



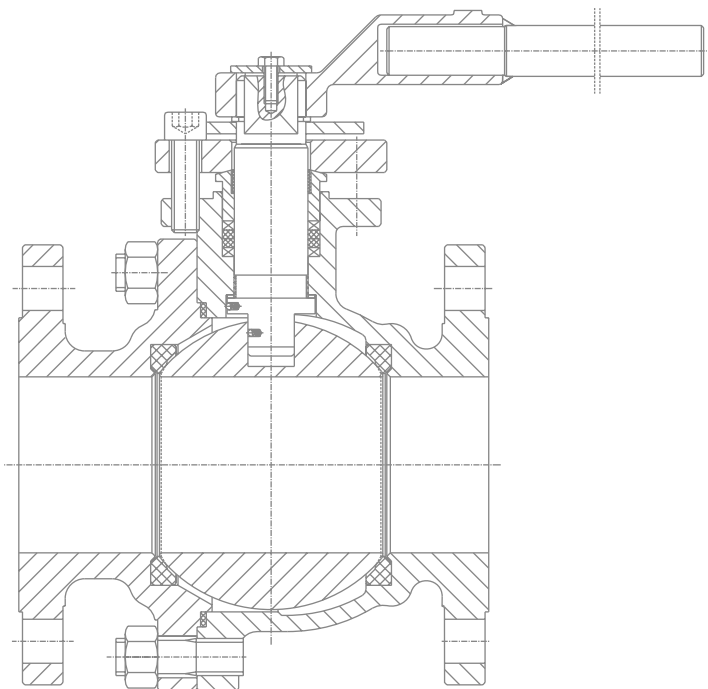
# RANGLER

VALVE AMERICA

API 6D 2 PIECE FLOATING  
BALL VALVE

ASME CLASS 150 - 600#

  
3  
300  
WGB  
600#  
CS



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# RANGER

VALVE AMERICA

Ranger Valve America Ltd. (Ranger™) is a specialized supplier of API 6D, API 600, API 6A and API 16C valves and flow control components, including industrial valves and wellhead equipment.

Ranger™ works with its partners to expand its customer base with an unwavering commitment to client needs. Ranger strives to exceed expectations.

Ranger™ valves are certified by ISO 9001, ISO 14001, OHSAS 18001, API Q1, API 6D, API 600, API 6A, ATEX, CE/PED, API 6A-PR2 and API 607.

Ranger™ works to provide a rigorous research and development program aimed at product design, innovation and validation. Ranger™ uses a full spectrum of inspection and test equipment to ensure that all products meet or exceed the quality standards, including:

- Mechanical: tensile, impact and hardness testing;
- NDE: PT, MT, UT
- Chemical: PMI
- Fugitive emission
- Shell type acceptance test(TAT).

As well, Ranger™ simulates various tests in critical and crucial working conditions to verify product performance.



# FEATURES

The Ranger™ series of 2 piece floating ball valves have been engineered to meet both general service and heavy duty applications including petroleum, petro-chemical, and industrial. Ranger's valves are designed in accordance with API 6D and CSA Z245.15, they are available in a variety of configurations and materials to meet your specific operational needs. Combined with our 24/48 month extended warranty, Ranger™ valves not only meet but exceed industry standards.

## KEY DESIGN COMPONENTS

### Unique Seat Design

- Wide flexible seat provides positive seal in both low and high pressure conditions.
- Self-relieving seat is standard and is designed and tested to provide automatic internal cavity relief.
- Standard seat is RPTFE in Class 150 and 300
- Devlon V API in Class 600
- Other materials are available on request

### Firesafe Designed and Tested

- In the event of a fire, the ball will be forced to the downstream machined metal lip and create a metal-to-metal seat seal. The graphite body seal and graphite stem seal provide a positive seal even after a fire.

### Blowout Proof Stem

- The stem is inserted during assembly from the inside of the bore and a shoulder on the stem ensures positive stem retention.
- The shoulder of the stem slides against a RPTFE thrust washer to provide low operating torque.

### Adjustable Stem Packing

- Graphite stem packing is adjustable in the field. Packing is self-lubricating and is replaceable.

### Locking Devices

- Both lever operated and gear operated valves are provided with locking devices and travel stops that are independent of the stem packing adjustment bolts.

### O-Ring Free Design

- The seal design allows the valve to be O-Ring free which can extend the valve upper and lower temperature range.
- O-Ring free design reduces media compatibility concerns by one component.

### Double Anti-static Stem

- Valve design includes anti-static devices from both the ball-to-stem and the stem-to-body to ensure electrical continuity through the valve.

### NACE Compatible

- Standard valves meet NACE MR 0175 and ISO 15156.



# PRODUCT RANGE API 6D FP AND RP

Size	ANSI 150	ANSI 300	ANSI 600
1/2"	●	●	●
3/4"	●	●	●
1"	●	●	●
1 1/2"	●	●	●
2"	●	●	●
3"	●	●	●
4"	●	●	●
6"	●	●	
8"	●	●	
10"	●		

## DESIGN & TEST STANDARDS

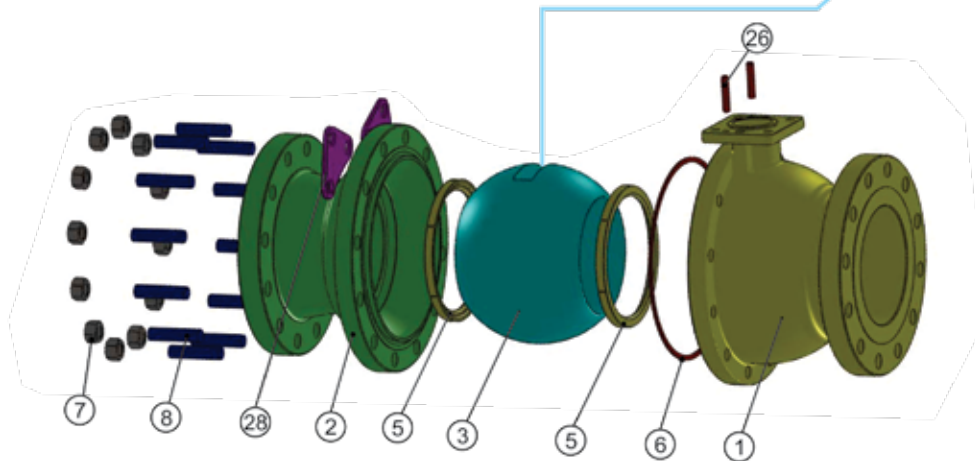
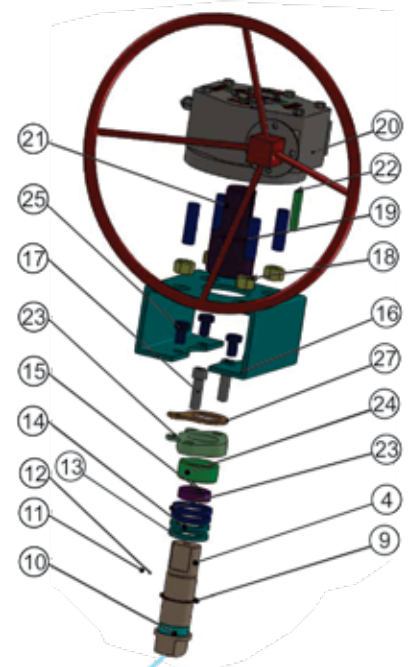
DESIGN	API 6D, CSA Z245.15, API 608, ISO 17292, CSA B51
PRESSURE/TEMPERATURE	ASME B16.34
FACE-TO-FACE	ASME B16.10
END FLANGES	ASME B16.5
FIRESAFE	API 607
SOUR SERVICE	NACE MR0175/ISO 15156
TOP FLANGE	ISO 5211
INSPECTION	API 598
TESTING	API 6D, CSA Z245.15 (Includes High and Low Pressure Air Seat Test)
MARKING	MSS SP-25, API 6D, CSAZ245.15
QUALITY	MSS SP-55
DOCUMENTATION	BS EN 10204-3.1
REGISTRATION	CRN IN PLACE FOR CANADA

# CROSS SECTIONAL DRAWING & BOM

(Available in standard and low-temperature materials)

## GEAR OPERATED

NO.	NAME	ENP TRIM	SS316 TRIM
1	BODY	A352 LCC	A352 LCC
2	END CAP	A352 LCC	A352 LCC
3	BALL	A350 LF2 CL 1+0.075mm ENP	A182 F316
4	STEM	A350 LF2 CL 1+0.075mm ENP	A182 F316
5	SEAT	RPTFE(15%~20% CF)	RPTFE(15%~20% CF)
6	FIRE SAFE GASKET	GRAPHITE+316SS	GRAPHITE+316SS
7	NUT	A194 7M	A194 7M
8	STUD	A320 L7M	A320 L7M
9	THRUST WASHER	RPTFE	RPTFE
10	BEARING	PTFE	PTFE
11	ANTISTATIC BALL	A276 316	A276 316
12	ANTISTATIC SPRING	A276 316	A276 316
13	FIRE SAFE PACKING	GRAPHITE+316SS	GRAPHITE+316SS
14	FIRE SAFE PACKING	GRAPHITE	GRAPHITE
15	BEARING	PTFE	PTFE
16	MOUNTING BRACKET	A36	A36
17	ALLEN HEAD BOLT	A320 L7M	A320 L7M
18	NUT	A194 7M	A194 7M
19	STUD	A320 L7M	A320 L7M
20	GEAR OPERATOR	ASSEMBLY	ASSEMBLY
21	GEAR OPERATOR DRIVE COUPLING	A29 4135+ENP	A29 4135+ENP
22	KEY	AISI 1045	AISI 1045
23	PACKING GLAND FLANGE	A320 LCC	A320 LCC
24	PACKING GLAND RING	A276 304	A276 304
25	HEX HEAD BOLT	A320 L7M	A320 L7M
26	POSITION STOP PIN	AISI 1035	AISI 1035
27	LIMIT STOP PLATE	A36+ENP	A36+ENP
28	LIFTING LUGS	A36	A36

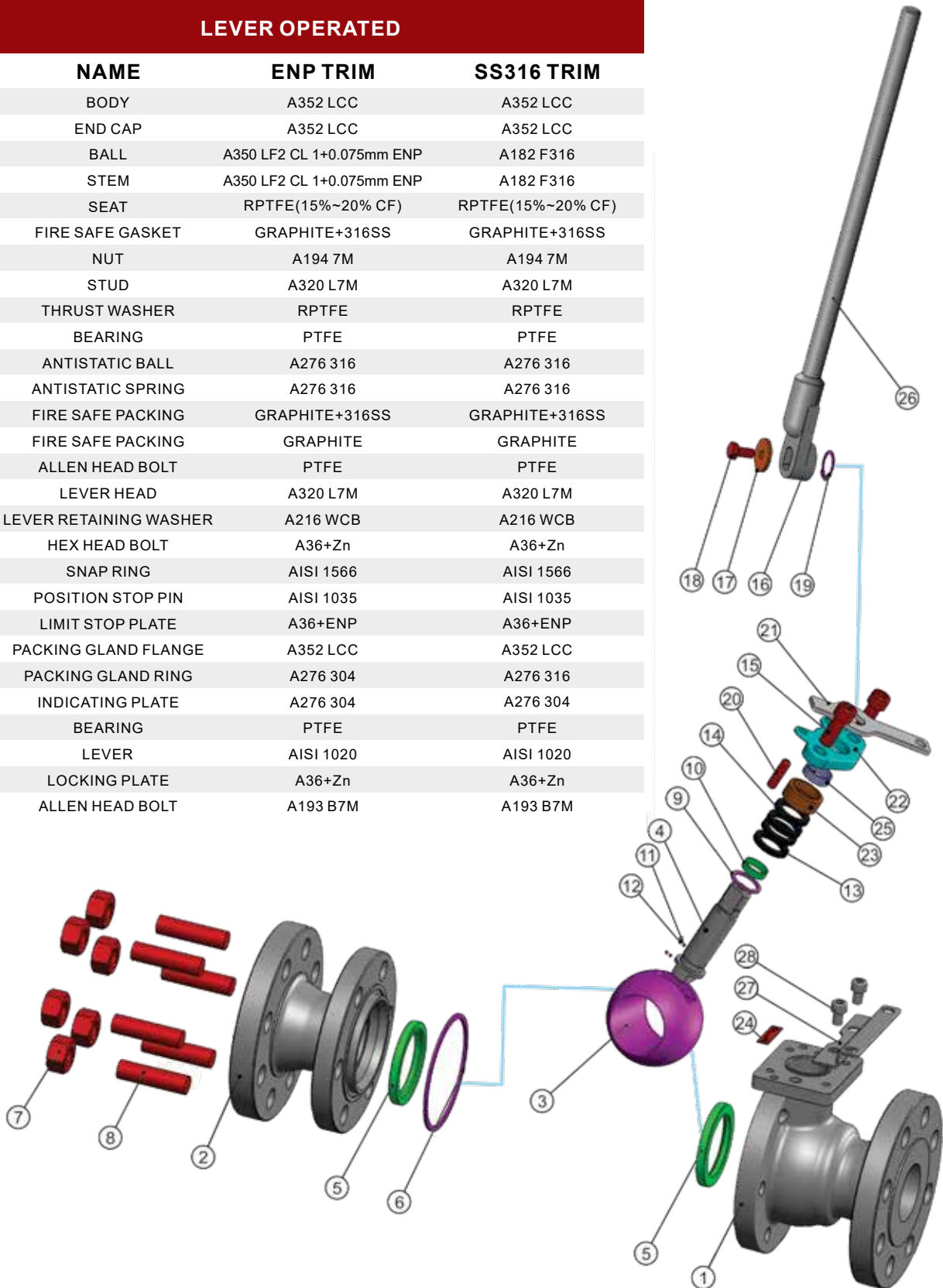


# CROSS SECTIONAL DRAWING & BOM

(Available in standard and low-temperature materials)

## LEVER OPERATED

NO.	NAME	ENP TRIM	SS316 TRIM
1	BODY	A352 LCC	A352 LCC
2	END CAP	A352 LCC	A352 LCC
3	BALL	A350 LF2 CL 1+0.075mm ENP	A182 F316
4	STEM	A350 LF2 CL 1+0.075mm ENP	A182 F316
5	SEAT	RPTFE(15%~20% CF)	RPTFE(15%~20% CF)
6	FIRE SAFE GASKET	GRAPHITE+316SS	GRAPHITE+316SS
7	NUT	A194 7M	A194 7M
8	STUD	A320 L7M	A320 L7M
9	THRUST WASHER	RPTFE	RPTFE
10	BEARING	PTFE	PTFE
11	ANTISTATIC BALL	A276 316	A276 316
12	ANTISTATIC SPRING	A276 316	A276 316
13	FIRE SAFE PACKING	GRAPHITE+316SS	GRAPHITE+316SS
14	FIRE SAFE PACKING	GRAPHITE	GRAPHITE
15	ALLEN HEAD BOLT	PTFE	PTFE
16	LEVER HEAD	A320 L7M	A320 L7M
17	LEVER RETAINING WASHER	A216 WCB	A216 WCB
18	HEX HEAD BOLT	A36+Zn	A36+Zn
19	SNAP RING	AISI 1566	AISI 1566
20	POSITION STOP PIN	AISI 1035	AISI 1035
21	LIMIT STOP PLATE	A36+ENP	A36+ENP
22	PACKING GLAND FLANGE	A352 LCC	A352 LCC
23	PACKING GLAND RING	A276 304	A276 316
24	INDICATING PLATE	A276 304	A276 304
25	BEARING	PTFE	PTFE
26	LEVER	AISI 1020	AISI 1020
27	LOCKING PLATE	A36+Zn	A36+Zn
28	ALLEN HEAD BOLT	A193 B7M	A193 B7M



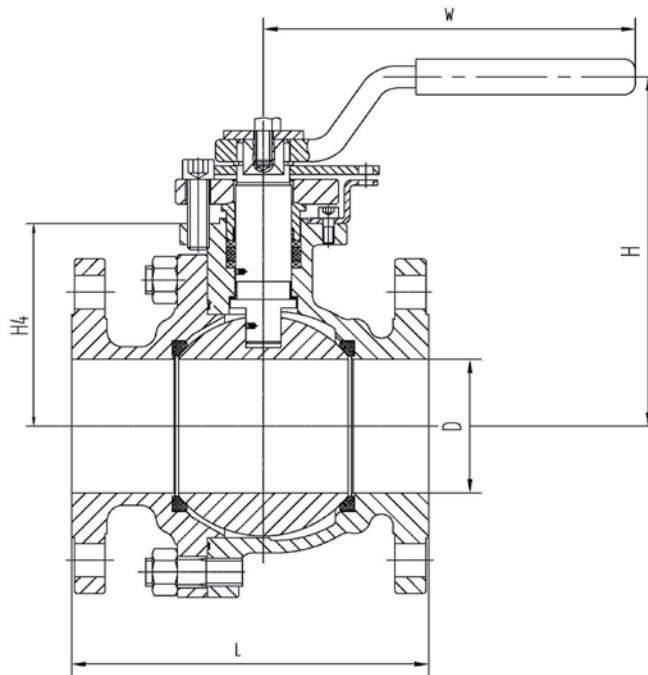
# SIZES, DIMENSIONS AND WEIGHTS

## 1/2" TO 1 1/2" FULL PORT, LEVER OPERATED

SIZE	D-FULL PORT	ASME CLASS 150		SIZE IN INCHES, DIMENSIONS IN INCHES			WEIGHT (POUNDS)
		L	H	H	4	W	
1/2	0.59	4.25	3.23	1.57	5.91	6	
3/4	0.75	4.61	3.54	1.54	5.91	7	
1	0.98	5.00	3.94	1.81	5.91	13	
1 1/2	1.50	6.50	4.33	2.56	11.81	16	

SIZE	D-FULL PORT	ASME CLASS 300		SIZE IN INCHES, DIMENSIONS IN INCHES			WEIGHT (POUNDS)
		L	H	H	4	W	
1/2	0.59	5.51	3.27	1.54	5.91	6	
3/4	0.75	5.98	3.54	1.54	5.91	8	
1	0.98	6.50	3.94	1.81	5.91	13	
1 1/2	1.50	7.48	4.33	2.56	11.81	23	

SIZE	D-FULL PORT	ASME CLASS 600		SIZE IN INCHES, DIMENSIONS IN INCHES			WEIGHT (POUNDS)
		L	H	H	4	W	
1/2	0.59	6.5	3.31	1.50	5.91	6	
3/4	0.75	7.48	3.54	1.54	5.91	12	
1	0.98	8.50	3.66	1.81	5.91	16	
1 1/2	1.50	9.49	5.28	2.60	15.75	30	





# SIZES, DIMENSIONS AND WEIGHTS

## 2" TO 10" FULL PORT, LEVER OR GEAR OPERATED

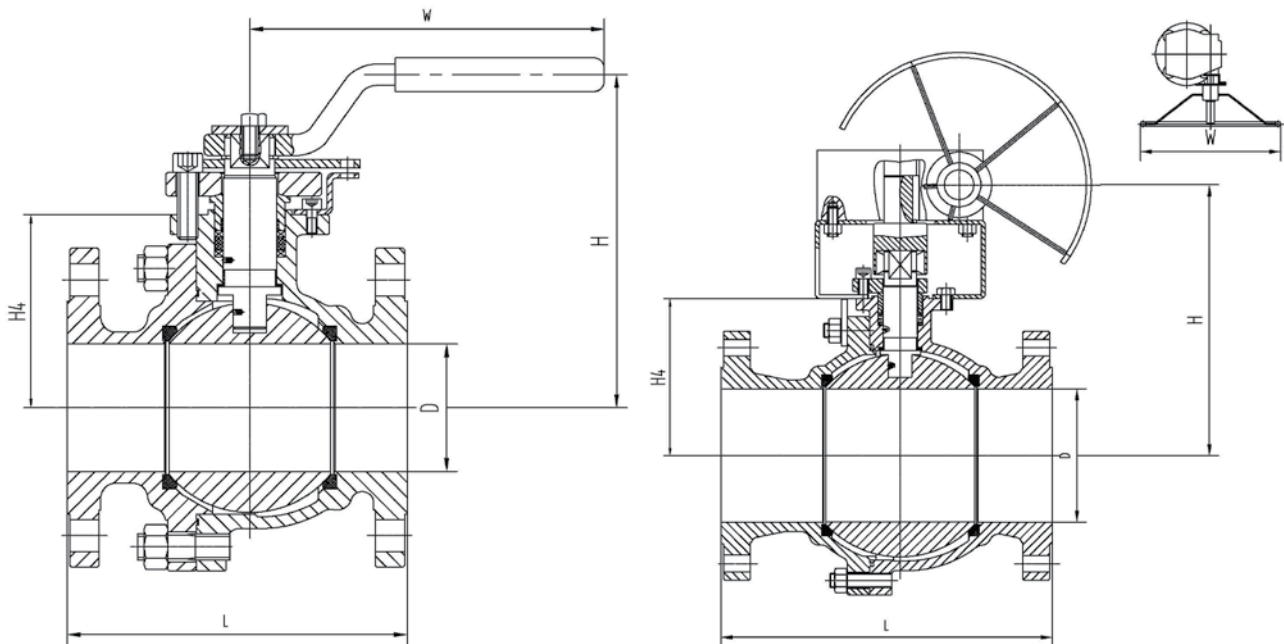
ASME CLASS 150							
SIZE	D-FULL PORT	SIZE IN INCHES, DIMENSIONS IN INCHES			WEIGHT (POUNDS)		
		L	H	H 4	W		
2	1.97	7.01	5.31	3.31	11.81	22	
3	2.95	7.99	6.93	4.53	15.75	44	
4	3.94	9.02	7.72	5.31	18.11	78	
6	5.94	15.51	13.90	7.56	18.11	212	
8	7.95	17.99	16.18	9.45	23.62	364	
10	9.92	20.98	18.31	11.42	23.62	551	

ASME CLASS 300							
SIZE	D-FULL PORT	SIZE IN INCHES, DIMENSIONS IN INCHES			WEIGHT (POUNDS)		
		L	H	H 4	W		
2	1.97	8.50	5.31	3.50	15.75	35	
3	2.95	11.10	6.93	4.53	21.65	80	
4	3.94	12.01	7.72	5.31	23.62	132	
6	5.94	15.87	13.90	7.52	18.31	260	
8	7.95	19.76	16.18	9.45	23.62	520	

ASME CLASS 600							
SIZE	D-FULL PORT	SIZE IN INCHES, DIMENSIONS IN INCHES			WEIGHT (POUNDS)		
		L	H	H 4	W		
2	1.97	11.50	5.31	3.39	21.65	49	
3	2.95	14.02	7.20	4.80	27.56	88	
4	3.94	17.01	11.02	6.06	33.46	177	



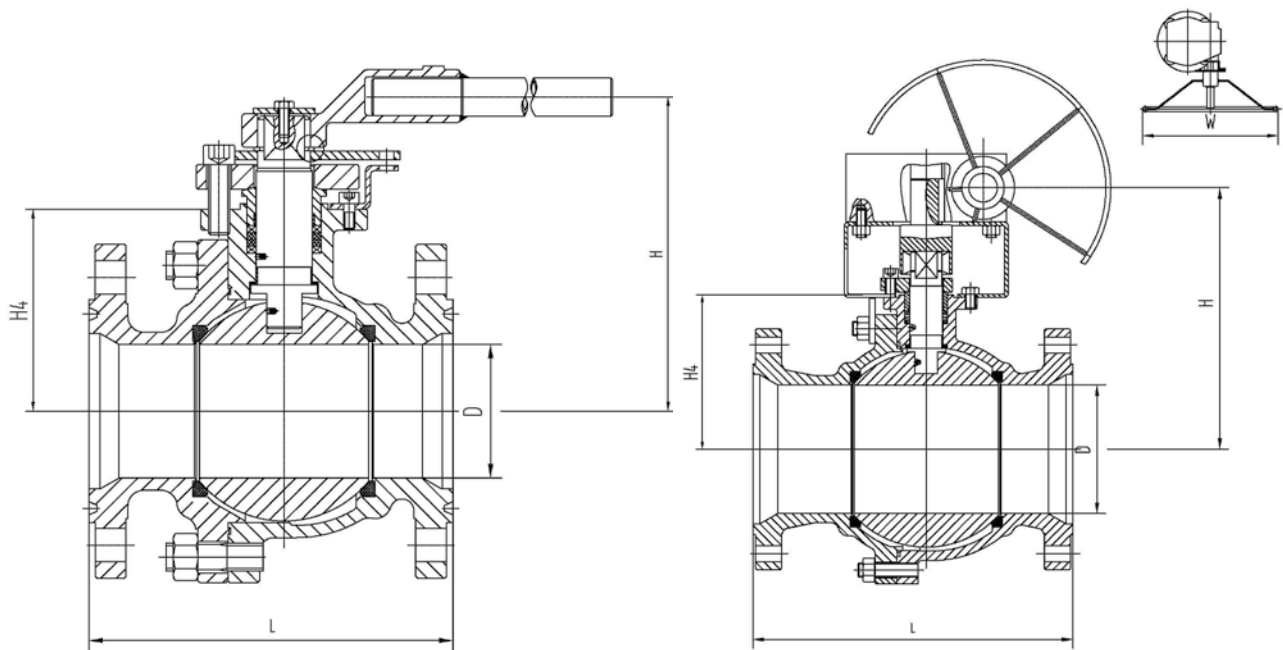
# SIZES, DIMENSIONS AND WEIGHTS

## 2" TO 10" REDUCED PORT, LEVER OR GEAR OPERATED

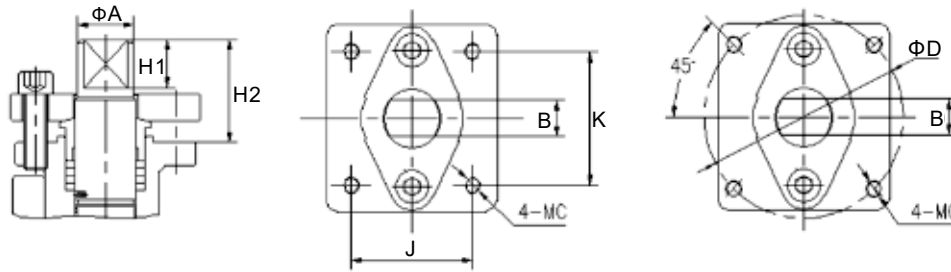
SIZE	D-REDUCED PORT	ASME CLASS 150		SIZE IN INCHES, DIMENSIONS IN INCHES			WEIGHT (POUNDS)
		L	H	H	4	W	
2X1 1/2"	1.50	7.01	4.57	2.56		11.81	21
3X2"	1.97	7.99	5.31	3.31		11.81	10
4X3"	2.95	9.02	6.93	4.53		15.75	77
6X4"	3.94	15.51	7.72	5.31		18.11	132
8X6"	5.94	17.99	10.08	7.56		18.11	265
10X8"	7.95	20.98	16.18	9.45		23.62	320

SIZE	D-REDUCED PORT	ASME CLASS 300		SIZE IN INCHES, DIMENSIONS IN INCHES			WEIGHT (POUNDS)
		L	H	H	4	W	
2X1 1/2"	1.50	8.50	4.57	2.56		11.81	33
3X2"	1.97	11.10	5.31	3.50		15.75	69
4X3"	2.95	12.01	6.93	4.53		21.65	126
6X4"	3.94	15.87	7.72	5.31		23.62	183
8X6"	5.94	19.76	13.90	7.52		18.31	421

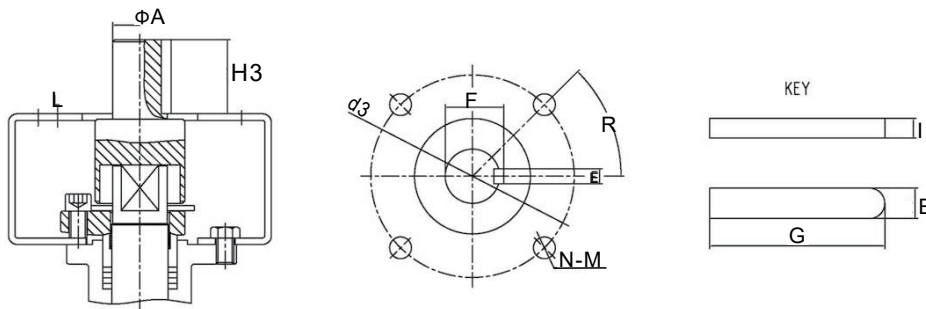
SIZE	D-REDUCED PORT	ASME CLASS 600		SIZE IN INCHES, DIMENSIONS IN INCHES			WEIGHT (POUNDS)
		L	H	H	4	W	
2X1 1/2"	1.50	11.50	4.61	2.60		15.75	40
3X2"	1.97	14.02	5.31	3.39		21.65	77
4X3"	2.95	17.01	7.20	4.80		27.56	121
6X4"	3.94	22.01	11.02	6.06		33.46	234



# TOPWORKS DIMENSIONS



NPS 1/2" - 1" CLASS 150-600 NPS 1 1/2" - 4" CLASS 150-600



NPS 6" - 10" CLASS 150, 6" - 8" CLASS 300

## ASME CLASS 150

SIZE IN INCHES DIMENSIONS IN INCHES

NPS	A	B	C	D	E	F	G	H1	H2	H3	I	J	K	ISO	d3	N-M	L	R
1/2"	0.47	0.31	4-M6					0.30	0.71			1.22	1.22					
3/4"	0.47	0.31	4-M6					0.33	0.81			0.98	1.85					
1"	0.47	0.31	4-M6					0.35	0.89			1.14	2.09					
1 1/2"	0.79	0.55	4-M8	2.76				0.79	1.57					F07				45°
2X1 1/2"	0.79	0.55	4-M8	2.76				0.79	1.57					F07				45°
2"	0.79	0.55	4-M8	2.76				0.87	1.57					F07				45°
3X2"	0.79	0.55	4-M8	2.76				0.87	1.57					F07				45°
3"	1.18	0.79	4-M10	4.02				0.94	2.09					F10				45°
4X3"	1.18	0.79	4-M10	4.02				0.94	2.09					F10				45°
4"	1.18	0.79	4-M10	4.02				0.94	2.09					F10				45°
6X4"	1.18	0.79	4-M10	4.02				0.94	2.09					F10				45°
6"	1.57				0.47	1.69	2.17			2.28	0.31			F12	4.92	4-Φ14	0.24	45°
8X6"	1.57				0.47	1.69	2.17			2.28	0.31			F12	4.92	4-Φ14	0.24	45°
8"	1.97				0.55	2.11	2.76			2.81	0.35			F14	5.51	4-Φ18	0.31	45°
10X8"	1.97				0.55	2.11	2.76			2.81	0.35			F14	5.51	4-Φ18	0.31	45°
10"	1.97				0.55	2.11	2.76			2.60	0.35			F14	5.51	4-Φ18	0.31	45°

# TOPWORKS DIMENSIONS

ASME CLASS 300													SIZE IN INCHES DIMENSIONS IN INCHES					
NPS	A	B	C	D	E	F	G	H1	H2	H3	I	J	K	ISO	d3	N-M	L	R
1/2"	0.47	0.31	4-M6					0.33	0.81			0.98	1.85					
3/4"	0.47	0.31	4-M6					0.33	0.81			0.98	1.85					
1"	0.47	0.31	4-M6					0.35	0.89			1.14	2.09					
1 1/2"	0.79	0.55	4-M8	2.76				0.79	1.57					F07				45°
2X1 1/2"	0.79	0.55	4-M8	2.76				0.79	1.57					F07				45°
2"	0.79	0.55	4-M8	2.76				0.83	1.54					F07				45°
3X2"	0.79	0.55	4-M8	2.76				0.83	1.54					F07				45°
3"	1.18	0.79	4-M10	4.02				0.94	2.09					F10				45°
4X3"	1.18	0.79	4-M10	4.02				0.94	2.09					F10				45°
4"	1.18	0.79	4-M10	4.02				0.94	2.09					F10				45°
6X4"	1.18	0.79	4-M10	4.02				0.94	2.09					F10				45°
6"	1.57				0.47	1.69	2.17			2.28	0.31			F12	4.92	4-Φ14	0.24	45°
8X6"	1.57				0.47	1.69	2.17			2.28	0.31			F12	4.92	4-Φ14	0.24	45°
8"	1.97				0.55	2.11	2.76			2.81	0.35			F14	5.51	4-Φ18	0.31	45°

ASME CLASS 600													SIZE IN INCHES DIMENSIONS IN INCHES					
NPS	A	B	C	D	E	F	G	H1	H2	H3	I	J	K	ISO	d3	N-M	L	R
1/2"	0.47	0.31	4-M6					0.33	0.77			0.98	1.85					
3/4"	0.47	0.31	4-M6					0.33	0.77			0.98	1.85					
1"	0.47	0.31	4-M6					0.33	0.89			1.14	2.09					
1 1/2"	0.79	0.55	4-M8	2.76				0.81	1.54					F07				45°
2X1 1/2"	0.79	0.55	4-M8	2.76				0.81	1.54					F07				45°
2"	0.79	0.55	4-M8	2.76				0.87	1.56					F07				45°
3X2"	0.79	0.55	4-M8	2.76				0.87	1.56					F07				45°
3"	1.18	0.79	4-M10	4.02				0.98	2.03					F10				45°
4X3"	1.18	0.79	4-M10	4.02				0.98	2.03					F10				45°
4"	1.57	1.18	4-M12	4.92				1.48	2.95					F12				45°
6X4"	1.57	1.18	4-M12	4.92				1.48	2.95					F12				45°

# TORQUE VALUES

OPEN TORQUE AT MAX. PRESSURE				UNIT: INCH POUND
BORE SIZE	RPTFE SEAT		NYLON/DEVLON SEAT	
	CLASS 150	CLASS 300	CLASS 600	
1/2"	62	98	124	
3/4"	98	124	178	
1"	124	160	240	
1 1/2"	302	435	648	
2"	400	710	959	
3"	799	1137	2380	
4"	1288	2078	3801	
6"	4796	7593		
8"	8393	15986		
10"	15986			

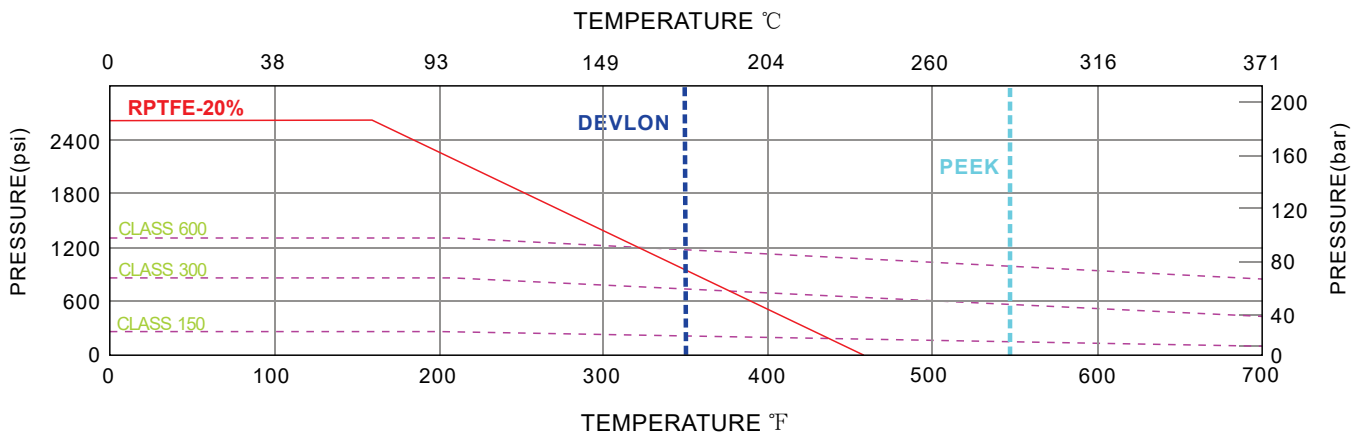
## ADDITIONAL NOTES

1. Torque values above are for new valves in clean water service.
2. Torque values are in inch pound, and excluded a safety factor.
3. Required safety factor is 1.35.
4. For unclean service, an additional safety factor of 30% is required.
5. For dry gas service, an additional safety factor of 50% is required.
6. Torques reflect valve bore, for RP select appropriate bore size.
7. Torques above are based upon standard seat insert offerings. Class 150 & 300: PTFE; Class 600: DEVLON. Consult Ranger™ for torques for different seat materials.

# CV VALUES

FULL BORE				REDUCED BORE			
Size(in)	150#	300#	600#	Size(in)	150#	300#	600#
1/2	46	46	46	2*1 1/2	306	306	306
3/4	97	97	97	3*2	377	377	377
1	168	168	168	4*3	1043	1043	1043
1 1/2	389	389	389	6*4	1587	1587	1587
2	647	647	647	8*6	4364	4364	
3	2086	2086	2086	10*8	7495		
4	2694	2694	2694				
6	6062	6062					
8	10885	10885					
10	17109						

## PRESSURE & TEMPERATURE CHART FOR TYPICAL SEAT & SEAL MATERIALS



Consult ASME 16.34 for specific material pressure/temperature ratings.



# PART NUMBER CONFIGURATION

<b>F</b>	<b>B2</b>	<b>F</b>	<b>30</b>	<b>R</b>	<b>03</b>	<b>N</b>	<b>L</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>A</b>	<b>G</b>
1	2	3	4	5	6	7	8	9	10	11	12	13

1-VALVE TYPE	2-BODY CONSTRUCTION	3-PORT TYPE
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F = Floating	B2 = Bolted 2 piece TE = Top Entry	F = Full Bore R = Reduced Bore
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4-NOMINAL SIZE
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050 = 1/2"	30 = 3"
075 = 3/4"	40 = 4"
10 = 1"	60 = 6"
15 = 1 1/2"	80 = 8"
20 = 2"	100 = 10"
25 = 2 1/2"	120 = 12"

5-CONNECTION	6-PRESSURE	7-SERVICE
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R = RF B = BW J = RTJ	01 = 150 03 = 300 06 = 600	L=Low Temp. NACE N=Regular Temp. NACE A=Corrosive NACE R=Regular Temp. O=Oxygen C=Cryogenic H=High Temp.
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8-TOP WORKS	9-BODY MATERIAL	10-BALL MATERIAL
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G = Gear L = Lever O = Oval Handle B = Bare Stem A = Actuator E = Extended*  *Add "E" to designate extended top works i.e. GE equals extended gear	1 = A216 WCB 2 = A105N 3 = LCC 4 = LF2 5 = CF8M 6 = F316 7 = Duplex 8 = Super Duplex X = Special	1 = A105N+ENP 2 = LF2+ENP 3 = 4140+ENP 4 = F316 5 = F6A 6 = F51 7 = F53 8 = F55 X = Special
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11-STEM MATERIAL	12-SEAT MATERIAL	13-SEAL MATERIAL
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1 = A105N+ENP 2 = LF2+ENP 3 = 4140+ENP 4 = F316 5 = F6A 6 = F51 7 = F53 8 = F55 X = Special	A = RPTFE B = Devlon V C = PEEK D = Nylon E = Delrin F = Metal G = PCTFE 99 = As per service requirements X = Special	G=Graphite 99 = As per service requirements X = Special
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Example valve figure number: FB2F30R03NL111AG  
 Floating bolted 2 piece ball valve, full bore, 3", raised face, 300 ASME, regular temperature NACE, lever operator, A105N body with A105N plus ENP ball, A105N plus ENP stem, and RPTFE seat and graphite seal.

**RANGER**  
VALVE AMERICA