

Model 3DX
Triple Duty[®] Valve

**INSTALLER:
PLEASE LEAVE THIS MANUAL
FOR THE OWNER'S USE.**

DESCRIPTION

The Triple Duty Valve is a quiet operating heavy-duty valve which performs all of the functions normally required on the discharge side of Hydronic System pumps.

The valve serves as a non-slam check valve as needed for zoned pumping, parallel and standby pumping, and condenser water applications. The spring loaded disc prevents valve chatter, and assures shutoff.

Bell & Gossett's Triple Duty Valve has a calibrated nameplate for rough system balance. The Triple Duty Valve is also equipped with Model RV-125A Readout Valves for more accurate system balance.

The calibrated nameplate allows the valve to be returned to the original balanced position after shutoff.

OPERATIONAL LIMITS

Maximum operating temperature: 250°F

Maximum operating pressure: 125 psig



SAFETY INSTRUCTION

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

***WARNING LABEL PART NUMBER V56845 INSTALLED IN THIS LOCATION.
IF MISSING IT MUST BE REPLACED.**

INSTALLATION INSTRUCTIONS

Bell & Gossett Triple Duty Valves must be installed on the discharge side of the system pump with the stem in the vertical position for proper seating of the valve disc.



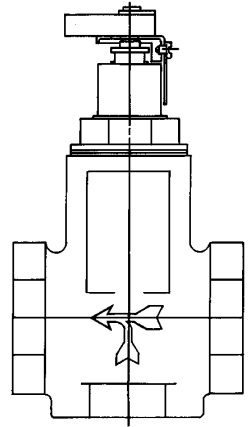
CAUTION: The generous use of pipe joint compound will foul the operating mechanism and prevent the Triple Duty Valve from functioning properly. When piping Triple Duty Valve to the system, apply pipe joint compound sparingly to male threads only. Failure to follow these instructions could result in property damage and/or moderate personal injury.



CAUTION: Stem breakage or damage to threads may result if pliers or other tools are used to open or close the Triple Duty Valve. Fingers only should be used on adjusting handle. Failure to follow these instructions could result in property damage and/or moderate personal injury.



CAUTION: The body casting may break if overtightening results from the use of PTFE based thread joint compounds. PTFE tape or PTFE impregnated pipe joint compound provides lubricity so that extra care must be used when tightening joints. Failure to follow these instructions could result in property damage and/or moderate personal injury.



IMPORTANT: FOR PROPER OPERATION,
VALVE STEM MUST BE VERTICAL.
ARROW INDICATES DIRECTION OF FLOW.

OPERATING INSTRUCTIONS

1. Using Scale 5 on the Bell & Gossett System Syzer, set required flow opposite calculated system head loss and read approximate required C_v for the Triple Duty Valve.
2. Refer to the C_v ratings for B&G Triple Duty Valves in these instructions, and find the stem rise C_v (B) that closely approximates the required C_v for the valve size and pattern selected for the job.
3. Turn the valve stem counterclockwise until the nameplate graduation for the selected stem rise position lines up with the top of the bonnet hub.
4. Start the system pump, and after flow through the pump quiets down indicating that all of the free air has been directed to the compression tank (closed system) or vented to the atmosphere (open system or closed system utilizing diaphragm or bladder tanks), take a differential pressure reading across the brass readout valves in the Triple Duty Valve.



WARNING: Escaping fluids can cause burns or serious eye injury. When monitoring system flow, safety glasses must be worn to avoid eye contact with liquids that may escape. Exercise care to avoid skin contact. Failure to follow these instructions could result in serious personal injury or death and property damage.

5. If differential pressure is 4 feet or greater, using Scale 5 on the B&G System Syzer, set the C_v mark over the corresponding (A) C_v rating (refer to the table in these instructions) for the selected stem rise position, and read the actual flow through the valve opposite the differential pressure reading obtained in Step #4. If differential pressure is less than 4 feet refer to 3DX flow curves.
6. If the required balance position has not been reached, adjust the stem rise position until the balance point is achieved.
7. If balancing beyond the 50% stem rise position is required, Bell & Gossett recommends the impeller be sized to produce design flow.

SERVICE INSTRUCTIONS

A. Valve leaking at the packing nut – turn packing nut clockwise until the leak stops.



WARNING: Hot leaking fluids or fluids leaking under pressure can be very hazardous. Avoid contact with leaking fluids. Failure to follow these instructions could result in serious personal injury or death and property damage.

B. If leaking persists –

1. Note the position of the valve opening (% Stem Rise).
2. Turn the valve stem fully counterclockwise until the stem resists additional turning.
3. Remove the packing nut (located at the base of stem) by turning it counterclockwise.
4. Remove the old packing.
5. Repack as required.
6. Replace the packing nut and tighten as required.
7. Reposition the valve stem per observation in Step #1.

C. Valve leaking at the bonnet gasket area – tighten (as required) until the leakage stops.

D. If leaking persists, or when replacing valve internals –



WARNING: Servicing a hot or pressurized Triple Duty Valve is very hazardous. Isolate the Triple Duty Valve from the system or reduce the system pressure to zero. Leave drain valves open during servicing. Allow system temperature to cool to approximately 100°F. Failure to follow these instructions could result in serious personal injury or death and property damage.

1. Loosen the threaded bonnet cap and remove the bonnet assembly with the valve stem attached.
2. Remove the old gasket and clean up the gasket surface on the body and bonnet.
3. Inspect the valve internals for signs of corrosion or erosion (wire-draw across the seat). If damaged, they must be replaced to function properly.
4. If the valve appears to be in serviceable condition, install a new gasket and replace the bonnet assembly.
5. Secure the bonnet.
6. Return the system to its normal operating mode.

NOTE: If leakage occurs at the bonnet gasket area, tighten (as required) until the leakage stops.

E. Replacing a damaged nameplate –

1. Turn the valve stem clockwise until it hits the bottom, closed position. Also count the number of turns.
2. Loosen and remove the (2) data plate screws.
3. Replace the old data plate with a new one.
4. Position the data plate so the closed line on the data plate aligns with the bonnet hub (see Fig. 2) and tighten screws.
5. Turn the valve stem counterclockwise the number of turns it took to close the valve.

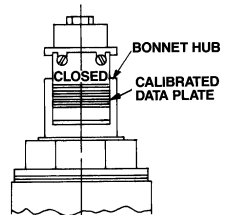


FIG. 2

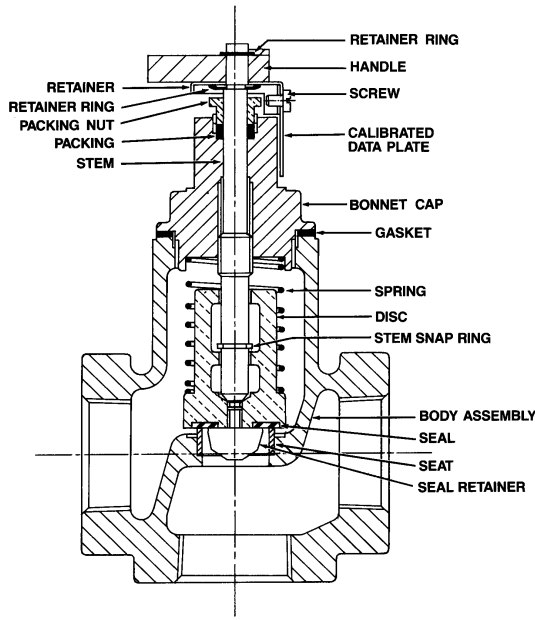


WARNING: Leakage past Triple Duty Valve seat when used as an isolation valve can be very hazardous due to unexpected pressure buildup. Check for proper sealing. If the seat is not sealing properly, liquid will continue to flow from the drain valves. In this case the Triple Duty Valve must be isolated from system pressure and inspected for seat or disc damage. Replace as necessary. Failure to follow these instructions can result in serious personal injury or death and property damage.



WARNING: Leakage, corrosion or indications of damage are signs of an impending serious failure of the Triple Duty Valve. Periodically inspect all parts for damage. Replace any questionable parts or the entire Triple Duty Valve if any of the above are noted. Failure to follow these instructions could result in serious personal injury or death and property damage.

FIG. 1



Model No.	Valve Pattern	B&G TRIPLE DUTY VALVES – Cv RATINGS PERCENT OF STEM RISE																	
		20		30		40		50		60		70		80		90		100	
		A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
3DX-1	ANGLE	2.0	2.0	2.7	2.6	3.5	3.4	4.3	4.0	5.2	4.6	5.6	5.1	6.0	5.5	6.6	6.2	7.4	6.8
	STRAIGHT																		
3DX-1¼	ANGLE	4.2	4.2	5.6	5.5	7.4	7.2	8.4	8.0	9.4	9.0	10.0	9.6	11.0	10.3	11.8	11.0	12.3	11.7
	STRAIGHT																		
3DX-1½	ANGLE	6.8	7.1	8.9	9.1	12.2	11.6	14.5	13.5	17.2	15.8	19.5	17.3	21.5	18.5	23.5	19.5	26.0	20.5
	STRAIGHT																		

A. Flowmeter Cv for Balancing. Not accurate for ΔP reading less than 3 ft.

B. Cv for calculating pressure drop across the valve.

Note: Maximum recommended pressure drop should not exceed 25 feet.



RV-125A Readout Valve

The RV-125A Readout Valve is equipped with an integral EPT Check Valve designed to minimize system fluid loss when setting up to monitor pumps, heat exchangers, valves, etc., handling hot or cold water.



RP-250B Readout Probe

These Readout Probes are designed for use with the B&G RV-125A Readout Valve.

xylem
Let's Solve Water

Xylem Inc.
8200 N. Austin Avenue
Morton Grove, Illinois 60053
Phone: (847) 966-3700
Fax: (847) 965-8379
www.xylem.com/brands/bellgossett