



## **VALVE SELECTION GUIDE FOR THE HYDROPOWER INDUSTRY**



## The DeZURIK Difference

Throughout our 250 years of combined history, DeZURIK, APCO, HILTON and Willamette have been recognized worldwide for collaborating with customers to design and engineer valves that provide superior performance and value. Each company was founded by an innovator who set out to solve a customer's problem application.

Today, the DeZURIK, APCO, HILTON and Willamette brands continue the tradition of partnering with our customers in the hydropower industry to provide the newest innovations in gate, plug, butterfly, check, air, ball, cone and rotary control valves.



A 90"/102" Hilton Throttling Knife Gate Valve (30 psi rating) is installed on the Pit River in Northern California.

## Full-Featured Valves

Valve designs for high flow capacity include anti-cavitation features for superior performance in hydropower applications. In addition, our expertise in materials engineering allows us to assist you in selecting the proper metals, elastomers and hardened trim materials for longest service life and maximum value.

## Designed For Your Applications

DeZURIK engineers spend many hours in the field listening to customers so that they fully understand the intricacies of each application and incorporate that knowledge into each valve design. Using the latest advancements in technology such as Solid Modeling, Finite Element Analysis, 3D Rapid Prototyping and Computational Fluid Dynamics, DeZURIK engineers create valves that offer superior installed performance in some of the toughest applications in the hydropower industry.



A 24" Jet Flow Gate (150 psi rating) with motor operator on a dam in Southern California.



## Quality Centered Manufacturing

DeZURIK's dedication to quality is exemplified in all aspects of the business but foremost in our manufacturing capabilities. Our state-of-the-art CNC machining centers and large valve fabrication facilities allow us to produce in excess of 100,000 valves annually that range in size from 1/2" to 144" and weigh up to 40 tons.

DeZURIK's dedication to outstanding practices is ingrained in its culture, and exemplified in our quality system. DeZURIK has been certified to the ISO 9001 standard since 1996. To further demonstrate our confidence in our product quality, DeZURIK offers a 2-Year Manufacturer's Standard Warranty – double the length of time offered by most other manufacturers.



A 72" Hilton Bonneted Knife Gate Valve (130 psi rating) with 18" diameter hydraulic cylinder actuator is used for a guard valve for a fixed cone valve.



This 42" Hilton Jet Flow Gate Valve is installed at LaGrande Dam near Tacoma, Washington.

## Application Expertise You Can Trust

The application expertise of DeZURIK technical sales representatives, located throughout the world, will ensure you receive the personalized and complete service you need to keep your process performing at optimum levels. Our independent representatives are backed by over 500 DeZURIK employees at our factories, service centers and offices whose primary goal is customer satisfaction and maintaining long-term relationships.



A 48"/60" Hilton Throttling Knife Gate Valve (50 psi rating) with electric motor operator is installed on a flow modification project.



DeZURIK/APCO/Hilton engineers are on-site for the installation of a 78" (1950mm) Hilton Jet Flow Gate at a dam in Southern Taiwan. Two of these Jet Flow Gates will be used for throttling service on Taiwan's largest reservoir which supports local irrigation, municipal water service and a 50 megawatt hydroelectric power station. These valves measure 31 feet tall and 10 feet wide. The total assembled weight for each valve is 75,000 pounds. They were entirely fabricated, assembled and tested at the company's Redmond, Washington manufacturing facility.

## Wide Selection of Valve Styles

DeZURIK has a wide variety of valve styles to meet the application requirements of the hydropower industry. The selection charts on the following pages serve as a starting point in the valve selection process. For additional information or to contact your local representative, visit us at [www.dezurik.com](http://www.dezurik.com)

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### Hilton Jet Flow Gates

**SIZE RANGE:** Through 96"

**PRESSURE RATING:** up to 400 psi

**SEATING:** Metal or Resilient

**MATERIALS:** Valves are normally supplied with epoxy coated carbon steel body with bronze seat ring and stainless steel gate. Other materials available upon request.

- High head free discharge up to 400 psi
- Accurate flow control down to 0% open



### Hilton Throttling Knife Gate Valves

**SIZE RANGE:** Through 144"

**PRESSURE RATING:** to 100 psi

**SEATING:** Metal or Resilient

**MATERIALS:** Valves are available in solid or wetted parts construction in any weldable alloy. Typical construction is carbon steel body with stainless steel wetted parts.

- Free discharge up to 100 psi
- Accurate flow control down to 0% open
- Economical alternative to a Jet Flow Gate for low head applications



### Hilton Knife Gate Guard Valves

**SIZE RANGE:** Through 144"

**PRESSURE RATING:** to 400 psi

**SEATING:** Metal or Resilient

**MATERIALS:** Valves are available in solid or wetted parts construction in any weldable alloy. Typical construction is carbon steel body with stainless steel wetted parts.

- Isolation of Jet Flow Gates or other flow control valves in free discharge applications



### DeZURIK AWWA Butterfly Valves

**SIZE RANGE:** 3-144" (80-3600mm)

**TEMPERATURE RANGE:** to 290°F (143°C)

**PRESSURE RATING:** to 250 psi (1700 kPa) CWP  
Shutoff-Bubble tight to full rated pressure.

**BODY MATERIAL:** Cast Iron, Ductile Iron

- Intake Water Systems
- Water Treatment Plants
- Cooling Water



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### **DeZURIK Eccentric Plug Valves**

SIZE RANGE: .5- 72" (15-1800mm)

TEMPERATURE RANGE: to 300°F (150°C)

**PRESSURE RATING:**

Cast Iron:

.5-12" = 175 psi (15-300mm = 1210 kPa)

14-72" = 150 psi (350-1800mm = 1035 kPa)

Ductile Iron:

.5-12" = 285 psi (15-300mm = 1965 kPa)

14-72" = 250 psi (350-1800mm = 1724 kPa)

Special: 450 psi (3100 kPa)

**BODY MATERIAL:** Cast Iron, Ductile Iron, Bronze, Aluminum, Carbon Steel, Stainless Steel, Alloy 20, and Monel

- Intake Water Systems
- Water Treatment Plants
- Floor Drains
- Chemical Services



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### **DeZURIK High Performance Butterfly Valves**

SIZE RANGE: 2-60" (50-1500mm)

TEMPERATURE RANGE: to 700°F (370°C).

On application, -320°F (-196°C) to 1000°F (540°C)

ANSI CLASS RATING: 150, 300

PRESSURE RATING: to 740 psi (5100 kPa)

**BODY MATERIAL:** 316 and 317 Stainless Steel, Carbon Steel, Hastelloy C, Titanium

- Intake Water Systems
- Water Treatment Plants
- Floor Drains
- Condensate Water Piping and Polishing
- Heater Drain Systems
- Cooling Water Systems
- Chemical Services



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### **DeZURIK Rotary Control Valves**

SIZE RANGE: 1-12" (25-300mm)

TEMPERATURE RANGE: to 1000°F (540°C)

ANSI CLASS RATING: 150, 300

PRESSURE RATING: to 740 psi (5100 kPa)

**BODY MATERIAL:** 316 and 317 Stainless Steel, Carbon Steel, Hastelloy C, Titanium

- Steam Control
- Air Systems
- Chemical Services
- Feedwater



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### **Willamette Metal Seated Ball Valves**

SIZE RANGE: 6-54" (150-1400mm)

PRESSURE RATING: to 300 psig (2068 kPa)  
to 400 psig (2758 kPa) on application

**BODY MATERIAL:** Ductile Iron

- Pump Start/Stop
- Flow Discharge Control



### **Willamette Metal Seated Cone Valves**

SIZE RANGE: 6-48" (150-1200mm)

- Pump Start/Stop

PRESSURE RATING: to 720 psig (4964 kPa)

- Flow Discharge Control

BODY MATERIAL: Cast Iron, Ductile Iron



### **APCO Air Release, Air/Vacuum and Combination Air Valves**

SIZE RANGE: .5-24" (15-600mm)

- Water Pumping Stations

PRESSURE RATING: to 740 psi CWP

BODY MATERIAL: Cast Iron, Ductile Iron,  
Carbon Steel, Stainless Steel



### **APCO Swing Check Valves**

SIZE RANGE: 2-66" (50-1700mm)

- Water Pumping Stations

PRESSURE RATING: to 250 psi CWP

BODY MATERIALS: Cast Iron, Ductile Iron

CLOSURE DEVICES: Lever & Spring, Lever  
& Weight, Air Cushion Cylinder, Oil Controlled  
Bottom Mounted Buffer.

# Facilities



DeZURIK Corporate Headquarters and Manufacturing facility, Sartell, MN USA. Established in 1928, 420,000 sq. ft.



DeZURIK Cambridge, Ontario, Canada. Established in 1961, 50,000 sq. ft.



DeZURIK, Schaumburg, IL, USA. Established in 1895, 100,000 sq. ft.



DeZURIK, Redmond, WA, USA. Established in 1952, 25,000 sq. ft.

## Sales and Service

For information about our worldwide locations, approvals, certifications and local representative:

**Web Site: [www.dezurik.com](http://www.dezurik.com) E-Mail: [info@dezurik.com](mailto:info@dezurik.com)**



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