

 **APV-LLK-2**

**DELATITE™ VALVES**



*“Not Just Tight Shut Off.....Very Tight Shut Off!”*

**The Latest Technology in Severe Service Ball Valves**

- **Zero Leakage**
- **High Pressure**
- **High Temperature**
- **Metal Seated**
- **Repairable**

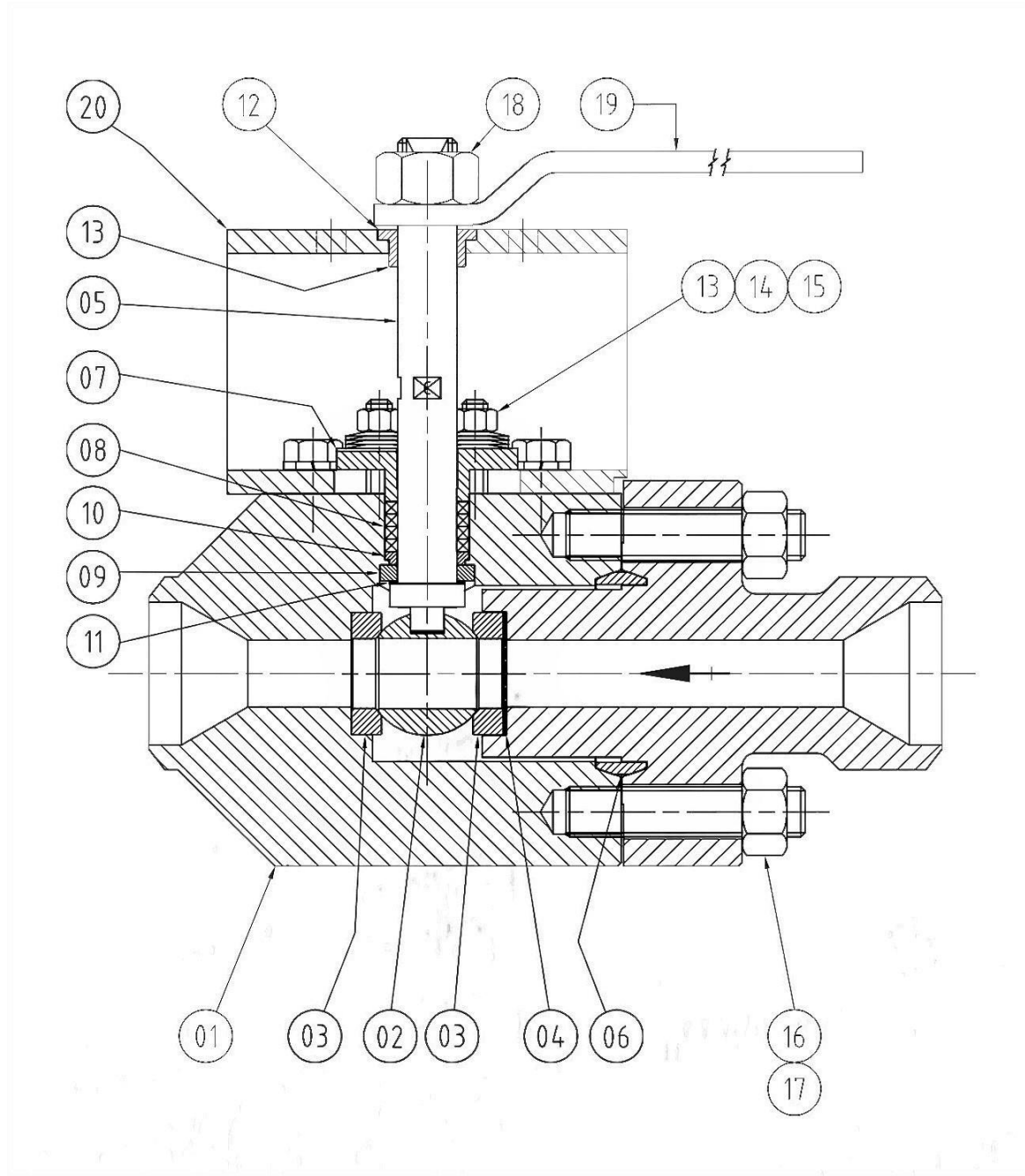
## **Model APV-LLK-2 Metal Seated Ball Valves**

- Demanding
- High Pressure
- High Temperature
- Power Industry

### **Typical Applications:**

- Turbine Drains
- Boiler Drains
- Super Heater Drains
- Feed Water Drains
- Steam Drum Vents
- Water Column Block Valves
- Boiler Vents
- Spray Water
- Continuous Blow-Down
- Valve Bypass
- Main Steam Start-Up
- Turbine Vents
- Main Isolation Valves
- Super Heater Vents

# The Latest Technology in High Pressure Ball Valves



## Bill of Materials

<i>Item</i>	<i>Description</i>	<i>Material</i>
1	Body	A182-F22 or A182-F316
2	Ball	431SS Coating (LLK 1906)
3	Seat	431SS Coating (LLK 1906)
4	Spring	Inconel 718
5	Stem	431SS
6	Body Gasket	AS2637-1986-630
7	Packing Flange	316SS
8	Packing	Graphite SS Reinforced
9	Split Ring Retainer	630 SS
10	Packing Support Ring	316 SS
11	Thrust Washer	Inconel 718
12	Upper Stem Bearing	431SS
13	Live Load Spring	17-4PH
14	Packing Gland Stud	A193-GR8
15	Packing Gland Nut	A194-GR.4H
16	Body Stud	A193 GR B8
17	Body Nut	A194 GR B8
18	Handle Nut	A194-GR.4H
19	Handle	Carbon Steel
20	Bracket	Carbon Steel

<i>Item</i>	<i>Description</i>	<i>Material</i>
1	Body	A105
2	Ball	431SS Coating (LLK 1906)
3	Seat	431SS Coating (LLK 1906)
4	Spring	Inconel 718
5	Stem	431SS
6	Body Gasket	AS2637-1986-630
7	Packing Flange	316SS
8	Packing	Graphite SS Reinforced
9	Split Ring Retainer	630 SS
10	Packing Support Ring	316 SS
11	Thrust Washer	Inconel 718
12	Upper Stem Bearing	431SS
13	Live Load Spring	17-4PH
14	Packing Gland Stud	A193-GR8
15	Packing Gland Nut	A194-GR.4H
16	Body Stud	A193 GR B8
17	Body Nut	A194 GR B8
18	Handle Nut	A194-GR.4H
19	Handle	Carbon Steel
20	Bracket	Carbon Steel

## 3200# Pressure & Temperature Ratings

Material A105 - Class 3200 #			
Temperature		Pressure	
Deg C	Deg F	kPa	PSI
-29	-20	54475	7901
93	200	49622	7197
149	300	48263	7000
204	400	46609	6760
232	450	45326	6574
260	500	44037	6387
288	550	41824	6066
316	600	39562	5738
343	650	39493	5728
371	700	39183	5683
399	750	37066	5376
427	800	30261	4389
454	850	19671	2853
482	900	12611	1829
510	950	7577	1099
538	1000	3785	549
566	1050		
573	1064		
582	1080		
593	1100		
621	1150		
649	1200		

Material A182 F22 - Class 3200 #			
Temperature		Pressure	
Deg C	Deg F	kPa	PSI
-29	-20	55158	8000
93	200	55158	8000
149	300	53558	7768
204	400	51904	7528
232	450	50380	7307
260	500	48870	7088
288	550	46678	6770
316	600	44478	6451
343	650	43140	6257
371	700	41755	6056
399	750	39086	5669
427	800	37321	5413
454	850	35818	5195
482	900	33040	4792
510	950	27765	4027
538	1000	19174	2781
566	1050	12873	1867
573	1064	11528	1672
582	1080	9991	1449
593	1100	8074	1171
621	1150	5054	733
649	1200	3013	437

Material A182 F316 - Class 3200 #			
Temperature		Pressure	
Deg C	Deg F	kPa	PSI
-29 to 38	-20 to 100	52841	7664
93	200	45443	6591
149	300	41044	5953
204	400	37701	5468
260	500	35053	5084
316	600	33116	4803
343	650	32585	4726
371	700	31702	4598
399	750	30999	4496
427	800	30475	4420
454	850	29475	4275
482	900	28889	4190
510	950	28358	4113
538	1000	26676	3869
566	1050	26421	3832
593	1100	23649	3430
621	1150	20133	2920
649	1200	15100	2190
677	1250	13341	1935
704	1300	10087	1463
732	1350	7570	1098
760	1400	5543	804
788	1450	4275	620
816	1500	3041	441

Material Pressure – Temperature Ratings per ASME/ANSI B16-34-1988; Standard Class Interpolated Ratings

A105 is not recommended for prolonged use above 427 Deg C (800 Deg F).

A182 F22 is not recommended for prolonged use above 593 Deg C (1100 Deg F).

## 1500# Pressure & Temperature Ratings

Class 1500 #		Material					
		A105		A182 F22		A182 F316	
Temperature		Pressure					
Deg C	Deg F	kPa	PSI	kPa	PSI	kPa	PSI
-29 to 38	-20 to 100	25545	3705	25855	3750	24821	3600
93	200	23270	3375	24683	3580	21339	3095
149	300	22615	3280	23339	3385	19271	2795
204	400	21856	3170	22339	3240	17720	2570
260	500	20650	2995	22063	3200	16478	2390
316	600	18857	2735	20857	3025	15548	2255
343	650	18512	2685	20271	2940	15306	2220
371	700	18375	2665	19581	2840	14893	2160
399	750	17375	2520	18340	2660	14548	2110
427	800	14203	2060	17513	2540	14307	2075
454	850	9239	1340	16789	2435	13996	2030
482	900	5929	860	15479	2245	13583	1970
510	950	3551	515	12997	1885	13307	1930
538	1000	1793	260	9239	1340	12548	1820
566	1050			6860	995	12411	1800
593	1100			3896	565	11101	1610
621	1150			3551	515	9446	1370
649	1200			1896	275	7102	1030
677	1250					6274	910
704	1300					4723	685
732	1350					3551	515
760	1400					2620	380
788	1450					1999	290
816	1500					1413	205

Material pressure - temperature ratings per ASME/ANSI B16-34-1988;

A-105 is not recommended for prolonged use above 427 Deg C (800 Deg F).

A182 F22 is not recommended for prolonged use above 593 Deg C (1100 Deg F).

## 4500# Pressure & Temperature Ratings

Class 4500 #		Material					
		A105		A182 F22		A182 F316	
Temperature		Pressure					
Deg C	Deg F	kPa	PSI	kPa	PSI	kPa	PSI
-29 to 38	-20 to 100	76601	11110	77566	11250	74463	10800
93	200	69775	10120	74050	10740	64052	9290
149	300	67879	9845	69982	10150	57847	8390
204	400	65535	9505	67017	9720	53124	7705
260	500	61915	8980	66845	9695	49401	7165
316	600	56606	8210	62535	9070	46678	6770
343	650	55537	8055	60846	8825	45919	6660
371	700	55089	7990	58709	8515	44678	6480
399	750	52124	7560	54951	7970	43678	6335
427	800	42541	6170	52469	7610	42954	6230
454	850	27648	4010	50366	7305	41955	6085
482	900	17720	2570	46471	6740	40714	5905
510	950	10652	1545	39024	5660	39955	5795
538	1000	5309	770	27648	4010	37576	5450
566	1050			20581	2985	37232	5400
593	1100			11721	1700	33336	4835
621	1150			10652	1545	28372	4115
649	1200			5688	825	21270	3085
677	1250					18788	2725
704	1300					14203	2060
732	1350					10652	1545
760	1400					7791	1130
788	1450					6033	875
816	1500					4275	620

Material pressure - temperature ratings per ASME/ANSI B16-34- 1988;  
Standard Class Interpolated Ratings

A-105 is not recommended for prolonged use above 427 Deg C (800 Deg F).

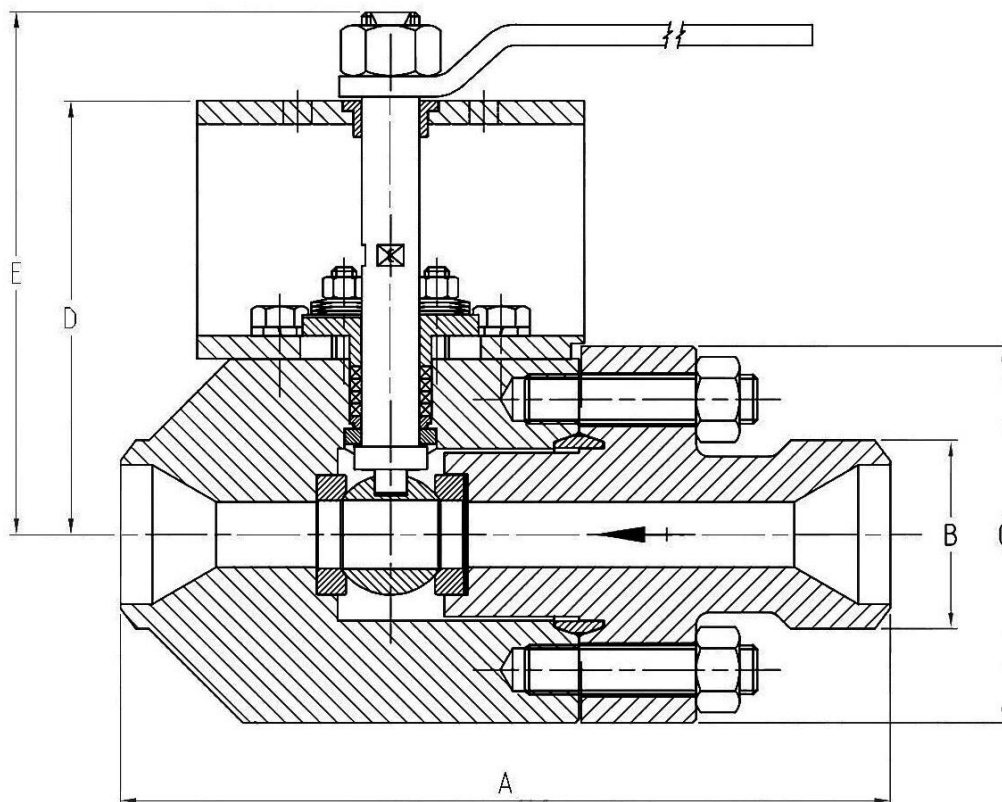
A182 F22 is not recommended for prolonged use above 593 Deg C (1100 Deg F).

## Features

- Rating: ANSI 3200# for all valves
- 3 Basic Valve Sizes to cover 1/2" - 4" Valves
- End Connections
- Butt Weld, Socket Weld, Threaded, Flanged and Special End Connections
- Sealing Surfaces Coated with Carbide (Coating applied using the latest HVOF Technology)
- Blow-out Proof Stem
- Forged Body
- Seat Faces are outside the Flow Path.
- Repairable (Replaceable Seats and Trim)
- Valves are available in Special Alloys
- Four Packing Rings, 2 x Woven, 2 x Solid
- All Valves have a unique Serial Number
- Material Certificates for all pressure containing parts are Supplied and Maintained
- Seat leakage Test
- Conform to MSS SP.61
- Valve can be Fitted with Pneumatic Hydraulic and Electric Actuators, Lever Operators and Gear Operators
- Repair Facilities are Available



## Dimensional Data



Nominal Size		(mm)					End Connections	Bore Size
(mm)	(inches)	A	B	C	D	E		(mm)
13	0.5	206	49	114	127	148	SW, BW, NPT, Flanged	17
20	0.75	206	49	114	127	148	SW, BW, NPT, Flanged	17
25	1.0	206	49	114	127	148	SW, BW, NPT, Flanged	17
32	1.25	206	49	114	127	148	SW, BW, NPT, Flanged	17
38	1.5	206	49	114	127	148	SW, BW, NPT, Flanged	17
*50	2	279	73	146	168	192	SW, BW, NPT, Flanged	25
*65	2.5	279	73	146	168	192	BW, Flanged	25
80	3	258	114	178	185	220	BW, Flanged	40
100	4	258	114	178	185	220	BW, Flanged	40

\* Note: Socket weld option add 25mm to dimension A

## Extension Bonnets

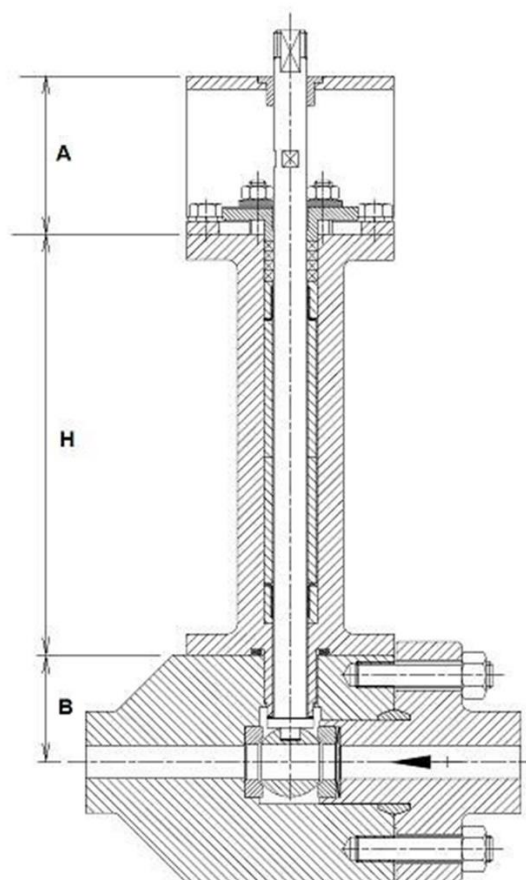
The Extension bonnet protects the packing from excess heat or excess cold, as high or low temperatures may affect the performance of the packing which in turn may reduce the performance of the valve. Extended bonnets are normally constructed from the same material as the valve body.

Valve Size	H	A	B
15 – 40mm (0.5-1.5")	200mm (7.9")	75mm (3.0")	51mm (2")
50 – 65mm (2 - 2.5")	265mm (10.4")	100mm (4.0")	68mm (2.7")
80 – 100mm (3 – 4")	320mm (12.6")	100mm (4.0")	84mm (3.3")

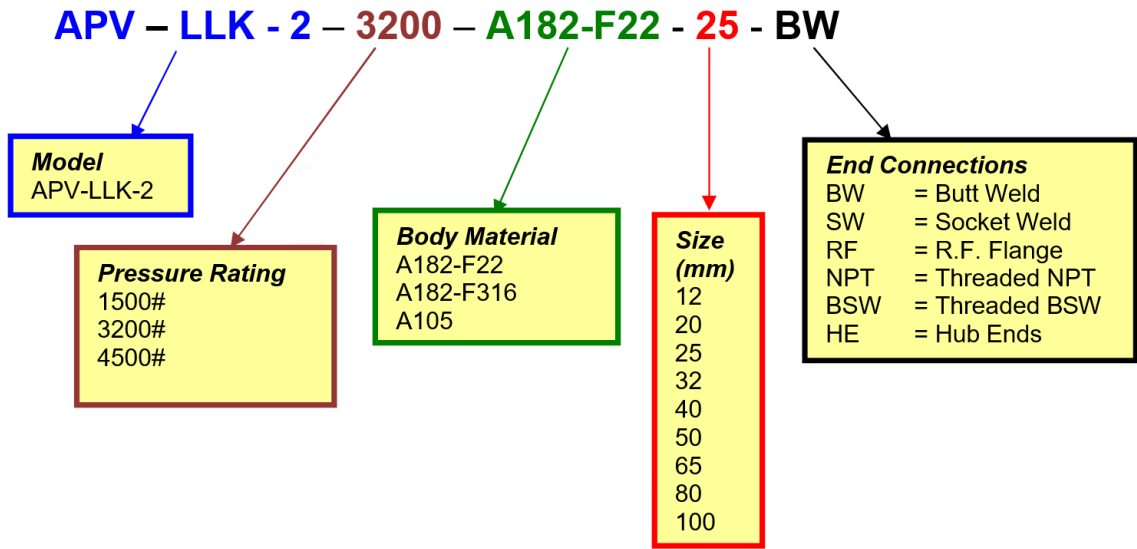
	A105	A182 F22	A182 F316
<b>Temperature Limits</b>	-30 to 427 °C -22 to 800 °F	-30 to 649 °C -22 to 1200 °F	-100 to 816 °C -148 to 1500 °F

### Packing

Graphite    2 x Woven 2 x Solid  
PTFE        Vee Rings



## Valve Model – Coding Number



Delatite Valves are dedicated to providing High Quality Products of Superior Design which are all supported by excellent customer service. Delatite are Committed to solving Severe Service Valve problems in today's industries.

Total Quality Management is our Commitment to our Customers. We go out of our way to understand the Customers' needs and to provide solutions which meet or exceed our customers' needs.

This commitment is carried across all departments of the company. Including;

- Sales
- Engineering
- Product Development

This Commits Delatite to ongoing quality and performance improvements to meet our customer's needs.

We aim to meet our Customers' Needs First Time and on Time. Valves have been designed to meet the ASME B16-34 Standards for Valves. Valve are Tested to conform with MSS SP.61.

Delatite Valves are accredited to ISO 9001 : 2015. For Design and Manufacture of Valves.

Repair facilities are ISO 9001 : 2015.

Certificate No AU 1807.

Pressure test equipment is calibrated, traceable & Certified by NATA LAB.



A batch of APV-LLK ball valves being prepared for shipment to customer.

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Delatite Valves are continually improving the performance of their range of valves. Information in this brochure is subject to change without notice.

For further information or verification please contact your Delatite Valve Representative.

**Manufactured in Australia by:**

**Authorised Distributor**

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