

Read all instructions thoroughly

INSTRUCTIONS

PRESSURE ACTUATED WATER REGULATING VALVE

Type **AWR**

MWR (Body Material : Bronze)

SAGInoMIYA

A. Failure to read and follow all instructions carefully before installing or operating this water regulating valve could cause personal injury and/or property damage. Save these instructions for future use.

B. NOTE FOR SAFETY

 **Warning**

- Be sure to read and follow all items before installing or operating this valve.
- Do not turn any other screws than Adjusting Spindle ① as it may cause water leakage.
- Water flow direction should follow arrow shown on the body.
Reverse flow direction against the arrow may cause uncontrolled.
- Pressure applied inside Bellows cap should be less than MP indicated on label.
Excessive pressure more than MP may cause pressure burst.
- Generally, type of MWR whose body is bronze has more corrosion resistance than flange type of AWR whose body is cast iron. However, the materials of MWR are not able to prevent completely corrosion trouble.
There is possibility of corrosion by seawater, and there is possibility of flow obstruction by the marine organism. Please confirm compatibility of fluid on device, and decide use of the valve.
- If Bellows cap is deformed by some mis-handling,
do not use this valve absolutely as it may create gas leakage.
- Bellows cap should be free from pulsation.
(Be sure to connect attached pressure damping capillary tube (fig. 2) for the models of connection size of 2" and 2-1/2". Since union connection is not fastened enough on delivery, it should be fastened tightly before using.)
Heavy pulsation may shorten the lifetime of bellows.
- Use the valve under the condition shown in this "Installation and Instruction".
- Do not hold system pressure at near equal to valve opening pressure
(within differential of 0.3 kgf /cm² {4.2 psi} from valve opening pressure).
Otherwise, the valve disk will repeat to open-close heavily in short time and it may cause abnormal noise and lifetime shortening.
- Remove dust or foreign matter inside of pipe before installation. It may cause valve leakage and wrong working.
- Do not cause Water Hammer to inside of connected pipe as it may cause water leakage from the valve.
- In case of troubles, close all other valves around the valve and contact us without disassembling. It will be dangerous because it is charged High Pressure Gas inside.

9	Bellows Cap
8	Bellows
7	Rubber Diaphragm
6	Valve Disk
5	Body
4	Rubber Diaphragm
3	Spring
2	Cover
1	Adjusting Spindle
No.	PART NAME

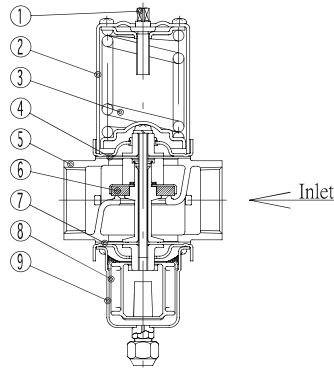


Fig. 1 Sectional View AWR-3212GLW

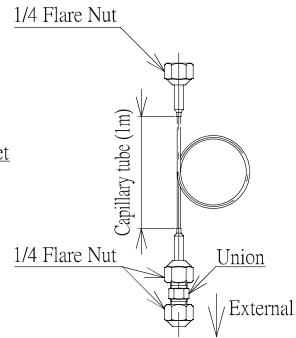


Fig. 2 Capillary tube assembly

C. SPECIFICATIONS

CATALOG NUMBER		CONNECTION		PRESSURE RANGE (OPENING POINT)		AIRTIGHT (WATERTIGHT) TEST PRESSURE	
TYPE	NUMBER	SIZE	STYLE	MIN.	MAX.	BODY	BELLOWS CAP
AWR-	1203BLW	3/8	Flare	8 kgf/cm ² {113 psi}	18 kgf/cm ² {257 psi}	10 kgf/cm ² {142 psi}	26 kgf/cm ² {370 psi}
	1204BLW	1/2					
	1203GLW	3/8	FPT (NPT)	6 kgf/cm ² {85.6 psi}	18 kgf/cm ² {257 psi}		24 kgf/cm ² {341 psi}
	1504GLW	1/2					
	2006GLW	3/4					
	2510GLW	1					
3212GLW	1 1/4						
AWR- MWR-	4014FLW	1 1/2	Flange	6 kgf/cm ² {85.6 psi}	18 kgf/cm ² {257 psi}		
	5020FLWR	2		6 kgf/cm ² {85.6 psi}	12 kgf/cm ² {171 psi}		
	5020FLWH			11 kgf/cm ² {156.7 psi}	18 kgf/cm ² {257 psi}		
	6524FLWR	2 1/2		6 kgf/cm ² {85.6 psi}	12 kgf/cm ² {171 psi}		
	6524FLWH			11 kgf/cm ² {156.7 psi}	18 kgf/cm ² {257 psi}		

D. OPERATION

In Fig. 1, system pressure contracts the bellows ⑧ and the valve disk ⑥ moves upwards resisting to spring ③. Cooling water in the body ⑤ flows in direction of arrow on the body when pressure in the bellows cap ⑨ increases.

E. ADJUSTMENT

Turn the adjusting spindle counter clockwise to strengthen the compression spring ③. This raises valve opening point to start cooling water flow.

F. MOUNTING

Mounting position (angle) has no restriction. In case this valve is applied to condenser cooling water of a refrigerating system, this valve can perform its function even if it is installed either inlet side or outlet side of a condenser.

Be sure to firmly tighten the nut. The proper tightening torque is as follows.

Torque	Style	Flare		Taper Pipe Threads				
	AWR-	1203BLW	1204BLW	1203GLW	1504GLW	2006GLW	2510GLW	3212GLW
kgf · cm		380	550	300	350	500	600	800
(Lbf · ft)		{28}	{40}	{22}	{26}	{37}	{44}	{59}

CONSENT RELATED TO DISCLAIMERS

We, SAGINOMIYA SEISAKUSHO, INC., (hereinafter referred to as "Saginomiya"), truly appreciate your choosing Saginomiya's product (hereinafter referred to as this "Product").

When this Product is used, this document as provided below shall be applicable except to the extent that there is anything to the contrary in any applicable estimate, agreement, catalogue, specification, etc.

● CONFIRMATION OF OPERATION

All customers using this Product (hereinafter referred to as "Customers") are requested to, after properly installing this Product, test the operation of this Product to confirm that all the systems in connection with this Product fully function.

In order to prevent the occurrence of bodily injury, fire accidents, serious damage, etc., in connection with the Customers' machinery or equipment due to improper installation of this Product, Saginomiya kindly requests the Customers to take the necessary safety measures by preparing safe designs such as a fail-safe design (*1) and a fire spread prevention design, as well as to make the proper adjustments for product reliability necessary for fault-tolerance (*2).

(*1) Fail-safe design: Design to ensure safety in the event of any mechanical failure

(*2) Fault-tolerance: Utilization of redundancy technology

Periodic Inspection of this Product

Be sure to confirm the proper operation of this Product and keep records of such operation at least once a year.

Saginomiya shall be held harmless and be indemnified by the Customers from any damages incurred due to the Customers failing to conduct the above operational procedures, provided, however, that, this shall not apply if the damages which the Customers incurred due to the defect of this Product caused by Saginomiya.

● RESTRICTIONS OF USE

This Product is designed and manufactured for the purpose of using them for cooling and heating and refrigerating appliances and air conditioning equipment or various industrial equipment, but is not designed and manufactured for the purpose of using this Product for any instrument or system related to human life or health purposes.

Therefore, the use of this Product in fields related to items (1) through (3) below is not intended whatsoever.

Saginomiya shall be held harmless and be indemnified from any and all damages incurred by use of this Product under item (3).

- (1) In any field related to nuclear power and radiation;
- (2) In any field related to space or seafloor equipment;
- (3) In any equipment or device requiring a high degree of reliance on such equipment or device with respect to which it is reasonably foreseeable that failure or malfunction of the equipment or device would either directly or indirectly cause serious damage to human life, health or property;

Also, when using this Product under the fields related to items (1) through (10), (except for item (3), in relation to which this Product must never be used), please be sure to notify Saginomiya's contact desk in charge of sales and obtain Saginomiya's prior written approval for such use.

Saginomiya shall be held harmless and be indemnified from any and all damages incurred by use of this Product in relation to these fields if the Customers do not notify Saginomiya's contact desk and obtain Saginomiya's prior written approval.

- (4) Heating, cooling and air conditioning equipment that uses flammable and/or toxic refrigerants, or various industrial equipment that uses flammable and/or toxic fluids;
- (5) Transportation device (railroad, aviation, ship or vessel, vehicle equipment, etc.);
- (6) Disaster-prevention or crime-prevention device;
- (7) Facility or application directly related to medical equipment, burning appliances, electro thermal equipment, amusement rides and devices, facilities/applications associated directly with billing;
- (8) Equipment requiring high reliance on supply systems such as electricity, gas, water, etc., in large-scale communication system, or in transportation or air traffic control system;
- (9) Facilities that are to comply with regulations of governmental / public agencies or specific industries or
- (10) Other machineries or equipment equivalent to those set forth in the above items (4) to (9) which require for high reliability and safety.

It is recommended to replace this Product within 5 to 10 years of delivery if no other duration of use is provided in the applicable specifications or instruction manual because the conditions and environment of use also have an impact on this Product.

● SCOPE OF WARRANTY

SAGINOMIYA WILL PROVIDE THE CUSTOMERS WITH REPLACEMENT OR REPAIRED THIS PRODUCT DELIVERED, FREE OF COST, ONLY WITHIN ONE YEAR OF DELIVERY TO THE CUSTOMER, IF FAILURE OCCURS IN THE CUSTOMERS' EQUIPMENT USING THIS PRODUCT DUE TO A DEFECT OF THIS PRODUCT; PROVIDED, HOWEVER, THAT IN ANY EVENT THE RATIO OF THE AMOUNT THAT SAGINOMIYA BEARS FOR THE DAMAGES INCURRED BY THE FAILURE OF THIS PRODUCT OR CUSTOMERS' EQUIPMENT SHALL NOT EXCEED THE PRICE OF THIS PRODUCT WE DELIVERED. IN ADDITION, SAGINOMIYA SHALL BE HELD HARMLESS AND BE INDEMNIFIED FROM ANY AND ALL DAMAGES INCURRED WHEN THE FAILURE OF THE CUSTOMERS' EQUIPMENT OCCURRED DUE TO ANY CAUSE SET FORTH BELOW.

- (1) WHEN CAUSED BY INAPPROPRIATE HANDLING OR USE OF THIS PRODUCT BY THE CUSTOMERS (SUCH AS NOT COMPLYING WITH THE CONDITIONS, ENVIRONMENTAL SPECIFICATIONS OR CAUTIONS INDICATED IN ANY APPLICABLE CATALOGUE, SPECIFICATIONS, INSTRUCTION MANUAL, ETC.);
- (2) WHEN FAILURE OCCURRED DUE TO ANY REASON OTHER THAN THIS PRODUCT;
- (3) WHEN CAUSED BY MODIFICATION OR REPAIR OF THIS PRODUCT MADE BY ANYONE OTHER THAN SAGINOMIYA OR DESIGNEE OF SAGINOMIYA;
- (4) WHEN CAUSED BY THE USE OF THIS PRODUCT IN VIOLATION OF THE ABOVE "RESTRICTIONS OF USE" OR "CONFIRMATION OF OPERATION";
- (5) WHEN SUCH FAILURE WAS NOT REASONABLY FORESEEABLE AT THE TIME OF SAGINOMIYA'S SHIPMENT; OR
- (6) BY ANY OTHER CAUSE NOT ATTRIBUTABLE TO SAGINOMIYA, SUCH AS AN ACT OF GOD, DISASTER, OR ACT OF ANY THIRD PARTY.

PLEASE NOTE THAT THE CUSTOMERS WILL NOT BE ENTITLED TO ANY OF THE ABOVE WARRANTY IF THE CUSTOMERS PURCHASED THIS PRODUCT FROM INTERNET AUCTION, ETC.