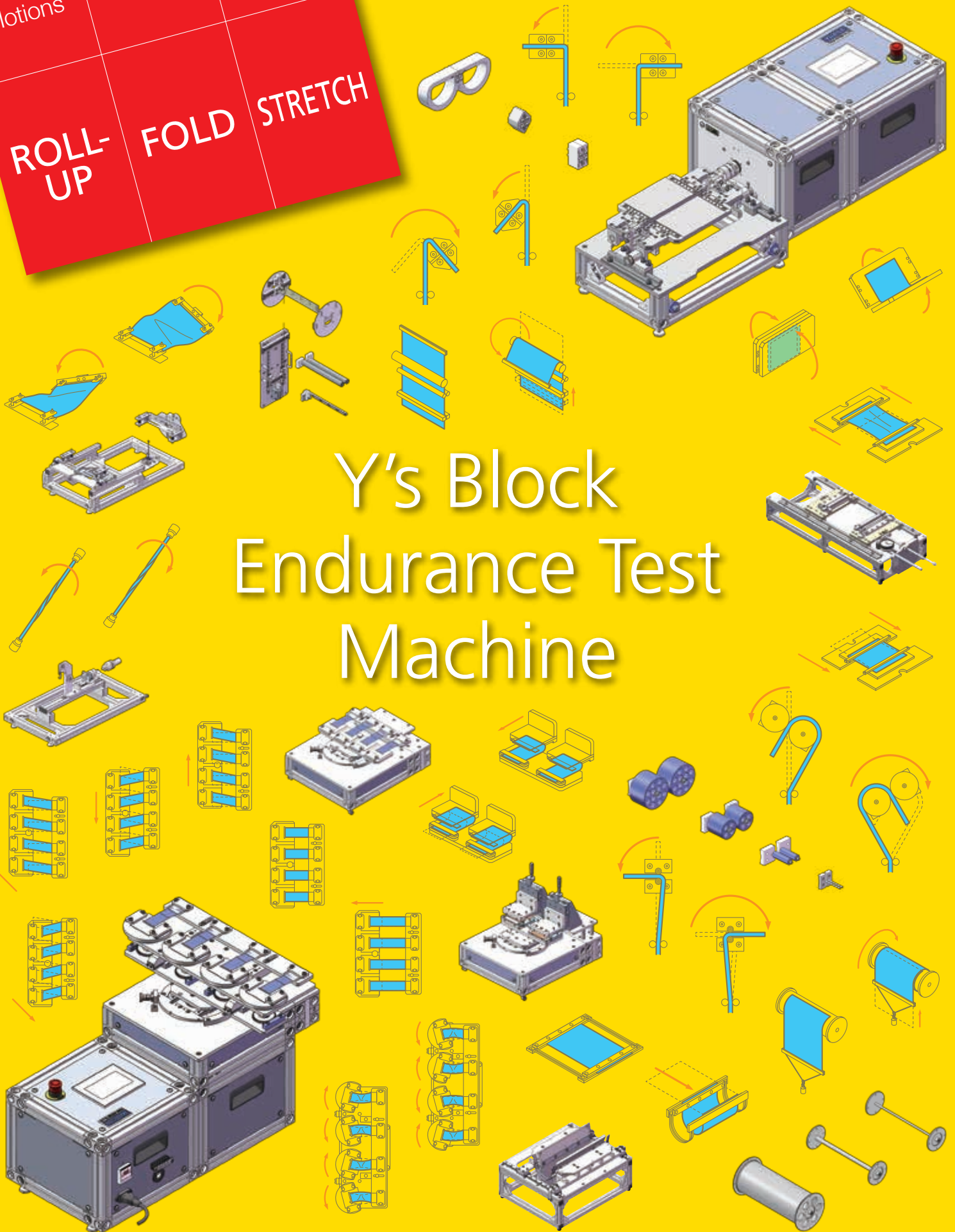


5  
Basic  
Motions

BEND TWIST

ROLL-UP FOLD STRETCH

# Y's Block Endurance Test Machine



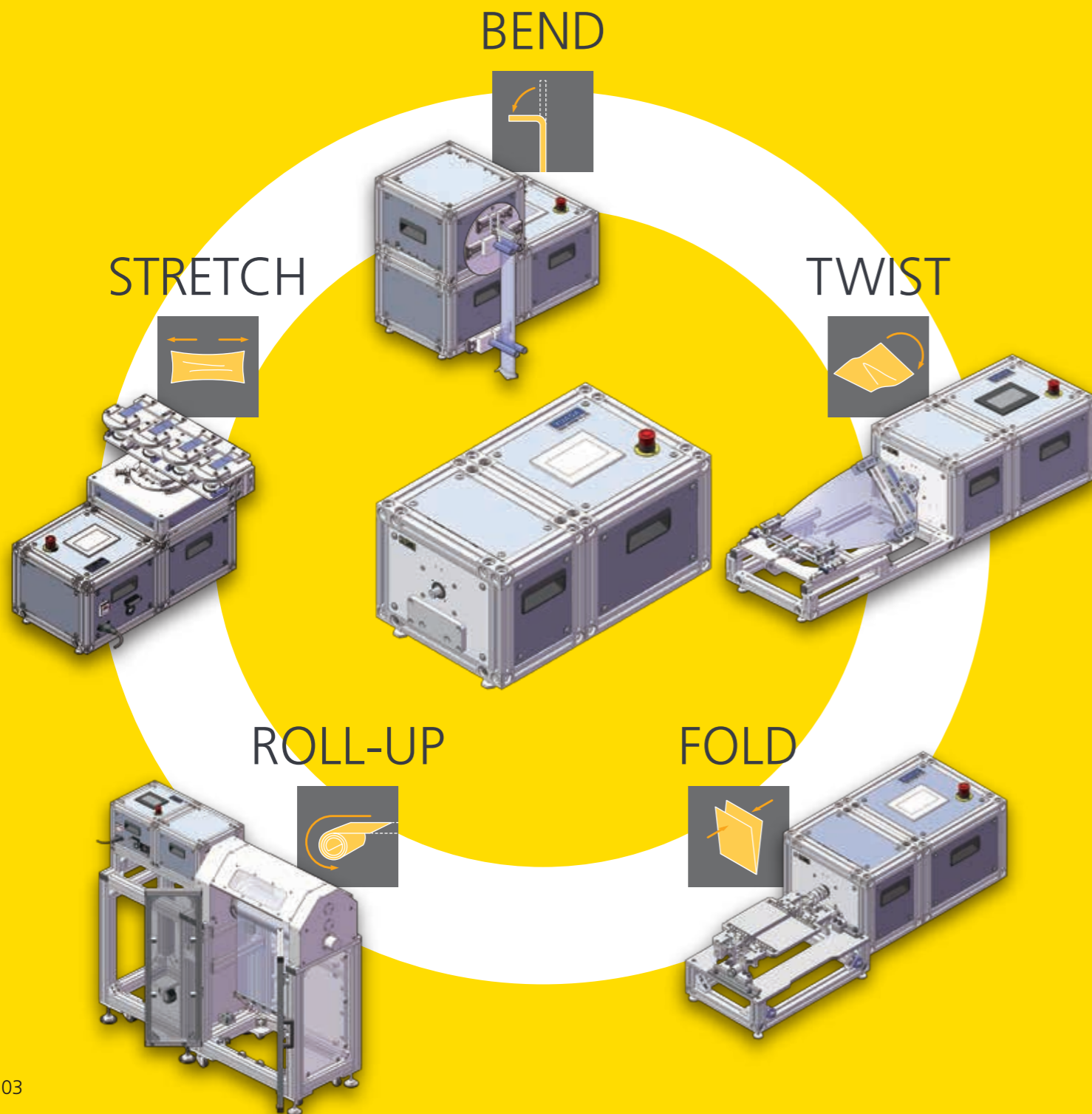
# Various Endurance tests with Free Combination of various jigs

## **Y's Block Endurance Test Machine**

Y's Block Endurance Test Machine provides free combination of various jigs like block toys. You can assemble it in your best style upon your own test purposes and sample types.

# Every kinds of Endurance tests by One test machine!

## Y's Block Endurance Test Machine



## Y's Block Endurance Test Machine Sample / Jig Movement

### BEND

Bending Test [ø220 Faceplate]  
DR11MR3-P220 ..... p. 05



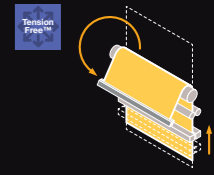
Bending Test [Centripetal Clamp Faceplate]  
DR11MR3-CBR ..... p. 05



Bending Test [Tension-Free™]  
DR11MR3-TFB ..... p. 06



Tension-Free™ Bending Test  
DR11MR-BTFB ..... p. 09

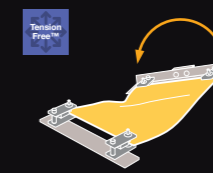


### TWIST

Torsion Test for Linear Object  
DR11MR-TW ..... p. 11

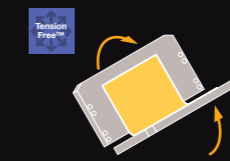


Torsion Test for Planar Object  
DR11MR-FT ..... p. 13

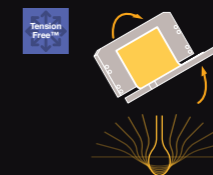


### FOLD

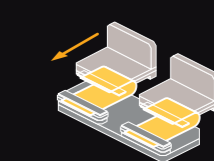
Tension-Free™ Folding Clamshell-type jig  
DR11MR-CS / CS-1 / CS-m ..... p. 15



Teardrop-Controller  
DR11MR-CS ..... p. 17

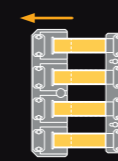


U-shape Sliding Plate Test [2-lane]  
DR11MR3-L2U ..... p. 19



### STRETCH

Linear Reciprocation Test  
DR11MR3-L4S ..... p. 19

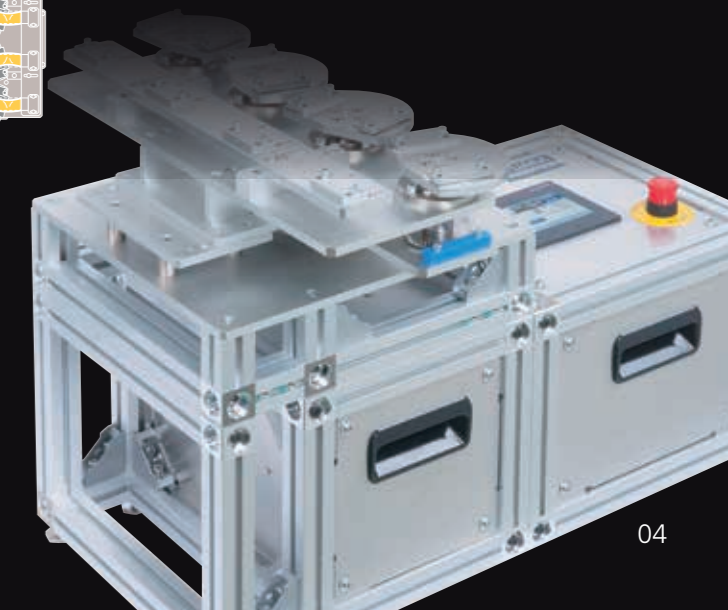


Rotation Reciprocation Test  
DR11MR3-R4S ..... p. 19



### ROLL-UP

Rolling Test  
DR11MR-FR ..... p. 23

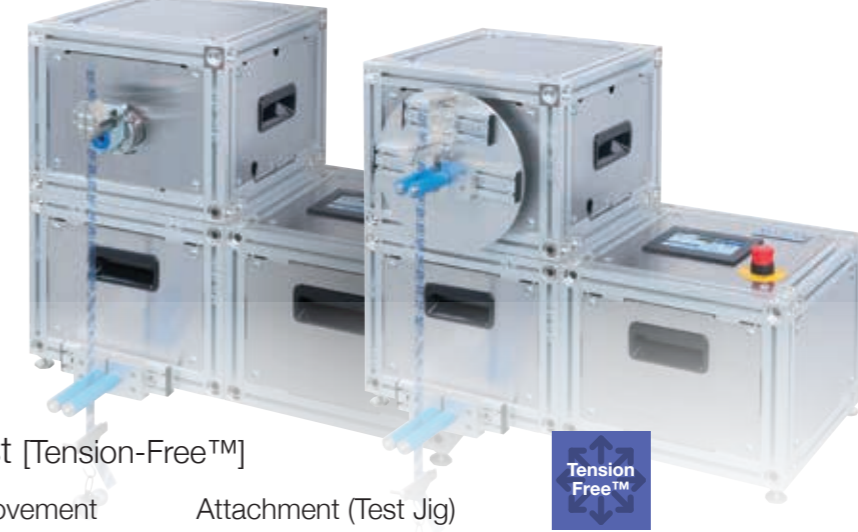


Y's Block

DR11MR3-P220 (ø220 Faceplate) / C□BR (Centripetal Clamp Faceplate) / TFB (Tension-Free™)

# Desktop Model Endurance Test Machine

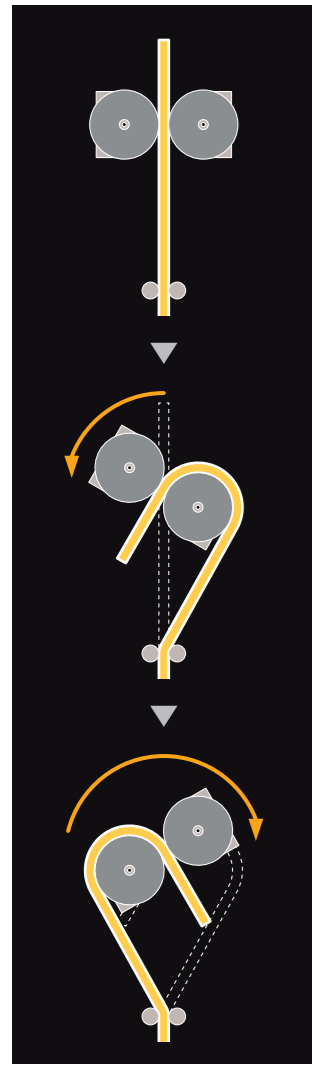
## Bending Test [ø220 Faceplate] / [Centripetal Clamp Faceplate] / [Tension-Free™]



### Bending Test [ø220 Faceplate]

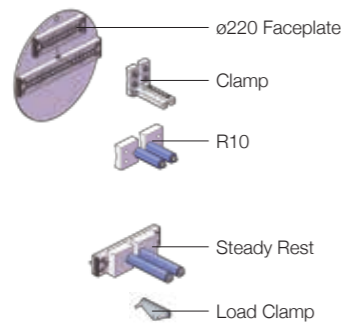
Sample / Jig Movement

Attachment (Test Jig)



#### Bending Radius Jig

Set the sample between bending radius jig (mandrel) and bend it.



Bending test [ø220 Faceplate] Jig

### Bending Test [Centripetal Clamp Faceplate]

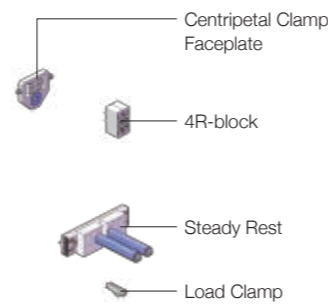
Sample / Jig Movement

Attachment (Test Jig)



#### Bending Radius Block (R-block)

Set the Sample in bending radius block, which is also used as clamp and bend it.

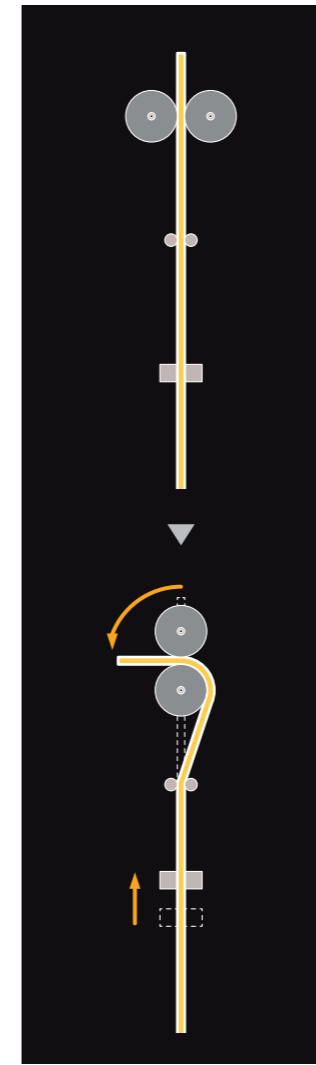


Bending test [Centripetal Clamp Faceplate] Jig

### Bending Test [Tension-Free™]

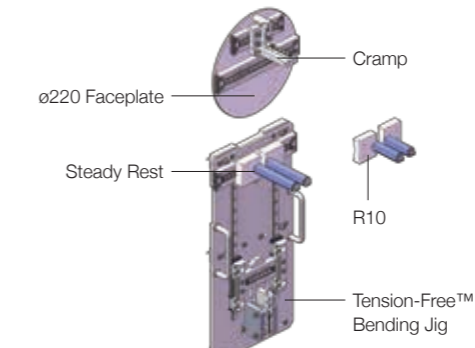
Sample / Jig Movement

Attachment (Test Jig)



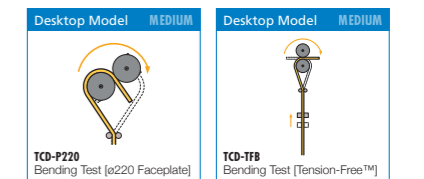
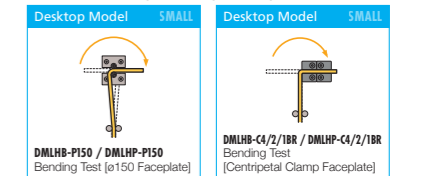
#### Tension-Free™ Bending Jig

Lower clamp slides up and down together with the movement of sample bending.

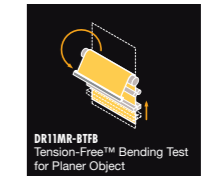


Tension-Free™ Bending Test Jig

Related tests or tests for reference  
<https://www.yuasa-system.jp/en/test>



p. 9



### 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.



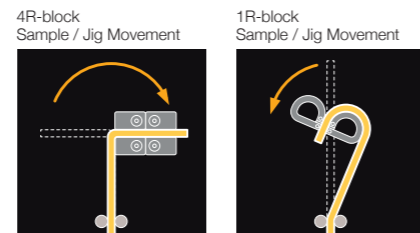
You can download the specification.

### 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 ±90°)



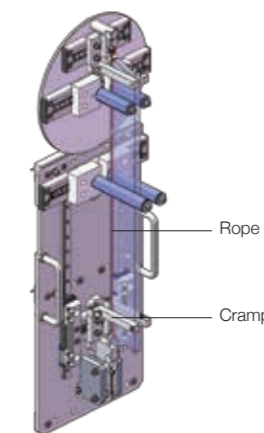
You can download the specification.

### Bending test without giving tension by weight on sample, is available

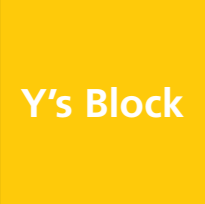
The mechanism is, when clamp in swinging motion at drive part of endurance test, the other side of clamp slides in conjunction.

### Bending angle bending speed can be set arbitrarily

0° - ±180° of bending angle, and 5 - 90 rounds/min. of bending speed can be set arbitrarily.



You can download the specification.



DR11MR3-P220 (ø220 Faceplate) / C□BR (Centripetal Clamp Faceplate) / TFB (Tension-Free™)

# Desktop Model Endurance Test Machine

## Bending Test [ø220 Faceplate] / [Centripetal Clamp Faceplate] / [Tension-Free™]

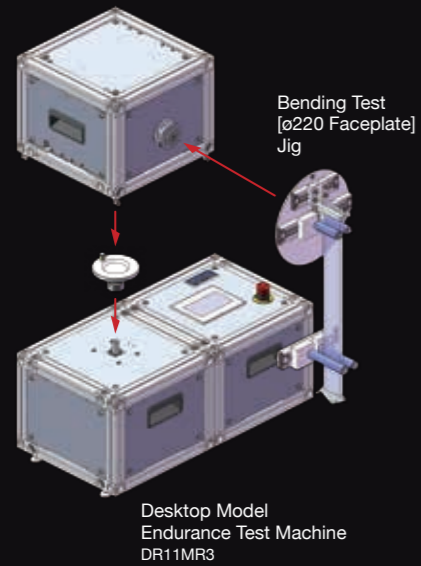


### BEND

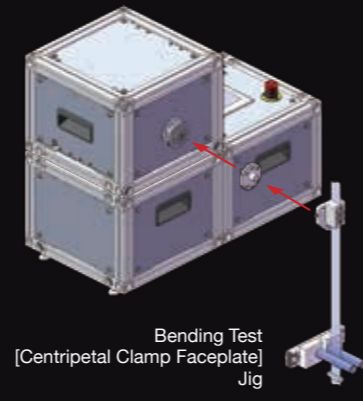
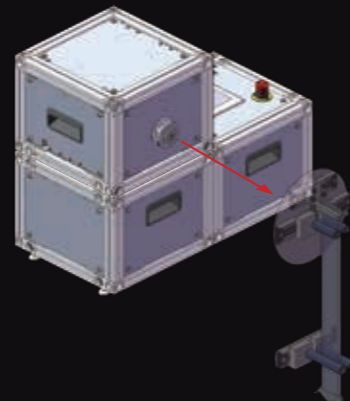


### Composition

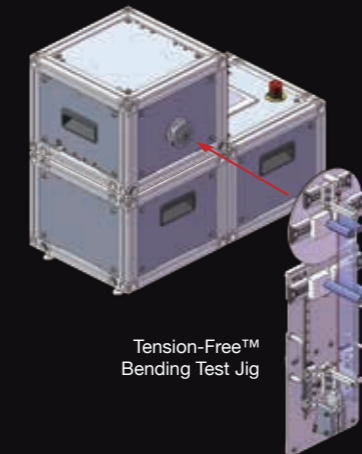
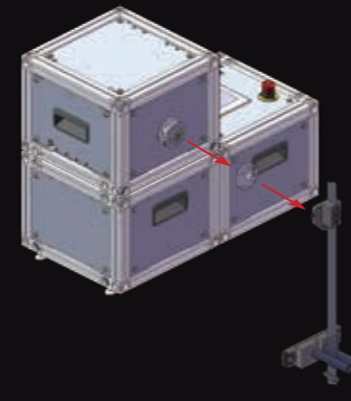
Bending Test [ø220 Faceplate]



Bending Test [Centripetal Clamp Faceplate]

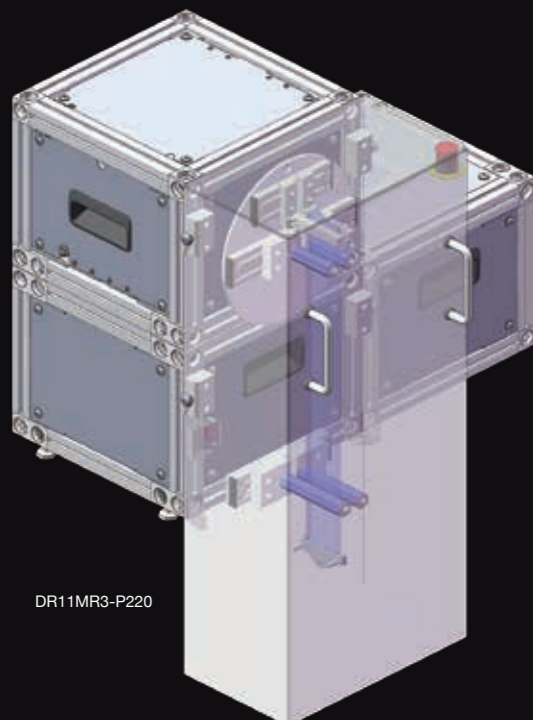


Bending Test [Tension-Free™]



### Drawing of Completed Assembly

Bending Test [ø220 Faceplate]



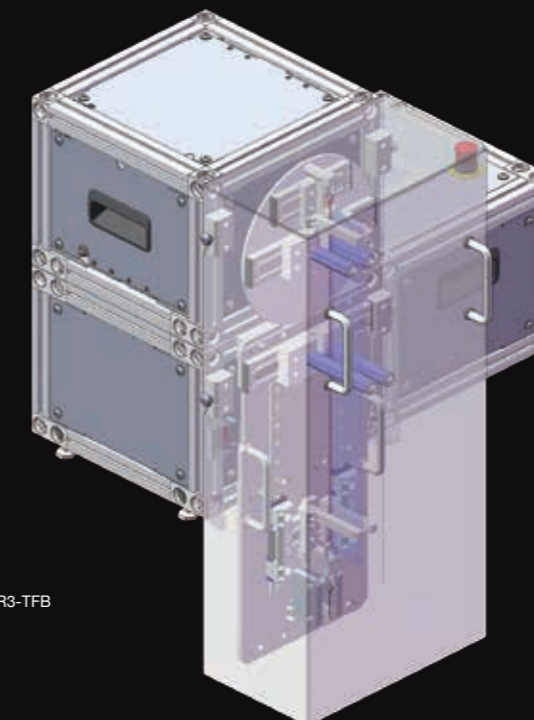
DR11MR3-P220

Bending Test [Centripetal Clamp Faceplate]



DR11MR3-C4BR

Bending Test [Tension-Free™]



DR11MR3-TFB

### Example of Test Pieces

- Flexible Devices Products
- Thin Film Materials
- Flexible Devices
- Flexible Printed Circuits
- Flat Wearable Products
- Wearable Products
- Pressure Sensor
- IC tag
- Wire Harness
- Flexible Panels
- Electric Cables
- Optical fiber Cables
- Fine Cables
- Home Appliance Cables
- Fibers (Planar)
- Fibers (Linear)
- Connectors
- Gears



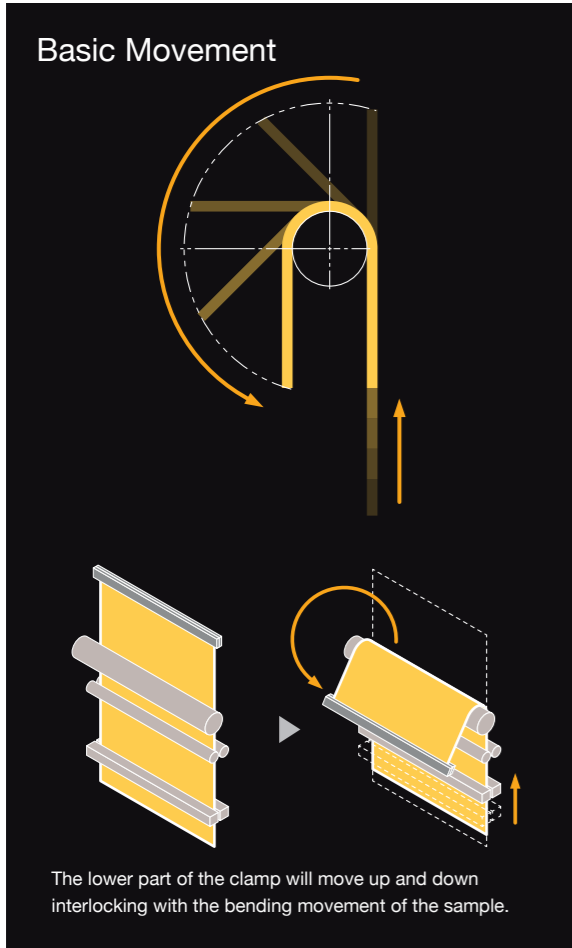
If you have any question, please ask us.

**Y's Block** DR11MR-BTFB  
**Desktop Model Endurance Test Machine**  
**Tension-Free™ Bending Test for Planar Object**

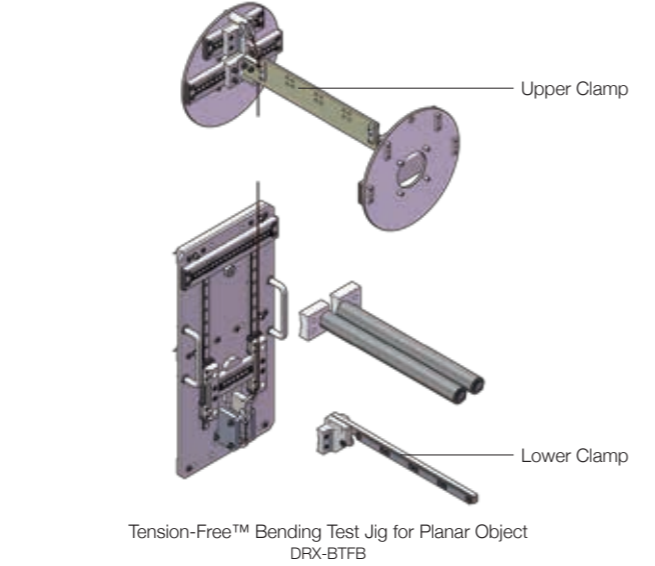


This equipment uses a bending rod to keep the bending radius constant. The clamp moves in the circular motion having the same center point as the rod. The other end slides. There would be no tension applied to the sample.

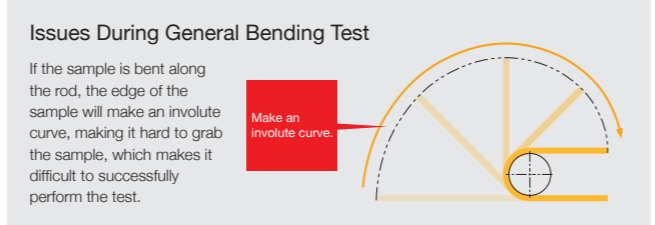
**Sample / Jig Movement**



**Attachment (Test Jig)**



The mechanism is, by connecting the both sides of sample between clamps, at the timing when the clamp on drive part of endurance test machine in vibrate movement, the other side of clamp slides in conjunction with it.



This machine makes it possible to perform tension-free bending test on a planar sample such as flexible device

By changing the position of the clamp, one can perform tension-free bending test for planar objects that are card size to A4 size. Maximum bending angle is up to ±180°. One can bend one side only or both right and left side.

One can also use a weight when performing the bending test

By changing the tension-free test jig to the stabilizing jig, it will be possible to perform bending test using weights.

Related tests or tests for reference

p. 6 <https://www.yuasa-system.jp/en/test>

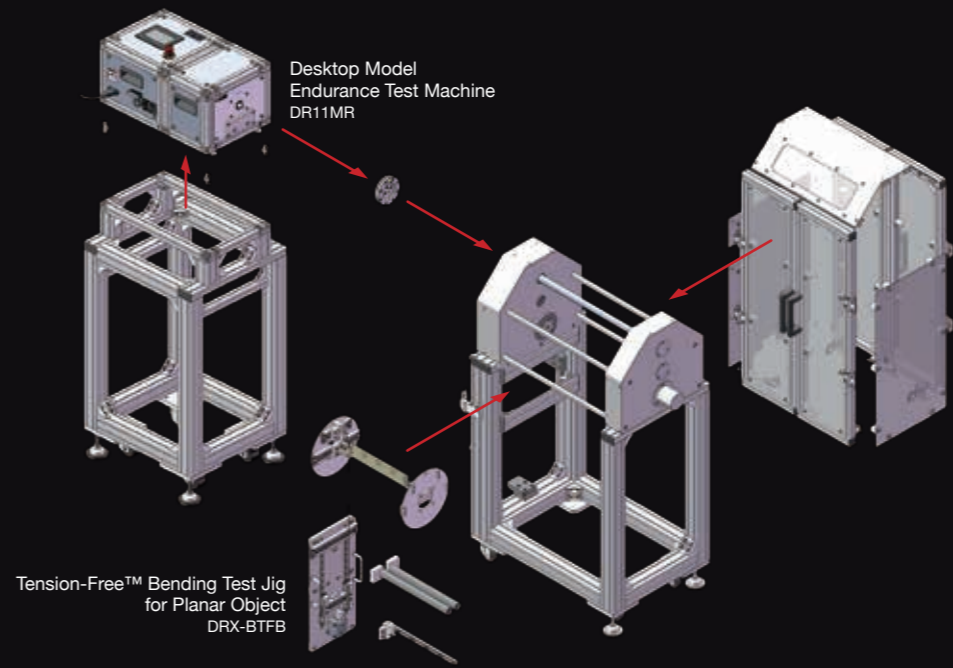
--	--	--

QR codes for each test type.

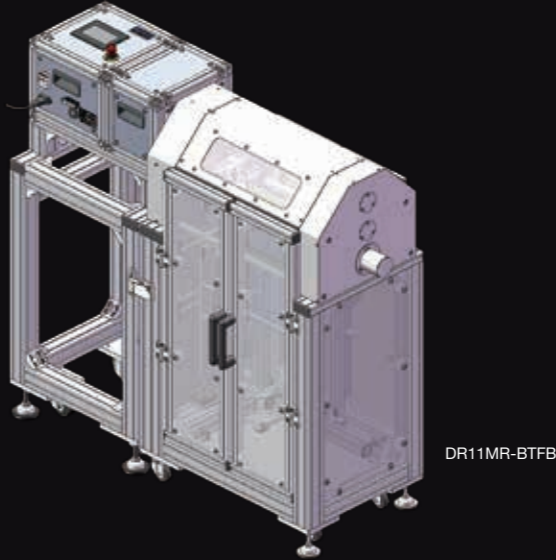
**MODELS**

You can download the specification.

**Composition**



**Drawing of Completed Assembly**



**BEND**



**Example of Test Pieces**


If you have any question, please ask us.

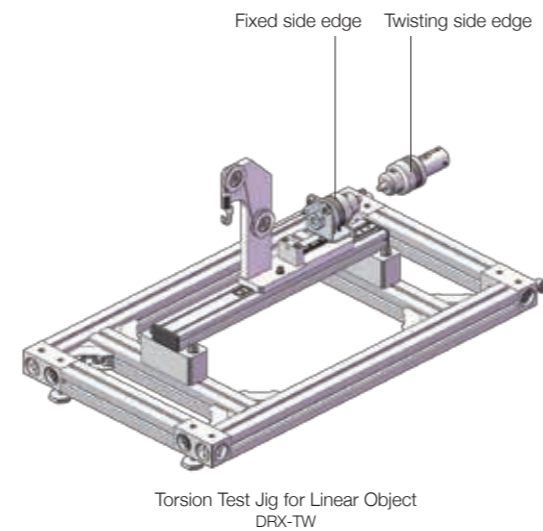
**Y's Block** DR11MR-TW  
**Desktop Model Endurance Test Machine**  
 Torsion Test for Linear Object

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

Sample / Jig Movement



Attachment (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.

A wide range of torsion tests confirming to JIS

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

Free size of test pieces up to  $\varnothing 10\text{mm}$

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

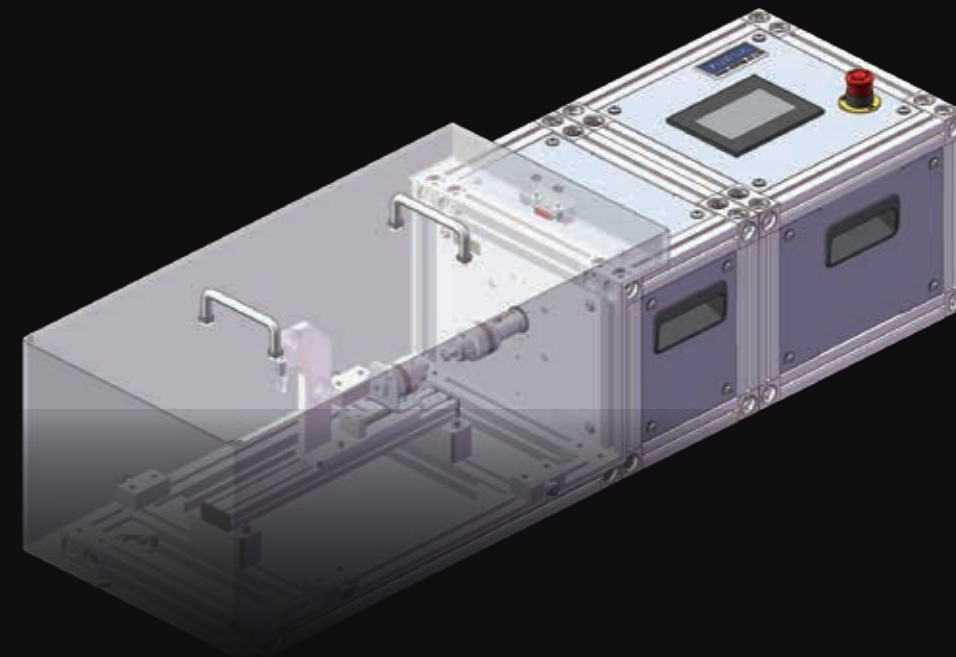
Both 10 revolutions twisting test

Regarding the driving unit of positioning type "DR11MR / DR11MR4", it can do torsion test both maximum 10 revolutions right and left.

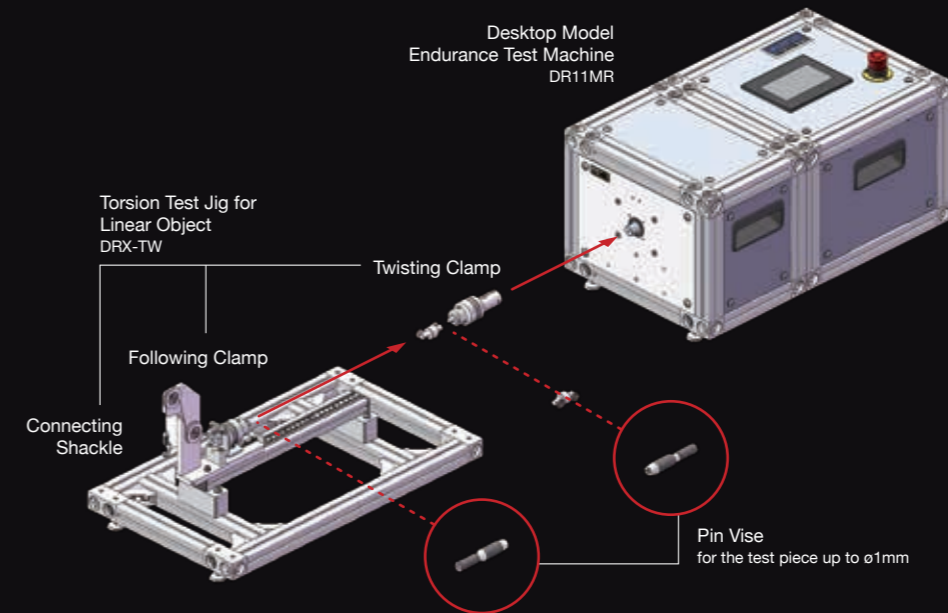
Related tests or tests for reference  
<https://www.yuasa-system.jp/en/test>



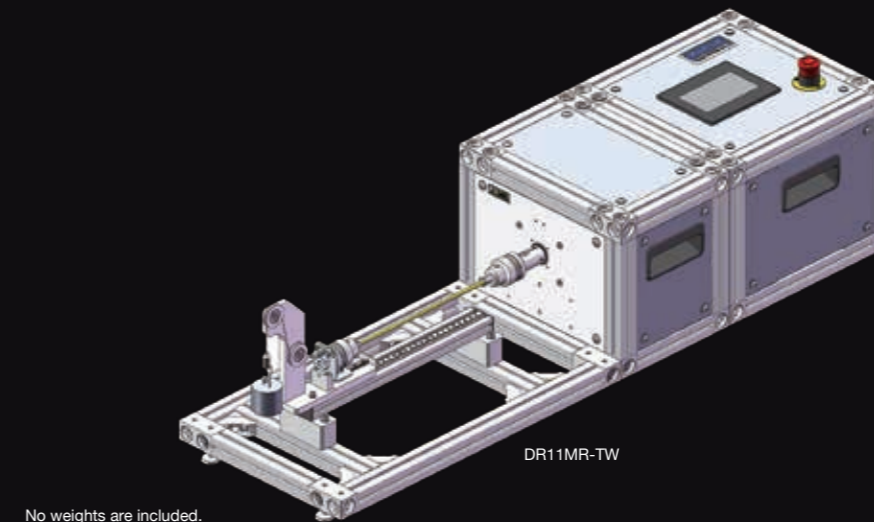
You can download the specification.



Composition



Drawing of Completed Assembly

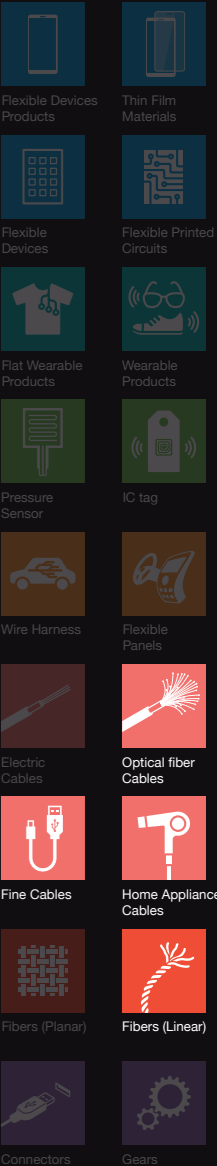


No weights are included.

TWIST



Example of Test Pieces



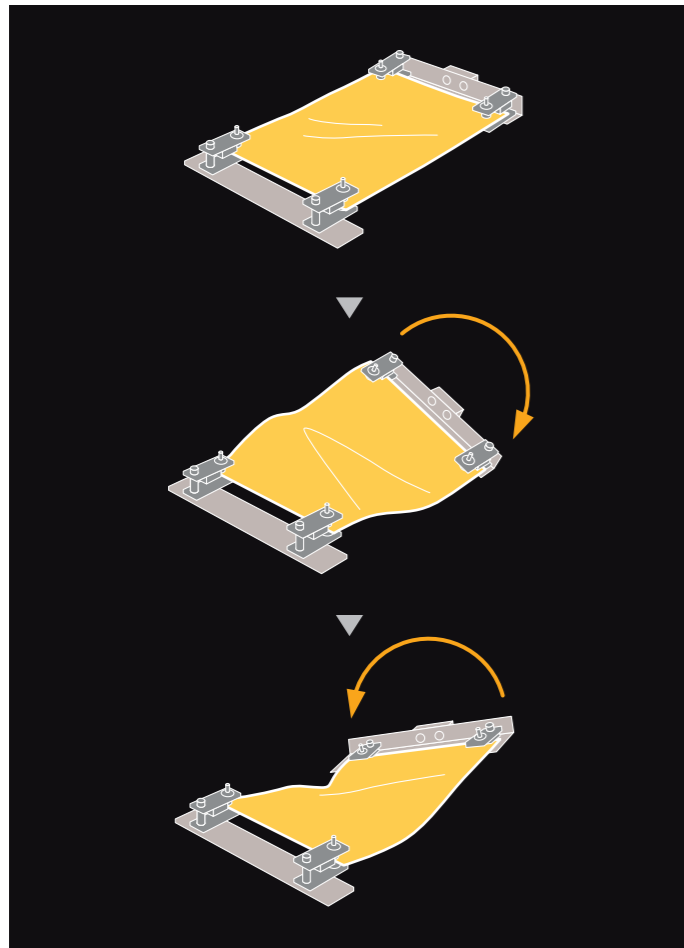
If you have any question, please ask us.

**Y's Block** DR11MR-FT  
**Desktop Model Endurance Test Machine**  
 Torsion Test for Planar Object

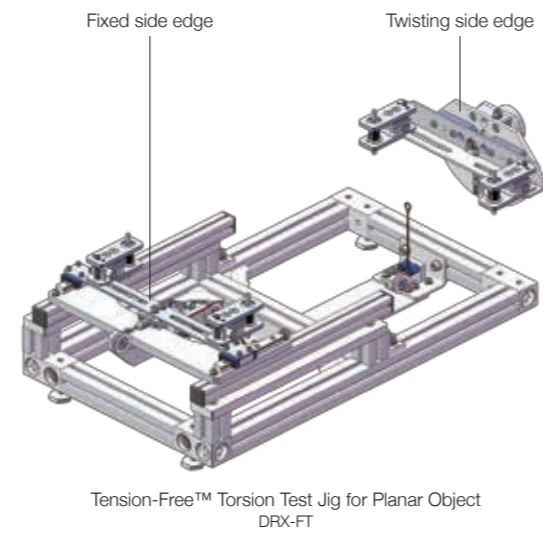


This machine realizes profitable tests for planar objects like flexible devices and wearable devices.

Sample / Jig Movement



Attachment (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.

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.

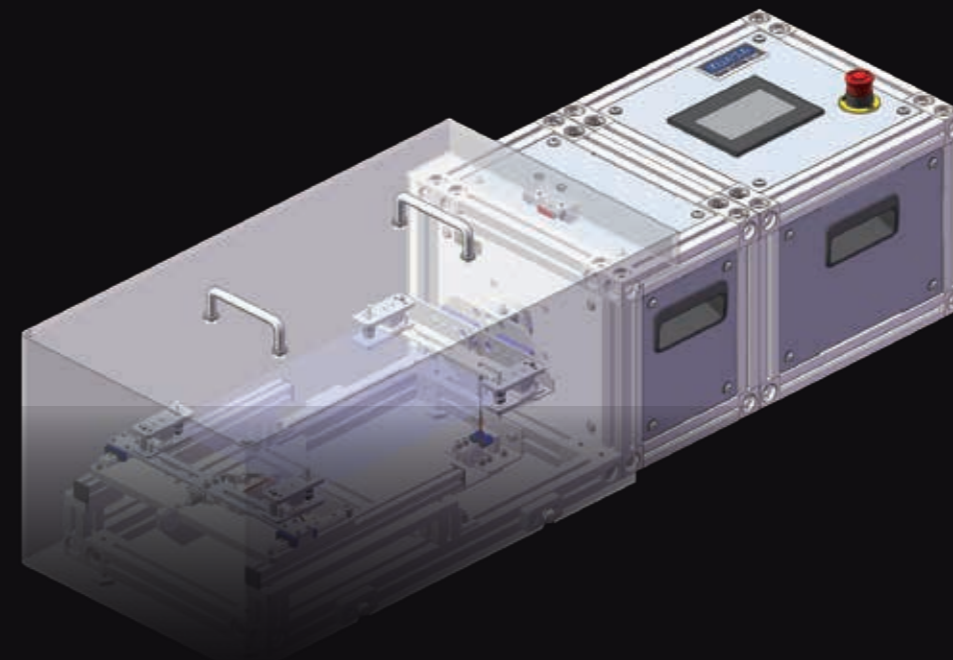
4-point clamping

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)

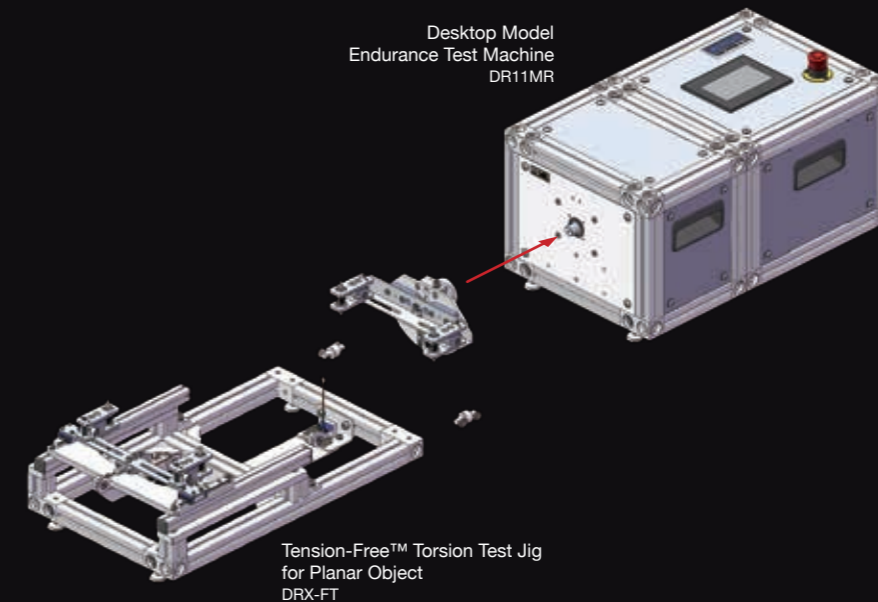
Related tests or tests for reference

p. 19 <https://www.yuasa-system.jp/en/test>

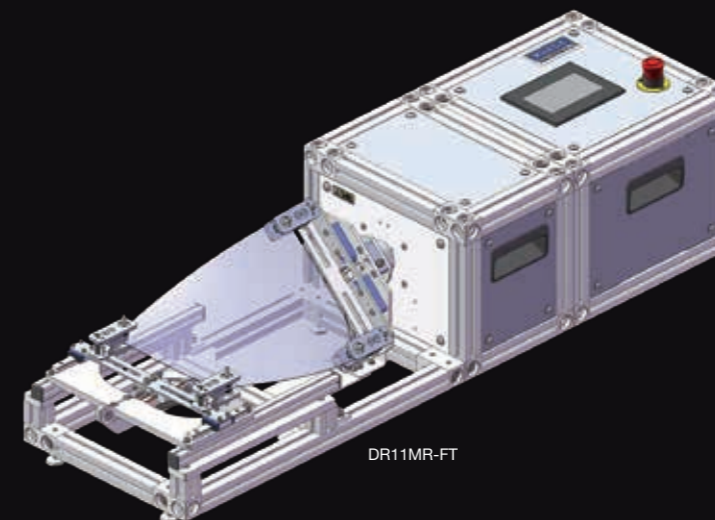
DR11MR3-L4S Linear Reciprocation Test	DR11MR3-R4S Rotation Reciprocation Test	DMLHP-FT / DMLHP-ST Torsion Test for Planar Object	TCD-FT Torsion Test for Planar Object	DMLHP-ST Stretching Test



Composition



Drawing of Completed Assembly



TWIST



Example of Test Pieces

- Flexible Devices Products
- Thin Film Materials
- Flexible Devices
- Flexible Printed Circuits
- Flat Wearable Products
- Wearable Products
- Pressure Sensor
- IC tag
- Wire Harness
- Flexible Panels
- Electric Cables
- Optical fiber Cables
- Fine Cables
- Home Appliance Cables
- Fibers (Planar)
- Fibers (Linear)
- Connectors
- Gears



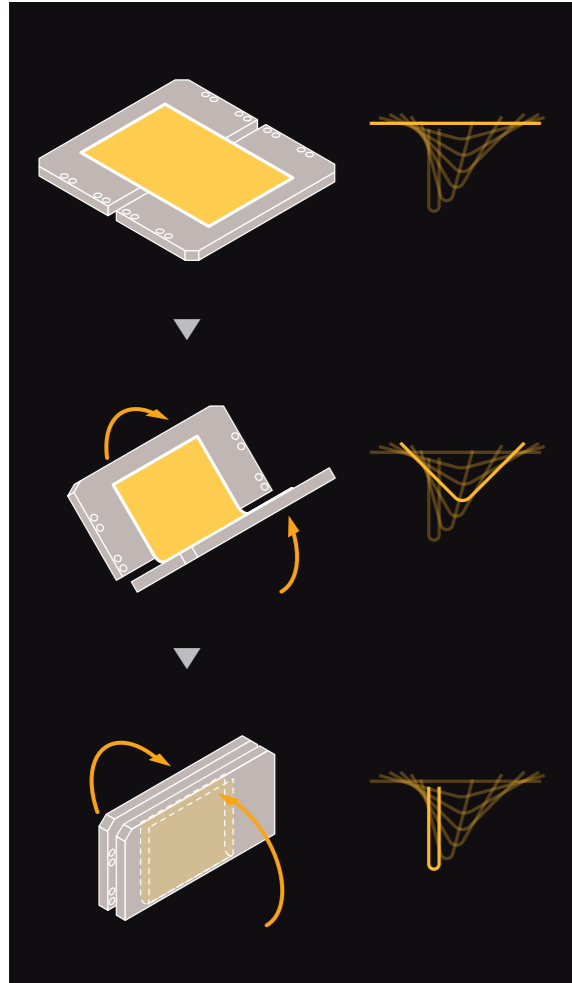
If you have any question, please ask us.



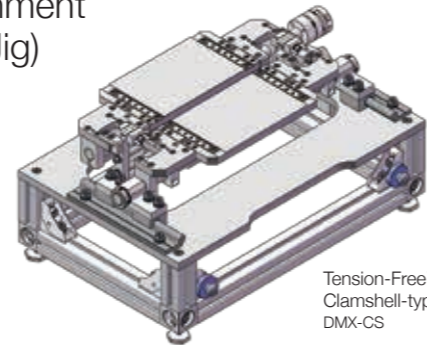
**Y's Block** DR11MR-CS / CS-t / CS-m  
**Desktop Model Endurance Test Machine**  
 Tension-Free™ Folding Clamshell-type



Sample / Jig Movement



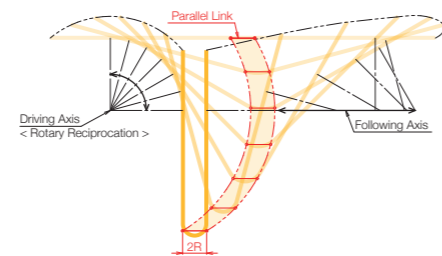
Attachment (Test Jig)



Tension-Free™ Folding Clamshell-type Jig DMX-CS

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 at the edge of plate. If the rotary point is different position, the tensile stress or compression stress will occur to the test sample.

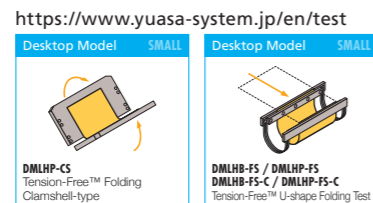
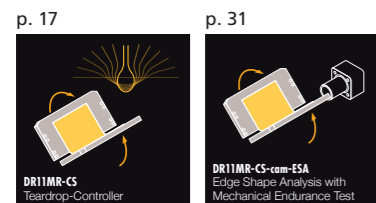
Removable cartridge

The sample attaching part is a removable cartridge, so the sample can be attached easily.

Three types of jigs support simultaneous testing and various sample sizes

In addition to the standard CS jig, the twin type CS-t and the large type CS-m are available, enabling simultaneous testing of multiple samples and large samples.

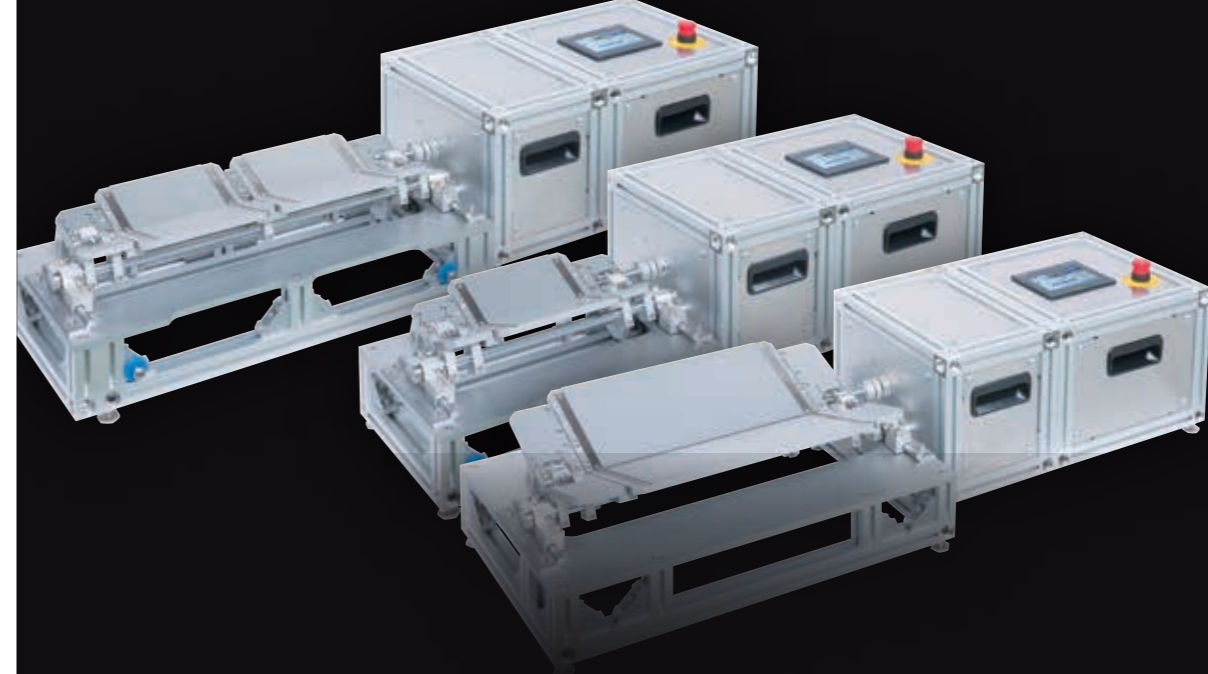
Related tests or tests for reference



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



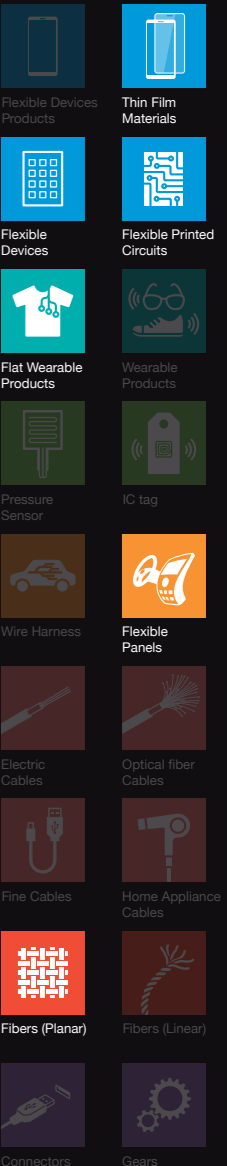
You can download the specification.



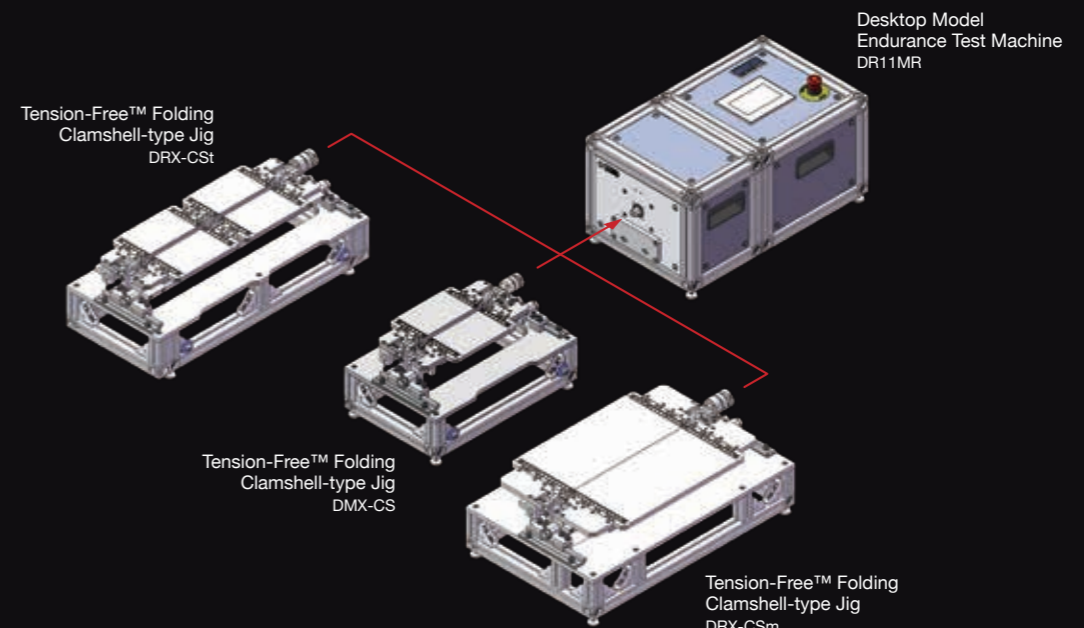
FOLD



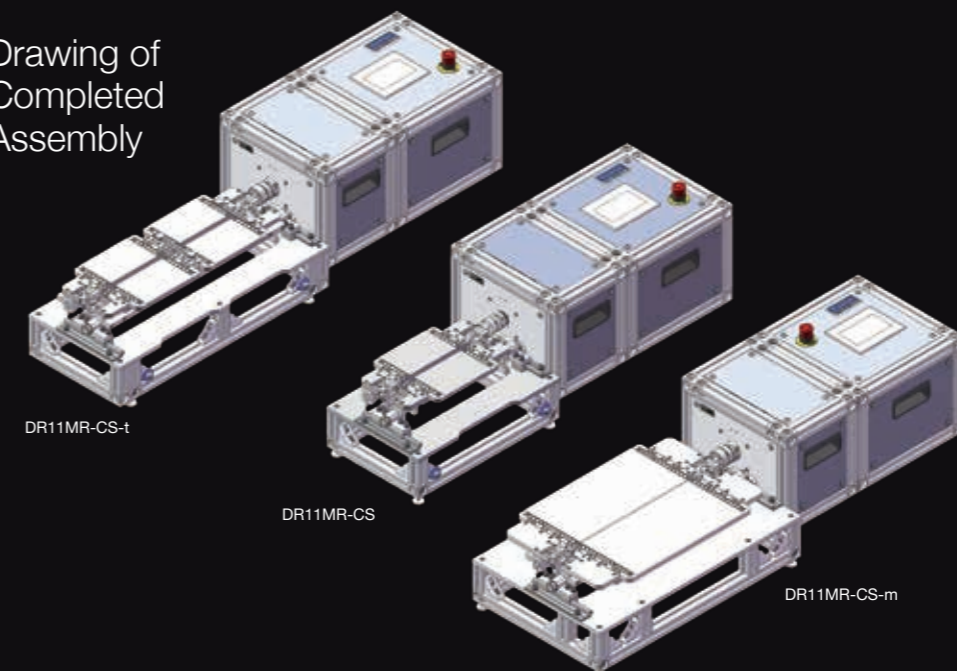
Example of Test Pieces



Composition



Drawing of Completed Assembly



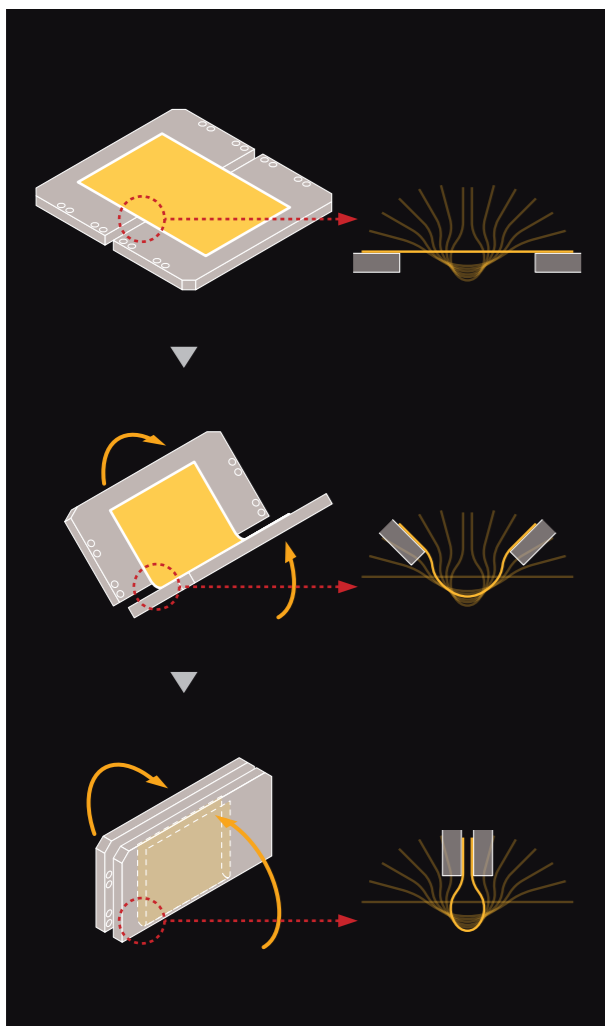
If you have any question, please ask us.

**Y's Block** DR11MR-CS  
**Desktop Model Endurance Test Machine**  
**Teardrop Controller**

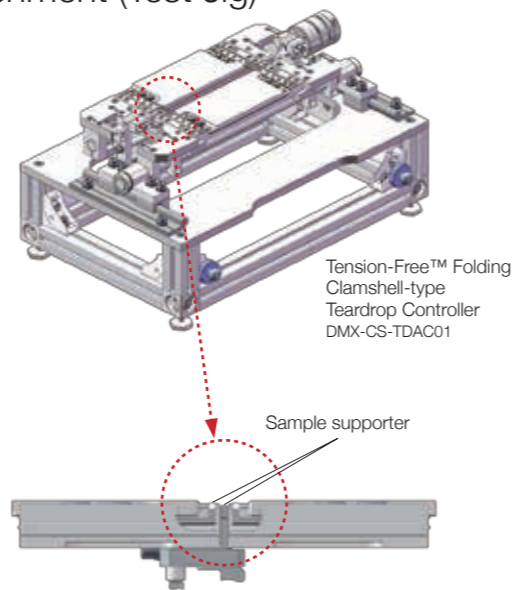


Test to deform the sample into "Tear Drop" shape, by using optional jig on the test of Tension-Free™ Folding Clamshell-type.

**Sample / Jig Movement**



**Attachment (Test Jig)**



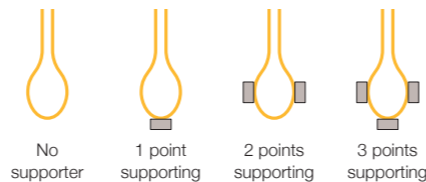
**Sample shape deforming process**



It is confirmed on many products that foldable displays are deformed into "Teardrop" shape when they are installed in actual products (Foldable Device). This optional jig "Teardrop Controller" enables the test under the condition near to the display used on actual product.

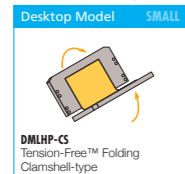
**Control the Teardrop shape**

Teardrop shape can be controlled by the sample supporter. Each supporter holds the sample at 4 different position and those combination, depending on the specification of final product.



**Related tests or tests for reference**

p. 15 <https://www.yuasa-system.jp/en/test>



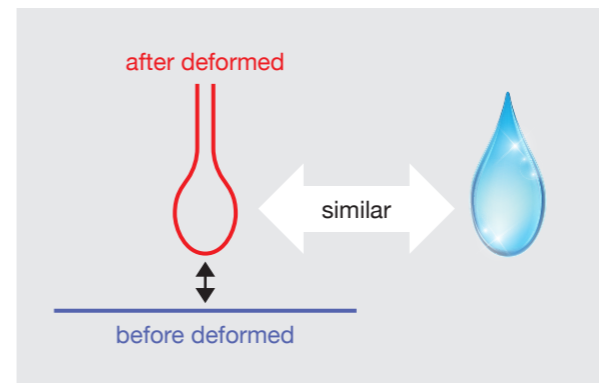
You can download the specification.

**Teardrop shape can also be reproduced on Endurance test machine**

By using Teardrop shape reproduction parts (optional), Endurance test which fits for non "U-shape", nor "V-shape" end-device, become available on Clamshell type bending test machine.

**What's the "Teardrop" shape?**

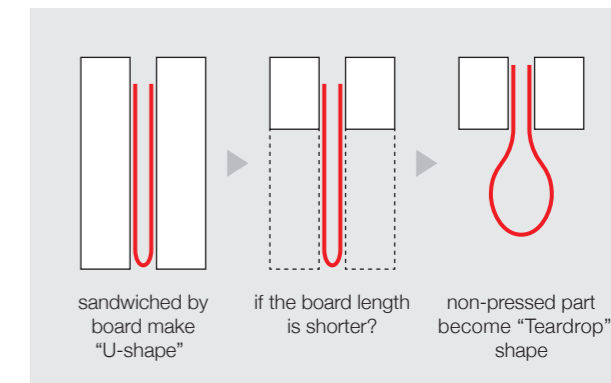
Inside of the tightly closed foldable smart phone, deformation load of display can be controlled.



Deformed shape looks like the shape of drop, so, this is called as "Teardrop shape"

**How is the "Teardrop" shape made?**

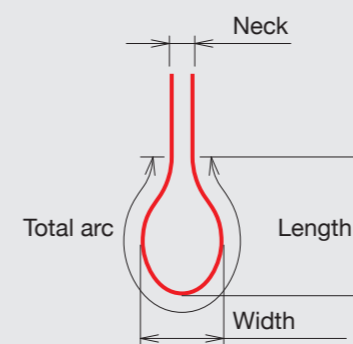
Basically, the "Teardrop" shape is made by "tension of test piece", namely, by the "not want to be bent" nature of the piece.



Even by same test method, deformed shape is vary by nature of the test piece, such as its easy to bend inside, outside, or hard to bend.

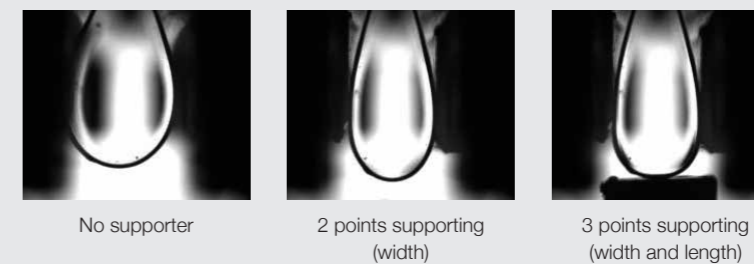
**In order to control "Teardrop" shape...**

The shape of "Teardrop" become different by various factors.



4 major factors to determine the shape of "Teardrop", there are "neck width", "total arc length", "teardrop width" and "teardrop length". Teardrop width is equivalent to curvature diameter of standard "U-shape" bending. In case that the deformed part bend in sharp, the part can be protected by restricting (supporting) the teardrop length. However, the part to be the "Teardrop" shape is not held anywhere, so it can move freely and could deform easily, thus it is quite difficult to control its shape at will.

Even if "neck width" and "total arc length" are same, test piece can be different shape.



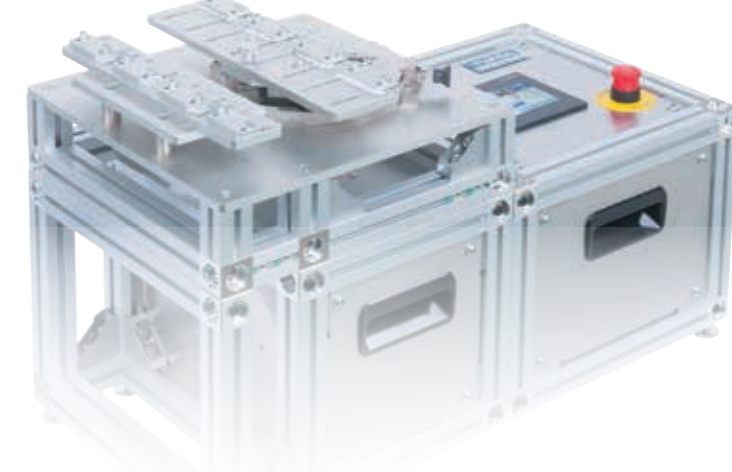
If you have any question, please ask us.

Y's Block

DR11MR3-L4S (Linear Reciprocation Test) / R4S (Rotation Reciprocation Test) / L2U (U-shape Sliding Plate Test)

# Desktop Model Endurance Test Machine

Linear Reciprocation Test / Rotation Reciprocation Test / U-shape Sliding Plate Test [2-lane]



## Attachment (Test Jig Cartridge)

### Linear Reciprocation Test

#### Linear Reciprocation Cartridge

This jig that repeatedly performs linear reciprocating motion to attached samples such as FPC board.



### Rotation Reciprocation Test

#### Rotary Reciprocation Cartridge

This jig that repeatedly performs rotation reciprocating motion to attached samples such as FPC board. This jig can perform a test that applies a load in the rotational direction, which is not possible with a linear reciprocating cartridge.



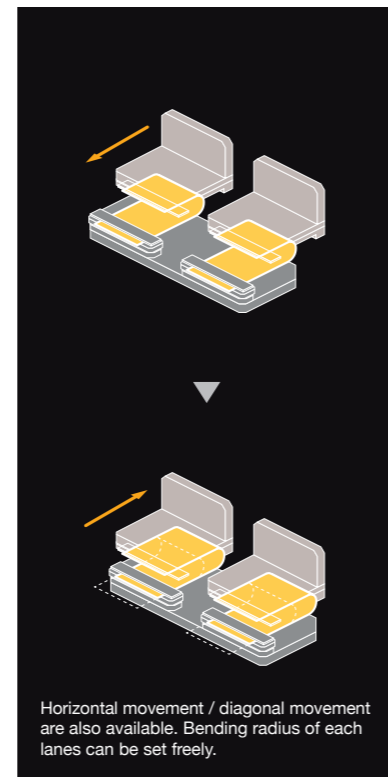
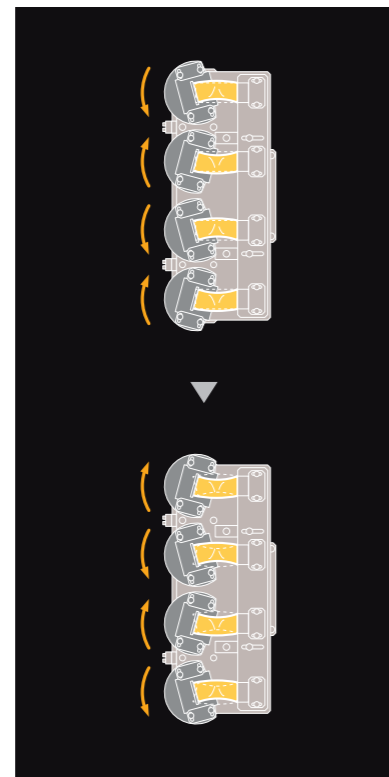
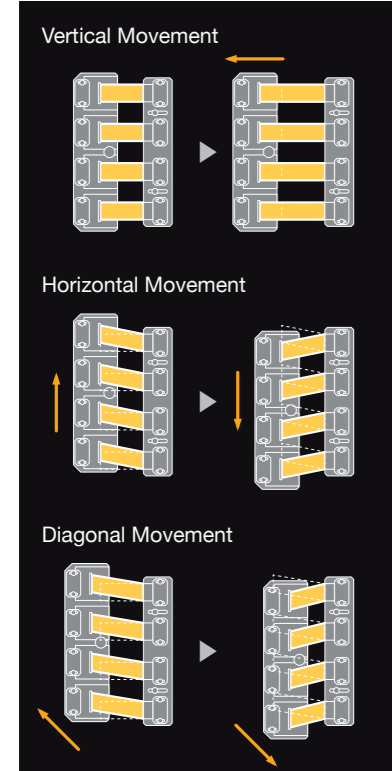
### U-shape Sliding Plate Test

#### U-shape Sliding Plate Cartridge

Cramp the sheet sample bent in U-shape, and apply linear reciprocating motion only for the lower clamp.



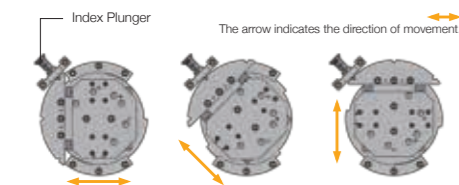
## Sample / Jig Movement



### Multiple movement applicable by rotary slide table

By rotating the rotary slide table along with the movement direction angle, 3 directions, vertical, horizontal and diagonal movement tests are available. Setting can easily be changed, since rotary slide table is fixed by pin.(index plunger)

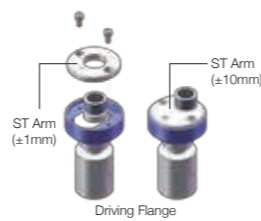
\*It is possible to customize the slide table of other direction.



### Set accurate reciprocation distance with cam mechanism

Accurate stroke is provided by exchanging the plate (ST-Arm) in the driving flange according to the reciprocating distance.

\* Linear distance:  $\pm 1 - 10$  mm (can be set in increments  $\pm 1$  mm)  
:  $\pm 1 - 10^\circ$  (can be set in increments  $\pm 1^\circ$ )



### Test time saving by test four samples simultaneously

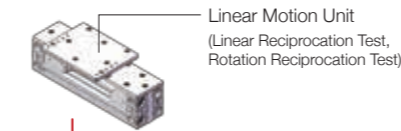
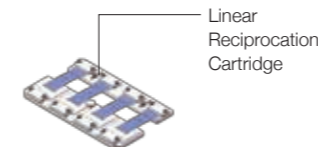
It is possible to shorten the test time by test not only single samples but also different types of samples simultaneously using four lanes freely.

\* Installable sample size for linear reciprocation test, rotation reciprocation test  
Sample thickness: max. 5 mm Sample width: max. 30 mm (clamping part: max. 60 mm)  
Sample length: min. 25 to max. 100 mm

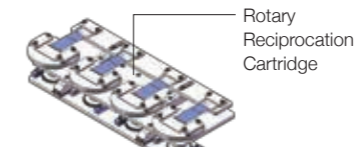
\* Installable sample size for U-shape sliding plate test  
Sample thickness: max. 3 mm Sample width: max.60 mm (clamping part: max. 60 mm)  
Sample length: min. 100 to max. 150 mm

## Composition

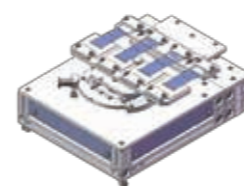
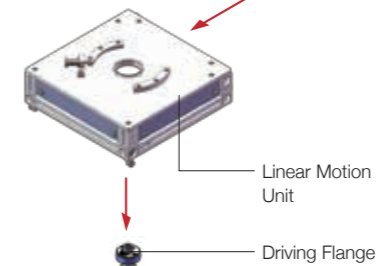
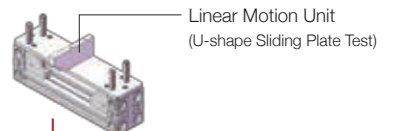
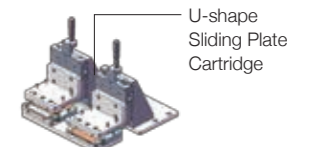
### Linear Reciprocation Test



### Rotation Reciprocation Test



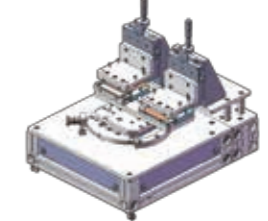
### U-shape Sliding Plate Test [2-lane]



Linear Reciprocation Test Jig



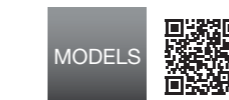
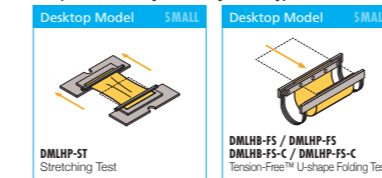
Rotation Reciprocation Test Jig



U-shape Sliding Plate Test Jig

### Related tests or tests for reference

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

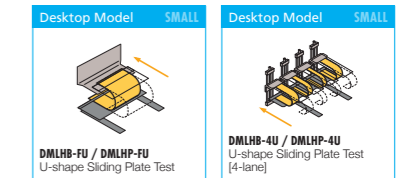


You can download the specification.

p. 13



You can download the specification.



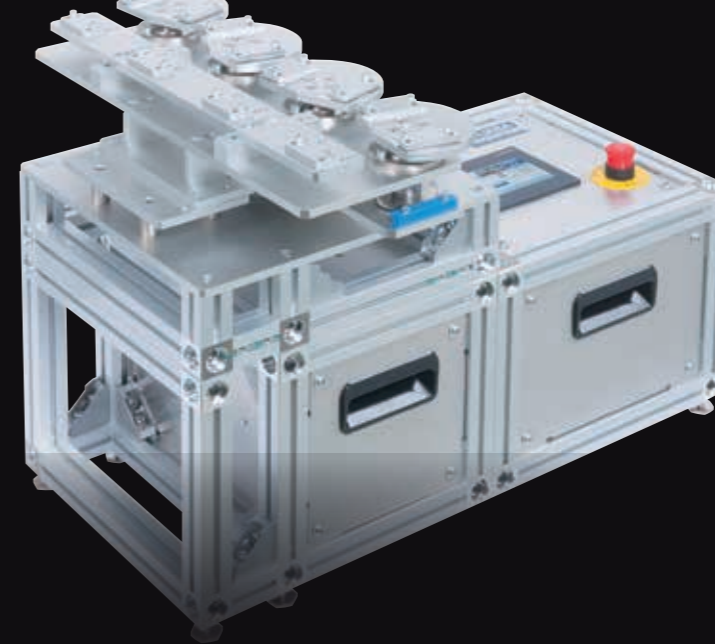
You can download the specification.

Y's Block

DR11MR3-L4S (Linear Reciprocation Test) / R4S (Rotation Reciprocation Test) / L2U (U-shape Sliding Plate Test)

# Desktop Model Endurance Test Machine

Linear Reciprocation Test / Rotation Reciprocation Test / U-shape Sliding Plate Test [2-lane]

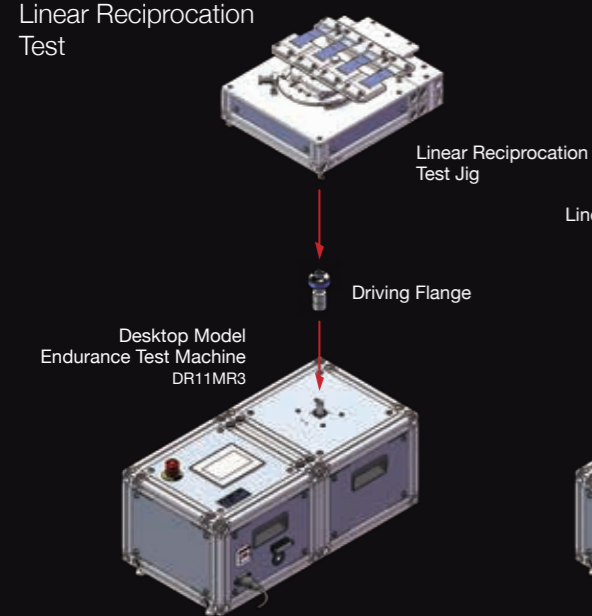


FOLD STRETCH

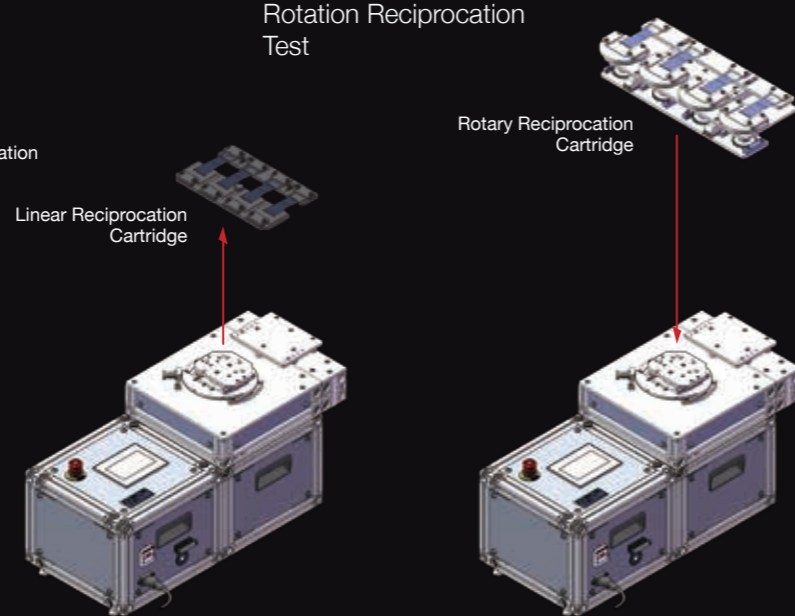


## Composition

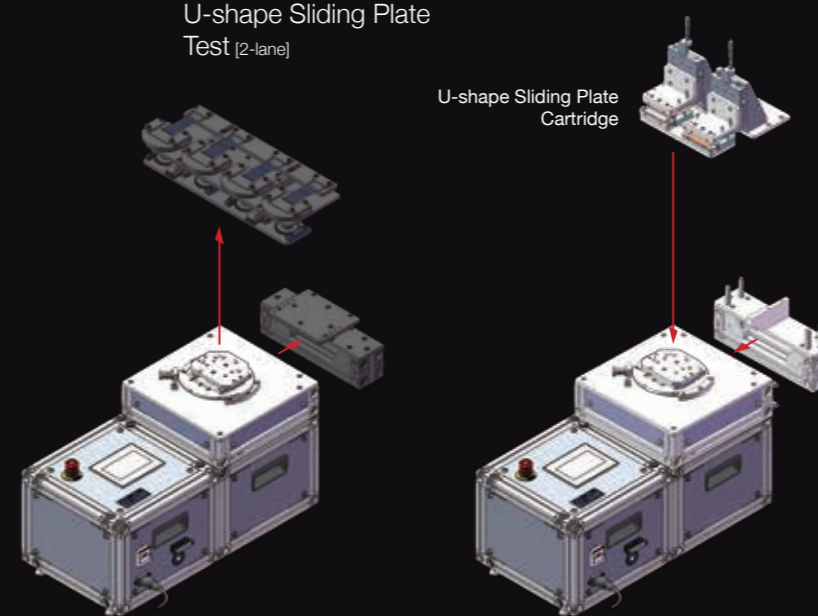
Linear Reciprocation Test



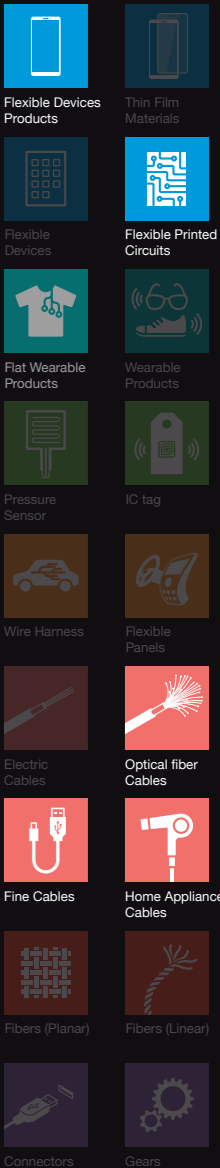
Rotation Reciprocation Test



U-shape Sliding Plate Test [2-lane]

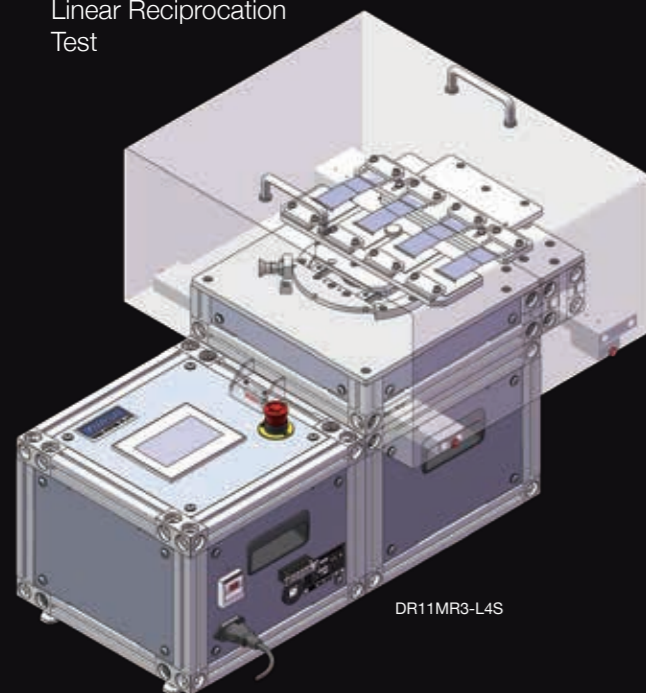


Example of Test Pieces

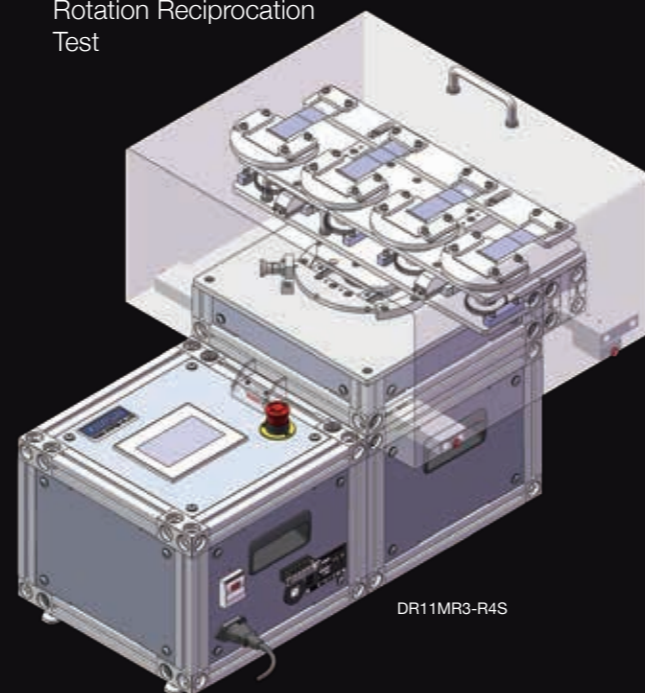


## Drawing of Completed Assembly

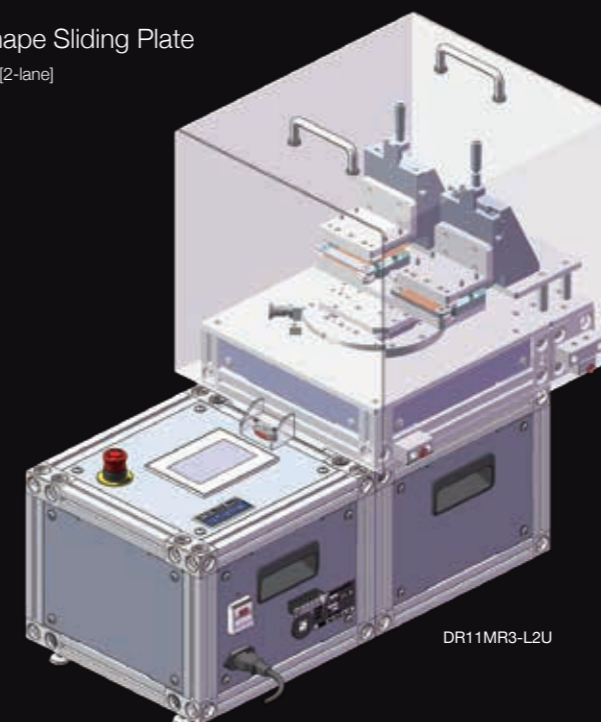
Linear Reciprocation Test



Rotation Reciprocation Test



U-shape Sliding Plate Test [2-lane]

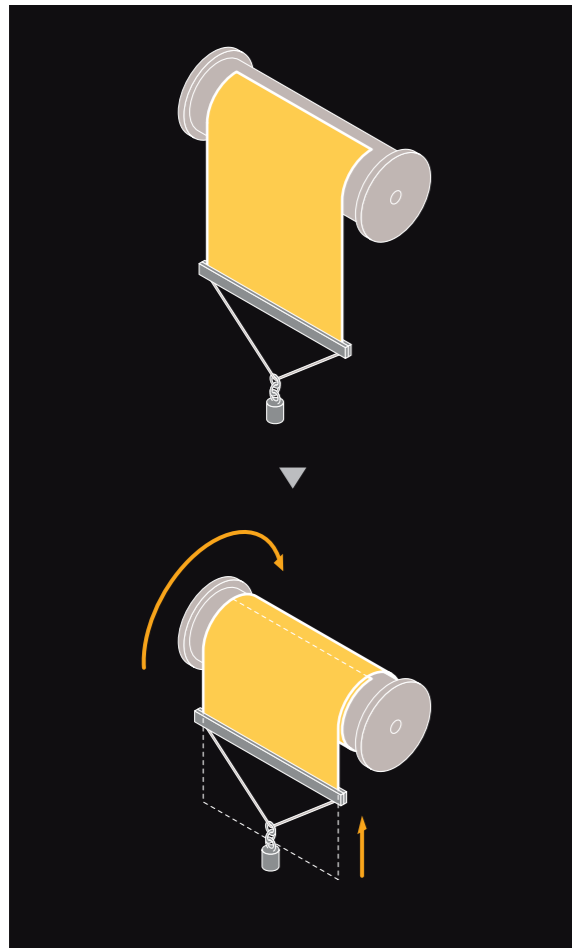


If you have any question, please ask us.

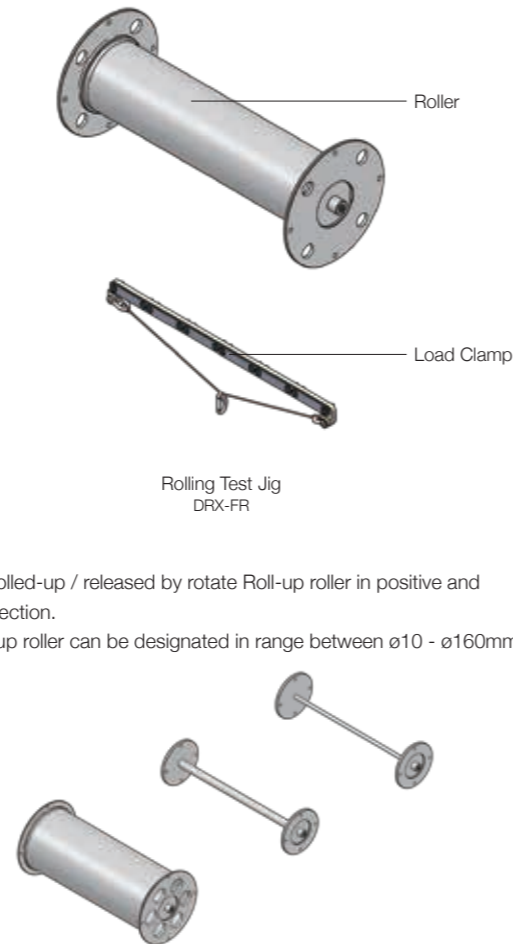
**Y's Block** DR11MR-FR  
**Desktop Model Endurance Test Machine**  
 Rolling Test

Endurance test of roll-up movement for sheet type sample such as flexible devices, cables or fabrics, etc., can be applicable.

Sample / Jig Movement



Attachment (Test Jig)



Sample is rolled-up / released by rotate Roll-up roller in positive and negative direction.  
 Size of roll-up roller can be designated in range between  $\phi 10$  -  $\phi 160$ mm

Sample can be rolled-up whichever from the left side or the right side

Sample can be rolled-up whichever from the left side towards roll-up roller, or from the right side. And the rolling-up amount can also be set arbitrarily.

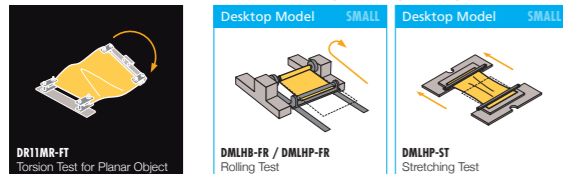
Sample mounting with reducing deflection

It is designed to reduce deflection by mounting sample in vertical direction. Straight rolling-up is enabled by the layout of sample mounting position and loading clamp in linear vertical direction.

Related tests or tests for reference

p. 13

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



DR11MR-FT  
Torsion Test for Planar Object

DMLHP-FR / DMLHP-FR  
Rolling Test

DMLHP-ST  
Stretching Test



You can download the specification.

ROLL-UP



Example of Test Pieces



Flexible Devices Products



Thin Film Materials



Flexible Devices



Flexible Printed Circuits



Flat Wearable Products



Wearable Products



Pressure Sensor



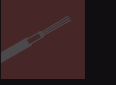
IC tag



Wire Harness



Flexible Panels



Electric Cables



Optical fiber Cables



Fine Cables



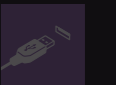
Home Appliance Cables



Fibers (Planar)



Fibers (Linear)

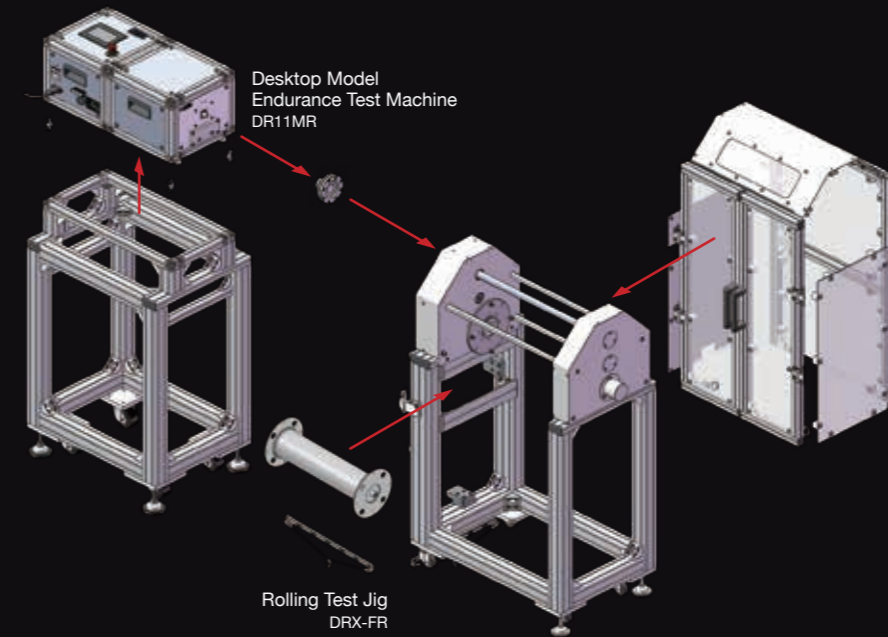


Connectors

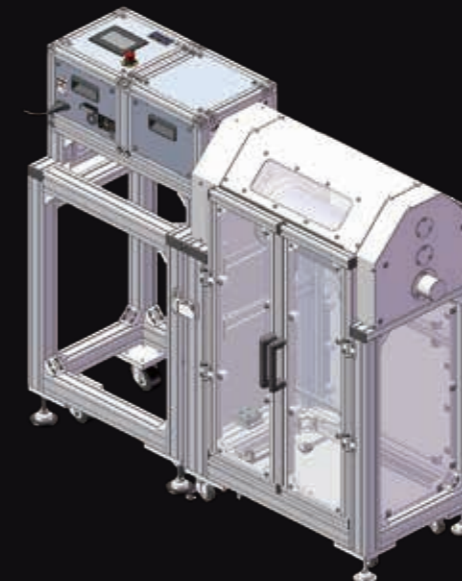


Gears

Composition



Drawing of Completed Assembly



DR11MR-FR



If you have any question, please ask us.

# Environment and Movement Interlocking Type Endurance Test System

## Endurance Test × Environmental Test

Environment and Movement Interlocking Type Endurance Test System Which Realizes Various Endurance Tests In Constant Temperature and Humidity Environment.

PROGRAMMING (1/2) Mar/13/17 18:13 MENU

PROGRAM EDIT STEP INSERT STEP DELETE PROGRAM CLEAR PROGRAM OPERATION

STEP	DRIVE UNIT	TEST MODE	DYNAMIC		STATIC			CHAMBER	
			SPEED (rpm)	COUNT	POSITION			TEMP. (°C)	HUM. (%)
1	DISABLE							85.0	90.0
2	ENABLE	STATIC			REAR END	CENTER	FRONT END	2.0	85.0 90.0
3	ENABLE	DYNAMIC	60	100000				85.0	90.0
4	END	DISABLE						24.0	30.0
7									
8									
9									
10									

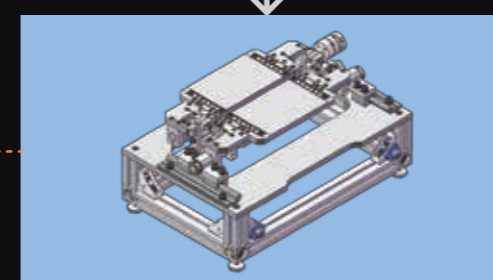
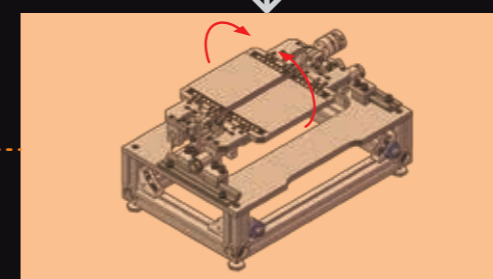
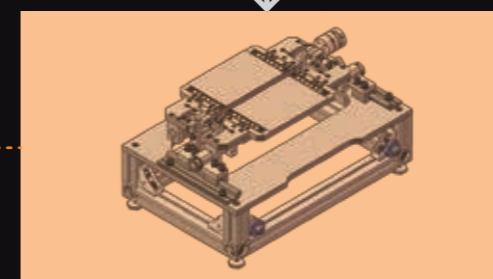
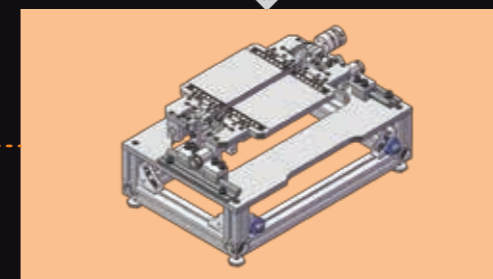
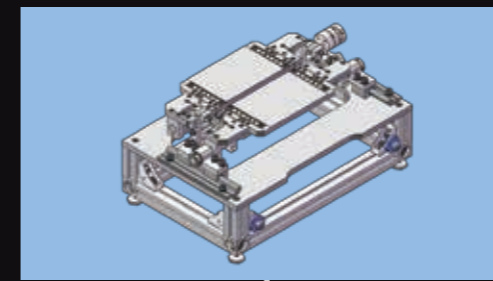
CHAMBER STATUS ENABLE LOOP SETTING 1 LOOP END CHAMBER CONTROL STOP AFTER END TEMP. (°C) HUM. (%) 0.0 0.0



# Endurance Test System

## → Programmed Operation

Example Using Program Operation  
(Tension-Free™ Folding Clamshell-type Jig)



### STEP 1

Set thermo-hygrostat to 85°C/90%Rh.

### STEP 2

Wait 2 hours maintaining thermo-hygrostat at 85°C/90%Rh.

### STEP 3

Conduct the test 100,000 times with thermo-hygrostat set at 60 rounds/minute.

### STEP 4

Adjust the thermo-hygrostat to room temperature (24°C/30%Rh) and finish the operation.

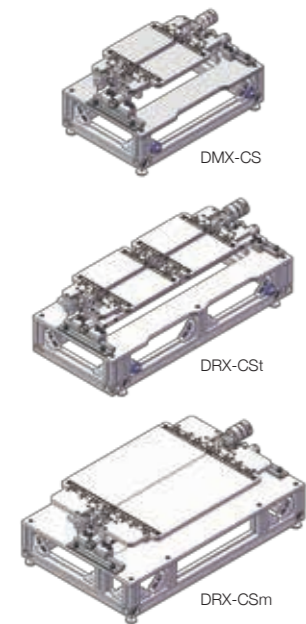
Y's Block

DR11MC-CET03A-CS / CS-t / CS-m  
 Constant Temperature and Humidity Environment  
 Endurance Test Machine  
 Tension-Free™ Folding Clamshell-type

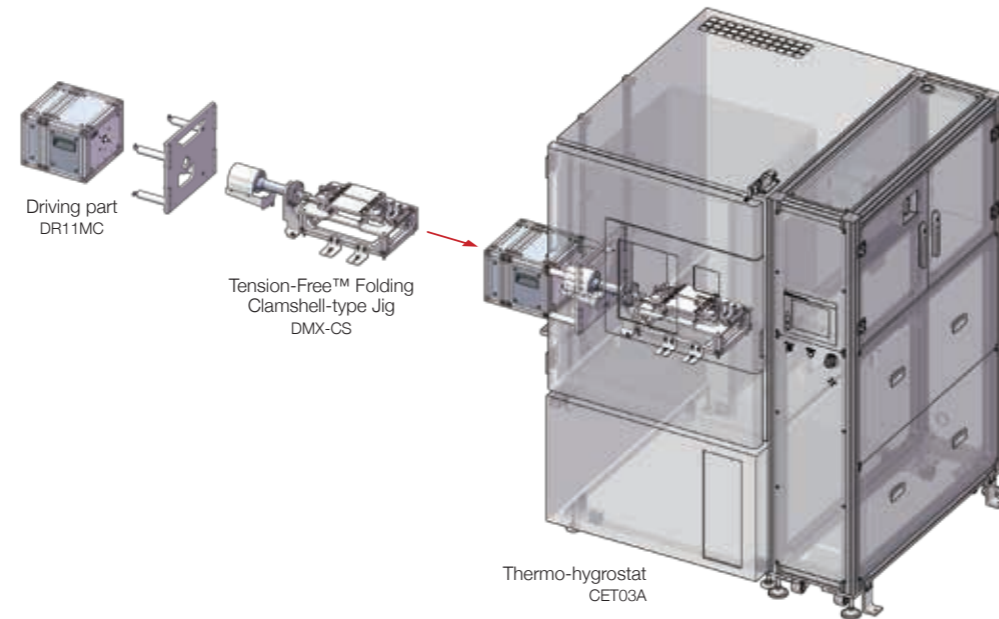


Attachment (Test Jig)

Tension-Free™ Folding Clamshell-type jig

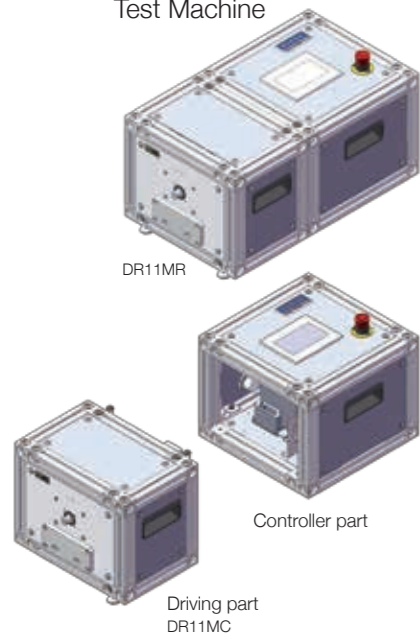


Composition

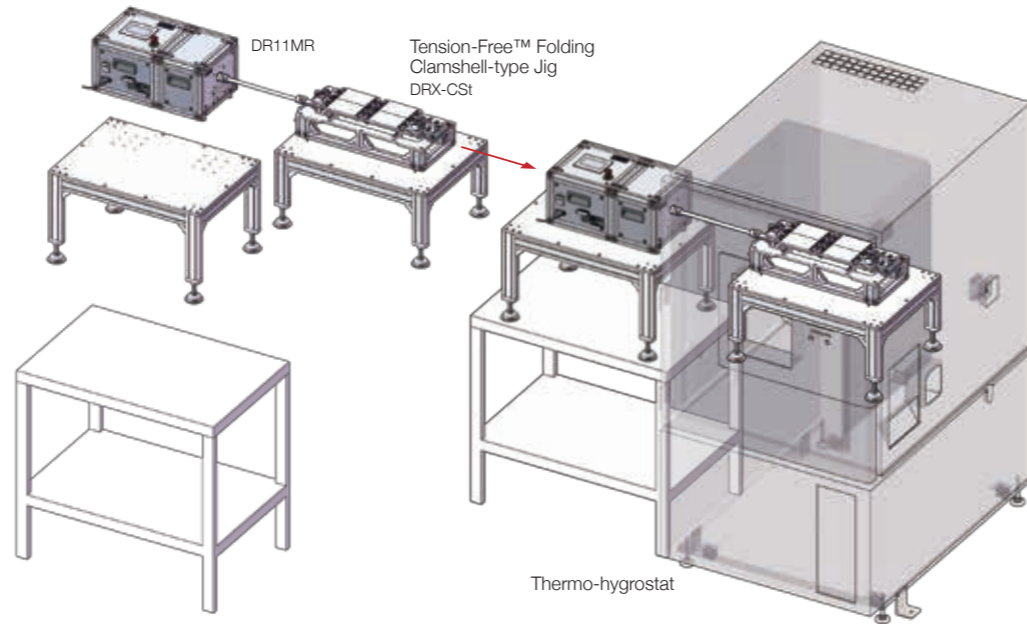


Driving Unit

Desktop Model Endurance Test Machine



In case installing in the existing Thermo-hygrostat



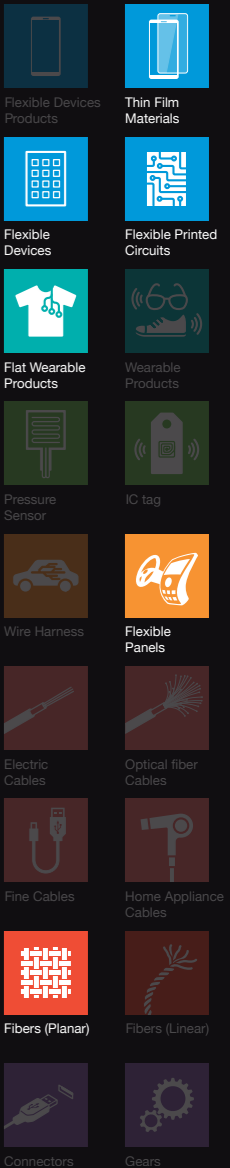
MODELS 

You can download the specification.

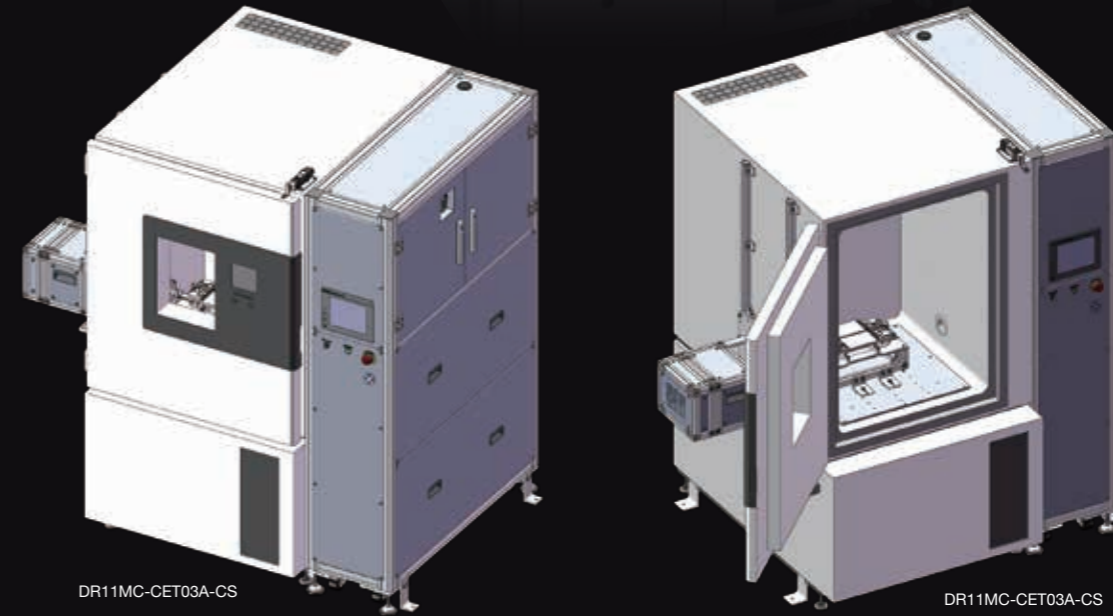
FOLD



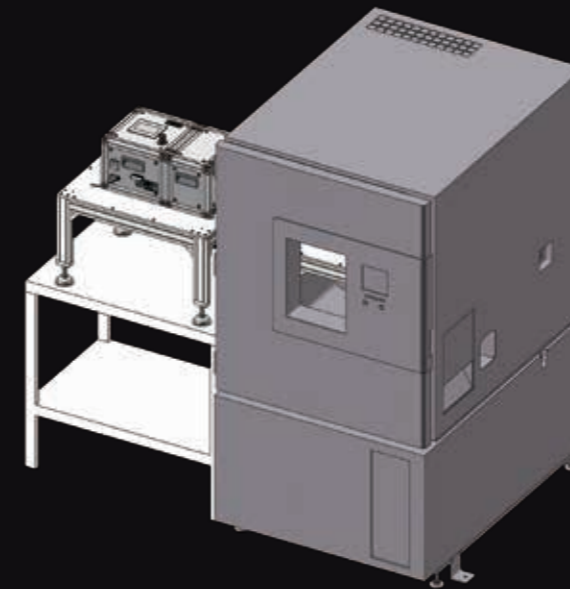
Example of Test Pieces



Drawing of Completed Assembly



Drawing of Completed Assembly



If you have any question, please ask us.

# Endurance Testing Systems Support Package

Image  $\times$  **Y's Block**  $\times$  Measuring

→ Analysis the sample deformation



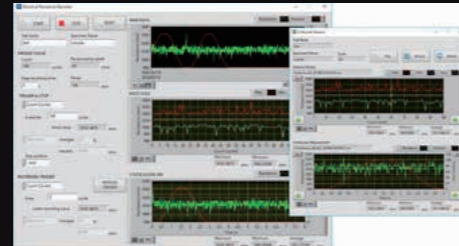
Image

Edge Shape Analysis



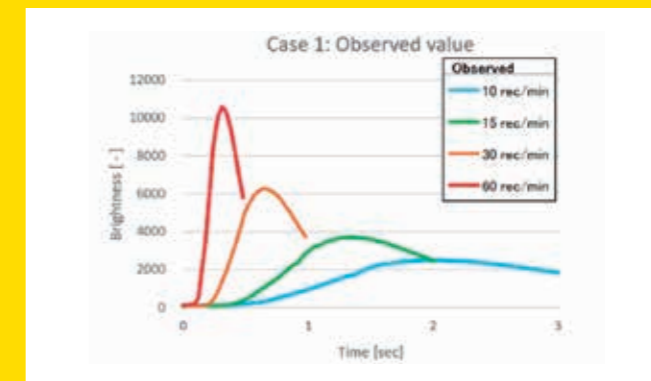
Measuring

Conductor resistance

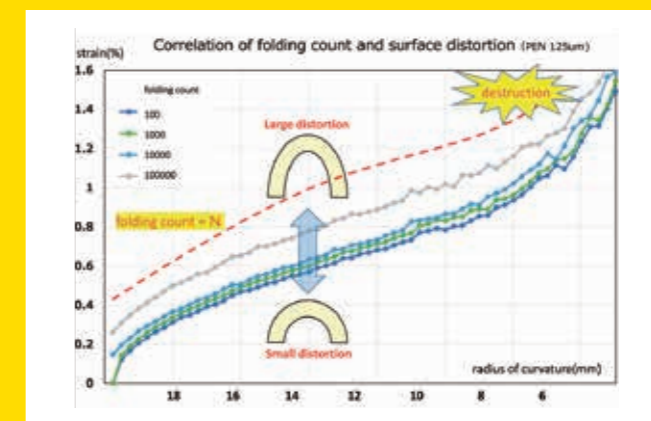


Analysis

Visualization

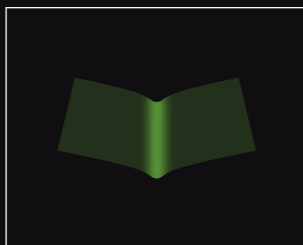


Failure prediction



Failure sign

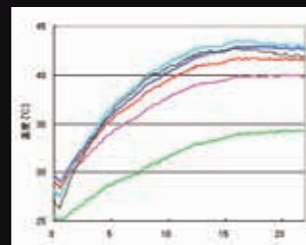
Mechanoluminescence



Failure detection



Temperature

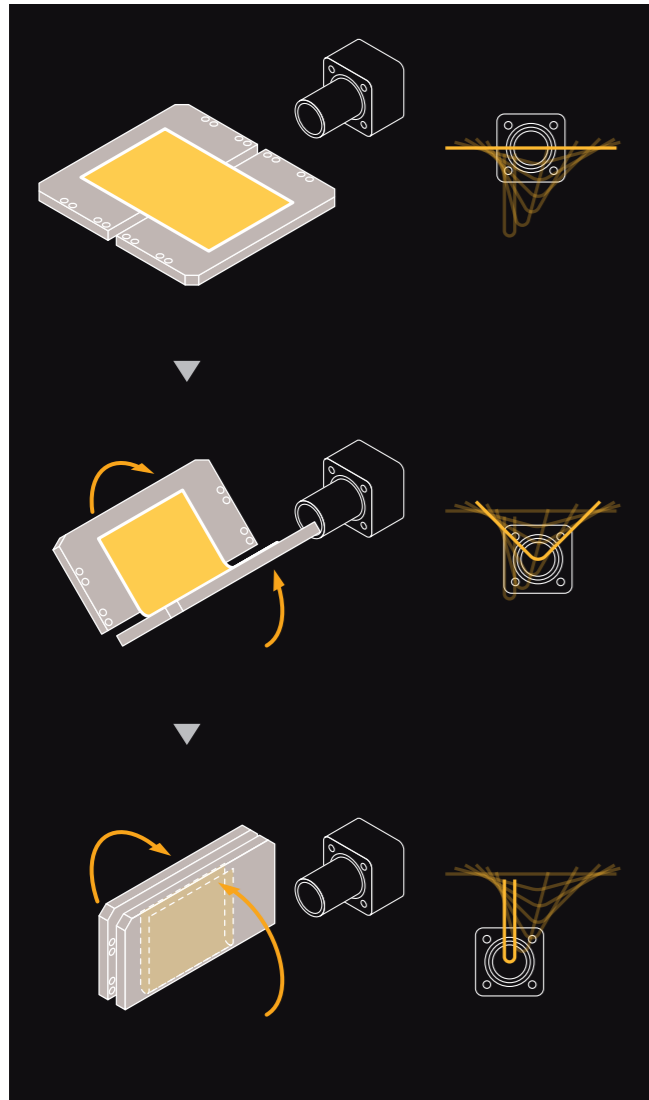




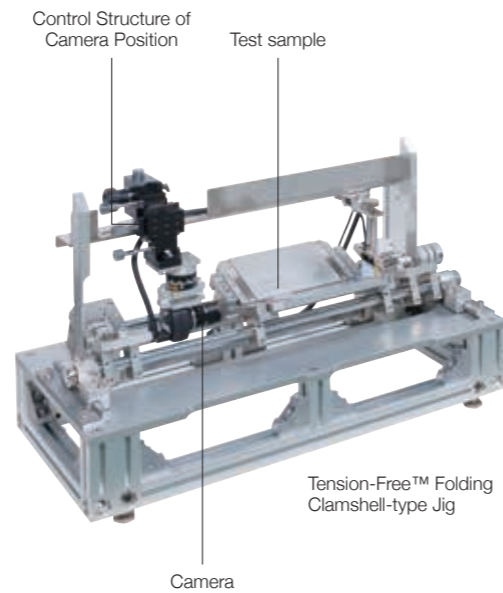
**Y's Block** DR11MR-CS-cam-ESA  
**Edge Shape Analysis with Mechanical Endurance Test**  
**Tension-Free™ Folding Clamshell-type**



Sample / Jig Movement



Attachment (Test Jig)



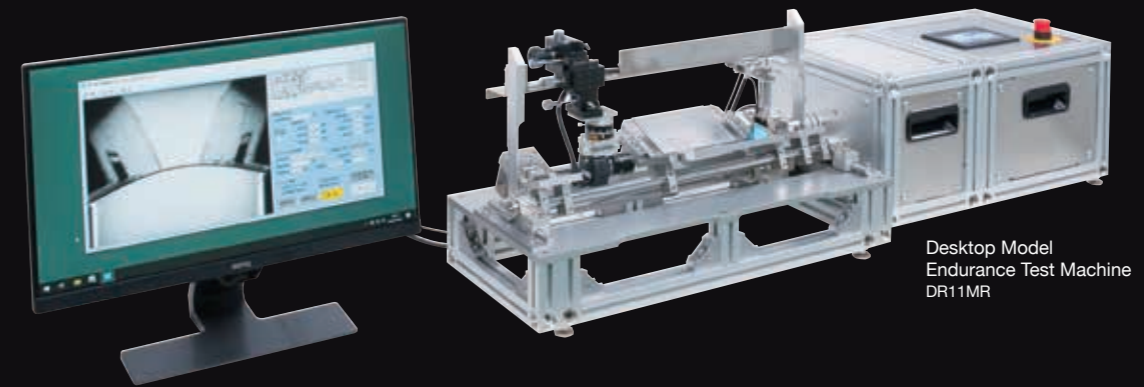
The camera follows movement of test sample by the control structure of camera position. That gives steady image of test sample to evaluate mechanical deformation.

Edge Shape Analysis during deformation using side-view  
 Failure prediction by deformation profiling

Image processing system developed by Shishido Lab. @TITECH tells precise edge shape on specimen while deformation occurred, by using specific optics. It can predict the failure by deformation profiling.



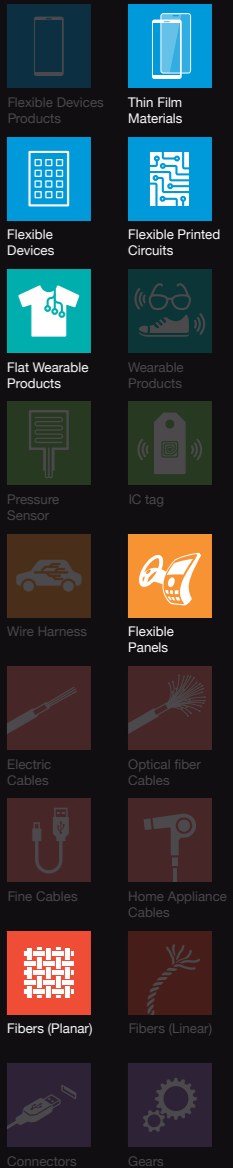
Composition



FOLD

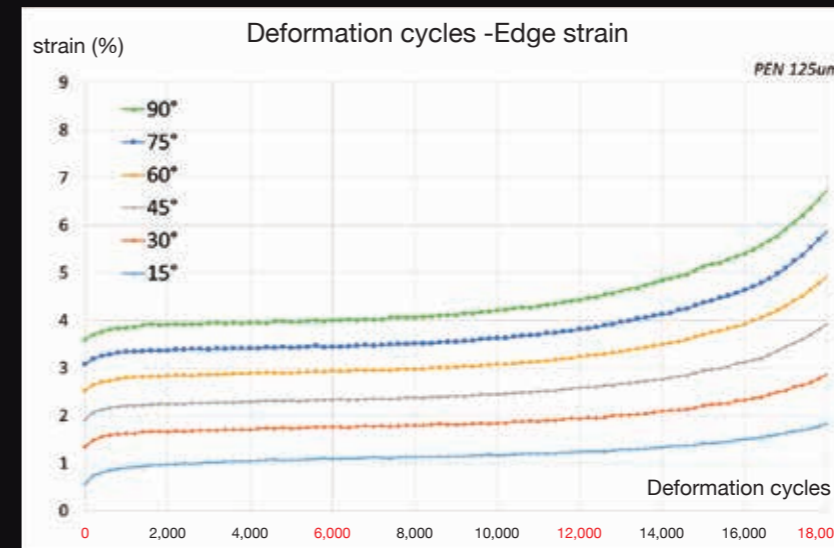
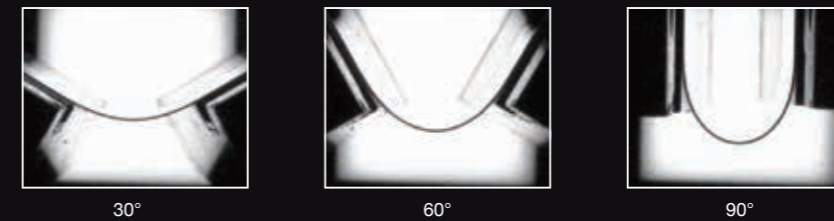


Example of Test Pieces



Examples

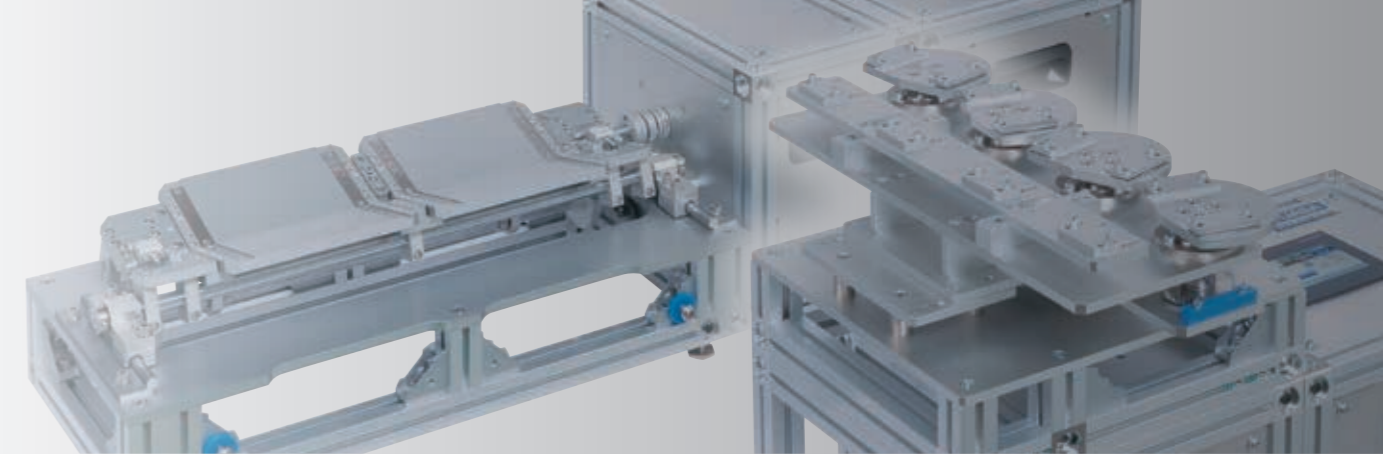
This system analyzes a maximum curvature on a neutral plane from an observed shadow shape of specimen, then calculates the surface strain from a curvature and the given its thickness.



# Specification of Base Unit

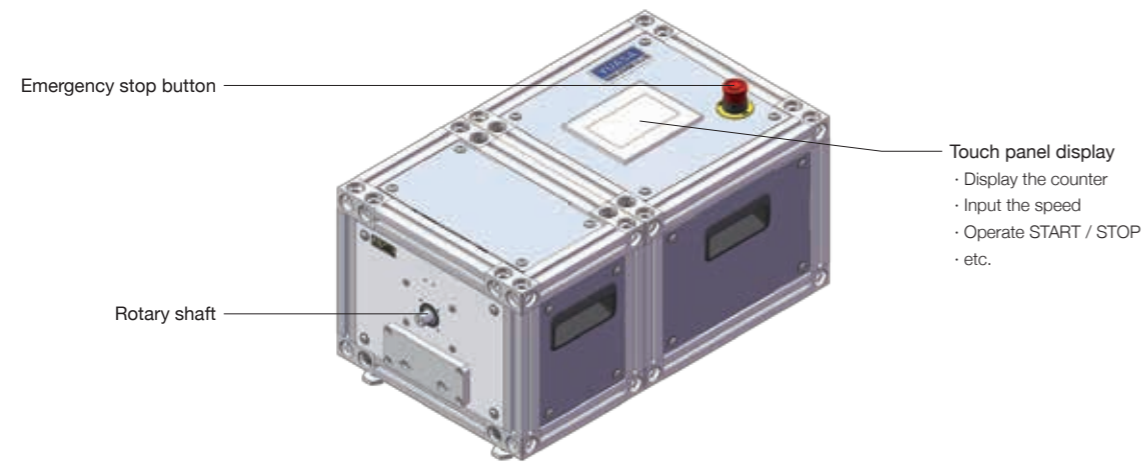
**Y's Block** → DR11MR / DR11MR4 (Horizontal axis Type) / DR11MR3 (Vertical axis Type)  
**Desktop Model Endurance Test Machine**

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



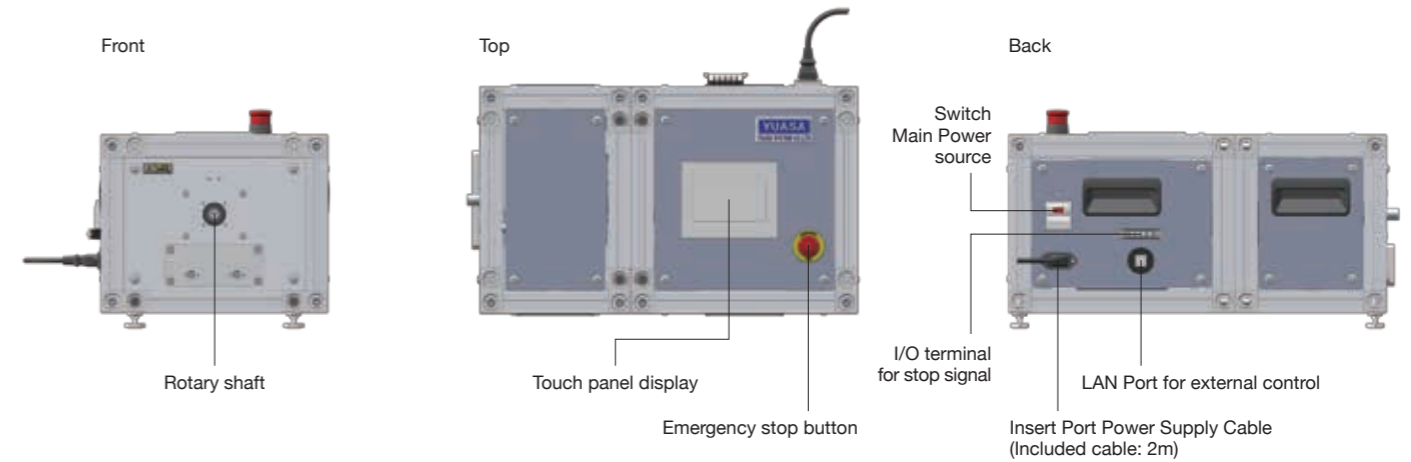
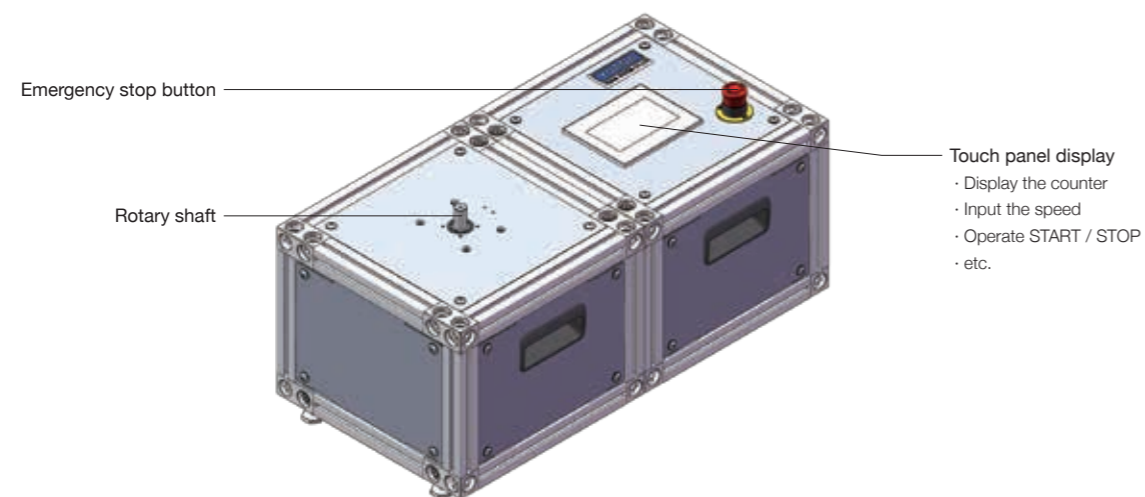
## DR11MR / DR11MR4 (Horizontal axis Type)

It is possible to set a variety of test conditions, and it can operate freely any position.  
 DR11MR4: when turn off the power, connected attachment does not move because motor is locked.



## DR11MR3 (Vertical axis Type)

This unit is suit for long-time repeating test.



60rpm is achieved with clamshell-type(p. 15).

The increased permissible torque enables operation at 60 rpm, which was not possible with our conventional small desktop endurance test machine.

### Various test condition

It is possible to operate freely within 10 rotations both side(±3600°).  
 One-way continuous rotation is possible by switching modes.

### Fully automatic testing

A disconnection detector and preset counter are standard equipment.

### Basic Specifications

	DR11MR	DR11MR4	DR11MR3
Electric Power	AC100-240V (50/60 Hz) 100VA		
Motor Unit	Stepping motor [DC48V, 3.55A (max. ), 100W, Gear box 1/15] (DR11MR4 with brake function.)		
Angle	Rotary Reciprocation Mode: ±7-±3600 deg. / Continuous rotation Mode: One-way rotation		
Rotary Speed	1-1200 deg / sec		
Permissible Torque / Output	6.5 N-m		
Permissible Moment of inertia	2.0x10 <sup>-3</sup> kg/m <sup>2</sup>		
Output Shaft Static Rated Moment	1.5 N-m		
Counter	8-digits display (Can set the target number)		
Installation Environment	Temp. : +5-40°C / Humi. : 15-85%Rh (No Condensation)		
Safety Interlock	Safety cover for the testing jig: Converted or Not		
Dimension (Excluding projection)	W 500mm × D 300mm × H 255mm	W 600mm × D 300mm × H 255mm	W 600mm × D 300mm × H 255mm
Weight	20kg	23kg	21kg

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

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

**MODELS**

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

## YUASA SYSTEM ENDURANCE TEST SYSTEM



**Bending**



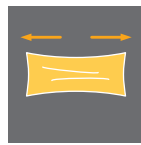
**Torsion**



**Folding**



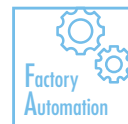
**Rolling**



**Tension**



YUASA SYSTEM CO., LTD.



**YUASA SYSTEM CO., LTD.**

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



PHONE: +81-86-287-9030 FAX: +81-86-287-2298

HEAD OFFICE / FACTORY 2292-1 KIBITSU, KITA-KU, OKAYAMA-CITY 701-1341 JAPAN

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.