

VALVE TAG



Fig. 9407 / 9409 valves are supplied with a data tag on which are indicated:

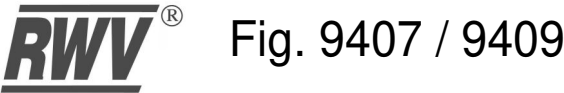
- the Fig. number of the valve type: 9407 or 9409;
- the nominal size;
- the value of the flow coefficient C_{vs} ;

There is room on the tag to write the desired flow rate or pressure signal.
This tag can be fixed to the valve with the provided plastic zip tie.
The included plastic tie is long enough to be used with insulated piping systems and still provide a clear identification of the valve.

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

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How to use your RWV Fig. 9407 / 9409 Metering Station
(Installation, Operation and Maintenance Instructions).



GENERAL INFORMATION

Overview:

- Fig. 9407 / 9409 valves are Fixed Orifice Metering Stations that are capable of measuring flow over their Venturi insert (fixed orifice).
- Metering points provide a quick and easy method of checking the flow conditions in any desired location, helping to balance heating and chilled water systems and detecting any piping system problems (improper flow, restricted pipes, improperly positioned check valves, etc);
- When combined with a flow regulating device, these metering stations allow you monitor the proper function of the device.

Features:

- Easy evaluation of the flow passing through the valve using the same flow coefficient value for every flow condition.
- Fig. 9407 has male/female threaded NPT end connections as per ANSI/ASME B1.20.1
- Fig. 9409 has solder end connections as per ANSI B16.22
- The 9407 / 9409 valve series are intended to be used for non hazardous liquids only.

PRESSURE AND TEMPERATURE VALVE RATINGS

VALVE FIG. #	Non shock pressure at temperature range	Non shock pressure at max. temperature
Threaded End (9407)	300 psi from 15°F(*) to 160°F	150 psi at 260°F (**)
Solder End (9409) (***)	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.

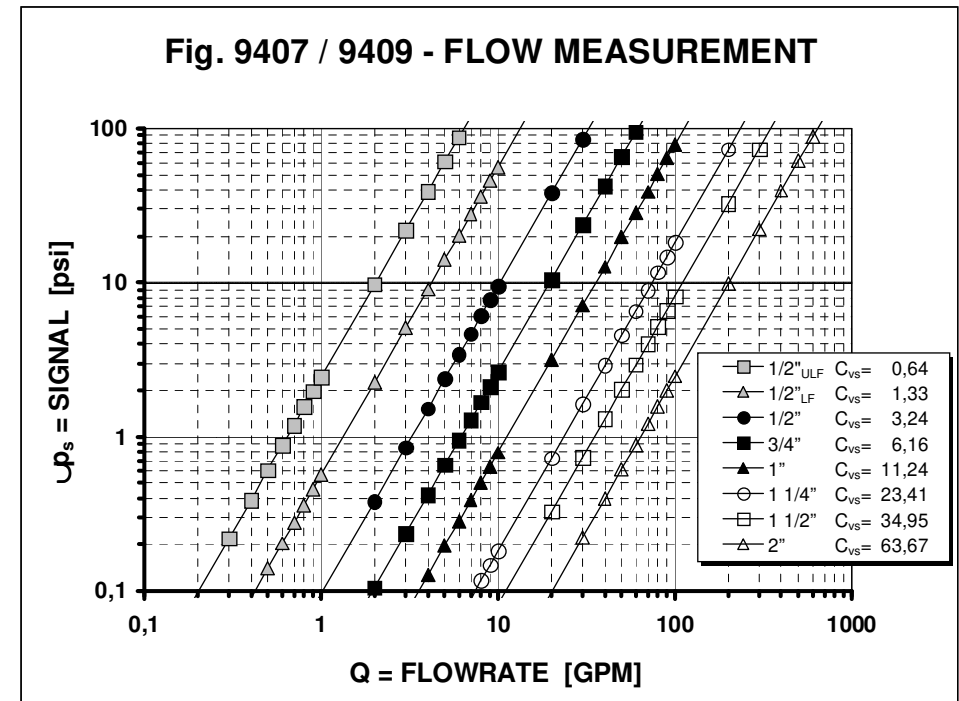
The operative conditions shown above are intended for non-shock operating conditions: water hammers, impacts, stress loads, corrosive or erosive external environmental elements and the transport of fluids with abrasive properties should be avoided.

INSTALLATION



- For optimum accuracy, valve should be installed under the following conditions when taking flow readings:
 - Piping:
 - Have a minimum straight pipe length equivalent to 5 pipe diameters at the inlet and 2 diameters at the outlet.
 - Have a minimum straight pipe length equivalent to 10 pipe diameters at the inlet when installed on the outlet of a pump.
 - Have a 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 9407 / 9409 valve series should be installed in such a way as 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. 9409 (solder end valve) to ensure that the flame is directed away from the metering points (seals). This will reduce the risk of damaging the valve seals due to heat.

FLOW MEASUREMENT



Where:

$$Q = C_{vs} \cdot \sqrt{\Delta p_s}$$

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}];

The required flow rates can be derived by either entering the differential pressure signals measured from the metering test points in the graphs or by using the previous formula.

"Low Flow" and "Ultra Low Flow" versions are identified by a letter marked on the body (L for "Low Flow", U for "Ultra Low Flow").