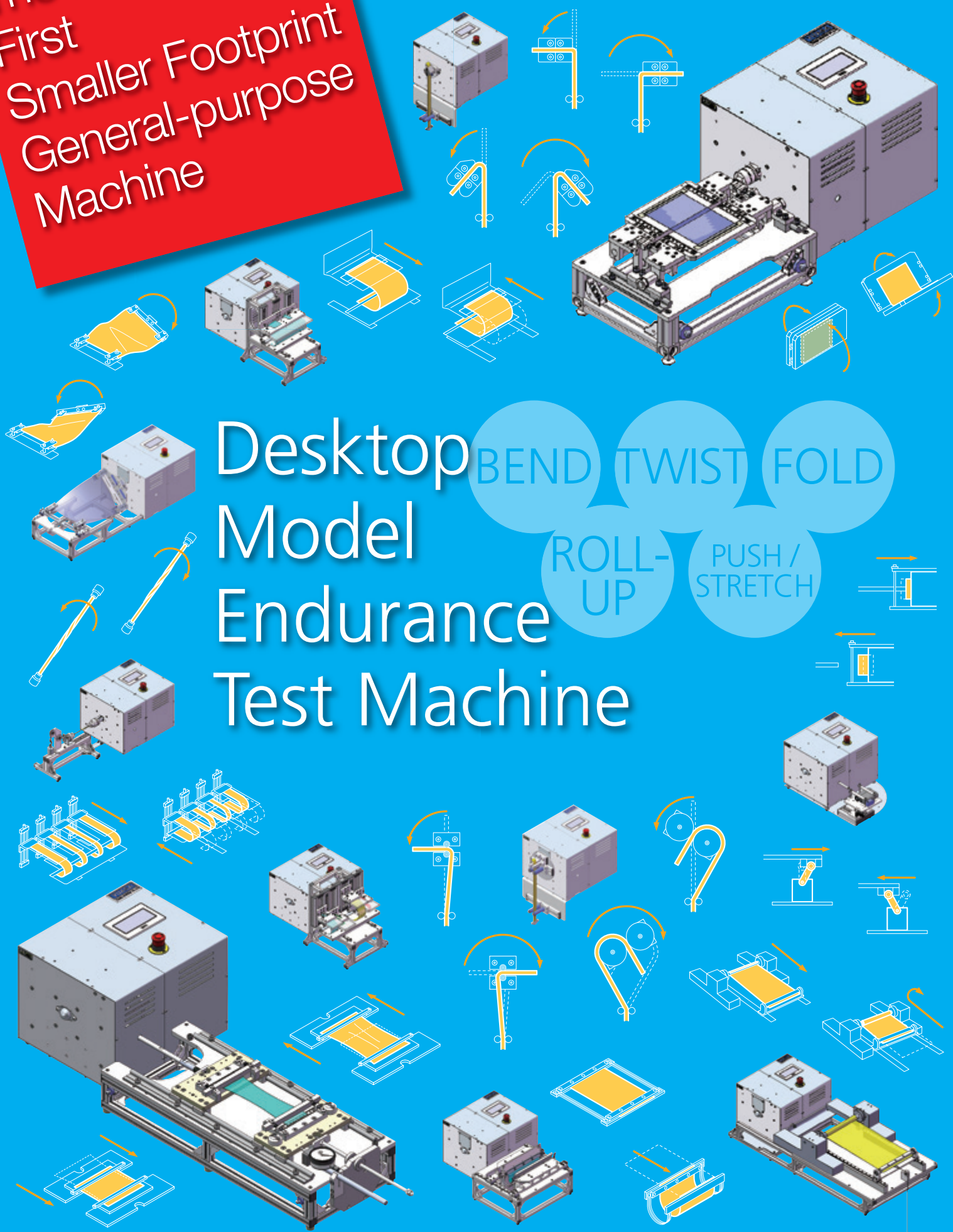


The Industry's  
First  
Smaller Footprint  
General-purpose  
Machine



# Desktop Model Endurance Test Machine

BEND

TWIST

FOLD

ROLL-  
UP

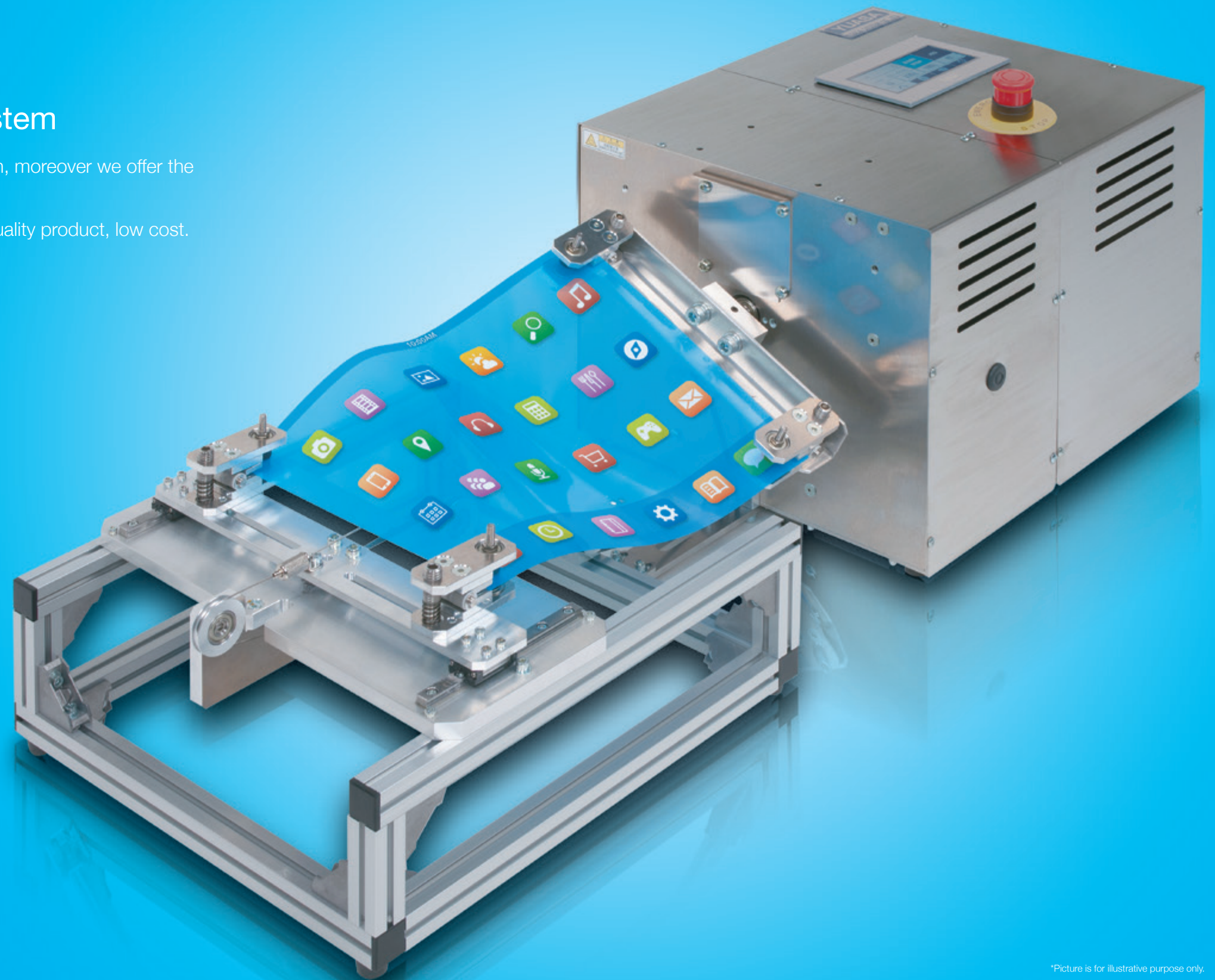
PUSH /  
STRETCH

# Further Improve Reliability

## Multipurpose endurance test system

Yuasa System quickly gets the trend and test information, moreover we offer the endurance test system which can use in all process.

Our advantage is a wide range of know-how and high quality product, low cost. To improve the reliability, we keep evolving.



**YUASA SYSTEM  
ENDURANCE TEST  
SYSTEM**

\*Picture is for illustrative purpose only.



# A Wide Range of Endurance Tests with Our Smaller Machine

SMALL

Desktop Model Endurance Test Machine

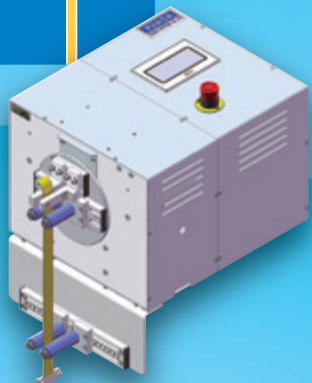


We can do various tests by changing the test jig.  
This machine is quiet and space-saving design.

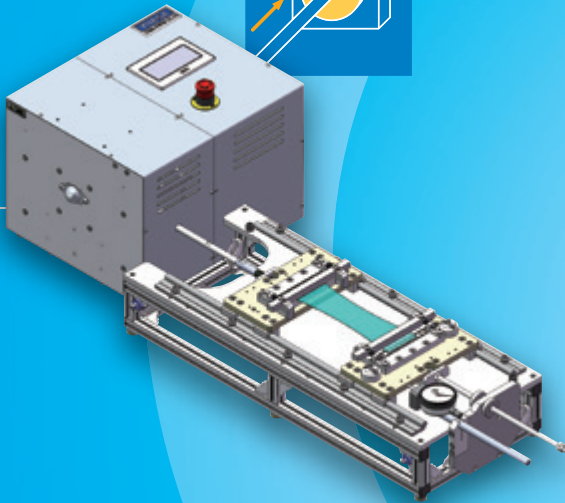
## Contents

07	BEND	Bending Test (ø150 Faceplate) DMLHB-P150 / DMLHP-P150
09		Bending Test (Centripetal Clamp Faceplate) DMLHB-C4/2/1BR / DMLHP-C4/2/1BR
11	TWIST	Torsion Test for Linear Object DMLHB-TW / DMLHP-TW / DMLHPR-TW
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15	FOLD	Tension-Free™ U-shape Folding Test DMLHB-FS / DMLHP-FS / DMLHB-FS-C / DMLHP-FS-C
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25	PUSH / STRETCH	Pushing / Pulling Test DMLHB-PP / DMLHP-PP
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29		Specifications of Base Unit

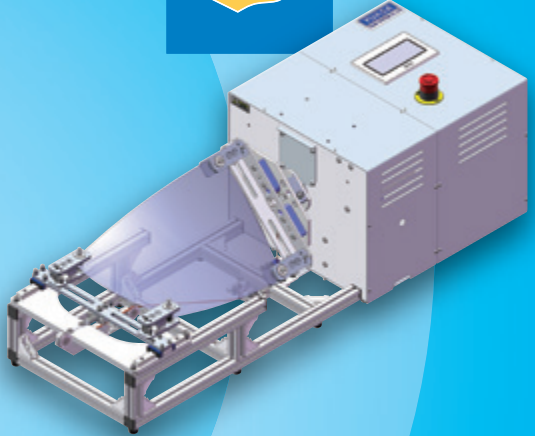
BEND



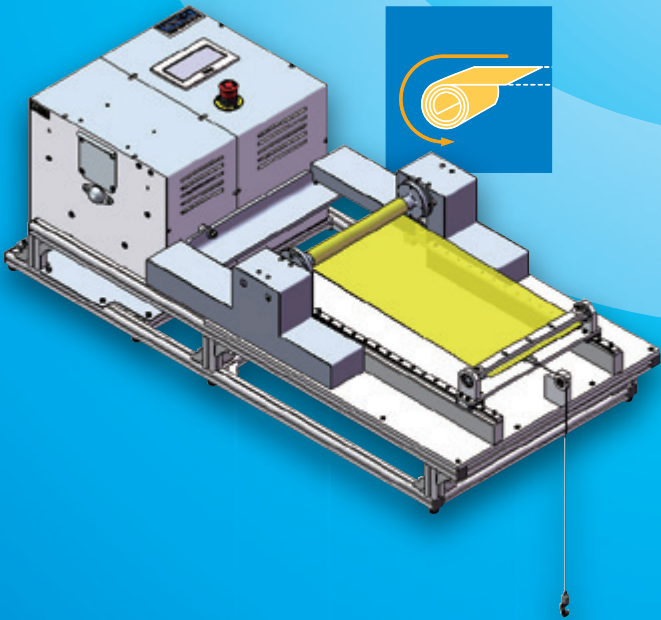
PUSH / STRETCH



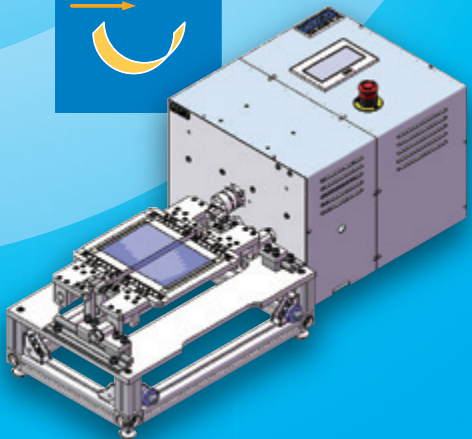
TWIST



ROLL-UP



FOLD

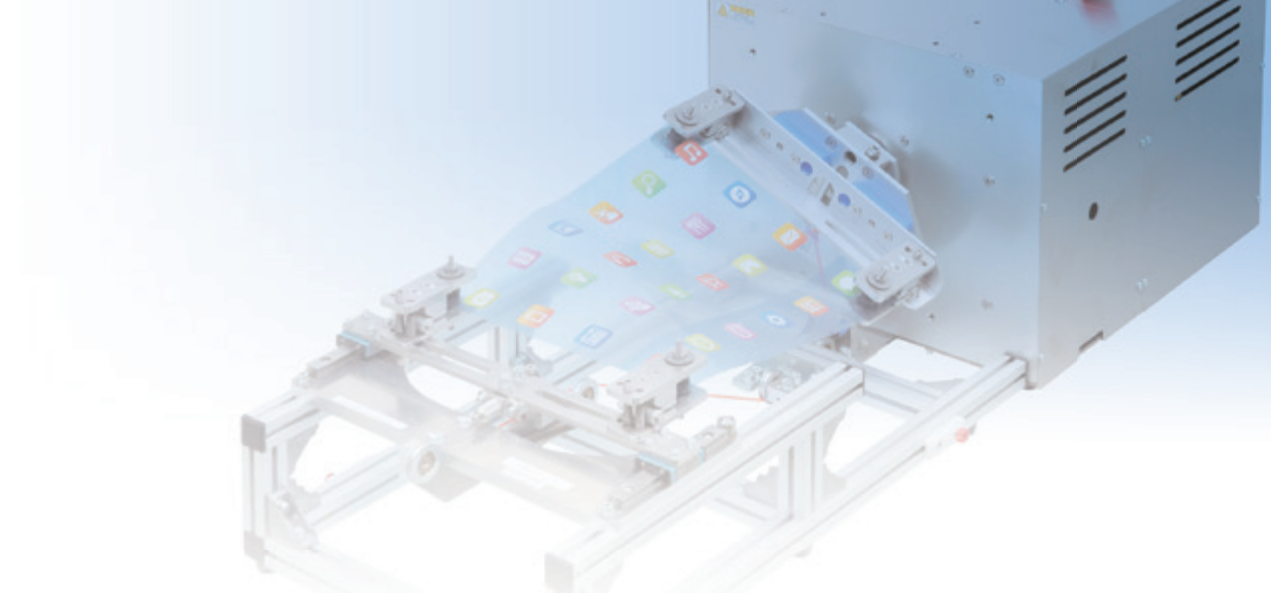


## Basic Motions

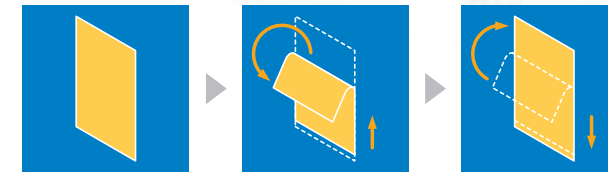
Yuasa's Desktop Model Endurance Test Machines provide

## 5 Basic Motions

5 different motions: bending, torsion, folding, rolling, and pushing / pulling / tension are available for testing with our machines.



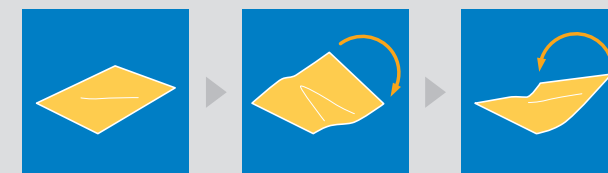
### BEND



#### Bending Test

In this test, a test piece is smoothly bended right and left under the preset test conditions.

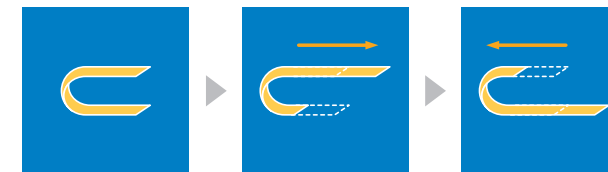
### TWIST



#### Torsion Test

In this test, a test piece is smoothly twisted right and left under the preset test conditions.

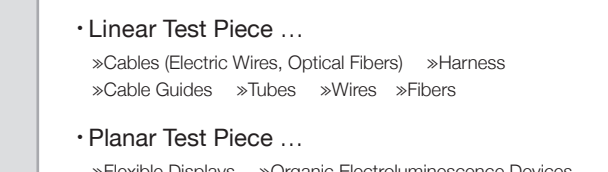
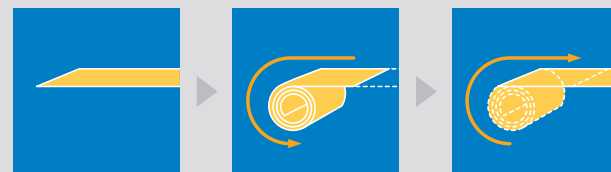
### FOLD



#### Folding Test

In this test, a U-shaped test piece is smoothly moved under the preset test conditions.

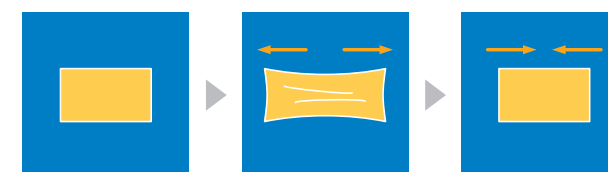
### ROLL-UP



#### Rolling Test

In this test, a test piece is smoothly rolled up and unrolled under the preset test conditions.

### PUSH / STRETCH



#### Pushing / Pulling Test

In this test, a test piece is smoothly pushed and pulled under the preset test conditions.

#### Tension Test

In this test, a test piece is smoothly stretched under the preset test conditions.

#### Example of Test Pieces

##### • Linear Test Piece ...

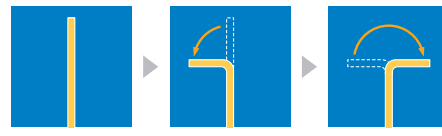
»Cables (Electric Wires, Optical Fibers) »Harness  
»Cable Guides »Tubes »Wires »Fibers

##### • Planar Test Piece ...

»Flexible Displays »Organic Electroluminescence Devices  
»Barrier Film »Flexible Printed Circuits  
»Flat Cables



# BEND



SMALL

DMLHB-P150 / DMLHP-P150

Desktop Model Endurance Test Machine

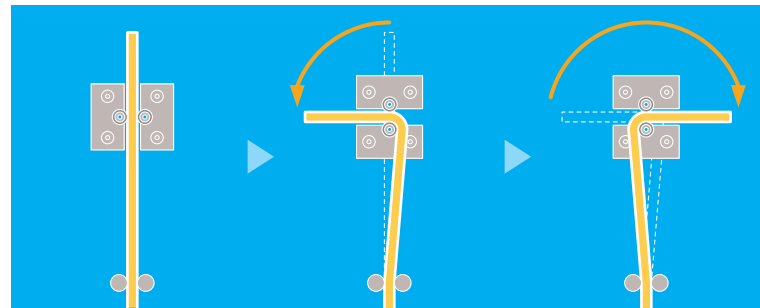
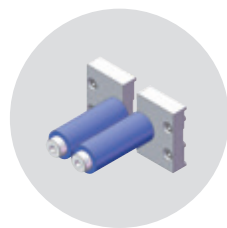
Bending Test (ø150 Faceplate)

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)

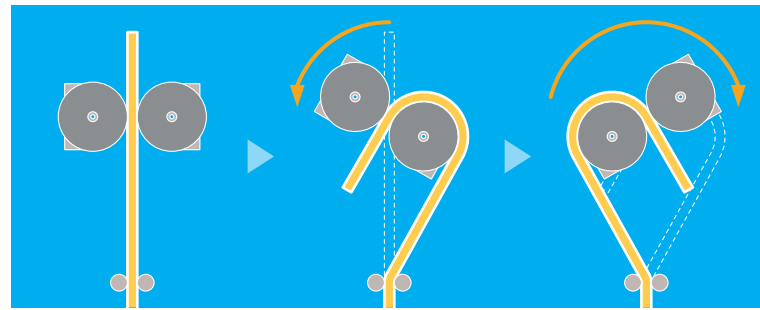
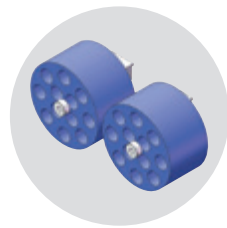
Bend Radius:10mm (Accessory)

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°.



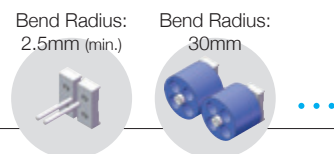
### Test Pieces

- 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.

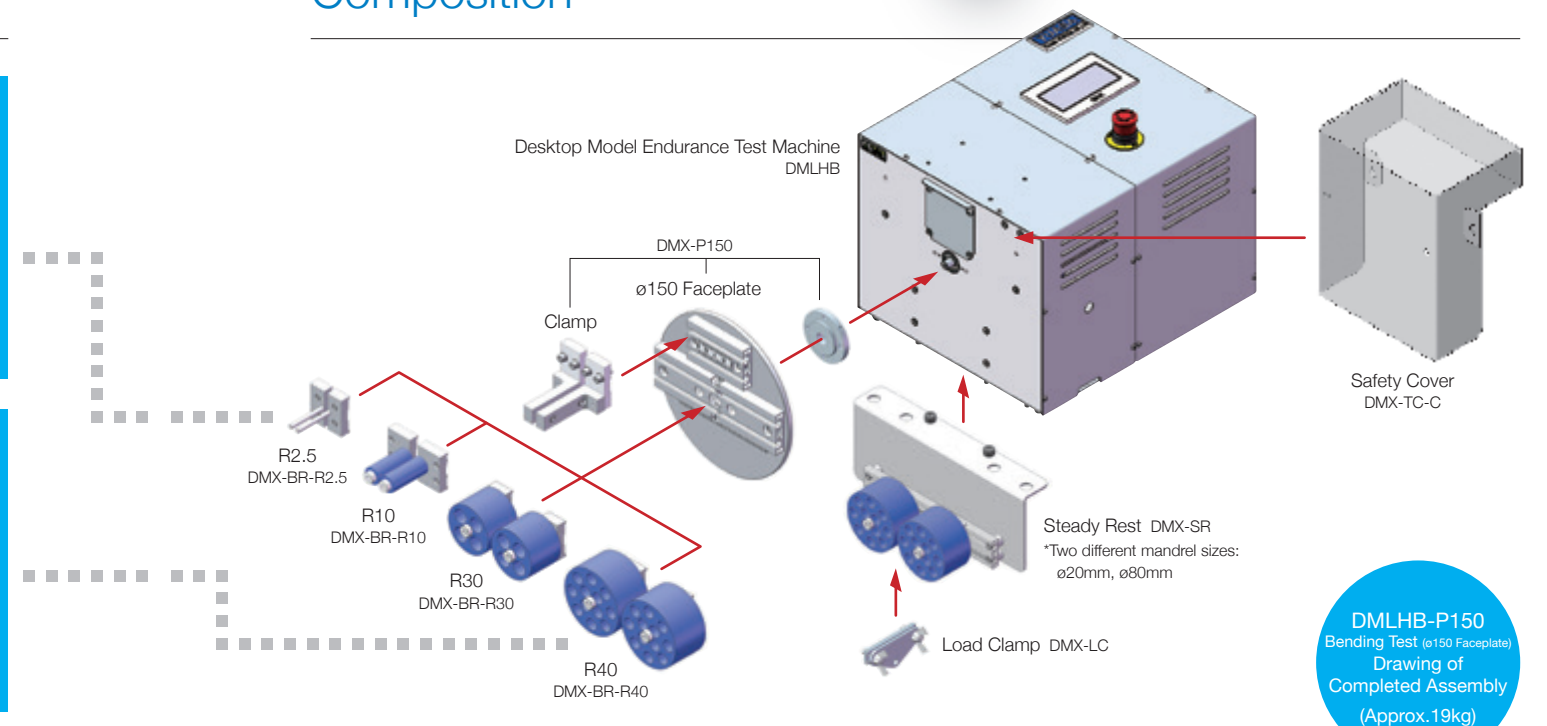
<https://www.yuasa-system.jp/en>

MODELS



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

## Composition



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

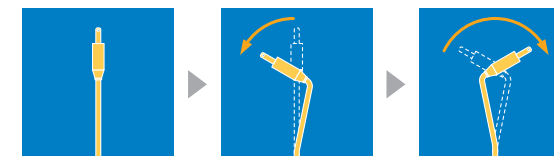
Based on JIS, this machine offers many different tests such as cable tests using weights. Moreover, belt-shaped objects like FFCs and FPCs up to 30mm in width will be tested.

### 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.

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

BEND  
Bending Test (ø150 Faceplate)

TWIST  
Torsion Test

FOLD  
Folding Test

ROLL-UP  
Rolling Test

PUSH / STRETCH  
Pushing / Pulling Test, Tension Test

Specifications of  
Base Unit

# BEND



SMALL

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

Desktop Model Endurance Test Machine

Bending Test (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.

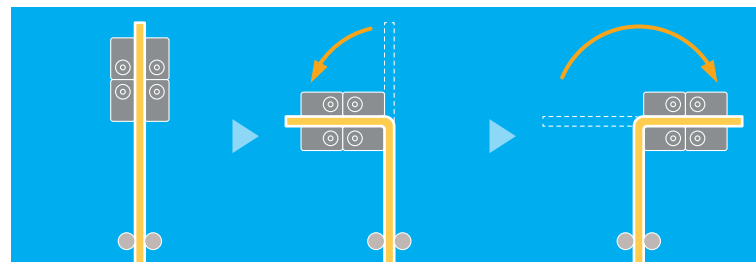
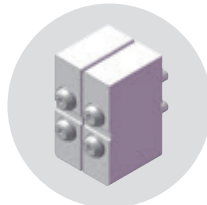
This machine is made for testing in smaller bend radii. There are some objects that can be tested with conventional mandrels.

## Attachment (Test Jig)

Bending block is usable as clamp.

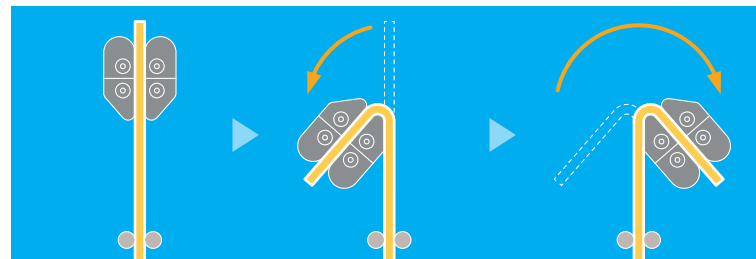
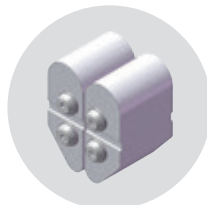
### 4R-block

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



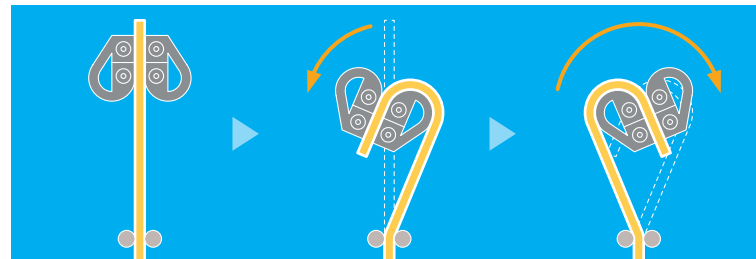
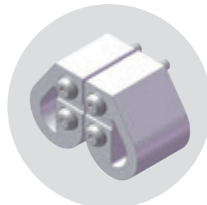
### 2R-block

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.

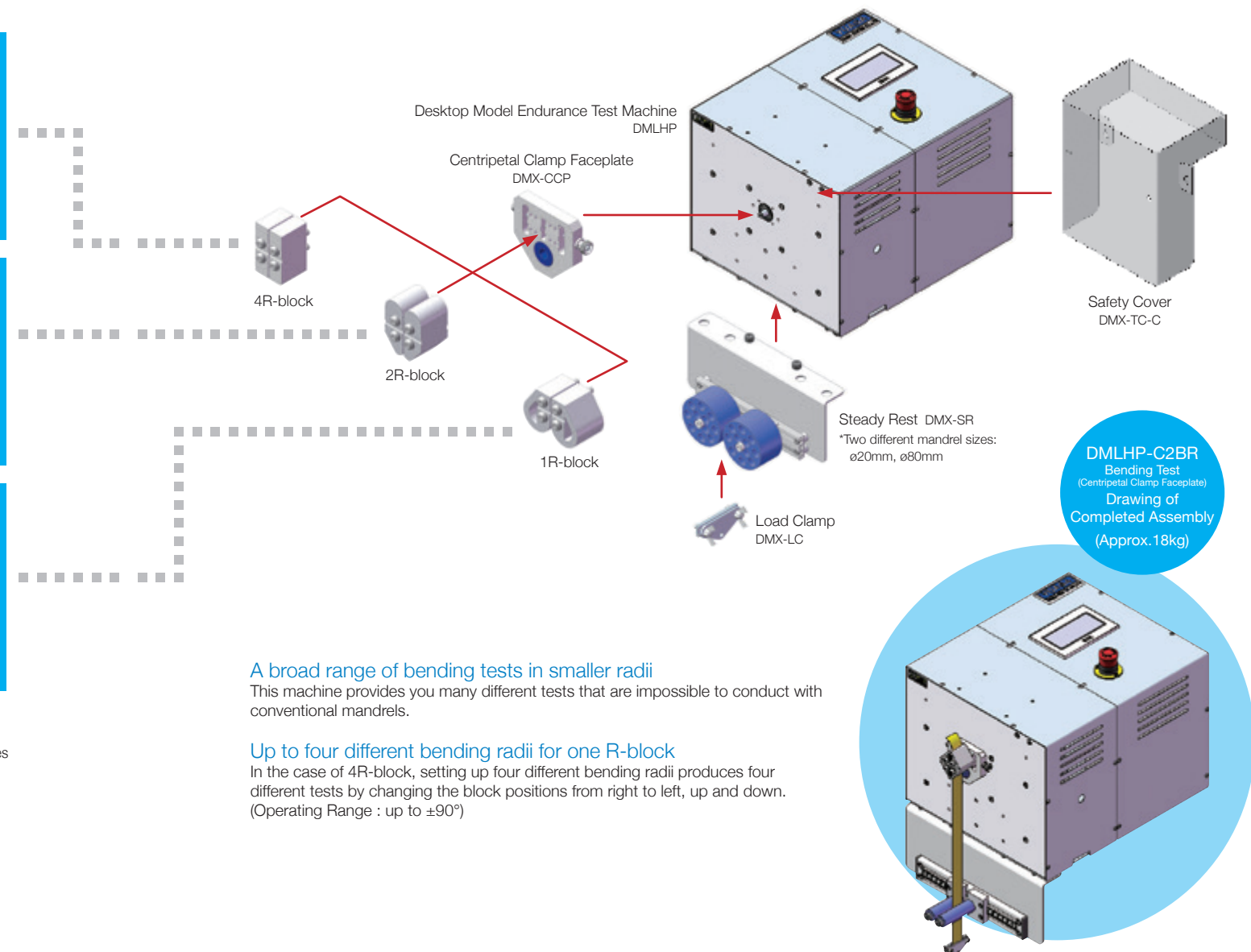
<https://www.yuasa-system.jp/en>

MODELS



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

## 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  $\pm 90^\circ$ )

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 (Centripetal Clamp Faceplate)

TWIST  
Torsion Test

FOLD  
Folding Test

ROLL-UP  
Rolling Test

PUSH / STRETCH  
Pushing / Pulling Test, Tension Test

Specifications of  
Base Unit



# TWIST



SMALL

DMLHB-TW / DMLHP-TW / DMLHPR-TW

Desktop Model Endurance Test Machine

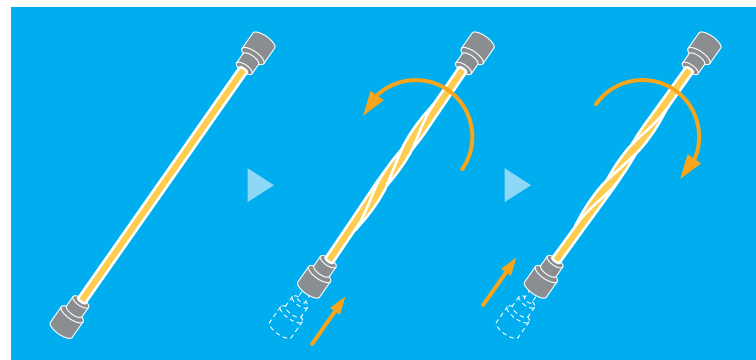
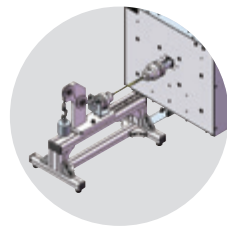
Torsion Test for Linear Object

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

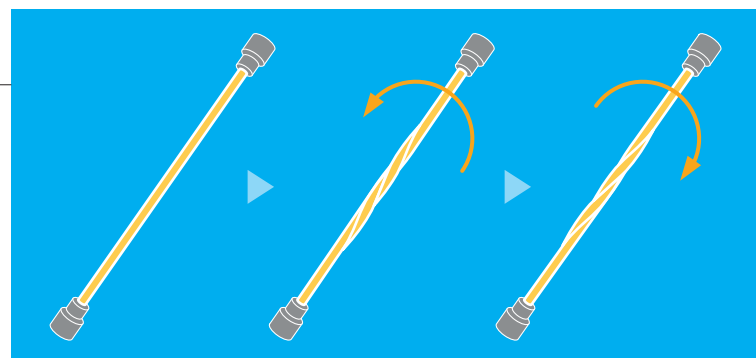
## Attachment (Test Jig)

### Test Jig for Linear Object

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.

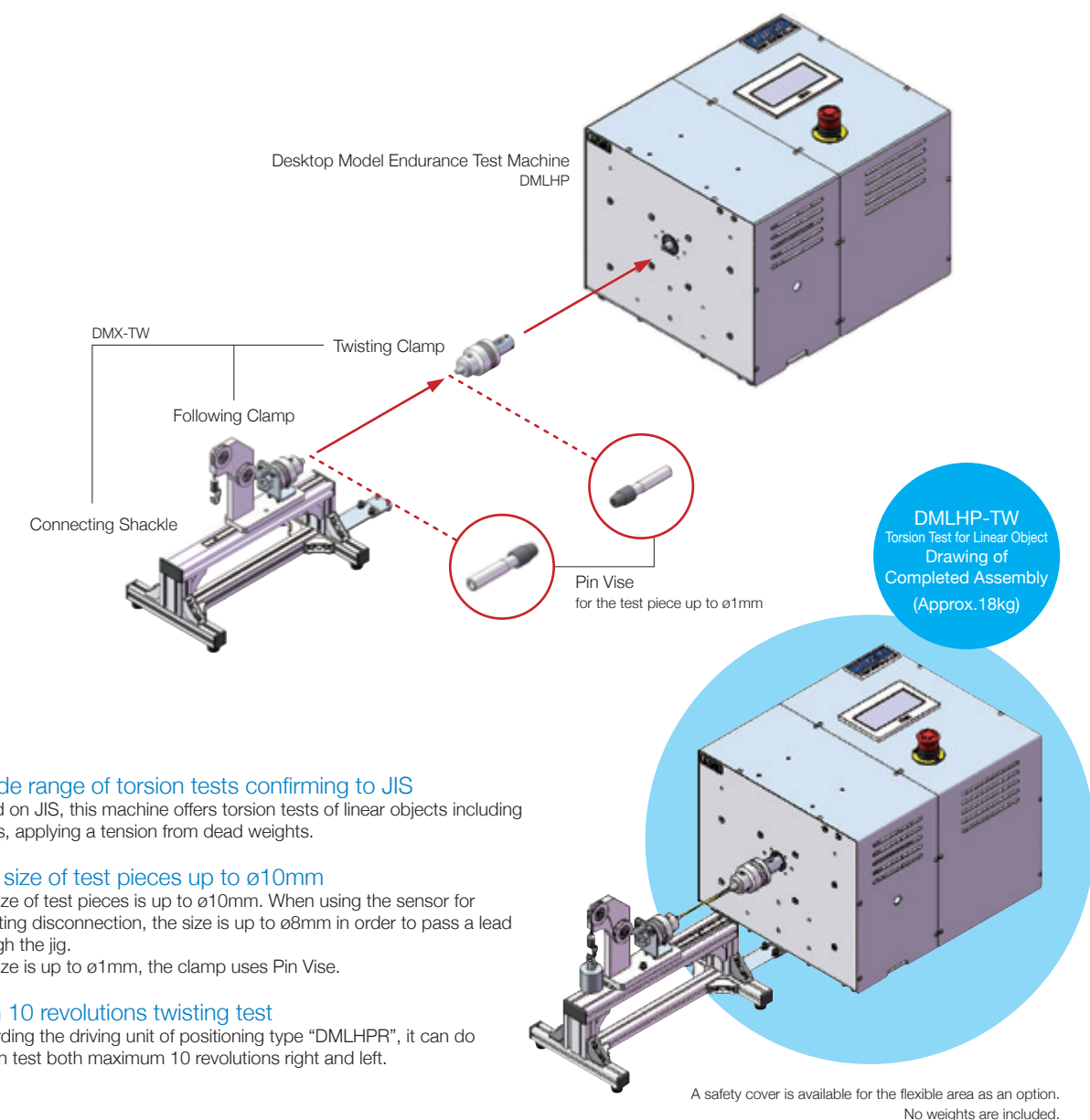
<https://www.yuasa-system.jp/en>

MODELS



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

## Composition



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

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

### Free size of test pieces up to $\phi 10$ mm

The size of test pieces is up to  $\phi 10$ mm. When using the sensor for detecting disconnection, the size is up to  $\phi 8$ mm in order to pass a lead through the jig.  
The size is up to  $\phi 1$ mm, the clamp uses Pin Vise.

### Both 10 revolutions twisting test

Regarding the driving unit of positioning type "DMLHPR", it can do torsion test both maximum 10 revolutions right and left.

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

BEND  
Bending Test

TWIST  
Torsion Test for Linear Object

FOLD  
Folding Test

ROLL-UP  
Rolling Test

PUSH / STRETCH  
Pushing / Pulling Test, Tension Test

Specifications of  
Base Unit

# TWIST



SMALL

DMLHB-FT / DMLHP-FT

Desktop Model Endurance Test Machine

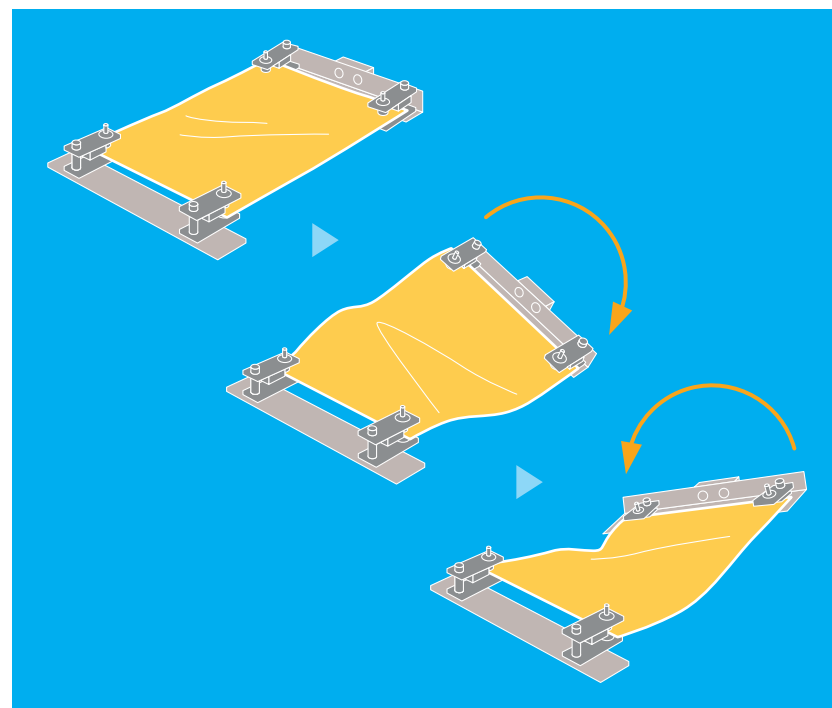
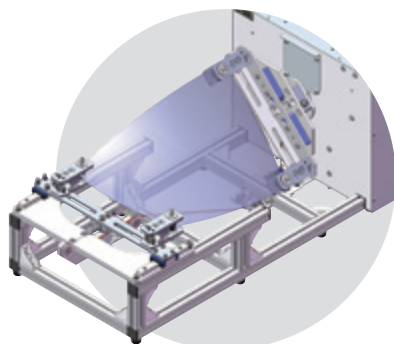
Torsion Test for Planar Object

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

## Attachment (Test Jig)

### No-tension Torsion Test Jig for Planar Object

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

Please check the latest specification on the web.

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

MODELS

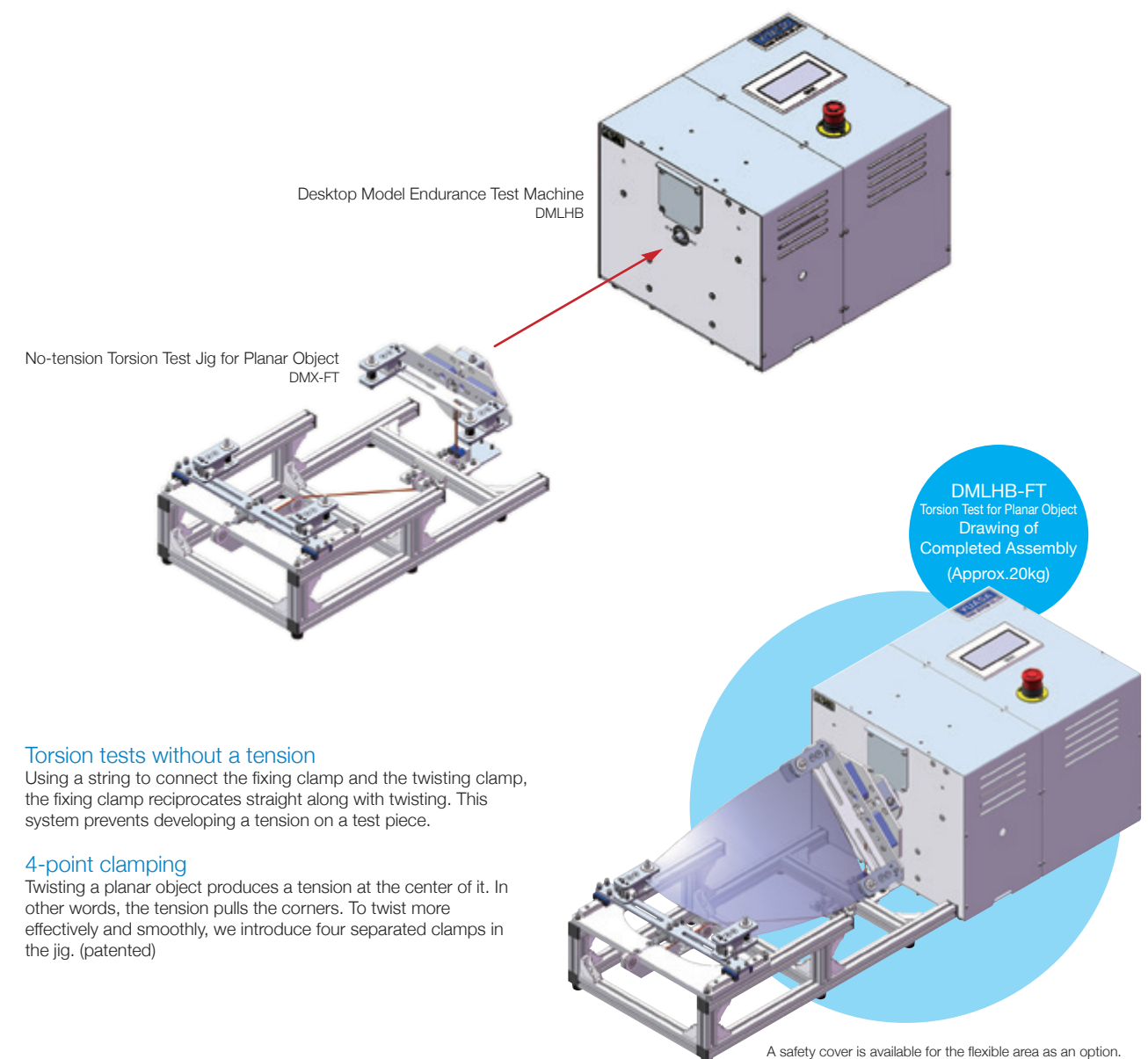


You can download the specification. If you have any question, please ask us.



DMLHP-FT

## Composition



### Torsion 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)

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

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

BEND  
Bending Test

TWIST  
Torsion Test for Planar Object

FOLD  
Folding Test

ROLL-UP  
Rolling Test

PUSH / STRETCH  
Pushing / Pulling Test, Tension Test

Specifications of  
Base Unit



# FOLD



SMALL

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

Desktop Model Endurance Test Machine

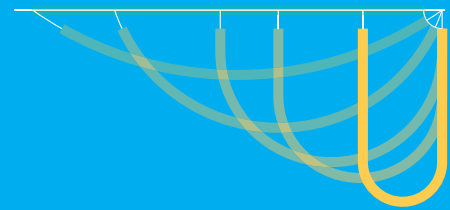
Tension-Free™ U-shape Folding Test



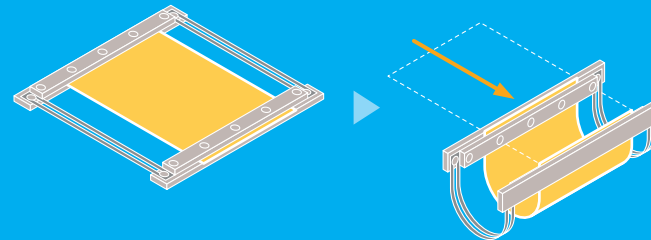
The bending load is applied by having one side of the sample move straight towards the other side. The sample only receives bending load so there are no applied tension or friction.

## Attachment (Test Jig)

### Basic Movement



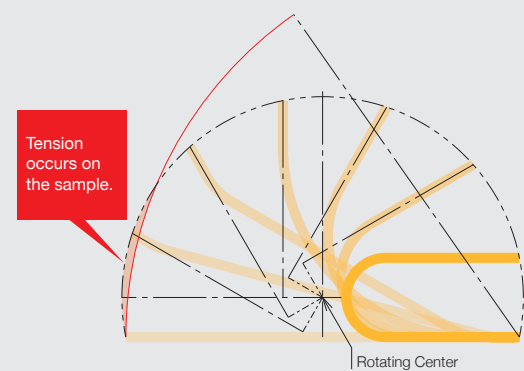
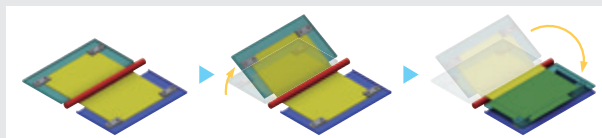
### Jig Movement



Set the sample flat on the tilt clamp. The equipment will repeat flat and bend motion. When bending, the tilt clamp moves downward so the sample would bend in natural U-shape. It is possible to perform vertical tests by setting the tilt clamp up right.

### Issues During General Folding Test

When conducting tests with equipments shown in the below diagram, a large tension occurs on the sample when the test starts. The cause of this is clear when drawing a circle with radius the same length as the sample on the movement track of the test machine, shown on right. As shown in red in the diagram, the length of the sample is too short against the movement track of the clamp. If one uses a rod, this becomes more apparent. This causes the unexpected breaks and disperse in the test results in actual tests.



### 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



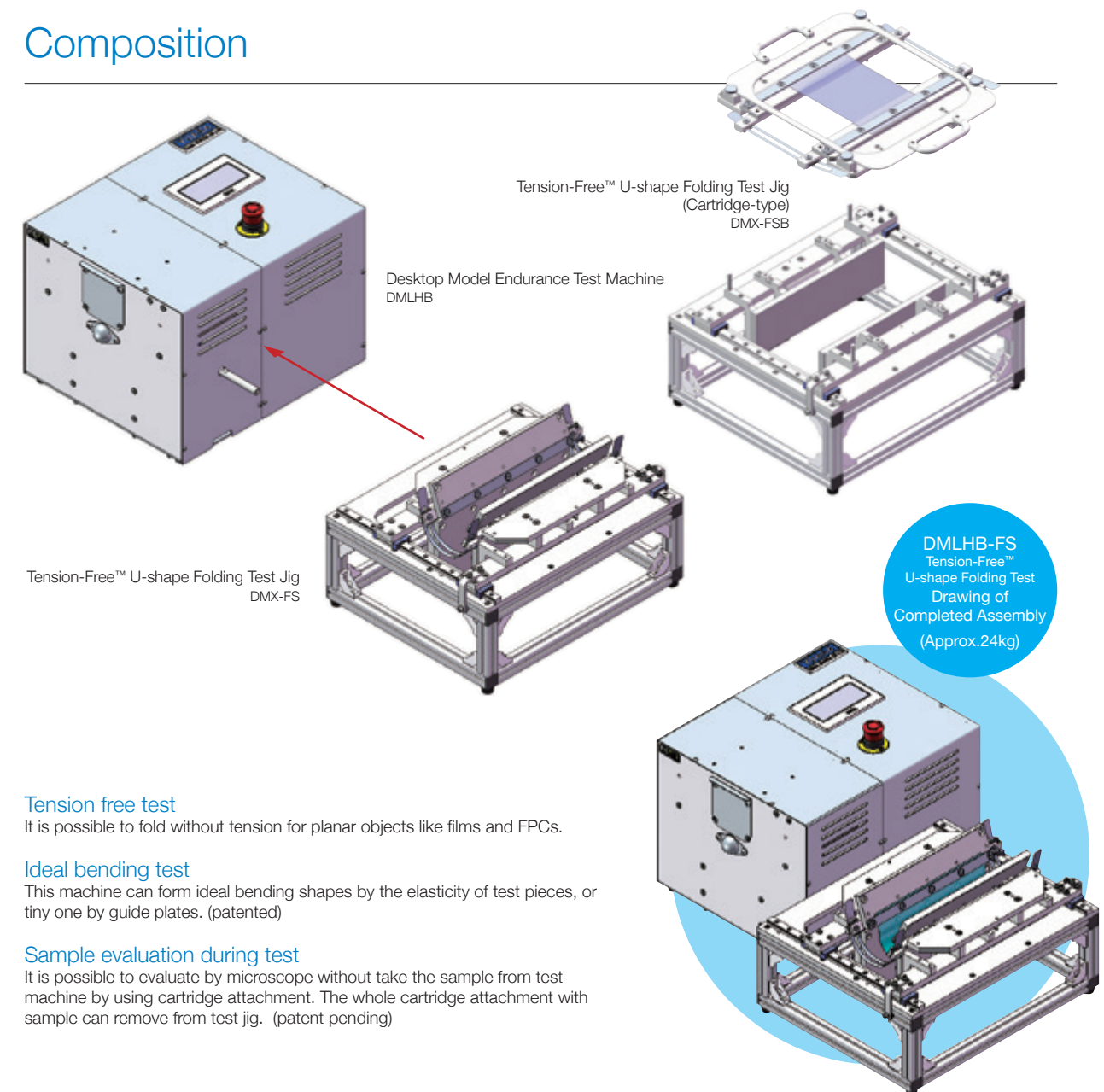
You can download the specification. If you have any question, please ask us.



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  
Torsion Test

FOLD  
Tension-Free™ U-shape Folding Test

ROLL-UP  
Rolling Test

PUSH / STRETCH  
Pushing / Pulling Test, Tension Test

Specifications of  
Base Unit

# FOLD



SMALL

DMLHP-CS

Desktop Model Endurance Test Machine

Tension-Free™ Folding Clamshell-type

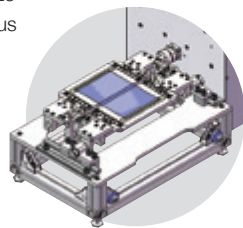


This test machine can examine by tiny bending radius.  
This test method doesn't occur the tensile stress to the test sample.

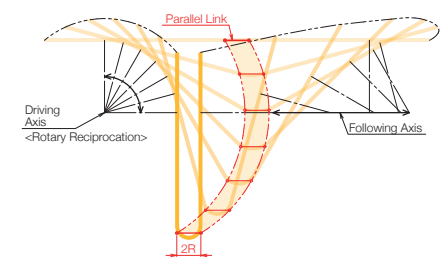
## Attachment (Test Jig)

### Tension-Free™ Folding Clamshell-type 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.

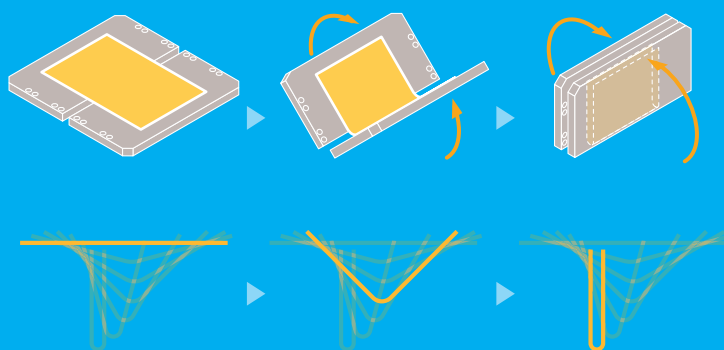


### Sample-deformation process



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.

### Jig Movement



### 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

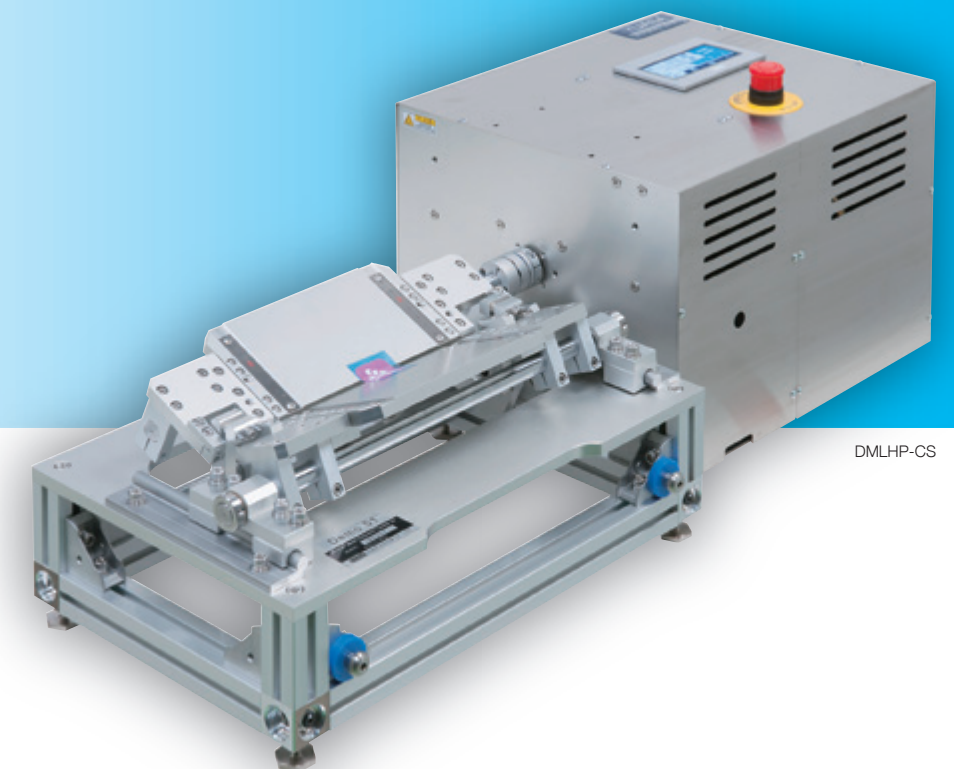
Please check the latest specification on the web.

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

MODELS

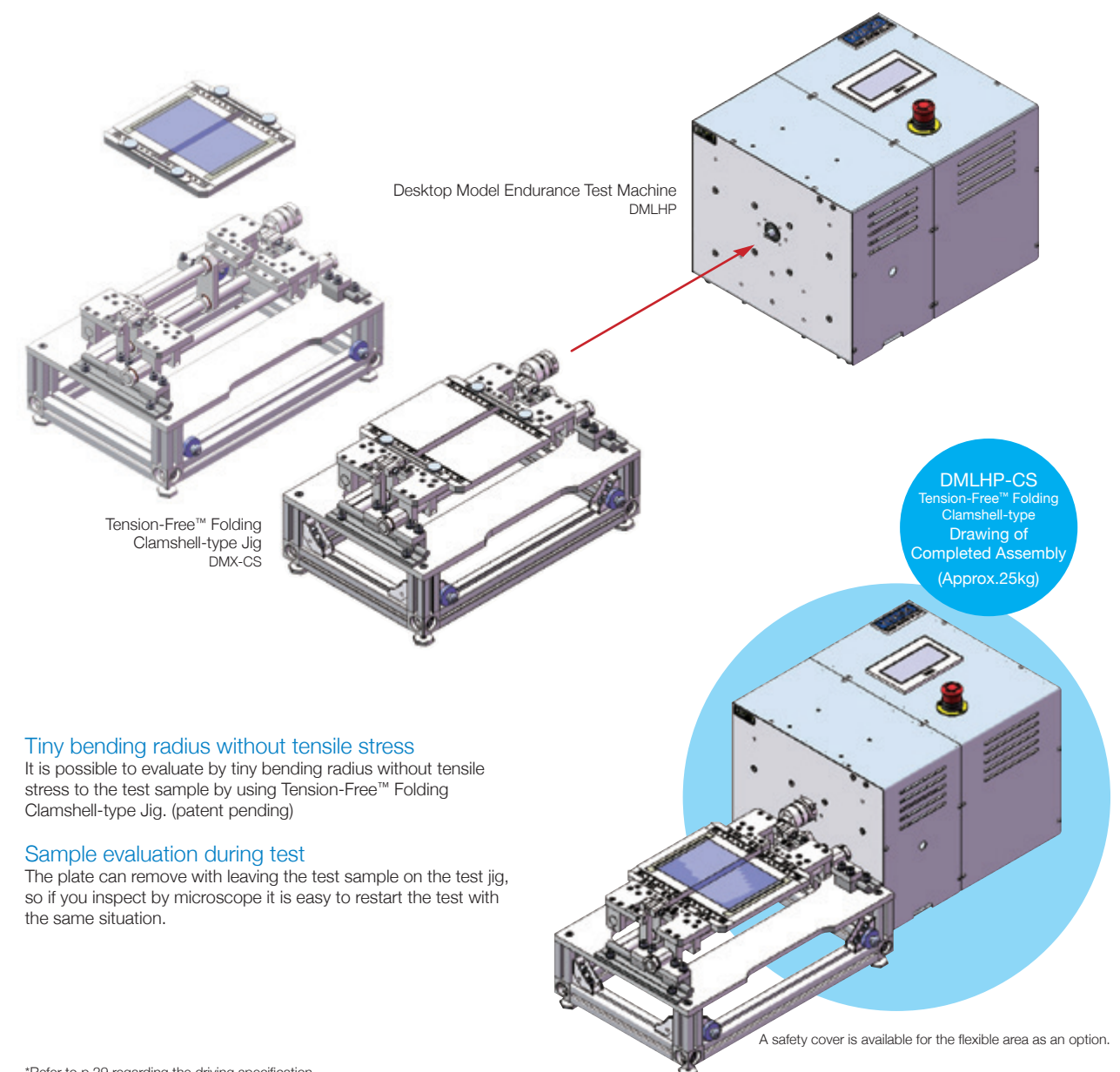


You can download the specification. If you have any question, please ask us.



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 Tension-Free™ Folding Clamshell-type 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  
Torsion Test

FOLD  
Tension-Free™ Folding Clamshell-type

ROLL-UP  
Rolling Test

PUSH / STRETCH  
Pushing / Pulling Test, Tension Test

Specifications of  
Base Unit



# FOLD



SMALL

DMLHB-FU / DMLHP-FU

Desktop Model Endurance Test Machine

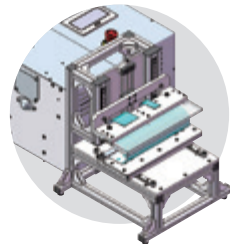
U-shape Sliding Plate Test

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

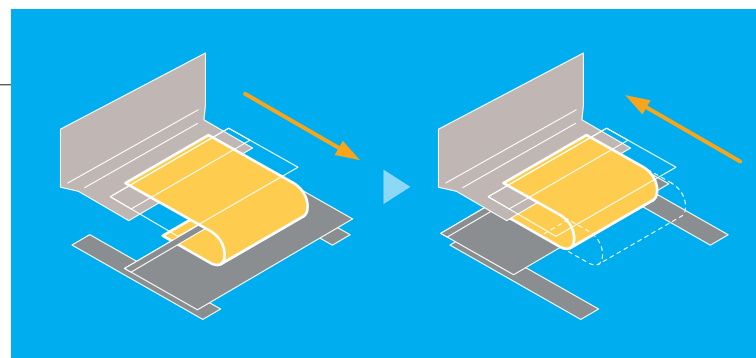
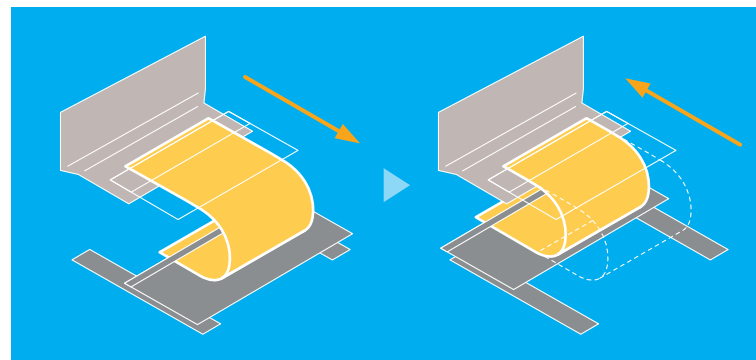
## Attachment (Test Jig)

### 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.

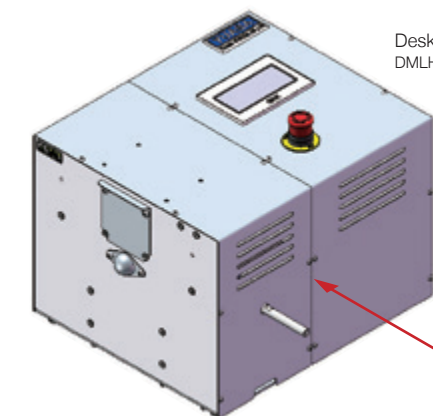
<https://www.yuasa-system.jp/en>

MODELS



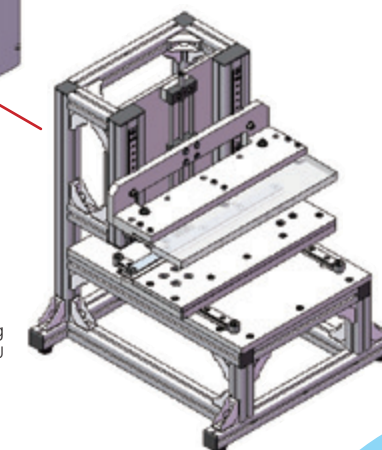
You can download the specification. If you have any question, please ask us.

## Composition

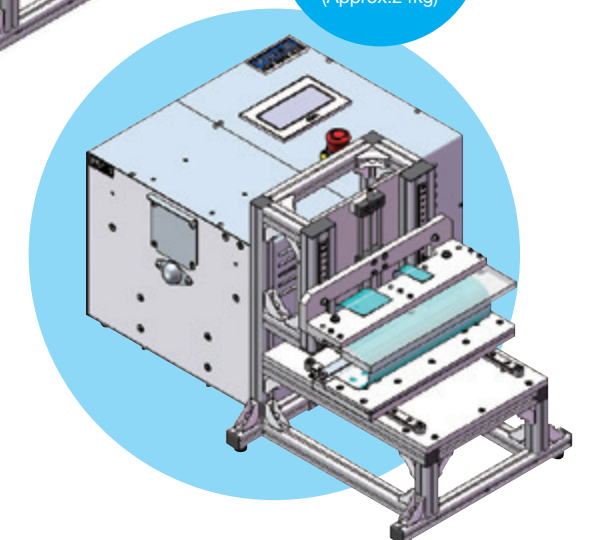


Desktop Model Endurance Test Machine  
DMLHB

Single-lane Test Jig  
DMX-FU



DMLHB-FU  
U-shape Sliding Plate Test  
Drawing of  
Completed Assembly  
(Approx.24kg)



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

### 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.

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

BEND  
Bending Test

TWIST  
Torsion Test

FOLD  
U-shape Sliding Plate Test

ROLL-UP  
Rolling Test

PUSH / STRETCH  
Pushing / Pulling Test, Tension Test

Specifications of  
Base Unit

# FOLD



SMALL

DMLHB-4U / DMLHP-4U

Desktop Model Endurance Test Machine

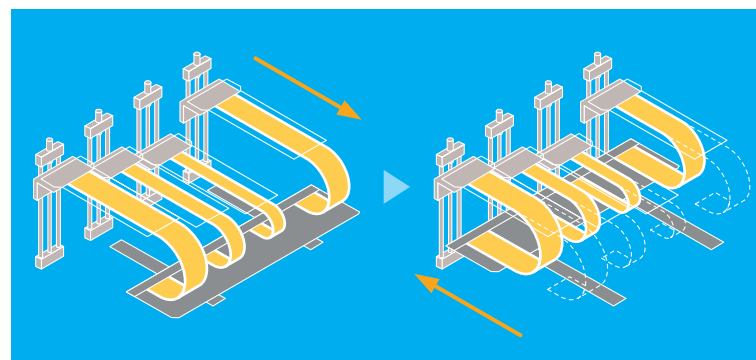
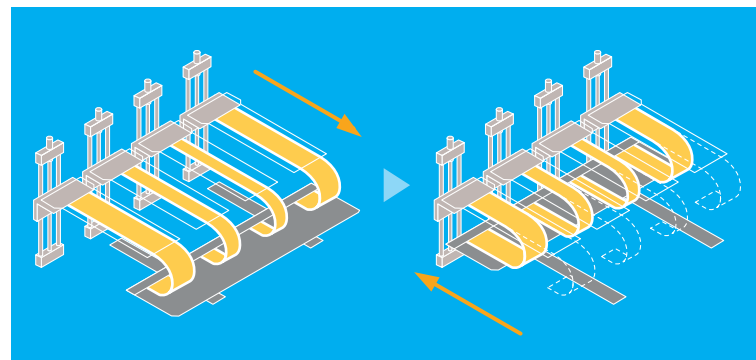
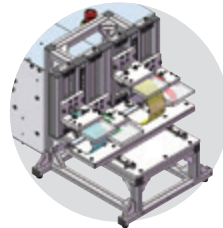
U-shape Sliding Plate Test (4-lane)

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.

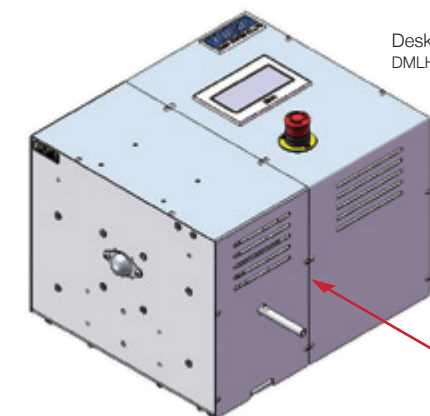
<https://www.yuasa-system.jp/en>

MODELS



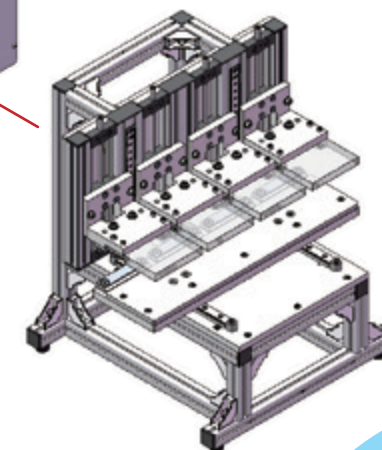
You can download the specification. If you have any question, please ask us.

## Composition

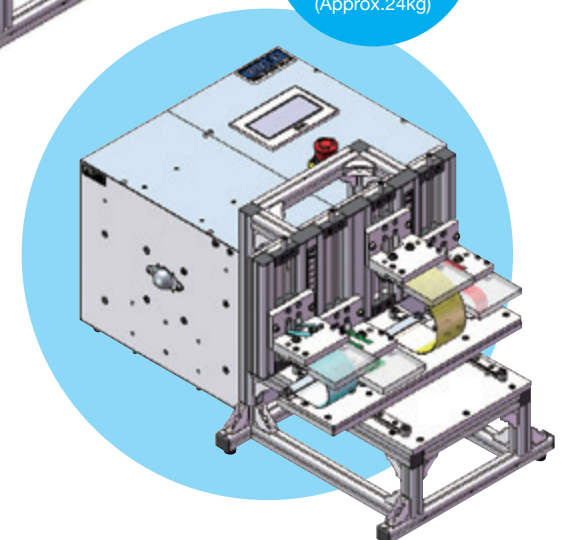


Desktop Model Endurance Test Machine  
DMLHP

4-lane Test Jig  
DMX-4U



DMLHP-4U  
U-shape Sliding Plate Test  
(4-lane)  
Drawing of  
Completed Assembly  
(Approx.24kg)



### 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  
Torsion Test

FOLD  
U-shape Sliding Plate Test (4-lane)

ROLL-UP  
Rolling Test

PUSH / STRETCH  
Pushing / Pulling Test, Tension Test

Specifications of  
Base Unit



# ROLL-UP



SMALL

DMLHB-FR / DMLHP-FR

Desktop Model Endurance Test Machine

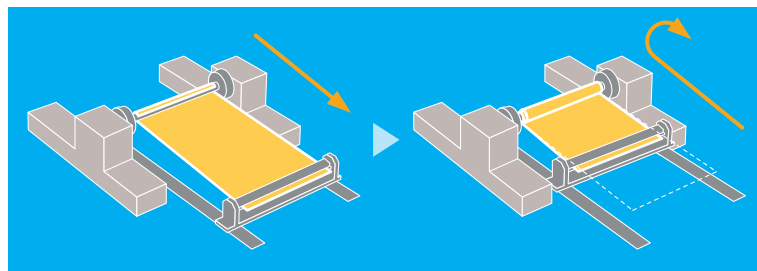
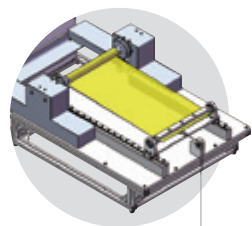
Rolling Test

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.



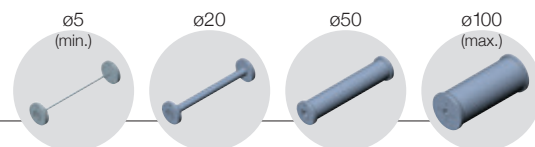
#### Test Pieces

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

#### Notes

»CE Marking

Specify roller sizes from  $\phi 5$  -  $\phi 100$ mm.

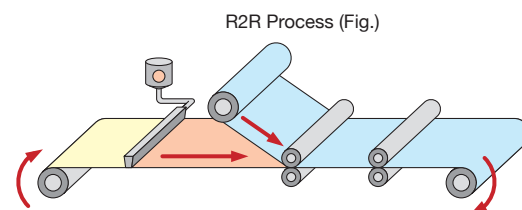


## The Needs of Rolling Test

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

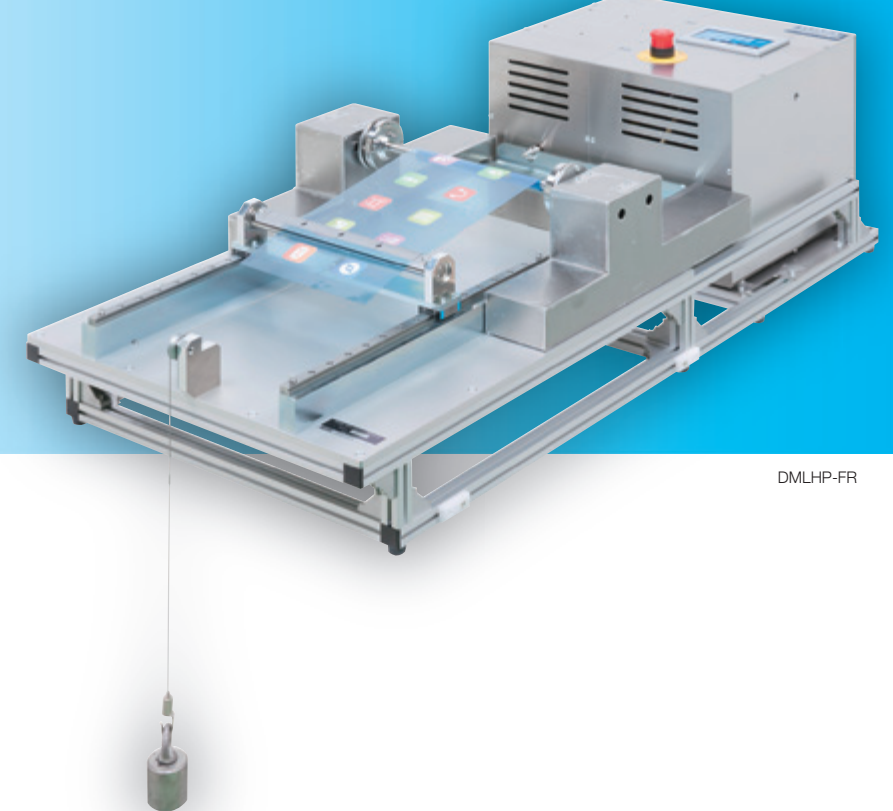
Please check the latest specification on the web.

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

MODELS

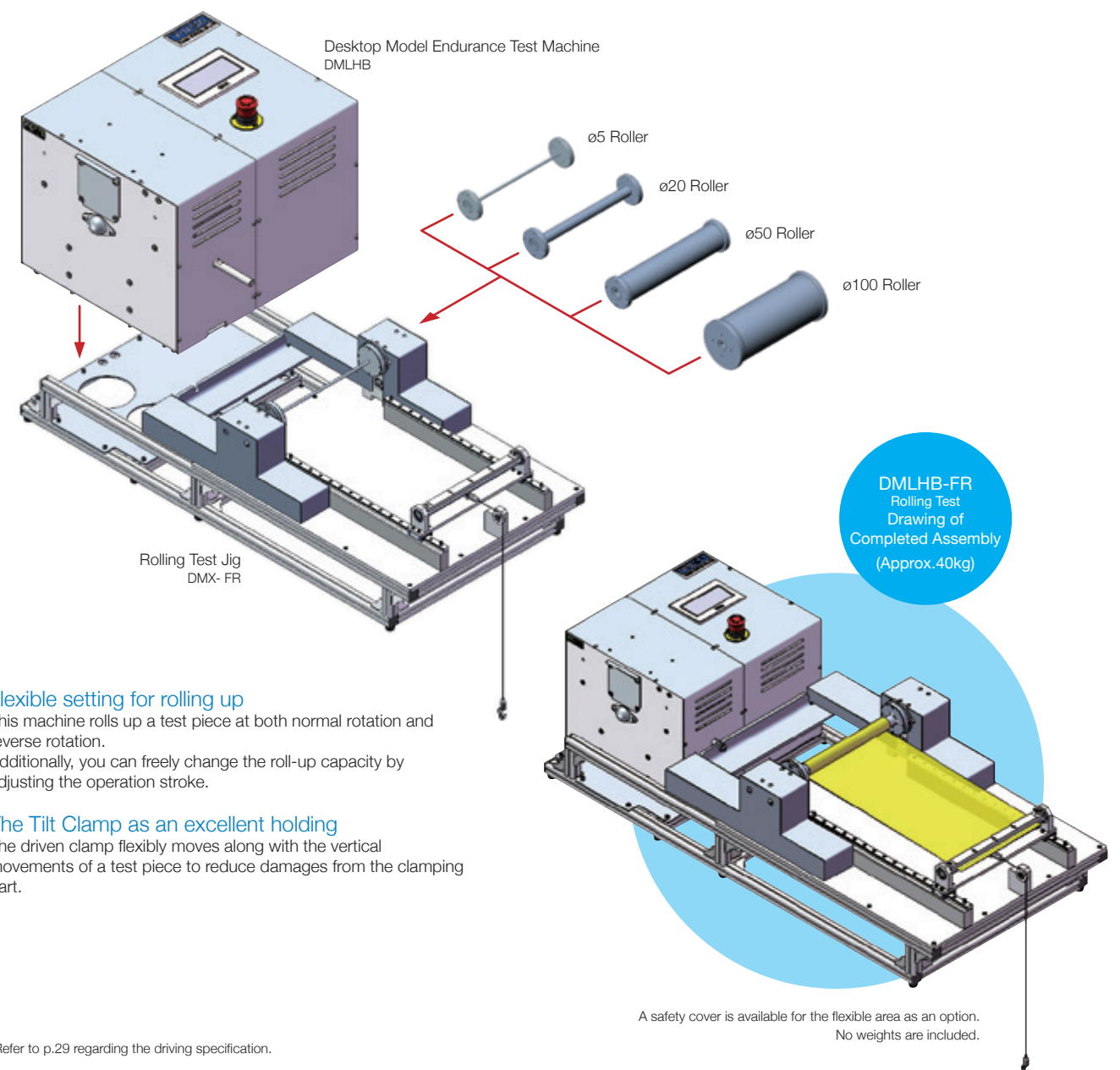


You can download the specification. If you have any question, please ask us.



DMLHP-FR

## Composition



### 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.

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

BEND  
Bending Test

TWIST  
Torsion Test

FOLD  
Folding Test

ROLL-UP  
Rolling Test

PUSH / STRETCH  
Pushing / Pulling Test, Tension Test

Specifications of  
Base Unit

# PUSH / STRETCH



SMALL

DMLHB-PP / DMLHP-PP

Desktop Model Endurance Test Machine

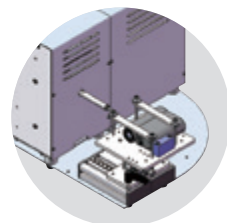
Pushing / Pulling Test

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

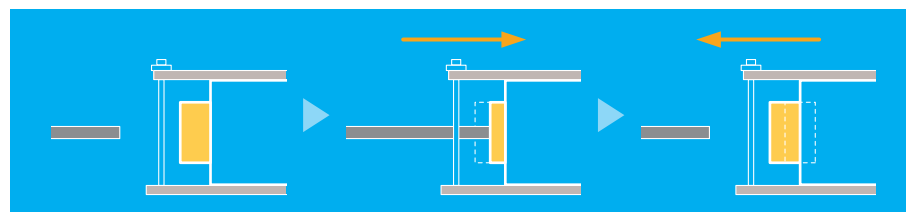
The output axis reciprocally pushes and pulls a test piece fixed on the XYZ table for testing its endurance. Please feel free to consult us about additional jigs attached to the output axis.



Test Pieces	»Push-button Switch	»Limit Switch	»Connectors
	»USB Memory	»SD Card	»Card Reader
Notes	»CE Marking		

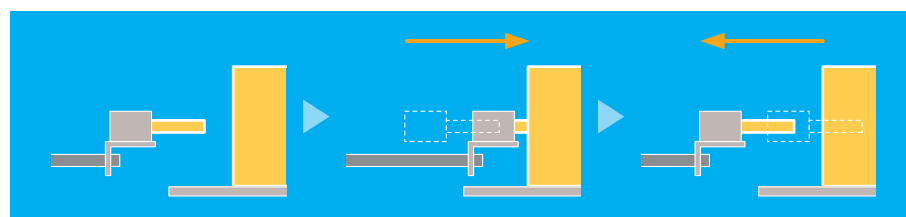
### Pushing Test for Push-button Switch

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



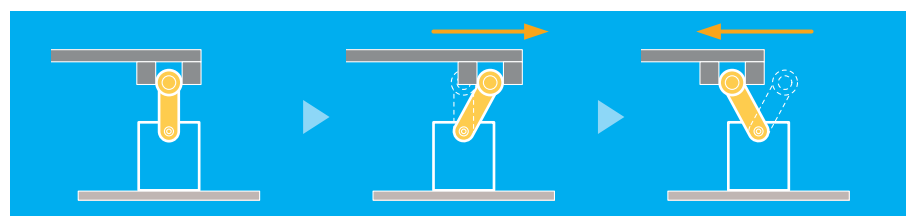
### Inserting and Ejecting Test for Storage Media

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.

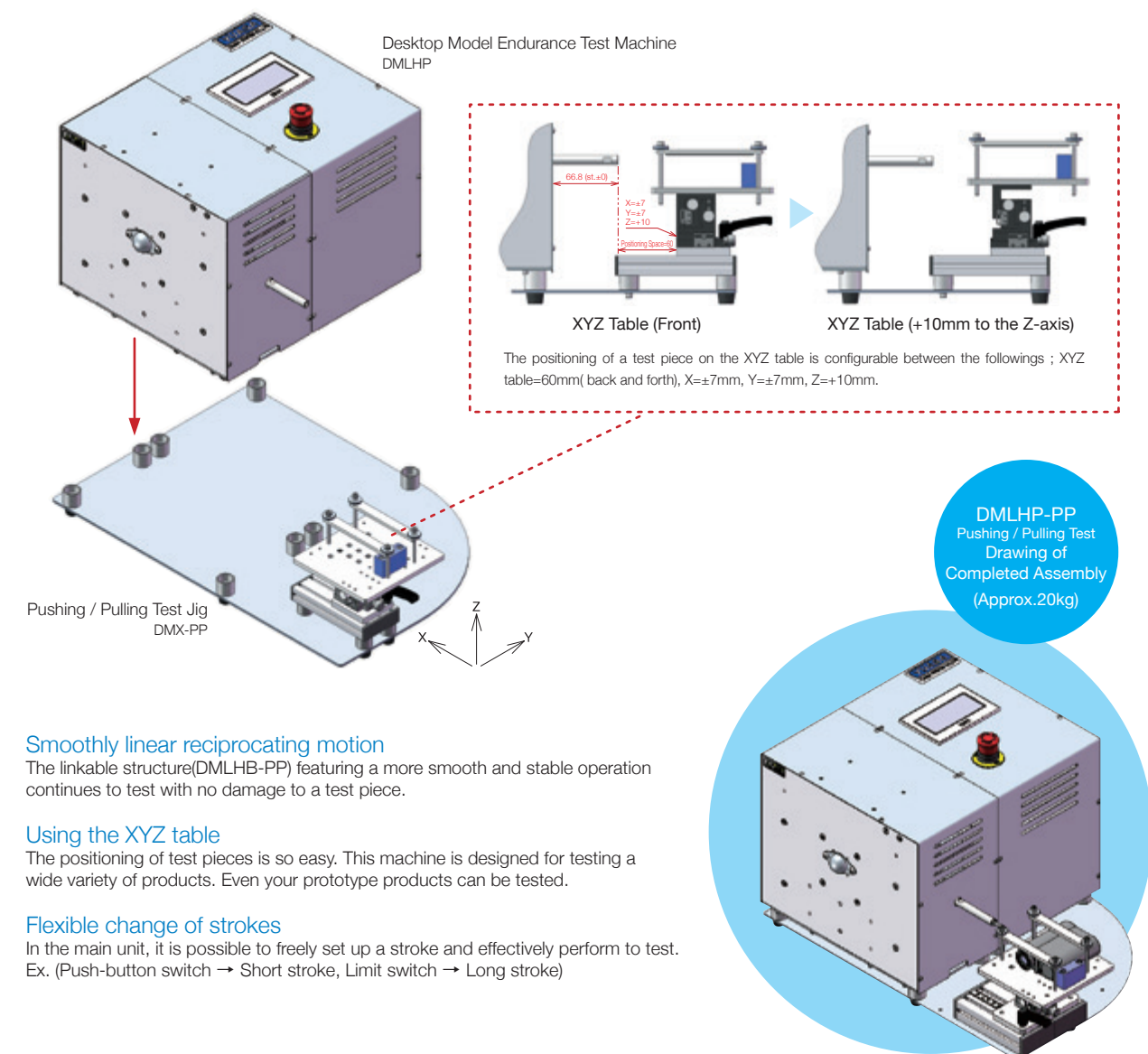
<https://www.yuasa-system.jp/en>

MODELS



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

## 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  
Torsion Test

FOLD  
Folding Test

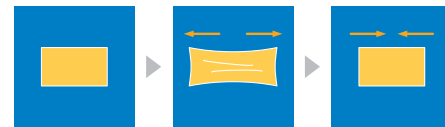
ROLL-UP  
Rolling Test

PUSH / STRETCH  
Pushing / Pulling Test

Specifications of  
Base Unit



# PUSH / STRETCH



SMALL

DMLHP-ST

Desktop Model Endurance Test Machine

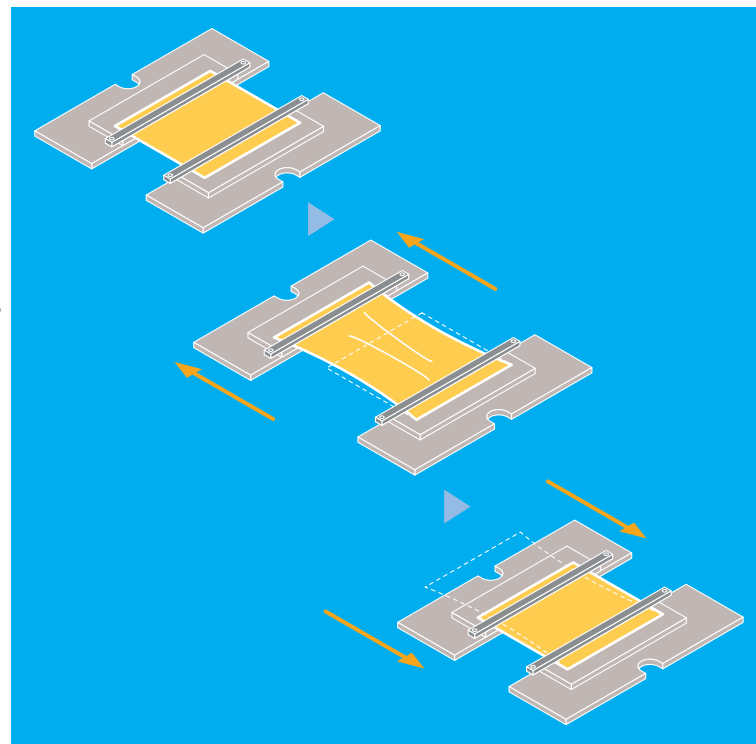
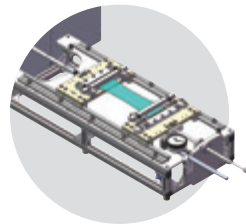
Stretching Test

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

Web

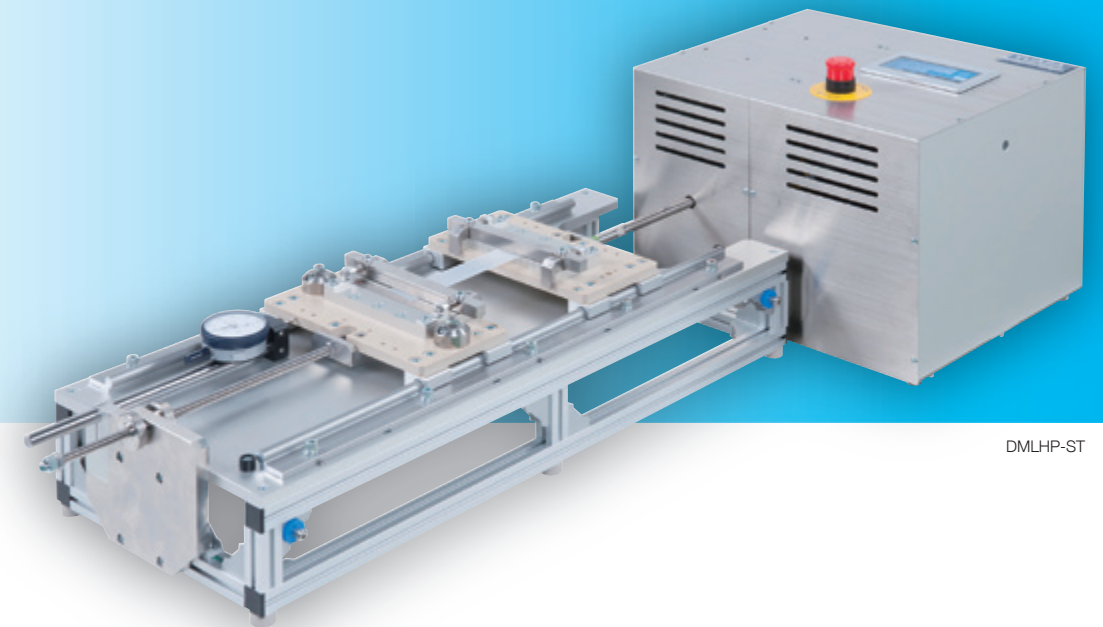
Please check the latest specification on the web.

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

MODELS

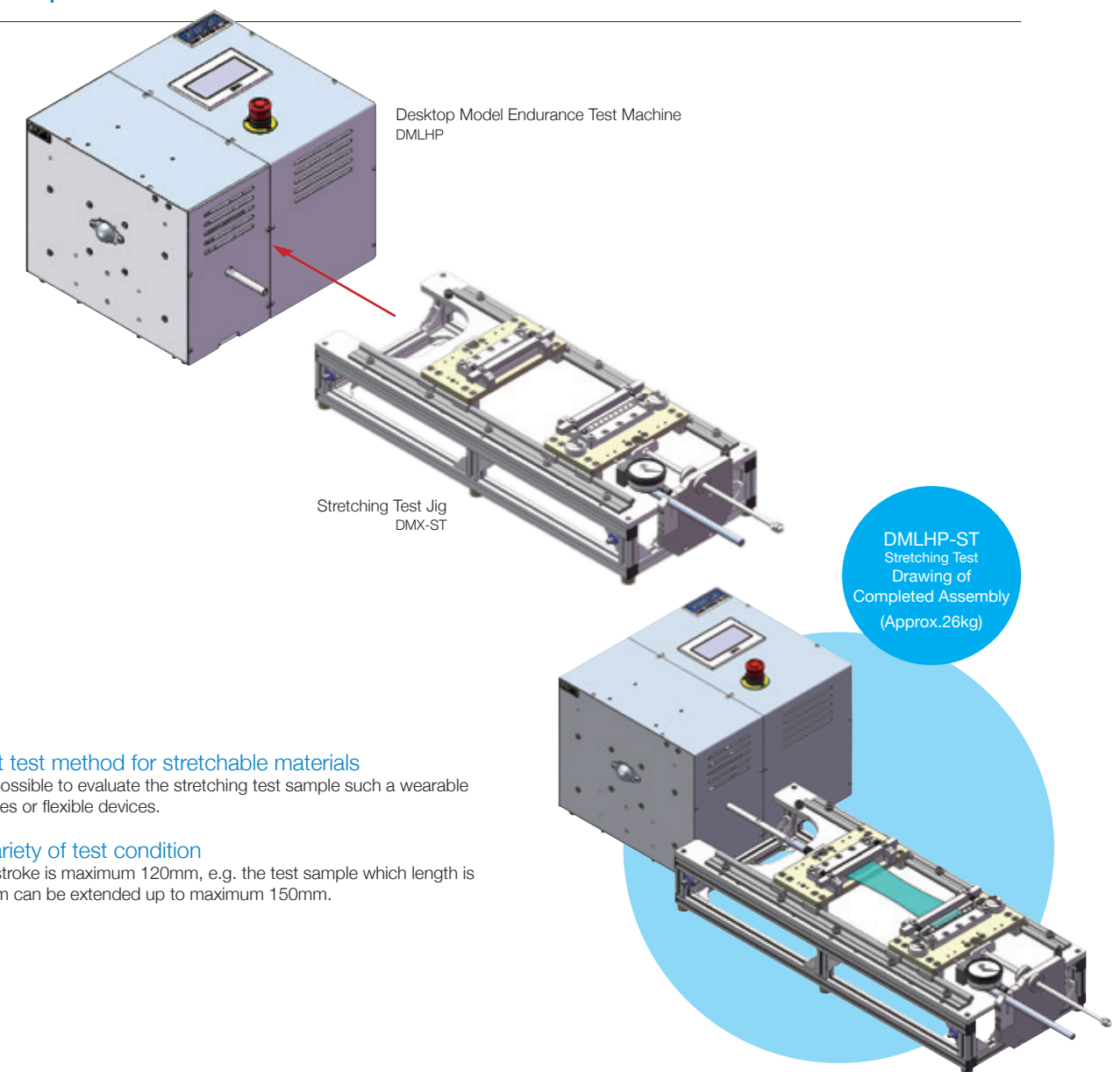


You can download the specification. If you have any question, please ask us.



DMLHP-ST

## Composition



Desktop Model Endurance Test Machine  
DMLHP

Stretching Test Jig  
DMX-ST

DMLHP-ST  
Stretching Test  
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  
Torsion Test

FOLD  
Folding Test

ROLL-UP  
Rolling Test

PUSH / 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.

The appearance is same as DMLHP. There is no Linear shaft, this DMLHPR is only rotary motion.



Web

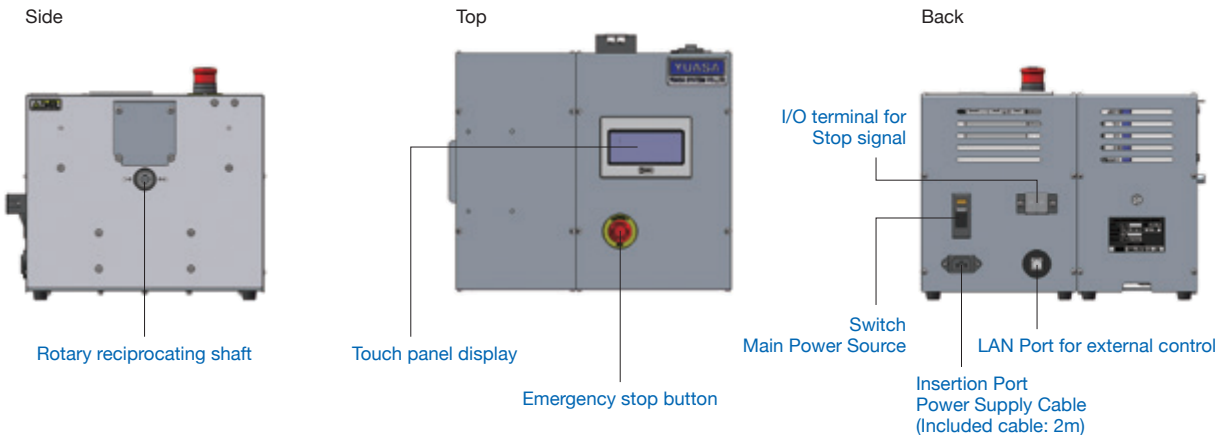
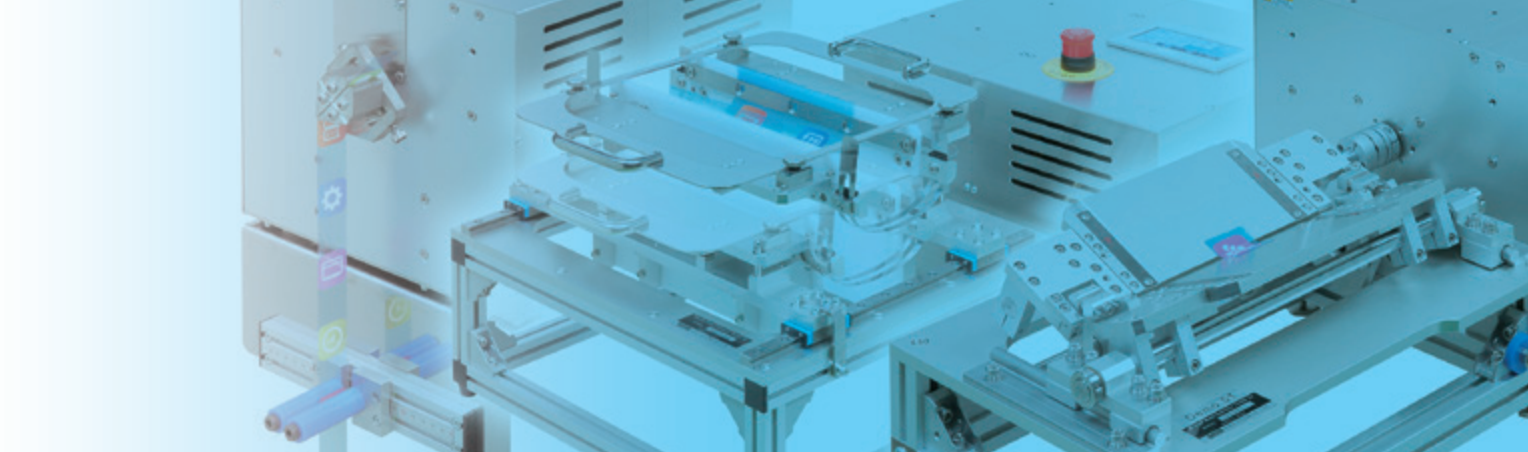
Please check the latest specification on the web.

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

MODELS

Notes

»CE Marking »KC Mark



## 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		AC100-240V (50/60 Hz) 100VA		
Motor Unit	DC brushless motor [DC24V, 3.5A(max.), 30W, Gear box 1/20]		Stepping motor [DC48V, 1.72A(max.), 30W, Gear box 1/20]		
Reciprocating Speed	10 - 120 rec/min		5 - 90 rec/min		5 - 1280 deg/sec
Reciprocating Angle / Distance	0 - $\pm 270$ deg.	0 - $\pm 60$ mm			
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)			
Counter	8 - digits display (Can set the target number)		8 - digits display (Can set the target number)		
Installation Environment	Temp. : +5 - +40°C (41 - 104°F) Humi. : 15 - 85%Rh (No condensation)		Temp. : +5 - +40°C (41 - 104°F) Humi. : 15 - 85%Rh (No condensation)		
Safety Interlock	Safety cover for the testing jig: Covered or Not		Safety cover for the testing jig: Covered or Not		
Dimensions (Excluding projections)	W 344 mm × D 296 mm × H 255 mm		W 344 mm × D 296 mm × H 255 mm		
Net Weight	17kg		15kg		

\*No test jigs are included for each unit.



# Further Improve Reliability

## YUASA SYSTEM ENDURANCE TEST SYSTEM



**Bending**



**Torsion**



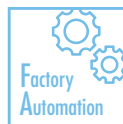
**Folding**



**Rolling**



**Tension**



**YUASA SYSTEM CO., LTD.**

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



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