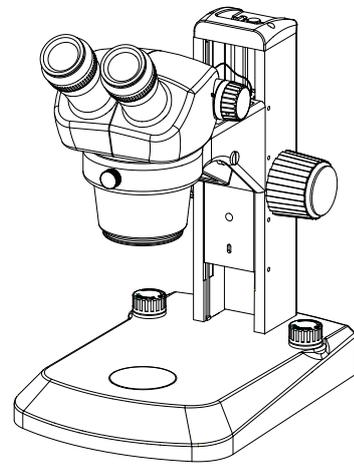




Stereo Microscope

BS-3015 Series

User Manual



It is recommended strongly that you study this manual thoroughly before using the microscope. Retain this manual in an easily accessible place near the work desk for future reference.

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User notice

BS-3015

1. Application

This microscope is ideal for science educators, industrial enterprise, scientists and practitioners.

2. Safety Precaution

1. Carefully open the box, avoid the accessories, like lens, dropping to ground and being damaged.
2. Check the input voltage, be sure the input voltage which signed on the microscope is consistent with the power supply voltage, or it will bring a serious damage to the instrument.
3. Do keep the instrument out of direct sunlight, high temperature or humidity, dusty and easy shaking environment. Make sure the stage is smooth, horizontal and firm enough.
4. To prevent the microscope body from turning over, its pivot angle must be limited to 30°.
5. A microscope is a precision instrument. Handle it with care and avoid subjecting it to sudden or severe impact.
6. Make sure the instrument is earthed, to avoid lightning strike.
7. Do not disassemble any part of the microscope, especially the electrical parts on the bottom side as this may result in electric shock.
8. Use the factory supplied power cord, please.
9.  Warning against electric shock.
10.  Warning: before use, carefully read the manual .improper use could result in personal injury to the user and/or damage to the equipment.

3. Maintenance and Storage

1. All the lenses have been well checked and adjusted. It is forbidden to disassemble them yourself.
2. The binocular viewing head and focusing unit have a compact and precise frame; please don't disassemble them as possibly as you can.
3. Keep the instrument clean, wipe dust regularly, and be attention to avoid contaminating the optical elements especially.
4. The contaminations on the prism, as fingerprint and oil, could be gently wiped with a piece of soft cloth or tissue paper, gauze which has been immersed in pure alcohol or

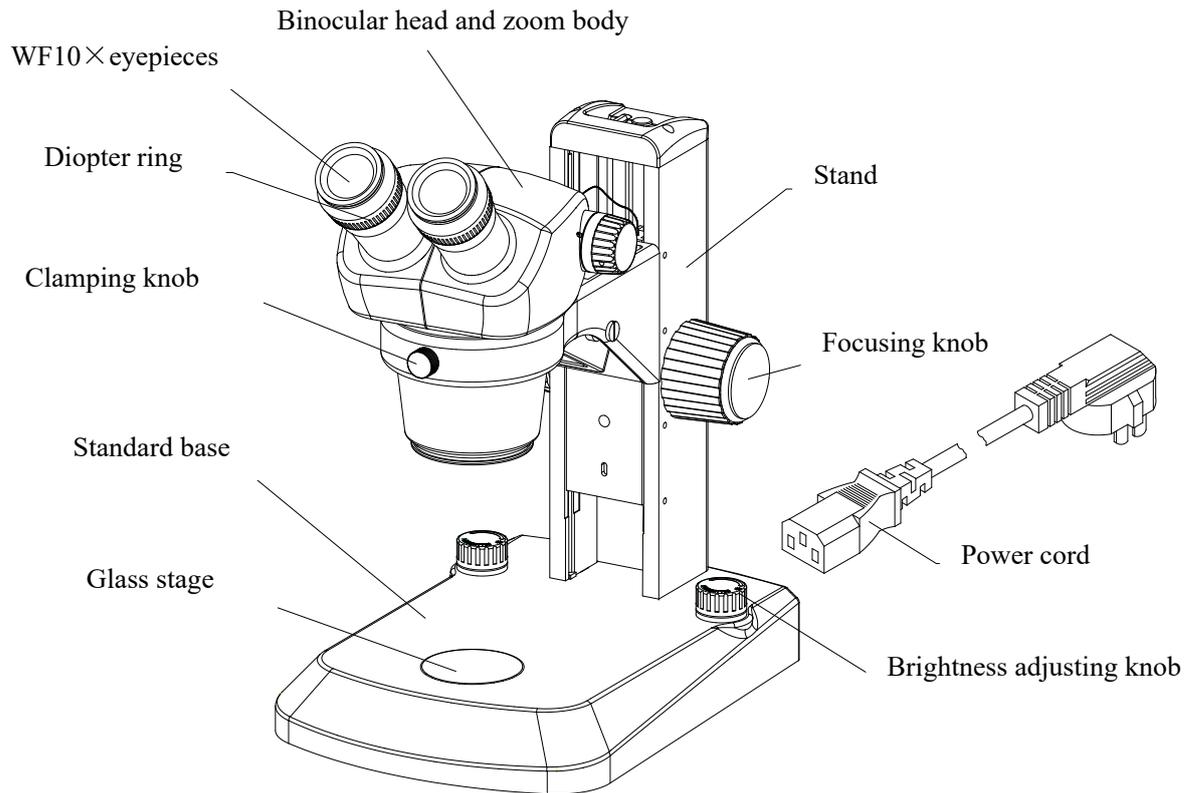
ether. **(Note that the alcohol and ether are highly flammable, do keep them away from the fire or potential sources of electrical sparks, and use them in a drafty room as possible as you can.)**

5. Do not attempt to use organic solvents to clean the microscope components other than the glass components. To clean them, use a lint-free, soft cloth slightly moistened with a diluted neutral detergent.
6. If the microscope is splashed by liquid during using, cut off the power at once, and wipe up the moisture.
7. Do not disassemble any parts of the microscope, which will affect the function or decline the performance of the microscope.
8. Place the instrument in a cool, dry position. When not using the microscope, keep it covered with a dust cover.

Stereo Microscope

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1. Components

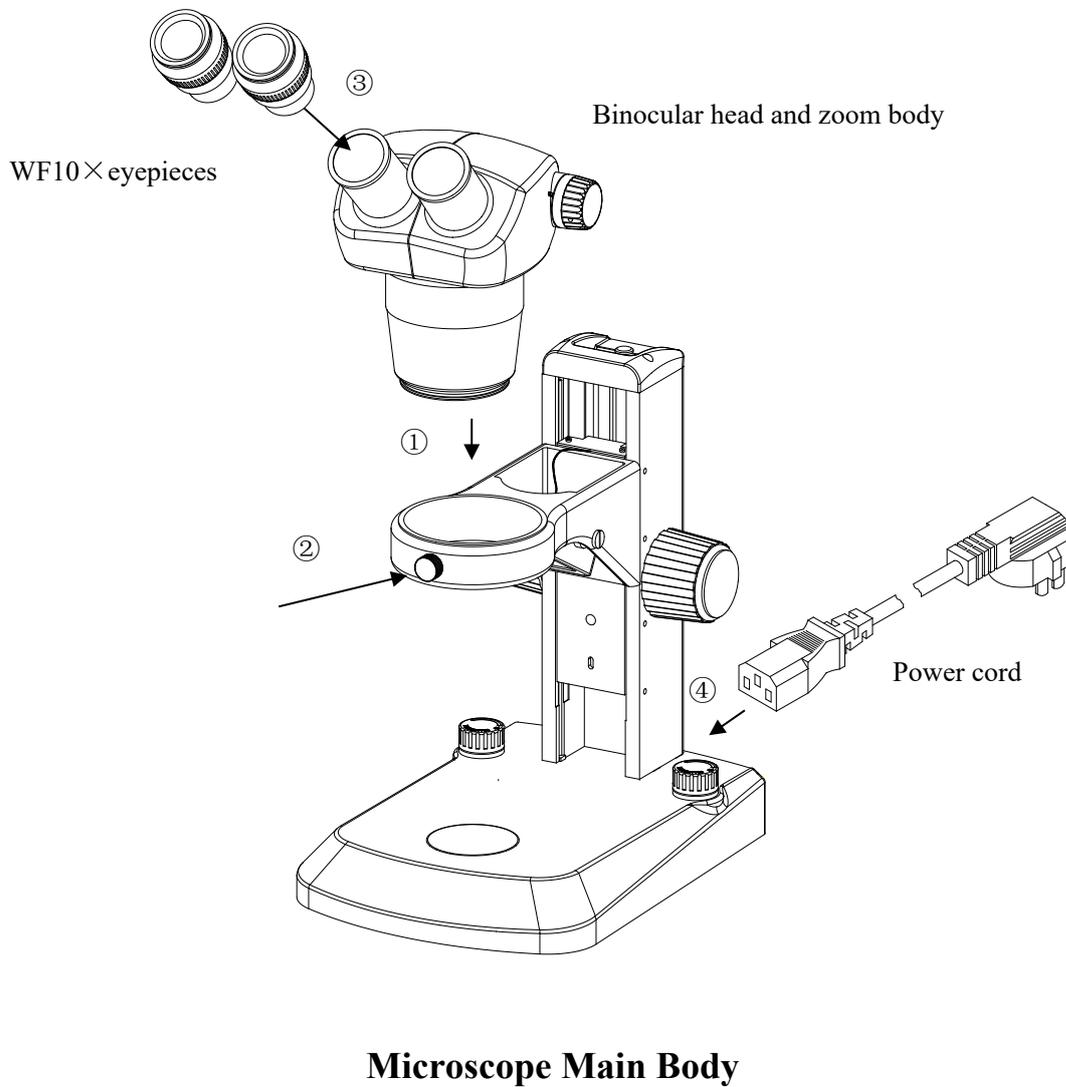


2. Assembly

2.1 Assembly Diagram

The diagram below shows how to assemble the various modules. The numbers indicate the order of assembly.

★When assembling the microscope, make sure that all parts are free of dust and dirt, and avoid scratching any parts or touching glass surfaces.



2.2 Detailed Assembly Procedure

2.2.1 Mounting binocular head (Fig.1)

Loose the clamping bolt③ on the pillar④ and insert the binocular head and zoom body assembly② into the bracket of the pillar, then screw down the bolt③.

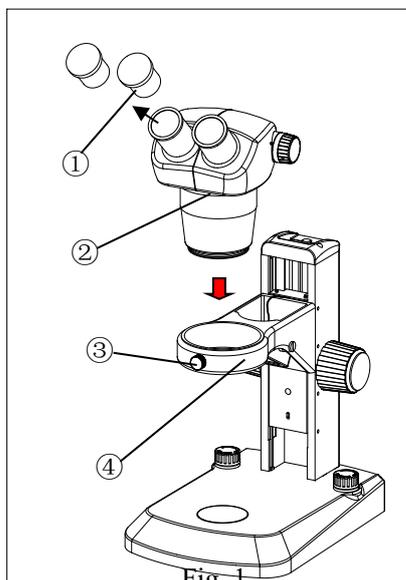


Fig.1

2.2.2 Mounting eyepieces (Fig.1, Fig.2, Fig.3)

Remove the eyepiece dust caps① and gently insert two adjustable eyepieces ⑤ into the eyepiece sleeves until they stops, as in Fig.3.

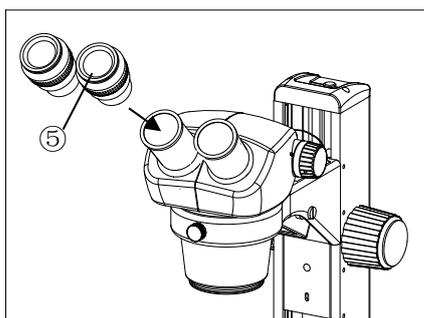


Fig.2

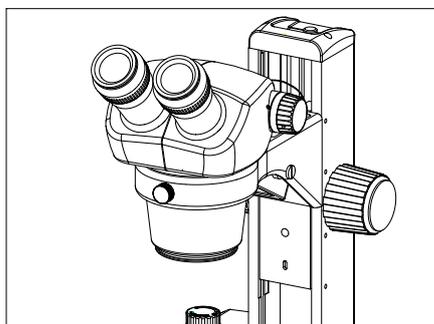


Fig.3

Note:

Working Environment Requirement:

1. Ambient temperature: 5°C to 40°C. (41°F to 104°F), Maximum R.H: 85%.
2. High Temperature will result in a mildewing, dew and even ruinous instrument.
3. Avoid placing the instrument in a dusty environment. When ending your microscope operation, please cover it with the dust cover.
4. Lay the microscope horizontally in a stable place please.

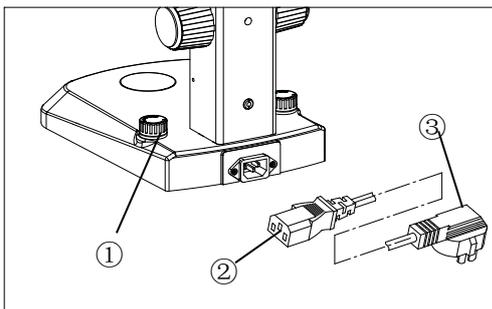


Fig.4

2.2.3 Connecting the power cord (Fig.4)

1. Rotate the left and right brightness adjusting switches① clockwise until the off state before connecting the power cord②.
2. Insert the power plug② into the power jack of the microscope; make sure the connection is well.
3. Plug the power cord③ into the power supply receptacle safely. Make sure the connection is well.

- Adjustable illumination for both LEDs (top and bottom).
- Input Rating:110V~240V.

Trinocular head is optional if video or photography function is needed.

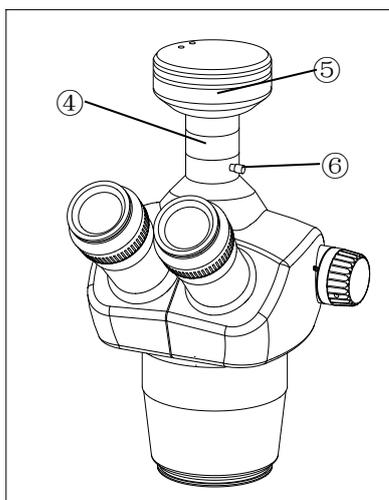


Fig.5

2.2.4 Video (Photography) accessories assembly (Fig.5, Fig.6)

1. Installing the video set: Remove the dust cap of the trinocular viewing tube, revolve the camera set ⑤ into the screw thread end of the video adapter④ with C mount, and insert the other end into the tri-through port and screw down the bolt⑥.
2. Installing the photography set: Remove the dust cap of the trinocular viewing tube, install the photography accessories⑦ into the tri-through port, and screw down the locking bolts⑥, change the camera⑨ gun with digital photography adapter⑧, and insert the adapter into the accessories, as in Fig 6.

2.2.5 Built-in digital accessories

Connect the built-in digital accessories with the USB port of the computer by USB cable and install the driver and software to use it.

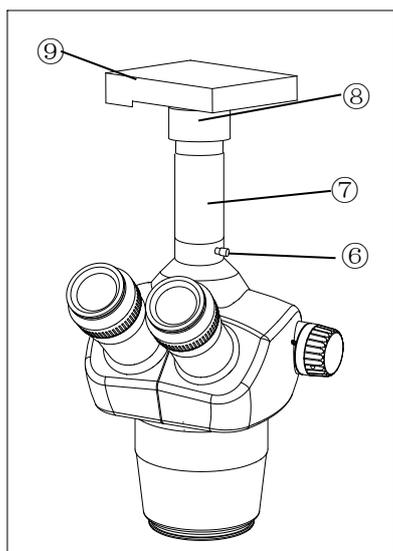
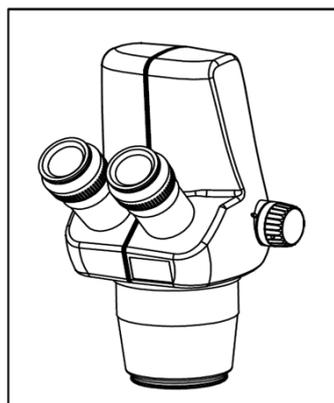


Fig.6



3. Adjustment and Operation

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3.1 Adjusting Binocular

Viewing Head

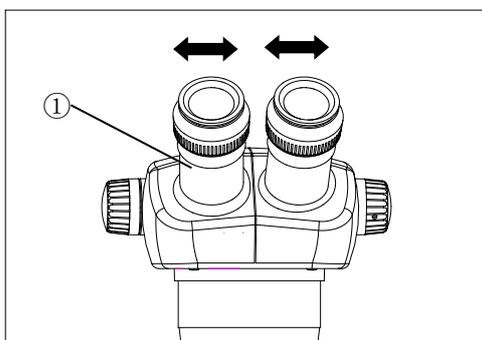


Fig.7

3.1.1 Adjusting interpupillary distance (Fig.7)

Different users have different interpupillary distances. So when users change, re-do the interpupillary distance adjustment.

Looking through the eyepieces, hold the left and right side of the binocular assembly ① and adjust the eyepieces by the direction shown in Fig.7 until the left and right fields of view coincide completely.

3.1.2 Adjusting diopter ring (Fig.8)

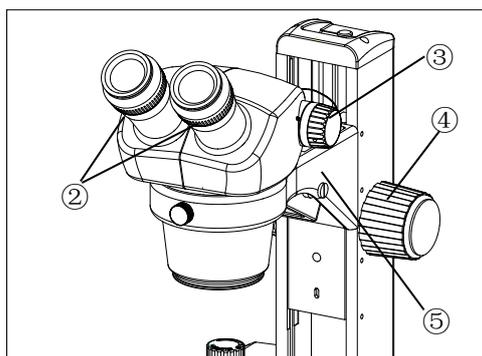


Fig.8

1. Set the diopter rings of both eyepieces to "0" point. (Do this when users change, because different users have different diopters.)
2. Place an easy-to-observe specimen on the stage plate.
3. Rotate the zoom body knob ③ to get the highest magnification, and turn the focusing knob ④ to focus the specimen.
4. Rotate the zoom body knob ③ to get the lowest magnification, looking only into the left eyepiece, adjust the diopter ring ② on left eyepiece to focus the specimen. Then do the same adjustment for the right one.
5. Repeat steps 3 and 4 until the specimen image can always focus without any adverse effect of the changes of magnification on the definition of the image.

3.2 Focus Adjustment

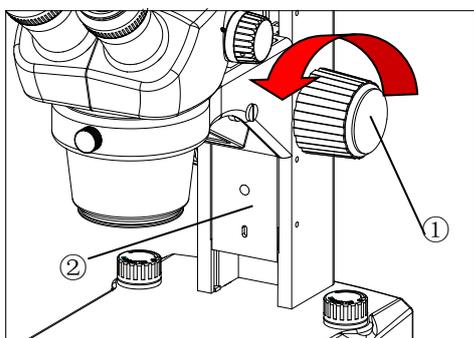


Fig.9

3.2.1 Adjusting the rotation tension of the focusing knob (fig.9, fig.10)

1. Rotate the focusing knob (1) to move the slider (2) to a lower position for fear that the zoom body drops down suddenly if the tension is decreased too much.
2. Hold the focusing knobs (1) with both hands, stop the left knob and rotate the right knob to increase or decrease the focus knob tension.
3. Rotate both the focusing knobs in the same direction (otherwise it will get loose) to move the zoom body up and down to focus on the specimen.

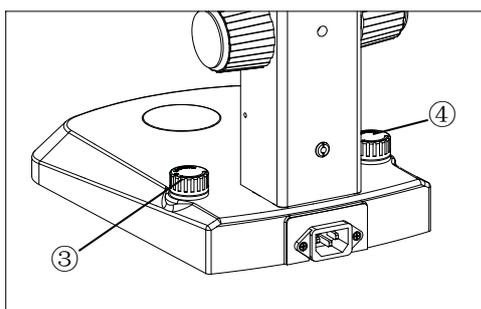


Fig.10

3.2.2 Changing the magnifications

1. The zooming knobs located at two sides of the zooming body could change the magnification of the specimen image.
2. Total Magnification = Magnification of zoom body magnification of eyepiece.

Note: While using the auxiliary objective, it should be multiplied by its magnification in addition.

3.2.3 Illumination

1. Use LED lamps for both top and bottom illumination.
2. Brightness adjustment (Fig.10): the right brightness adjustment knob (3) is used to adjust the bottom illumination, and the left brightness adjustment knob (4) is used to adjust the top illumination. Each knob has its own on-off. Rotate anticlockwise to open the power and increase the brightness, keeping rotating clockwise would decrease the brightness until it is power off.

4. Main specifications

BS-3015
4.1 Electrical parameters:

Input Voltage: AC 110V~240V 50HZ/60HZ

Power rating: 15W

Top Illuminator: 1W Bottom illuminator: 0.5W

4.2 Binocular viewing head: Inclined at 45, interpupillary distance range: 55~75mm
4.3 Illumination system: LED lamps for both top and bottom illumination
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Auxiliary objective	Working distance (mm)	Eyepiece					
		10× Field Number 23mm		15× Field Number 14mm		20× Field Number 11mm	
		Magnification	Actual field	Magnification	Actual field	Magnification	Actual field
None	100	10×, 30×	Φ2.3 Φ0.77	15×, 45×	Φ0.93 Φ0.31	20×, 60×	Φ0.55 Φ0.18
0.5×	180	5×, 15×	Φ4.6 Φ1.53	7.5×, 22.5×	Φ1.87- Φ0.62	10×, 30×	Φ1.1 Φ0.36
0.75×	120	7.5×, 22.5×	Φ3.06 Φ1.02	11.3×, 33.8×	Φ1.24 Φ0.41	15×, 45×	Φ0.73 Φ0.24
2×	30	20×, 60×	Φ1.15 Φ0.38	30×, 90×	Φ0.47 Φ0.16	40×, 120×	Φ0.28 Φ0.09

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Auxiliary objective	Working distance (mm)	Eyepiece					
		10× Field Number 23mm		15× Field Number 14mm		20× Field Number 11mm	
		Magnification	Actual field	Magnification	Actual field	Magnification	Actual field
None	100	20×, 40×	Φ1.15 Φ0.58	30×, 60×	Φ0.47 Φ0.23	40×, 80×	Φ0.28 Φ0.14
0.5×	180	10×, 20×	Φ2.3 Φ1.15	15×, 30×	Φ0.93- Φ0.47	20×, 40×	Φ0.56 Φ0.28
0.75×	120	7.5×, 30×	Φ1.53 Φ0.78	22.5×, 45×	Φ0.62 Φ0.31	30×, 60×	Φ0.37 Φ0.18
2×	30	40×, 80×	Φ0.58 Φ0.29	60×, 120×	Φ0.23 Φ0.12	80×, 160×	Φ0.14 Φ0.07

5. Troubleshooting

Under certain conditions, performance of this unit may be adversely affected by factors other than defects. If a problem occurs, please review the following list and take remedial action as needed. If you cannot solve the problem after checking the entire list, please contact your local franchiser for assistance.

PROBLEM	CAUSE	SOLUTION
1. Incomplete binocular vision.	Interpupillary distance is not correctly adjusted.	Adjust it correctly
	Diopter adjustment is incomplete.	Complete diopter adjustment
2. Dirt is visible in field of view	Dirt on specimen	Clean specimen
	Dirt on eyepiece	Clean eyepiece
3. The visibility of the image is poor.	Dust on objective front lens.	Clean lens surface
4. Specimen image blurs when zoom magnification is changed.	Diopter ring is not correctly adjusted.	Adjust it correctly.
	Not in complete focus on specimen.	Focus specimen correctly at a high magnification.
5. Coarse focus adjustment knobs rotate with too much resistance.	Tension adjustment ring is too tight.	Loosen it properly.
6. Zoom microscope body drops or specimen goes out of focus during observation.	Tension adjustment ring is too loose.	Tighten it properly.

6. Outfit

Components	Specification	Quantity	Outfit
Main body	Main body	1	●
Observation system	Binocular head and zoom body	1	●
	Trinocular head and zoom body	1	○
	Built-in digital zoom body	1	○
Illuminator	Transmitted illuminator (LED)	1	●
	Reflected illuminator (LED)	1	●
Eyepiece (diopter adjustable)	10×/ Φ23mm Eyepiece	2	●
	10× Eyepiece with reticle inside	1	○
	15×Eyepiece	2	○
	20×Eyepiece	2	○
Auxiliary objective	0.5×objective	1	○
	0.63×objective	1	○
	0.75×objective	1	○
	2×objective	1	○
Digital camera		1	○
Camera adapter		1	○
Stage plate	Glass plate	1	●
Power cord	Power cord	1	●

●: Standard Outfit; ○: Optional