
Instruction Manual

Multi Wide Size gel Casting Kit
WSE-1195
Multi-Lane Gel Cast

5th Edition
December 28th, 2023



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Introduction

Thank you for purchasing ATTO Corporation's Wide Size gel casting kit , "WSE-1195 Multi-Lane Gel Cast ". This instruction manual is delivered to you together with the system so that you can make full use of it. Not only those of you using this system for the first time, but also those of you having used before, should read this document carefully to understand contents. If you use this system for the first time, please read this document from beginning in serial order. In addition, this document contains information related to maintenance and guarantees as well as how to use. Please keep it handy all the time to make its full use.

If you have any questions on your purchased products or the instruction manual, please feel free to contact us. (Please refer to the back cover.)

About this manual

Before using the product, please read this document carefully. After reading it, please be sure to keep it for your future reference. When you relocate this system, be sure to attach this document to it.

If there is any defect in this document such as misplaced or missing pages, or if this document is lost or stained, we will replace it with a new one. Please take a moment to contact the distributor you purchased the product from or our company's customer service department (please refer to the back cover). At that time, please inform us of your product name and type. This document was created with our most careful attention; however, should you find any queries, errors or omissions, please inform our company's customer service department (please refer to the back cover).

Safety precautions







To use this system safely, it is a must to operate it properly. Do not use this product until you read this document carefully and understand the content sufficiently. Precautions on usage and safety described in this document are applied to the use of this system only for the specified purpose of use. Do not use this system for any other purpose than described here, or do not use this system by any other method than described here. If you use this system for any other purpose or by any other method than described in this manual, you will be held responsible for all necessary safety measures as operator.

If you operate the system for the first time, you need to be given instructions from an experienced operator with proper knowledge, and to understand its principle and method. Not only people who operate the system for the first time but people who have ever used it after receiving professional education should keep this instruction manual handy to make its effective use. In order to prevent any electric shock caused by the system or any damage to the system, please understand and follow the correct operation method shown in this manual.

If you have questions or concern related to the principle of maintenance or inspection, feel free to contact our company (please refer to the back cover).

Safety symbols

To use this system safely and maintain the safe status, the following symbols are indicated in the instruction manual and on the system's main unit. Please note the meaning of each symbol and observe each item.

Symbol	Description
 Danger	This symbol indicates emergent danger, such as death or heavy injury caused by ignoring the symbol and mishandling the system.
 Warning	This symbol indicates possibility of danger, such as death or injury, caused by ignoring the symbol and mishandling the system.
 Caution	This symbol indicates possible occurrence of property damage caused by ignoring the symbol and mishandling the system.
	This symbol indicates prohibition.
	This symbol indicates an important matter.
	This symbol indicates a tip to the operation.

Other Notices

Application	This device is for life science research use only. It's not a medical device and cannot be used for medical treatment, such as making medical-related judgments or confirming the effectiveness of treatment.
Export	Export of specific work and cargo are controlled by Foreign Exchange Laws and Cabinet Order/Ministerial Orders of Foreign Trade Control Laws and those controls are applied to this unit. Even if the unit is not applicable to the Cabinet Order, it's required to submit documents accordingly and if it's applicable, then obtain export license from the Ministry of Economy, Trade and Industry, and then submit the license to the customs office. When you export our products, please confirm with your supplier or us in advance.
Trademarks/ Copyright	You are hereby notified that any distribution, copying or forwarding of this manual is strictly prohibited without permission of ATTO Corporation. Information in this manual or specification of the product is subject to change without notice.

1 Overview

1.1 Purpose

WSE-1195 is a gel cast for making flat polyacrylamide gel of wide size (140 x 80 x 1 mm)

2 Inspection when unpacking the product

2.1 Inspection at unpacking

Upon arrival of the product, please confirm whether the main body and accessories are packed correctly or if any defects exist. In case there is any inadequacy, deficiency, etc., please inform your supplier or us immediately.

Please unpack and inspect the contents within a week of receiving the product.

Confirmation after more than a week may not be warranted for defects or missing items.

2.2 Product component

This device consists of a main body and accessories.

Main Unit

Product Name	Multi-Lane Gel Cast
Model	WSE-1195
Product No.	2393032
Main unit	Main unit of gel cast Plate with packing

Attachments

Model	WSE-1195
Plate set (MLAB-12, MLB-02)	2
Multi-Lane comb(30 well,ML10-30)	2
Divider plate (98 x 160 x 1mm)	6
Dummy plate (98 x 160 x 10mm)	1
Silicon plate (a) (22 x 164 mm)	1
Silicon plate (b) (22 x 103 mm)	2
Instruction manual	1

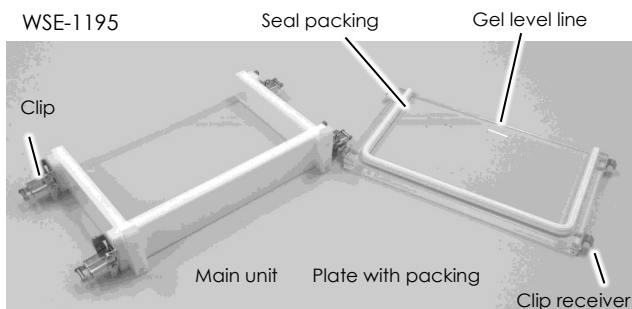
Materials

	WSE-1195
Main unit	Acrylic, Stainless steel
Plate with packing	Acrylic, stainless steel, Silicon sponge
Multi-Lane comb(30 well)	Polypropylene
Divider plate	Polycarbonate
Dummy plate	Acrylic
Silicon plate	Silicon

3 Name and function

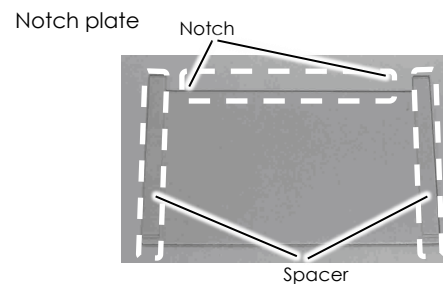
(1) Main unit of Mini Gel Cast

This is for making compact size gel. With standard attachment, WSE-1195 is intended to make 2 gel. It is available for making max. 4 gels with additional 2 pairs of glass plates by WSE-1195.



(2) Notch plate (2 plates) MLAB-12

Place the spacer side up and put plain plate on it. Gel is made in the space between 2 plates.



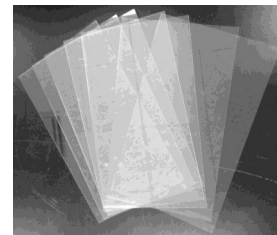
(3) Plain plate (2 plates) MAB-02

Place the spacer side of notch plate up and put plain plate on it. Gel is made in the space between 2 plates.



(4) Divider plate (6 plates)

This plate is inserted between pair of glass plates and another pair for preventing from making surplus gel and for removing gel from plates easily.



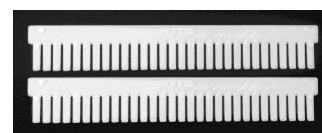
(5) Dummy plate (1 plate)

When 2 gels are made, this plate is inserted to the space of main unit. In the case of making 4 gels, this plate is not used.



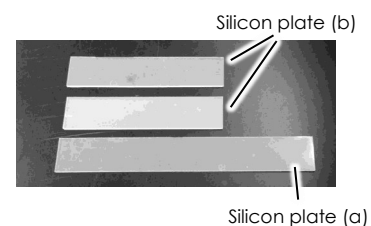
(6) Multi-Lane comb(30 well) (2 combs) ML10-30

This is 30-well comb for making wells on gel.



(7) Silicon plate

This silicon plate is set on the bottom and side of main unit. The length of silicon plate (a) is different from that of (b) even though the width is the same. This product includes a 22 x 124mm plate (a) and two 22 x 103mm plates (b). Plate (a) is set on the bottom of the system and then plate (b) is set on the each side of it.



4 Gel preparation

Assemble gel casting system and prepare gel solution for making gel.

Prepare Separation gel and Stacking gel solution using the following liquid volumes as a guide.

No. of Gels	Separation Gel	Stacking Gel
4	60~70mL	30~40mL
3	45~55mL	25~30mL
1-2	30~35mL	25~30mL

*For the composition of the gel solution, please refer to the instruction manual for the WSE-1170 Multilane Gel Electrophoresis System.



Warning

Monomer of acrylamide has neurotoxicity. Protect your body with gloves etc.



If you operate with bare hands, experimental tools, solution and anything related to the operation may be contaminated, and it is difficult to get the best experimental result. Also, if the plates are contaminated, air bubbles may occur easily when gel solution is being put into the system. Be sure to clean it sufficiently. Do not fix the system by clips except when making gels. If you do, elasticity of seal packing is lost and it may cause liquid spill when making gels.

4.1 Assembling a gel cast

It explains how to assemble WSE-1195 system in the below.

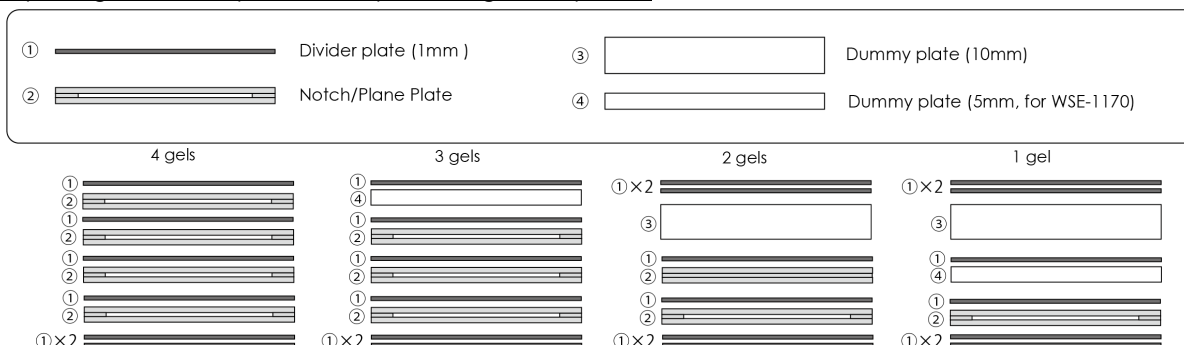
Please put clean gloves on for experiment when you operate.

The number of electrophoresis plates and other items required for gel preparation is as follows. After assembly, if gaps are present, please check that the electrophoresis plates and divider plates are set correctly. If the gaps persist, add one more divider plate.

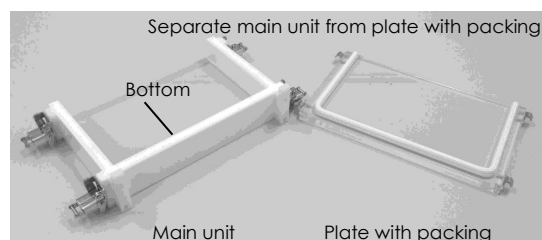
No. of gels	Notch /Plain plate	Divider plate	Dummy plate	Dummy plate For WSE-1170	Multi-Lane comb
4	4	6	0	0	4
3	3	5	0	1	3
2	2	5	1	0	2
1	1	5	1	1	1

* When preparing one or three gels, prepare the dummy plate (for WSE-1170) included with the WSE-1170 Multi-Lane Gel Electrophoresis system.

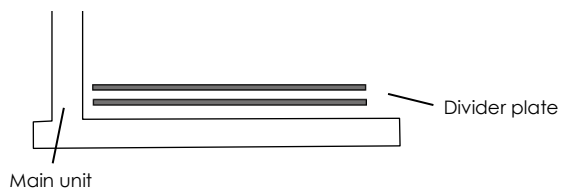
Setup image for each plate when producing 1 to 4 pieces



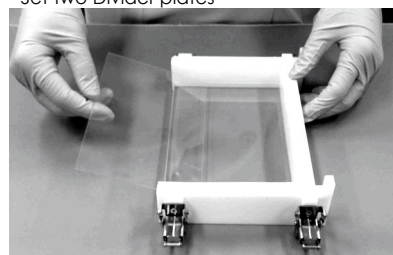
1. Separate the Main unit and Plate with packing. Place the silicone plate inside the Main unit. Place the silicone plate (a, 22 x 164 mm) on the bottom and silicone plate (b, 22 x 103 mm) on the left and right sides (these are already installed at the time of shipment).



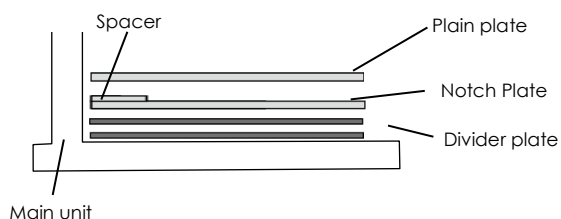
2. Place two Divider plates inside Main unit.



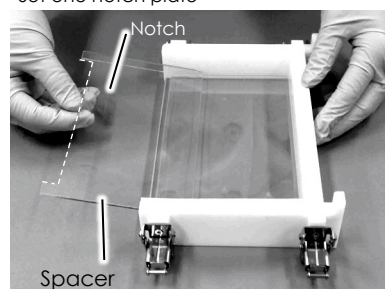
Set two Divider plates



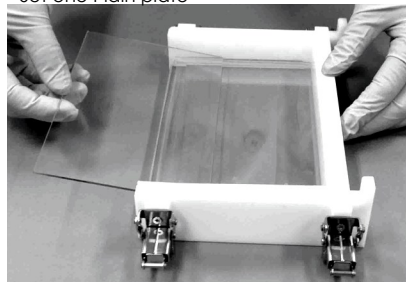
3. Set one notch plate to main unit so that spacer faces to upward and notch on the left side like the image. Set one plain plate on the notched plate. The set of notch and plain plate is called "plate set".



Set one notch plate



Set one Plain plate

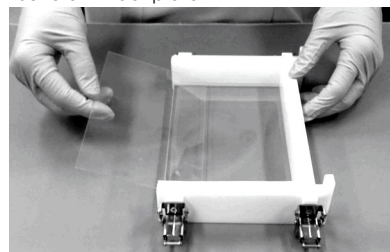


4. Set 3rd Divider plate on the plain plate. Set 2nd 'plate set' as same as 1st time.



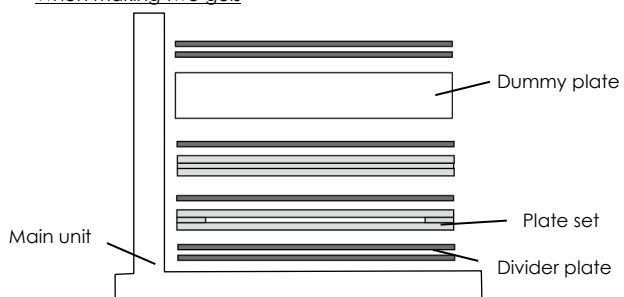
If you are making only one gel, use the dummy plate (for WSE-1170) that comes with the WSE-1170 instead of the second plate set.

Set 3rd Divider plate

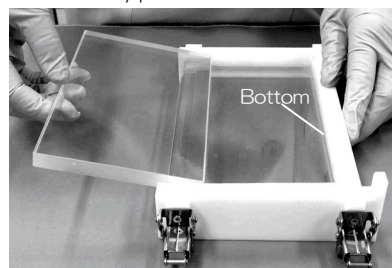


5. Set 4th Divider plate on the 2nd 'Plate set'.
Set the Dummy plate.

When making two gels

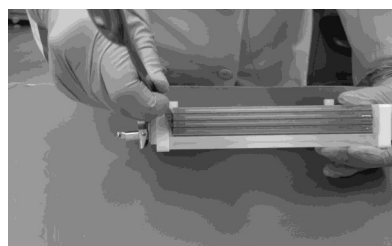


Set Dummy plate



At this point, make sure that all of the two notch plates, two plain plates, four divider plates, and one dummy plate are touching the inside bottom of the main unit.

6. Confirm all plates are set properly; right and left side of plate don't get out of position. If it gets out of position, reset plates or use a tool whose tip is flat like spatula for setting.



7. Finally, set 1 divider plate and then plate with packing. Fix plates by right and left clips uniformly.

Fix plates by clips

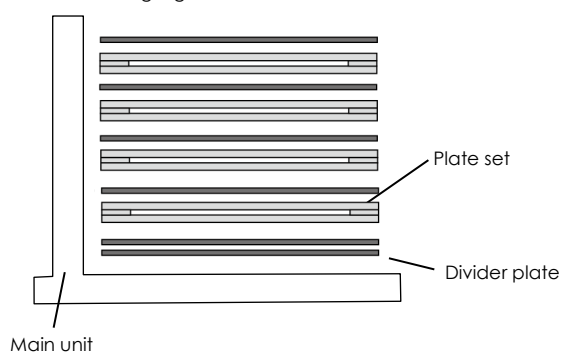


8. If you are making 4 gels, do not use a dummy plate. First, set 2 Divider plates. As above, sandwich a Divider plate between each set of plates. Finally, insert one Divider plate.



If you are making three gels, use the dummy plate (for WSE-1170) provided with the WSE-1170 instead of the fourth plate set.

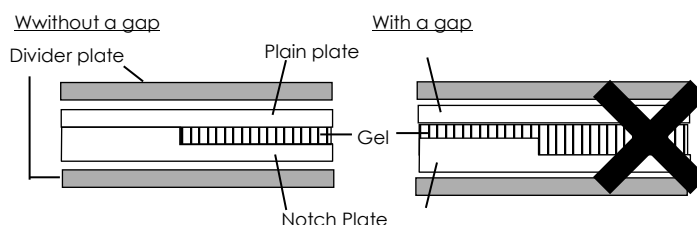
When making 4 gels



9. Stand the system upright and confirm notch and plain plate cohere well. If there is a gap, confirm all plates are set correctly.

Gel may be made between spacer of notch plate and plain plate and it may affect migration.

If there is a gap between plates set correctly, add one more divider plate for attaching spacer to plain plate.



4.2 Gel casting

Please select concentration depending on molecular weight of sample. In the case of native PAGE, charge state of sample affects mobility greatly. So, concentration cannot be selected on the basis of only molecular weight of sample. It needs preliminary experiment for selecting.



Warning

Monomer of acrylamide has neurotoxicity. Protect your body with gloves etc.

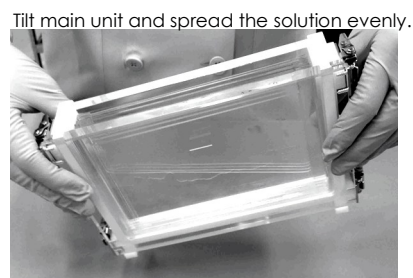
1. Pour separating gel solution gently into the assembled system from notch part. If the solution is poured vigorously, uneven polymerization may occur.

Do not put air bubbles in.

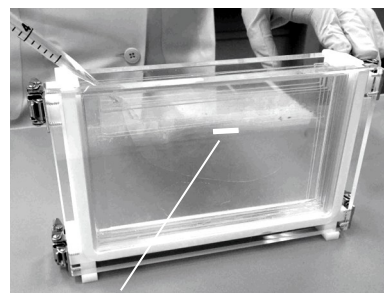


2. When about 1/3 of separating gel solution is poured, tilt main unit to back and forth or right and left for spreading it on the whole.

If there are air bubbles between plates, tilt main unit and so on to remove them.



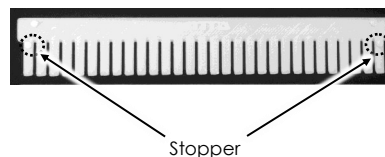
3. Pour separating gel solution up to 'separating gel level line' marked on plate with packing. Tilt main unit and so on for adjusting each height of solution between plates to be same level.





If you are making a gel that does not require a stacking gel, pour the gel solution up to the top edge of the glass plate.

Insert the Multi-Lane comb until the stopper touches the notch in the plate.



4. Slowly put distilled water on the each separating gel solution until the height which is 2-3mm higher than the surface of gel solution and keep it still for more than 30min to let polymerization happen.



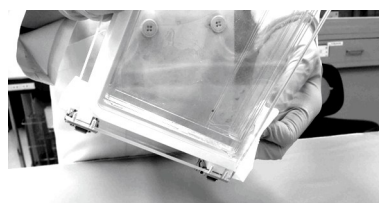
Pour the distilled water evenly into each plate. If the amount of water poured is different, the length of the separating gel will not be uniform.



At low temperature (less than 20°C), polymerization is difficult to occur. The polymerization speed is varied by temperature. Let polymerization occur always at a constant temperature so as to maintain reproducibility of the electrophoretic pattern.

5. After polymerization is completed, discard the distilled water. At this time, hold main unit gently for preventing plates from slipping out and tilt it to discard distilled water. In the case of making gel for DNA, this process is not necessary.

Tilt main unit and discard the distilled water.



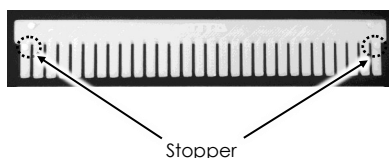
6. Pour stacking gel solution up to the upper end of plate.

Pour stacking gel solution.

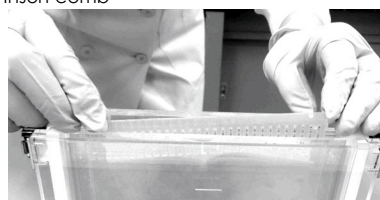


7. Insert sample comb until the stopper touches the notch of plate.

Polymerization will be completed in about 30min.



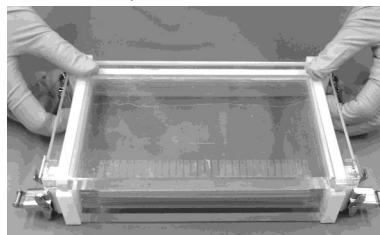
Insert comb



Be careful not to attach air bubbles to the teeth of comb. If you do, the well will not be formed properly.

8. Take gels out from the main unit after confirming gelation is completed. Place main unit horizontally and unlock the right and left clip.

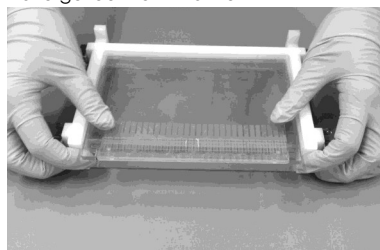
Unlock the clips.



9. Remove 'Plate with packing'.

Remove Plate set and Divider plates, and take gels out from main unit one by one.

Take gel out from main unit



Removal of unnecessary gel and unpolymerized acrylamide solution



Wash away gel solution attached to plates with distilled water soon. Remove unnecessary gel attached to comb by a tool like spatula.

10. If the gel is not used for electrophoresis soon, plastic wrap for preventing it from drying.

5 How to Clean and store the system

5.1 Cleaning

Clean glass plates & combs by soft sponge with neutral detergent so as not to leave bits of gel before drying. Then, dry them naturally. If they touch organic solvent such as acetone, alcohol and so on or are dried at high temperature, it may cause crack, deformation and discoloration.

Clean and dry naturally gel cast, divider and dummy plates as well as glass plates. Prevent from using a sponge made of metal for cleaning them. If you do, they are damaged so visibility at the time of making gels is reduced.

5.2 Storing the system

Store the system in an area out of direct sunlight, high temperature, or corrosive gas. Do not fix gel cast by clips except when you make gels. The elasticity of seal packing is reduced and it may cause leak when to make gels.

6 Trouble shooting

Symptoms	Cause	Solution
Gel solution leaks.	The system is not assembled correctly.	Confirm glass plates etc. are set in the system and fix them by clips correctly. If glass plates etc. are out of position, refer to "4.1 Assembling a gel cast" and assemble it again. If the lock is incomplete, fix the system by clips again.
	Seal packing is twisted or wrinkled.	Confirm seal packing has no twist and wrinkle. Remove seal packing from the system and reset it without twist and wrinkle.
	Seal packing deteriorates.	Refer to "7.2 Inspection" and check water leakage. If there is leakage, please contact our company.
Well is shallow.	stacking gel solution is not enough.	In the case of WSE-1195, after inserting comb, solution may flow out to the gap between glass plate and the main unit, and surface of liquid lowers. Fill gel solution up to the upper end of glass plates.
Unnecessary surplus gel is made at the right and left hand of glass plates, or on the bottom.	Silicon plate is not set in main unit.	Set silicon plate (a) on the bottom and silicon plate (b) in the right and left hand of main unit.
2 pairs of glass plates cannot be separated.	Divider plate is not set.	Set a divider plate between a pair of plates and another pair.
Gel is made at the spacer.	Plain and notched plate don't cohere enough.	Refer to "4.1 Assembling a gel cast" and assemble it. If plates don't cohere each other, add one more divider plate.

7 Maintenance

7.1 Cleaning

Clean glass plates & combs by soft sponge with neutral detergent so as not to leave bits of gel before drying. Then, dry them naturally. If they touch organic solvent such as acetone, alcohol and so on or are dried at high temperature, it may cause crack, deformation and discoloration.

Clean and dry naturally gel cast, divider and dummy plates as well as glass plates. Prevent from using a sponge made of metal for cleaning them. If you do, they are damaged so visibility at the time of making gels is reduced.

7.2 Inspection

When the system is used after storing, read this manual at the same time to inspect it. If there is an abnormality, do not use it and contact our company.

If the seal packing of 'Plate with packing' is out of position or twisted, reset it correctly. Also if there is a lateral wrinkle at the curve of the bottom, reset it, too.

Refer to "4.1 Assembling a gel cast" and assemble the system. Pour pure water in up to 0.5 -1 cm from the upper side and keep it quietly for 1 hour. Check there is no leakage.

7.3 Consumables

The following goods are consumables . Please replace with new one depending on the condition. For the goods not described in the below, contact your distributor or our company.

Product name	Code No.
ML-10 Glass Plate Set (MLAB-12, MLB-02 each 1 ea)	2398300
MLAB-12 1 mm Notched Glass Plate for WSE-1195, 2 ea	2398301
MLB-02 Plain Glass Plate for WSE-1195, 2 ea	2398302
10 mm Dummy plate for WSE-1195	2393039
Divider plate for WSE-1195, 6/pk	2393040
Silicone Plate set for WSE-1195 (22 x 103 mm 2 ea + 22 x 164 mm 1 ea)	2393041
ML10-30 1 mm 30-well Multi-Lane Comb for WSE-1195, 2ea	2398303
5 mm Dummy plate for WSE-1170	2322215

7.4 Warranty

ATTO Corporation warrants all of its products under the following terms and conditions.

1. This warranty covers all new products that are sold by ATTO Corporation (hereinafter called ATTO).
 2. Expendable items are not covered by this agreement.
 3. Claims under this warranty are limited to defects in material and workmanship of the products.
 4. Malfunction and/or damage due to neglect, abuse, operation or repair contrary to specifications and/or instructions presented by ATTO are not warranted.
 5. ATTO shall not be liable to consequential damage, labor, loss or expense directly or indirectly arising from use of the products.
 6. Damage due to transit is not covered by this warranty.
 7. The warranty period is one (1) calendar year from a date when the products are shipped from ATTO to an original purchaser.
 8. This warranty is not applied to any defect that is reported to ATTO later than one (1) calendar month from a date of warranty termination.
 9. ATTO Shall supply parts to replace faulty parts of defective products under this warranty, free of charge.
 10. ATTO shall repair defective products under this warranty, which cannot be repaired at field, free of charge.
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11. ATTO shall replace defective products under this warranty, which cannot be repaired, free of charge.
12. Freight charges for return and replacement shipments under this warranty are shared by ATTO and a purchaser, that is one way by either party and another way by another party.
13. Warranty period of repaired products and replacement products or parts is three (3) calendar months from a date when the said products or parts are shipped from ATTO, or a remaining term of an original warranty period of the defective products, whichever lasts longer.
14. Return of the products for credit or refund is not accepted unless otherwise agreed in writing by ATTO.

8 Specification

Product name	WSE-1195 Multi Lane Gel Cast
Model	WSE-1195
Plate size (W x H x D , mm)	160 x 100 x 5
Gel size (W x H x D , mm)	140 x 80 x 1.0
Number of gel	Max. 4 sheets (Standard: 2 sheets)
Location of use	Only use in a room. No dew condensation. Operation ambient temperature: 5 - 40°C Operation ambient humidity: 5 - 70%RH
Dimension/Weight	45mm(D) x 197mm (W) x 129mm(H) (without clip) 0.7Kg
Standard components	Main unit 1set Glass plate 2pair (MLAB-12, MLB-02) Multi-Lane comb 2combs Divider plate 6plates Dummy plate 1plate Instruction manual



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