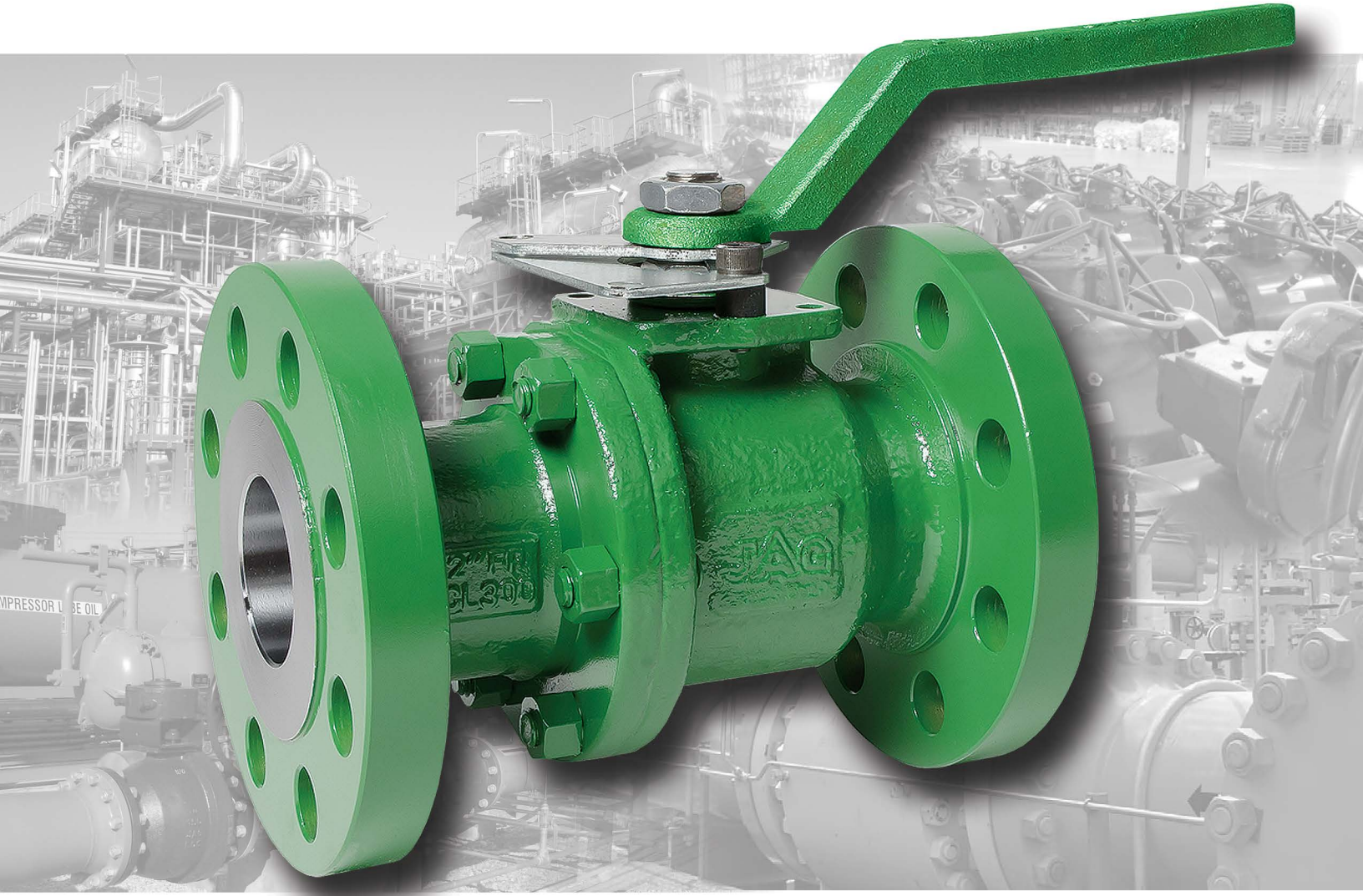
FLANGED

FLOATING BALL VALVES

JAG
flocomponents LP



www.jagvalve.com

JAG valve

Built with Integrity

Edmonton, Canada

• 55,000 square feet • ISO 9001:2015 • API 608

JAGflo's wholly owned Dalian, China facility uses state of the art machining and design capabilities to produce world-class valves that have earned a reputation of reliability and value. As an ISO 9001 certified facility, JAGflo's Dalian plant produces reliable and safe valves with a hands-on approach to quality. Our foundries and forge suppliers are carefully screened and routinely audited. JAGflo's commitment to quality can be seen in every step of the design, manufacturing and testing process. Our passion for "Building with Integrity" is passed to the customer through a reliable and value-driven valve.

JAG valve

The perfect combination of domestic manufacturing and global materials, JAG valves offer end-users an economical choice with proven reliability and on time delivery. JAGflo has registrations in API 6D, API QI, ISO 9001. JAGflo has manufacturing facilities in Edmonton, Canada and Dalian, China operating under strict quality guidelines. Every valve is carefully machined, assembled and tested before leaving our facility to ensure your project runs smoothly, on time and on budget. With thousands of valves installed worldwide, JAGflo has earned a reputation that you can depend on.

Built with integrity

www.jagvalve.com

FB2

- *Forged 2"-4" (ASME 150-600)*
- *Cast 6" (ASME 150-300)*
- *2-piece Bolted Body*
- *Full or Reduced Port*
- *Flanged End connections*
- *Blowout Proof Stem*
- *Dual Stem Seals*
- *Designed and tested to ASME B16.34 / API 608*
- *NACE MR-01-75*
- *ISO 5211 Mounting Pad*
- *Double "D" Stem*
- *Anti-static Device*
- *Locking Lever*
- *Firesafe to API 607*

Features & Benefits

	FEATURES	BENEFITS
Ball	• Floating Ball • Stop Plate	• Seal is created by line pressure • Ensures ball cannot be over-rotated
Body	• Bolted 2-piece Construction • 2"- 4" Forged Steel • 6" Cast Steel	• Offers easy maintenance for longer service life • Rugged design for high pressure applications • Economical solution for low pressure applications
Seat	• Designed in strict accordance with API 607	• Metal-to-metal secondary seal isolates flow if primary soft seals are compromised by fire
Stem	• Integral T-style stem internally inserted • Double D stem • Anti-static devices ground contact between stem and ball and body • Stem O-rings	• Blow-out proof stem cannot be removed while valve in service • Guarantees correct handle mount parallel to flow • Ensures electrical continuity • Provides dual seal capability
Gland Flange	• Live-Loaded Belleville springs on gland studs	• Provides continuous compression to maintain load on the stem packing at all times
Packing	• Packing, O-ring and thrust washer for triple protection	• Maximum sealing performance reducing fugitive emissions to comply with most severe regulations
Mounting Pad	• ISO 5211 standardized mounting pads	• Simple and economical automation mounting
Handle	• Locking Handle	• Tamper proof in the Open and Closed positions
Traceability	• Materials Certification of all pressure containing parts	• Available for stringent specification requirements

Part number configuration

F	B2	-	F	40	R	06	N	–	-	S4	02	-	J
1	2		3	4	5	6	7	8		9	10		11

1-Type

F - Floating

2-Construction

B2 - Bolted (2 pc) - Forged 2″to 4″
B2 - Bolted (2 pc) - Cast 6″

3-Port

F - Full Port
R - Reduced Port

4-Nominal Size

05 - 1/2″
07 - 3/4″
10 - 1″
15 - 1.5″
20 - 2″
30 - 3″
40 - 4″
60 - 6″

5-Connection

A - RF Smooth
B - BW Sch 40
C - BW Sch 80
E - BW Sch XXH
J - RTJ
R - Raised Face
X - Special

6-Pressure

01 - ASME 150
03 - ASME 300
06 - ASME 600

7-Body / Service

L - ASTM A350 LF2 / A352-LCC / LT / NACE
N - A105N / A216-WCB / NACE
X - Special

8-Operator

* – - Handle
G - Gear
B - Bare Stem

9-Soft Goods

*S4 - Viton / RPTFE Seats

10-Trim

*02 - 316 SS

11-Computer Code

J

For additional configurations, please consult JAGflo

* Our standard

Built with integrity

JAGflo's commitment to quality begins with world class engineering and is the driving force behind every step of the process. We audit and certify mills and foundries that supply our raw materials to ensure top quality products. Every component is machined using state of the art equipment in factories that adhere to our strict quality guidelines. Every single valve we build is tested to today's rigorous standards so every valve we ship is guaranteed to deliver lasting reliability, operational safety and uncompromised long-term value. JAGflo's culture is a hands-on approach to quality and a dedication to putting the customers' needs first in manufacturing, sales and service. *Our company and products are....*

Built with integrity

TÜVRheinland® Precisely Right.

CERTIFICATE

Quality-Assurance System

acc. to European Directive 97/23/EC

Certificate No.: 01 202 CH/Q-08 0297

Name and address of manufacturer: Dalian Jag Flocomponents Co., Ltd. DEPZ Songlan Street No. 1 Building A, Dalian, P. R. China 116600

The TÜV CERT Certification Body for Pressure Equipment hereby certifies that the above - mentioned manufacturer operates a quality system according to the European Directive 97/23/EC. The manufacturer has the permission to affix the following CE marking to pressure equipment described and manufactured in accordance to the scope covered by this Quality-Assurance System:

CE 0035

Approved acc. to Directive 97/23/EC: QA-System (Module H)

Audit Report No.: CH/Q-08 0297

Scope: Design and Manufacturing of Ball Valves

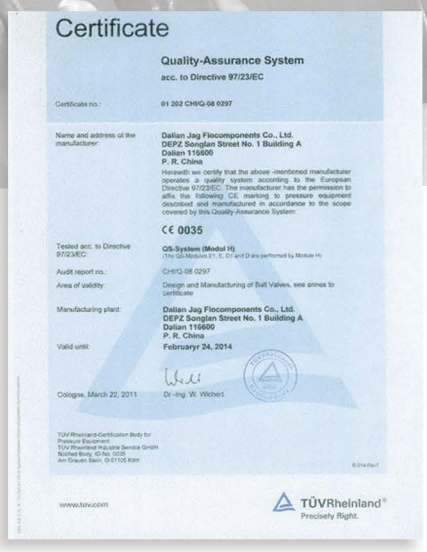
Plant: Dalian Jag Flocomponents Co., Ltd. DEPZ Songlan Street No. 1 Building A, Dalian, P. R. China 116600

Valid until: January 2011

Cologne, March 06, 2008

TÜV CERT-Certification Body for Pressure Equipment

Dr.-Ing. Wichert



Certificate

Quality-Assurance System

acc. to Directive 97/23/EC

Certificate no.: 01 202 CH/Q-08 0297

Name and address of the manufacturer: Dalian Jag Flocomponents Co., Ltd. DEPZ Songlan Street No. 1 Building A Dalian 116600 P. R. China

Herewith we certify that the above -mentioned manufacturer operates a quality system according to the European Directive 97/23/EC. The manufacturer has the permission to affix the following CE marking to pressure equipment described and manufactured in accordance to the scope covered by this Quality-Assurance System:

CE 0035

Tested acc. to Directive 97/23/EC: QS-System (Modul H)

Audit report no.: CH/Q-08 0297

Area of validity: Design and Manufacturing of Ball Valves, see annex to certificate

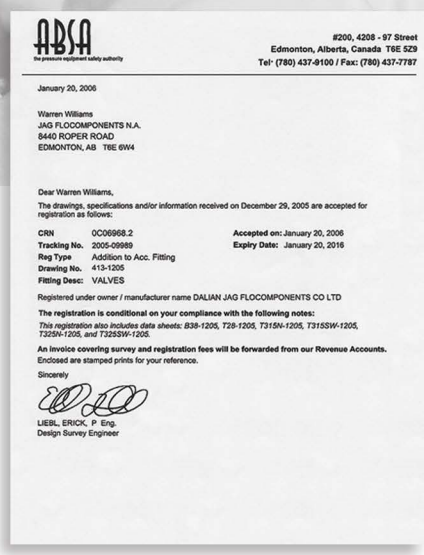
Manufacturing plant: Dalian Jag Flocomponents Co., Ltd. DEPZ Songlan Street No. 1 Building A Dalian 116600 P. R. China

Valid until: Februaryr 24, 2014

Cologne, March 22, 2011 Dr.-Ing. W. Wichert

www.tuv.com

TÜVRheinland® Precisely Right.



ABSA the pressure equipment safety authority

#200, 4208 - 97 Street
Edmonton, Alberta, Canada T6E 5Z9
Tel· (780) 437-9100 / Fax: (780) 437-7787

January 20, 2006

Warren Williams
JAG FLOCOMPONENTS N.A.
8440 ROPER ROAD
EDMONTON, AB T6E 6W4

Dear Warren Williams,

The drawings, specifications and/or information received on December 29, 2005 are accepted for registration as follows:

CRN 0C06968.2 — Accepted on: January 20, 2006
Tracking No. 2005-09989 — Expiry Date: January 20, 2016
Reg Type Addition to Acc. Fitting
Drawing No. 413-1205
Fitting Desc: VALVES

Registered under owner / manufacturer name DALIAN JAG FLOCOMPONENTS CO LTD

The registration is conditional on your compliance with the following notes:

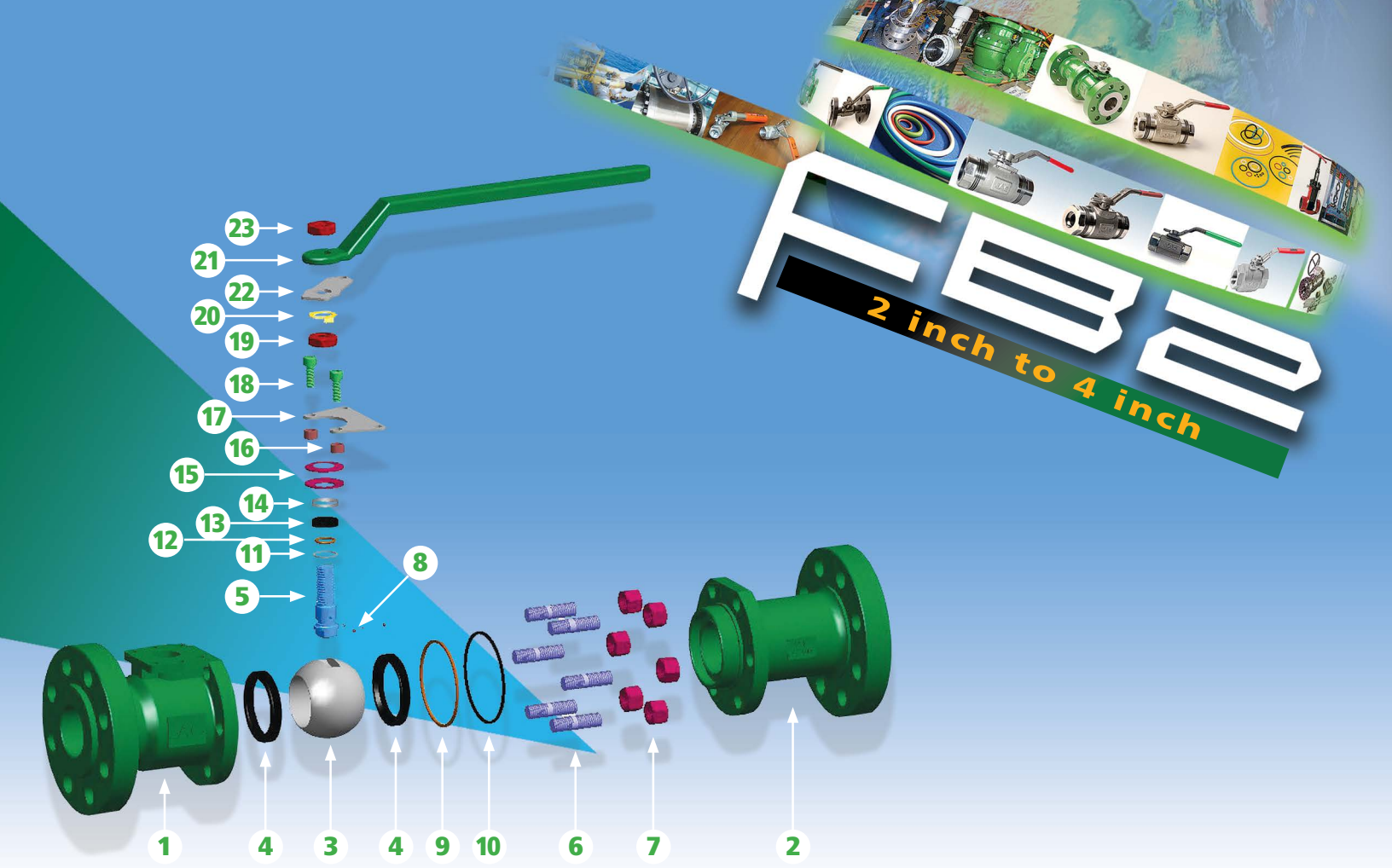
This registration also includes data sheets: B38-1205, T28-1205, T315N-1205, T315SW-1205, T325N-1205, and T325SW-1205.

An invoice covering survey and registration fees will be forwarded from our Revenue Accounts.

Enclosed are stamped prints for your reference.

Sincerely

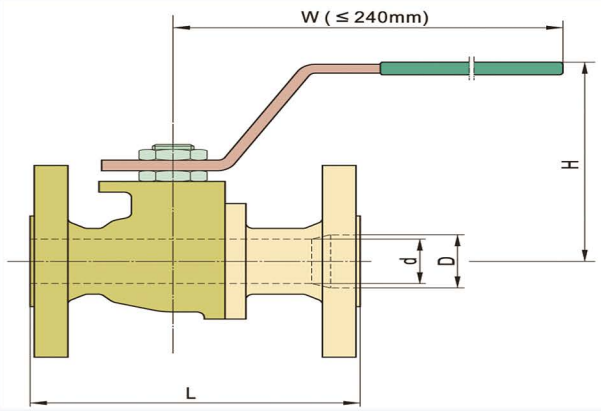
LIEBL, ERICK, P Eng.
Design Survey Engineer



FB2 Two Piece Forged Body Floating Ball Valve – Material Specifications			
No.	Part	A105N/316 NACE	Low Temp LF2/316 NACE
1	Body	ASTM A105N	ASTM A350-LF2
2	End Closure	ASTM A105N	ASTM A350-LF2
3	Ball	ASTM A351-CF8M	ASTM A351-CF8M
4	Seat	RTFE	RTFE
5	Stem	ASTM A182-F316	ASTM A182-F316
6	Body Stud	ASTM A193-B7M	ASTM A320-L7M
7	Body Nut	ASTM A194-2HM	ASTM A194-7M
8	Antistatic Device	ASTM F304	ASTM F304
9	O-ring	Viton	Viton
10	Gasket	Graphite	Graphite
11	Thrust Washer	RTFE	RTFE
12	O-ring	Viton	Viton
13	Packing	Graphite	Graphite
14	Packing Ring	ASTM A276-GR304	ASTM A276-GR304
15	Belleville Washer	Spring Steel	Spring Steel
16	Spacer	Carbon Steel - Plated	Carbon Steel - Plated
17	Lock Plate	Carbon Steel - Plated	Carbon Steel - Plated
18	Cap Screw	Carbon Steel	Carbon Steel
19	Gland Nut	Carbon Steel - Plated	Carbon Steel - Plated
20	Lock Washer	Carbon Steel - Plated	Carbon Steel - Plated
21	Lever Handle	Carbon Steel	Carbon Steel
22	Stopper Plate	Carbon Steel - Plated	Carbon Steel - Plated
23	Lever Handle Nut	Carbon Steel - Plated	Carbon Steel - Plated

Dimensions

2 inch to 4 inch



FB2 Forged - CLASS 150 Full Bore

Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lbs.	kg
2	50	2	50.8	7	178	5.39	137	10	250	24.23	11
3	80	3	76	8	203	6.84	173.7	16	400	52.42	23.8
4	100	4	100	9	228.5	8.62	219	18	450	83.26	37.8

FB2 Forged - CLASS 300 Full Bore

Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lbs.	kg
2	50	2	50.8	8.5	216	5.39	137	10	250	31.28	14.2
3	80	3	76	11.14	283	6.84	173.7	16	400	70.48	32
4	100	4	100	12	305	8.62	219	18	450	118.50	53.8

FB2 Forged - ASME 600 Full Bore

Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lbs.	kg
2	50	2	50.8	11.5	292	5.39	137	10	250	40.53	18.4
3	80	3	76	14	356	6.84	173.7	16	400	87.67	39.8
4	100	4	100	17	432	8.62	219	18	450	183.92	83.5

FB2 Forged - CLASS 150 Reduced Bore

Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lbs.	kg
2x1.5	50x38	1.5	38	2	50.8	7	178	5.08	129	8	203	22.03	10
3x2	80x50	2	50.8	3	76	8	203	5.47	139	10	250	37.00	16.8
4x3	100x80	3	76	4	100	9	228.5	6.84	173.7	16	400	63.44	28.8

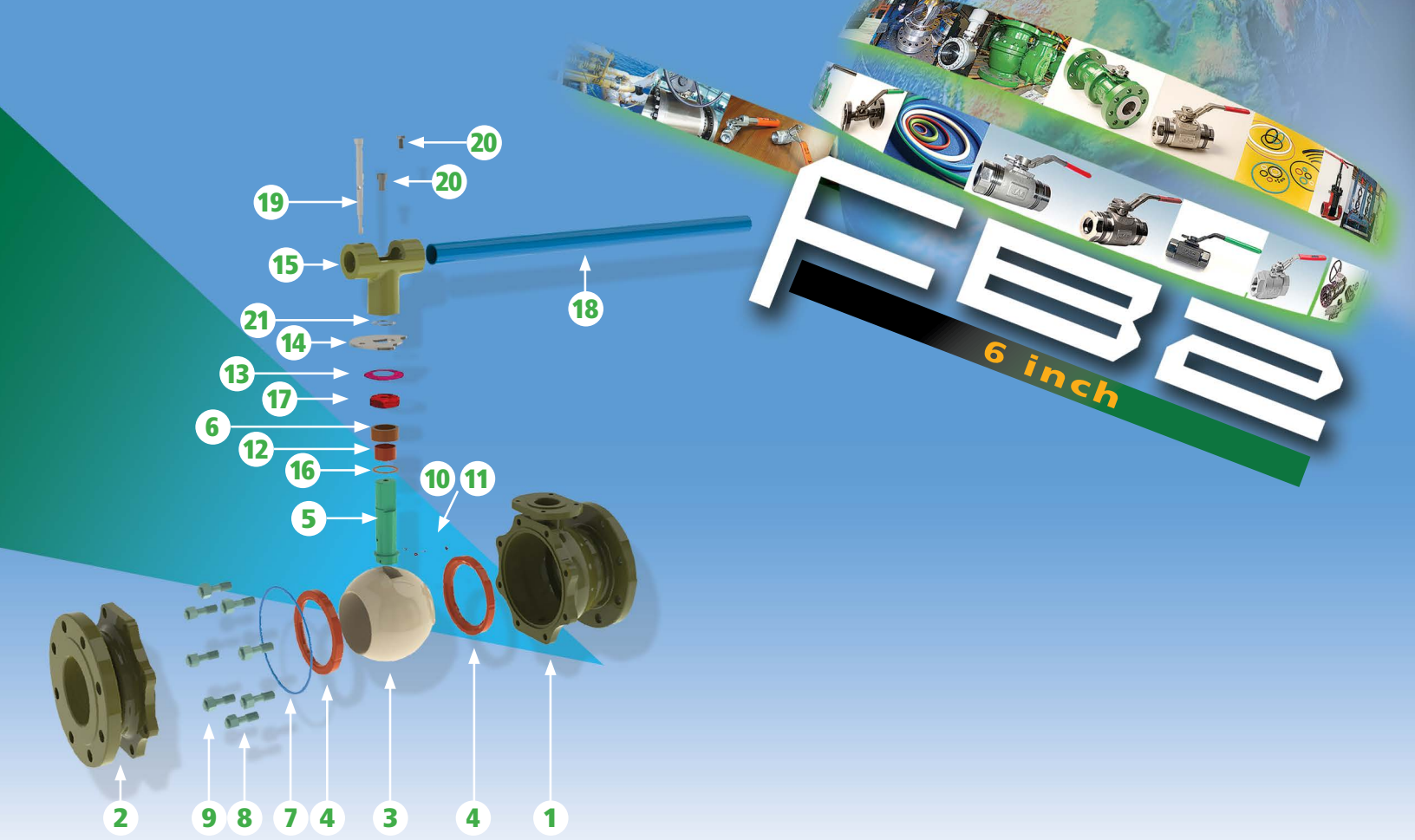
FB2 Forged - CLASS 300 Reduced Bore

Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lbs.	kg
2x1.5	50x38	1.5	38	2	50.8	8.5	216	5.08	129	8	203	27.75	12.6
3x2	80x50	2	50.8	3	76	11.14	283	5.47	139	10	250	47.58	21.6
4x3	100x80	3	76	4	100	12	305	6.84	173.7	16	400	90.75	41.2

FB2 Forged - ASME 600 Reduced Bore

Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lbs.	kg
2x1.5	50x38	1.5	38	2	50.8	11.5	292	5.08	129	8	203	40.53	18.4
3x2	80x50	2	50.8	3	76	14	356	5.47	139	10	250	62.33	28.3
4x3	100x80	3	76	4	100	17	432	6.84	173.7	16	400	134.80	61.2

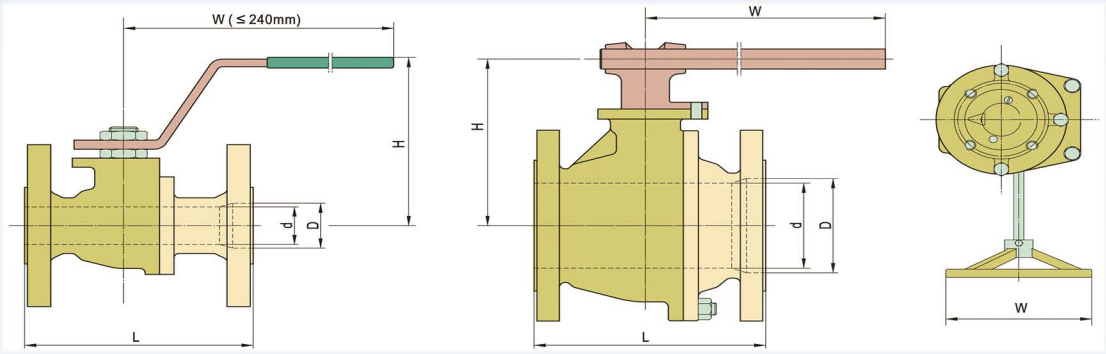
* Imperial dimensions are for reference only and have been rounded off to the nearest decimal.



FB2 Two Piece Cast Body Floating Ball Valve – Material Specifications			
No.	Part	A216 WCB/316 NACE	A352 GR LCC/316 NACE
1	Body	ASTM A216-WCB	ASTM A352-LCC
2	End Closure	ASTM A216-WCB	ASTM A352-LCC
3	Ball	ASTM A182-F316	ASTM A182-F316
4	Seat	RTFE	RTFE
5	Stem	ASTM A182-F316	ASTM A182-F316
6	Packing Ring	ASTM A276-GR304	ASTM A276-GR304
7	Gasket	Graphite	Graphite
8	Body Stud	ASTM A193-B7M	ASTM A320-L7M
9	Body Nut	ASTM A194-2HM	ASTM A194-7M
10	Steel Ball	Stainless Steel	Stainless Steel
11	Antistatic Spring	Inconel X-750	Inconel X-750
12	Packing	Graphite	Graphite
13	Belleville Washer	Spring Steel	Spring Steel
14	Lock plate	Carbon Steel - Plated	Carbon Steel - Plated
15	Lever Head	Carbon Steel - Zinc Plated	Carbon Steel - Zinc Plated
16	Thrust Washer	PTFE	PTFE
17	Gland Nut	Carbon Steel - Plated	Carbon Steel - Plated
18	Lever Handle	Carbon Steel - Zinc Plated	Carbon Steel - Zinc Plated
19	Position Screw	Carbon Steel	Carbon Steel
20	Screw	Carbon Steel	Carbon Steel
21	Lock Washer	Carbon Steel - Plated	Carbon Steel - Plated

Dimensions

6 inch



FB2 Cast - CLASS 150 Full Bore

Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lbs.	kg
6	150	6	150	6	150	15.5	395	30	760	10.7	272	165	75

FB2 Cast - CLASS 150 Reduced Bore

Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lbs.	kg
6x4	150x100	4	100	6	150	15.5	395	20	510	8	203	121	55

FB2 Cast - CLASS 300 Full Bore

Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lbs.	kg
6	150	6	150	6	152	15.9	403	30	760	12	304	275	126

FB2 Cast - CLASS 300 Reduced Bore

Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lbs.	kg
6x4	150x100	4	100	6	150	15.87	403	20	510	8	203	165	75

* Imperial dimensions are for reference only and have been rounded off to the nearest decimal.

Formulas

FLOW COEFFICIENT (Cv)

The Flow Coefficient of a valve is the flow rate of water (gallons/minute) through a fully open valve, with a pressure drop of 1 psi across the valve. To find the flow of liquid through a valve from the Cv, the following formulas;

Liquid Flow

QL = Flow rate of liquid (gal./min.)
ΔP = Differenitial pressure across the valve (psi)
G = Specific gravity of liquid (for water, G = 1)

$$QL = Cv\sqrt{\frac{\Delta P}{G}}$$

Gas Flow

Qg = Flow rate of gas (CFH at STP)
P2 = Outlet pressure (psia)
g = Specific gravity of gas (for air, g = 1.000)

$$Qg = 61Cv\sqrt{\frac{P_2\Delta P}{g}}$$

ANSI Class	ASME Group 1.1 (WCB/LCC & A105N/LF2)	ASME Group 2.2 (CF8M/316SS)
150 (PN 20)	285 PSI	275 PSI
300 (PN 50)	740 PSI	720 PSI
600 (PN 100)	1480 PSI	1440 PSI
900 (PN 150)	2220 PSI	2160 PSI
1500 (PN 250)	3705 PSI	3600 PSI
2500 (PN 420)	6170 PSI	6000 PSI

**Maximum Allowable Pressure at 100 Deg F*

Weight

Kg. x 2.2 = Lbs.
Lbs. x 0.45 = Kg.

Distance

inch x 25.4 = mm
mm x 0.039 = inch
ft x 0.305 = meters
meters x 3.28 = feet

Pressure

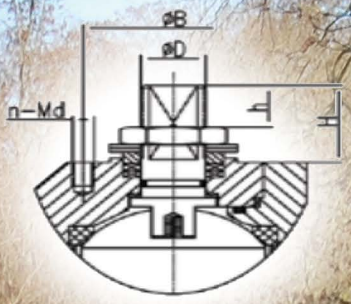
PSI x 6.89 = kPa
kPa x 0.145 = PSI
PSI x 0.0689 = bar
bar x 14.50 = PSI

Temperture

Celsius	Fahrenheit
(Deg F - 32)÷1.8	(Deg C x 1.8)+32

Torque

N.m. x 0.737 = Ft/Lbs.
Ft/Lbs. x 1.356 = N.m.



Top works and torques

TOP WORK DIMENSIONS (ISO 5211)

Class 150 - Forged

Size	ISO Flange	n-Md (mm)	Double D Flats	B(mm)	D (mm)	H (mm)	h (mm)	Hole Depth
2" 150	F07	4-M8	14	70	18	38	23	12
3" 150	F10	4-M10	22	102	30	58	35	15
4" 150	F10	4-M10	27	102	39	78	48	15

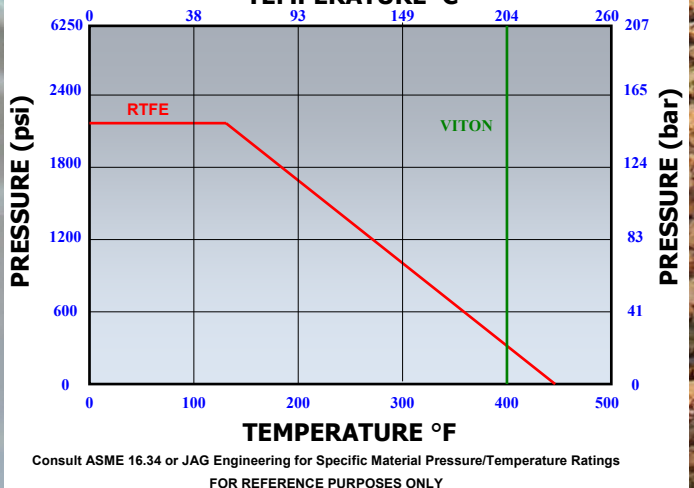
Class 300 - Forged

Size	ISO Flange	n-Md (mm)	Double D Flats	B(mm)	D (mm)	H (mm)	h (mm)	Hole Depth
2" 300	F07	4-M8	14	70	18	38	23	12
3" 300	F10	4-M10	22	102	30	58	35	15
4" 300	F10	4-M10	27	102	39	78	48	15

Class 600 - Forged

Size	ISO Flange	n-Md (mm)	Double D Flats	B(mm)	D (mm)	H (mm)	h (mm)	Hole Depth
2" 600	F07	4-M8	14	70	18	38	23	12
3" 600	F10	4-M10	22	102	30	58	35	15
4" 600	F10	4-M10	27	102	39	78	48	15

PRESSURE TEMPERATURE CHART JAG FLOATING FB2



Consult ASME 16.34 or JAG Engineering for Specific Material Pressure/Temperature Ratings

FOR REFERENCE PURPOSES ONLY

Built with integrity

Built with Integrity

JAG flocomponents LP

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