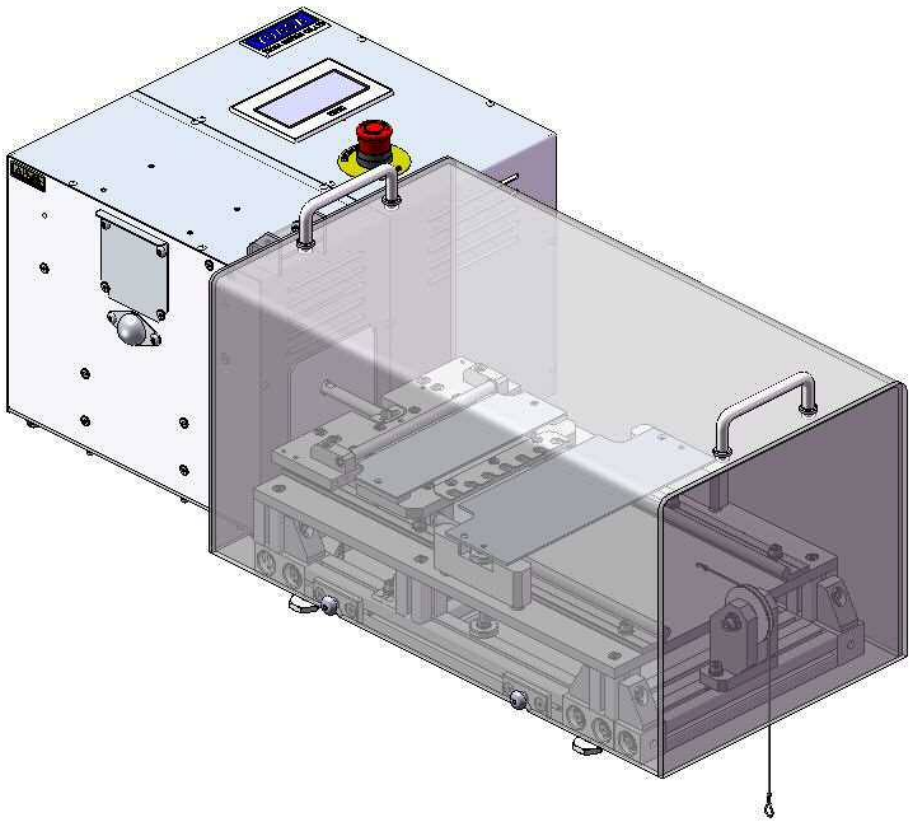
J0001273M0001/00

INSTRUCTION MANUAL
PULLING OUT



YUASA
YUASA SYSTEM CO., LTD.

Safety precaution are classified into five categories

WARNING : Death or serious injury may result from not following product installation instruction.
CAUTION : Minor injury, as well as damage to the product may result from not following product instruction.
NOTICE : Inaccurate data may result from not following the test instructions.
NOTE : General knowledge.
INTERLOCK : Effect of the interlock system for safety.

INTERLOCK : Install the safety cover and prevent access to any moving parts.
WARNING : Installing, operating, maintaining or inspecting must be carried out by skilled and professional engineers.
WARNING : Make sure to tighten each screws as described in this manual.
WARNING : Make sure the Emergency Stop Button is maked work, and the machine is completely stopped before adjust the testing condition and change the part.
WARNING : Make sure the power is switched off, and the machine is completely stopped before carrying out maintenance and inspection.
WARNING : Do not use products beyond its capacity as specified in the specification.
WARNING : Do not remodel.
CAUTION : Do not change installation environment (temperature and humidity) rapidly.
CAUTION : Isolate the machine from sunlight.
CAUTION : Isolate the machine from any noise.
CAUTION : Isolate the machine from any dust.
CAUTION : Isolate the machine from large vibration.
CAUTION : Immediately stop the machine upon any sign of abnormal operation.
NOTICE : Make sure to tighten the screws as described in the manual.
NOTE : In some cases, illustrations with different shapes may be included.
NOTE : In some cases, a description different from your equipment may be included.
NOTE : The scraps should be disposed as general waste by skilled professionals.

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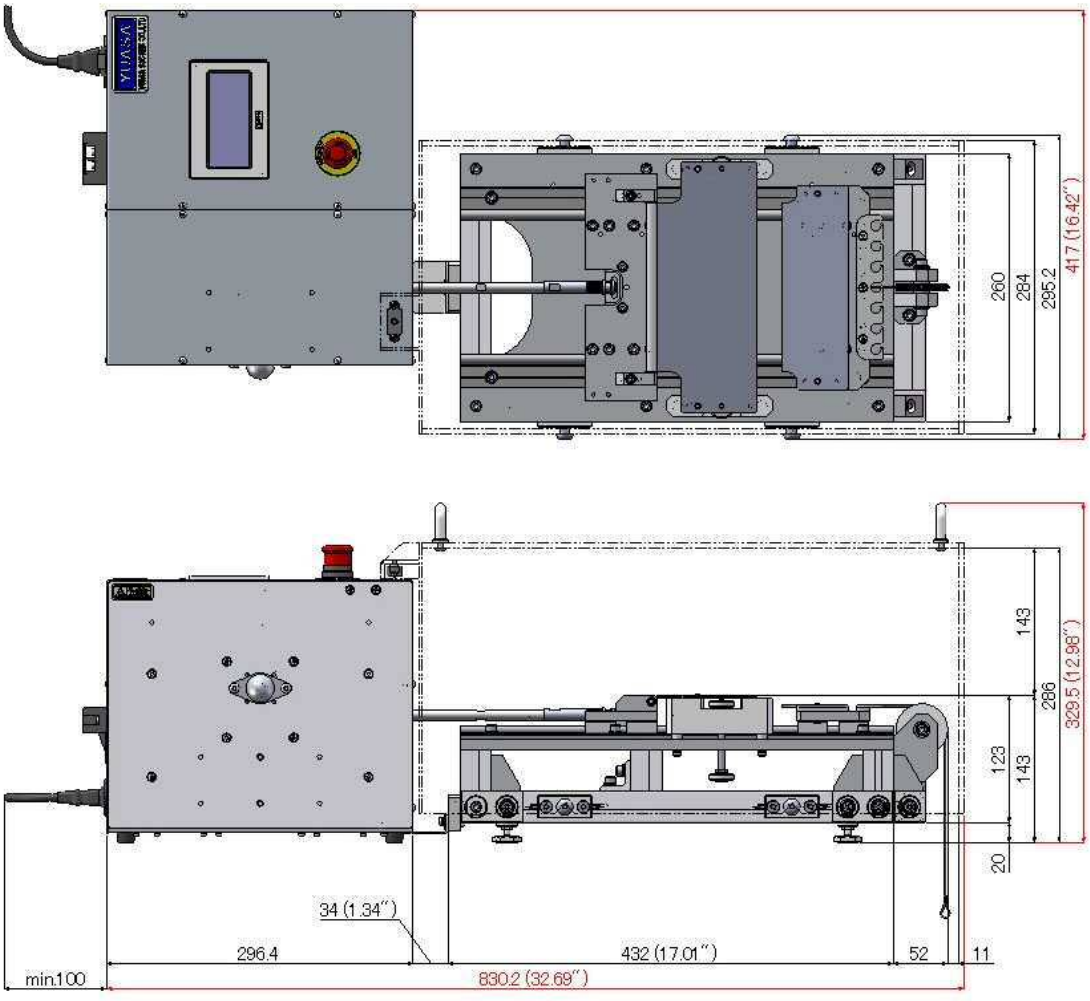
[- NOTICE -]

We make absolutely sure about the contents of this user manual.
However, if you have some questions or find some incorrect, please contact us.

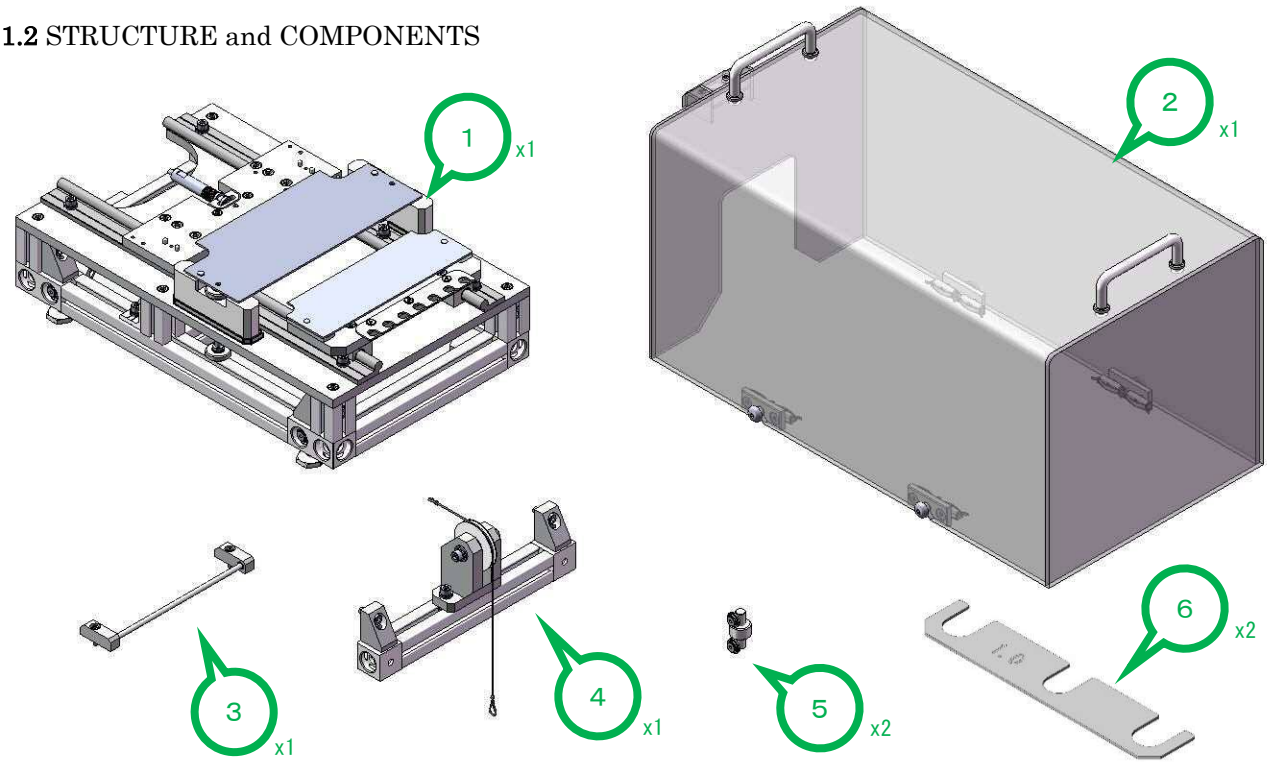
1. INTROCUCTION

1.1 OVERVIEW

SAMPLE SIZE	Thickness : Max. 1 mm Width : Max. 160 mm
TESTING CONDITIION	Reciprocation Distance : 3～120 mm Reciprocation Speed : max.90 rec/min (Reciprocation Distance : under 20 mm) max.30 rec/min (Reciprocation Distance : over 80 mm) NOTE Refer from manual for DMLHP that detail of Reciprocation Speed. Core Radius : φ5～20 mm Loading Weight : max.10N (=1.02kg ,2.24lbs)
DRIVING UNIT	DMLHP only
MASS	Testing Jig : about 7 kg (15.5lbs) Safety Cover : about 4 kg (8.9lbs) ※without Testing Machine
INSTALLATION ENVIOROMENT	Temp. : +5～+40 ° C Humi. : 15～85%RH (No Condensation)



1.2 STRUCTURE and COMPONENTS

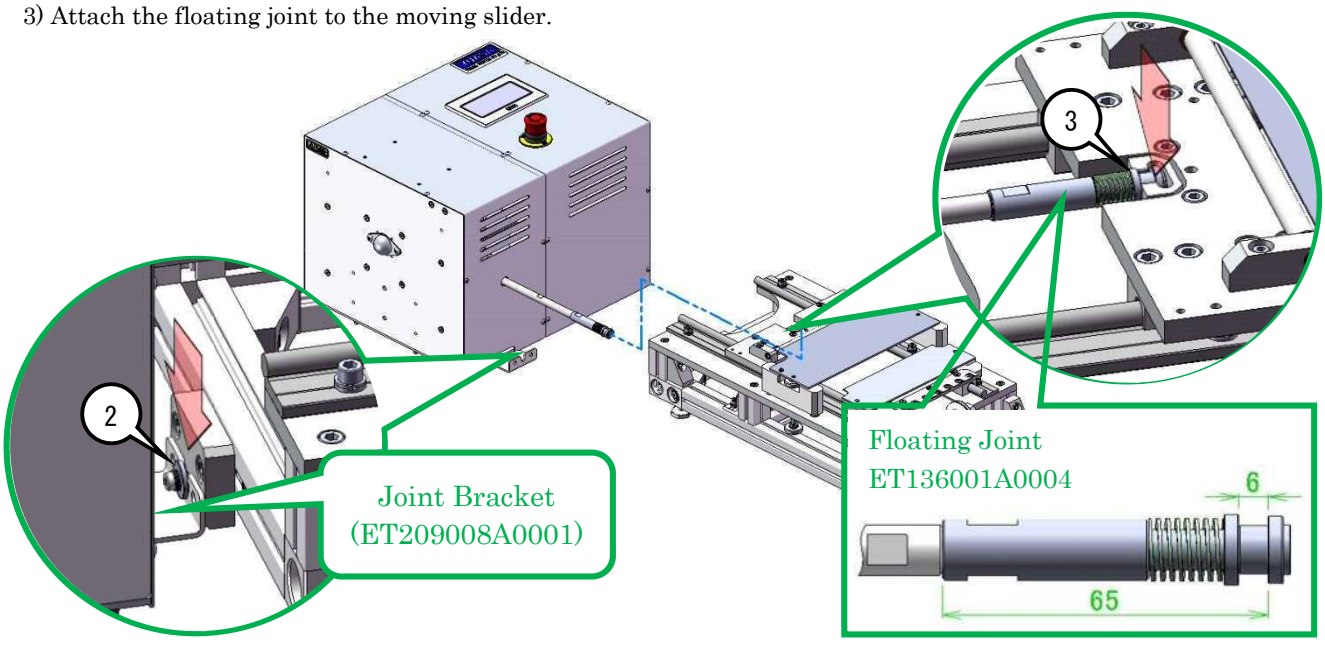


№	NAME	PART NUMBER	Quantity	MANUFACTURE (MATERIAL)	NOTE
1	Testing Jig	ET256001A0002	1	YUASA SYSTEM	
2	Safety Cover	ET503007A0008	1	YUASA SYSTEM	
3	Core Unit	ET256003A0025	1	YUASA SYSTEM	ϕ5 (Special) Choice in ϕ5～ϕ20
4	Load Unit	ET256002A0002	1	YUASA SYSTEM	Static Load type
5	Connector	ET135001A0001	2	YUASA SYSTEM	
6	Shim	YS001P0000478	2	YUASA SYSTEM	For ϕ5

NOTE The load unit and connector parts are delivered as assembled to the test jig body.

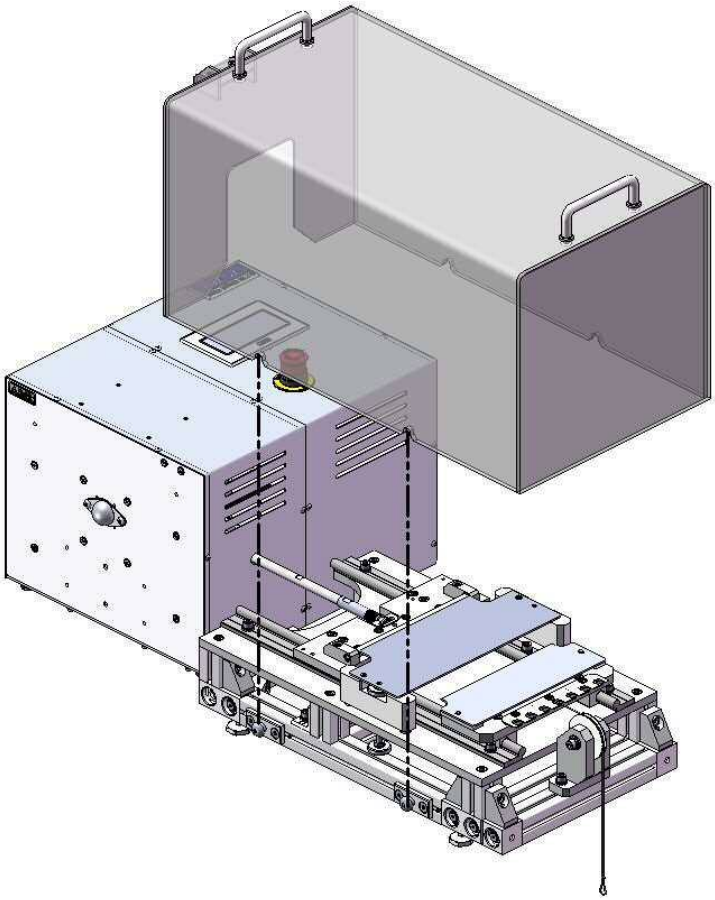
1.3 INSTALLATION [Tool : 3 mm Allen wrench]

1) Confirm that the driving unit (DMLHP or DMLHB) modified to linear rec. mode, and the joint bracket (ET209008A0001) and the floating joint (ET136001A0004) has been attached to driving unit.
   NOTE Refer from manual for DMLHP how attach joint bracket and floating joint.
2) Holding the moving slider, put on testing jig to the joint bracket
3) Attach the floating joint to the moving slider.



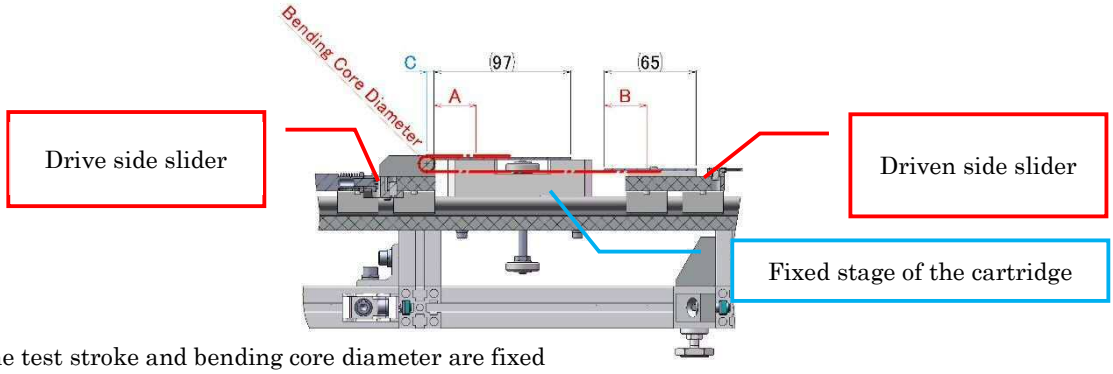
4) Mount the safety cover to testing jig, confirm to move driving unit and testing jig smoothly.
(Refer to "**3.3 SAFETY COVER**" for detail).

INTERLOCK Cannot move driving unit when the safety cover is open.



3. SETTING of TESTING CONDITION

CAUTION When operating with the test machine, the driven side slider operates with twice the stroke for the test stroke. Check the combination of the test stroke and the sample length by the following method before sample attach. (Combination of there is not rightly, the drive side slider and the driven side slider may collide, and the test may not be performed correctly, or the test jig may be damaged.)



① When the test stroke and bending core diameter are fixed

From the test stroke and bending core diameter, determine the minimum sample length that can be tested.

(Sample length) ＝ (Holden Space , above "A＋B")＋(Test stroke＋{(Bending core diameter)×1.6}
＋{(Clearance with the cartridge to the bending core , above "C")×2}

CAUTION The clearance with the cartridge to the bending core is the radius of the bending core when the drive side slider is at the forward end (+60 mm).

CAUTION When conducting the test, be sure to prepare a sample that is **longer** than the above calculation results.

② When the sample length and bending core diameter are fixed

From the sample length and bending core diameter, determine the maximum stroke that can be tested.

(Test stroke) ＝ 1/2×[(Sample length)－(Holden Space , above "A＋B")－{(Bending core diameter))×1.6}
－{(Clearance with the cartridge to the bending core , above "C")×2}]

CAUTION When conducting the test, be sure to perform the test with a stroke **shorter** than the above calculation results.

③ When the test stroke and sample length are fixed

From the test stroke and sample length, determine the maximum bending core diameter that can be tested.

(Bending core diameter)) ＝ [(Sample length)－(Holden Space , above "A＋B")－(Test stroke)
－{(Clearance with the cartridge to the bending core , above "C")×2}]÷1.6

CAUTION When conducting the test, be sure to perform the test with a bending core diameter **smaller** than the above calculation results.

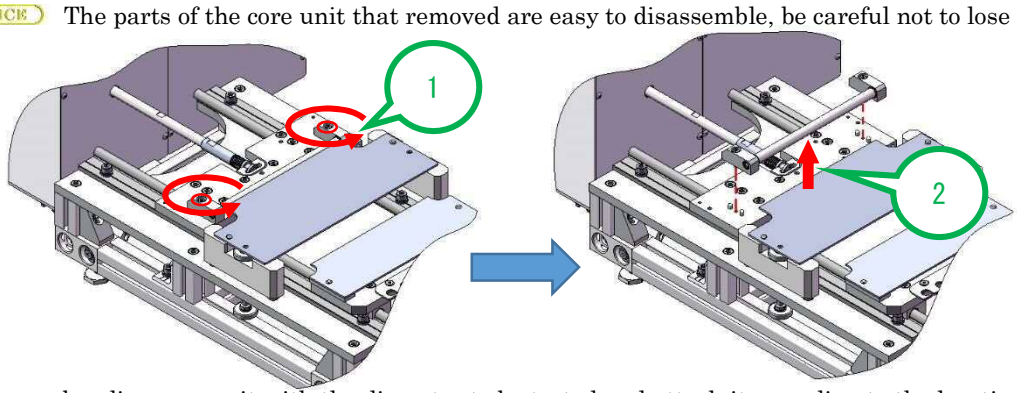
3.1 ATTACH THE PARTS of TESTING

3.1.1 ATTACH THE CORE UNIT [Tool: 3 mm Allen wrench]

Differ the parts of the core unit depending on testing condition. When changing testing condition, replace the core.

1) Loosen the bolts (M4x2) that secure the core.
2) Lift and remove the core unit.

NOTICE The parts of the core unit that removed are easy to disassemble, be careful not to lose them.



3) Prepare a bending core unit with the diameter to be tested and attach it according to the locating pin.
4) Tighten the bolts (M4x2) secure the bending core unit.

CAUTION Tightening Torque : 3N･m (do not over tighten screws)

3.1.2 SETTING THE FIXING SIDE CARTRIDGE POSITION

Adjust the height of the fixed side sample cartridge according to the bending core.

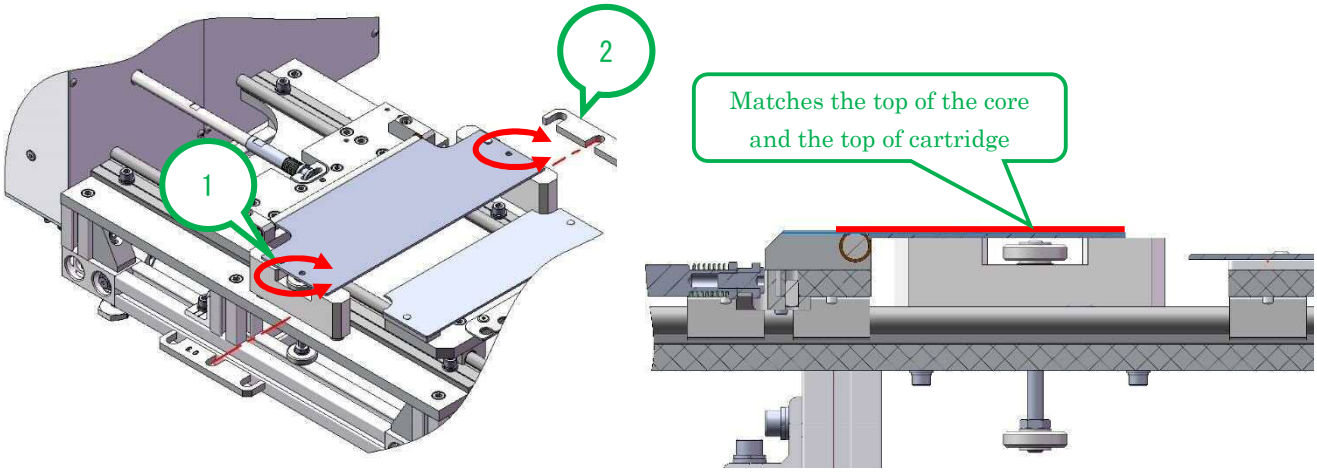
1) Turn the knob on the fixed stage of the cartridge to adjust it slightly above the core.

2) Insert the shims underneath the fixed stage.

3) Adjust while lowering the height of the fixed stage so that the top of the cartridge matches the top of the core.

NOTE When testing with the tiny core diameter (φ5 to φ6) without using the shim, adjust the upper surface of the cartridge to a position slightly higher (to +0.5 mm) with respect to the upper surface of the core.

4) Make sure that moving with hand to driven slider that there is no interference between the driven side slider and the fixed side sample cartridge, and that it operates smoothly.



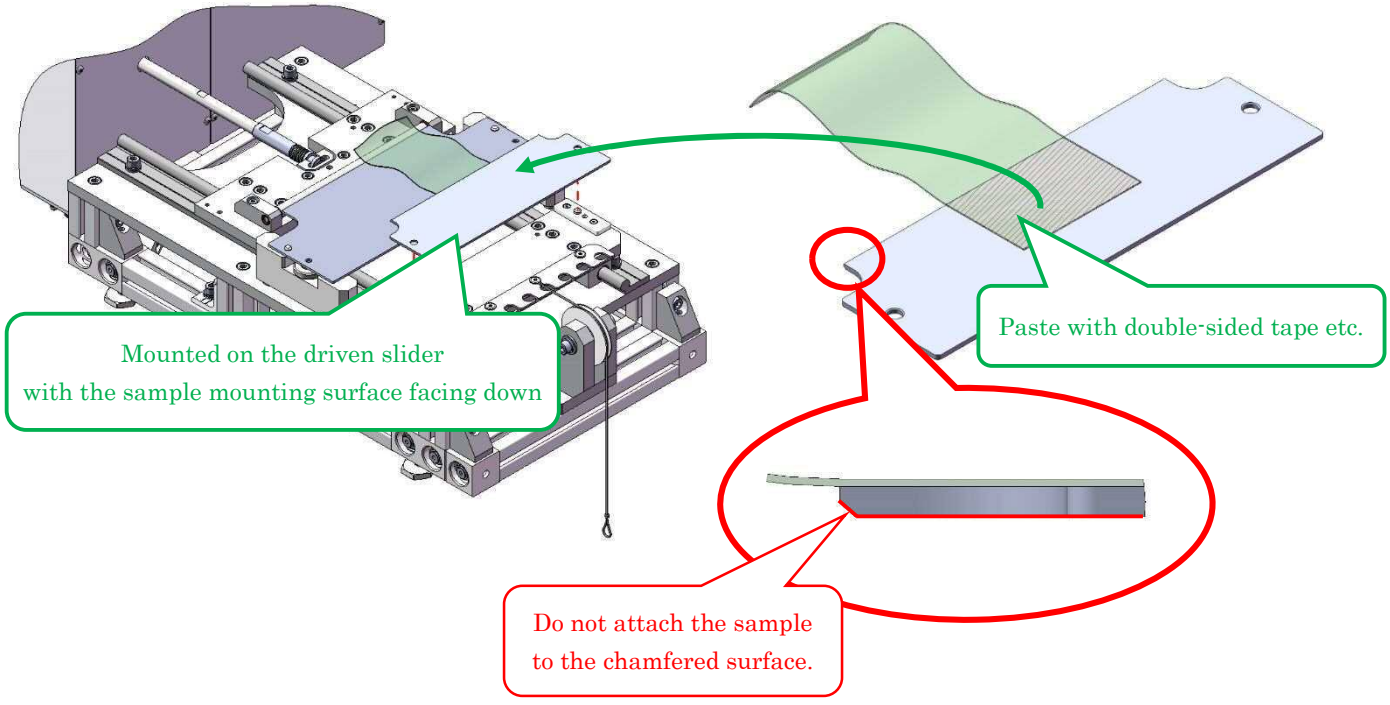
3.2 ATTACH THE SAMPLE

NOTICE Before installing the sample, make sure the cartridge is not warped or distorted.

1) Remove the cartridge from the driven slider.

2) Attach the sample to the flat side of the cartridge with double-sided tape or masking tape.

CAUTION Attach the sample tightly with spacious holden space the sample from falling off during the test. (～65mm)



3) Mounted on the driven slider with the sample mounting surface facing down.

NOTE At this stage, only one of the samples is fixed and the other is free.

4) Move the moving side slider to the test start position.

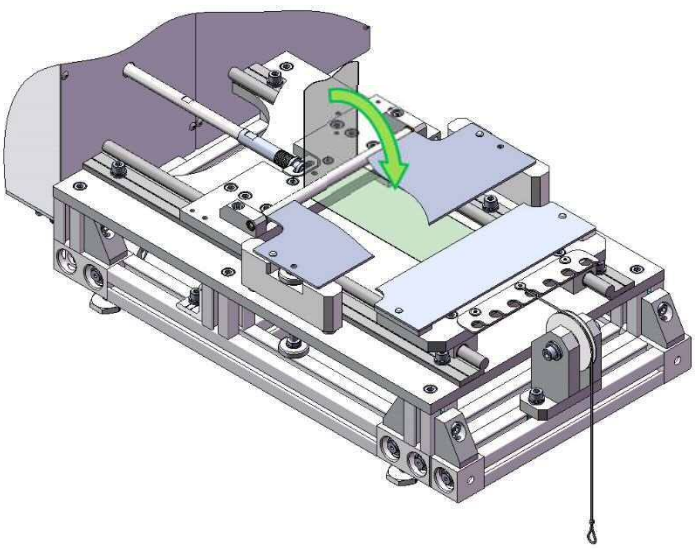
NOTE For the operation of the testing machine, refer to the instruction manual of the testing machine (DMLHP).

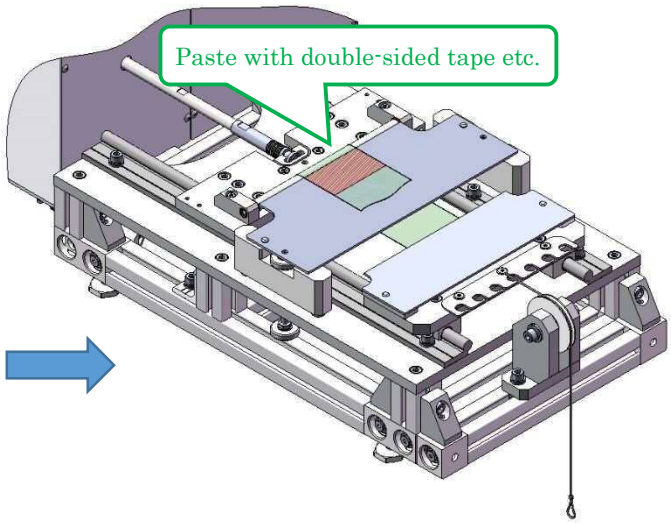
4) Suspend the weight on the static load unit. (weight : max.10N = 1.02kg (2.24lbs))

5) Pass the sample from the bottom of the core, fold it upwards, and attach the sample to the top of the fixed cartridge.

CAUTION Attach the sample tightly with spacious holden space the sample from falling off during the test.
(～97mm)

CAUTION Make sure the operation with JOG to confirm that there is no interference between the parts.





3.3 DETTACH THE SAMPLE [Tool: 3 mm Allen wrench]

Move the drive side slider to a position where it is easy to work in advance.

1) Remove the weight so that the driven slider can be moved.

2) Remove the core.

NOTE Refer from "**3.1.1 ATTACH THE CORE UNIT**" that method of remove the core.

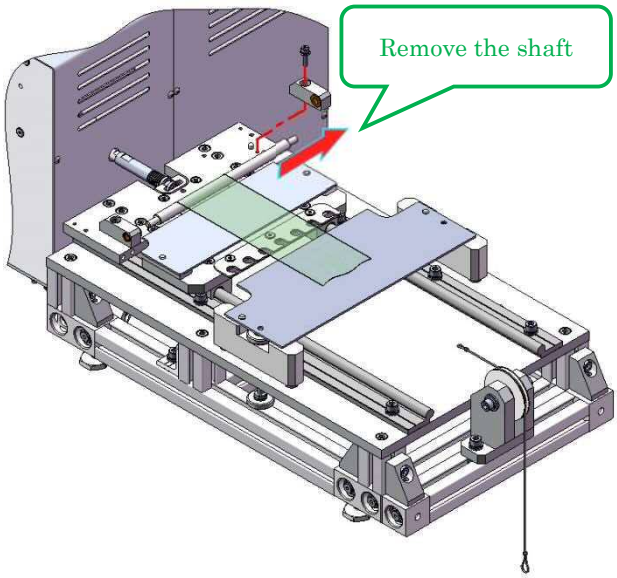
CAUTION Remove the sample so that it is not overloaded.

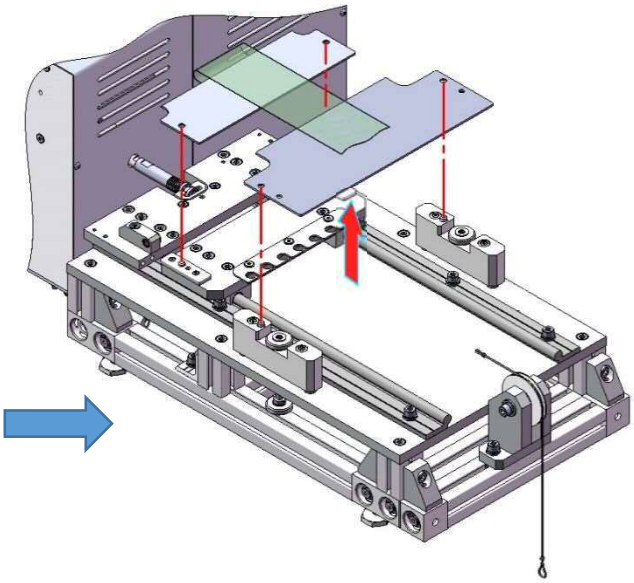
3) Lift up and remove the cartridge (fixed side / driven side).

CAUTION When removing the sample from the cartridge, make sure that the cartridge does not deform.

CAUTION Wipe it off after peeling it so that no adhesive remains on the mounting surface of the cartridge.

CAUTION If the sample is deformed when it is removed from the cartridge, be sure to replace it with a new cartridge.





3.4 SAFETY COVER

WARNING Install a safety cover and prevent access to any moving parts.

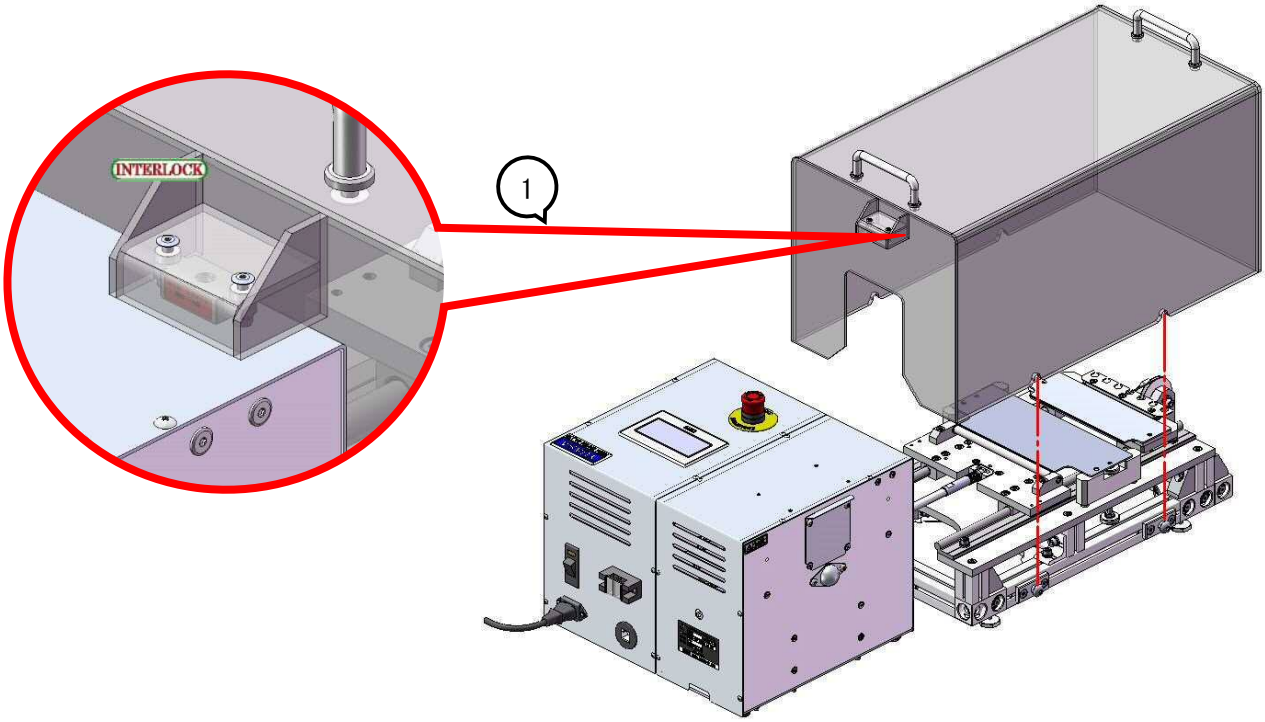
INTERLOCK Cannot operate equipment with the operation panel whenever the safety cover opened.

3.4.1 MOUNTING [Tool: ---]

1) Mount the safety cover on the testing jig.

NOTE Confirm direction of the safety cover as below.

CAUTION Confirm screws are fit in the ditch of the safety cover.



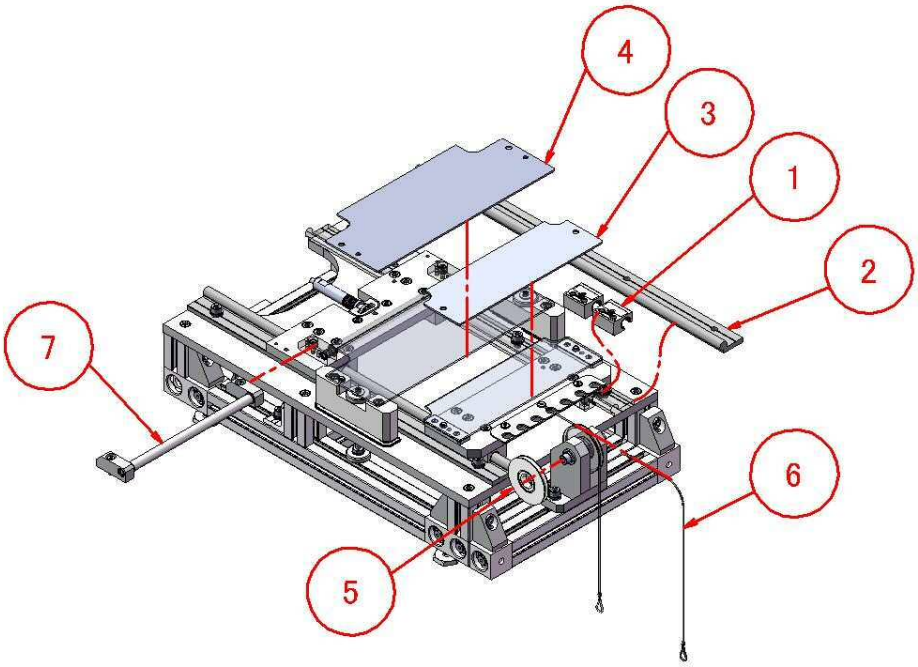
4. MAINTENANCE and INSPECTION

4.1 INSPECTION

This Jig is maintenance-free.

Change to the new one if some components will break because of using condition or aging.

4.1.1 PARTS LIST



№	NAME	TYPE	Num.	MANUFACTURE (MATERIAL)	NOTE
1	Drylin	J200UMO-01-10	8	igus	
2	Single Rail	WS-10-420-C5＝C6＝30	2	igus	
3	Holder Plate	YP000P0003254	1	YUASA SYSTEM	
4	Holder Plate	YP000P0003253	1	YUASA SYSTEM	
5	Idler	MBFS48-2.1	1	MISUMI	
6	Code (for Tensioning)	DYNEEMA CODE (φ1.5)	1	SWAN	Equivalent product is possible. Length is any
7	Bending Core	ET256002A0025 (*1)	1	YUASA SYSTEM	ϕ5 (Special)

NOTE *1 : Differ from type of the bending core each testing condition, please contact the sales agent.

～ Further Improve Reliability

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http://www.yuasa-system.jp ～

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