



**Rodney Hunt**  
A ZURN Company  
Jet Flow Gates

Jet  
Flow

Gates



# Rodney Hunt Jet Flow Gates:



The Jet Flow gate is a fabricated valve that has the appearance of a bonneted gate valve. It is used in special applications for the modulation, occasionally at extreme low degrees of opening, of high flows and high pressures.

The Jet Flow gets its name in that immediately upstream of the gate leaf the waterway slopes conically inward. This conical section concentrates the flow into a jet. Hence the name *Jet Flow*.

The Jet Flow gate is used for flow modulation and energy dissipation. Normally, the Jet Flow gate discharges either freely or into an enlarged non-pressurized conduit. When discharging into a conduit it is necessary to vent air into the area immediately downstream of the gate leaf to stabilize the jet.

The Jet Flow gate was developed in the mid-1940's by the United States Bureau of Reclamation as a solution to the problem of cavitation damage in bonneted slide gates at low degrees of opening.

Jet Flow gates are used in similar applications to Howell-Bunger valves. The difference in the two types is the discharge pattern. The discharge from a Howell-Bunger valve is an energy dissipating spray whereas the Jet Flow gate is a high velocity jet.

The Jet Flow gate has a maximum head of approximately 500 feet, while the Howell-Bunger valve has a maximum head of about 1000 feet. There are a number of 95", 90" and 84", as well as smaller sizes, at various dams throughout the world. The simplicity and excellent flow regulation characteristics of Jet Flow gates have resulted in the development of standard designs in 10", 12" and 14" sizes by the Bureau of Reclamation.

Jet Flow gates operate smoothly without vibration or serious cavitation damage at any opening. However, under free discharge conditions there is considerable air demand at partial openings on the discharge side.



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