Bell & Gossett
a xylem brand

INSTRUCTION MANUAL
V58046 Rev D

Wafer Valve

Automatic Flow Limiting Valve

www.xylem.com/bellgossett

1 Introduction and Safety

Installer

NOTICE:
PLEASE LEAVE THIS MANUAL FOR OWNER'S USE

⚠ SAFETY INSTRUCTIONS
This safety alert symbol will be used in this manual and on the unit safety instruction decals to draw attention to safety related instructions. When used, the safety alert symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED! FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN A SAFETY HAZARD.

2 Product Description

2.1 Description

The Bell & Gossett WAFER Valve is designed to fit between two 150 lb. ASME flanges and to automatically control the flow in a piping system to a selected preset flow requirement. As pressure differential increases, a cartridge inside the valve body reduces the flow area to accurately maintain the pre-selected flow rate.

Warning label

Warning label part number V56871 is installed under Bell & Gossett. If missing it must be replaced.

NOTICE:
This product is not intended for use in open systems. An open system is one that is exposed to atmospheric pressure at any point, such as a cooling tower system.

2.2 Specifications

Maximum operating temperature: 250°F (121°C)

Maximum operating pressure: 250 psig (1724 kPa)

Flow control, differential pressure: Min: Varies on valve size and flow. See submittal A-606.22. Max: 60 psi (414 kPa)

3 Installation

3.1 Install the wafer valve

1. Install the Wafer valve in the piping system/circuit where it is desired to maintain the flow at a pre-selected value.

   The lifting lug (eye-bolt) provided (from 4" thru 20") will make handling of the valve easier.
2. Install the lifting lug into the valve body between two identical 150 lb. ASME flanges.

   Use long threaded rods to connect the two flanges together and secure the wafer valve and mating gasket in full contact with the flanges.
3. Torque each nut on the threaded rod to specified torque necessary for typical flange torque connections.

⚠ CAUTION:
Use unit lifting eyes only to lift unit as shipped from factory. Unit must be empty and disconnected from pipe, and other restraints. Use proper rigging procedures. Failure to follow these instructions could result in injury or property damage.

4. Install the unit so that the flow arrow on the body housing points in the direction of flow.
5. Install the pressure readout fittings into the valve body using the extension adapters first. Then install the pressure and temperature access port onto the extension adapter 1/4 inch NPT end.

⚠ CAUTION:
The generous use of pipe joint compound when installing the adapter or P/T will foul the valve operating mechanism preventing it from functioning properly. Pipe joint compound must be conservatively applied to male threads only. Failure to follow this instruction can result in moderate personal injury and/or property damage.

⚠ CAUTION:
The use of PTFE impregnated pipe compound and PTFE tape on pipe threads provides lubricity, which can lead to overtightening and breakage. Do not overtighten. Failure to follow this instruction can result in moderate personal injury and/or property damage.

3.2 How to use automatic flow-limiting valve pressure taps to determine proper functioning of valve

1. Using Bell & Gossett RP-250 readout probes, attach a Bell & Gossett differential pressure readout kit to the readout valves on the Automatic Flow-Limiting Valve.

WARNING:
Hot water leakage can occur from readout valve during probe insertion and during hook-up of readout kit. Follow instruction manual supplied with readout probes and readout kits for safe use. Failure to follow this instruction could result in serious personal injury and/or property damage.

2. Read the differential pressure across Wafer Valve. This can be compared to system pump head to determine valve function, and system flow blockage.

4 Operation

4.1 Operation instructions

Operation of the wafer valve is fully automatic and does not require any adjustment. It automatically maintains the selected flow over the designed differential pressure range.

CAUTION:
Hot insulated surfaces can cause burns to the skin. Do not touch hot surfaces. Failure to follow these instructions could result in moderate personal injury.

5 Maintenance

5.1 Service instructions

Should the Wafer Valve require cleaning or changing the orifice, consult the following instructions.

WARNING:
System fluid under pressure and/or at high temperature can be very hazardous. Before servicing, reduce system pressure to zero or isolate the pressure reducing from the system. Leave drain valve open. Allow system to cool below 100°F. Failure to follow these instructions could result in serious personal injury or death and property damage.

1. Remove the valve body from the piping system by unbolting it from the two flanges on either side. Use the lifting lug (eye-bolt for 4" through 20") to handle/carry the valve.
2. Pull the cartridge assembly from the valve body for cleaning or change to new flow cartridge. The cartridge is secured to the mid-plate of the housing by means of 2 or 3 allen head screws. Remove the screws first. Then pull the cartridge out of the mid-plate bore. Check the cartridge by pushing the orifice washer in to the cartridge housing against the spring force several times to make sure the spring is functional. Inspect the interior of cartridge for broken spring or any particles stuck inside that may prevent free movement of the cartridge housing.
3. To change the orifice washer (for different flow rate), remove the clip ring from inside the cartridge housing with a screwdriver. Pull the orifice washer out and replace it with the new orifice (orifice part number should be facing upward). Push the new orifice in until it seats all the way to the bottom of the shelf.
4. Reinstall, or replace the clip ring in the cartridge-housing groove and make sure that it is holding the new orifice disk securely in place.
5. Reassemble the cartridge into the mid-plate bore and secure with the allen head screws.

WARNING:
Corrosion or leakages are indications that the Wafer Valve may be about to cause serious damage from leakage or rupture. It must be periodically inspected and if noted, it must be replaced. Failure to follow these instructions could result in serious personal injury or death and property damage.

Xylem Inc.
8200 N. Austin Avenue
Morton Grove IL 60053
Tel: (847) 966–3700
Fax: (847) 965–8379
www.xylem.com/bellgossett

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