



## **HILTON H-200-B BONNETED KNIFE GATE VALVES**

- **Standard Designs to 96" (2400mm)**
- **Custom Designs to 144" (3600mm)**



**Made in the U.S.A.**

# Hilton Technology, Standard Designs, Rugged Construction

## Fabricated Construction for Design Versatility & Quick Turnaround

Hilton standard design Bonneted Knife Gate Valves provide performance, economy and rugged construction for a broad range of water and industrial applications including Water, Wastewater, Paper, Mining, Power and Hydro Dams.

The use of readily available plate steel and alloy materials allows faster manufacturing turn-around as compared to cast valves. In larger sizes, fabricated construction expands knife gate manufacturing capability beyond the practical range of cast valves. Special application configurations can be added to standard fabricated valves at lower cost, and materials of construction can be varied within the design adding further versatility.

A leader in fabricated valve technology, Hilton offers H-200-B Standard Knife Gate Valves in sizes 2" to 96".

## Standard Pressure Ratings

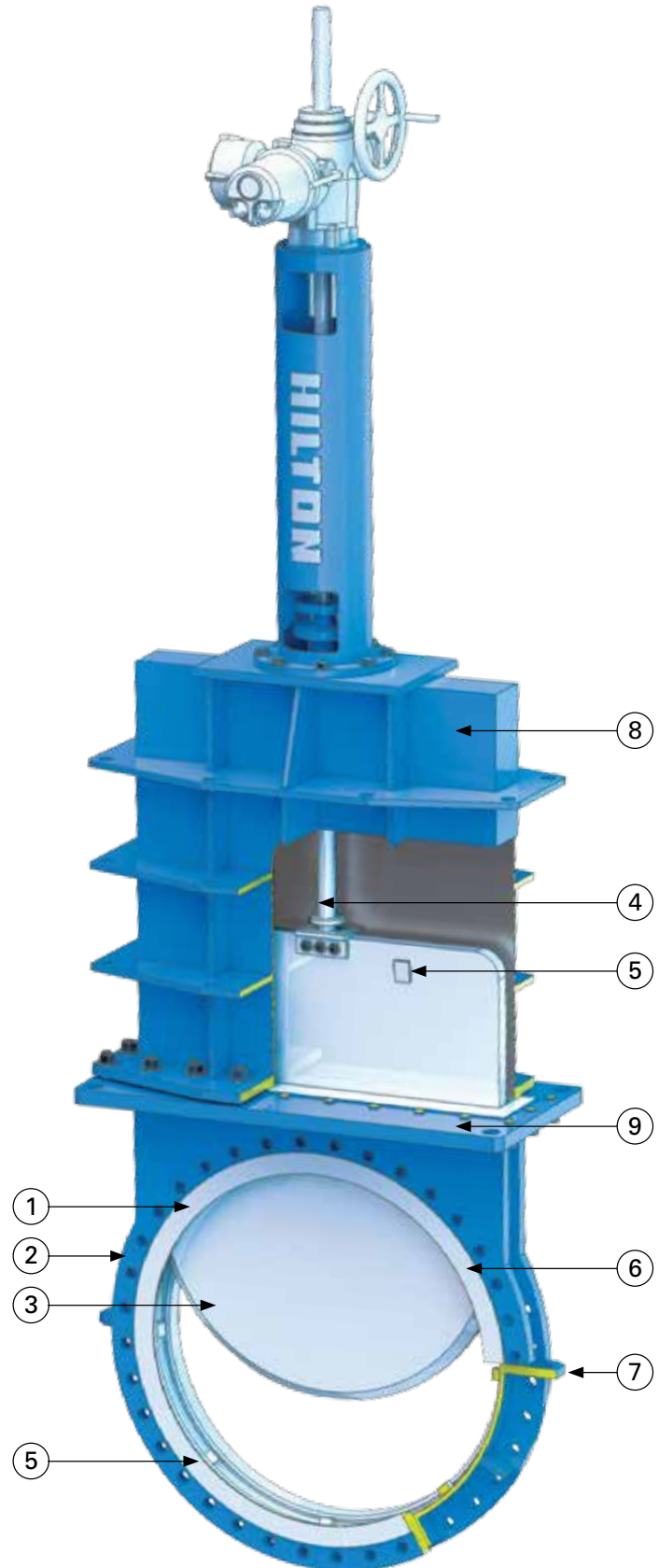
Standard pressure rating is 150 psi in sizes 2-24" and 50 psi in sizes 30-96". All valve components are designed to specified pressure rating requirements. This provides the most cost-effective valve for lower pressure applications with the option of higher pressure capability where needed. Alternate designs are available to meet higher pressure requirements. Hilton custom fabricated valves are available to 144" and with higher pressures and temperature capabilities to meet particular application requirements.

## 1. Corrosion Resistant Wetted Parts

Standard valve design provides fully welded wetted parts of 304 stainless steel. Optional designs can provide wetted parts of 316 stainless steel or any weldable alloy to meet specific application requirements. Valves can also be supplied in all-stainless or solid alloy construction.

## 2. Structural Steel Body Construction

Structural carbon steel construction provides maximum strength. The use of steel on non-wetted parts adds to overall design economy. Special purpose coatings are available for corrosion resistance. Valves of all-stainless or solid alloy construction are also available.



### 3. High Strength Machine-Finished Gate

The ground and polished gate finish assures long seat life and shutoff at full rated pressure. Finish is a minimum of 32 micro-inch R.M.S. The uni-directional beveled knife leading edge pushes aside or cuts through solids for positive seating and shutoff.

### 4. Heavy Duty Stem Components

Stainless steel Acme thread stems provide maximum torque and lift with faster opening and closing operation. Acid resisting bronze stem nuts provide strength and assure smooth operation. Heavy duty, one-piece stem clevis and bolting are engineered to valve size and pressure rating. These are all standard components on the Hilton Knife Gate Valve.

### 5. Gate Guides & Wedges for Assured Alignment & Closure

Gate guides are integral to the upper and lower port area to assure full gate support and alignment as the valve opens and closes. Gate wedges in both the upper and lower port area hold the gate against the seat to assure positive seating and shutoff.

### 6. Raised Face Flanges

Standard flanges have a raised face and spiral serrated finish for best gasket sealing and mating with pipeline flange. Flanges are drilled as standard to ASME and AWWA. International standards including DIN, British, Australian, JIS and other/special requirements available.

### 7. Body Flush and Drain Ports

Optional body flush and drain ports can be provided to clean the seat and flush the valve interior. Number and placement of flush ports is user specified based on application requirements.

## Bonnet Design and Construction

### Bonnets Provide Media Containment and Superior Packing Seal at Full Rated Pressure

Bonneted Valves provide positive media containment and control of fugitive emissions. The bonnet adds operating safety by fully enclosing the moving gate.

### 8. Pressure Retaining Enclosure

Bonnets are designed as an integral part of the valve and are rated to the full pressure rating of the valve.

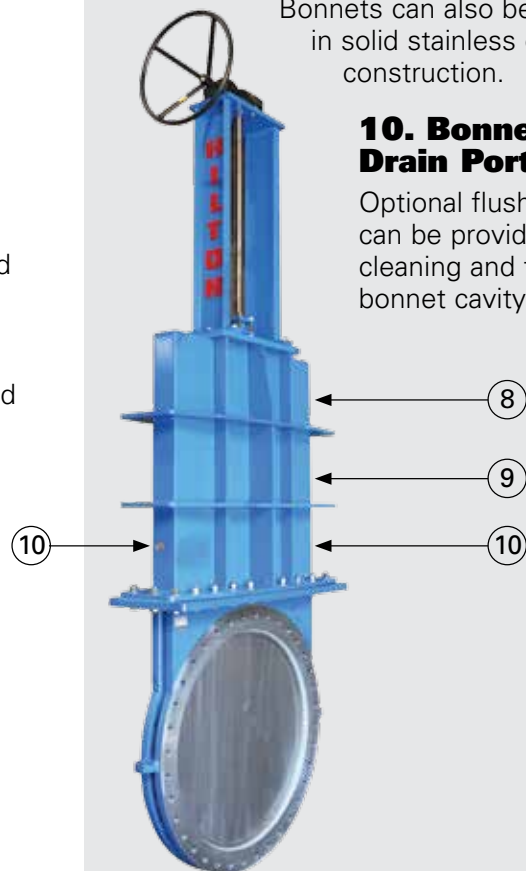
### 9. Steel Bonnet Construction with Stainless Steel Wetted Parts

Dual materials in the bonnet construction provide 304 stainless steel wetted parts for corrosion resistance with carbon steel bonnet flanges and stiffeners for maximum strength. The result is maximum performance plus economy. All bonnet components and stainless interior linings are fully welded into a single assembly for integrity and rigidity.

Bonnets can also be supplied in solid stainless or alloy construction.

### 10. Bonnet Flush and Drain Ports

Optional flush and drain ports can be provided for interior cleaning and flushing of the bonnet cavity.



# Stem Seal Design with Back Seating Seal Ring

## Packing System Provides Superior Sealing

Bonneted Valve top mounted packing system contains the packing in a gland that seals against the valve stem, providing the most effective seal design for Knife Gate Valves.

Locating the packing gland on the top of the bonnet minimizes the area to be sealed and allows external access to the packing for adjustment or replacement under system pressure without valve or actuator disassembly. Sealing around the smooth stem circumference avoids the wear and difficulty of sealing square corners around the gate as in Bonnetless Valves. The packing area is smaller, making the seal easier to achieve and maintain.

## Stacked Packing Design

The Stacked Packing Design includes multiple rings of square braided packing, ideally suited for frequent valve operation and to provide the most reliable and long-life seal. Standard packing is PTFE impregnated synthetic fiber with other packing materials available on request. The packing follower is readily accessible and provides easy adjustment to further assure packing seal and long packing life.

## Efficient Stem Seal Packing

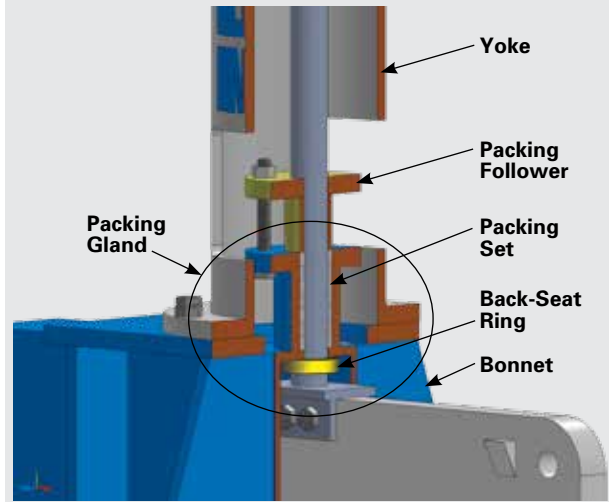
Stem seal packing provides the most effective media containment, reduces packing loads and allows the use of smaller sized operators.

## Valve Repackable Under Pressure

Packing can be replaced without valve disassembly and with the valve in the pipeline and under pressure. Maintenance is reduced and downtime is avoided.

## Back-Seat Ring

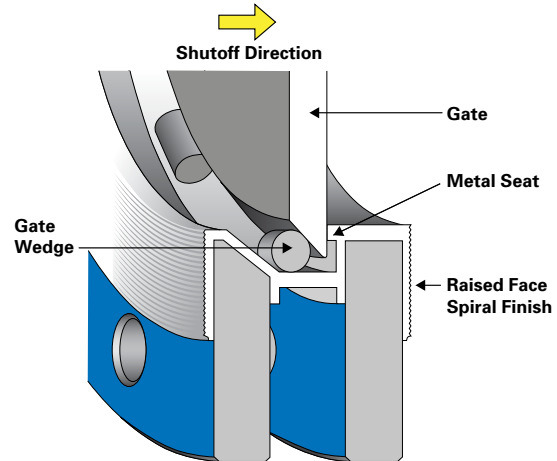
A Back-Seat Ring on the stem seals against the packing gland in the top of the valve bonnet with the gate in the full open position. This allows the stem packing to be replaced with the valve in the line and under pressure without bonnet disassembly.



# Metal & Resilient Seat Options

## Metal Seats for Maximum Ruggedness

Solid metal seats provide maximum durability and service reliability ruggedness on tough applications. Tapered inlet design provides a relief to keep solids in suspension as the gate closes. Shutoff on metal seated valves meets MSS SP-81 specifications.

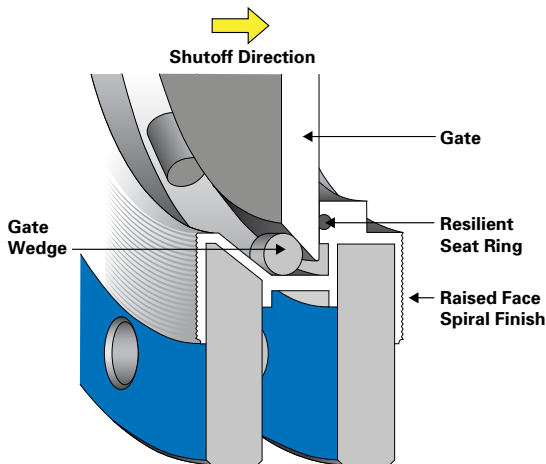


## Resilient Seats for Tight Shutoff

Optional resilient seats provide drip tight shutoff. The resilient seat is installed in a self-retaining groove cut into the stainless steel seat ring by a modified dovetail design which holds the sealing surface in place without the use of fasteners or adhesives. Seat rings can be replaced without removing the valve from the pipeline with no special tools. Standard resilient seat material is fluoroelastomer in a 304 stainless steel ring. Other resilient materials available upon request.

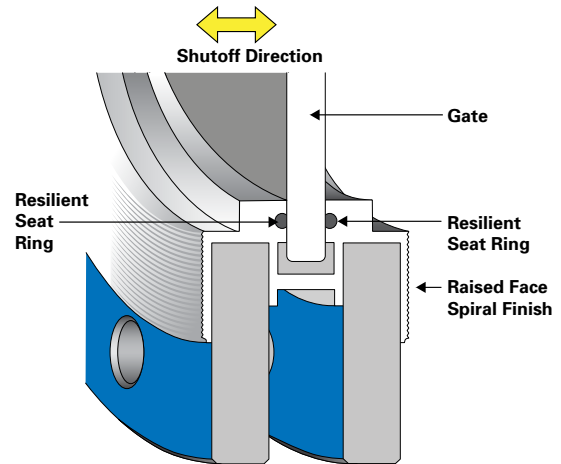
## Uni-Directional Resilient Seats

Uni-Directional Resilient seated valves provide drip tight shutoff by utilizing gate wedges and system pressure to push the gate into the seat.



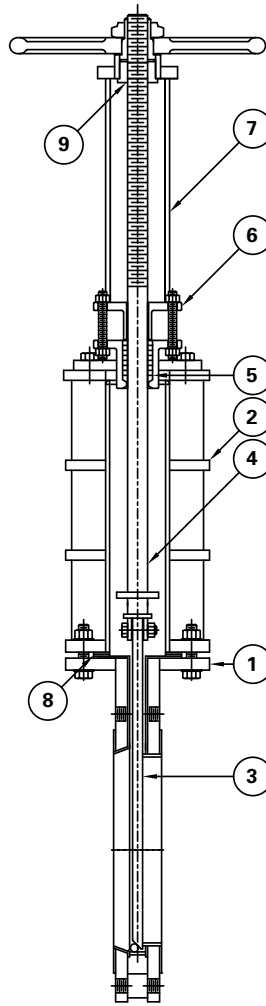
## Bi-Directional Resilient Seats

Bi-Directional Resilient Seats are an option that provides drip-tight shutoff with pressure in either direction.

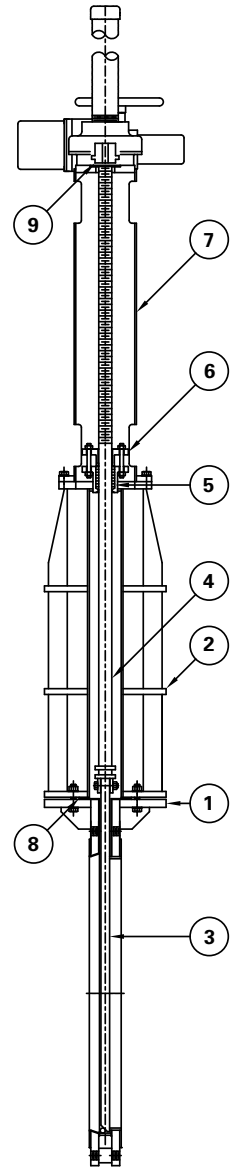


# Materials of Construction

Item	Description	Material
1	Body	Carbon Steel / Stainless Steel
2	Bonnet	Carbon Steel / Stainless Steel
3	Gate	Stainless Steel
4	Stem	Stainless Steel
5	Packing Set	PTFE / Synthetic Fiber
6	Packing Follower	Stainless Steel
7	Yoke	Carbon Steel
8	Bonnet Gasket	Synthetic Fiber
9	Stem Nut	Bronze



2-24"



30" and Larger

## Valve Selection Shut-Off Capabilities

Resilient Seats	Leak tight/drip tight
Metal Seats	Meet MSS-SP81 and TAPPI TIS 405-8

## Pressure Ratings\*

2-24" 50-600mm	150 psi CWP 1030 kPa
30-96" 750-2400mm	50 psi CWP 340 kPa
to 144" to 3600mm	As Specified

\*Additional Pressure Ratings Available

## Temperature Ratings\*\*

2-96" 50-2400mm	400° F 204° C
to 144" 3600mm	As Specified

\*\* Additional temperature ratings are available. The limiting factor in valve selection is the lowest temperature of the packing or seat.

# Valve Selection

## Valve Weights

### Bonneted Valves

Valve Size	Valve with Handwheel	Valve Size	Valve with Handwheel
2" 50mm	50 23	30" 750mm	2500 1135
3" 80mm	65 30	36" 900mm	3400 1543
4" 100mm	85 39	42" 1100mm	4700 2133
6" 150mm	135 62	48" 1200mm	6300 2859
8" 200mm	215 98	54" 1400mm	8100 3676
10" 250mm	320 146	60" 1500mm	10200 4628
12" 300mm	445 202	66" 1700mm	12500 5672
14" 350mm	575 261	72" 1800mm	14800 6716
16" 400mm	735 334	78" 2000mm	17400 7895
18" 450mm	900 409	84" 2100mm	20300 9211
20" 500mm	1110 504	90" 2300mm	23700 10754
24" 600mm	1650 749	96" 2400mm	28400 12886
		to 144" 3600mm	Contact Factory

Pounds  
Kilograms

## Flow Parameters

Valve Size	Metal Seated		Resilient Seated	
	Cv	Port Area in <sup>2</sup>	Cv	Port Area in <sup>2</sup>
2"	250	3.1	250	3.1
3"	570	7.1	570	7.1
4"	1,050	12.6	1,050	12.6
6"	2,460	28.3	2,460	28.3
8"	4,510	50.3	3,700	41.3
10"	7,200	78.5	5,830	63.6
12"	10,700	113.1	8,920	95.0
14"	14,700	153.9	12,200	127.7
16"	19,200	201.1	15,700	165.1
18"	24,200	254.5	20,400	213.8
20"	30,300	314.2	25,900	268.8
22"	36,600	380.1	31,800	330.1
24"	44,100	452.4	38,800	397.6
30"	69,900	706.9	60,900	615.8
36"	102,000	1017.9	91,000	907.9
42"	139,000	1385.4	126,000	1256.6
48"	182,000	1809.6	167,000	1661.9
54"	230,000	2290.2	213,000	2123.7
60"	284,000	2827.4	265,000	2642.1
66"	343,000	3421.2	323,000	3217.0
72"	408,000	4071.5	386,000	3848.5
78"	479,000	4778.4	455,000	4536.5
84"	555,000	5541.8	529,000	5281.0
90"	638,000	6361.7	603,000	6013.2
96"	725,000	7238.2	688,000	6866.1
to 144"	Contact Factory			

Cv = Flow in GPM of water at 1 psi pressure drop.

## Ordering

To order, simply complete the valve order code from information shown. An ordering example is shown for your reference.

<b>Valve Brand</b> <b>Give valve brand code as follows:</b> H = Hilton
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<b>Options</b> <b>Give options code as follows:</b> B = Bonnet
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<b>Valve Type</b> <b>Give valve type code as follows:</b> 2 = Knife Gate Valve
<b>Body Style</b> <b>Give body style code as follows:</b> 0 = Wafer Body - Lugged 4 = Extended Flange 6 = Extended Flange - ANSI
<b>Seat Type</b> <b>Give seat type code as follows:</b> 0 = Metal 1 = Resilient, Uni-Directional 2 = Resilient, Bi-directional

<b>Materials of Construction</b> <b>Give options code as follows:</b> T304 = Carbon Steel Construction with Type 304 Stainless Steel wetted parts as standard ST304 = Solid Type 304 Stainless Steel Construction
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### Ordering Example:

H-200-B-T304

Contact DeZURIK for information on ordering additional options, surfacing and coatings.

# Dimensions\*

## H-200B Bonneted Knife Gate Valves

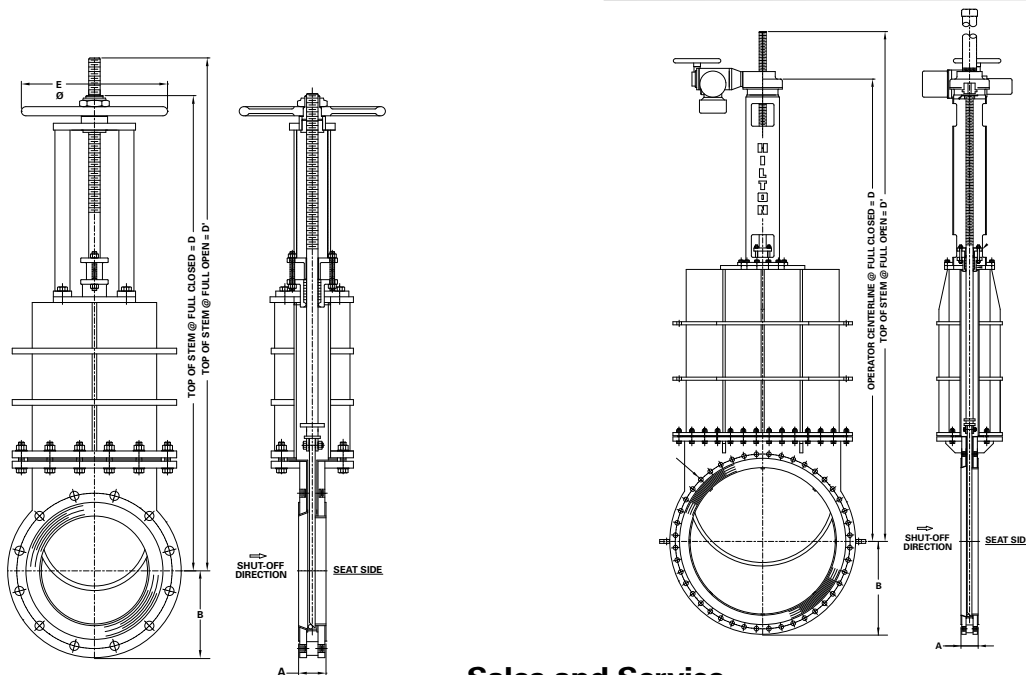
### 2-24" (50-600mm) Valves

Valve Size	A	B	D	D'	E
2" 50mm	1.88 48	3.00 76	20.50 521	23.50 597	8.00 203
3" 80mm	2.00 51	3.75 95	23.50 597	27.50 699	10.00 254
4" 100mm	2.00 51	4.50 114	27.00 686	32.00 813	10.00 254
6" 150mm	2.25 57	5.50 140	32.50 826	39.50 1003	12.00 305
8" 200mm	2.75 70	6.75 171	38.50 978	47.50 1207	14.00 356
10" 250mm	2.75 70	8.00 203	44.00 1118	55.00 1397	14.00 356
12" 300mm	3.00 76	9.50 241	50.50 1283	63.50 1613	16.00 406
14" 350mm	3.00 76	10.50 267	56.50 1435	71.50 1816	18.00 457
16" 400mm	3.50 89	11.75 298	63.00 1600	80.00 2032	18.00 457
18" 450mm	3.50 89	12.50 318	69.50 1765	88.50 2248	24.00 610
20" 500mm	4.50 114	13.75 349	75.50 1918	96.50 2451	24.00 610
24" 600mm	4.50 114	16.00 406	89.50 2273	114.50 2908	24.00 610

Inches  
Millimeters

### 30-144" (750-3600mm) Valves

Valve Size	A	B	D	D'
30" 750mm	4.50 114	19.38 492	101.00 2565	132.00 3353
36" 900mm	5.00 127	23.00 584	115.00 2921	152.00 3861
42" 1100mm	5.00 127	26.50 673	130.00 3302	173.00 4394
48" 1200mm	5.50 140	29.75 756	148.00 3759	197.00 5004
54" 1400mm	7.00 178	33.13 841	166.00 4216	221.00 5613
60" 1500mm	7.50 191	36.50 927	184.00 4674	245.00 6223
66" 1700mm	8.00 203	40.00 1016	202.00 5131	269.00 6833
72" 1800mm	8.50 216	43.25 1099	220.00 5588	293.00 7442
78" 2000mm	9.00 229	46.50 1181	239.00 6071	318.00 8077
84" 2100mm	9.00 229	49.88 1267	258.00 6553	343.00 8712
90" 2300mm	9.50 241	53.25 1353	278.00 7061	369.00 9373
96" 2400mm	10.00 254	56.63 1438	298.00 7569	395.00 10033
to 144" 3600mm	Contact Factory			



### 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)

Hilton Valve Direct Line: 425-883-7000



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