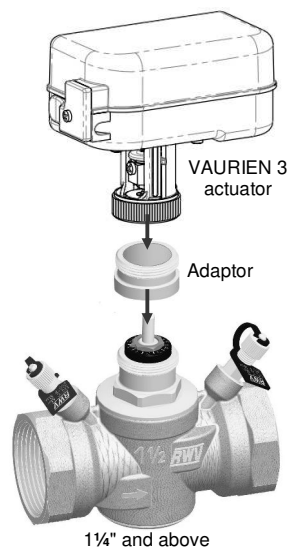
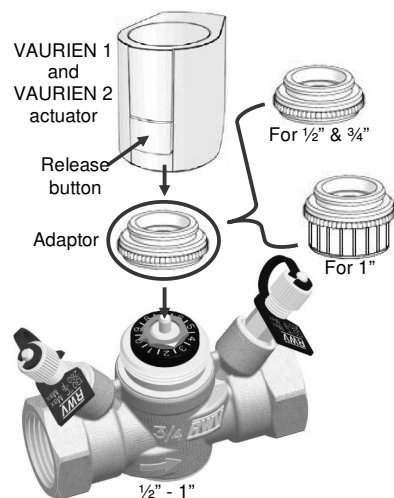


HOW TO MOUNT AND USE THE ACTUATOR



Mounting actuator when valve is inline.

- Remove the ON/OFF cap located on top of the valve. Select the appropriate adaptor based on valve size. Install the adaptor and tighten by hand in the clock-wise rotation, thus avoiding the use of any additional tools.
- Assemble the actuator onto the adaptor by simply pressing the two parts together for VAURIEN 1 and VAURIEN 2 or by screwing it to the adaptor for VAURIEN 3.
- To remove the actuator, simply press down on the release button (VAURIEN 1 or VAURIEN 2) or unscrew (VAURIEN 3).

Please verify actuator is suitable for the valve you are using:

- VAURIEN 1 are 100N ON/OFF thermal actuators for 1/2" and 3/4" valves.
- VAURIEN 2 are 125N ON/OFF thermal actuators for 1/2", 3/4" and 1" valves
- VAURIEN 3 are 300N ON/OFF electric actuators for 1 1/4", 1 1/2" and 2" valves

VAURIEN 1 and VAURIEN 2 actuators are available in 12V, 24V or 120V. Each version is available in either NC "normally closed" or NO "normally open" position.

The NC "normally closed" actuators are supplied in an open position. After installation, it will be necessary to connect the appropriate power supply (12V, 24V or 120V according to the model used) for at least 6 minutes in order to cycle the valve to its normal function (function "First Open"). The NO "normally open" actuators are ready for use.

VAURIEN 3 actuators are available only in 24V version with 3-point controls.

Specific installation and instructions for use of the actuator are printed onto the inside of the actuator box itself.

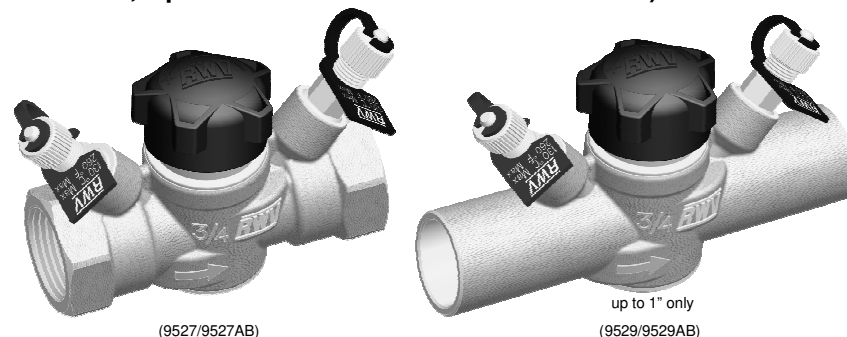
For more information, feel free to contact RED-WHITE VALVE CORP.

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RWV[®] 9520 series

How to use your 9520 series Balancing Valve (Installation, Operation and Maintenance Instructions).



GENERAL INFORMATION

Overview:

- RWV 9520 series are Variable Orifice Balancing Valves with ON/OFF capabilities which can be used with our optional VAURIEN actuators.
- They are mainly designed to be used for mounting of thermal exchanger units such as fan coils or similar allowing basic balancing and remote shut-off via the actuator.

Features:

- Verify the flow rate passing through the valve by measuring the differential pressure at the test points at inlet / outlet of the valve.
- Flow is regulated by referring to the dial on the top of the valve (accessible by removing the ON/OFF cap).
- Fig. 9527 and 9527AB have female threaded NPT end connections as per ANSI/ASME B1.20.1
- Fig. 9529 and 9529AB have solder end connections as per ANSI B16.22
- The 9520 valve series is intended to be used for non hazardous liquids only.
- Fig. 9527AB and 9529AB are made in low lead brass compliant to California Assembly Bill 1953 (AB1953) and are NSF-61-G certified.

PRESSURE AND TEMPERATURE VALVE RATINGS

VALVE VERSION	Non shock pressure at temperature range	Non shock pressure at max. temperature
Threaded End (9527 and 9527AB)	300 psi from 15°F(*) to 160°F	150 psi at 260°F (**)
Solder End (9529 and 9529AB) (***)	300 psi from 15°F(*) to 160°F	150 psi at 260°F (**)

(*) = below freezing temperatures only for water with antifreeze additives.

(**) = over 212°F only for water with anti-boiling additives.

(***) = soldered connections have working rating limitations depending on the solder type.

The temperature and pressure shown above are for non-shock operating conditions: water hammers, impacts, stress loads, corrosive or erosive external environmental elements and the transport of aggressive fluids should be avoided.

INSTALLATION

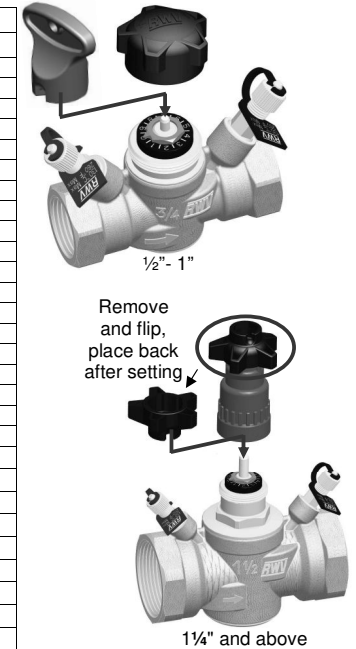


- For optimum accuracy, valve should be installed under the following conditions:
- Installation guidelines
 - Minimum straight pipe length equivalent to 5 pipe diameters at the inlet and 2 diameters at the outlet.
 - Minimum straight pipe length equivalent to 10 pipe diameters at the inlet when installed on the outlet of a pump.
 - Minimum straight pipe length equivalent to 5 diameters at the inlet from any elbows, tees or other pipe junctions.
- Verify that flow is in the direction of the arrow on the valve body.
- Remove excess pipe dope / tape that protrude into the flow path.
- Thoroughly deburr and/or ream pipes to remove any materials protruding into the flow path.
- Please note that the 9520 series valves should be installed to allow access for the manometer probes into the pressure test points and to prevent the accumulation of debris in these areas.
- Care should be taken when installing Fig. 9529 and Fig 9529AB (solder end valves) to ensure that the flame is directed away from the center of the valve (valve seat and seals) and also from the metering points (seals). In addition a wet rag should be put on the valve while soldering it to the line. This will reduce the risk of damaging the valve seals due to overheating.



VALVE SETTING

Regul. position	Cv (gpm/PSI ^{1/2})						
	½" LF	½"	¾"	1"	1¼"	1½"	2"
0.5	0.127	0.58	0.80	1.54	2.01	2.15	3.82
1.0	0.173	0.88	1.24	2.40	3.51	3.85	6.02
1.5	0.220	1.10	1.58	3.12	4.65	5.60	8.03
2.0	0.254	1.26	1.90	3.66	5.26	6.71	9.06
2.5	0.289	1.40	2.20	4.16	5.92	7.51	10.3
3.0	0.335	1.51	2.45	4.51	6.54	8.37	11.2
3.5	0.382	1.61	2.67	4.84	7.02	9.06	12.3
4.0	0.428	1.70	2.86	5.23	7.60	9.91	13.4
4.5	0.486	1.77	3.02	5.49	7.95	10.5	14.3
5.0	0.543	1.84	3.18	5.72	8.56	11.2	15.3
5.5	0.601	1.88	3.31	5.94	8.88	11.6	16.1
6.0	0.659	1.93	3.42	6.13	9.48	12.1	16.8
6.5	0.717	1.97	3.53	6.31	9.90	12.4	17.5
7.0	0.775	2.00	3.62	6.56	10.5	12.8	18.2
7.5	0.832	2.03	3.70	6.74	10.9	13.2	18.9
8.0	0.879	2.06	3.79	6.94	11.2	13.6	19.6
8.5	0.925	2.08	3.87	7.09	11.5	13.9	20.3
9.0	0.960	2.10	3.94	7.14	11.9	14.5	20.9
9.5	0.994	2.12	4.01	7.28	12.4	15.0	21.6
10.0	-	-	-	-	13.1	15.3	22.1
10.5	-	-	-	-	-	-	22.7
11.0	-	-	-	-	-	-	23.0
11.5	-	-	-	-	-	-	23.5
12.0	-	-	-	-	-	-	23.7
12.5	-	-	-	-	-	-	24.1
13.0	-	-	-	-	-	-	24.3
13.5	-	-	-	-	-	-	24.9
14.0	-	-	-	-	-	-	25.2
14.5	-	-	-	-	-	-	25.8
15.0	-	-	-	-	-	-	26.1



Where:

$$Q = C_v \cdot \sqrt{\Delta p_s}$$

Q = flowrate [GPM];

Δp_s = differential pressure (signal) through the pressure test points of the valve [psi];

C_{vs} = flow coefficient through the pressure test points of the valve [GPM/psi^{1/2}];

Regulate the flowrate by removing the ON/OFF cap and rotating the dial with the provided regulating key (as in above pictures). The required settings can be determined by the differential pressure signals measured from the test points and the specific demands of the application.



"Low Flow" version is identified by a "L" letter marked on the valve body, next to the size.

The current setting of the valve can be read on the valve dial (zero indicates that the valve is closed).

Warning: the 2" valve has a stroke of one and a half turns. The regulating value on the half turn is equal to that indicated by the arrow + 10 (see picture on the right).

