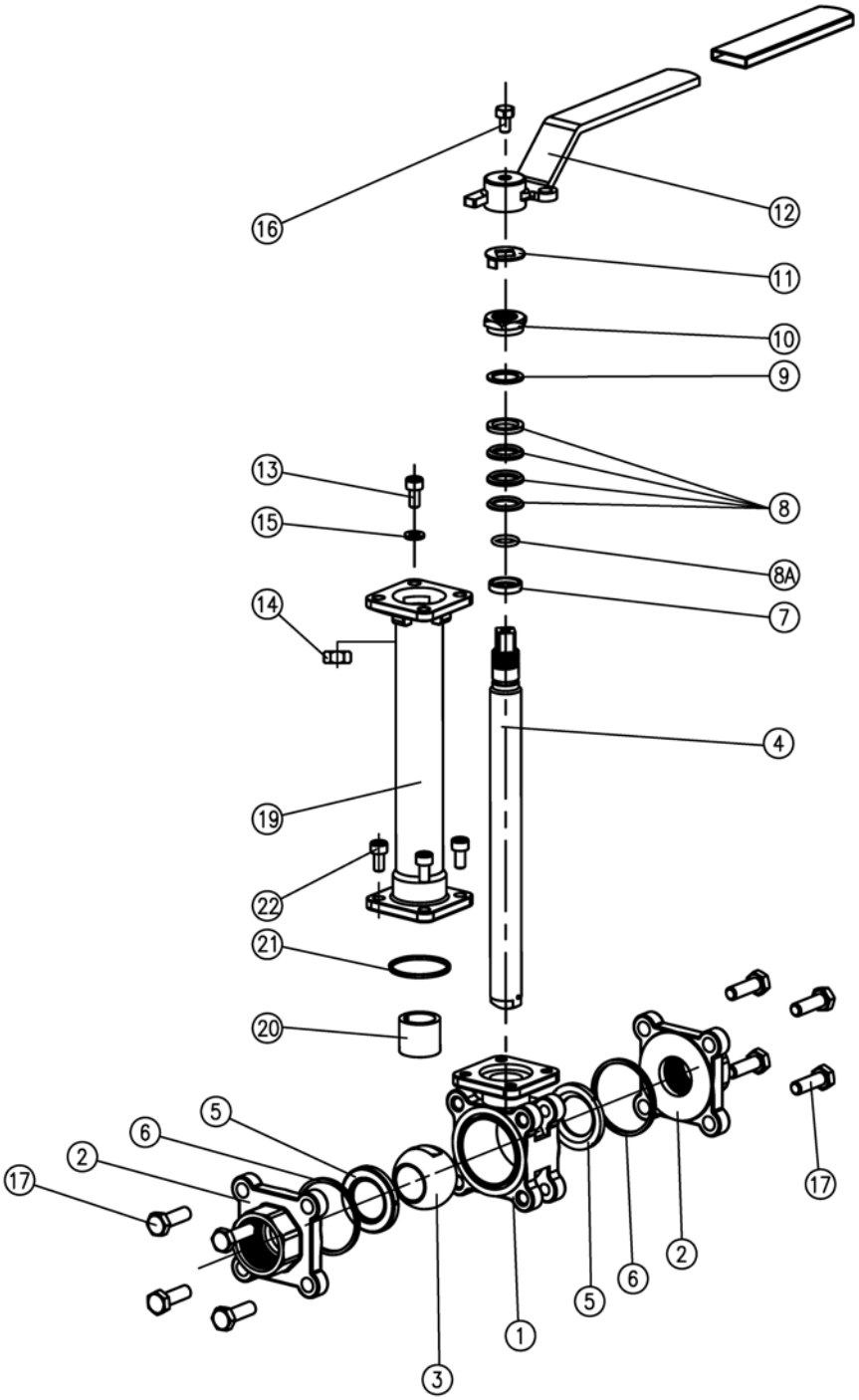
TYPE 1380

DESCRIPTION

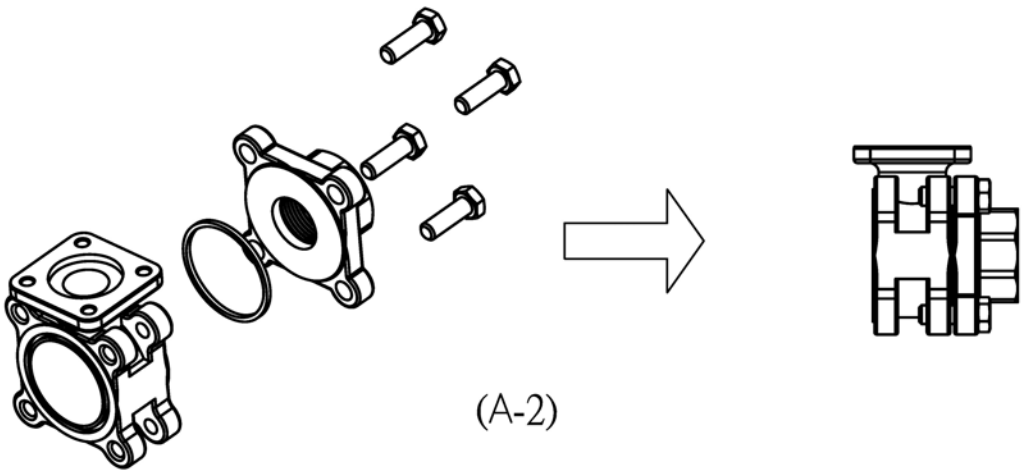
1. STEPS OF INSTALLATION



(A-1)

STEP 1:

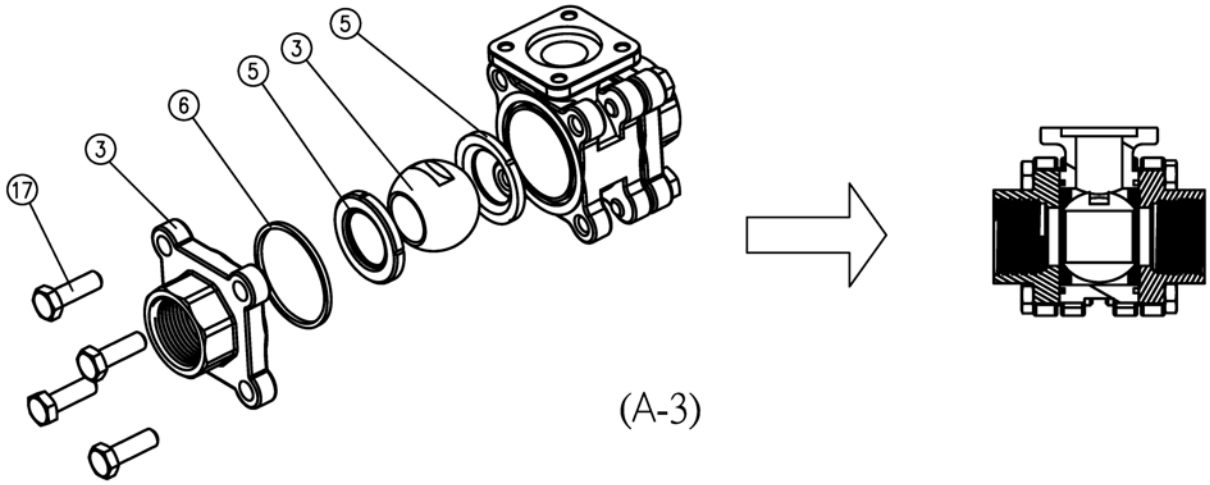
A–1): Complete explode view drawing.



(A-2)

STEP 2:

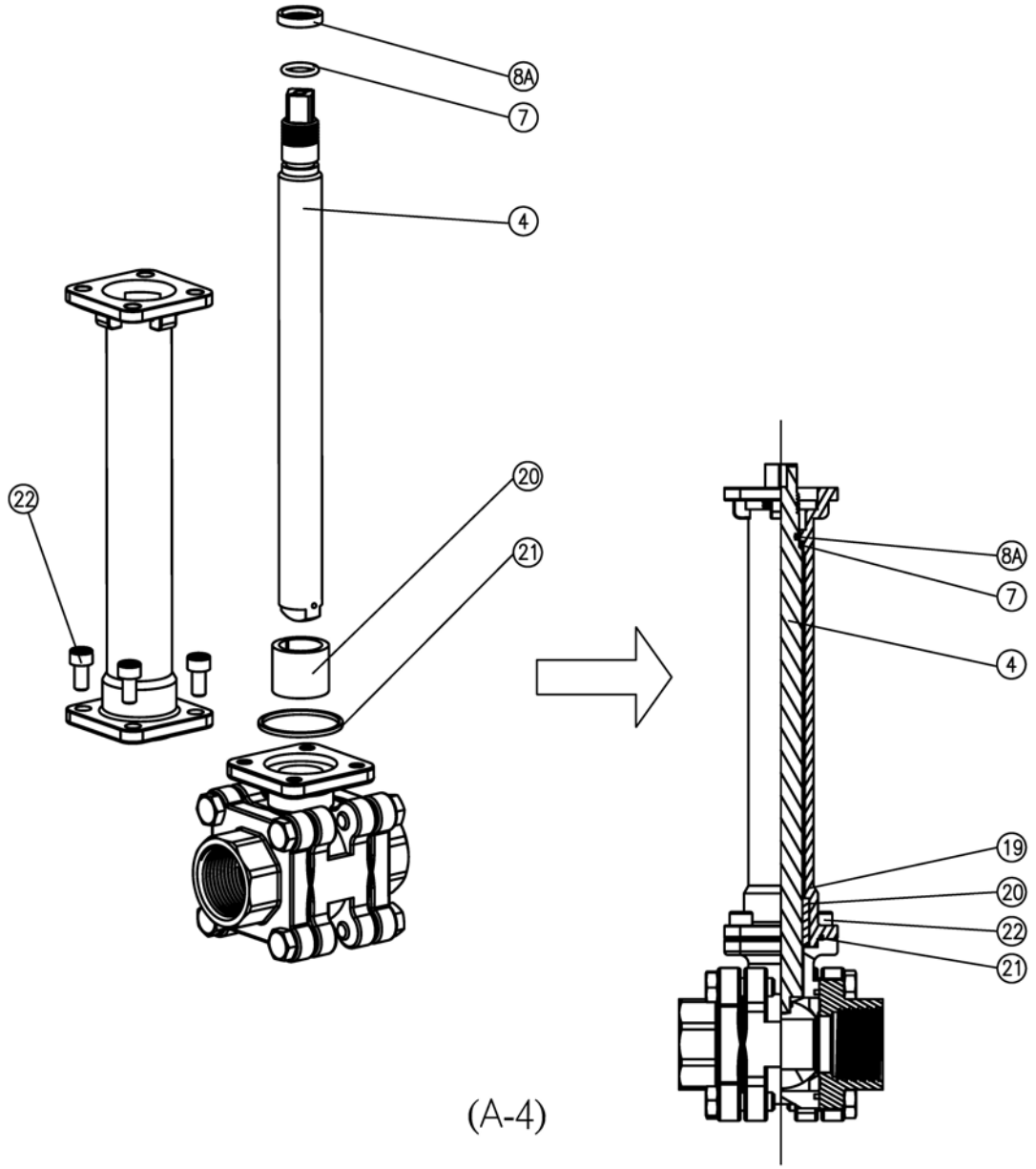
A-2): Showing single side assembly drawing. Put part (6), (2) on the valve body (1) in order. Tighten the bolts (17) properly and evenly according to torque figures.



(A-3)

STEP 3:

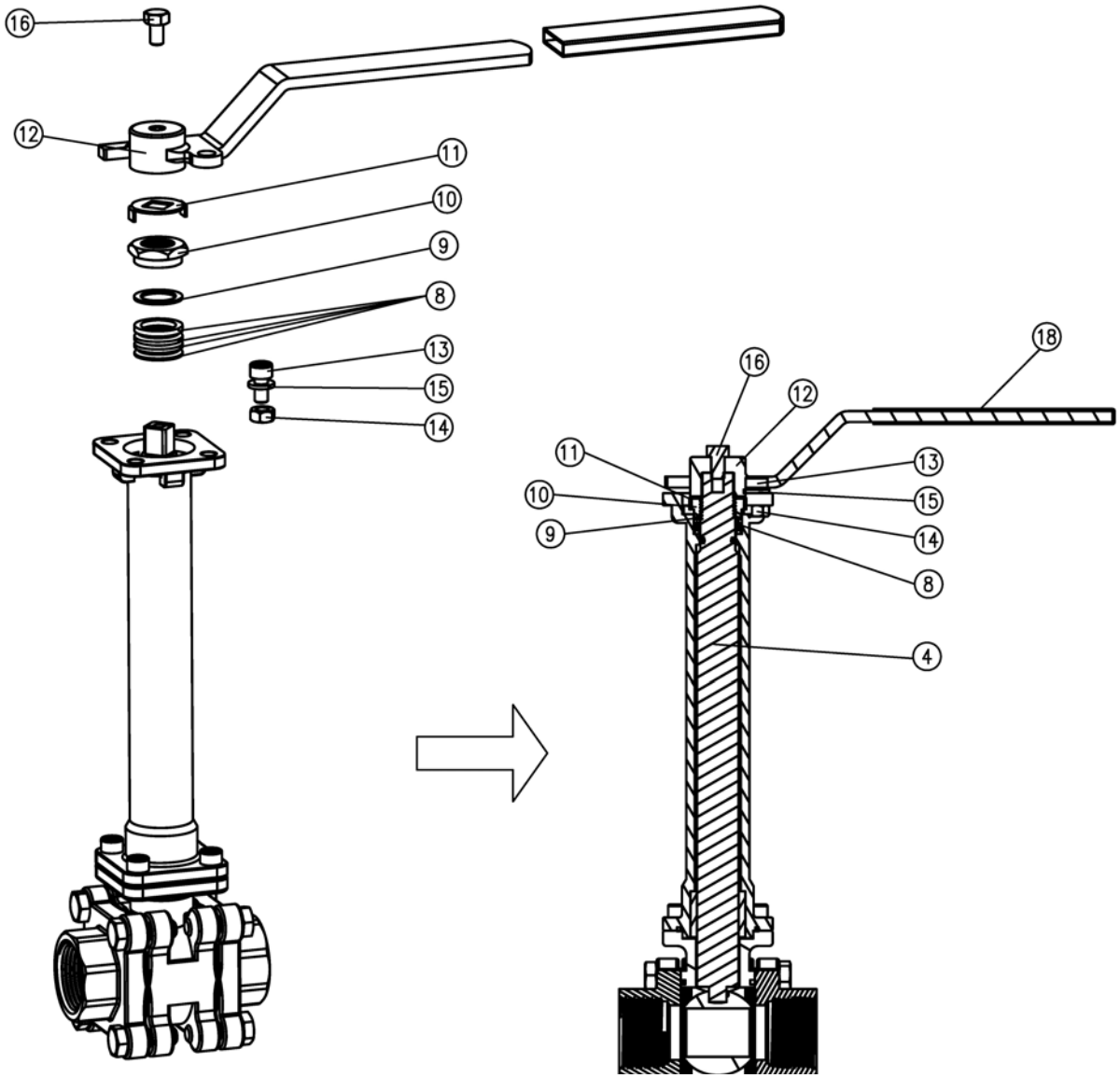
A—3):Put the seat (5) & ball (3) align into the valve body (1), Put parts, seat(5), seal(6), cap(2), body bolt(17) on the other side, following step 2 to complete assembly.



(A-4)

STEP 4:

A- 4): Put the parts (7), (8) in order to the stem (4) and assemble to the inside of the extension (19), position thrust bearing (20) & extension gasket (21) at right place, tighten the extension bolts (22) properly and evenly according to torque figures.



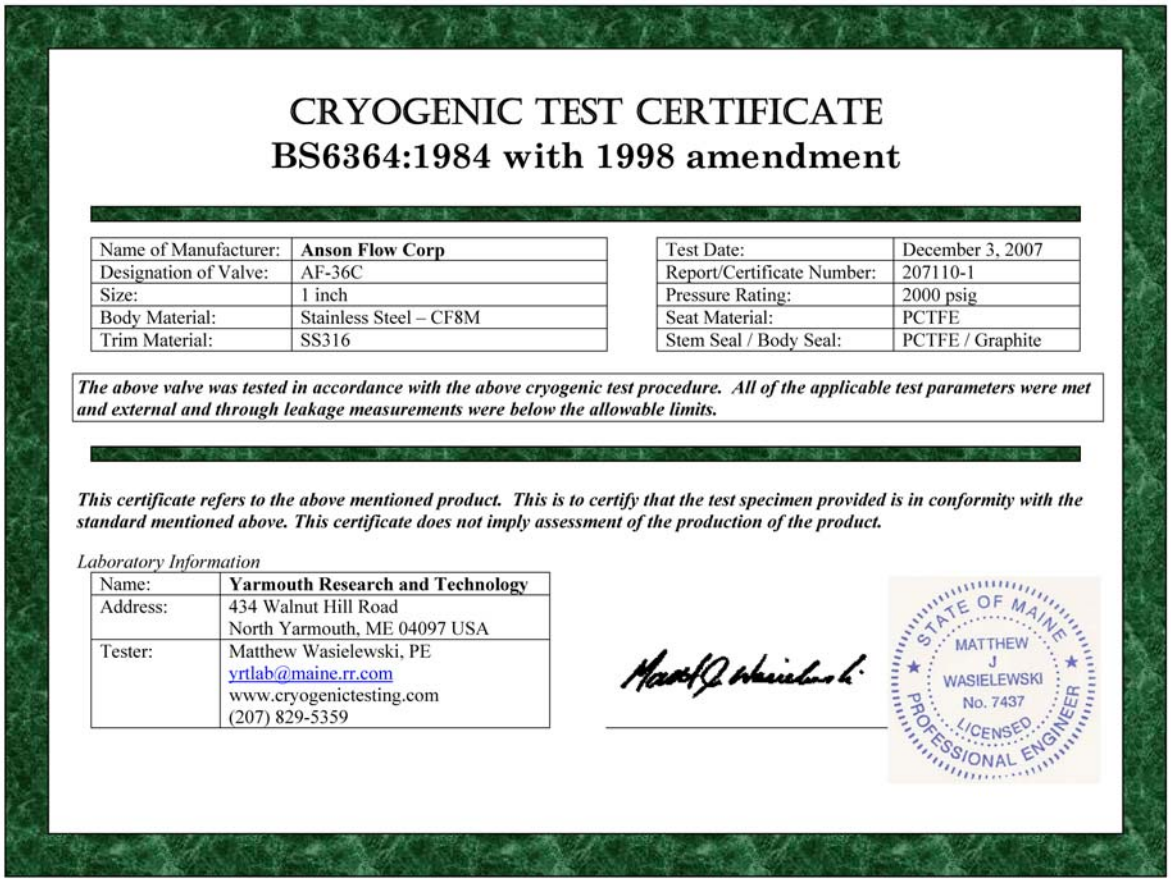
STEP 5:

A-5): Put stem packing (8) & thrust washer (9) into the stem (4) tighten the stem nut (10) properly and evenly according to torque figures. (11) lock saddle must be positioned right to the hexagon sides to prevent it from loosening. Assemble the parts (12)(16)(18)(15)(13)(14) in order. Check the port if it is at the right direction according open/close operation. If not, it takes the opposite procedures to dismantle the parts.

Size	Torque (N.M) (under normal atmospheric temperature)	Torque (N.M) (under - 196°C)	Stem Nut Tightening Torque (N.M)	Body Bolt Tightening Torque (N.M)	Extension Bonnet Tightening Torque (N.M)	KV
1/2"	9.04	20.34	9.04~10.17	17.52	6.78	16.34
3/4"	12.43	27.12	9.04~10.17	17.52	6.78	30.10
1"	15.82	33.90	12.43~14.69	17.52	9.04	43.00
1-1/4"	22.60	45.20	12.43~14.69	33.90	9.04	94.60
1-1/2"	28.25	56.50	15.82~18.08	33.90	17.52	172.00
2"	45.20	101.70	15.82~18.08	58.76	17.52	301.00
3"	79.10	180.80	21.47~23.73	77.97	33.90	946.00
4"	135.60	316.40	32.77~35.03	113.00	33.90	1806.00
5"	192.10	508.50	32.77~35.03	113.00	33.90	3405.60
6" RP	192.10	508.50	32.77~35.03	113.00	33.90	3827.00

*Torque figures are net without safety factors. Please consider adding 30% for safety factor.

2. CERTIFIKATER, TESTS



CRYOGENIC TEST CERTIFICATE
BS6364:1984 with 1998 amendment

Name of Manufacturer:	**Anson Flow Corp**	Test Date:	December 3, 2007
Designation of Valve:	AF-36C	Report/Certificate Number:	207110-1
Size:	1 inch	Pressure Rating:	2000 psig
Body Material:	Stainless Steel – CF8M	Seat Material:	PCTFE
Trim Material:	SS316	Stem Seal / Body Seal:	PCTFE / Graphite

The above valve was tested in accordance with the above cryogenic test procedure. All of the applicable test parameters were met and external and through leakage measurements were below the allowable limits.

This certificate refers to the above mentioned product. This is to certify that the test specimen provided is in conformity with the standard mentioned above. This certificate does not imply assessment of the production of the product.

Laboratory Information

Name:	**Yarmouth Research and Technology**
Address:	434 Walnut Hill Road North Yarmouth, ME 04097 USA
Tester:	Matthew Wasielewski, PE yrtlab@maine.rr.com www.cryogenictesting.com (207) 829-5359

STATE OF MAINE
MATTHEW J WASIELEWSKI
No. 7437
LICENSED PROFESSIONAL ENGINEER

Yarmouth Research and Technology

PROJECT SUMMARY

Project Number: 207110

Customer: **Anson Flow Corp.**
7F-2, No. 408, Sec. 2, Nantun Road
Taichung 408
Taiwan (R.O.C.)

Date(s) of Test: December 3-5, 2007

Product(s) Tested: Valve Size: 1"
Type: 3-Piece Ball Valve
Model No. AF-36C
Connection: NPT
Maximum Pressure Rating: 2000 Psi Cold Working Pressure

Purpose of Test: The test was conducted to evaluate the valve'seat and stem seal sealing performance at ambient and at cryogenic temperature.

Test Procedure: BS6364:1984 with 1998 amendment.

Conclusion: Zero seat and external leakage was observed at ambient temperature before and after the cryogenic test. After the valve was cooled to -321F and allowed to stabilize for 1 hour, the maximum seat leakage was 7 ml/min with an allowable of 150 ml/min.

See attached sheets for more information.

Test Witness:

Matthew J. Wasielewski, P.E., President
YARMOUTH RESEARCH AND TECHNOLOGY

STATE OF MAINE
MATTHEW
J
WASIELEWSKI
No. 7437
LICENSED
PROFESSIONAL ENGINEER

92 East Elm Street, Yarmouth, Maine 04096 USA
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Yarmouth Research and Technology

BS 6364 CRYOGENIC TESTING DATA SHEET

Customer: Anson	**Date:** 12/3/2007
Valve Description: 1 inch C1800 3 piece Ball Valve	**Pressure Rating:** 2000 psig

Ambient Temperature Shell Test		
Record valve temperature:	68	deg. F
Pressurize valve with helium to 2000 psig minimum:	2000	Actual pressure (psig)
Observe body seal leakage over 5 minute period:	0	
Observe stem seal leakage over 5 minute period:	0	(After retorquing packing nut)
Pass or Fail:	Pass	

Ambient Temperature Seat Test		
Pressurize Closed Valve to 2000 psig with helium:	2000	Actual pressure (psig)
Record leakage over 3 minute period:	0	
Torque to open valve against pressure:	10	ft-lb
Pass or Fail:	Pass	

Cryogenic Test Procedure		
Record Body Temperature:	68	F
Submerge Valve in LN2 or Fill Tank with LN2:	Yes	
Record Start Time of Cooldown:	12:30	
Record Time When Valve Body Reaches -321 deg. F.	12:45	
Purge Valve with Helium During Cooldown:	Yes	
Close Downstream Vent Valve:	Yes	
Record Start Time of Leakage Readings:	14:30	
Pressurize Test Valve to 2000 psig. - Actual Pressure:	2000	psig
Record maximum leakage over 5 minute period:	5	ml/min
Record Torque to Open Valve Against Pressure:	30	ft-lb
Cycle Valve 20 Times:	Yes	
Record Torque to Open Valve Against Pressure:	30	ft-lb
Pressurize Test Valve to 400 psig. - Actual Pressure:	400	psig
Record maximum leakage over 5 minute period:	2	ml/min
Pressurize Test Valve to 800 psig. - Actual Pressure:	800	psig
Record maximum leakage over 5 minute period:	3	ml/min
Pressurize Test Valve to 1200 psig. - Actual Pressure:	1200	psig
Record maximum leakage over 5 minute period:	6	ml/min
Pressurize Test Valve to 1600 psig. - Actual Pressure:	1600	psig
Record maximum leakage over 5 minute period:	6	ml/min
Pressurize Test Valve to 2000 psig. - Actual Pressure:	2000	psig
Record maximum leakage over 5 minute period:	6	ml/min

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CRYOGENIC TESTING DATA SHEET

Page 2 of 2

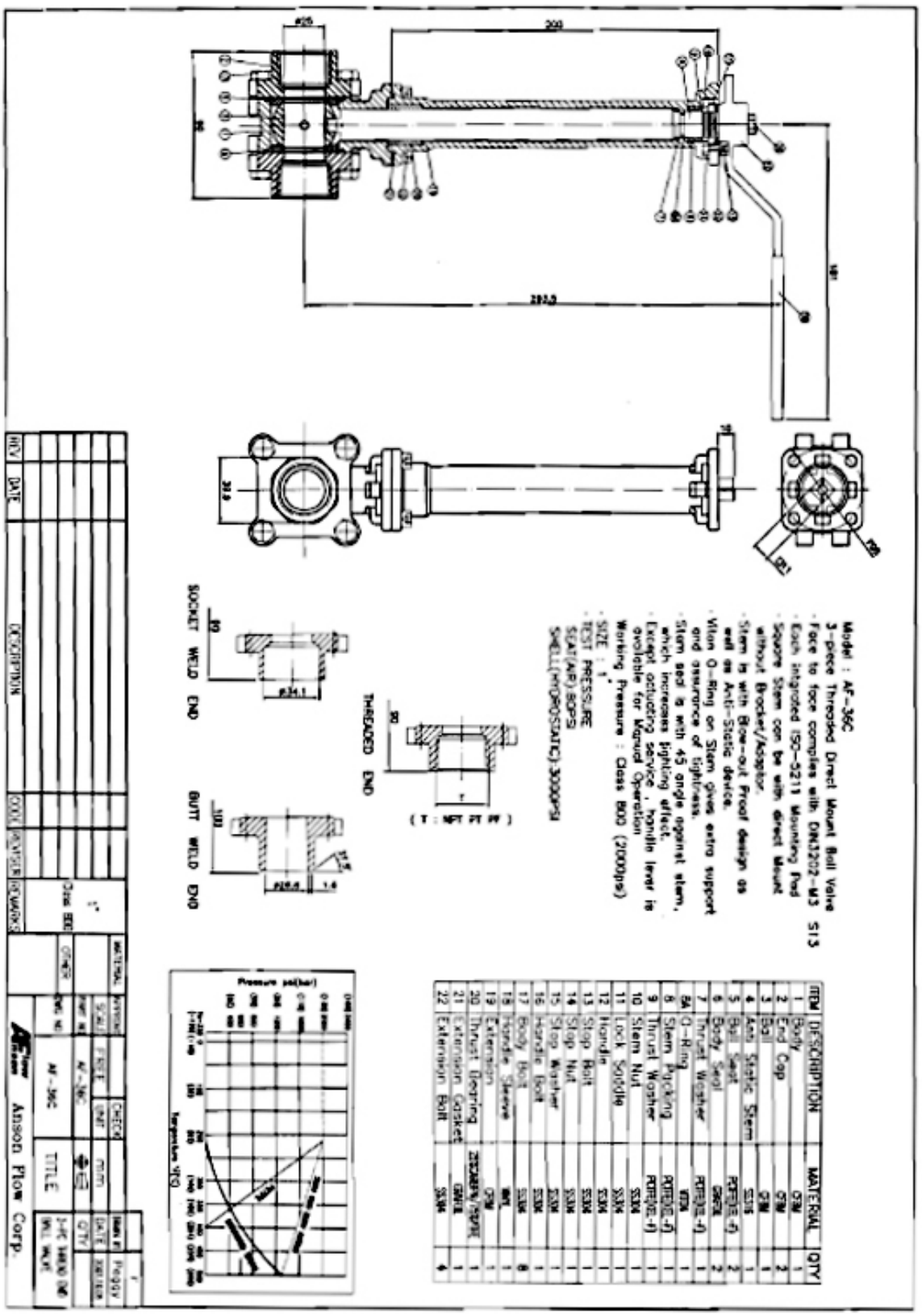
Cryogenic Leakage Results		
Record Maximum Leakage Reading:	7	ml/min
Record Pressure at Which Maximum Leakage Occurred:	2000	psig
Allowable Leakage (150 ml/min/NPS):	150	ml/min
Was Maximum Leakage Below Allowable?	Yes	
Open Test Valve and Record Run Torque:	22	ft-lb
Observe External Leakage with 2000 psig Pressure:	0	thru body seals
Pass or Fail:	Pass	

Ambient Temperature Shell Test		
Record valve temperature:	66	deg. F
Pressurize Opened Valve with Helium to 2000 psig minimum:	2000	Actual pressure (psig)
Observe body seal leakage over 5 minute period:	0	
Observe stem seal leakage over 5 minute period:	0	(After retorquing packing nut)
Pass or Fail:	Pass	

Ambient Temperature Seat Test		
Pressurize Closed Valve with Helium to 2000 psig minimum:	2000	Actual pressure (psig)
Record leakage over 3 minute period:	0	ml/min
Record Torque to Open Valve Against Pressure:	20	ft-lb
Pass or Fail:	Pass	

Does Valve Meet All the Requirements of the Test Standard?	Yes

Tested By:


Model : AF-36C
3-piece Threaded Direct Mount Ball Valve
Face to face complies with DIN3202-M3 S13
Each integrated ISO-5211 Mounting Pad
Square Stem can be with direct Mount without Bracket/Adaptor.
Stem is with Blow-out Proof design as well as Anti-Static device.
Viton O-Ring on Stem gives extra support and assurance of tightness.
Stem seal is with 45 angle against stem, which increases tighting effect.
Except actuating service , handle lever is available for Manual Operation
Working Pressure : Class 800 (2000psi)
SIZE : 1"
TEST PRESSURE
SEAT(AIR):80PSI
SHELL(HYDROSTATIC):3000PSI
SOCKET WELD END
BUTT WELD END
THREADED END
ITEM DESCRIPTION MATERIAL QTY
1 Body CFM 1
2 End Cap CFM 2
3 Ball CFM 1
4 Anti Static Stem SS316 1
5 Ball Seat PCFE(R-F) 2
6 Body Seal GRAFOIL 2
7 Thrust Washer PCFE(R-F) 1
8A O-R ing VITON 1
8 Stem Packing PCFE(R-F) 1
9 Thrust Washer PCFE(R-F) 1
10 Stem Nut SS304 1
11 Lock Solville SS304 1
12 Handle SS304 1
13 Stop Bolt SS304 1
14 Stop Nut SS304 1
15 Stop Washer SS304 1
16 Handle Bolt SS304 1
17 Body Bolt SS304 8
18 Handle Sleeve MPT 1
19 Extension CFM 1
20 Thrust Bearing ZSCRAM/PCFE 1
21 Extension Gasket GRAFOIL 1
22 Extension Bolt SS304 4
Anson Flow Corp.
AF-36C
TITLE
Pressure psi(bar)
Temperature °F(°C)

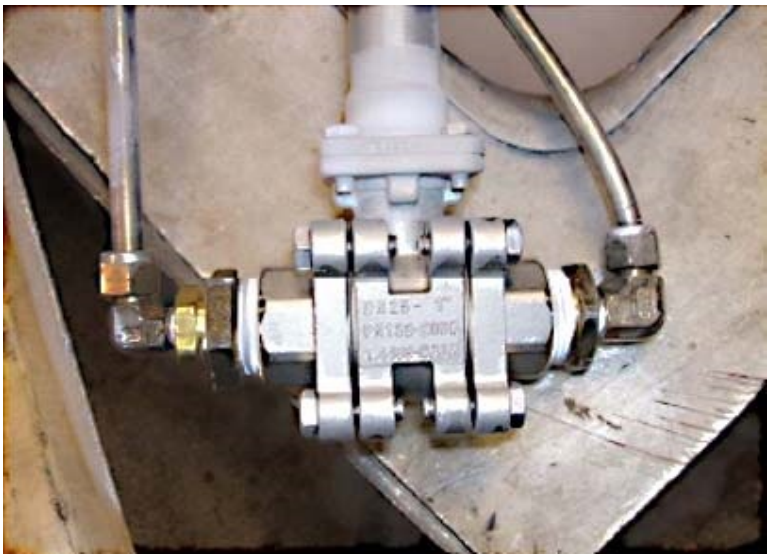


Fig. 1 Valve before cryogenic.

Fig. 3 Valve after cryogenic.