



AIHS 620 (Version: AMOSAIHS620SM20130402)

Immunohistochemistry Stainer

Service Manual

AMOS SCIENTIFIC PTY.LTD. ABN37 159 778 140

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AIHS620 Immunohistochemistry Stainer

Maintenance Manual

I. General Principle:

This Service Manual is made according to the structure and features of this equipment.

II. Structure:

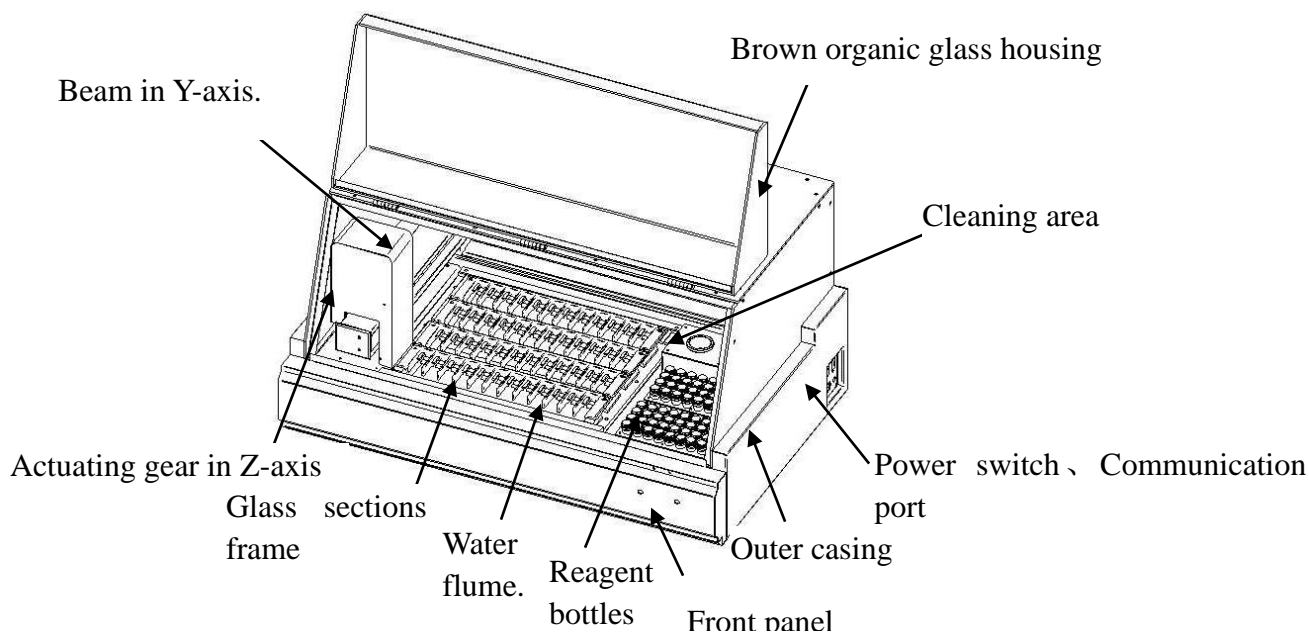
1. The input power supply is AC220V or 110V. The equipment adopts SCM control system. (Connected to a computer which has installed concerned operation software, the equipment works in RS-232 Universal Communication way).
 - a. Use powerful new-style control CMOS Chip.
 - b. Motion control in five ways (injector, X-Y linkage, two actuating gears in the direction of Z).
 - c. High precision photoelectric switch (origin locating).
 - d. High quality water pump, air pump and various valves are used in concerned parts.
 - e. Save reagents for the set dropping amount is sound and reasonable. Precise time control (with a tolerance of less than 10 seconds).
 - f. Spare parts are made elaborately. The equipment is airtight and strongly resistant to corrosion.
 - g. Human-based operation board, including several management functions like reagent handling, printing management, maintenance, main pump and etc.
2. Use imported spare parts like dynamo, drive, screw mandrel, straight line motion trial and etc. in order to guarantee reliable performance and precise locating (with a tolerance of less than 0.2mm).
3. Use towline dynamo power cable and signal shielding wire which are used in Germany exclusively. The equipment is strongly anti-interference.

III. Components.

1. A main equipment.
2. A computer.
3. An imported tag printer.
4. A communication cable.

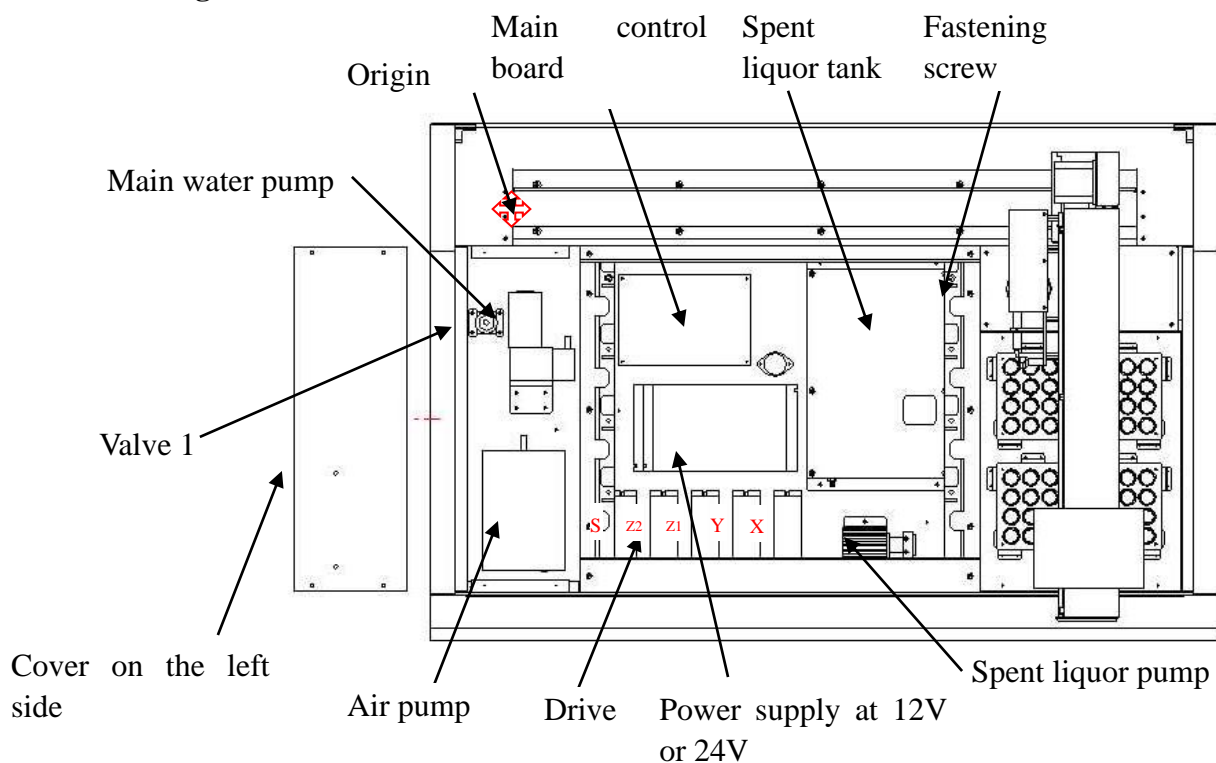
IV. Introduction of main structure.

1. Diagram of main equipment



Instructions: This equipment is very heavy. Thus it is better to be carried by four people. Turn off the power switch first and then take off communication cable before moving it to other places. Please handle with care in order to avoid collision and drop. Particular attention should be paid to the protection of the two buttons in the front panel.

2. Diagram of inner structure



If there is something wrong with parts inside the equipment, please deal with it according to the following instructions:

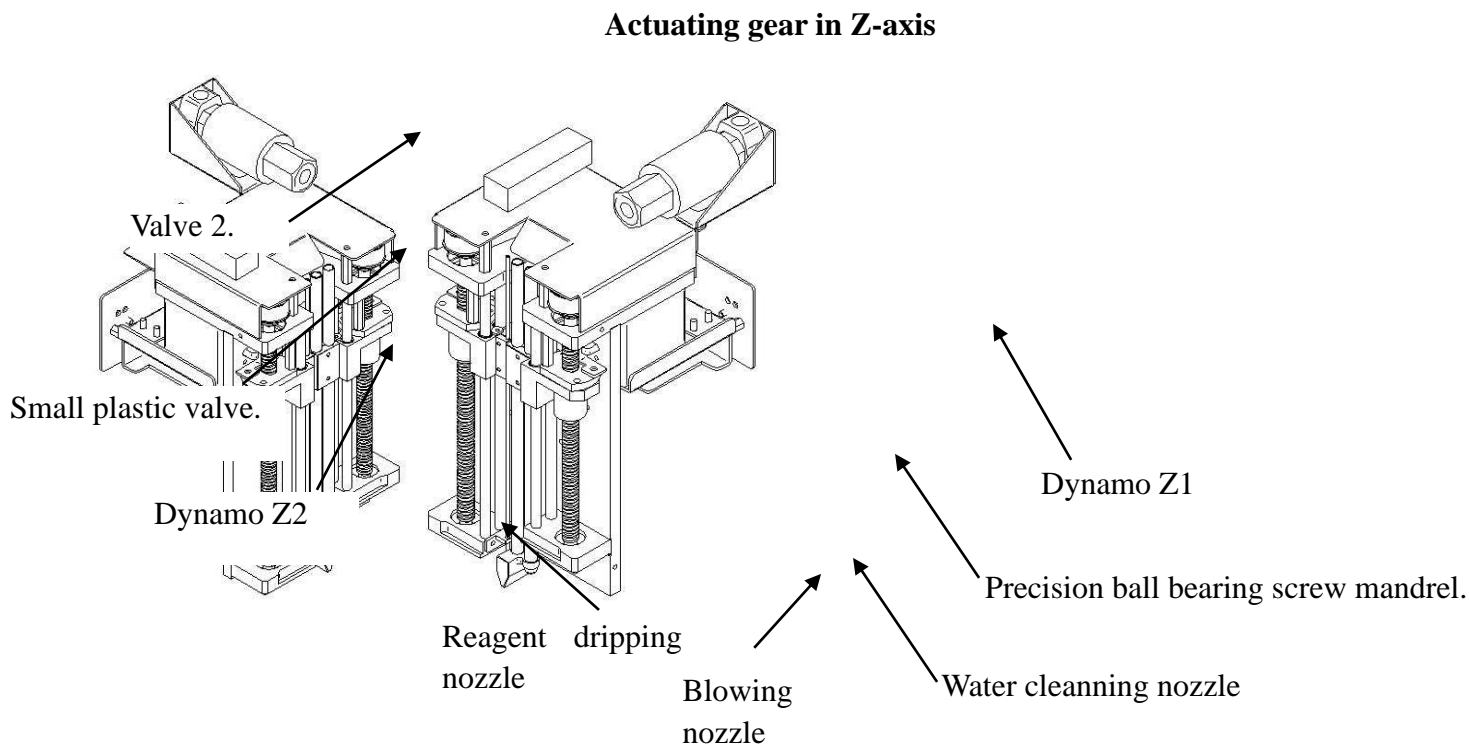
- a. When any malfunction occurs, at first restore the equipment to origin position (X-axis and Y-axis return to the upper corner on the left side), and then cut off the power supply (press “Finish/Restoration” button twice).
- b. Move the beam in Y-axis to the right side (as indicated), take off glass section frame, unscrew the fastening screws (total ten M4 socket head screws), and then remove the water flume (Attention: Do not sprinkle water on these electric components).
- c. If the main water pump or air pump on the left side of the equipment is out of work, please unscrew the four bolts whose diameter is 3mm in the cover on the left side with an inner hexagon spanner, and then take off the cover to check whether there is a break in the circuit and whether the voltage is normal or not. (The normal voltage of air pump and main water pump are 220V and 24VDC respectively). Take out the wire holders of all bumps and valves according to the wiring diagram (connect the fan-out of the broken-down part to safety position with two outlet wires), and then click the “Auto run” button. When the equipment is under operation, check the indicator light beside the relay of the broken-down part. If the indicator light is on, it indicates there is output in relay. And then measure the voltage in the outlet wires with a multimeter. If there is no voltage in the outlet wires, the relay is broken. If the voltage is normal, there is nothing wrong with the main control board. Then measure the internal resistance of the broken-down parts like main water pump, air pump and etc. If there is no internal resistance, it indicates that those parts are broken or there is a break in the circuit. The break-downs of other components can be checked and eliminated in the same way.

Attention: Before checking breakdowns, take out the wire holders of all bumps and valves in order to avoid that the residual water in pipes is sprinkled on the circuit board and other electric components.

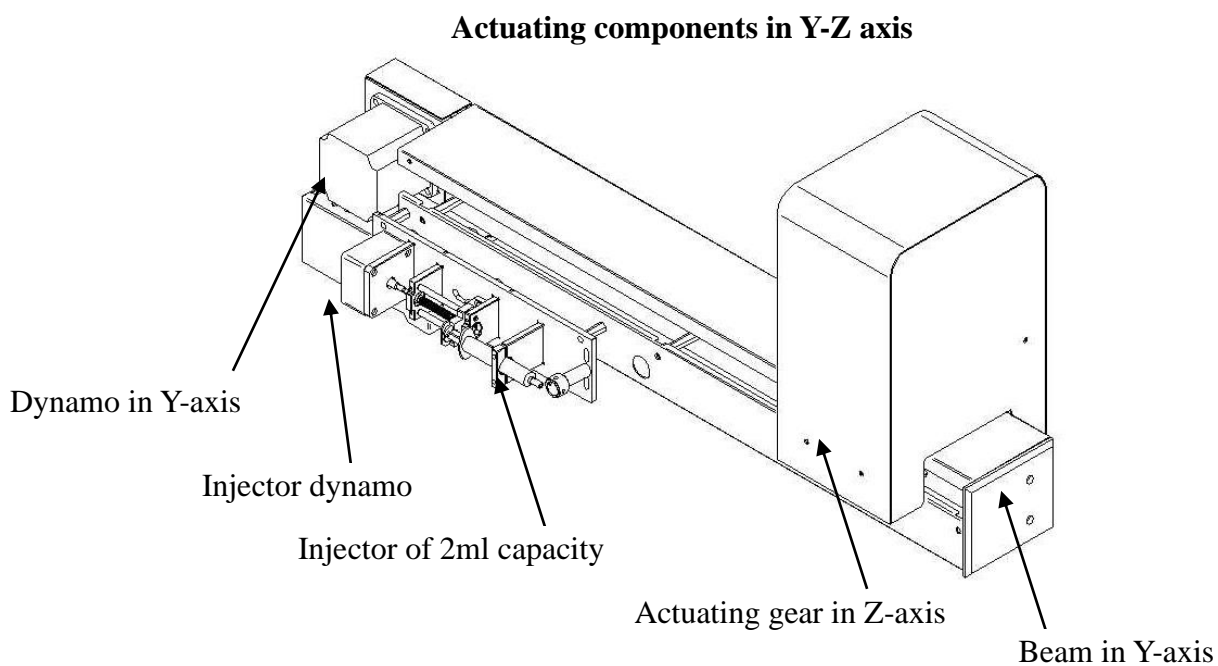
Notes : The voltage of spent liquor pump and electromagnetic valve are 12VDC respectively.

- d. If any dynamo in certain direction is out of work, check whether the indicator light of concerned drive is on or not. If the drive works normally, please check the internal resistance between A and A— pole or B and B— pole of the dynamo. If there is no internal resistance between those poles, either there is a break in the circuit or the dynamo has burnt out.
- e. The problems that locating is not precise enough and the equipment can not return to origin position normally may result from the increased resistance due to the abrasion of transmission units, loss of synchronism of the dynamo or damage to the photoelectric switch (including a break in the circuit). If above-mentioned problems occur, please contact us to replace those broken parts in time.
- f. When the equipment is under operation normally, please do not put your head or hands into its working area in order to avoid personal injuries. When an accident occurs, please press the red button on the front panel twice, then the equipment will stop working and restore to zero state.
- g. If the downloaded data are incomplete or downloading process goes overtime (the normal time is 15 seconds) when you are downloading the programs, please check the setting of COM port (com1 is defaulted) and look over whether the communication cable is loose or not.

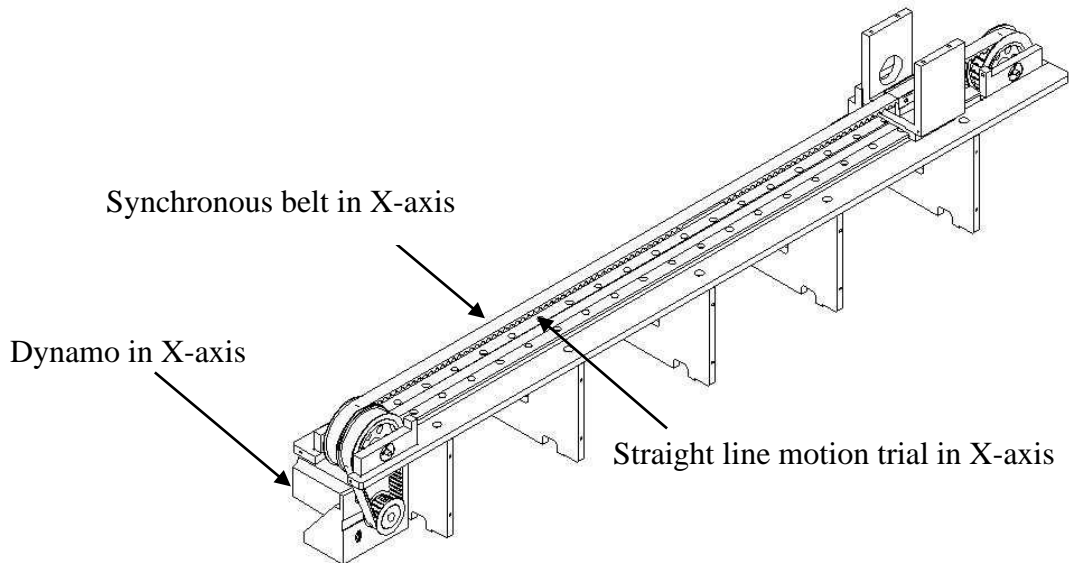
3. Structure diagram of other components.



Actuating gear in Z-axis is precision component; do not take it apart without authorization. If there is any malfunction, please contact us to repair it.



Components in X-axis



Instructions: The transmission units are high precision parts. If there is any malfunction, please contact us in time. We will send professional maintenance worker to repair it.

Attention: The precision of certain parts will be reduced due to abrasion, which may result in uneven transmission and louder noise in operation.

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