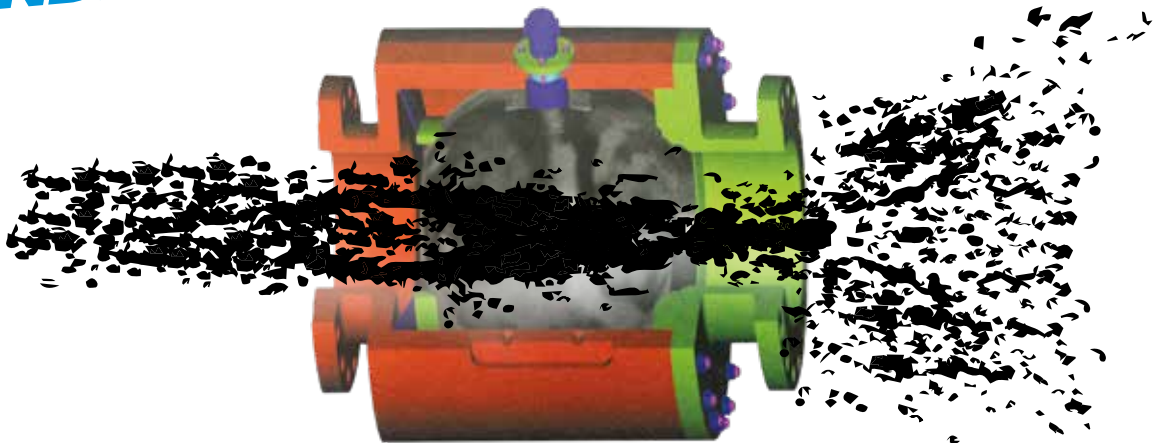


# VALVTRON TITAN SEVERE SERVICE BALL VALVE

MANUFACTURED IN SOUTH AFRICA



**“SIMPLY  
INDESTRUCTIBLE”**



Address: 272 Bath Street Glasgow G2 4JR Cell: +44 (0) 776348 8809; Land: +44 (0) 1369 760423;  
Email: [john@afvalves.co.uk](mailto:john@afvalves.co.uk) Web: [www.afvalves.co.uk](http://www.afvalves.co.uk)

## Valvtron Titan Severe Service Ball Valve

For the most abrasive applications and High temperatures



- Full or Reduced Port
- ANSI Class 150 to 2500
- Sizes 25 to 400mm
- Side Mounting Actuator Pad
- Flanged to any Standard or Butt Weld
- 'D' Port Ball for Control Application

The Valvtron Metal Seated Ball Valve is simply the best answer for the most severe applications, and will outlast other abrasion resistant valve.

It has a simple Rugged design with only 9 components

1. Body
2. Seat End
3. Stem
4. Ball
5. Spring Guide
6. Spring
7. Body Gasket
8. Gland Flange
9. Packing

All these components have been designed to ensure extended trouble free service

### **BODY**

- Forged material
- Rigid Actuator Mounting Pad
- End connections to suit Customer Piping
- Non Standard face to face dimensions easily accommodated

### **SEAT END**

- Integral seat. No possibility of particles behind the seat
- Large range of Hard Facing materials to suit most applications
- HVOF coatings have high Bond strength
- Excellent Thermal expansion Capability
- Non-Porous up to 5 times harder than Stellite 6
- Low Coefficient of friction



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## For the most abrasive applications and High temperatures

### STEM

- Large section heavy duty stem
- Design ensures no side loads
- Torsion resistant materials
- Hardened for long leak-free service
- Same stem & ball center lines prevents camming & side loads

### BALL

- Hardened, ground & lapped to achieve tight shut-off (Zero Leakage)
- Large diameter with full port as standard
- Large diameter also allows full depth stem engagement

### BALL GUIDE

- Hardened & lapped to ensure long service life
- Static Spring force once assembled
- Body seat & guide hard coated & lapped to same standard
- Ensures precise ball to seat alignment at all times

### SPRING

- Manufactured from material suitable for temperatures up to 600°C
- Deflected to obtain desired seating force on assembly
- Ensures that Ball & Seat are always in seating contact
- Static spring force in normal conditions
- Can allow for unexpected thermal expansion

### BODY GASKET

- All metal body gasket spiral wound
- Self energized
- Pressure seal
- Re-usable
- Fire Resistant
- Optional leak detection port and secondary gasket

### GLAND FLANGE

- Precision machined and hardened to provide additional stem support
- Optional Live-loading ensures compliance with fugitive emission requirements.

### GLAND PACKING

- Graphite or Graphoil rings with anti-extrusion bull rings
- Optional Lantern ring & Leak Detection Port

- No Side loads
- Precision machined stuffing box & hardened and polished stem.

### SEATING MATERIALS

The following choices are available

#### Chromium Carbide

- Hardness 1100 Vickers
- Cr Carbide Ni Chrome Matrix
- Good Corrosion resistance and suitable for temperatures up to 600°C

Suitable for

- HP Steam and Condensate (Flashing) Boiler Down Load
- Catalyst withdrawel

#### Tungsten Carbide

- Hardness 1300 Vickers
- Excellent abrasion resistance
- Good corrosion resistance
- Temperatures up to 450°C

Suitable for

- Hydrocarbons
- Flyash
- Severe abrasion – heavy metals etc

#### Alumina Ceramic

- Hardness 1300 Vickers
- Chemically Inert up to 2000C
- Non-Permeable
- Good wear resistance

Suitable for

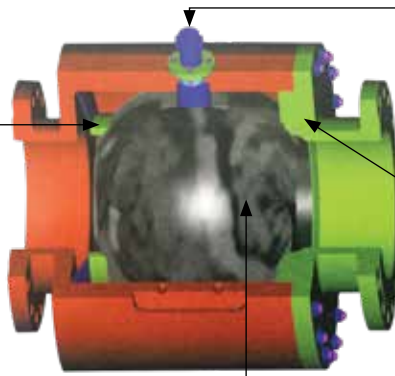
- Corrosive & Acidic Mining Slurries

#### Amorphous Metal Alloy

- Hardness 1400 Vickers
- Maximum Abrasion resistance
- Maximum Corrosion resistance
- Low Coefficient of friction
- Suitable up to 450°C

Suitable for Chemical Slurries

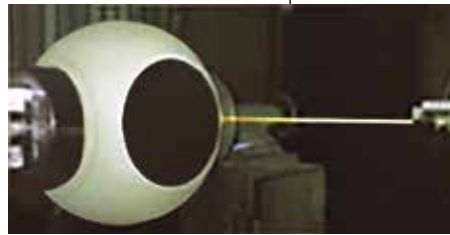




Multiple actuation options are available, including pneumatic, electro-pneumatic and manual (gearbox) Electric, Hydraulic.



Heavy duty disc spring eliminates ingress of medium between ball and seat.



HVOF ball and seat coatings with superior ground finishes ensure smooth, low torque operation.



Integral hard faced body seat ground and lapped ensures positive sealing and eliminates seat gasket leakage.

On the right is a picture of balls after grinding to a mirror finish prior to lapping to the body seat.

Valves tested in accordance with API 598 with zero leakage on every valve.



VALVE SIZE (NPS)	LIQUID TEST (DROPS PER MINUTE)	GAS TEST (BUBBLES PER MINUTE)
25 - 150MM	3	6
200 - 300MM	6	10

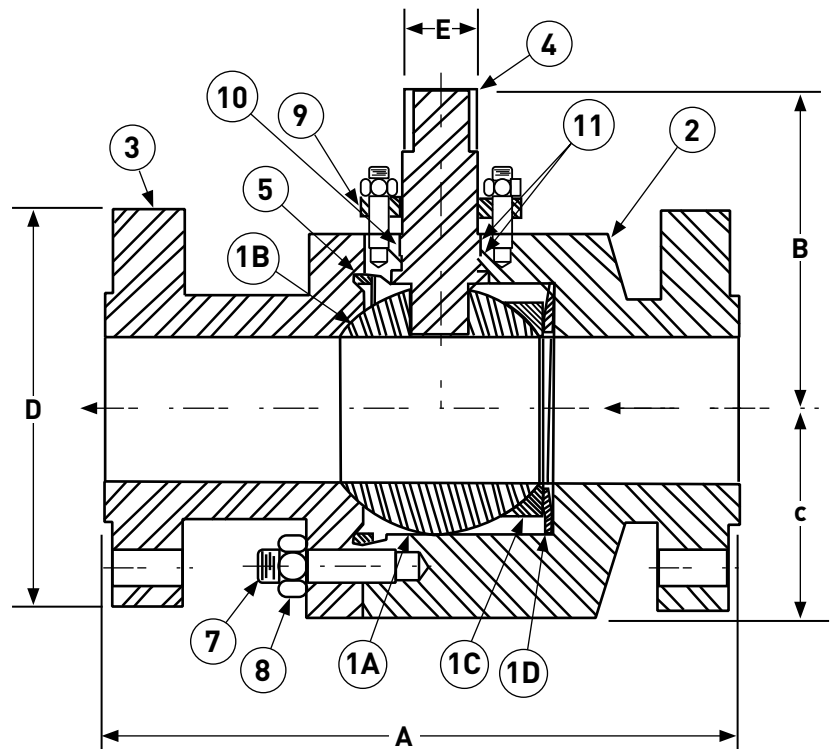
The ratings in the hardness comparison table (seen below) range from 450 to 1400 Vickers. For chemical and abrasion resistance, please refer your enquiries to us. A cross section of our available ball and seat hardening materials are listed in comparative chart below.

MATERIAL REF	CHEMICAL COMPOSITION	HARDNESS-VICKERS	TYPICAL PROPERTIES
Stellite 6	Co-Cr-Ni-C	450	Good resistance to Thermal Shock and High Temperature Oxidation Resistance
MSvlam H624	WC-Co	1300	High Hardness combined with Good Abrasion Resistance
MSvlam H654	WC-Co-Cr	1200	Good Combination of Wear and Corrosion Resistance
MSvlam H834	Cr <sub>3</sub> C <sub>2</sub> -MNiCr	1100	Very Corrosion and High Temperature Resistance up to 850°C
MSvlam C604	Cr <sub>2</sub> O <sub>3</sub>	1300	Wear Resistance Ceramic, Insoluble in most Chemicals up to 200°C
MSvlam M310	Amorphous Metal Alloy	1200 - 1400	Maximum Abrasion & Corrosion Resistance

# ENGINEERING DIMENSIONS - RF & RTJ - FULL PORT

These products are designed to meet the requirements of all applicable ANSI, API, and ASTM standards.

Item	Description
1A	Ball
1B	Seat
1C	Guide
1D	Disc Spring
2	Body
3	End piece with integral seat
4	Stem
5	Body Gasket
7	Body Stud
8	Body Nut
9	Gland Ring
10	Grafoil Ring
11	Anti-extrusion packing rings



## ANSI 150/300

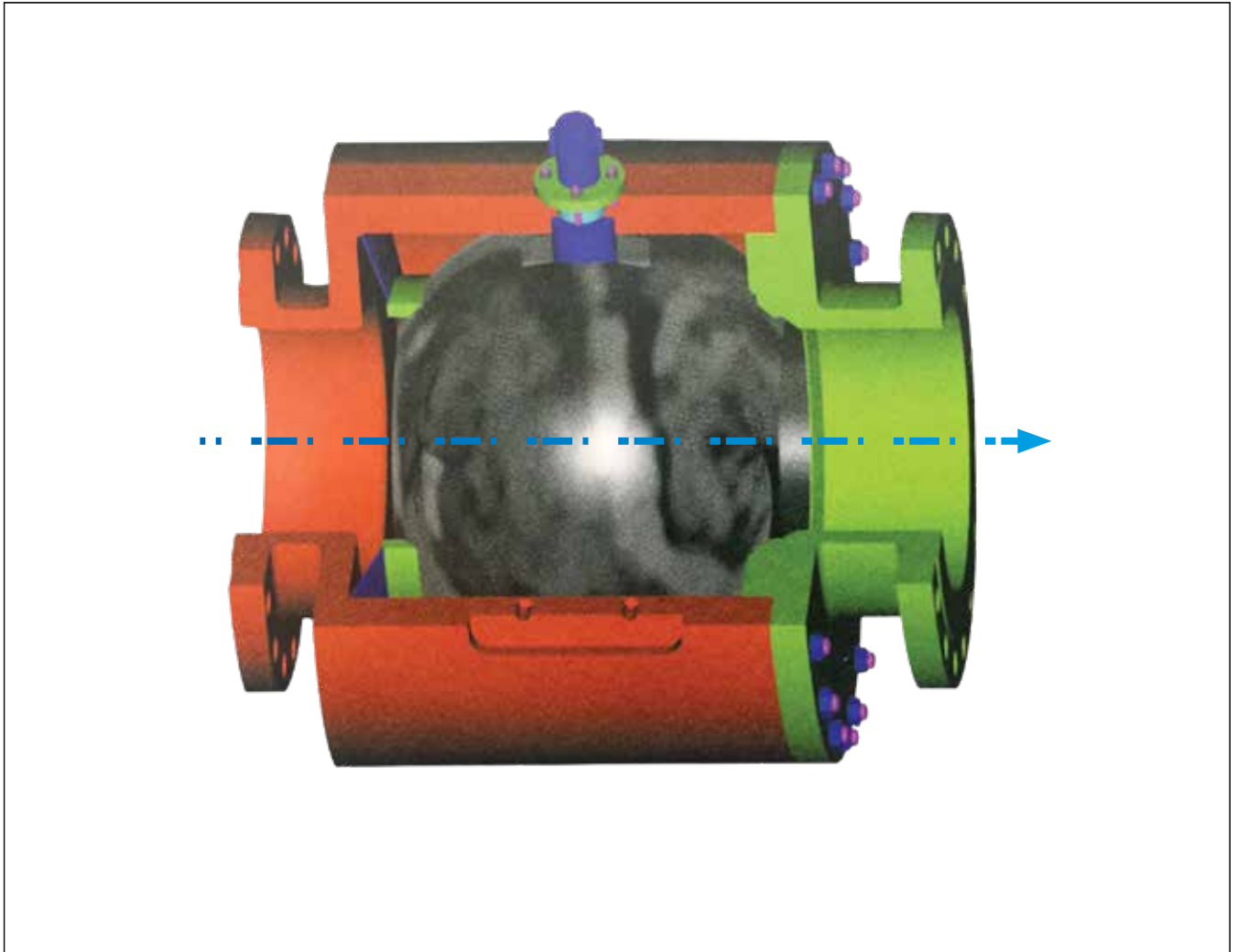
Nom. Size	Bore	A RF	A RTJ	B	C	D 150	D 300	E
15	15	140	151	48	44		95	16
20	20	152	165	54	44		117	16
25	25	165	178	70	57		124	19
40	40	191	203	102	70		156	25
50	50	216	232	111	83		165	25
65	65	242	257	171	108		191	38
80	80	282	298	187	121		210	38
100	100	305	321	238	127		254	51
125	125	381	397	286	171	254	279	51
150	150	403	419	343	171	279	318	64
200	200	502	518	438	216	343	381	76
250	250	568	584	467	267	406	445	102
300	300	648	664	521	305	483	521	127
350	337	762	778	578	337	533	584	152
400	394	838	854	667	375	597	648	203
450	438	914	930	797	432	635	711	229
500	489	991	1010	826	483	699	775	254
600	591	1143	1165	880	521	813	914	279

## ANSI 600

Nom. Size	Bore	A RF	A RTJ	B	C	D	E
15	13	165	165	48	44	95	17
20	13	191	191	48	44	117	17
25	19	216	216	54	44	124	17
40	25	241	241	70	60	156	19
50	38	292	295	102	70	165	25
65	51	330	333	111	83	191	25
75	51	356	359	111	83	210	25
100	76	432	435	187	121	273	38
125	102	508	511	238	143	330	51
150	102	559	562	238	143	356	51
200	152	660	664	343	191	419	64
250	203	787	791	435	232	508	89
300	254	838	841	467	273	559	102
350	305	889	892	521	324	603	127
400	337	991	994	578	356	686	152
450	387	1092	1095	667	413	743	203
500	438	1194	1200	797	508	813	229
600	489	1397	1407	826	568	940	254

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### COMPARISON WITH OTHER MS BALL VALVES

#### TITAN METAL SEATED BALL VALVE

- Only 9 Components
- **Two moving Parts**
- Integral Seat
- Metal Pressure Seal Body Gasket
- ISO Standardised Actuator Mounting
- Forged Materials
- Local Repair Facilities

#### COMPETITORS METAL SEATED BALL VALVE

- 20 + Components
- Loose Insert Seal
- Normally Spiral Wound Body Gasket
- Non Standard Actuator Brackets
- Mainly Cast Materials
- No Repair Facilities in South Africa



# Valvtron Titan Severe Service Ball Valve

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## APPLICATIONS - PETROCHEMICAL

- FCCU Slurries & Pump Isolation
- FCCU Emergency Isolation
- L.P. & H.P. Steam Isolation & Drain
- Catalyst Handling
- Gaseous Helium & Hydrogen Service
- Ash & Catalyst Slurries
- Visbreaker Heat Exchanger & Filter Isolation
- Pump Isolation

## APPLICATIONS - DELAYED COKER

- Overhead Vapour
- Quench Water
- Cutting Water
- L.P. & H.P. Steam Diverter & Isolation
- Quench Oil Filter
- Coal Slurry Handling
- Diverter & Switching

## APPLICATIONS - MINING

- Backfill & Tailings Isolation
- Slurry Transfer Isolation
- Turbine By-Pass & Isolation
- Heavy Metal Pump Isolation
- HP Dewatering Pump Isolation
- Deep Level Mud Column Drains
- 3-Way Diverter Valves

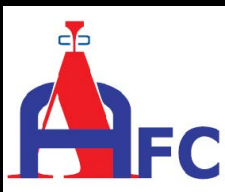
## APPLICATIONS - POWER GENERATION

- Steam Isolation - Saturated & Superheated
- Feedwater Isolation
- HP Ash & Coal Slurry Handling
- HP Turbine Drains & Vents
- Front Wall Drains
- Continuous & Intermittent Blowdown
- Sootblower Isolation
- Steam & Mud Drum Drains & Vents

## APPLICATIONS - PULP & PAPER

- Green Liquor
- Black Liquor
- Batch Digester Blow
- Gas & Steam Venting
- Pocket Valves
- Continuous Blow Control





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**[Alpine Flow Control UK Limited](#)**

Address: 272 Bath Street Glasgow G2 4JR Cell: +44  
(0) 776348 8809; Land: +44 (0) 1369 760423; Email:  
john@afcvalves.co.uk; Web: www.afcvalves.co.uk

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