FLOW CONTROL

2 PIECE CAST FLOATING BALL VALVE

Atlas Floater Series

C&C

C&C is a product brand of CNC Flow Control

CONTENTS

ADDITIONAL API 6D OFFERINGS

2 PIECE CAST TRUNNION MOUNTED BALL VALVE

ATLAS SERIES

- Sizes 2” to 12”, ASME Class 150 through 600
- API 6D Monogrammed, ASME B16.34, CSA Z245.15-17
- Compliant with ASME B16.5, B16.10 and ISO 5211
- Fire Safe: API6FA/API 607 7th Edition
- NACE MR0175/ISO 15156-1
- Material Traceability to ASME B31.1
- PED 2014/68/EU Annex III, Module H
- Canadian Registration Number approved
- Fugitive Emissions: API 641

3 PIECE FORGED TRUNNION MOUNTED BALL VALVE

TRIDENT SERIES

- Sizes 2” to 48”, ASME Class 150 through 2500
- Available with DBB, DIB-1, & DIB-2 seat configurations
- DIB-1 inventory can be converted to DIB-2 (conversion kits stocked)
- API 6D Monogrammed, ASME B16.34, CSA Z245.15-17
- Compliant with ASME B16.5, B16.10 and ISO 5211
- Fire Safe: API6FA/API 607 7th Edition
- NACE MR0175/ISO 15156-1
- PED 2014/68/EU Annex III, Module H
- Canadian Registration Number approved
- Material Traceability to ASME B31.1
- Fugitive Emissions: API 641

PISTON CHECK VALVE

GUARDIAN SERIES

- Sizes 2” to 12”, ASME Class 150 through 1500
- API 6D Monogrammed, ASME B16.34, CSA Z245.15-17
- NACE MR0175/ISO 15156-1
- PED 2014/68/EU Annex III, Module H
- Canadian Registration Number approved
- Material Traceability to ASME B31.1

API 6D SWING CHECK VALVES ALSO AVAILABLE

CVA SERIES

2 PIECE CAST FLOATING BALL VALVE

ATLAS FLOATER SERIES

Our C&C branded 2-piece cast floating ball valve is a versatile product capable of use in a wide range of applications. All valves are compliant to API 6D, ASME B16.34, CSA Z245.15-17, NACE MR0175, fire-safe certified to API 607, and low fugitive emissions certified to API 641.

SPECIFICATIONS

- Sizes: 2" - 6"
- ASME Class: 150 - 600
- Full and reduced bore
- Design Temperature:
  - WCB: -20°F to 300°F (-29°C to 150°C)
  - LCC: -50°F to 300°F (-46°C to 150°C)
  - CF8M: -50°F to 300°F (-46°C to 150°C)
- Blowout proof stem
- Anti-static design
- Lockable handle

STANDARDS

- Basic Design:
  - API 6D
  - ASME B16.34
  - CSA Z245.15-19
- End to End: ASME B16.10
- Flanged End: ASME B16.5
- Inspection & Testing: API 6D/CSA Z245.15-17
- Fugitive Emissions Certified to API 641
- Fire Safe Certified to API 607
- NACE MR0175/ISO 15156-1 Compliant

HOW TO ORDER GUIDE

EXAMPLE:

C&C 2” CL 600 2 piece cast full port floating ball valve with raised face end connections, low temperature carbon steel body, stainless steel trim, Devlon® seats, LT HNBR seals, and lockable lever operated is written as 206F2FRL5DHL.

A	B	C	D	E	F	G	H	I	J
2	06	F2	F	R	L	5	D	H	L

A	Size (Inches)
2	2"
3	3"
4	4"
6	6"

B	Pressure Class
01	Class 150
03	Class 300
06	Class 600

C	Valve Type
F2	C&C Atlas Floating Ball Valve

D	Port
F	Full
R	Reduced

E	End Connection
R	RF Flange
J	RTJ Flange

Warning: Metallic materials selected using ANSI/NACE MR0175/ISO 15156 are resistant to cracking in defined H2S containing environments in oil and gas production but not necessarily immune to cracking under all service conditions. It is the equipment user’s responsibility to select materials suitable for the intended service.

F	Body Material	
C	Carbon Steel	ASTM A216 WCB
L	Low Temperature Carbon Steel	ASTM A352 LCC
S	Stainless Steel	ASTM A351 CF8M

G	Trim Material	
5	Stainless Steel	A182 316F Ball & 17-4 PH Stem

H	Seat Material
D	Devlon®
P	PEEK
T	TFM 1600

I	Seal Material
H	LT HNBR 90
V	Viton® GLT 90

J	Operator
B	Bare Stem
L	Lockable Wrench
G	Gear Operator

Viton® is a registered trademark of The Chemours Company.
Devlon® is a registered trademark of Devol Engineering, Ltd.

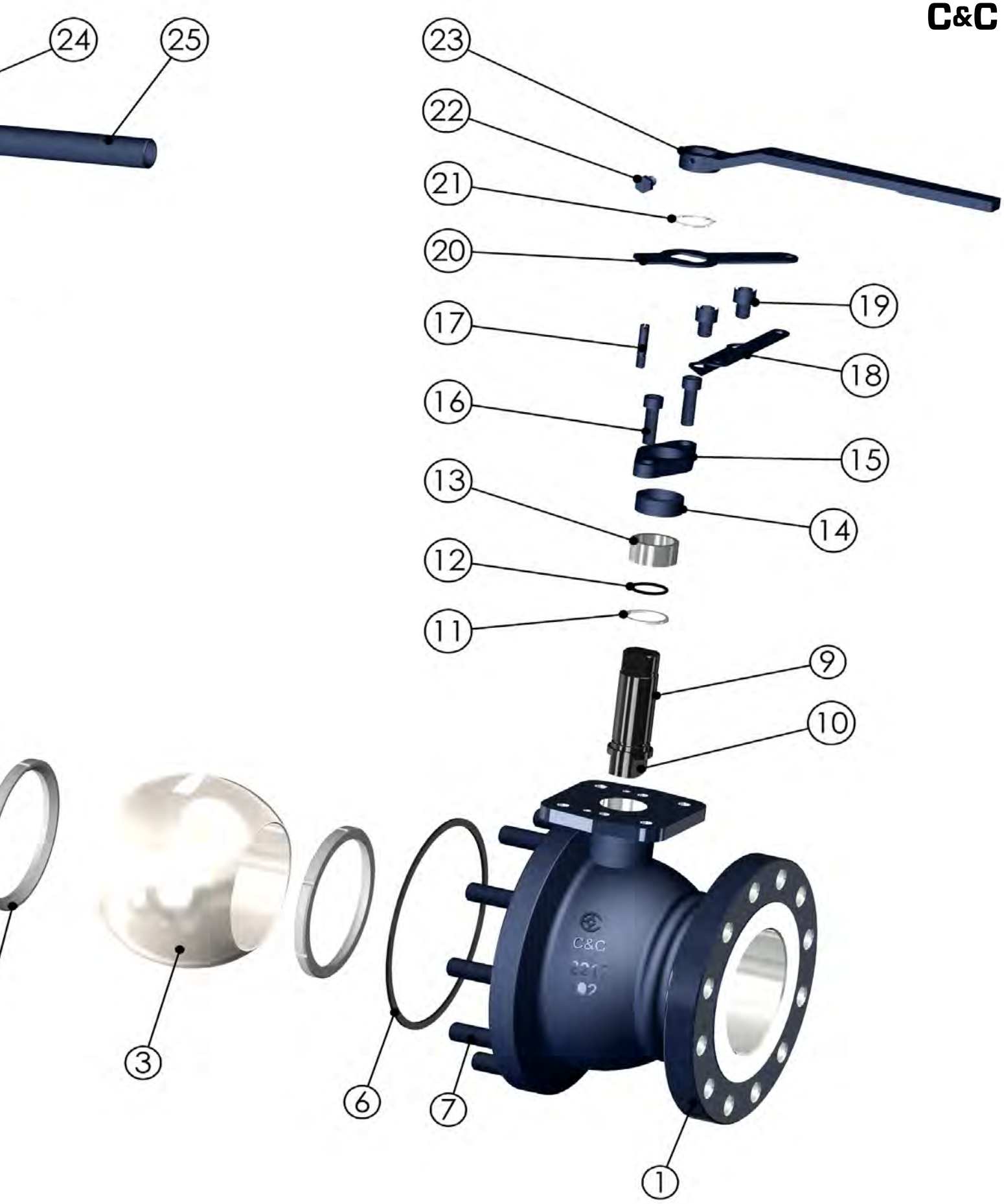
STANDARD MATERIALS OF CONSTRUCTION

ITEM	COMPONENT	MATERIAL	SPECIFICATION
1	Body	Carbon Steel	ASTM A352 LCC
2	End Cap	Carbon Steel	ASTM A352 LCC
3	Ball	Stainless Steel	ASTM A182 F316
4	Seat	Plastic	TFM 1600
5	O-Ring	Elastomer	LT HNBR 90 Duro
6	Gasket	SS + Graphite	304 + Graphite
7	Stud	Alloy Steel	ASTM A320 L7M
8	Nut	Carbon Steel	ASTM A194 7M
9	Stem	Stainless Steel	A564 17-4 PH
10	Anti-Static Device	Stainless Steel	ASTM A276 304
11	Thrust Washer	Plastic	PTFE
12	Stem O-Ring	Elastomer	LT HNBR 90 Duro
13	Stem Packing	Graphite	Graphite
14	Gland	Stainless Steel	ASTM A276 304
15	Gland Flange	Carbon Steel	ASTM A352 LCC
16	Gland Bolt	Alloy Steel	ASTM A320 L7M
17	Pin	Stainless Steel	SS 201
18	Lock Plate	Carbon Steel	ASTM A29 1025
19	Lock Plate Bolt	Carbon Steel	GB/T70.1 8.8
20	Stop Plate	Carbon Steel	ASTM A29 1025
21	Snap Ring	Carbon Steel	GB/T894 (65Mn)
22	Set Screw	Carbon Steel	GB/T573 8.8
23	Handle	Carbon Steel	ASTM A216 WCB
24	Handle Guide	Carbon Steel	ASTM A216 WCB
25	Pipe Handle	Carbon Steel	ASTM A29 1025

** Above BOM reflects our LCC construction. Other material options available. Consult CNC Flow Control for a full list of material options per valve size and pressure, as components may vary according to design.*

Pipe Handle Design

6" CL 150, 4" & 6" CL 300/600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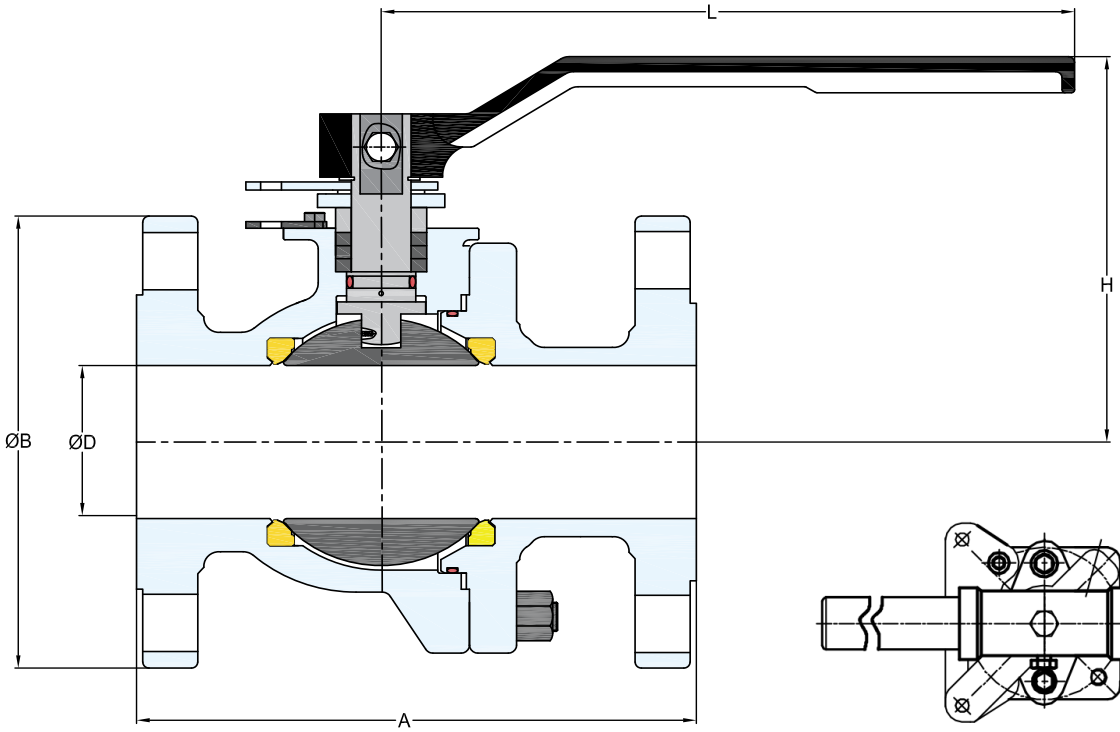
C&C

FULL PORT WEIGHT AND DIMENSIONS



4"CL 300/600
6"CL 150/300

CLASS 150

FULL PORT VALVE - DIMENSIONS IN INCHES (IN)						
SIZE	A	ØB	ØD	H	L	WEIGHT (LB)
2"	7.00	6.00	1.97	5.75	9.90	25.0
3"	8.00	7.50	2.99	6.97	13.70	51.0
4"	9.00	9.00	4.02	7.80	13.70	78.1
6"	15.50	11.00	5.90	11.61	26.80	170.4

CLASS 300

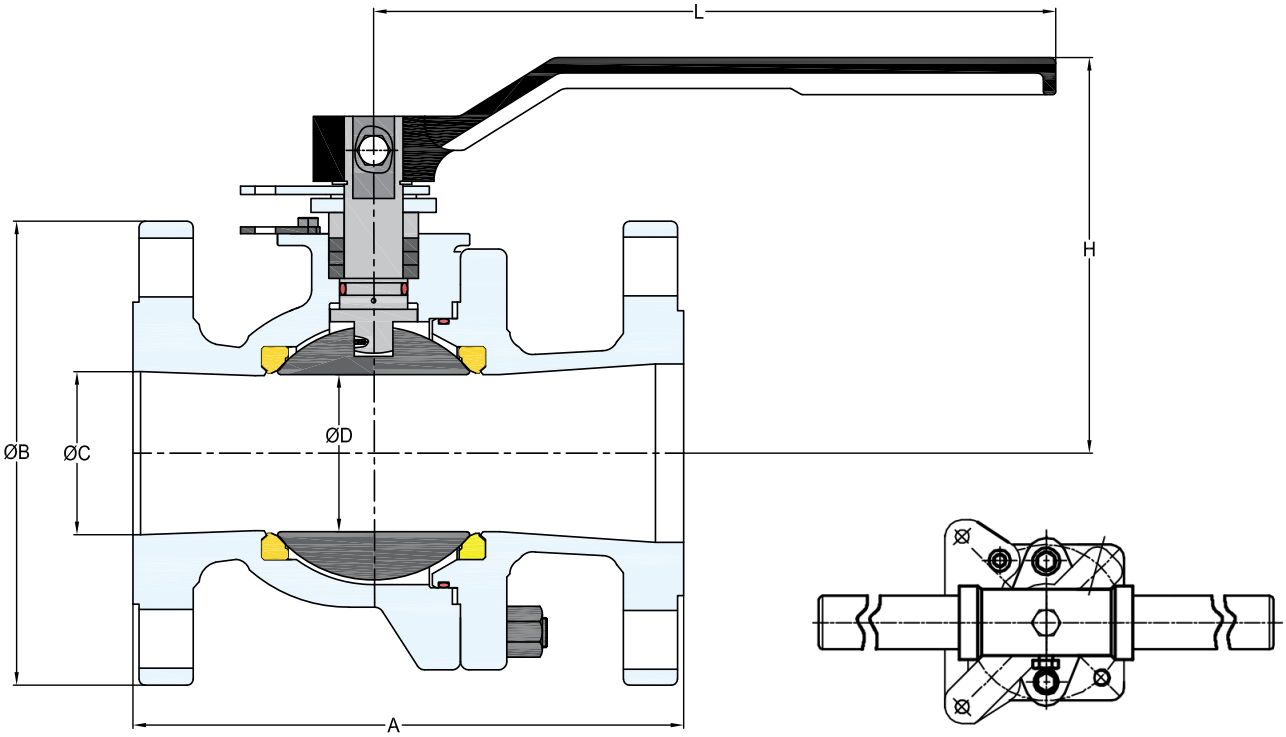
FULL PORT VALVE - DIMENSIONS IN INCHES (IN)						
SIZE	A	ØB	ØD	H	L	WEIGHT (LB)
2"	8.50	6.50	1.97	5.75	9.90	30.1
3"	11.12	8.25	2.99	7.17	13.70	68.5
4"	12.00	10.00	4.02	9.69	21.60	119.2
6"	15.88	12.50	5.90	12.13	29.50	240.7

CLASS 600

FULL PORT VALVE - DIMENSIONS IN INCHES (IN)						
SIZE	A	ØB	ØD	H	L	WEIGHT (LB)
2"	11.50	6.50	1.97	5.75	13.70	38.5
3"	14.00	8.25	2.99	7.32	13.70	86.1
4"	17.00	10.75	4.02	10.83	22.80	177.7

**All weights listed are estimated and may vary slightly.*

REDUCED PORT WEIGHT AND DIMENSIONS



6"x4" CL 300/600

CLASS 150

REDUCED PORT VALVE - DIMENSIONS IN INCHES (IN)							
SIZE	A	ØB	ØC	ØD	H	L	WEIGHT (LB)
2"	7.00	6.00	1.97	1.50	4.80	7.80	20.4
3"	8.00	7.50	2.99	1.97	5.75	9.90	36.3
4"	9.00	9.00	4.02	2.99	6.97	13.70	61.4
6"	15.50	11.00	5.94	4.01	7.91	17.70	95.1

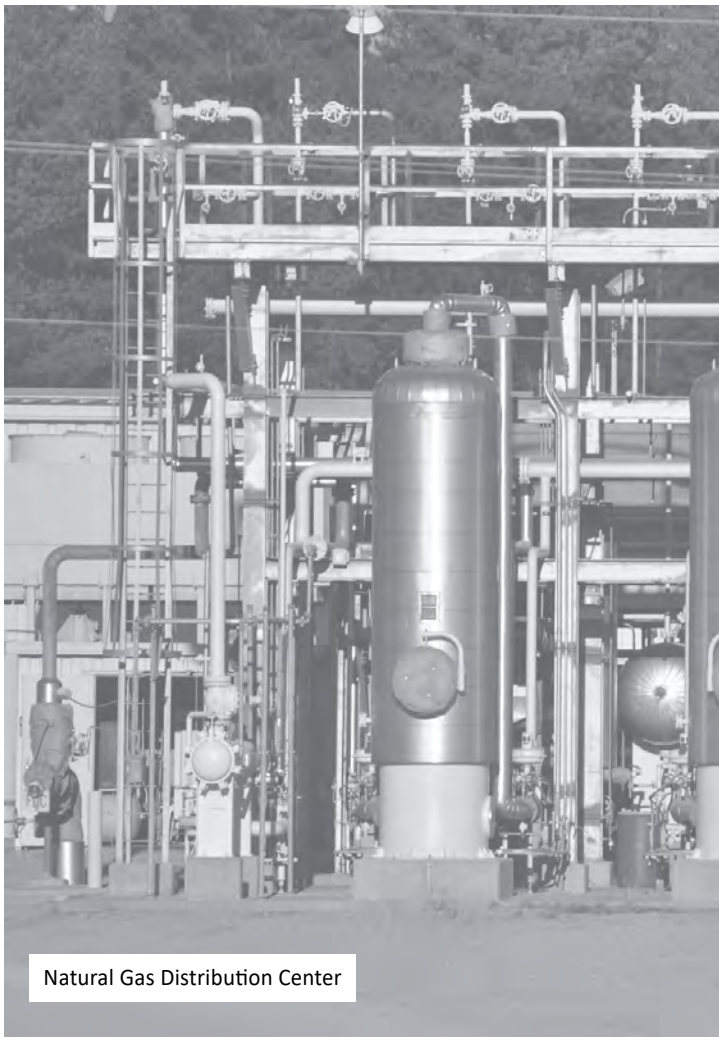
CLASS 300

REDUCED PORT VALVE - DIMENSIONS IN INCHES (IN)							
SIZE	A	ØB	ØC	ØD	H	L	WEIGHT (LB)
2"	8.50	6.50	1.97	1.50	4.80	7.80	25.2
3"	11.12	8.25	2.99	1.97	5.75	9.90	48.2
4"	12.00	10.00	4.02	2.99	7.17	13.70	89.2
6"	15.88	12.50	5.94	4.01	9.61	21.60	160.9

CLASS 600

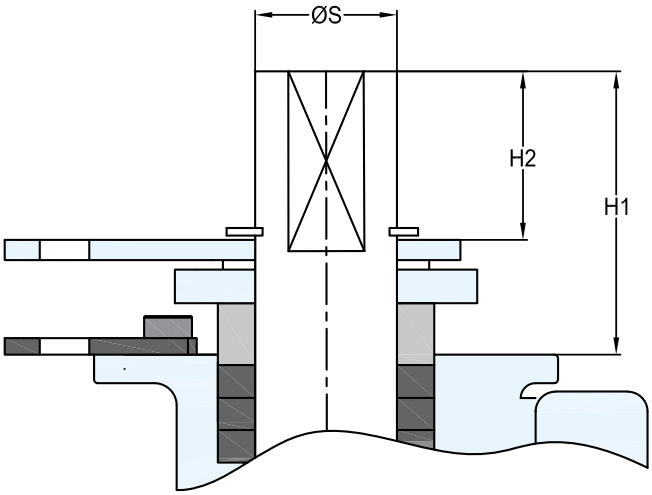
REDUCED PORT VALVE - DIMENSIONS IN INCHES (IN)							
SIZE	A	ØB	ØC	ØD	H	L	WEIGHT (LB)
2"	11.50	6.50	1.97	1.50	4.80	11.80	33.7
3"	14.00	8.25	2.99	1.97	5.75	13.70	60.9
4"	17.00	10.75	4.02	2.99	7.32	13.70	89.4
6"	22.00	14.00	5.94	4.02	10.83	23.60	254.6

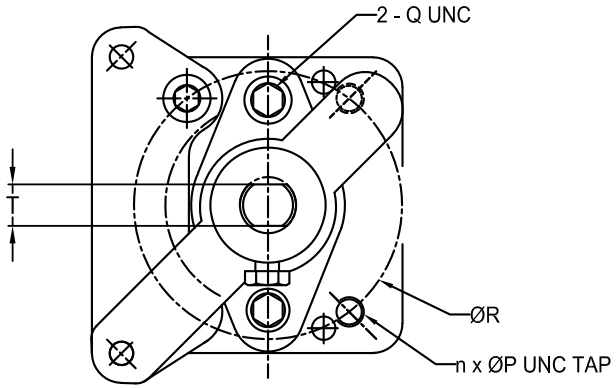
**All weights listed are estimated and may vary slightly.*



Natural Gas Distribution Center

ACTUATOR MOUNTING INFORMATION
FULL PORT





CLASS 150

FULL PORT VALVE - DIMENSIONS IN INCHES (IN)									
SIZE	ISO 5211	n	ØP	ØR	T	ØS	ØQ	H1	H2
2"	F07	4	5/16-18UNC	2.756	0.551	0.787	M10	1.693	0.709
3"	F07	4	5/16-18UNC	2.756	0.748	1.181	M12	2.008	0.866
4"	F10	4	3/8-16UNC	4.016	0.827	1.260	M12	2.165	0.984
6"	F12	4	7/16-14UNC	4.921	1.063	1.575	M14	2.953	1.693

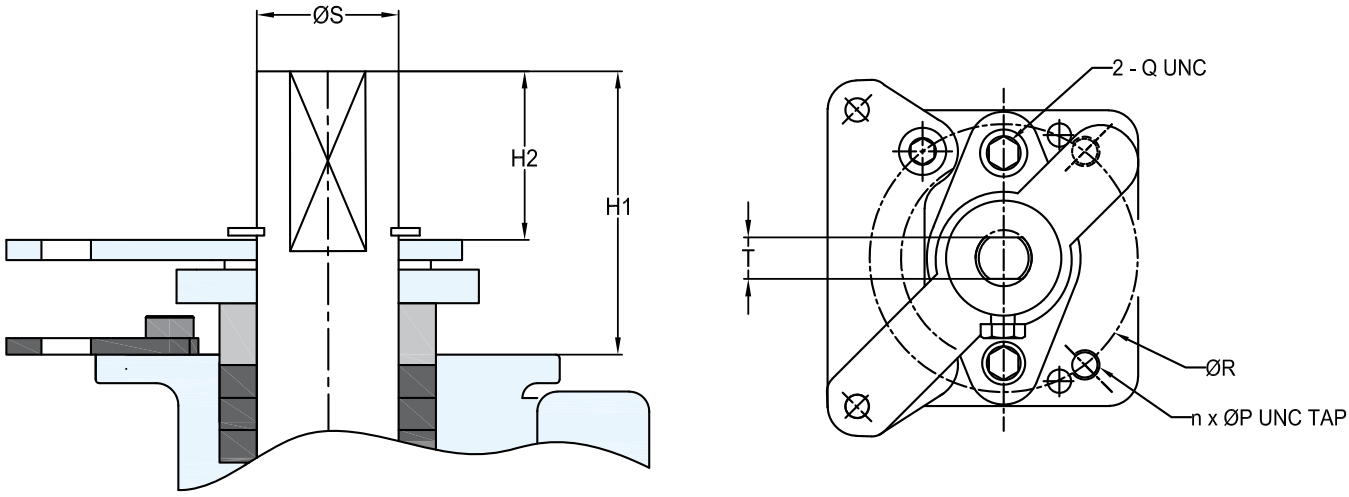
CLASS 300

FULL PORT VALVE - DIMENSIONS IN INCHES (IN)									
SIZE	ISO 5211	n	ØP	ØR	T	ØS	ØQ	H1	H2
2"	F07	4	5/16-18UNC	2.756	0.551	0.787	M10	1.693	0.709
3"	F07	4	5/16-18UNC	2.756	0.748	1.181	M12	2.008	0.866
4"	F10	4	3/8-16UNC	4.016	0.827	1.260	M12	2.165	0.984
6"	F12	4	7/16-14UNC	4.921	1.063	1.575	M14	2.953	1.693

CLASS 600

FULL PORT VALVE - DIMENSIONS IN INCHES (IN)									
SIZE	ISO 5211	n	ØP	ØR	T	ØS	ØQ	H1	H2
2"	F07	4	5/16-18UNC	2.756	0.551	0.787	M10	1.693	0.709
3"	F07	4	5/16-18UNC	2.756	0.748	1.181	M12	2.008	0.866
4"	F10	4	3/8-16UNC	4.016	0.827	1.260	M12	2.165	0.984
6"	F12	4	7/16-14UNC	4.921	1.063	1.575	M14	2.953	1.693

ACTUATOR MOUNTING INFORMATION
REDUCED PORT



CLASS 150

REDUCED PORT VALVE - DIMENSIONS IN INCHES (IN)									
SIZE	ISO 5211	n	ØP	ØR	T	ØS	ØQ	H1	H2
2"	F05	4	1/4-20UNC	1.968	0.472	0.709	M10	1.614	0.591
3"	F07	4	5/16-18UNC	2.756	0.551	0.787	M10	1.654	0.709
4"	F07	4	5/16-18UNC	2.756	0.748	1.181	M12	1.968	0.866
6"	F10	4	3/8-16UNC	4.016	0.827	1.260	M12	2.047	0.984

CLASS 300

REDUCED PORT VALVE - DIMENSIONS IN INCHES (IN)									
SIZE	ISO 5211	n	ØP	ØR	T	ØS	ØQ	H1	H2
2"	F05	4	1/4-20UNC	1.968	0.472	0.709	M10	1.614	0.591
3"	F07	4	5/16-18UNC	2.756	0.551	0.787	M10	1.654	0.709
4"	F07	4	5/16-18UNC	2.756	0.748	1.181	M12	2.047	0.866
6"	F10	4	3/8-16UNC	4.016	0.827	1.260	M12	2.323	1.417

CLASS 600

REDUCED PORT VALVE - DIMENSIONS IN INCHES (IN)									
SIZE	ISO 5211	n	ØP	ØR	T	ØS	ØQ	H1	H2
2"	F07	4	5/16-18UNC	2.756	0.472	0.709	M10	1.614	0.591
3"	F07	4	5/16-18UNC	2.756	0.551	0.787	M10	1.654	0.709
4"	F10	4	3/8-16UNC	4.016	0.748	1.181	M12	2.047	0.866
6"	F12	4	7/16-14UNC	4.921	1.063	1.575	M14	2.953	1.693

TECHNICAL DATA

FULL PORT INFORMATION

OPERATING TORQUE

BREAK TORQUE IN INCH POUNDS (IN-LB)			
SIZE	CL 150	CL 300	CL 600
2"	469	531	761
3"	664	708	1,062
4"	1,062	1,558	1,752
6"	2,148	2,300	-

FLOW COEFFICIENT (C_V)

CV VALUE OF FULL PORT BALL VALVE			
SIZE	CL 150	CL 300	CL 600
2"	442	454	302
3"	1,383	1,197	1,072
4"	2,452	2,323	1,729
6"	4,700	5,483	-

REDUCED PORT INFORMATION

OPERATING TORQUE

BREAK TORQUE IN INCH POUNDS (IN-LB)			
SIZE	CL 150	CL 300	CL 600
2"	425	496	584
3"	469	531	673
4"	673	681	1,062
6"	956	1,558	1,752

FLOW COEFFICIENT (C_V)

CV VALUE OF REDUCED PORT BALL VALVE			
SIZE	CL 150	CL 300	CL 600
2"	185	182	171
3"	221	381	289
4"	509	606	464
6"	1,020	1,029	1,068

- Teflon seat material for CL 150/300 and Devlon seat material for CL 600 were used in calculating operating torque values.
- The above values are new valve torque values at maximum differential pressure.
- The run (operating) torque is 60% of break torque. Closing torque is 80% of break torque.
- For sizes not listed, consult CNC Flow Control.
- The above torque values do not contain service factors.
- When selecting an actuator, add a 25% safety factor at a minimum.
- Actuator selection should be made on customer experience and appropriate service factors.

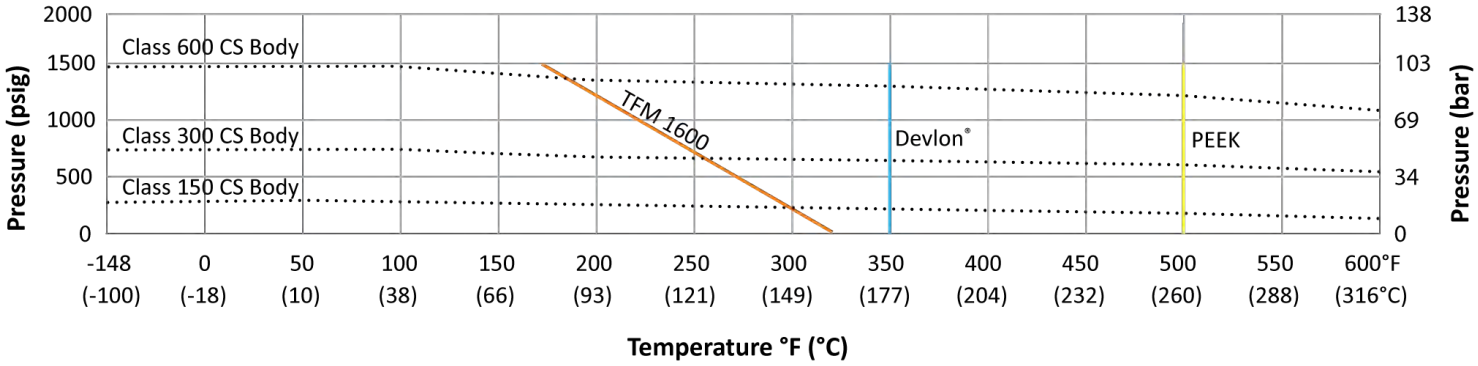
MAXIMUM MATERIAL PRESSURE RATINGS

MAXIMUM MATERIAL PRESSURE RATING BY CLASS AT AMBIENT TEMPERATURE						
CLASS	CARBON STEEL		LOW TEMP CARBON STEEL		STAINLESS STEEL	
	PSIG	BAR	PSIG	BAR	PSIG	BAR
150	285	20	290	20	275	19
300	740	51	750	52	720	50
600	1480	102	1500	103	1440	99

**Above pressure ratings are applicable at ambient temperature -20°F to 100°F (-29°C to 38°C)*

TECHNICAL DATA

SEAT PERFORMANCE CAPABILITIES



TEMPERATURE LIMITS

MATERIAL TEMPERATURE LIMITS						
MATERIAL		SPECIFICATION	FAHRENHEIT (°F)		CELSIUS (°C)	
			MIN.	MAX.	MIN.	MAX.
BODY	**Carbon Steel**	ASTM A216 WCB	-20	800	-29	427
	Low Temp Carbon Steel	ASTM A352 LCC	-50	650	-46	343
	Stainless Steel	ASTM A351 CF8M	-425	1500	-254	816
SEAT	**TFM 1600**	TFM 1600	-148	320	-100	160
	Devlon®	Devlon®	-50	320	-46	160
	PEEK	PEEK	-148	500	-100	260
SEAL	**LT HNBR 90**	LT HNBR 90	-50	302	-46	150
	Viton® GLT 90	Viton® GLT 90	-50	392	-46	200

**Contact CNC Flow Control for additional materials based on application.*

About Our Company

CNC Flow Control is headquartered in Houston, Texas with multiple other locations in the U.S. and Canada. Our company unifies several trusted valve and flow line brands that have been serving numerous industries in North America for nearly three decades. From long range projects to same-day delivery, our diverse team is dedicated to understanding customers' needs in order to ensure exceptional service and the best solutions. Our extensive product portfolio ranges from commodity products like hammer unions and needle valves, to highly engineered products like API 6D trunnion mounted ball valves.

Member of API

Quality assurance is critical to CNC Flow Control's process and we hold multiple internationally recognized quality standards certifications and management system. We are dedicated to understanding our customers' needs to ensure exceptional service by offering an in-house engineering and product management team, an extremely large product portfolio and extensive inventory to support same day shipments.

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